Appendix Contents:

Executive Summary

This appendix presents the findings of the collaborative, community-based Nine Springs Health Impact Assessment (HIA) completed to support the planning process for the future use of the Nine Springs Golf Course property. The HIA includes a report on the potential health impacts of the alternative park and golf course plans as well as research regarding high priority focus areas that were identified by the Community Advisory Committee, including: physical activity, social cohesion (community connectedness), safety, and environmental health.

Key findings from this Health Impact Assessment include:

Obesity

- The area surrounding the golf course lies within the Fitchburg census block group (014.03.2) ranked #1 for obesity.
- Nearly 1 in 4 (24%) children ages 2-17 in this area are obese.
- Within the #2 ranked census block group (014.02.3), 46% of children ages 2-17 were overweight/obese.
- Mothers giving birth residing in the area also show a higher rate of obesity (30%), when compared to the rest of Fitchburg (21%) and Dane County (22%).

Physical Activity

- Residents and stakeholders perceive there is inadequate open green space and play space for the neighborhood.
- Residents and stakeholders perceive that access to physical activity opportunities outside of the neighborhood is limited due to language and transportation barriers.
- Residents living in the Pines apartment complex are perceived to be particularly isolated and lack opportunities for physical activity.
- The golf course is perceived to offer a unique physical activity opportunity for the elderly due to the walkable terrain and affordability.
- The golf course is perceived to be a significant source of physical activity for regular users (especially passholders).
- Public Health – Madison and Dane County (PHMDC) conservatively estimates the annual return on investment for the potential health benefits associated with increased access to physical activity opportunities (which research suggests reduces levels of obesity) to be over three million dollars per year.

Social Cohesion

- The majority of residents surveyed who live around the golf course agree or strongly agree that people in their neighborhood get along with each other (64%) and are willing to help one another (57%).
- People live in the surrounding community for a significant amount of time; 62% of surveyed residents have resided in this neighborhood for four or more years.

- Community involvement in planning and decision making is valued, seen as important by decision makers and service providers, and is needed to maximize health and safety benefits of a park or the golf course.
- Golf course users perceive the course to be welcoming, compared to area residents who perceive the golf course to be unwelcoming.

Safety

- Overall, crime is low and has been on the decline in this area and within the City of Fitchburg over the past four years. In particular, violent crime and drug crime have been very low.
- Service providers, including the Fitchburg Police Department (FPD), view crime and related issues in the area as proportionate to other areas of similar density.
- Design, visibility (lighting/sight lines) and creating a sense of community ownership are key components of ensuring safety in the proposed park plan.

Environmental Health

- Land management of the golf course follows good practice standards.
- Water quality and storm water retention are the biggest environmental concerns of the surrounding residents and stakeholders.

Priority RECOMMENDATIONS if the Park Master Plan is implemented:

- Strengthen community engagement processes to increase social cohesion:
    - Create an inclusive process of broad community engagement for decision making.
    - Offer translation services by the City of Fitchburg for all City meetings and communications.
    - Work with nearby resident leaders, including youth, and existing community organizations (such as the Neighborhood Associations, the Parent Teacher Groups, and the Pines Parent Empowerment Group) to act as liaisons and help plan and communicate available uses and regulations associated with the property. Consider explicit policy language to include this in the plan. Consider hiring some nearby residents on a limited or part-time basis to fill this role.
    - Involve nearby residents, including youth, in developing multiple communication strategies about the uses and regulations associated with the property, including, but not limited to creation of welcoming and easy-to-understand signage, flyers, text messages and social media.
    - Form a Park Watch Group.
- Provide welcoming entrances to the park and features within the park for all ages, races, and abilities.
- Provide no or low-cost opportunities for surrounding low-income residents to participate in physical activity programs.
- Provide no or low-cost community programming and other events in the park such as a farmer's market, movie night on the green, etc.
- Improve access to the park by bicycling, walking, and using public transit.
- Include a community garden within the park plan to offer a gathering space and opportunity for neighbor-to-neighbor interactions across race and class lines (would also improve physical activity).

- Build a partnership between the local police force and the community to closely monitor park space (example: *Amigos en Azul*, foot and bike patrol).
- Follow Crime Prevention through Environmental Design recommendations.
- Place signage near water features with information in English and Spanish (and pictorially) regarding the risk of drowning during heavy rains, prohibiting fishing, and swimming.
- Work toward implementation of Watershed Management Plan recommendations to reduce risk of flooding (drowning).

Priority RECOMMENDATIONS if Nine Springs Golf Course is maintained:

- Strengthen community engagement processes to support future success of the golf course and increase social cohesion:
    - Create an inclusive process of broad community engagement for decision making.
    - Offer translation services by the City of Fitchburg for all City meetings and communications.
    - Work with nearby resident leaders, including youth, and existing community organizations (such as the Neighborhood Associations, the Parent Teacher Groups, and the Pines Parent Empowerment Group) to act as liaisons and help plan and communicate available uses and regulations associated with the property. Consider explicit policy language to include this in the plan. Consider hiring some nearby residents on a limited or part-time basis to fill this role.
    - Involve nearby residents, including youth, in developing multiple communication strategies about the uses and regulations associated with the property, including, but not limited to creation of welcoming and easy-to-understand signage, flyers, text messages and social media.
    - Form a local resident/stakeholder board to improve communication between the golf course and surrounding neighborhoods and increase usage by area residents.
- Offer community access to appropriate parts of the golf course during the off-season and after hours for social programs and physical activity opportunities (examples include: winter activities such as ice skating and snow shoeing, movie nights on the green, etc).
- Provide no or low-cost opportunities in the neighborhood for surrounding residents who are low-income to participate in physical activity programming, such as a sliding-fee scale or scholarship program to subsidize golf passes for neighborhood residents.
- Develop scaled down play spaces (such as a small playgrounds) in apartment areas or on the perimeter of the golf course to provide alternatives to kids playing in the parking lots. Public access trails could allow improved accessibility to existing and new play spaces.
- Build a partnership between the local police force and the community (example: *Amigos en Azul*).
- Work toward the implementation of the Watershed Management Plan recommendations to reduce risk of flooding and drowning.
- Update the Spanish translation on the no trespassing signage.

Health Impact Assessment

Health Impact Assessments (HIA) are a general framework used to systematically judge the potential impacts of a proposed policy or project on the health of a population and distribution of effects within the population. Using research, data and stakeholder input, the HIA is particularly valuable in assuring that health and factors that contribute to disparate health outcomes are considered in decision-making processes (Human Impact Partners, 2013). HIAs are widely used to provide information to decision-makers that can help minimize the anticipated adverse health effects and maximize positive health outcomes (NRCNA, 2011). HIAs consist of six steps: screening, scoping, assessment, development of recommendations, reporting, and monitoring/evaluation.

Project Overview

We can improve our quality of life by making healthy and safe choices and engaging in healthy and safe behaviors. However, where we live, learn, work and play has an enormous impact on our ability to make healthy decisions. For example, it's hard to eat healthy foods if there is no grocery store or fresh food market where you live. It is also difficult to be physically active if there are no sidewalks in your community or you do not feel safe going outside. These are examples of the social, economic, and environmental determinants of health - conditions affected by where people are born, grow, live, work, and age (WHO, 2008). These factors ultimately contribute to the health of a neighborhood. The social, economic, and environmental determinants of health can also be distributed unequally across communities, resulting in health inequities. Health inequities are differences in health that are not only unnecessary and avoidable, but also unfair and unjust (WHO, 2006). For example, the difference in mortality rates between people from different social classes would be a health inequity.

Research conducted within the past ten years has revealed a positive correlation between access to open, green space and health. Public parks and nature conservatories are the most common types of accessible open space; golf courses have not been identified by the United States Environmental Protection Agency as an example of open, green space (EPA). Research has found that open, green space promotes health by encouraging physical activity, limiting noise pollution, and facilitating healthy nights of sleep. These benefits may be two-fold for community members with lower socioeconomic statuses because people in this group are more dependent on their immediate physical environment (De Vries, Verheij, and Groenewegen, 2003). Another study found that people with lower levels of education were also more sensitive to the nearby physical environment (Maas, Verheij, Groenewegen, et al, 2006). Researchers noted that, "the inequality in all-cause and circulatory disease mortality related to income deprivation is lower in the populations who live in the greenest areas than in those who have less exposure to green space. [They] also noted an independent association between residence in the most green areas and decreased rates for all-cause circulatory mortality" (Mitchell & Popham, 2008). In other words, low-income populations have better health outcomes if they live near green open space making access to neighborhood green space both an issue of health and health equity.

Partners

In July 2013, Public Health Madison and Dane County (PHMDC) learned of the Fitchburg Park Department's Nine Springs Golf Course Master Plan at a meeting of the Childhood Obesity Prevention Collaborative of Dane County (COPC). PHMDC and other members of the COPC decided to embark on the screening process for the Nine Springs Golf Course HIA. The screening process for this project was conducted by the HIA Leadership Team, which includes staff from PHMDC, COPC, and the City of Madison Planning Division, which is located in the City of Madison Department of Planning and Community Development. Staff from the City of Madison Planning Division led the Arbor Hills-Leopold Neighborhood plan, which includes the Fitchburg Nine Springs golf course due to the close proximity to Madison.

Fitchburg stakeholders, including the Mayor of Fitchburg and several members of the Fitchburg Common Council, supported the creation of an HIA to provide unbiased information for a politically charged land use decision. The HIA was also valued to encourage community input and identify areas of health inequity.

In September 2013, the HIA Leadership team formed a Community Advisory Committee (CAC), and a Technical Advisory Committee (TAC) to assist staff with the HIA efforts. The CAC provides an opportunity for resident engagement and was comprised of organizations that serve the study area such as Neighborhood Associations, churches and schools or individuals that live within a ½ mile radius of the golf course. The CAC and the TAC were formed to provide guidance throughout the six steps of the HIA. Their involvement included providing technical expertise, connection to residents and local community leaders, and guidance on important decisions. Since health was not a factor being considered in the Master Planning process, the formation of the two advisory committees was effective in raising awareness about these impacts on the community.

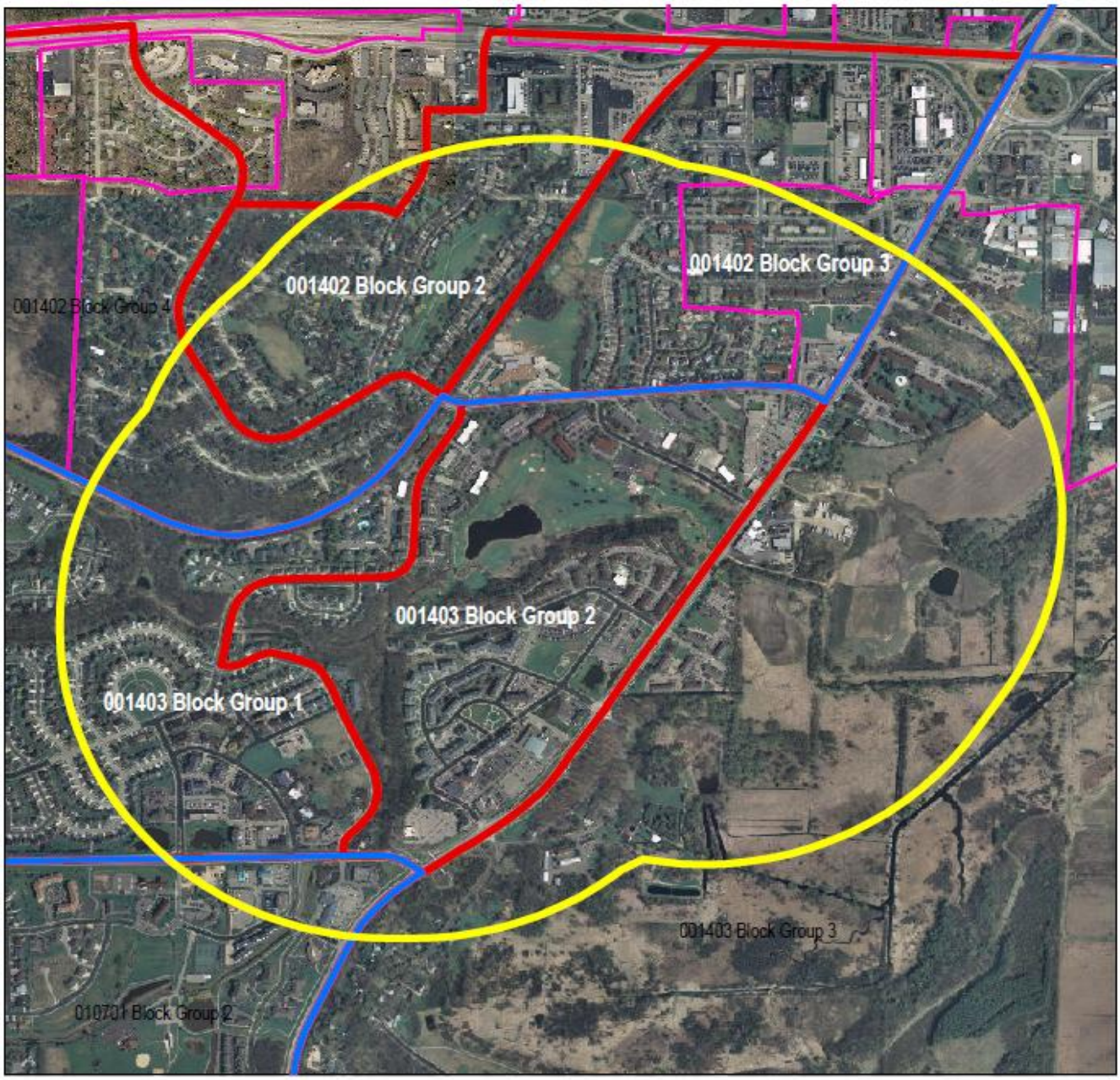
Methods

Scoping

In the scoping phase, the HIA Leadership team continued to identify and work with members of the CAC and the TAC to establish project goals, identify key health determinants likely to be impacted, and develop research questions for the HIA. The HIA Leadership team identified the population of residents living within ¼ mile (walkable) - ½ mile (bikeable) distance from the golf course to be those most likely to experience the greatest impacts of the Park Master Plan decision. This was supported by Fitchburg Parks Department's definition of the park's purpose as a mix between an area park (1/2 mile walking distance) and a conservancy as provided in the alternate park plan.

Census block group (CBG) selection. A total of four CBG were identified as being potentially impacted by the Nine Springs golf course project. Three of the four ***impacted CBGs*** were in Fitchburg (**014.03.1**, **014.03.2**, **014.02.3**) and one was in Madison (**014.02.2**). The selection procedure for identifying ***impacted CBG*** was as follows: A 0.5 mile radius was drawn around the periphery of the park. If greater than 25% of the CBG fell within that radius, it was considered to be an ***impacted CBG*** (see Map 1).

Map 1: Nine Springs 2010 Census Blocks



Nine Springs: 2010 Census Blocks

City of Fitchburg/City of Madison Boundary
Nine Springs
1/2 mile buffer from Nine Springs
Nine Springs 2010 Census BG's
2010 Census Tracts
Tax Parcels
BG&Tract Number

0 0.1 0.2 0.3 0.4 Miles

N

Low income families and individuals, children, the elderly, and racial and ethnic minorities, are at greatest risk for experiencing health inequities (NRCNA, 2011). An estimated 3,500 people live within walking distance (1/4 mile) and an estimated 8,525 people live within biking distance (1/2 mile) of the golf course. 21% of Fitchburg's population lives within the study area. School poverty rates in this area are much higher than average. Leopold Elementary School, serving this neighborhood, reports 91% of Hispanic students and 88% of Black students participate in the Free and Reduced Price Meal Program (60% and 50%, respectively are the Madison Metropolitan School District averages).

The scoping phase of the HIA coincided with the development of the park alternatives. Community input was solicited through the CAC and local neighborhood associations. The group identified the potential impacts of the park plan on social, economic and environmental factors and thus suggested potential changes to short and long-term health in the community. The CAC set the research priorities for the HIA by creating the Pathway Diagrams (Figures A and B). They identified physical activity, social cohesion, safety, and environmental impacts as the priorities for further research.[1]

A pathway diagram is a simplistic depiction of the complex and multifaceted connections of a policy to the changes in social and environmental conditions that lead to the health determinants and outcomes. The visualization does not imply causation; instead it provides a big picture view of the study.

[1] The Leadership Team deemed two items unnecessary to include in the HIA: implementation costs and mental health impacts. Fitchburg Parks and Planning departments included the costs in their report and while mental health was found to be an indicator of overall health and social cohesion in the literature, the team decided to eliminate it as a research question due to the lack of local quantifiable data.

Figure A: **Pathway Diagram: Park Master Plan adopted**

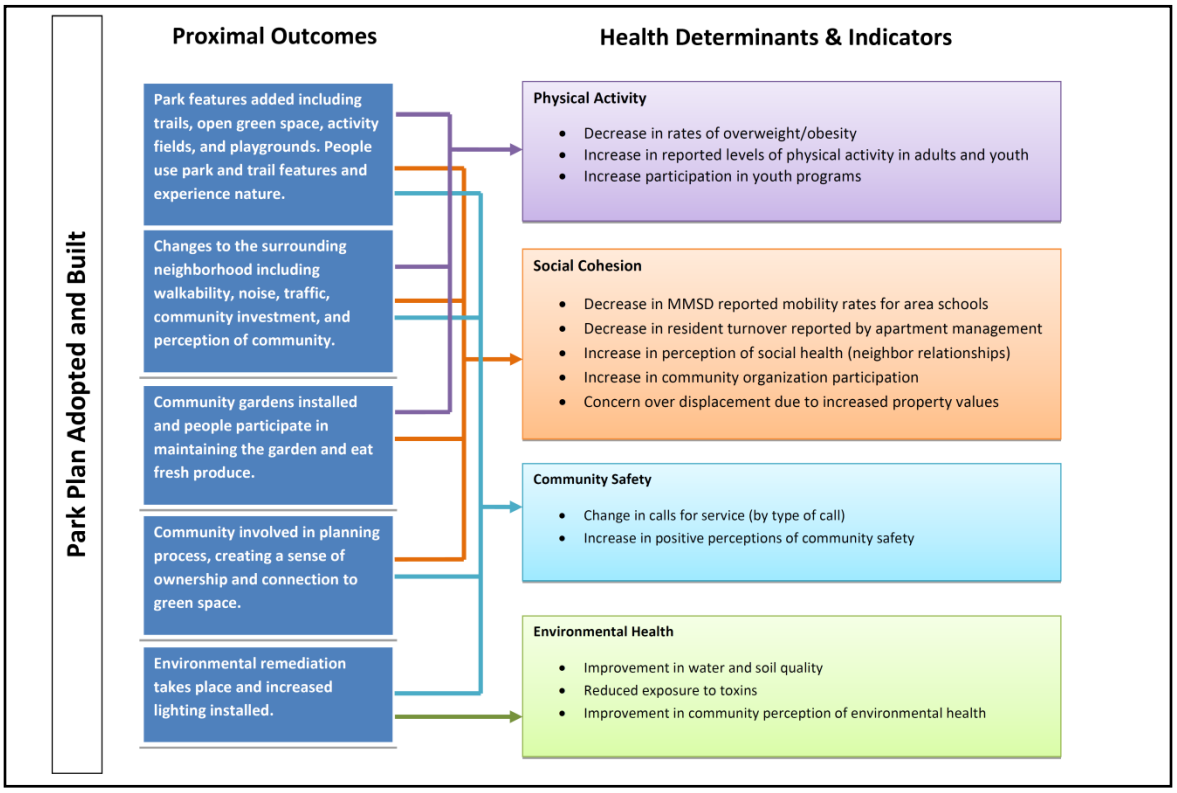
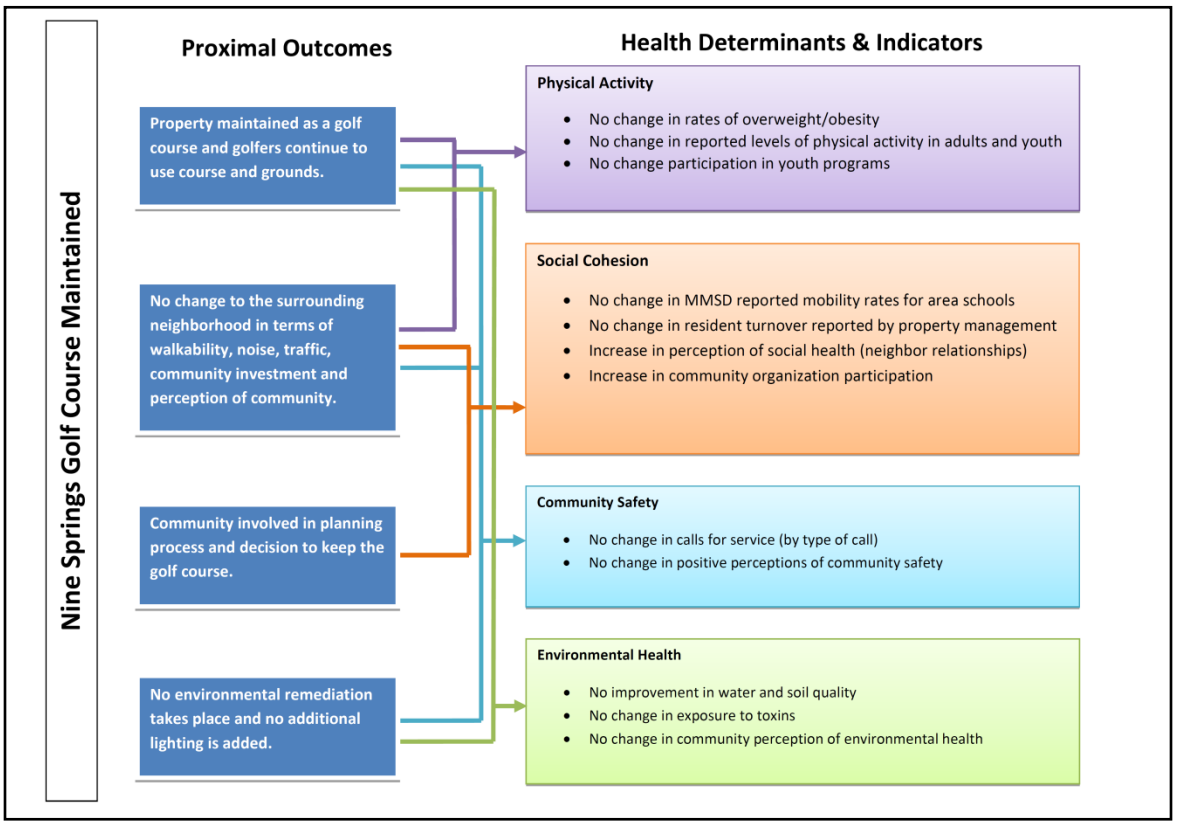


Figure B: **Pathway Diagram: Nine Springs Golf Course Maintained**



Research Priority Definitions

ADEQUATE PHYSICAL ACTIVITY

Physical activity is important for maintaining a healthy weight for both children and adults (Shaw, et. al, 2006). Physical activity can also improve health by lowering the risk for heart disease, stroke, some cancers, and Type 2 diabetes; as well as improving mental health and mood, and increasing longevity. Adults, including older adults, need at least 2 and 1/2 hours (150 minutes) a week of moderate-intensity aerobic physical activity (e.g. brisk walking). This should be at a moderate level, such as a fast-paced walk for no less than 10 minutes at a time. Women and older adults are not as likely to get the recommended level of weekly physical activity. Inactive adults have higher risk for early death, heart disease, stroke, type 2 diabetes, depression, and some cancers. Walkable communities result in more physical activity. It is recommended that children participate in 60 minutes a day every day of aerobic activity (CDC).

It is important to provide facilities and assure that the built environment (human-made surroundings that provide the setting for human activity) facilitates ease of physical activity in low socioeconomic neighborhoods to decrease physical activity inequities (County Health Rankings & Roadmaps). There is strong evidence that access to active environments through community design increases physical activity and improves physical fitness (The Community Guide – Physical Activity, Wolch 2011, CDC MMWR-Khan 2009, CETRT, TRB 2005, Cohen 2012). Access itself is also strongly associated with high levels of physical activity (Brownson 2006) and lower obesity rates among adolescents (Dunton 2009). Those with higher socio-economic status have been shown to have greater access to active environments (spaces that support and encourage non-motorized forms of transportation and recreation such as walking and bicycling) than individuals of lower socio-economic status (ALR-Disparities 2011, Gordon-Larsen 2006).

SOCIAL COHESION

The presence and perception of green space in neighborhoods has been shown to impact social cohesion (community connectedness). Social cohesion is the willingness of people in a society to cooperate with each other in order to survive and prosper (Stanley, 2003). The dimensions of social cohesion include having a common purpose, social interaction, social control and order, and a sense of community (Forrest & Kearns, 2001). Alternately, a society lacking in social cohesion would experience higher levels of social disorder, inequality and conflict. Social capital is a related concept, defined as the ''resources available to individuals and to society through social relationships,' specifically social networks, norms of reciprocity, and trust that encourage people to act together to attain shared goals (Haughton McNeill, Kreuter & Subramanian, 2006). The local neighborhood is an important source of social identity and if there is access to open, green spaces, there is also an increase in opportunities for social interaction and strengthened community bonds. Socially integrated societies tend to experience better health outcomes than less cohesive societies (Haughton McNeill, Kreuter & Subramanian, 2006).

SAFETY

Community safety is a complex and multifaceted issue and is an important social determinant of health. There are many factors that contribute to how safe a community is and feels, and safety can be measured in many different ways. Perceived safety, police data, occupational hazards, traffic injuries, and risk of injury are all factors that could be considered when trying to understand how safe a community is. For the purposes of this HIA our primary focus is on public safety and crime. We measured this both by surveying and interviewing community residents and stakeholders on

their perceptions of public safety, as well as looking at local police data (primarily calls for service to the study area). The HIA Leadership Team and CAC decided to focus their safety research on crime and public safety due to questions alders and the public asked on whether or not a park might increase the risk of crime in the community.

ENVIRONMENTAL HEALTH

Environmental health is the branch of public health that is concerned with all aspects of the natural and built environment that may affect human health. Water quality was the biggest environmental concern raised by the Community Advisory Committee, and the greatest contributor to water quality issues is potentially untreated storm water flowing directly into the watershed. Another environmental concern raised by the community is the risk associated with pesticide and fertilizer applications. The safe and efficient application of nutrients and chemicals to public land spaces is essential to the health of the ecosystem and human exposure. Thus, for the purposes of this HIA water quality and toxin exposure were researched

Assessment

Data collection and analysis methods included:

- Collection and review of peer-reviewed literature.
- Analyses of population health data for the City of Fitchburg and Dane County.
- Qualitative data collection, including:
    - Key informant interviews with decision-makers and other stakeholders
    - A focus group discussion with individuals who golf at the Nine Springs Golf Course. Limitations of this focus group include that the golfers were all identified by golf course operator, Sam Schultz.
    - Participatory Photo Mapping by youth attending the Leopold afterschool program (PPM is a tool to learn about a community through photo documentation of their environment). For this HIA, the PPM tool was used before the pathway diagram was created, and so its data does not carry the same rigor as data that has been collected after the pathway diagram was created. However, the HIA team is including its data in this study to demonstrate the capacity and power of youth voice in political decision-making. It should also be noted that not all children in the study area attend Leopold Elementary School. The physical activity opportunities and lived experience for kids who are bused to Chavez would likely be different and more limited.
    - A community survey (a survey was conducted of 58 residents living around the golf course to gauge perceptions of social cohesion and neighborhood quality of life issues). Survey data is just a snapshot of the perception of the people being surveyed and cannot be utilized to generalize to a large population due to the limited sample size. To mitigate the limitations of the survey, notes and observations were also documented at the annual Leopold Neighborhood Association and Neighborhood Resource Team community meeting where approximately 100 residents/stakeholders discussed neighborhood assets and issues as a way to "ground truth" the survey data.
- Qualitative data was reviewed and coded based on recurrent themes. The themes were then analyzed based on frequency, extensiveness and strength of information to identify qualitative findings. Limitations of the qualitative analysis include that the interviews were conducted by different members of the Leadership Team and Community Advisory Committee and were not recorded. The coding process was done using notes versus transcription.

Nine Springs Area Existing Conditions

Below is an analysis of the baseline conditions of the Nine Springs study area. Qualitative and quantitative data is summarized for the four research focus areas (Physical Activity, Social Cohesion, Safety, and Environmental Health) to help us understand current conditions and health outcomes for Nine Springs as it compares to the rest of Fitchburg, as well as Dane County.

Obesity

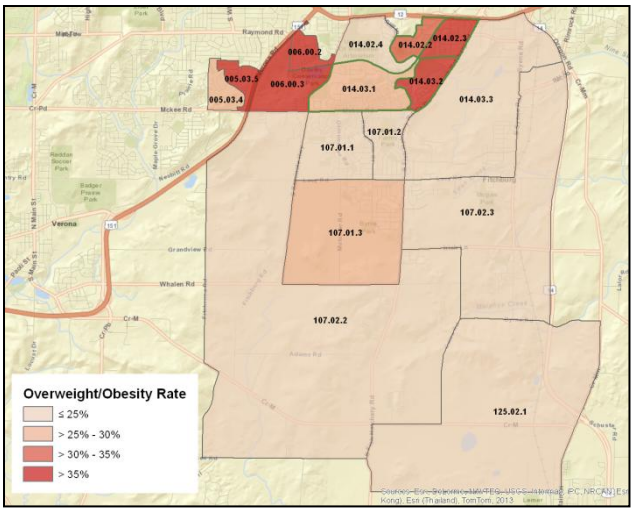
Literature review

The national rise and spread of the obesity epidemic is mainly due to an environment that promotes excessive food intake and discourages physical activity (Sallis JF, 1998). Obesity increases the relative risk of several chronic diseases, including cardiovascular disease, type 2 diabetes mellitus, and various musculoskeletal disorders (Papas, 2007). The estimated annual healthcare cost attributable to obesity in the US alone is estimated to be $147 billion (Baily, 2013). Minority groups and individuals with low SES are at most risk for obesity and related diseases (CDC, 2012a). Children and adolescents who are overweight or obese are more likely to become obese adults (Baily, 2013; Nader, et.al, 2006) and may have three times the odds of premature death before the age of 55 (Engeland, et. Al, 2003. Engeland, et. Al, 2008). Early intervention is critical. The built environment and safe access to recreational space have been associated with increased physical activity in children (Ding, et. al, 2011; Brennan, et. al, 2014) and possibly obesity reduction in children and adolescents (Dunton, et.al, 2009).

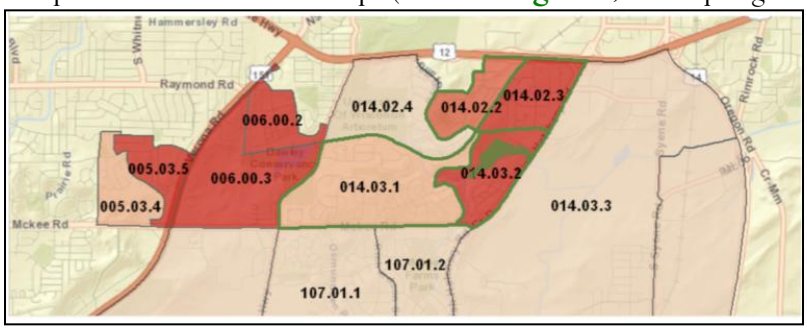
Quantitative data

The frequency of childhood overweight and obesity in the Nine Springs study area was calculated using the University of Wisconsin (UW) Public Health Information Exchange (PHINEX) database. PHINEX includes de-identified electronic health record data from patients accessing UW Health primary care from 2007 through 2012, as well as from patients accessing Dane County federally qualified health centers from 2007 through 2009. The formula kg(weight)/m(height)^2 was used to calculate BMI. BMI was plotted on CDC sex- and age-specific percentile charts according to recommended methods (Kuczmarski RJ, et. al, 2002). Obesity was defined as having a BMI greater than or equal to the 95th percentile. Overweight and obesity was defined as a BMI greater than or equal to the 85th percentile (Barlow SE, 2007). The overall rates of obesity and overweight/obesity for PHINEX patients ages 2-17 from 2007-20012 living in Fitchburg were 14% and 29% respectively. Rates within the four impacted CBGs were significantly higher: 18% and 34% for obesity and overweight/obesity respectively. All 16 CBGs were ranked in order of descending obesity. The *impacted CBGs* were ranked #1, #2, #5, and #8. Ranks #1 and #2 (CBG 014.02.3 & 014.03.2) had a significantly higher frequency of obesity ($P<0.05$) compared to six other CBGs within Fitchburg. Within the #1 ranked CBG (014.03.2), nearly 1 in 4 (24%) of PHINEX patients were obese. In contrast, rates of obesity were 5% in the lowest ranking CBG (107.01.1). (Figure C).

Figure C. Overweight/Obesity Rates in the PHINEX database
Patients ages 2-17 years (2007-2012) by Census Block Group



Detail of Four Impacted Census Block Groups (outlined in **green**, Nine Springs shaded **green**)



The childhood obesity rate in the area of interest could potentially remain high, as the birth rate for the area is also high. In the four block groups of interest (14022, 14023, 14031, 14032, see figure D), the overall general fertility rate is 74.9 per 1,000 women of child-bearing age (15-44), compared to 54.3 per 1,000 in Dane County, using the 2008-2012 ACS average population. Mothers giving birth in the area are also showing a higher rate of obesity, when compared to the rest of Fitchburg, and Dane County with 57.7% of expectant mothers in the Nine Springs study area being overweight or obese (see table 1).

Figure D Birth Density: Most of the births are from the center and NE of the area

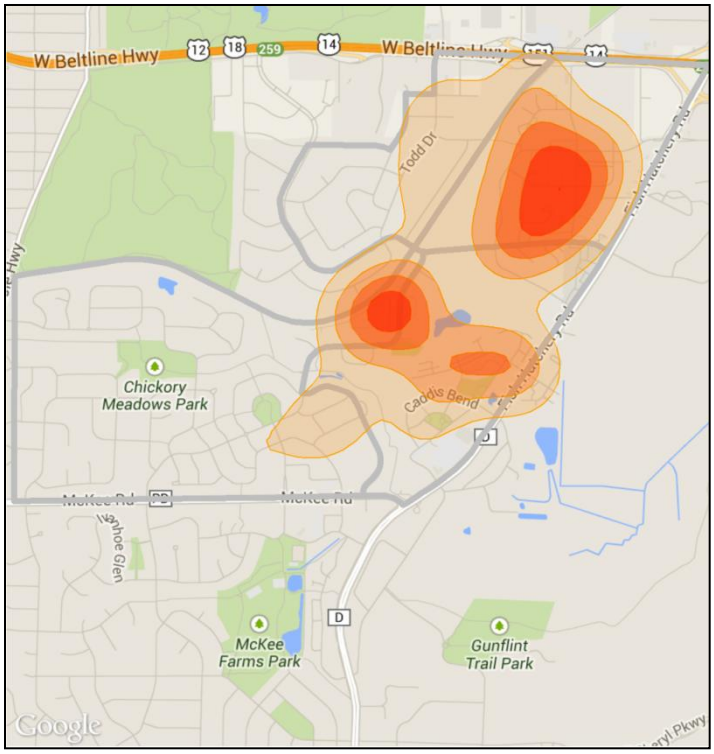


Table 1. Pre-pregnancy BMI: Overweight (BMI ≥25) include obese (BMI ≥30)

Nine Springs				Fitchburg			Dane		
BMI	Count	Pct	95%CI	Count	Pct	95%CI	Count	Pct	95%CI
Obese	144	29.6	(25.7,33.8)	233	20.9	(18.6,23.4)	3854	21.5	(20.9,22.1)
Overweight	285	57.7	(53.3,62)	538	47.4	(44.5,50.3)	8365	46	(45.3,46.7)

Physical Activity

Qualitative Data

1,588 youths ages 5-17 live in the four impacted census block groups (2010 Census). Area service providers were asked to identify youth programming and physical activity opportunities currently offered in the community. The golf course offers a summer youth golfing program that serves approximately 60 kids with an estimated 30 living within a ½ mile radius of the course. The other major programming opportunities include Millenium Soccer League, a flag football league, a community garden in Leopold Park and activities at the Leopold Open School House (a weekly event on Tuesday evenings where Leopold Elementary School offers classes and activities for the community). Each activity is offered over limited periods of time (for instance soccer season lasts 6 weeks out of the year) and the programs serve a relatively small percentage of the kids (approximately 10-75) in the study area (R. Ruiz, Key Informant Interview, January 17, 2014). The community survey showed that most respondents do find ways to be physically active the majority of the days of the week; however, youth are still not receiving the CDC recommended

daily allotment of physical activity. Around half of the respondents also reported that they access McKee Farms Park and Leopold Park at least sometimes.

Furthermore, key informant interviews uncovered the following perceptions from service providers and stakeholders:

- The golf course primarily serves older adults and offers a unique physical activity opportunity for the elderly due to the very walkable terrain and affordability.
- The golf course is a significant source of physical activity for regular users (especially season pass holders).
- There is inadequate open green space and play space for neighborhood youth.
- The neighborhood would benefit from increased outreach for existing programs and increased physical activity opportunities for youth and adults.
- Access to physical activity opportunities that exist outside of the neighborhood is limited due to language and transportation barriers.
- Residents living in The Pines apartment buildings are particularly isolated and lack opportunities for physical activity in part because kids are bused outside of the neighborhood to school and thus do not have the ability to access the few opportunities that exist at Leopold School and Park.
- Service providers perceive there is underutilization of the bike paths in the area because residents are unfamiliar with usage rules.

To understand physical activity opportunities in the area current usage of Nine Springs Golf Course must be considered as well. It is unknown what percentage of golfers live within the study area, but the community survey shows the high majority of respondents report they never use the space, with 2% and 12% reporting use Often or Sometimes, respectively. The Nine Springs Golf Course collects limited usage data; however, using available data, an estimate of current usage of the golf course is listed below.

- The number of purchased rounds in 2013 was 4,582 (this does not include season pass holders)
- In 2013 there were 35 adult season pass holders. The average season pass holder was estimated by Nine Springs Golf Course staff to play 45 rounds of golf during the 2013 golf season.

Youth Voice:
Participatory Photo Mapping
Jesus

I took this picture because in the summer I have a lot of friends by my house and we play soccer next to the golf course, but when the ball goes through the sign, we can't go past there and we have to wait until one of the golf players comes. There is a lady who yells at us because we can't go on the golf course… It's bad because she yells at you when you kick it there by accident… Sometimes the golf balls go in our soccer field and the kids show the golfers where the balls are. A kid picked a ball up once and the golfers yelled at him and he was crying.

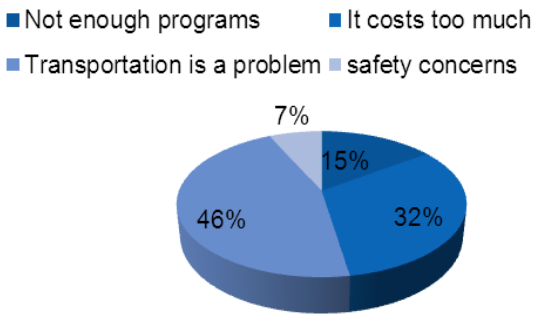
- Assuming a 30 week season, an average of 29 adults played a round of golf at Nine Springs Golf Course per day.
- In 2013 63 kids participated in the First Tees program. This program is being discontinued; however, the current operator plans to offer a similar youth golf program and hopes to serve more kids. (Note: First Tees youth participants were also given season passes. Youth rounds of golf played through the First Tees Program are not included in the above data).

To date, there are no available estimates of how many people may use the park. Fitchburg Parks Department does not collect usage data; however, the Fitchburg Planning and Parks Departments are in the process of estimating usage by evaluating the amenities in the Park Master Plan, how similar amenities are used in current parks, and population density. This work is currently underway. Research demonstrates that closely involving the community in the development of the public park will increase their engagement and lead to them taking "ownership" of the space. (Hale, 2011)

Quantitative Data

According to Public Health Madison and Dane County's assessment of the 2012 *Dane County Youth Survey* of 7th-12th graders, females, low income youth, and Hmong and Hispanic youth throughout Dane County were most likely to cite lack of recreational programs or space, cost, or transportation as barriers to physical activity. PHMDC analyzed data for all 7-12th graders living in zip codes (53711, 53713) that cover the impacted area and who attend Wright, Cherokee, and West schools. The analysis below is for students who answered questions related to barriers to exercise (Figure E).

Figure E. Barriers to Exercise

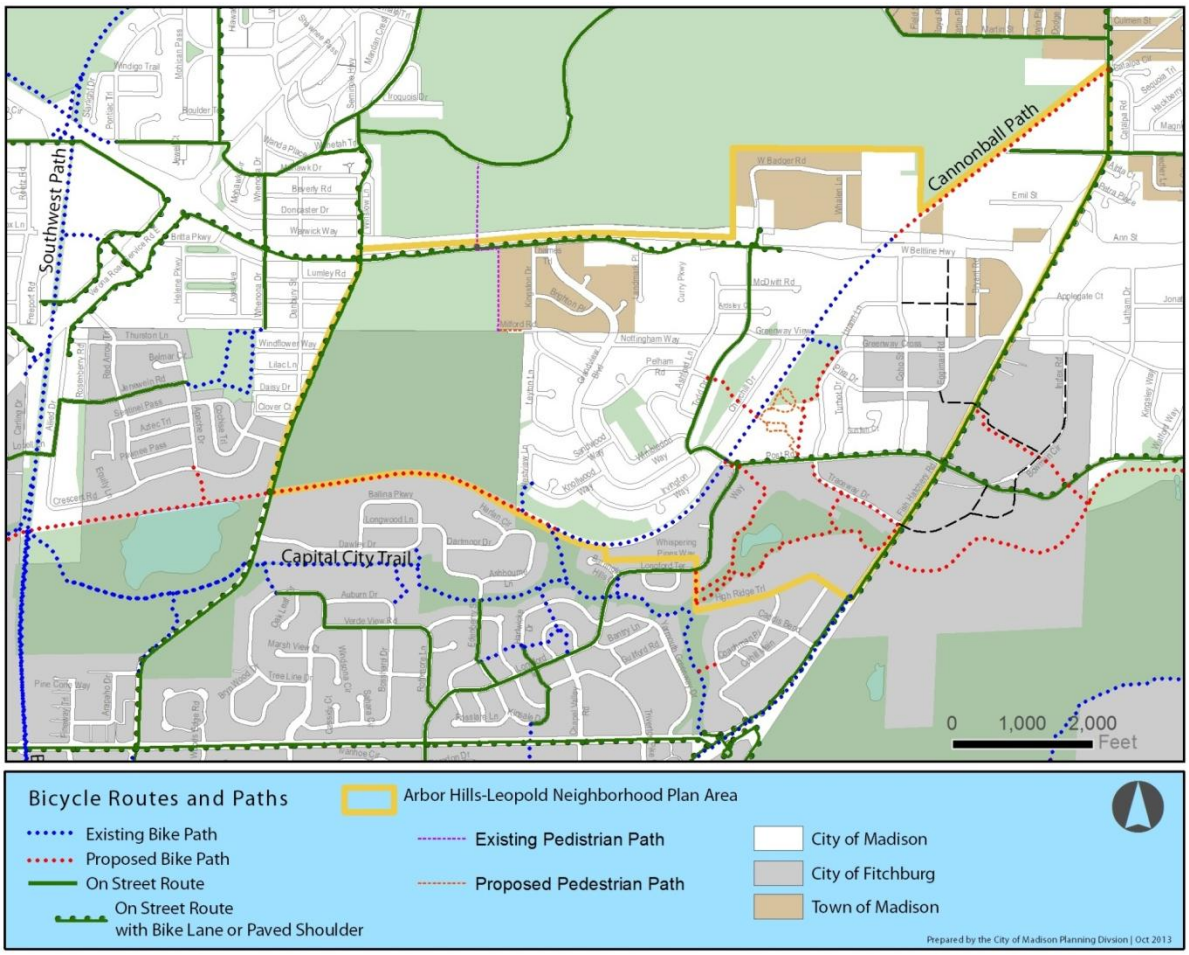


Street Smart Walkscore, a web-based application that measures walkability of a location and takes into account block length, number of intersections as well as proximity of amenities, gives the Nine Springs Golf Course address a score of 48 out of 100, or "Car Dependent" (www.walkscore.com).

Compared to some areas of the county, the study area has more bike paths and better path access. This is due to the convergence of the recently constructed Cannonball Trail and Capital City Trail to the west of the site. These local bicycle paths are also connected to the Badger State Trail (which requires a pass) and the Southwest Commuter Trail further to the west. There are improvements that could be made to increase usage and connectivity of the trails in the Nine Springs area. By

closing the gaps between trails or educating residents on the presence and proper use of the trails, those who do not have a vehicle or cannot drive will have better access to surrounding parks and recreational spaces.

Map 2: Bicycle Routes and Paths



Return on Investment

Public Health – Madison and Dane County (PHMDC) conservatively estimates the annual return on investment for the potential health benefits associated with increased access to physical activity opportunities (which research suggests reduces levels of obesity) to be over three million dollars (NACo; Harvard SoPH), 2012). This is based on:

- Increases in Moderate Activity for Adults in the service area under 65: $300 per adult (5,669 adults under 65) in annual health savings: $1,700,700.
- Increases in Moderate Activity for Adults in the service area over 65: $700 per adult (520 adults over 65) in annual health savings: $364,000.
- Obesity-Related Medical Expenses Savings in the service area: $600 per child (1,126 children that are obese) in higher annual medical costs: $675,600. $2,700 per adult (144 pre-pregnancy obese females) in higher annual medical costs: $388,800.

Social Cohesion

Qualitative Data

Perceptions on levels of social cohesion of the Nine Springs area seemed to differ between service providers/stakeholders interviewed and residents who participated in the community survey. In general the key informant interviewees perceived the area to have low levels of social capital, in part because it is a rental community. The community survey showed, however, that the majority of residents surveyed agree or strongly agree that people in their neighborhood get along with each other (64%) and are willing to help one another (57%). It also uncovered that people report living in the community a significant amount of time; with sixty-two percent of surveyed residents residing in this neighborhood for four or more years. This is backed up by reports from Fiduciary, which manages the Pines and Fairways apartments, that turnover is low. They report that most properties have a 50 – 60% turnover rate; whereas these properties turnover at a 40 – 50% rate. Additional relevant findings from the key informant interviews include:

- Community involvement is valued and seen as important by decision makers and service providers and is needed to maximize health and safety benefits of a park or the golf course.
- There is a lack of a community gathering space in the area.
- The golf course is perceived to be welcoming by golfers and unwelcoming by other service providers and some tension exists between neighborhood youth and golfers.
- There is a need to maintain affordable housing in the area.

Quantitative Data

In March 2014, the MMSD Research & Program Evaluation office received a request from Public Health Madison & Dane County to examine the residential mobility of students in the City of Fitchburg living in select neighborhoods around the Nine Springs Golf Course.

- Due to data integrity issues, mobility data from Census Tract 1402, Block Group 2 is currently unavailable.
- Students living in Census Tract 1402, Block Group 3; Census Tract 1403, Block Group 1; and Census Tract 1403, Block Group 2, are more likely to have moved schools in the past year than their peers. About 16% of students in these blocks have moved within the past year, compared to 13% of MMSD students overall.

Safety

Qualitative Data

Perception of crime and safety varies among stakeholders. Some decision makers perceive that the area has safety issues and all interviewed want to know if conversion to a park will increase the likelihood of crime. In general, golfers perceive the area as having serious crime issues and believe strongly that increased access and utilization of the space will lead to an increase in criminal activity. However, service providers, including the Fitchburg Police Department (FPD), view crime and related issues in the area as proportionate to other areas of similar density. This is supported by the resident survey with the majority of respondents reporting that they are not aware of a lot of crime or quality of life issues in

CASE STUDY: Brittingham Park in Madison has a similar diverse, low-income surrounding population. After a combination of park improvements and installation of a community garden, crime in the park area decreased, and the severity of the calls for service also decreased. Gardeners are in the park from dawn until dusk.
(Interview with Freedom Inc. 2/25/2014)

their neighborhood and perceive the neighborhood as safe. However, some perceptions of crime by stakeholders may not be consistent with the data. A partnership between FPD and area stakeholders is important to address these perceptions/concerns.

Additional findings from the key informant interviews show:

- Design, visibility (lighting/sight lines) and community ownership are perceived to be key to keeping the park safe.
- Stakeholders are concerned about the risk to youth playing in the parking lots.
- There are traffic safety issues walking to Leopold Elementary School and Leopold Park.
- There are concerns about possible risk of drowning in the creek on the Nine Springs property.

Youth Voice:
Participatory Photo Mapping
Christian

We play soccer here sometimes. I like playing soccer on the grass better. This is hard… we sometimes ride bikes but we have to be careful of the cars… (Jesus') sister almost got hit by a car in this parking lot. She was riding her bike and didn't know how to stop it. It didn't hurt her but touched her. It was scary.

Quantitative Data

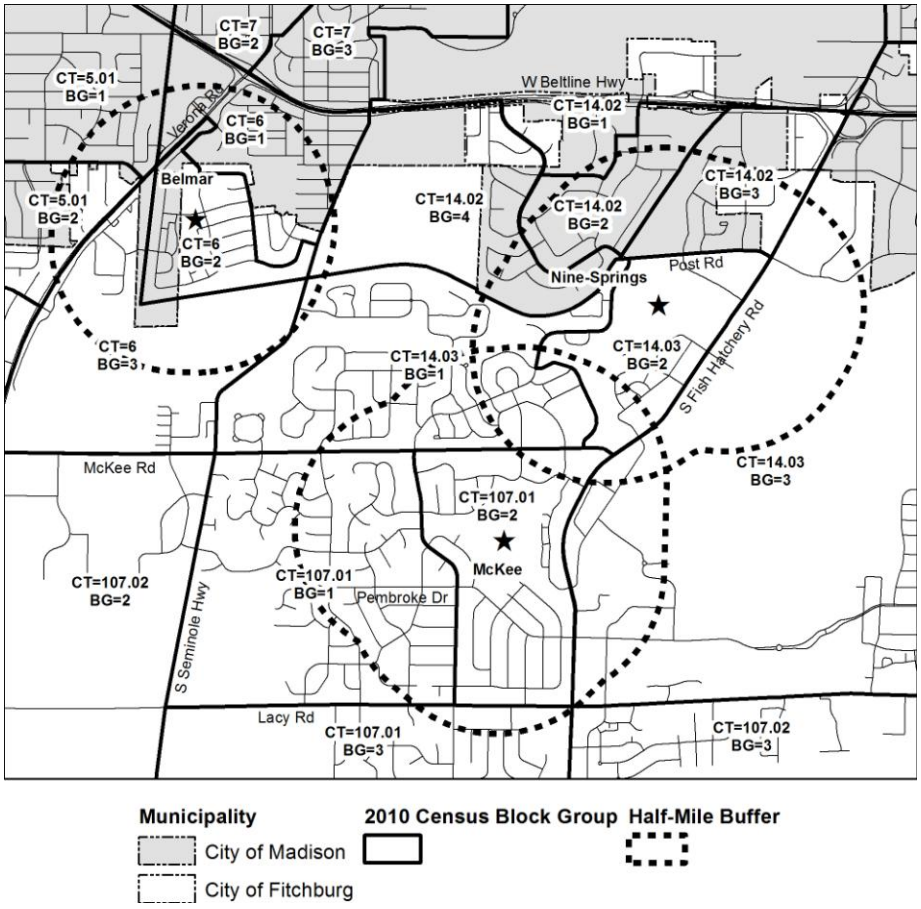
Calls for police service (CFS)[2] for the Nine Springs Golf Course Neighborhood Area were analyzed in relation to the rest of the City of Fitchburg, and to the Belmar Park and McKee Farms Park Neighborhood Areas (Map 3). The Belmar Park and McKee Farms Park study areas are somewhat comparable to the Nine Springs area in terms of demographics, housing type and population density. Data is based on Census Block Groups that were identified to be at least 25 percent or more within the half mile buffer study areas. The Nine Springs Golf Course and Belmar Park study areas include parts of both the Cities of Madison and Fitchburg; therefore data from both police departments is included when the three study areas are compared to each other.

There are a number of different factors that should be noted about this crime and safety analysis. First, the Nine Springs study area is the most urbanized part of Fitchburg with a relatively high population density compared to the rest of Fitchburg. A higher population density means there are more people within a given area who may call for police service. Further, CFS is only one measure of crime and safety in a community, and a more in-depth study would include review and analysis of arrest records and case file reports to provide a better understanding of actual crime in relation to calls for service. Such further analysis is likely to show that crime is lower than the CFS numbers alone indicate as many CFS never result in arrests. Another factor that may affect CFS in this area is that there have been many efforts in the past 5 or so years by municipalities, service providers, neighborhood

[2] This analysis focuses on Federal Bureau of Investigation (FBI) Uniform Crime Record (UCR) Part One crimes, or property crimes and violent crimes. UCR Part One crimes are used in most media and other presentations when a community describes crime trends. While not a UCR Part One crime, drug crime was also included as it is of special interest to the community. Calls for police service categories that are excluded include such things as traffic related incidents, disturbances, domestic disturbances, etc.

groups, faith groups, schools and other stakeholders to improve the Nine Springs area. In such a climate, there is a heightened level of engagement where residents are quite observant of issues and empowered to call for service on a more frequent basis. Finally, the actual CFS may be lower than reported since the Nine Springs area is on the border of Fitchburg and Madison. Both departments are frequently called for service concerning suspected incidents thus the available data records many calls twice.

Map 3: Open Space/Neighborhood Half Mile Buffer Study Areas

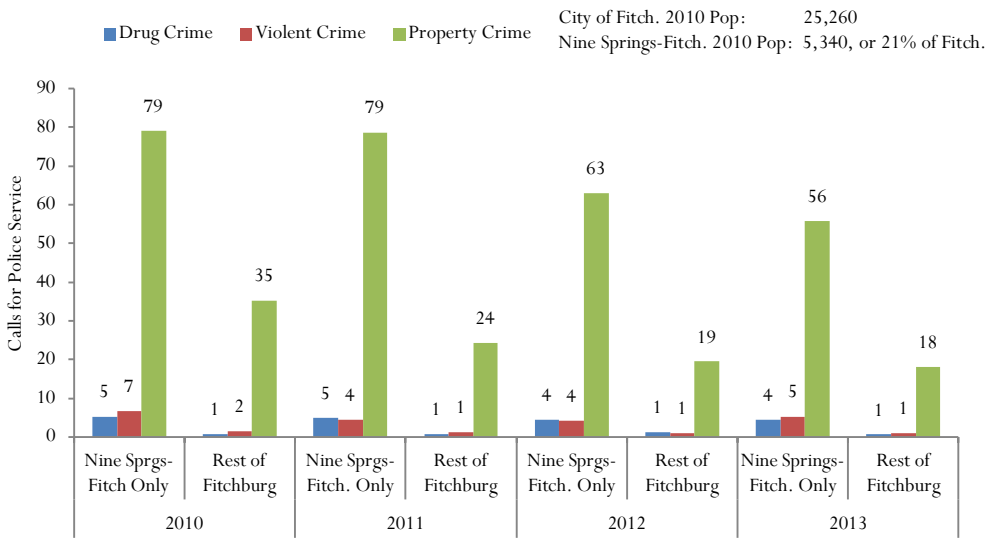


Sources: City of Madison Department of Planning & Community & Economic Development and U.S. Census 2010

Primary Findings

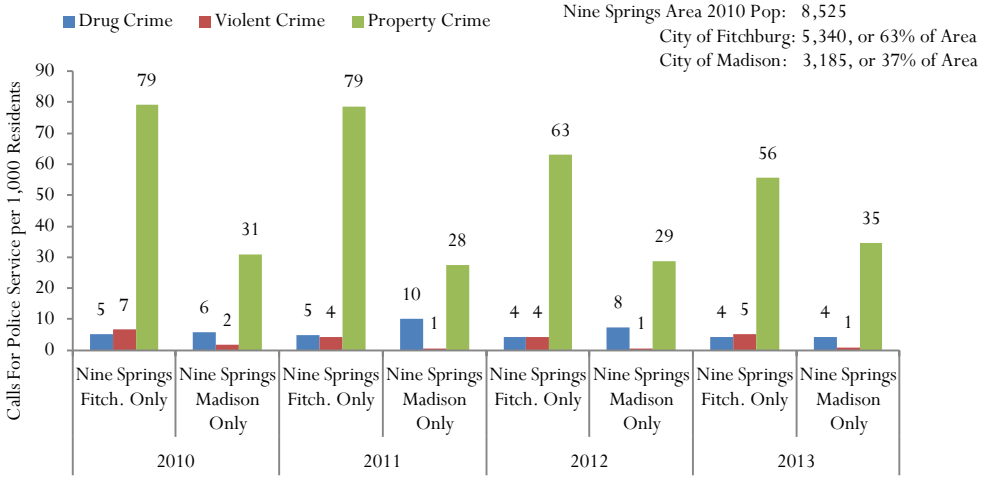
- Overall, crime is low and has been on the decline in the City of Fitchburg and the Nine Springs Golf Course Neighborhood Area over the past four years.
- In particular, violent crime and drug crime has been limited to a small amount of CFS per 1,000 residents, per year. Drug crime includes such violations as buying and selling drugs and violent crime includes robbery, assault with a weapon, homicide and other related violations.
- Property crime CFS is the most prevalent of the three CFS types studied. Property crime includes larceny, or stealing personal property, motor vehicle theft, damage to property and other related violations.
- Property crime CFS gradually decreased from 2010-2013.
- The Nine Springs study area population is approximately two-thirds Fitchburg and one-third Madison residents. Property crime CFS to the Madison Police Department were quite a bit lower than property crime CFS to the Fitchburg Police Department from 2010-'13. However drug and violent crime CFS were somewhat similar per 1,000 residents between the two departments.

Figure F Nine Springs-Fitchburg Area Only vs. Rest of Fitchburg CFS per 1,000 Residents 2010-'13



Sources: City of Fitchburg Police Department 2014 and U.S. Census 2010

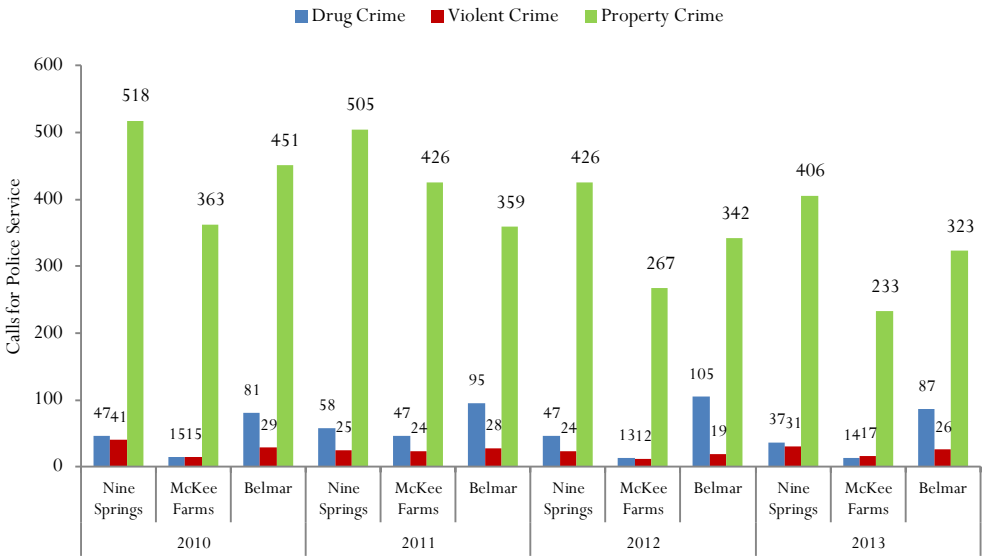
Nine Springs GC Study Area: CFS per 1,000 Residents in Fitchburg vs. Madison Portions 2010-'13



Sources: City of Fitchburg Police Department 2014; City of Madison Police Department, South District, Sector 308; and U.S. Census 2010

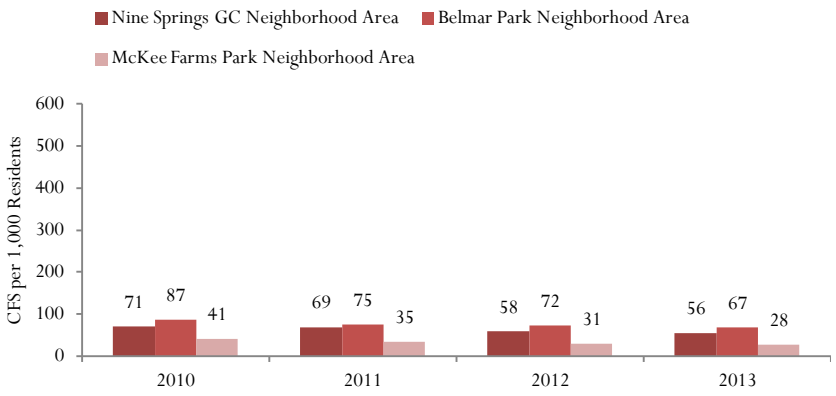
- Among the three open space/neighborhood areas, total property crime CFS was the highest, followed by much lower numbers of drug and violent crime CFS.
- Total drug crime CFS was the highest in the Belmar Park Neighborhood Area followed by Nine Springs and McKee Farms Park Neighborhood Areas.
- Total property, drug and violent crime CFS per 1,000 residents for each of the four years from 2010-2013 was highest in the Belmar Park Neighborhood Area, followed by Nine Springs Golf Course and McKee Farms Park Neighborhood Areas (Figure H).
- Total property, drug and violent crime CFS per 1,000 residents decreased steadily from 2010-2013 in all three open space/neighborhood areas (Figure I).
- Total property, drug and violent crime CFS per 1,000 residents in the City of Fitchburg as a whole, also decreased steadily from 2010-2013.

Figure H: Open Space/Neighborhood Area Total CFS by Type 2010-'13 including CFS for Madison and Fitchburg in Belmar and Nine Springs GC Areas and Fitchburg only for McKee Farms Park Area



Sources: City of Fitchburg Police Department 2014; City of Madison Police Department 2014: South District, Sector 308

Figure I: Open Space/Neighborhood Area CFS per 1,000 Residents 2010-'13 including CFS for Madison and Fitchburg in Belmar and Nine Springs GC Areas and Fitchburg only for McKee Farms Park Area



Sources: City of Fitchburg Police Department 2014; City of Madison Police Department 2014: South District, Sectors 308 and West District Sectors 104 and 105; and U.S. Census 2010

Environmental Health

Below is a summary of the land management practices of both the golf course and parks in Fitchburg.

Qualitative Data

- Water quality was the biggest environmental concern noted and the greatest contributor to water quality issues is untreated storm water flowing directly into the watershed.
- Land management of the golf course is reported to follow good practice standards.
- Stewardship of the land requires extensive staff time (removal of trash from pond, picking up goose droppings, etc).
- The land offers access to beauty, nature and wildlife and there are questions if a park will negatively impact wildlife.
- Mosquitoes are an issue, especially in the wooded area and near the pond.
- Fitchburg does not usually use chemicals to manage their parks and the majority of this park land will be maintained at a moderate and low level, categories 3 and 5 respectively under the Fitchburg maintenance plan (D. Dentice, personal communication, March 25, 2014). According to current Fitchburg park management practices, as described in the September 2013 draft of the Specific Management Plan for Public Properties within the City of Fitchburg, "undesirable plant species" are managed mechanically first and with herbicides when necessary. No specific chemicals are listed, only the term herbicide.
- Golf course staff worked with UW Soils Department to develop and implement a Nutrient Management Plan that follows good industry standards (S. Schultz, key informant interview, January 22, 2014).
- Golf course staff mix their own fertilizer and generally avoid potash, the main cause of the algae blooms/lake pollution (S. Schultz, key informant interview, January 22, 2014).
- The main pesticide used is Chorothalonil which they apply with a surfactant every ten days to prevent/treat grass diseases and maintain turf health. Other herbicides and pesticides are used infrequently for spot treatments and/or as needed (S. Schultz, key informant interview, January 22, 2014).

Youth Voice:
Participatory Photo Mapping
Laura

That sign [no trespassing around golf course] – I don't like it. But I still go down there some… Flowers grow over there and they are really pretty – pink, purple, all colors. We found a nest over there… I saw frogs, turtles and fish. I like exploring down there… We are not supposed to go down there because of the golf… It isn't fair because we can't play there.

Literature Review

Below is a summary of relevant research to consider in understanding the relationship between physical activity, social cohesion and safety as it relates to this land use decision.

Relevant literature if Master Park Plan is implemented:

Physical Activity

- Exercise is more beneficial—leading to enhanced tranquility, and more relief of anxiety and depression—when it occurs in natural settings, like parks, rather than along urban streets (Bodin and Hartig,2003).
- Proximity to parks has been linked to physical activity and frequency of park use by older adults (King et al. 2003; Mowen et al. 2007)
- Renovating parks increases a child's daily physical activity by 12 minutes. http://activelivingresearch.org/.
- People in poor communities are less likely to have access to a car which reduces their prospects of regular physical activity because traveling to a distant park is not possible (National Recreation and Park Association, 2010).
- Parks can provide low or no-cost options for physical activity in low income communities by providing facilities for recreation, organized activities, and a walking destination (Cohen et al., 2007; Transportation Research Board [TRB], 2005).
- Proximity to a park is crucial to increasing physical activity levels (Cohen et al., 2006; Kahn et al., 2002).
- Certain park features predict greater use for physical activity. These include accessibility, proximity, good lighting, toilets and drinking water, well-designed and well-maintained paths, as well as attractive scenery (Frumkin, 2003).
- Community gardens can simultaneously promote good nutrition and physical activity within neighborhoods, especially in areas with economic or structural barriers to accessing fresh produce and recreation opportunities (Alaimo, Packnett, Miles, & Kruger, 2007).
- The presence of vegetation in urban residential neighborhoods has been shown to increase the use of outdoor public spaces by community members when compared to more barren locales (Coley, Kuo, & Sullivan, 1997; Kuo, Bacaicoa, & Sullivan, 1998; Taylor, Wiley, & Kuo, 1998).

Social Cohesion

- Access to parks has been linked to reducing stress and generally improving health- especially for lower-income populations (Maas, et. Al, 2009).
- Accessible nature in an urban setting decreases isolation and increases connections with neighbors. A greater sense of community emerges and increases in generosity, trust, and civic mindedness (Trust for Public Land, 2004).
- The quantity and quality of local natural space may have greater influence on the place where people choose to spend their leisure time, rather than where they engage in physical activity (deVries, van Dillen, Groenewegen & Spreeuwenberg, 2013).
- The quality of local green space affects neighborhood attractiveness, which impacts residential satisfaction and ultimately, social cohesion (deVries, van Dillen, Groenewegen & Spreeuwenberg, 2013).
- Neighborhoods with community gardens were found to have higher levels of social capital and cohesion (Hale, 2011).

- In a study of Latino gardens in New York City, Saldivar-Tanaka and Krasny (2004) found that community gardens were sites of frequent socializing and community organizing and that gardeners viewed their gardens ''more as social and cultural gathering places than as agricultural production sites'' (p. 407).
- Closely involving the community in the development of the public park will increase their civic engagement and lead to them taking "ownership" of the space (Hale, 2011).
- 83% of people are more likely to participate in social activities if they were held in a green space as opposed to a less green area (Sullivan, Kuo, DePooter, 2004).
- Public green spaces promote social cohesion (van den Berg, Maas, Verheij, 2010).
- High quality parks encourage economic development and can increase property values up to 15% (City Parks Alliance, n.d., "Significant Savings," para, 3).
- Displacement due to rising property values can cause stress, anxiety, and potentially homelessness (ACS, 2005-2009).

Safety

- Access to parks and recreational facilities is related to a reduction in crime (Sherer, 2006).
- Fear of crime can prevent children from using community green space (Dennis, Gaulocher, Carpiano, Brown, 2008).
- Perceived safety is improved by a well maintained and monitored public green space because of lower levels of crime and social disorder like graffiti (Sherer, 2006).
- The four principles of Crime Prevention Through Environmental Design (CPTED) are: access control, surveillance, territorial reinforcement, and maintenance (Nat'l Parks and Recreation, 2010).
- Accessible nature in an urban setting decreases loneliness, aggression, and crime. (Trust for Public Land, 2004).
- Greenery near apartment buildings was found to reduce crime by 52 percent (Trust for Public Land, 2004).
- Exposure to green space can reduce feelings of aggressiveness and anger in an individual because he or she is less stressed (Groenewegen, Verheij, van den Berg, de Vries, 2006).
- Vandalism that is immediately addressed reduces fear in the community and sends a message to potential vandals that the park is well cared for (Parks and Recreation, 2010).
- A partnership between the local police force and the community creates a dialogue about problems in the park (and solutions) between the two entities (Parks and Recreation, 2010).

Environmental Health

- Trails and greenways create open space which has the following returns: "pollution and flood control, protection of wildlife habitat and migration routes, biodiversity, threatened species, watersheds, and buffers from development" (Moore, 1998, p.62). Creating green space also allows for possible environmental education opportunities in the area. The current park alternative plan includes trails and a conservation and restoration area that would promote ecological education.

Relevant literature if Nine Springs Golf Course is maintained:

Physical Activity

- Golfing while walking and carrying clubs and walking with a caddy elicited an average heart rate response and caloric expenditure that meets the minimum threshold of recommended physical activity guidelines for adults (Sell, Abt & Lephart, 2008).
- Regular walking while playing golf contributes to improved health and reduced risk of disease across many age groups. The benefits are not realized if people choose to ride in carts while golfing (Parkkari et al., 2000).
- Health benefits from walking on the golf course are best seen when playing on an 18-hole course (Kobriger, Smith, Hollman & Smith, 2006).
- Health benefits from regular walking on the golf course are best seen in previously sedentary middle-aged men and the elderly (Parkkari et al., 2000).
- Although there are some health risks involving strains and stress from this type of repetitive exercise, overall it is a low-impact activity with a fairly low risk of injury (Cann, Vandervoort & Lindsay, 2005).

Social Cohesion

- One study conducted found considerable support that having natural elements or settings in the view from the window contributes substantially to residents' satisfaction with their neighborhood and with their sense of well-being (Kaplan, 2001).
- Sports like golf and other team-building exercises are often used to build or strengthen relationships between co-workers and to foster new relationships (Mueller, Agamanolis & Picard, 2003).

Safety

There is a lack of literature on the relationship between golf courses and community safety.

Environmental Health

- The golf course industry, like mining and farming, transforms a tract of land from its original state and depends upon the use of pesticides and fertilizers to maintain the landscape (Ryals, Genter & Leidy, 1998).
- There is increasing concern about the use of fertilizers for maintaining golf course turfgrass, which can be a potential source of surface water and groundwater nutrients (Wong, Chan & Cheung, 1997).
- Nitrogen runoff or leaching into groundwater can occur when the fertilizer is applied at times when it can be removed by rainfall or snowmelt, or the land cannot absorb the nutrients. Similar to phosphorus, nitrogen contributes to the eutrophication (overfertilization) of waters (Miller, 2012).
- Eutrophication puts aquatic ecosystems out of balance and can lead to massive blooms of some types of algae. When the algae die and decay, oxygen is depleted, sometimes at levels that can stress or kill fish and other animals (Wenger, 1999).
- Another study has shown that under certain circumstances chlorothalonil, a chemical found in pesticides, has been associated with cancer in humans and animals (Knopper & Lean, 2010).

Health Equity Analysis

A health equity analysis was conducted to assess whether the social, economic, health and environmental impacts of implementing the Master Park Plan would affect the neighborhood in an equitable way. These determinations are listed below and recommendations that impact health equity are highlighted in the Recommendations section of the report.

If the Master Park Plan is implemented

- Increased economic development surrounding the park could elevate property values, which could lead to involuntary displacement of current residents.
- Programming available for children and adults could be cost-prohibitive for low-income families and individuals.
- Residents who live farther than walking-distance from the park and do not have regular access to an automobile may not be able to access the property unless alternative transportation options are available.
- Unresolved concerns about stormwater management on the property pose possible safety and health concerns regarding flooding and exposure to chemicals on the property.
- Some residents have expressed concerns about public safety due to a possible increase in illegal activity, especially after park hours.

If the Nine Springs Golf Course is maintained

- The majority of residents in surrounding multi-family housing do not currently use the golf course, and do not have access to adequate open green space.

If the Master Park Plan is implemented or the Nine Springs Golf Course is maintained

- Language and cultural barriers between nearby residents and local government can impede communication regarding any potential changes in the property as well as available uses and regulations on the property.

Impact Analysis Table

Definitions Used for Analysis

Magnitude	Nature of Impact on health (+, -, 0)	Likelihood	Vulnerable Populations	Quality of Evidence
Reflects a qualitative judgment of the size of the anticipated change in health effect (e.g. the increase in the number of cases of disease, injury, adverse events): **None, Minor, Moderate, Major.**	Whether the plan alternative will improve (+), harm (-), no change (0)	Unlikely: There is little evidence that effects will occur as a result of this plan. Possible: Evidence suggests that effects may occur, but are not always present in similar situations. Likely: Evidence suggests that effects commonly occur in plans of this type.	*List*	*** At least 5-10 studies or strong quantitative/qualitative data ** 5 or more studies of weak and moderate quality; or studies have mixed result; or moderate quantitative/qualitative data * <5 studies and claim consistent with public health principles

Health Determinant		Magnitude	Nature of Impact	Likelihood	Vulnerable Populations	Quality of Evidence
Physical Activity						
Adequate physical activity	Golf Course (adult)	Minor	+	Possible	Elderly	*
	Golf Course (youth)	None	0	Likely	Low Income youth	*
	Park (adult)	Major	+	Possible	Low income adults	***
	Park (youth)	Major	+	Possible	Low income youth	***
Safety						
Community safety (Crime and violence)	Golf Course	Minor	+	Possible	Low income residents (inc youth)	*
	Park	Major	+	Possible	Youth	***
Social Cohesion						
Community Social Cohesion	Golf Course	Moderate	-	Possible	Youth	*
	Park	Major	+	Likely	Low income residents (inc youth)	***
Environmental Health						
Environmental health (storm water exposure/toxin exposure, water and soil quality)	Golf Course	Minor	-	Unlikely	Youth	*
	Park	Minor	-	Unlikely	Youth	*

RECOMMENDATIONS

The HIA Leadership Team conducted an impact analysis using the existing conditions report and the evidence base outlined above to extrapolate the impact of this decision on community health. Magnitude, the nature of impact on health, the likelihood of impact and the strength of the research were all weighed in drawing conclusions. A series of recommendations are outlined below to enhance potential health benefits and mitigate the potential health risks of this land use decision. Based on the previously mentioned health equity analysis, recommendations with particular importance with regard to racial equity and social justice are noted with a ★☆ below.

Recommendations if the Park Master Plan is implemented

To strengthen potential health benefits:

- ★ Strengthen community engagement processes to support utilization of the park and increase social cohesion:
  - ☆ Create an inclusive process of broad community engagement for decision making.
  - ☆ Offer translation services by the City of Fitchburg for all City meetings and communications.
  - ☆ Work with nearby resident leaders, including youth, and existing community organizations (such as the Neighborhood Associations, the Parent Teacher Groups, and the Pines Parent Empowerment Group) to act as liaisons and help plan and communicate available uses and regulations associated with the property. Consider explicit policy language to include this in the plan. Consider hiring some nearby residents on a limited or part-time basis to fill this role.
  - ☆ Involve nearby residents, including youth, in developing multiple communication strategies about the uses and regulations associated with the property, including, but not limited to creation of welcoming and easy-to-understand signage, flyers, text messages and social media.
  - ☆ Form a Park Watch Group.
- ★ Increase physical activity by providing no or low-cost opportunities for surrounding low-income residents to participate in physical activity programs.
  - ☆ Partner with Fitchburg Parks and Recreation Department and other recreation providers to create more local programs and increase access to existing programs (especially for children living in the Pines apartments).
  - ☆ Increase/improve outreach efforts to the surrounding neighborhoods including translating park program opportunities into Spanish.
  - ☆ Partner with both Leopold and Chavez Elementary Schools to increase their afterschool programming opportunities.
  - ☆ Provide and actively promote programs during off-hours and seasons including winter programming activities on the property.
- ★ Improve access to the park by bicycling, walking, and using public transit:
  - ☆ Increase pedestrian and bicycle connections between Post Road, Traceway Drive, Leopold Way, Longford Terrace, and High Ridge Trail.
  - ☆ Provide informational signage on bike paths in English and Spanish (with pictorial representations).

- ☆ Create a connector bike path in the southwest corner of the property to link the Capitol City Trail to the park.
- ☆ Provide bicycle parking, a bicycle share or lending program (with helmets), bicycle safety education classes/rodeos, and safe routes to school/work.

- Increase use of the park by providing accessibility, proximity, good lighting, toilets and drinking water, well-designed and maintained paths, and attractive scenery.
- ★ Host no or low-cost community events in the park such as a farmer's market, movie nights, etc. to encourage increase in social cohesion.
- ★ Create a central community gathering area within the park such as a community center, picnic pavilion, etc. to increase social cohesion.
- ★ Include a community garden within the park plan to offer a gathering space and opportunity for neighbor-to-neighbor interactions across race and class lines (would also improve physical activity).
- ★ Provide welcoming entrances to the park, and features within the park for all ages, races, and abilities.

To mitigate potential health risks:

- ★ Crime Prevention Through Environmental Design (CPTED) recommendations should be applied including:
  - ☆ Improving lighting on well used park trails near houses.
  - ☆ Maintain sightlines into the park (for example: carefully planning and regularly pruning landscaping around and within the park).
  - ☆ Positioning benches in a way that makes it easier to observe activities in the park and placing bleachers near areas of expected high activity levels.
  - ☆ Reinforcing territoriality by installing signs which explain rules and limits of the park, having the local police number and GPS coordinates listed so trail users can report illicit activity, and increasing the use of the park through programming.
  - ☆ Locate play equipment for optimal sight lines and access to residents.
- ★ Build a partnership between the local police force and the community (example: Park Watch program, Amigos en Azul). Partner with the Fitchburg Police Department to closely monitor park space (including foot and bike patrol).
- Take care of any incidents of vandalism immediately to add to the perception of safety within the park.
- Post lower speed limits or other traffic calming means on roads near the park.
- ★ Work with local apartment companies to provide affordable housing opportunities.
- ★ Place signage near water features with information in English and Spanish (and pictorially) regarding the risk of drowning during heavy rains, prohibiting fishing, and swimming.
- Replace all bridge structures on the property with structures that can withstand a flood event.
- Work toward implementation of the Watershed Management Plan recommendations to reduce risk of flooding and drowning.

Recommendations if the Nine Springs Golf Course is maintained

To strengthen potential health benefits:

- ★ Strengthen community engagement processes to support future success of golf course and increase social cohesion:
  - ☆ Create an inclusive process of broad community engagement for decision making.
  - ☆ Offer translation services by the City of Fitchburg for all City meetings and communications.
  - ☆ Work with nearby resident leaders, including youth, and existing community organizations (such as the Neighborhood Associations, the Parent Teacher Groups, and the Pines Parent Empowerment Group) to act as liaisons and help plan and communicate available uses and regulations associated with the property. Consider explicit policy language to include this in the plan. Consider hiring some nearby residents on a limited or part-time basis to fill this role.
  - ☆ Involve nearby residents, including youth, in developing multiple communication strategies about the uses and regulations associated with the property, including, but not limited to creation of welcoming and easy-to-understand signage, flyers, text messages and social media.
  - ☆ Form a local resident/stakeholder board to improve communication between the golf course and neighborhoods and increase usage by area residents.
- ★ Offer community access to appropriate parts of the golf course during off season and after-hours for social programs and physical activity opportunities (examples include: winter activities such as ice skating and snow shoeing, movie nights on the green, etc).
- ★ Provide no or low-cost opportunities in the neighborhood for surrounding low-income residents to participate in physical activity programming; include a sliding-fee scale, and a scholarship program to subsidize golf passes for neighborhood residents.
  - ☆ Partner with Fitchburg Parks and Recreation Department and other recreation providers to create more local programs and increase access to existing programs (especially for children living in the Pines apartments).
  - ☆ Increase/improve outreach efforts to the surrounding neighborhoods including translation of the park program opportunities into Spanish.
  - ☆ Partner with both Leopold and Chavez Elementary Schools to increase their after-school programming opportunities.
  - ☆ Outreach for the youth golf program (formerly First Tees) should target children living in ½ mile radius and have Spanish-speaking capacity (Spanish speaking instructors and literature).
- ★ Improve access to biking opportunities in the area:
  - ☆ Increase pedestrian and bicycle connections between Post Road, Traceway Drive, Leopold Way, Longford Terrace, and High Ridge Trail.
  - ☆ Provide informational signage on bike paths in English and Spanish (and pictorial representation).
  - ☆ Create a connector bike path in the southwest corner of the property to link the Capitol City Trail to the golf course land.
  - ☆ Provide bicycle parking, a bicycle share or lending program (with helmets) and bicycle safety education classes/rodeos and safe routes to school/work.

To mitigate potential health risks:

★ To increase neighborhood walkability/connectivity add public access trails through the golf course to run between Fitchburg Springs Park and Leopold Way/Longford Terrace and High Ridge Trail. This would increase connectivity between those neighborhoods and improve access to the grocery store and programming at Leopold School/Park.

★ Develop scaled down play spaces (such as a small playgrounds) in apartment areas or on perimeter of golf course to provide an alternative to kids playing in the parking lots. Aforementioned public access trails could allow improved accessibility to existing and new play spaces.

★ To continue to improve perception of safety build a partnership between the local police force and the community (example: *Amigos en Azul*).

- Take care of any incidents of vandalism immediately to add to the perception of safety around the golf course.

★ Update the Spanish translation on the no trespassing signage to make golf course more welcoming to the Spanish-speaking community.

- Work toward implementation of the Watershed Management Plan recommendations to reduce risk of flooding and drowning.
- Replace all bridge structures on the property with structures that can withstand a flood event.

Recommendations to Improve Environmental Health

If the Park Master Plan is adopted or the Nine Springs Golf Course is maintained we recommend the following:

- Review and implement all applicable recommendations regarding the Nine Springs pond to reduce flooding issues as noted in the Watershed Management Plan produced by the City of Fitchburg.
- Routinely inspect the Nine Springs pond and the wooded areas on the property for mosquito issues and treat accordingly to lower the risk of bites to patrons of the property and the potential risk of West Nile Virus. Any treatment should be documented.
- Partner with Public Health Madison and Dane County to develop a Mosquito Larvae Monitoring and Control Program for Fitchburg to prevent the spread of West Nile Virus.
- Increase the vegetative buffer around the Nine Springs pond with native vegetation to encourage increased levels of wild-life, reduce nutrient levels, reduce sedimentation, reduce the concentration of goose waste, reduce mosquito larvae levels, and discourage people and their pets from using the storm water pond.
- Routinely monitor the Nine Springs pond to evaluate the presence of algal blooms and treat accordingly to lower the potential exposure of patrons of the park to cyanobacteria. Any treatment of the pond should be documented.
- Consider installing a floating island in the Nine Springs pond because this man-made artificial island could be used to further increase the amount of plant and animal life in and around the pond, allow the installation and the camouflage of water aerators, decrease nutrient levels, and potentially lower the concentration of mosquito larvae due to wildlife food chains.

MONITORING PLAN

Nine Springs Golf Course – Potential Park Use Option Master Plan Health Impact Assessment

The Nine Springs Health Impact Assessment (HIA) includes recommendations to be considered if the Nine Springs Golf Course is maintained, or if a park is developed. These recommendations were developed with the purposes of strengthening potential health benefits, mitigating potential health risks, and improving environmental health. As with the entire HIA process, the recommendations were developed with a health equity focus, prioritizing the population living within a ½-mile radius of the Nine Springs property and with particular attention to communities of color and low-income persons.

On May 13, 2014, the City of Fitchburg Common Council made the decision to continue using the Nine Springs land as a golf course, for at least the coming year of 2015. Since that time, several preliminary plans and actions have been taken with an eye toward improving opportunities for both community involvement in City processes and healthy living in the Nine Springs area. Many of these plans and actions are reflected in the monitoring plan along with selected indicators related to the original recommendations.

The Common Council has indicated that it will be considering the long-term land use of the Nine Springs area in the coming year, and may engage in a broader neighborhood planning process in 2015. If and when this planning process takes place, affects on the indicators below will be considered and updated as needed.

Finally, the Community Advisory Committee (CAC) formed during the HIA has largely remained intact with an intention of staying involved in issues related to community health and engagement. In addition to key staff at the City of Fitchburg Parks and Planning departments, Public Health Madison & Dane County, and the Dane County Childhood Obesity Collaboration, the CAC will participate in the HIA monitoring phase via its strong and growing involvement in the Nine Springs area.

Note that all indicators are related to the Health Impact Assessment area of a ½-mile radius from the Nine Springs Golf Course.

Indicator	Agency Responsible for Monitoring	Timing/ Frequency
1. Land Improvements		
Remediation of parkland/green space deficiency - acres of land designated as green space - parks or play facilities added	City of Fitchburg	Annual
Improve access to and through the property - locations of new access points and paths and improvements to existing facilities	City of Fitchburg	Annual
Community gardens started within Health Impact Assessment area - number of gardens - number of garden plots	City of Fitchburg	Annual

Neighborhood or area redevelopment or improvement plans	City of Fitchburg	Annual
Prevention of flooding - implementation of Watershed Management Plan recommendations	City of Fitchburg and Dane County	Annual
Safety near water features - multi-lingual signage added to explain appropriate and safe behavior near water features - facility changes to prevent drowning and other safety related issues near water	City of Fitchburg	Annual
Pond improvements to reduce mosquito activity - planting of a barrier of native plants - monitoring and spraying	City of Fitchburg	Annual
2. Neighborhood Involvement		
Community activities (e.g., movie nights) on or near the golf course	City of Fitchburg	Annual
Resident involvement in neighborhood organizations - resident groups actively meeting - number of meetings held	Nine Springs HIA Community Advisory Committee	Annual
Resident participation in local decision making - resident/stakeholder board or similar body formed - translation of materials for City meetings and communications	City of Fitchburg	Annual
- meeting materials translated - other communications translated	City of Fitchburg	Annual
3. Opportunities for Physical Activity		
Perceptions of and experiences with physical activity opportunities - Photo Mapping project	Dane County Childhood Obesity Prevention Collaborative	2014 Then TBD
Recreational programming offered by City of Fitchburg Parks Department - City of Fitchburg budget allocation for recreational programming in Nine Springs area - number and types of programs, including low and no cost options - frequency of offerings (e.g., ongoing, X weeks, X days per week, etc)	City of Fitchburg	Biannual
Recreational programming offered by Madison Metropolitan School District (including MSCR) - number and types of programs, including low and no cost options - frequency of offerings (e.g., ongoing, X weeks, X days per week, etc)	MSCR City of Fitchburg	Biannual

Recreational programming offered by nearby churches and community organizations - number and types of programs, including low and no cost options - frequency of offerings (e.g., ongoing, X weeks, X days per week, etc)	Nine Springs HIA Community Advisory Committee	Biannual
Reduced-cost golf opportunities offered for residents	City of Fitchburg	Annual
4. Health Outcomes		
Childhood obesity rates - changes in trends - sustained weight loss	PHINEX	Annual

EVALUATION

Support

The capacity of Public Health Madison and Dane County (PHMDC) to conduct an HIA was made possible by the grant and mentorship program through the National Association of County and City Health Officials (NACCHO). The grant provided training in conducting an HIA, mentorship throughout the HIA, and technical assistance in analyzing the data.

Human Impact Partners and the Health Impact Project provided the tools necessary to conduct the HIA. The Human Impact Partners also conducted a community engagement evaluation which will serve as a supplement to this process evaluation.

Process Evaluation

Victoria Kent, an Area Health Education Center (AHEC) student intern and third-party evaluator for the project, conducted the process evaluation for this HIA using an evaluation tool provided by Human Impact Partners. In planning the process evaluation, she referenced academic articles that explained the process of conducting an HIA Evaluation, and reviewed the tools provided by Human Impact Partners to harness a greater understanding of the proper process for an HIA.

Methodology

Ms. Kent started the process evaluation by reading over all documents surrounding the HIA in sequential order, according to the steps of the HIA. Once the documents had been reviewed multiple times and noting recurrent themes, she sent a series of follow up emails to the HIA Leadership team, and interviewed a team-member, to gain a greater understanding of their process and feedback from the HIA, and to clarify existing data**.** Because not all of the questions on the evaluation tool could be answered through reviewing the documents, Victoria developed a survey for stakeholders in the HIA process (golfers, TAC and CAC members, HIA Leadership members). The survey questions were developed using the Human Impact Partners' Evaluation Tool, as well as meeting with a PHMDC epidemiologist to insure the quality and potential of usefulness of the questions. An online survey tool, Survey Gizmo, was used to administer and analyze the survey.

Key informant interviews of three of the eight Common Council members were also conducted, in order to have a greater understanding of the use of the HIA in the decision making process, as well as the feasibility of the recommendations provided by the HIA Leadership team. The questions created for the interviews were developed through the Human Impact Partners' Evaluation Tool as well as through meeting with the consulting team of PHMDC and an epidemiologist. Not all Common Council members were able to be interviewed, as two were being already being interviewed by Human Impact Partners, two responded negatively, and the remaining never returned a phone call.

This evaluation is the culmination of information provided by interviews, document analysis, tools provided by HIP, and responses from the surveys.

Key Findings of the Process Evaluation

Concerns regarding objectivity

Throughout the HIA process, one of the major difficulties for the Leadership team, TAC CAC and Common Council members was to remain objective. It was mentioned by both Fitchburg Common Council members and the Leadership team that the overall findings that a park would be a healthier option were expected. For this reason it was hard to remain objective in conducting the HIA.

The HIA Leadership team otherwise remained very careful to utilize language to assure that both the park and the golf course options were equally assessed, and that the HIA was focused on improving the health of the community and mitigating health risks of both options.

The Fitchburg Common Council voiced that there was bias and political conflict surrounding the decision of the HIA among Common Council members. Upon interviewing alders after the decision, it was found that despite the desire to have an objective report, the aldermen were biased, and upon reading the report looked for the data they were hoping to see.

Time and Resource Restraints

Three salaried employees from PHMDC spent their work-time on the project and three interns were utilized in the HIA process (two were volunteers and one was paid by a third party). Although trainings and mentoring were provided for the Leadership team, no additional outside funding was provided to reimburse staff time.

Timesheet data was not accessible, but 33.3% of respondents to a post-HIA survey of HIA participants said that they spent more time on the HIA than they anticipated, 28.6% stated they had spent less time than they anticipated, and 38.1% said they had spent the amount of time that they had anticipated on the HIA.

The majority of correspondents from the survey stated that they spent 0-10% of their work week on the HIA process, while 35% spent 11-25% of their work week on the project, 8.7% spent 26-50% of their work week on the project and 4.4% spent 51-75% of their work week on the project.

The HIA took more time and money than anticipated by PHMDC staff members.

1. PROCESS

Screening

Purpose: Determine if an HIA is an appropriate tool for analyzing the proposed project to project potential health impacts and inequities and provide information to decision makers and stakeholders

Process: HIA Leadership team utilized HIP screening tool (appendix A)

Strengths:

- Relevant stakeholders were identified and were involved
- Stakeholders were advised in determining the use of the HIA
- Ample research available surrounding health determinants of decision

Limitations:

- The HIA was not budgeted into PHMDC and took more time and money than expected
- Team leaders were unsure about whether or not there was enough time to conduct an HIA (see appendix A)
- Stakeholders were unsure about the viability of conducting an HIA or its use in the process (see appendix A)

Both of these ended up being a problem upon completion of HIA

- Inability to collect primary data due to limited time and resources
- Data presented by HIA was "common knowledge" and expected by majority of stakeholders

Suggestions

- More rigorous screening process:
  1) Asking more questions of stakeholders
  2) Ensure stakeholders understand the role of HIA in the decision making process
  3) Involve supervisors and executives of the lead organization to assess agency capacity to conduct the HIA
- Utilize and train community members to conduct an HIA, to be involved with each step of the process, so that the community evaluation resources remains within the community

Key Findings of Screening

"I feel that this was a highly politicized process and the outcome was predetermined" – HIA participant

Upon interviewing decision makers post-HIA it was found that

- HIA presented data that was obvious (for example, one Common Council member mentioned that they were aware of inequities within community from Race to Equity Report)
- HIA was largely discarded in decision making process

- Decision makers were not in agreeance regarding the role of the HIA in the decision making process

Scoping

Purpose: Identify stakeholders, potential health determinants and research questions of the HIA

Process: HIA Leadership team created pathway diagram, created CAC and TAC, developed the main research questions through examining the potential health impacts and stakeholder feedback

Strengths:

- TAC was composed of skilled professionals from multiple disciplines who were able to contribute to gathering relevant data
- CAC included diverse group of stakeholders within the community
- Formal agreements were developed for CAC and TAC
- Vulnerable populations affected by the decision were included in the scoping process
- CAC and TAC members helped prioritize health determinants and create research questions
- CAC and TAC members were given opportunity to provide feedback on research questions and the pathway diagram, and their ideas were taken into consideration
- Creation of CAC and TAC empowered the community to become more involved in decision making process

Limitations:

- Leadership did not set limits on the scope of the project
- Work plan inconsistent with what actually occurred
- Not all groups affected by the decision were able to be included in TAC/CAC
- Bias/conflicting interest in composition of CAC/TAC
- Not all stakeholders could contribute to the scoping process
- There were two pathway diagrams used, the original and the new pathway diagram that was created for the report, it appears the pathway diagram was created retrospectively as opposed to iteratively to guide the process (see appendix B for original)
- Proximal outcomes in the golf course pathway diagram do not take into consideration the recommendations made by the HIA, while the park pathway diagram does (see Pathway Diagram)
- Tools used by HIA Leadership team in scoping meetings may have been beyond the comprehension of CAC and TAC members (heavily jargoned and complex representation) and created disconnect between the process of the Leadership team and involvement of community

Suggestions

- Simpler language in materials presented to stakeholders
- Inclusion of all stakeholders in CAC/TAC
- Consistency and transparency in pathway diagram and research

Key Findings of Scoping

- HIA Leadership team was unable to gather CAC members from all apartment buildings and all populations within the community due to time constraints and disinterest of community members
- Golfers were not involved in the scoping process, their focus group occurred late into the assessment phase and they were not able to provide feedback for the research questions
- One of the CAC members spoke in favor of the park at the final decision, it was mentioned that the individual was not speaking on behalf of the Leadership team, but it is possible that the member who spoke and other members of the CAC and TAC had conflict of interest in the decision.
- Upon interviewing a member of the Leadership team and gathering observations from past meetings, it was discovered that the highly technical terms used in the pathway diagram and the tools necessary did not allow for the tools to be utilized in the CAC and TAC as the Leadership team had hoped
- Due to time constraints, the original work plan developed was not consistent with the reality of the project

"The CAC was a very beneficial part of the process, and I think involving people in the community is very important" –HIA participant

"I felt that there was inherent bias in the design pathway diagram and consequently, the research questions – this didn't lend itself to the true nature of an HIA" –HIA participant

"This was my first time participating in an HIA, and I learned so much about my community, how to gather data and apply it in a report…finding new talents and gifts in myself, and meeting new people who took the time to listen" –CAC member

"Scoping the project ahead of time to determine how much resources and time to allocate would have been helpful" –HIA participant

Assessment

Purpose: Gather data necessary to answer research questions and address health determinants

Process: HIA Leadership team used CAC and TAC members to find and participate in KII, focus groups, and utilized community knowledge and resources to gather data

Strengths:

- CAC and TAC members provided suggestions for focus groups and KII
- KII and participation from community members raised awareness and provided background knowledge of the situation and potential health impacts to the community
- Community was engaged in gathering, analyzing and providing feedback of the data
- According to a post-HIA survey of relevant stakeholders, the health concerns of the community were correctly identified, supported and addressed within the final report.

Limitations:

- Assessment took longer than expected and often was due to limitations in staff time, it was the most time consuming and delayed portion of the HIA
- Not all KII or focus groups that were suggested occurred
- Not all health determinants suggested by TAC and CAC members were able to be researched due to time constraints and the availability of data
- Inclusion and exclusion criteria for literature review is not stated
- Research questions, pathway diagram, impact analysis table and resulting recommendations were not congruent
- Post-decision interviews of decision-makers revealed that the information presented in final report was obvious, and did not provide new information
- A final review of the data collected was not possible within the Leadership team
- Community participation in the process dwindled near the end of the project

Suggestions

- Allow for more time for the assessment phase
- Gathering primary data and post-decision data to survey the level of awareness of the community and their involvement in the HIA

Key Findings of Assessment

- Community members were empowered and were given the opportunity to

aid in gathering data. CAC members aided in organizing the focus group, as well as conducting KII.

- KII raised awareness of resources within the community and provided background knowledge from specific fields
- The Impact Analysis table was excluded from the report presented to the Common Council as it was thought to be confusing. However, a Common Council member requested the document and stressed in a KII that it was missing from report
- Uncertainty of time-frame was a problem in the assessment phase as not enough time was allocated for complete data collection.

Recommendations

Purpose: Develop recommendations backed by data and that are within the capacity of the community to fulfill

Process: As the HIA Leadership team conducted the literature review, focus groups and KII, recommendations were developed and recorded in the four common themes that were identified

Strengths:

- The recommendations presented in the report were supported by evidence from both stakeholders' knowledge and literature reviews
- Recommendations from stakeholders and community members were included in the report
- The decision makers felt that the recommendations were backed by data and sufficiently addressed their concerns
- Recommendations address health inequities within the community
- Feedback from stakeholders involved in the HIA process through a post-decision survey and KII revealed that the recommendations were feasible and within the capacity of the city and organizations of Fitchburg to implement
- CAC, TAC and stakeholders were given the opportunity to modify the recommendations, and their modifications were implemented

Limitations:

- Recommendations were not prioritized, nor was a criteria utilized in developing the recommendations
- Inconsistent format of recommendations
- Redundancy within the recommendations
- KII post-decision revealed that a large list of recommendations was overwhelming to decision makers
- KII post-decision revealed that recommendations expected by the Common Council members were outside of the scope of the HIA

Suggestions

- Simpler representation of recommendations, with visual aids
- Focusing on the change in health, rather than creating two sets of recommendations (i.e. only focusing on the park option as current health impacts are known)

"The research is important, but finding how to communicate with our goals better to the decision makers would have been more influential. There was so much data that clearly showed the needs of the community, but the data alone was not enough."
- HIA Participant

Reporting

Purpose: Present the HIA to relevant stakeholders; effectively communicate HIA so that all relevant stakeholders can understand the health impacts of the decision

Process: The HIA was presented to decision makers and relevant stakeholders a few weeks before the decision timeframe to allow for time for feedback. A copy of the report was published online, and paper copies were distributed to those who needed it.

Strengths:

- Throughout the HIA process, resources were modified so all had access and ability to understand them
- HIA was followed and reported by local newspapers
- HIA was reported in a three different forms: a one-page summary, an executive summary, and a final report
- The Alderman felt that they had sufficient time to review the report and HIA Leadership team answered any questions they had before final decision
- Final HIA report was accessible to all relevant stakeholders
- The HIA Leadership team stressed that the final report was a living document and alternations could be made at any time
- The HIA will be published on the Human Impact Partners Website
- The HIA Leadership team was asked to share their findings at the National HIA Conference

Limitations:

- The final paper report was not distributed during the final decision meeting
- Impact Analysis Table was not initially included in report presented to Common Council members during the final decision meeting, but was added to the report after the final decision meeting

Key Findings of Reporting

- The Impact Analysis Table was not included initially because the Leadership team thought that it caused more confusion, but it was requested to be published in the final report

2. OUTCOMES

The majority of respondents from a post-decision survey of HIA participants reported that the HIA accomplished their overall goal.

The HIA Leadership team presented the HIA to the Committee of the Whole on April 23, 2014; the final vote by the Common Council on May 13, 2014 was to keep the space a golf course. However, the Common Council mentioned that they would look into assessing the possibility of using unused land adjacent to the golf course for a park, as well as increasing community activities within the area.

3. IMPACTS

The data collected from the HIA has been requested from varying organizations in the community to utilize in future projects. The HIA has created cross-sector collaboration within the community, and efforts have been made to address health inequities identified within the report.

CAC members are becoming increasingly involved with the community, at both a city and county level. One member was invited to serve on the Dane County Poverty Commission. The members have focused on following up with decision makers to insure the implementation of their requests, as well as organizing initiatives to follow recommendations from the report. The HIA also allowed for community members whom had not attended Fitchburg Public Meetings before to do so. Due to lack of translation materials and transportation in the past, many of the members were deterred from attending.

The Common Council has set aside a fund for future park development within the Nine Springs area. Also, the Common Council will revisit the land use decision in 2015 to review if health inequities within the community have been addressed and a need for open green space and increased social cohesion persists within the community.

"I think that the CAC formation has already had really profound effects in the community development and it can continue to grow after the HIA is finished" –HIA participant

Conclusion

This Health Impact Assessment examined the health impacts of the Nine Springs Golf Course and Alternative Park plans on residents living within ½ mile of the area surrounding the Nine Spring Golf Course. In partnership with PHMDC, COPC, and the City of Madison planning staff, residents and stakeholders uncovered several neighborhood priority issues related to the proposed plans. Based on the assessment, the partners and community members created a series of recommendations to address any concerns and build upon community assets.

The recommendations in this report target social, economic, and environmental determinants of health, that have the ability to produce outcomes that may promote social cohesion, safety, physical activity, and environmental health in the impacted area. By building social connectedness and the community's capacity to respond to the HIA recommendations, residents will: feel they are connected to their land, live in a safe and beautiful environment, know their neighbors, have opportunities for physical activity, and feel empowered to address their issues. Change will not be possible unless it is driven and owned by the community.

Prepared by the HIA Leadership Team and Community Advisory Committee:

Jessica LeClair
Kim Neuschel
Jordan Bingham

Julia Stanley

Linda Horvath

Pastor Thom Cahill, CAC Member Liaison to the HIA Leadership Team

Fitchburg Community Advisory Committee Members:

Berta Armacanqui
Jennifer Bendorf
Pastor Thom Cahill
Sherri Carter
Betty Dawson
Cynthia Johnson
Lula Jones
Denise Maddox
Dianne McMurray
Pastor Josh Miller
Sandra Rivera
Roger Tesch

Technical Advisory Committee Members:

Berta Armacanqui, CAC member liaison to the TAC
Captain Joe Balles, South Police District, City of Madison
Eileen Bradley, Group Health Cooperative (GHC)
Chad Brecklin, Lieutenant, Fitchburg Police Department
Samuel Dennis Jr., Associate Professor, UW-Madison, School of Landscape Architecture
Sonia Dubielzig, Safe Routes to School Coordinator, Madison Metropolitan School District
Scott Endl, Director, Fitchburg Parks, Recreation, and Forestry Department
Elizabeth Feder, Healthy Policy Analyst, UW-Madison, Population Health Institute
Tracy Flood, Wisconsin Population Health Service Fellow, Public Health Information Exchange
Jason Hagenow, Meridian Group, Inc.
Sergeant Edward Hartwick, Fitchburg Police Department
Katherine Hebert, Davidson Design for Life Coordinator
Sean Higgins, Community Planner, CARPC
Rick Ilertson, Environmental Project Engineer, Fitchburg Public Works Department

Brian Kavanaugh, Sports Director, YMCA
Sergeant Matthew Laha, Fitchburg Police Department
Bill H. I. Lanier, Planning GIS Specialist, City of Madison Planning Division
Bo McCready, Research & Program Evaluation office, Madison Metropolitan School District
Colleen Moran, Wisconsin Population Health Service Fellow, Wisconsin Division of Public Health
MaraLee Olson, ASLA, Independent Landscape Architect
Tony Roach, Fitchburg City Administrator
Ruth Ruiz, Community Social Worker, Joining Forces for Families (JFF)
Tom Solyst, Director of Vera Court Neighborhood Center
Stephen Steinhoff, Senior Community Planner, Capitol Area Regional Planning Commission
Wade Thompson, Resource/Project Planner, Fitchburg Planning and Zoning Department
Todd Violante, Director, Dane County Planning and Development

Other HIA Contributors

Bill Buckingham
Janel Heinrich
Judy Howard
Victoria Kent
Jeff Lafferty
Jennifer Lujan
Mary Michaud
Sridevi Mohan
Sarah Mroz
Mamadou Ndiaye
Lesly Scott
Mary Traudt
Nora Waters
Nathan Watson
Jennifer Weitzel

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APPENDIX

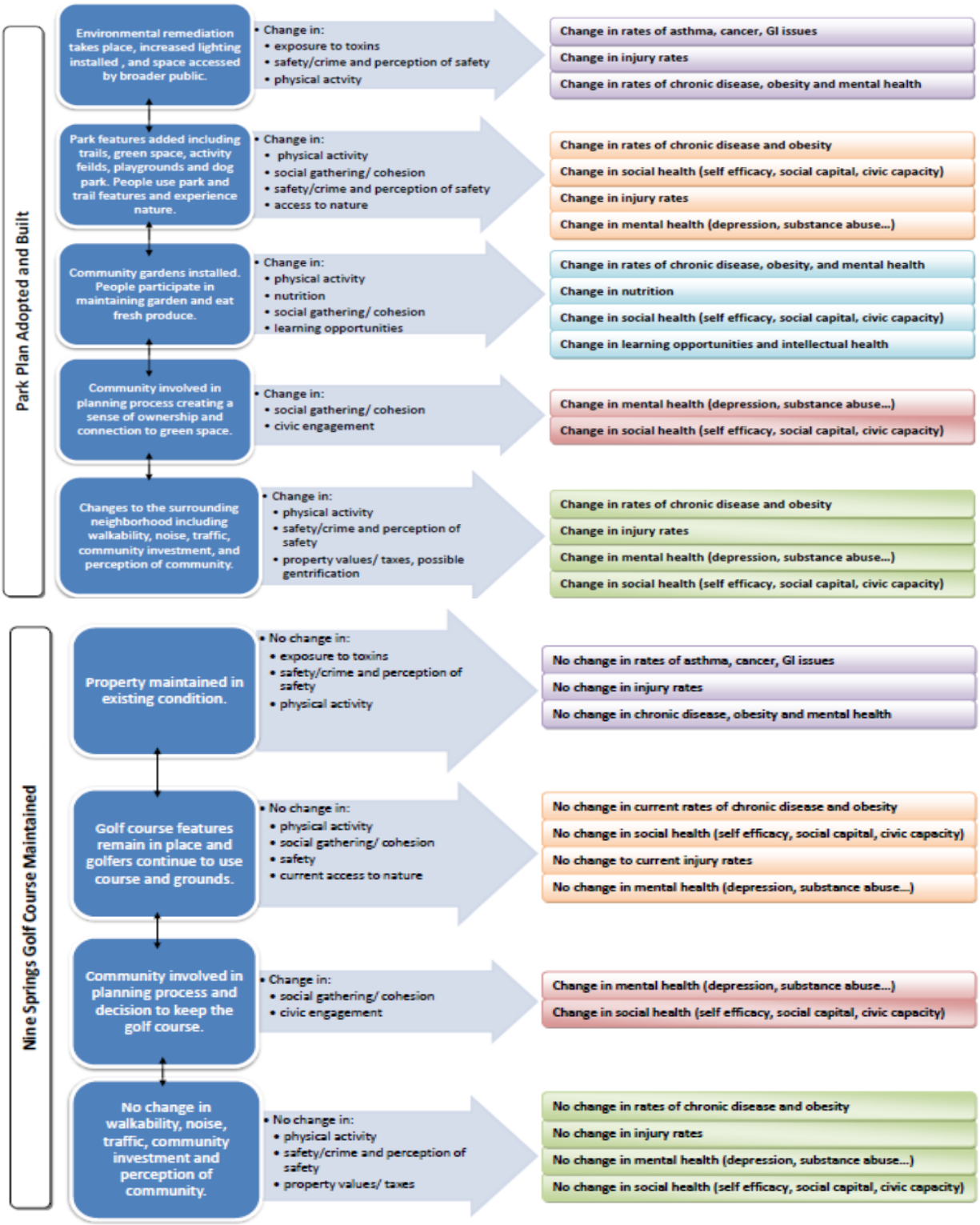
HIA Screening Worksheet

Screening Questions	Response and Supporting Facts
Project and Timing *Has a project, plan or policy been proposed?*	Yes – The proposal is the update of the Master Plan for the Nine Springs Golf Course, which is located on 33 acres of publicly owned parkland in Fitchburg, WI. The Fitchburg Common Council will be reviewing park alternatives to the current golf course operation, and is currently soliciting public input regarding potential alternative uses for the land.
Is there sufficient time to conduct an analysis before the final decision is made?	Likely – The preliminary timeline for the Master Plan update spans into early 2014. Currently, the timeline includes approval (if proposed) of an alternate park use in December 2013, with final approval of the new Master Plan in April 2014. Some local elected officials have indicated strong support for the HIA and may be willing to extend the timeline further into 2014 to allow for the full analysis and recommendations to be completed before finalizing the decision. If this is not the case, a rapid HIA will be conducted and results will be shared as early as possible in the decision making process. In any case, a complete HIA report will be created and shared with stakeholders. The director of Parks, Recreation, Forestry and Natural Resources has not expressed full support for the HIA process and has not yet indicated willingness to factor the HIA into the decision-making process. Ultimately, the Fitchburg Common Council and Parks Commission will be the decision making bodies for this project and the HIA can be conducted without support from the Parks director (although this is not the desired scenario). As the political process develops, core HIA staff will maintain an unbiased position and will continue to seek and incorporate input from all decision makers as well as residents and other stakeholders.
Health Impacts *Does the decision have the potential to affect environmental or social determinants that impact health outcomes? If so, which determinants and which health outcomes?*	Yes – Parks and recreation and land use decisions have implications for the following *determinants*: lack of physical activity; alcohol and tobacco use; unsafe streets or unsafe neighborhoods; polluted air, soil and water; housing conditions or unaffordable housing; social isolation. www.healthyplanning.org/ www.barhii.org/resources/downloads/barhii_healthy_planning_guide http://www.countyhealthrankings.org/policies/increase-green-spaceparks
Would health inequities be impacted? In what ways?	Health *outcomes* that may be impacted by this decision include: chronic diseases related to lack of physical activity (diabetes, heart disease, obesity and some types of cancer); acute and chronic diseases related to water, soil and air quality; mental health and quality of life indicators related to safety, social cohesion and social support (stress, depression, anxiety); violence and injury. Yes – The residents who live in close proximity to the golf course do not use the course, likely due to a combination of financial and social barriers. At the very least, this decision has implications for physical activity, engagement of at-risk youth, and social capital and empowerment of nearby residents. The HIA would provide opportunities for resident engagement in ways that were not previously possible.
Are the proposal's impacts to health likely to be significant in terms of the number of people impacted, the magnitude, breadth and/or immediacy of impacts?	Yes – 43 multifamily housing buildings, 753 units, and over 1,500 residents are located immediately adjacent to the golf course. 3,500 people, or more than 10% of the Fitchburg population, live within walking distance (1/4 mile or less). 100% of the housing units are rentals. Approximately half of renters are below the poverty line. % of students at the nearest elementary school are eligible for the Free and Reduced Price Meal Program. Madison Planning Division reports that 47% of residents living in the apartments are Hispanic and over 25% are Black. Children attend Leopold Elementary school, the largest in Madison Metropolitan School District. Free & Reduced Meal rate for Leopold is 60% overall; 91% for Hispanic students and 88% for Black students.
Do evidence, expertise, and/or research methods exist to analyze health impacts of the decision?	Yes – Ample evidence exists in the area of land use decisions related to health and equity. However, a limited number of HIAs have been conducted on land use and health equity issues related to parks and this project would have the potential to add to that evidence base. While the decision will lie with local officials and residents, the link between increasing access to green space and parks for uses like recreation, community gardening, trails, and social gatherings is scientifically supported. This is especially evident when combined with efforts to address potential safety and security concerns in nearby neighborhoods. http://www.countyhealthrankings.org/policies/increase-green-spaceparks The local HIA core team includes a solid mix of HIA technical experts, public health and land use content experts, researchers and community liaisons. Methods that may be used for this project include: secondary data analysis, including demographics and results from community surveys; Participatory Photo Mapping; qualitative data from public meetings; key informant interviews; focus

	groups; and stakeholder sharing sessions. The HIA team has the expertise to carry out any of these methods.
Potential Impact of HIA Findings *Is health already being considered in the proposal or as part of the decision-making process?*	Not specifically, unless proposed in community survey or public meetings.
Are the links between the proposal and health or health determinants clear?	Yes – See previous section. What is unclear at this time is how the land would be used if it were re-designated and redeveloped for alternate use(s).
Is the decision-making process open to the HIA and/or recommendations for changes to design, mitigations and/or alternatives?	Somewhat – Some elected officials and most key stakeholders are open to and supportive of the HIA. Currently, there appears to be a lack of openness from the Parks Department. Ideally, the HIA would be conducted with full support from all decision-makers; however, given the level of support from other key decision makers and community leaders, the core stakeholder group has agreed that the HIA can and will be conducted regardless of direct participation from the Parks Department.
If applied, would HIA findings and recommendations potentially improve the impact that the proposal has on health?	Yes – the HIA will be conducted with the goal of using data and existing evidence to identify the public health implications of possible land use decisions as well as highlighting nearby residents' desired uses for the land.
Potential Impact of the HIA Process *What are the potential impacts of the HIA process? (e.g., building relationships, empowering community members, demonstrating how health can be used in decision making)*	Empowerment and engagement of nearby residents; relationships and trust between elected officials, local leaders and residents; demonstrating how data and resident engagement can inform decisions with the greatest good for the greatest number of residents in mind by clearly articulating potential impacts of land use decisions; bridging disparate interests (health, economics, land use and sustainability); and helping to establish shared priorities; potential decrease in health inequities, especially those related to race, ethnicity, language, and economic status.
Stakeholder Interest and Capacity *Have public concerns about the health impacts of the decision been voiced or documented?*	Somewhat - The survey has been deployed in the community. However, the survey was not originally distributed in Spanish or to all nearby residents (this is happening now)

Who are the stakeholders and interest groups involved in the decision-making process?	Current stakeholders include the Fitchburg Common Council, Fitchburg Parks Commission, Fitchburg Department of Parks, Recreation, Forestry and Natural Resources, Nine Springs Golf Course management, Fitchburg Planning Department, Fitchburg Police Department, City of Madison Planning Division, Public Health Madison & Dane County, Dane County Board of Supervisors, Leopold Neighborhood Association (and possibly other neighborhood associations), Community First local advocacy organization, Dane County Childhood Obesity Prevention Collaborative; recreation service providers (Boys & Girls Club, YMCA, Madison School & Community Recreation, Fitchburg Recreation),
Do stakeholders have the interest to participate in the HIA?	Most stakeholders are very interested and willing to participate in the HIA. A public listening session will be held on August 22, and high attendance representing multiple interests (including nearby residents, golf enthusiasts, park advocates, and others) is expected. The HIA team will likely give a brief presentation at this meeting to explain the HIA process and expected outcomes.
Do stakeholders have the capacity (resources, skills, etc.) to participate in the HIA?	Yes – Stakeholders represent a mix of technical expertise, connections and trust with residents and community leaders, and decision-making power.
Would stakeholders use the HIA to inform or influence the decision-making process? How?	TBD – Several stakeholders, including elected officials, have expressed support for the HIA and willingness to adapt the decision timeline if needed to allow for HIA recommendations.

HIA Screening Worksheet from:
Human Impact Partners · 304 12th Street, Suite 3B Oakland, CA 94607 · 510.452.9442 · www.humanimpact.org


Park Plan Adopted and Built
Environmental remediation takes place, increased lighting installed , and space accessed by broader public.
• Change in:
• exposure to toxins
• safety/crime and perception of safety
• physical actvity
Change in rates of asthma, cancer, GI issues
Change in injury rates
Change in rates of chronic disease, obesity and mental health
Park features added including trails, green space, activity feilds, playgrounds and dog park. People use park and trail features and experience nature.
• Change in:
• physical activity
• social gathering/ cohesion
• safety/crime and perception of safety
• access to nature
Change in rates of chronic disease and obesity
Change in social health (self efficacy, social capital, civic capacity)
Change in injury rates
Change in mental health (depression, substance abuse...)
Community gardens installed. People participate in maintaining garden and eat fresh produce.
• Change in:
• physical activity
• nutrition
• social gathering/ cohesion
• learning opportunities
Change in rates of chronic disease, obesity, and mental health
Change in nutrition
Change in social health (self efficacy, social capital, civic capacity)
Change in learning opportunities and intellectual health
Community involved in planning process creating a sense of ownership and connection to green space.
• Change in:
• social gathering/ cohesion
• civic engagement
Change in mental health (depression, substance abuse...)
Change in social health (self efficacy, social capital, civic capacity)
Changes to the surrounding neighborhood including walkability, noise, traffic, community investment, and perception of community.
• Change in:
• physical activity
• safety/crime and perception of safety
• property values/ taxes, possible gentrification
Change in rates of chronic disease and obesity
Change in injury rates
Change in mental health (depression, substance abuse...)
Change in social health (self efficacy, social capital, civic capacity)
Nine Springs Golf Course Maintained
Property maintained in existing condition.
• No change in:
• exposure to toxins
• safety/crime and perception of safety
• physical activity
No change in rates of asthma, cancer, GI issues
No change in injury rates
No change in chronic disease, obesity and mental health
Golf course features remain in place and golfers continue to use course and grounds.
• No change in:
• physical activity
• social gathering/ cohesion
• safety
• current access to nature
No change in current rates of chronic disease and obesity
No change in social health (self efficacy, social capital, civic capacity)
No change to current injury rates
No change in mental health (depression, substance abuse...)
Community involved in planning process and decision to keep the golf course.
• Change in:
• social gathering/ cohesion
• civic engagement
Change in mental health (depression, substance abuse...)
Change in social health (self efficacy, social capital, civic capacity)
No change in walkability, noise, traffic, community investment and perception of community.
• No change in:
• physical activity
• safety/crime and perception of safety
• property values/ taxes
No change in rates of chronic disease and obesity
No change in injury rates
No change in mental health (depression, substance abuse...)
No change in social health (self efficacy, social capital, civic capacity)