



# *Darbo-Worthington-Starkweather Neighborhood Plan*

## **Health Impact Assessment (HIA)**

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# Darbo-Worthington-Starkweather Neighborhood Plan Health Impact Assessment (HIA)

Prepared For: City of Madison

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## EXECUTIVE SUMMARY

In 2016 a Health Impact Assessment (HIA) was completed simultaneously with the creation of the Darbo-Worthington-Starkweather (DWS) Neighborhood Plan. The HIA includes a review of existing characteristics of the neighborhood related to four priority areas which were identified during the planning process: safety; mobility and accessibility; social connectedness and empowerment; and environmental and built conditions. The HIA predicts the impact the plan will have on the DWS Neighborhood and offers additional recommendations to promote positive health impacts.

### **Key Findings from the Health Impact Assessment include:**

#### Safety

- The DWS Neighborhood experiences a crime rate approximately three or more times the rate per acre of the City of Madison for crimes that affect personal safety. Stakeholders are also concerned about high crime rates within the DWS Neighborhood.
- Between 2005 and 2015 the number of property maintenance and housing code violations within the neighborhood increased by 42%. The most common code violations included general maintenance of the exterior; junk, trash and debris; graffiti; and snow removal.

#### Mobility & Accessibility

- The lack of sidewalks in the Town of Blooming Grove leads to lack of connectivity between areas of the Neighborhood.
- Stakeholders feel pedestrians do not have enough time to cross the street at crosswalks along E Washington Ave. with pedestrian lights.
- The DWS Neighborhood is categorized as a “food swamp”. In other words, the area is swamped with convenience stores and fast-food outlets. Stakeholders feel concerned about the lack of nearby access to healthy foods.
- Stakeholders would like to see a B Cycle (bike-sharing) station in/near the DWS Neighborhood.

#### Social Connectedness & Empowerment

- Access to information about neighborhood services and events in the DWS Neighborhood is not available in one location, but can currently be found in several locations. Stakeholders feel that holding more events in the Neighborhood would help establish the neighborhood as a revitalized destination and improve social cohesion.
- The poverty level in the Neighborhood is similar to the City of Madison, except when it comes to female householders, in which case the poverty rate is higher than in the City (6% compared to 3%).

#### Environmental & Built Conditions

- Starkweather Creek is listed by the Wisconsin Department of Natural Resources (WDNR) as an impaired waterway.
- Within the DWS Neighborhood, between 28% and 47% of owner-occupied housing units are paying 30% or more of their incomes on mortgage. Fifty-three percent (53%) to 65% of renter-occupied housing units are paying 30% or more of their incomes on rent.

- The DWS Neighborhood is included in part of the worst quartile for the number of houses built prior to 1950 compared to Dane County (68% compared to 16%).
- The south and west portions of the DWS Neighborhood appear to be most negatively by sound from truck traffic.

#### Recommendations to Improve Safety

- Review signal timing along E Washington Avenue to see if it is feasible to increase the time pedestrians have at crosswalks.
- Consider implementing an outreach program to encourage crime reporting.
- Consider adding street lighting to Reger Park, Dixon Greenway, Wirth Court Park, intersection of Darbo Dr. and N Marquette St. and adjacent to Mobil Station.
- Work with store owner of the Mobil Station to prioritize replacement of security cameras. In collaboration with the neighborhood and residents, the City should aggressively enforce existing laws and ordinances at the property.

#### Recommendations to Improve Mobility & Accessibility

- Consider establishing a free bike share program within the DWS Neighborhood.
- Consider contacting B-Cycle of Madison and recommending Woodmans as another potential location for a B-Cycle station.
- Include multiple vendors in the farmers market and ensure vendors are committed to showing up at the same times/days each week.
- If a grocery store locates at Union Corners, evaluate its impact on the DWS Neighborhood.
- Work with convenience stores in the DWS Neighborhood to improve selections and price points of non-packaged foods that they offer.

#### Recommendations to Improve Social Connectedness & Empowerment

- Compile and distribute a list of events and services that are available to neighborhood residents.
- Have information about all neighborhood services and events in one location.
- Neighborhood groups should provide activities that don't require an ongoing commitment and increase the frequency of their outreach.
- Encourage the Department of Corrections to host or sponsor events or activities.

#### Recommendations to Improve Environmental & Built Conditions

- Make neighborhood residential areas within the 65 – 75 DNL noise buffers priority areas for noise mitigation techniques.
- Worthington Park – consider adding permanent or portable restroom facilities; assess lighting and increase as necessary; add picnic tables under shade trees; and use Crime Prevention Through Environmental Design (CPTED) principles.
- Reger Park – consider adding park amenities that will encourage use of park and use CPTED principles.
- Focus on planting native vegetation adjacent to Starkweather Creek to filter pollutants before they reach the water.
- Ensure that affordable housing is maintained so that current residents are not forced to leave the DWS Neighborhood.



## 1. INTRODUCTION

According to the World Health Organization, the health of individuals in our communities is affected not only by individual characteristics and behaviors, but also by the surrounding environment, including social, economic and physical characteristics. Health determinants are personal, social, economic and environmental factors that influence health<sup>1</sup>. Determinants of individual health include things individuals can and cannot directly control such as income and social status, crime/safety, education, natural and built environments, social support networks, genetics and health services (World Health Organization). There is a wealth of research that supports the link between these determinants and health outcomes. A Health Impact Assessment is a tool that can help predict the impact that plans, policies and programs could have on a community's health. An HIA can also offer recommendations to mitigate negative impacts from proposed policies and offer additional recommendations that promote positive health impacts.

The City and neighborhood residents agree that public health is a priority in the Darbo-Worthington-Starkweather (DWS) Neighborhood, and we also agree that changes to the built environment and public and private activities within that environment impact health here. This Health Impact Assessment (HIA) has been prepared in concert with the DWS Neighborhood Plan to improve the plan and help all participants better understand the relationship between various neighborhood investments and health outcomes.

## 2. HEALTH IMPACT ASSESSMENT PROCESS

The Health Impact Assessment for the DWS Neighborhood Plan was completed over a ten month period beginning May 2016. The City of Madison used the BUILD grant funding to hire MSA Professional Services to conduct the HIA. There is a six step process that Health Impact Assessments typically follow which was used in the DWS HIA: screening, scoping, assessment, strategies & recommendations and reporting. Each of these steps as they relate to the DWS HIA are described in further detail below.

### 2.1 SCREENING

The purpose of this step is to determine if an HIA is needed. In this case, the determination was made by the City of Madison based on feedback from residents at a 2015 community listening session where the City identified public health as a priority for the neighborhood.

### 2.2 SCOPING

The purpose of this step is to collect data that describes characteristics related to health and select a methodology for the assessment phase. The City and Department of Public Health collected and compiled the neighborhood and city-wide data that was used in this report. Data was collected on a variety of topics including crime rates, trails, land use, air quality, housing affordability, code violations and so on.

To inform the selection of methodology, MSA conducted a literature review of relevant studies, including HIAs and other literature that describes methods of studying public health/urban design linkages. During this survey, MSA also started a compilation of research that supports the link between health determinants and health outcomes, and related policies, guidelines and tools that may be useful. MSA completed an



initial review of 17 HIAs that appeared most relevant to the DWS neighborhood and chose five studies for an in-depth review of methodology, health-based evidence and recommendations. Based on the literature review, the basic steps that were identified for the scoping and assessment phases of the DWS HIA were:

- 1) Based on public and City input, identify the four most important health concerns for the community and translate these into health determinants.
- 2) Develop a baseline community conditions/health profile to understand where the community is starting from. The data the City and the Department of Public Health collected was used in this step.
- 3) Identify indicators that can help analyze the four health determinants identified in step 1.
- 4) Summarize existing conditions for each health determinant and complete a qualitative and/or quantitative analysis for each health indicator.
- 5) Predict the impact that the DWS Neighborhood Plan's recommendations will have on each health determinant.

The full literature review memo can be found in Appendix A.

In addition to a review of neighborhood data, stakeholder feedback was also used to identify the four most important health concerns for the neighborhood. Stakeholders were consulted through a service provider questionnaire, two focus groups and three public open houses.

Before the first public open house, a service provider meeting was held to gain input for the Neighborhood Plan from providers currently serving the neighborhood. At this meeting, providers were asked to fill out a short survey to get their insights on what the most important health issues and concerns are in the neighborhood. In total, 14 services providers completed the survey. Top concerns from the surveys included:

- Air Quality
- Land Use/Zoning
- Community Gathering Space
- Access to Food
- Personal Health

To improve these conditions in the community, some of the respondents said they would like to see:

- More community gathering spaces
- Better access to healthy food
- More education on health topics (e.g. mental health, parenting)
- More meaningful collaboration
- Businesses that add to the community (e.g. no additional fast food, loan stores, gas stations)

Obstacles service providers see to improving health outcomes of residents are political challenges, crime, community engagement, and leadership/coordination. Survey respondents were most concerned about health risks for the youth population.

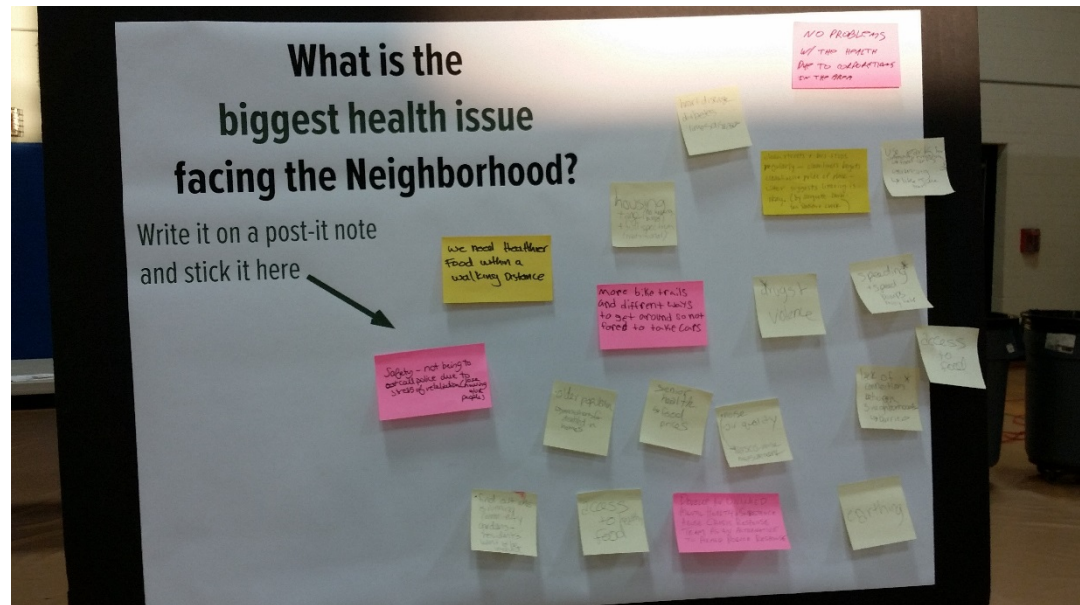
Approximately 20 neighborhood residents attended the first public open house that was held on July 12, 2016. At the open house there was a booth dedicated to the topic of “Health” and a graffiti board set up where residents were asked “What is the biggest health issue you see facing the neighborhood?” Residents could then write down their concerns on post-it notes and put the notes on the board and discuss what they wrote down. There were a variety of responses. Some concerns that were mentioned multiple times included:

- Access to healthy food
- Speeding
- Drugs and violence
- Community gardens

In August two focus groups were held; on August 3 and on August 10. The first group had 5 attendees and the second had 7 attendees. Together attendees represented the following groups: neighborhood residents, early childcare providers, Walgreens, Friends of Starkweather Creek, Dane County Public Health and the Schenk-Atwood-Starkweather-Yahara Neighborhood Association (SASY). A couple of phone interviews were also conducted with people who were unable to attend either focus group. Concerns discussed at the focus groups meetings followed similar themes to what was discussed at the first public open house:

#### Safety

- Crime/drugs
- Fear



*Graffiti Board at July 12<sup>th</sup> Open House*

- Shootings
- Loitering

#### Mobility & Accessibility

- Access to food
- Public Transit
- Pedestrian connectivity and safety
- Biking connectivity and safety

#### Social Connectedness & Empowerment

- Investment/involvement in the neighborhood

#### Environmental & Built Conditions

- Air quality
- Underutilized parcels
- Parks
- Noise



*Break-out sessions at November 10th Open House*

Approximately 27 residents attended the next open house that was held on November 10, 2016. The meeting focused on discussing draft recommendations from the Neighborhood Plan. There were also break-out discussions concerning additional recommendations residents would like to see. Some of these additional ideas included:

#### Safety

- Additional lighting

#### Mobility & Accessibility

- Pedestrian flashing beacons
- Crosswalks

#### Social Connectedness & Empowerment

- Neighborhood clean-up/restoration

## Environmental & Built Conditions

- Park improvements
- Using vacant/underutilized parcels
- Temporary art
- Community kitchen
- Helping seniors remain in homes

Approximately 30 neighborhood residents attended the final open house on January 23, 2017. Draft recommendations from the HIA were presented and residents were invited to comment. The comments that were received focused on supporting actions to improve social connectedness and empowerment, lengthening crosswalk timing across E Washington Ave, enhancing police presence in the neighborhood and bringing more gathering spaces into the neighborhood.

### 2.3 ASSESSMENT

The assessment task is the core of the HIA, featuring the documentation of selected health outcomes and determinant conditions and evaluation of potential health impacts of the plan. Using the data collected/developed by City Staff and Department of Public Health, MSA documented current health outcomes and determinant conditions within the neighborhood. Where possible, these baseline conditions were presented in the context of other parts of the City.

The other major part of this task included evaluating the draft recommendations put forward by the City in the DWS Neighborhood Plan and estimating each recommendation's impact on the neighborhood.

### 2.4 STRATEGIES & RECOMMENDATIONS

The draft Neighborhood Plan featured many recommendations that would likely have a positive impact on health outcomes in the neighborhood. As part of this task, MSA offered changes/additions to the DWS Neighborhood Plan's recommendations to enhance positive health outcomes. The purpose of these additional recommendations is to supplement existing content in the draft DWS Neighborhood Plan that can enhance positive health outcomes and mitigate negative health outcomes. The HIA includes possible funding sources to help implement the recommended programs or actions.

### 2.5 REPORTING

This task involved compiling and communicating each of the prior tasks into a cohesive deliverable. MSA prepared this report and helped the City present the HIA's findings and recommendations to the neighborhood and other stakeholders.

## 2.6 MONITORING & EVALUATION

City staff will conduct an evaluation at least a year after the Neighborhood Plan is adopted. The City should evaluate any completed measures by considering whether they affected the identified health determinants, and also by looking for any change in health outcomes. Given the difficulties with measurement and showing causality in a complex urban environment, it is acceptable for this evaluation to consider any quantitative, qualitative and anecdotal evidence of change. The City should also offer an evaluation of the HIA process itself, as this is still a novel practice and the methods deserve scrutiny as planners learn to use this tool.

## 2.7 A NOTE ON DETERMINANTS, INDICATORS & DESIRED OUTCOMES

The following four sections discuss determinants of health deemed most pressing to the Darbo-Worthington Park-Starkweather Neighborhood (DWS) and their associated desired outcomes: Safety, Mobility & Accessibility, Social Connectedness & Empowerment, and Environmental & Built Conditions. Each of these four determinants was chosen due to common themes that emerged from the stakeholder discussions and by a desktop review of data on the neighborhood.

**Safety** was a common theme stakeholders discussed at the open house and during the focus groups. They discussed drug and violence issues in the neighborhood. One resident who was involved in the neighborhood cleanup last year said the crew found approximately 150 used heroine baggies in the area. Residents are also concerned with gunfire in the neighborhood. Some have reported they feel that gunfire and violence have increased in the last few months. Residents also noticed people coming from outside of the neighborhood and loitering, primarily at the Mobil Station and in parks.

*Target Outcome: The neighborhood plan's recommendations should focus on improving the safety of the neighborhood. This includes elements aimed at reducing crime and drug use within the neighborhood and contributing to the perception of DWS as a safe neighborhood.*

Residents also mentioned issues related to **mobility and accessibility**. Perhaps one of the most common topics under this determinant is that residents need improved access to healthy foods. The nearest grocery stores are approximately one to one-and-a-half miles away (Hy Vee and Woodman's). Some people do shop at Walgreens and the Mobil Station, but their prices on fresh foods are high. Another issue that was discussed was missing sidewalk within the neighborhood – particularly in the Town of Blooming Grove. Pedestrians and bikers also have safety issues crossing E Washington Ave as the road is very wide and crossing is stressful. Several also mentioned that taking public transit is inconvenient and time consuming.

*Target Outcome: The neighborhood plan's recommendations should seek to improve mobility and accessibility for neighborhood residents. This includes connectivity of sidewalks, enhanced crosswalks, increased access to healthy food and improved facilities for bicyclists.*

**Social connectedness and empowerment** was a theme that was brought up indirectly. Residents overall feel a lack of social connection to their neighbors and would like this to change. Some even noted they were afraid to leave their homes because they feel unsafe. Safety, mobility &

accessibility, and environmental & built conditions are all related to social connectedness and empowerment. Mobility and accessibility focus on physically connecting the neighborhood and built conditions give residents a public space to be in and meet other people in. Residents also want to have events that bring people together and get them invested in the neighborhood they live in. People-friendly places along with transportation networks can serve to improve the safety of the neighborhood by creating more “eyes on the street”.

*Target Outcome: The neighborhood plan’s recommendations should improve social connectedness and empowerment within the neighborhood. This includes the creation of additional public gathering space, the enhancement of existing public spaces, increasing the number of neighborhood-wide events and developing a method of notifying residents of neighborhood events and services.*

Residents were concerned about **environmental and built conditions** in the neighborhood as well. In particular, residents were concerned about the water quality of Starkweather Creek, soil quality and air quality in the area (primarily due to nearby industrial uses). Housing was another topic that residents discussed. The housing in the neighborhood is old, deteriorating and isn’t necessarily affordable to everyone living in the neighborhood. Additionally, there are underutilized parcels and vacant parcels that residents feel aren’t adding value to the neighborhood and should be put towards other uses. Similar to social connectedness and empowerment, environmental and built conditions affect the determinants listed above: safety, mobility & accessibility and social connectedness & empowerment. Thus improving environmental and built conditions can serve to improve the first three indicators. For instance, land use can help reduce the number of alcohol outlets in an area which is linked to less crime (improved safety), bringing a grocery store to a neighborhood can improve accessibility to healthy food, and creating new gathering spaces can serve to improve social connectedness.

*Target Outcome: The neighborhood plan’s recommendations should improve environmental and built conditions within the neighborhood for residents. This includes elements focused on improving the water quality of Starkweather Creek, improving housing quality, increasing housing affordability, redeveloping underutilized/vacant parcels, improving air quality and improving existing parkland.*

Connections between these determinants of health and health indicators are discussed in each of the following sections. Health indicators are measurable characteristics that describe a population’s health. For each health indicator, baseline conditions as they exist in the neighborhood today are discussed. The health indicators in sections three through six are considered indirect measures of health. For instance, access to healthy food can be correlated to improved health, but cannot in and of itself cause someone to be more healthy. Section 7 discusses direct measures of health such as asthma rates, obesity rates and type II diabetes. These are elements that can directly cause someone to be considered healthy or unhealthy. All of these direct measures of health have been linked to various indicators in the following subsections titled, “Connection to Health”.

*Notes: All maps referenced below can be found in Appendix B. Also, the study area contains a portion of the Town of Blooming Grove. Where data for the Town was unavailable in the maps, this portion of the neighborhood is greyed out.*

### 3. SAFETY

#### 3.1 CONNECTION TO HEALTH

There are certain neighborhood conditions that help people feel safe and conditions that can make a neighborhood feel unsafe, whether real or perceived. One of the common themes from stakeholders is that they don't feel safe in their neighborhood, primarily due to drug use and crime. There are certain conditions in neighborhoods that have been suggested as risk factors for crime. These include: poverty, lack of economic opportunity, access to drugs, guns and alcohol, poor response to code violations regarding blighted properties and lack of programming for youth<sup>2, 3, 4</sup>. A higher density of alcohol outlets has also been associated with greater rates of physical assault, violent crimes and violence in general<sup>5</sup>.

Fear of crime can be increased by the physical condition of a neighborhood. Broken sidewalks, poor lighting and graffiti can all be a sign of social disorder; the "Broken Windows Theory"<sup>6</sup>. Interestingly studies have found that the presence of street lighting doesn't actually stop crime<sup>7</sup>. The "Broken Windows" theory suggests that a neighborhood's physical condition sends out messages about the kind of behaviors that are permitted; a broken window that goes unfixed indicates that no one cares enough to fix it<sup>8</sup>. Similarly, if there is crime on a particular street, people will avoid the area out of fear, and if the public avoids an area this can invite more serious crimes to the area<sup>8</sup>.

Consequently, violence in a community inhibits social interactions and has a negative impact on social cohesion<sup>9</sup>. This was echoed as a common theme by neighborhood residents; they feel apprehensive about leaving the safety of their homes but yet they desire a neighborhood where they feel connected to people.

A study of more than 10,000 people in England found that fear of crime was associated with poorer mental health, reduced physical functioning and a lower quality of life. People who experienced fear of crime exercised less, saw friends less often, participated in fewer social activities and reported greater fear, more depression and worse mental health overall<sup>10</sup>. It is important to keep in mind that everyone experiences fear of crime differently, for example, low income mothers are one group that is more prone to experience fear of crime when compared to other groups<sup>11</sup>.

Witnessing crime can also impact communities. Research shows that homicides, physical assaults, and rapes/sexual assaults negatively impact health outcomes. Being exposed to community violence can also cause long-term behavioral and emotional problems in youth<sup>12</sup>.

#### 3.2 BASELINE CONDITIONS

##### 3.2.1 Alcohol Outlets

According to data from Public Health, there are approximately 19 alcohol outlets in or adjacent to the planning area. A majority of these outlets are restaurants or bars (74%). There are 5 off-site sellers (grocery or convenience stores) located within or adjacent to the planning area. The isthmus and near east side of the City of Madison both show a higher number of alcohol outlets than the rest of the City, see Figure 1 (Appendix



B). This is primarily due to a higher number of restaurants and bars in the area. The neighborhood on the north side of E Washington Ave contains 21-28 alcohol outlets. As section 3.2 stated, a higher density of alcohol outlets is associated with more crime, and the neighborhood does have a much higher concentration of these outlets as compared to many areas in the City.

Near completion of the Healthy Impact Assessment study, new data become available on [Healthy Dane](#) from the [500 Cities Project](#). This data compares measures of health in the DWS neighborhood to the US and to Dane County where sufficient data is available. This data shows that the DWS neighborhood is part of the lowest quartile compared to the US overall for percentage of adults who binge drink (25% compared to an overall US value of 16%)

### 3.2.2 Crime Rates

Based on 2015 data compiled by the UW Madison Applied Population Lab, crimes against persons (e.g. robbery, battery and sexual assault), crimes against property (e.g. residential burglary, retail burglary, auto theft), and crimes against society (e.g. disturbances, liquor violations and drug incidents) typically occur more often in the downtown Madison isthmus due to there being a higher concentration of people<sup>13</sup>. Table 1 below compares crime rates for the City of Madison, the Schenk-Atwood-Starkweather-Yahara (SASY) Neighborhood and the Worthington Park Neighborhood. The SASY neighborhood includes additional homes that are not part of the current study area; see Figure 2 (Appendix B) for neighborhood association and study area boundaries.

**Table 1. Crime Rates Expressed in Number of Crimes per Total Population (2015)**

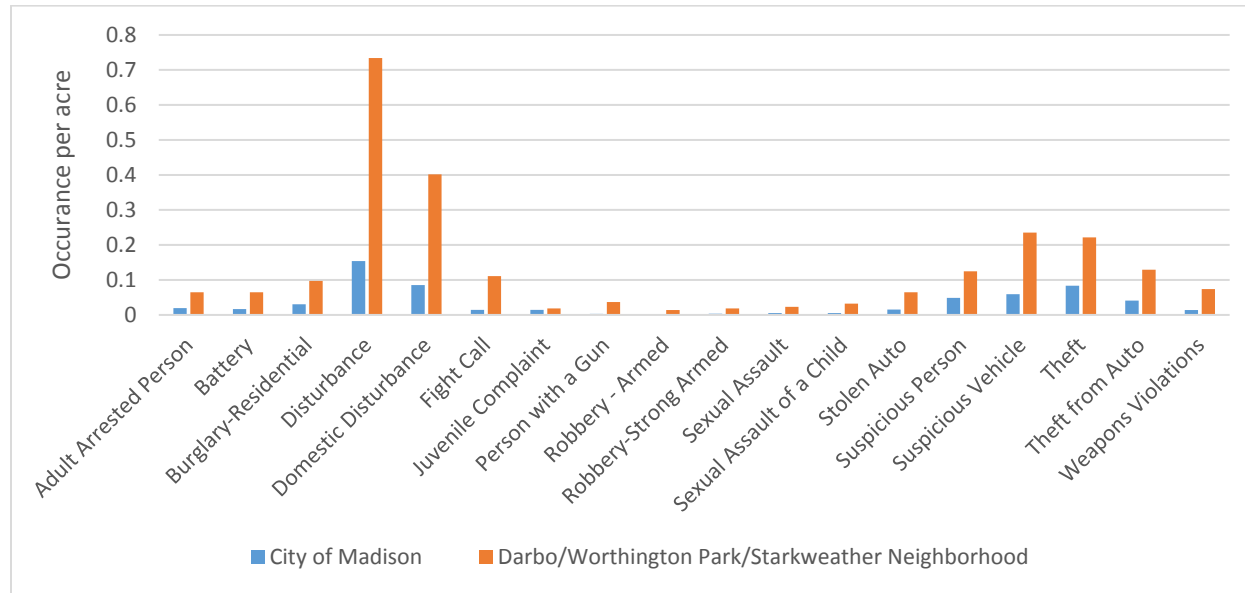
*Source: Madison Neighborhood Indicators Project, UW Applied Population Lab*

	City of Madison	SASY Neighborhood	Worthington Park Neighborhood
<b>Crimes against persons</b>	.001/person	.005/person	.014/person
<b>Crimes against property</b>	.038/person	.032/person	.046/person
<b>Crimes against society</b>	.038/person	.037/person	.101/person

In the SASY neighborhood, crimes against persons occur at a higher rate than in the City of Madison (by 400%). All other types of crimes in the SASY neighborhood occur at a lower rate as compared to the City of Madison. All crime types are much higher in the Worthington Park neighborhood than in the City of Madison. In the Worthington Park neighborhood, crimes against society occur at 165% of the rate they do in Madison, crimes against persons occur at a rate of 13 to one compared to Madison, and crimes against property occur at a rate of 21% of the rate they do in Madison.

Another method to measure the prevalence of crimes in an area is by calculating crimes per acre. Figure 3 below shows crime per acre for the neighborhood (FY2015 and Q12016) as compared to the City of Madison for selected crimes that affect personal safety. For all calls the neighborhood experienced a higher crime rate per acre than the City as a whole. All police calls shown in Figure 3 (with the exception of

“Juvenile Complaint”) occur at three or more times the rate per acre of the City of Madison within the neighborhood. “Person with a Gun” occurs at a rate of approximately 13 times that of the City of the Madison within the neighborhood.



**Figure 3. Crime Rates Expressed in Number of Crimes per Acre (FY2015 and Q12016)**

*Source: City of Madison*

Higher crime rates are impacting the neighborhood as evidenced by the data, news reports and anecdotal evidence from residents. These elevated crime rates are not new and have been impacting the neighborhood for a long time. Since 1990 there has been a neighborhood police officer from the Madison Police Department assigned to the Worthington Park Neighborhood. According to the Neighborhood Police Officer’s report from 2014, the Officer’s main focus was on community policing, relationship building within the neighborhood and proactive patrol. He met with residents in their homes to listen to their concerns and hear their ideas on how to improve issues within the neighborhood. Despite this relationship building, people are afraid of retaliation and often times do not report serious crimes to the police. Residents at the open house, focus group meetings and the community policing officer all mentioned the fear of “being snitches”. Overall, the Community Police Officer has had a positive impact on the neighborhood and residents say he has improved their sense of safety, however crime is still an issue in the neighborhood.

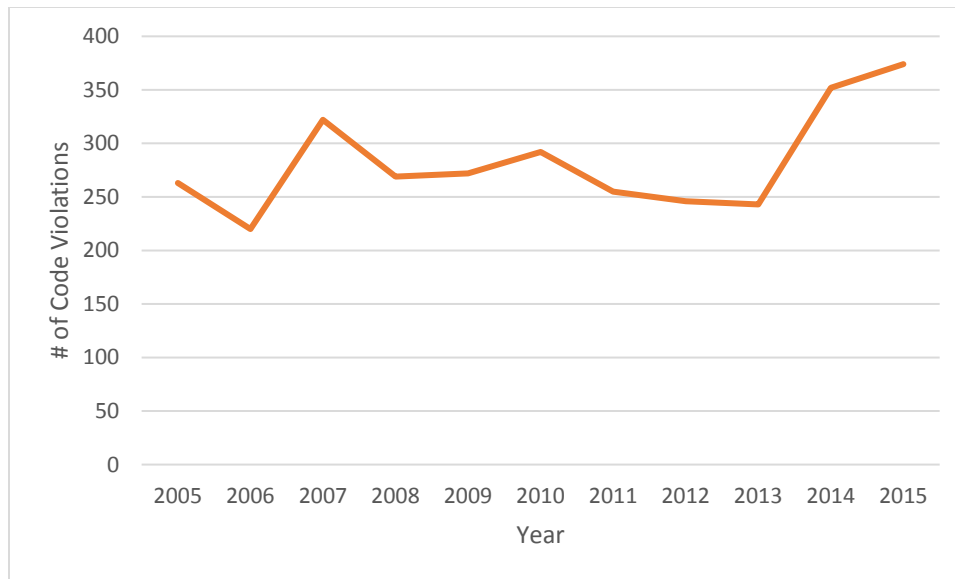
### 3.2.3 Lighting

Figure 4 (Appendix B) shows that Reger and Worthington Parks are the only parks in the neighborhood that have lighting though there was feedback that the parks could use more. Reger Park has been noted as a particular area of concern. The park is a magnet for kids smoking marijuana and early morning loitering. Thurber Park, Dixon Greenway and Wirth Court Park do not have any lighting.

Figure 5 (Appendix B) shows existing street lighting within the neighborhood, with the exception of the Town of Blooming Grove for which no information is available. Stakeholders would like to see more lighting at the intersection of Darbo Drive and N Marquette Street. There is also a lack of street lighting north of this intersection and adjacent to the Mobil station. There appears to be a lack of lighting along Rethke Ave, though this could be because the lighting is located in the Town of Blooming Grove.

### 3.2.4 Code Violations

During focus group meetings, stakeholders mentioned that litter and trash in the neighborhood give the appearance that no one cares. Looking at code violations within the DWS neighborhood, data shows that the neighborhood does have a substantial number of code violations related to property maintenance and litter/junk. Property maintenance and housing code violations between 2005 and 2015 in the DWS neighborhood are shown in Figure 6 below. Between 2005 and 2015 the number of property maintenance and housing code violations within the neighborhood increased by 42%. The most common code violations during this time period included general maintenance of the exterior; junk, trash and debris; graffiti; and snow removal. The two most common property maintenance/housing code violations in 2015 were general maintenance of the exterior and junk, trash and debris, making up 43% of the neighborhood's 2015 total property maintenance and housing code violations. In 2015, 374 parcels within the DWS neighborhood had property maintenance and housing code violations. Of these 374 parcels, approximately 71% parcels received more than one code violation in the same year.



**Figure 6. Property Maintenance & Housing Code Violations in the DWS Neighborhood, 2005-2015**

*Source: City of Madison, Building Inspection*

## 4. MOBILITY & ACCESSIBILITY

### 4.1 CONNECTION TO HEALTH

Neighborhood residents mentioned that moving through the neighborhood is difficult due to lack of sidewalks and insufficient crosswalks.

Evidence shows that neighborhoods containing obstacles such as high traffic volumes and speeds, narrow or missing sidewalks, poor lighting, dangerous intersections, and poor roadway connectivity discourage walking and bicycling<sup>14</sup>. Another review of 16 research studies found 11% fewer traffic-related injuries in neighborhoods that had features designed to reduce traffic speeds such as narrow travel lanes, medians, sidewalks and street trees<sup>15</sup>.

Research suggests that changes in the physical environment, such as sidewalks, traffic calming measures, and well-designed crosswalks can also make walking and biking to school more appealing and safer<sup>16</sup>. A safe route to school from the neighborhood is especially important as East High School is adjacent to the neighborhood. Emerson and Lowell Elementary Schools and the Goodman Center are also within several blocks of the neighborhood. Research suggests that children in neighborhoods with sidewalks and safe places to cross the street are more likely to be physically active than children in neighborhoods without these facilities<sup>17</sup>.

Safety and access to bicycle facilities were other issues that were brought up by residents and stakeholders. One study found that the risk of injuries to cyclists was lowest on roads with on-road bike routes, on-road marked bike lanes, and off-road bike paths, compared to roads without any of these. Street lighting and paved surfaces also improve safety for bicyclists<sup>18</sup>. Although increased bicycle and pedestrian activity would seem to increase people's exposure to motor vehicle accidents, several studies have shown that an increased number of cyclists and pedestrians actually lowers rates of accidents as pedestrians and drivers become more used to regular interaction<sup>19</sup>.

Access to and usability of Madison's public transportation system was another topic that stakeholders and residents were concerned about. The neighborhood is served by several Madison Metro bus routes. Research has found that proximity to public transit helps to determine travel choice<sup>20</sup>. It is likely that the number and type of places a person can reach in what they feel is a reasonable amount of time, also makes people more likely to use public transit. Common places people need to get to are jobs, grocery stores and medical care facilities. It is estimated that approximately 29% of people using transit to get to work meet their daily requirements for physical activity<sup>21</sup>. And approximately 10% of an individual's health is determined by the medical care they receive, so it is important people have access to healthcare by public transit too<sup>22</sup>.

What we put into our bodies also has a direct influence on our health. For those who do not make healthy dietary choices, this often comes down to several reasons: the food is not easy to get, it is too costly and/or there is little knowledge about preparing healthy meals and snacks. Research has demonstrated that people who have convenient access to healthy foods (primarily fruits and vegetables) tend to consume more produce and have lower rates of obesity, type 2 diabetes, and other nutrition-related health problems<sup>23</sup>. Not only is increasing access to healthy foods important, but other research shows that restricting access to unhealthy foods may even be more important<sup>24</sup>.

One study shows that the convenience of retail food outlets plus low family income and high transportation cost can play an important role in what a household eats. Households living near a full-service supermarket with fair pricing are more likely to eat the daily-recommended amount of fruits and vegetables<sup>25</sup>. It comes down to the option being available and a household having the means to get to the store and purchase the food.

Access to healthy, affordable foods can also come from farmers markets and community gardens. Community gardens and local farmers markets also serve as opportunities for health education, for example, providing information on how to prepare healthy food and the nutritional benefits of fruits and vegetables<sup>26</sup>. Information on how to prepare healthy foods is another topic stakeholders felt the neighborhood could use more education on.

## 4.2 BASELINE CONDITIONS

### 4.2.1 Sidewalks & Crosswalks

In the southwest portion of the neighborhood (west of Clyde Gallagher Ave.) there are generally sidewalks on both sides of the street (see Sidewalk and Pedestrian Amenities Map in Neighborhood Plan). In the northeast portion of the neighborhood (east of Clyde Gallagher Ave.) the

streets in the City of Madison generally have sidewalk on one side only. For those streets in the Town of Blooming Grove there are generally no sidewalks which leads to a lack of connectivity between areas of the DWS neighborhood.

There are six standard crosswalks across E Washington Ave, three of which have pedestrian lights. According to stakeholders, the three crosswalks with lights are the main locations where people from the neighborhood cross E Washington Ave (intersections with Milwaukee Street, N Marquette Street and E Johnson Street). Residents noted that the crosswalks across E Washington Ave are overall not sufficient; where there are crosswalk lights, pedestrians do not have enough time to cross the street and the refuge island is very small and hardly noticeable to traffic.

Within the neighborhood, pedestrians also noted that the intersections of Milwaukee Street and Oak Street and Clyde Gallagher Ave and Darbo Drive are difficult for pedestrians to cross due to shrubs blocking driver's views and thus traffic does not always yield to pedestrians. Figure 7 (Appendix B) shows the number of pedestrian, bike and vehicle crashes between May through July 2015 and October through December 2015.

#### 4.2.2 Healthy Food

Public Health Madison and Dane County's map (Figure 8 in Appendix B) of Madison's food deserts categorizes the neighborhood as a "food swamp". In other words, the area is swamped with convenience stores and fast-food outlets. When categorized by the USDA, the neighborhood planning area is considered a "food desert" which refers to the combination of high average distance to a grocery store with high rates of poverty by Census tract. According to 2013 ACS data, the neighborhood has a 15% poverty rate compared to the City of Madison's poverty rate of 16%.

By driving distance, the nearest grocery stores to the neighborhood with the greatest variety and quantities of food are Woodman's (~1 mile), Hy-Vee (~1.5 miles), Pick' n Save (~2 miles) and Aldi (~2 miles) (see Food Grocery Product Availability Map in Neighborhood Plan). According to Figure 9 (see Appendix B), there are no grocery stores reachable from the neighborhood within 15 minutes of walking. Data for Figure 9 was provided by the Madison Area MPO. Transit and walk access scores were calculated by the MPO using an access to destination tool called "Sugar Access." Figure 10 (Appendix B) shows that for a majority of the neighborhood between six and nine grocery stores are reachable within 30 minutes by Metro Transit during morning peak hour. The northeast portion of the neighborhood has one to five grocery stores available and the portion of the neighborhood adjacent to E Washington Ave has 14 to 17 grocery stores reachable within 30 minutes of a Metro Transit ride. There are several other retailers in the neighborhood which carry limited grocery products, such as Walgreens. Convenience stores and non-grocery retailers tend to have higher prices on fresh food items, which is a barrier to purchasing them.

All restaurants, taverns and liquor stores within the neighborhood are shown on the Entertainment Map (see Neighborhood Plan). These locations, especially fast food restaurants, typically offer unhealthy food options. Within the neighborhood, these unhealthy food options are concentrated along E Washington Ave, adjacent to the neighborhood and along Atwood Avenue near the neighborhood.

In addition to grocery stores, there are other ways people have access to healthy foods, such as from community gardens. There are three community gardens in the neighborhood, refer to the Food Grocery Product Availability Map (see Neighborhood Plan). An unofficial garden is located at the Salvation Army, 3030 Darbo Drive. Another community garden is located on the 3000 through 3200 blocks of Saint Paul Avenue along the railroad tracks, off Milwaukee Street. Saint Paul Avenue is an organic garden with over 70 garden plots that is sponsored by the Goodman Center. The third community garden is located at the CDA apartment on the corner of Webb and Rethke Aves.

Farmer's markets are also valuable for providing healthy foods to communities. Within the neighborhood there is one farmer's market stand located at the Madison East Shopping Center in front of the Public Health office located near 2705 E Washington Ave, refer to the Food Grocery Product Availability Map (see Neighborhood Plan). There is currently only one vendor who sells fruits and vegetables weekly, on Thursdays from 11 am to 3 pm. Walgreens also sells fresh produce, though stakeholders mentioned that Walgreens' grocery is often more expensive than what is found in a typical grocery store.

#### 4.2.3 Trails

There is one main shared use path that runs through the neighborhood: the Starkweather Creek Path. The Starkweather Creek Path traces the waterway north from the Capital City State Trail through Madison's eastern neighborhoods. The scenic trail features two dedicated bridge crossings over busy E Washington Ave/US 151 and Aberg Ave/ WI 30. There is also a planned bike path along the rail line that runs through the neighborhood and one that runs from the old quarry/Voit Farm area, along the east edge of the neighborhood, and down to the Garver Feed Mill. See the Bicycle Facilities Map (see Neighborhood Plan) for existing and future bicycle facilities.

At the HIA focus group meetings it was mentioned that bicycling in the neighborhood is difficult; particularly due to a lack of bike infrastructure on roadways. One particular improvement that was suggested was at the intersection of Oak Street and Milwaukee Street. It was suggested that parking near the intersection makes turning difficult on a bike. Representatives from the biking community also mentioned that during heavy commute times, there are often traffic jams on the Starkweather Creek Path. Residents would also like to see art and/or community gardens along the Starkweather Creek Path within the neighborhood, to make biking through the neighborhood an aesthetic experience.

Stakeholders also mentioned that they would like to see a B Cycle (bike-sharing) station in the neighborhood, and one that offered tricycles so that persons of all abilities are able to ride, as there is not currently a station in the neighborhood. B-Cycle is operated by a private-for-profit organization. The closest B Cycle station is at the Olbrich Botanical Gardens. One suggestion that was made was to have a station at Woodman's. Another option that was mentioned was to create a free bike share program within the neighborhood.



#### 4.2.4 Public Transportation

Public transportation is an important mode of transportation for neighborhood residents. According to data from Healthy Dane, the DWS neighborhood is included in the lowest quartile compared to other Census Tracts in Dane County for the number of households without a vehicle (13% compared to an overall County value of 8%). During the study process, residents mentioned that using public transit (Madison Metro) can be stressful. In particular, physically getting to bus stops (i.e. lack of bike and pedestrian facilities, heavy traffic) and interpreting the bus schedule were said to be exasperating. It was also mentioned that riding the bus is expensive. Base fare is \$2 for a one-way trip, a 31 day pass for unlimited riding is \$65, and a 31 day low income pass is \$28. Medicare Riders are another group that is eligible for reduced fares.

The Madison Metro also operates a paratransit service for persons with disabilities who cannot access the public transit system due to their disability. Paratransit service covers the same area and hours as public transit. Paratransit fares are \$3.25 per ride and rides must be scheduled at least one day ahead of needed service.

The Madison Metro Public Transportation operates regular trips in both directions along E Washington Ave and Milwaukee Street every day (Routes #4, 5 and 6), see Bus Routes Map (in the Neighborhood Plan). There are some routes that made additional trips along these roads and along Aberg Ave/Wis 30 and Fair Oaks Ave. The nearest transfer point to the neighborhood is the East Transfer point. According to Google Maps, walking distance from the Salvation Army to the East Transfer point is approximately 1.2 miles. All of the regular routes within the DWS neighborhood go to the transfer point and make it possible for people to change buses and get to other parts of the City.

Travel times to other areas of Madison are not always convenient. For example, using a center point in the neighborhood as a starting location (intersection of Rethke Ave and Worthington Ave) it would take someone approximately 12 minutes total to get to Woodman's (with a total of half a mile of walking). This trip would take five minutes by car. To get to the East Towne Mall area, it takes approximately 23 minutes total (with a total of 0.7 miles of walking). The trip takes 10 minutes by car. A trip to Walmart takes approximately 30 minutes total (with 0.7 mi of walking). The trip would take eight minutes by car. Depending on where a person is going and if they have a certain time they need to go at, the Madison Metro can be convenient or it can be time consuming.

Figure 11 (Appendix B) shows the percent of all types of jobs reachable within 30 minutes by public transit. The majority of the DWS neighborhood has access to between 24% and 38% of all jobs within the City. This is a higher percentage than many of the outlying areas of the City, however it should be noted that the map does not take into account types of jobs and how qualified residents are for these jobs.

To get an idea of the job skills of people in the neighborhood, educational attainment can be used, see Table 2 below. Within the neighborhood, more people have a high school diploma (no higher degree) and an Associate's Degree as compared with the City of Madison. The number of those who have had some college, but no degree is also higher within the neighborhood than within the City of Madison (24.5% versus 18.7%). The number of those with Bachelor's Degrees and Graduate or Professional Degrees is lower in the neighborhood than within the City (40.6%

versus 51.6%). The group for which job availability may be most difficult is those with some high school but no degree. The number of those with some high school and no degree is slightly higher within the neighborhood than the City (1.5% versus 1.2%).

**Table 2. Educational Attainment**

*Source: 2009-2013 American Community Survey*

	<b>DWS Neighborhood</b>	<b>City of Madison</b>
<b>High School (no degree)</b>	1.5%	1.2%
<b>High School Graduate or Equivalent</b>	19.6%	18.1%
<b>Some College</b>	24.5%	18.7%
<b>Associate's Degree</b>	12.6%	8.9%
<b>Bachelor's Degree</b>	24.3%	28.4%
<b>Graduate or Professional Degree</b>	16.3%	23.2%

*Note: Margin of error exceeds 10% for all estimates in Table 2.*

#### 4.2.5 Access to Medical Facilities

A majority of the neighborhood has access to between one and seven basic healthcare providers (physicians, general medical/surgical hospitals and family planning centers) within 30 minutes by public transit during peak hour AM travel, see Figure 12 (Appendix B). There are some parcels on the south side of the neighborhood that have access to between eight and 21 providers. Access to medical facilities from downtown Madison and the Campus area is much better compared to the rest of the City, including the DWS neighborhood.

## 5. SOCIAL CONNECTEDNESS & EMPOWERMENT

### 5.1 CONNECTION TO HEALTH

Land use and urban design not only mold how our living spaces look, but also the feelings we have about a place and our behaviors. Land use patterns that encourage neighborhood interaction and a sense of community have been shown to reduce crime and also create a sense of community safety and security<sup>27</sup>. Neighborhoods that are walkable and have sufficient well-designed community gathering spaces will contribute to a positive sense of community. Neighborhoods with diverse and mixed land uses have the potential to create proximity between residences, workplaces and goods and services which reduces the number of vehicle trips and tends to increase the number of walking and biking trips<sup>20</sup>.

One study found that residents who live in neighborhoods with high walkability walked an average of 34-47 minutes a week more than residents in low-walkability neighborhoods. The study showed that for those living in highly-walkable neighborhoods, obesity rates were 35% lower than for those living in neighborhoods with low-walkability<sup>28</sup>.

In addition to providing the pedestrian facilities to make walking possible, having places for people to walk to is also important. Mixed uses can give people places to walk to (e.g. retail) which also increases the number of eyes on the street and can increase perceived safety within the neighborhood<sup>29</sup>. Industrial uses are typically undesirable in neighborhoods, and there are some within and adjacent to the DWS neighborhood. It is not uncommon for low-income, segregated neighborhoods to host unwanted land uses such as power plants, solid and hazardous waste sites, bus yards, and other similar uses<sup>30</sup>. This is not the case in the DWS planning area however E Washington Ave and Hwy 30 create physical barriers.

The social ties residents have in a neighborhood can also impact health. Strong social ties can encourage neighbors to work together to achieve common goals, exchange information and improve social cohesion. Communities where residents feel mutual trust and reciprocity have also been linked to lower homicide rates while neighborhoods lacking social cohesion and community wellness have been linked to higher rates of social disorder, anxiety, and depression<sup>31</sup>.

## 5.2 BASELINE CONDITIONS

### 5.2.1 Services and neighborhood events

Access to information about neighborhood services and neighborhood events in DWS is not available in one location, but can currently be found in several locations. Part of this is due to the fact that the study area is served by two neighborhood associations, one which appears to be more active than the other. Access to information about events and services is something stakeholders mentioned; people don't know what services are available to them and would like to see a list put together. These are some of the groups that hold neighborhood-wide events and currently publicly post information about their events:

1. SASY Neighborhood Association – information on events is found on a calendar on the neighborhood association's website (<http://www.sasyna.org/>). The group also has an email discussion group and monthly meetings. Meetings are held at the Goodman Community Center. Annual event highlights for the group include: Mad City Bazaar and the Neighborhood Winter Celebration and Summer Fest.
2. Worthington Park Neighborhood Association – information on events is found primarily on the Association's Facebook page and through an email group. The Neighborhood Association has a website (<http://worthingtonpark.org/>) that was last updated in July 2015. According to the City, this group is not currently active. Past event highlights for the group have included: Darbo-Worthington Block Party, Annual Picnic, Movie in the Park (sponsored by City of Madison Parks) and Art Cart (sponsored by Madison School & Community Recreation).
3. Salvation Army – information on events, programming and service is found on the Salvation Army's website (<http://www.salvationarmydaneconomy.org/>). The Salvation Army is used as a neighborhood gathering location though stakeholders believe the Salvation Army could be utilized more often. The Salvation Army is located at 3030 Darbo Drive.

4. Hawthorne Library – information on events and classes held at the library can be found on the Library’s website (<http://www.madisonpubliclibrary.org/hawthorne>). The library is also used as a neighborhood gathering location. The library is located at 2707 E Washington Ave in the Madison East Shopping Center.
5. Eastside Planning Council (EPC) – information on EPC’s events is found on a calendar on the group’s website (<http://www.madisoneastside.org/sample-page/>). EPC’s mission is to support neighborhood-based organizations and facilitate community-driven planning efforts. Past events on EPC’s calendar have included neighborhood association meetings and a sustainable potluck. EPC is located at 1202 Northport Drive.
6. Goodman Community Center – information on the Goodman Community Center’s events is found on their website (<http://www.goodmancenter.org/>). The Goodman Community Center offers a variety of programs, services and events that benefit the neighborhood including early childhood education, after-school programs, fitness center, food pantry, catering, etc. The facility is located at 149 Waubesa Street.
7. East Madison Community Center – information on events can be found on the Community Center’s website (<http://www.eastmadisoncc.org/>). The East Madison Community Center offers programs for adults and children including senior programs, food pantry, parenting classes, teen development, after-school care, etc. The facility is located at 8 Straubel Court.
8. Friends of Starkweather Creek – information on events can be found on the group’s website (<http://starkweatherfriends.org/>). The Friends of Starkweather Creek covers the Starkweather Creek watershed and also includes parts of the Towns of Madison, Burke & Blooming Grove. The Friends group is dedicated to raising public awareness and appreciation of the creek through education and outreach. The Friends group has hosted clean-up days, nature outings and work day events in the past.

Additional events that are held in the neighborhood include the following (if a sponsor is known, that is also noted):

- Make Music Madison (Make Music Madison is a 501 (c)(3))
- Bike Rodeo (Madison Police Department)
- Annual meeting and potluck
- Pickup soccer
- Reger Park Picnic
- Reger Park monthly potlucks

Other groups that offer events, services and programming to neighborhood residents include:

- Madison School and Community Recreation (MSCR) – provides public recreation opportunities for Madison adults and youth (e.g. sports, camps, fitness aquatics).
- Lowell Elementary School – hosts events such as End of School/Back to School parties, Black History Celebration, etc.

Many residents expressed a desire for more neighborhood events. People generally feel that holding more events would help establish the neighborhood as a revitalized destination and improve social cohesion. Residents would like to see a jazz festival at Worthington Park with food carts, a multi-ethnic festival with street fair and booths or something similar to the annual Juneteenth Day Celebration hosted by the Kujichagulia-Madison Center for Self-Determination, Inc.

In addition to the Salvation Army, other community-based organizations include Joining Forces for Families and Mentoring Positives. Joining Forces for Families addresses the needs of families and children. Specifically they respond to basic needs such as food, clothing, shelter, housing and transportation and more personal and family needs such as mental healthcare, after-school care, peer mediation, and alcohol and other drug abuse help. Mentoring Positives is a referral-based mentoring program that offers positive programs for elementary through high school aged boys and girls. Mentoring Positives is based on the 40 Developmental Assets for Adolescents, developed by the Search Institute of Minnesota. The organization focuses on entrepreneurial skills such as the current salsa program where youth grow, make and sell their salsa in local stores.

### 5.2.2 Land Use

Within the study area there are approximately 14.1 acres of land (7% of the total acreage of the neighborhood) designated for industrial use. This land is located primarily south of the rail line. Just outside of the neighborhood boundary there are additional areas designated for industrial uses, see Existing Land Use Map (found in Neighborhood Plan). The rail line and community gardens separate the northeastern portion of the neighborhood from the old quarry/Voit Farm area. The Kipp-Madison industrial property (located at 201 Waubesa Street) is surrounded by commercial, single-family residential and vacant land. Within the City's Comprehensive Plan, the only area in the neighborhood designated as an industrial district in the future is the Kipp-Madison Property. See City of Madison Comprehensive Plan Map (found in Neighborhood Plan).

Another 15 acres (7% of the total acreage) is currently used for institutional purposes (the Salvation Army and Department of Corrections (DOC)). The DOC is surrounded by single-family residential, multi-family residential and some commercial and vacant land. The City's Comprehensive Plan designates the DOC as an employment center. According to residents, during rush hour in the morning, traffic inflow to DOC creates a lot of congestion in the area and DOC employees park on the streets in the neighborhood which creates additional congestion, particularly on Rosemary Ave.

Within the neighborhood, land uses are generally more intense along the E Washington Ave corridor. Land uses along E Washington Ave include commercial, a few parcels of single-family residential, vacant land and institutional. This area is designated as community mixed-use in the future. The remainder of the neighborhood is primarily designated as low density residential (0-15 units/acre) in the future. The area directly south of the DOC is designated as medium density residential (16-40 units/acre). There are several other areas within the neighborhood designated as future neighborhood mixed use and community mixed use.

### 5.2.3 Poverty Rate

According to 2010 Census data, median household income in the neighborhood was \$39,338 compared with \$61,074 in the City of Madison. Median family income in the neighborhood was \$42,491 compared with \$80,347 in the City of Madison. Median per capita income in the neighborhood was \$25,597 compared to \$33,334 in the City of Madison. The differences in household income between the City and the neighborhood are likely attributable to the higher prevalence of single-headed households within the neighborhood and education disparities.

According to 2013 ACS data, 315 households (15%) within the neighborhood had income below the poverty level in the last 12 months. This is slightly lower than the percentage of households with income below the poverty level for the entire City at 16%. The total number of female householders with income below poverty level in the last 12 months was 121 households (6%). This is double the percentage of female householders with income below poverty level in the City at 3%. The neighborhood has historically had a high number of single-headed family households. Thirteen percent of non-family households in the neighborhood are female householders (compared to 8% of the City) and 9% are female householders with own children under 18 years old (compared to 5% of the City). A female householder includes females maintaining a household with no other householder present. According to Healthy Dane, the DWS neighborhood is included in part of the lowest quartile for percentage of single parent households compared to Dane County (48% compared to an overall County value of 29%).

The poverty level in the neighborhood is similar to the City of Madison, except when it comes to female householders, in which case the poverty rate is higher than in the City. According to [Healthy Dane](#), the DWS neighborhood is included in the worst quartile compared to Dane County for the percentage of children living below poverty level (30% compared to an overall County value of 14%).

## 6. ENVIRONMENTAL & BUILT CONDITIONS

### 6.1 CONNECTION TO HEALTH

The built environment can have a profound impact on health. The homes people live in, the roads they live by and the types of buildings in the neighborhood all play a part in shaping the built environment. Access to nature and open space also plays a role in mental and physical health by providing places we can go for relaxation and recreation and trees in open spaces make the air that we breathe cleaner.

Frequent exposure to poor air quality has regularly been associated with an increased risk of heart disease, stroke and lung cancer<sup>32, 33, 34</sup>. Those at highest risk are the elderly, individuals with pre-existing respiratory diseases, individuals with low socioeconomic status and those with diabetes<sup>32</sup>. Prolonged exposure to high levels of particulate matter has been associated with a higher risk of hospitalizations and death due to heart issues including heart attack, stroke, arrhythmias, and heart failure<sup>33,34</sup>.

Asthma can be triggered or made worse by air pollution<sup>32</sup>. However it is still under investigation whether air pollution can actually cause asthma<sup>35</sup>. According to the CDC, low-income populations, minorities and children living in inner cities are disproportionately at a higher risk for asthma<sup>36</sup>. Research suggests this is caused by factors such as differences in access to medical care, disease management, and exposure to

asthma triggers, including indoor and outdoor air pollution<sup>37</sup>. In addition, recent studies link proximity to high traffic roads with adverse health effects in children and adults. Most research has focused on the association between exposure to small particulate matter and an increased risk for respiratory effects, like childhood asthma, or cardiovascular issues in adults, such as heart attacks<sup>38, 39, 40, 41</sup>. Increased asthma hospitalizations have also been associated with living within 650 feet of heavy car and truck traffic<sup>42</sup>.

Soil contamination is also a factor that can cause health issues in a community and slow the pace of redevelopment due to the challenges associated with remediating a contaminated site. Depending on the type and level of contamination, a particular brownfield site can threaten air or drinking water quality<sup>43</sup>. It is important to redevelop brownfield sites, when possible, because of the potential environmental, economic, and social benefits they can bring. Cleaning up brownfields and removing contamination can reduce health risks, and the economic life restored to these sites could create jobs and bring in tax dollars. It has been suggested that brownfield redevelopment can improve environmental justice<sup>43</sup>.

Water quality is another environmental concern that was expressed by stakeholders. Water quality is largely impacted by our built environment. Urban areas typically have more impervious surfaces which means that water does not have a chance to be filtered as it flows from the ground to nearby bodies of water. This unfiltered water can carry sediment, chemicals, and other toxic substances that affect human health and also the health of wildlife and aquatic life<sup>44</sup>.

Home, a place where people spend many hours, can also impact health. A lack of affordable housing within communities may compromise the health of low-income residents since they spend more on housing costs and less on other health needs. It can also put residents at greater risk of exposure to problems associated with poor-quality housing (mold, pests, lead, etc.), and cause stress and other adverse health outcomes as a result of potential housing instability<sup>45</sup>. Lead paint in homes can lead to lead poisoning, which can cause learning disabilities, seizures, and even death<sup>46</sup>.

In addition to encouraging exercise, which serves to decrease obesity, it has been suggested that having view of and access to natural vegetation in an urban environment reduces socially unacceptable behavior and crime, increases concentration and is associated with few behavior problems in children<sup>47</sup>. Physical activity also reduces the risk of premature death, heart disease, hypertension, colon cancer, and diabetes mellitus<sup>48</sup>.

Noise pollution is another element that affects both health and behavior. Research evidence suggests adverse effects on children's ability to learn due to chronic exposure to noise<sup>49</sup>. Health studies also suggest a higher risk of cardiovascular disease when people are exposed to high levels of noise from road or air traffic noise<sup>49</sup>. Stress from noise affects biological risk factors such as blood pressure, fats and sugar levels, and blood flow. People who experience these factors have a risk of high blood pressure, hardening of the arteries and heart attacks<sup>49</sup>.



## 6.2 BASELINE CONDITIONS

### 6.2.1 Air Quality

One of the more recent air pollution issues within the neighborhood has been with Madison-Kipp (adjacent to the DWS neighborhood) which produces precision machined components and system subassemblies for transportation and industrial end markets and has been in the neighborhood since 1903. Recently the company has paid settlements to residents related to pollution from the site. Kipp has also provided pollution control systems for homes near the plant and replaced and cleaned the top foot of soil of the 32 homes closest to the plant<sup>50</sup>. Mitigation systems have been put into several homes to prevent the vapors from getting into the indoor air. The DNR has concluded that exposure to nearby residences is primarily through vapors. It is possible these vapors can lead to an increased risk of cancer according to WDNR<sup>51</sup>.

According to neighborhood residents there are still discussions occurring since the EPA has released more recent air quality standards for fine particles (PM<sub>2.5</sub>) for which Kipp does not conform and which would require them to install upwind and downwind continuous air quality monitors. According to the CDC, breathing in fine particles is dangerous because they are small enough they can get into the deep parts of your lungs and possibly into your bloodstream. Particle pollution has been linked to eye irritation, lung and throat irritation, trouble breathing, lung cancer and problems with babies at birth (e.g. low birth weight), according to the CDC.

There is an air quality monitoring station located near the neighborhood at 2302 Hoard Street (Madison East High School). The purpose of this monitoring location is to determine population exposure to elevated pollutant levels of ozone and PM<sub>2.5</sub> (fine particulate matter). Based on WDNR's most recent Wisconsin Air Quality Trends report (2015)<sup>52</sup>, the Madison East site does not currently have enough years of data to meet the criteria to compare its readings to US National Ambient Air Quality Standards (NAAQS). Using the data from only the monitoring site on the west side of Madison (University Avenue), Dane County is under NAAQS for PM<sub>2.5</sub> and ozone.

### 6.2.2 Water Quality

Starkweather Creek runs through the study area, see Figure 13 (Appendix B). The Wisconsin Department of Natural Resources (WDNR) lists Starkweather Creek (which is part of the Yahara River and Lake Monona Watershed) as an impaired waterway due to chronic aquatic toxicity, low dissolved oxygen, acute aquatic toxicity and degraded habitat. Pollutants include unspecified metals, chloride, sediment/Total Suspended Solids (TSS) and biochemical oxygen demand. According to WDNR, until the early 1970's, industries directly dumped huge amounts of toxic waste into the Creek (point source pollution). Industries no longer directly discharge into the Creek, however some of the older industrial sites in the area are still causing water quality problems for the Creek. And within the watershed, most of the wetlands that once existed have been developed and are no longer able to filter and clean water that flows into the Creek. The DNR states the lower branch of Starkweather Creek is where stormwater from the east side of Madison goes to<sup>53</sup>. The lack of filtration stormwater receives before it enters the Creek is one of the reasons Starkweather Creek currently has high chloride and TSS.

High phosphorus levels lead to a reduction of dissolved oxygen in waterways, which is important for aquatic organisms. Based on water quality data collected by the Department of Public Health at the airport and at Fair Oaks Ave during 2015 and 2016, phosphorus samples from Starkweather Creek ranged from .0404 to .199 mg/L. According to § NR 102.06, Wis. Adm Code, the phosphorus limit for streams in Wisconsin is .075 mg/L. Starkweather Creek exceeded this limit for 60% of the samples taken. The Creek is listed by the WDNR as a warm water fishery. Warm water fish survive best with 5 mg/L of dissolved oxygen. Dissolved oxygen levels in Starkweather Creek ranged from 2.5 to 11.8 mg/L. Starkweather Creek was below or above 5 mg/L for 58% of the samples during 2015 and 2016.

Chloride levels in Starkweather Creek ranged from 26.7 to 96.0 mg/L. The US Environmental Protection Agency (EPA) lists 230 mg/L as a desired maximum chloride level. Starkweather Creek has not reached this level, but chloride is becoming an increasing concern as it is nearly impossible to remove from water. This is particularly of concern in Wisconsin due to road salt use during the winter. This water quality data is summarized in Table 3 below.

**Table 3. Starkweather Creek Water Quality Sampling**

*Source: Wisconsin Department of Public Health, Wisconsin Department of Natural Resources, US Environmental Protection Agency*

<b>Water Quality Sampling Measure</b>	<b>Starkweather Creek Values</b>	<b>Desired Value</b>	<b>Importance</b>
Phosphorus	.0404 - .199 mg/L	.075 mg/L (Starkweather Creek exceeded this measure for 60% of 2015-2016 samples)	Excess phosphorus increases aquatic plant and algae growth which reduces dissolved oxygen. This can be harmful to aquatic life and plants and can impede opportunities for recreation.
Dissolved Oxygen	2.5 to 11.8 mg/L	5 mg/L for warm water fisheries (Starkweather Creek was below or above this measure for 58% of 2015-2016 samples)	Dissolved oxygen levels that are too high or low can stress and kill aquatic life and plants.
Chloride	26.7 to 96.0 mg/L	Maximum of 230 mg/L (Starkweather Creek was below this measure for 100% of 2015-2016 samples)	High chloride levels can be harmful to aquatic wildlife and plants as well as drinking water supply. Chloride is extremely difficult to remove from water.

As of July 2016, City Engineering is exploring how to filter stormwater before it enters Starkweather Creek. A proposed project would potentially turn an existing quarry pond (North of Milwaukee St and East of Starkweather Creek-just outside of the study area boundary) into a settling pond. Water would be diverted from the stream where a coagulant would be added before the water reaches a settling pond. The treated water would then be returned to the Creek<sup>54</sup>. The project also identifies a portion of the site for conversion to public parkland with a canoe launch and trails overlooking Starkweather Conservation Park marsh to the east.

### 6.2.3 Soil Contamination

Figure 14 (Appendix B) shows there are two open sites that have soil contamination within the neighborhood (McDonalds Restaurant and Capital Petroleum). There are several other open contaminated sites nearby including the Josef Property (former), Madison-Kipp Corporation and Madison City – Garver Feed Mill sites.

The McDonalds site (3051 E Washington Avenue) has been identified as a contaminated site by the DNR since 2008 when notification was first sent to the owners. Contaminants at the site include petroleum and VOCs. A recent update from the DNR indicates there has been no activity on the site and they are waiting for a redevelopment plan to conduct soil remediation. The site is eligible for the Petroleum Environmental Cleanup Fund Award which provides reimbursement of eligible expenses for the investigation and cleanup of petroleum contamination from product storage systems.

The Capital Petroleum site (3019 E Washington Ave) has been identified as a contaminated site since 2008 when notification was first sent to the owners. Contaminants at the site include VOCs. A recent update from the DNR indicates that there has been no activity due to no contract with the responsible party. This site is not eligible for PECFA funds.

As mentioned previously in the report, the Madison-Kipp Corporation site (201 Waubesa St) is of concern to stakeholders, although it is not located within the study area boundary. The Madison-Kipp site has been listed as a contaminated site since 1983 due to VOCs and PCBs. As of now, the DNR, Public Health-Madison & Dane County and Wisconsin Department of Health Services have determined that the primary risk of exposure to residences is from contamination through vapor intrusion; drinking water in area homes has been determined to not be affected by the soil contamination.

Open and closed sites are shown in Table 4 and Figure 14 (Appendix B). Environmental cleanup has been completed for all closed sites. However, for some of the closed sites residual soil and/or groundwater contamination are still above environmental standards even after cleanup. If contamination remains after remediation, closed sites are required to be managed according to applicable environmental laws and rules.

**Table 4. Contaminated Sites within DWS Neighborhood***Source: Wisconsin Department of Natural Resources – RR Sites Map & BRRS on the Web*

Site	Status	Contaminants	Impacts	Eligible for Petroleum Environmental Fund Award?
McDonalds (3051 E Washington Ave)	Open	-Petroleum -VOCs	-Soil Contamination	Yes
Capital Petroleum (3019 E Washington Ave)	Open	-VOCs	-Soil Contamination	No
Madison-Kipp Corporation (201 Waubesa St) (adjacent to DWS neighborhood)	Open	-VOCs -PCBs	-Soil Contamination -Groundwater Contamination	No
American Family Insurance (3099 E Washington Ave)	Closed	-not listed	-Soil Contamination	No
Easton Square Condominiums	Closed	-not listed	-Soil Contamination	Yes
Mobil #05-EGN	Closed – some contamination remains	-Petroleum -Unknown Substance	-Groundwater Contamination -Soil Contamination	Yes
Krishnaiah Properties (3003-3015 E Washington Ave)	Closed – some contamination remains	-VOCs -Petroleum -Metals	-Groundwater Contamination -Soil Contamination	No
Walgreens (2909 E Washington Ave)	Closed	-Petroleum	-Soil Contamination	No
Classic Cleaners (2701-2829 E Washington Ave)	Closed – some contamination remains	-VOCs	-Groundwater Contamination	No (received Dry Cleaner Environmental Response Fund Grant)
Madison East Shopping Center (2701-2829 E Washington Ave)	Closed – some contamination remains	-Petroleum	-Free Floating Product -Groundwater Contamination -Soil Contamination	No
Brookins Management Co (2617 E Washington Ave)	Closed	-Petroleum	-Soil Contamination	No
Madison Metro Bus Barn (166 S Fair Oaks Ave)	Closed – some contamination remains	-Petroleum	-Soil Contamination	Yes
Consolidated Paving Co (Gateway St)	Closed	-not listed	-Soil Contamination	No
Four Lakes Paving (3030 Gateway Place)	Closed – some contamination remains	-Petroleum	-Soil Contamination	Yes

Site	Status	Contaminants	Impacts	Eligible for Petroleum Environmental Fund Award?
Starkweather Creek & Maly Rd (Starkweather Creek & Maly Rd)	Closed	-not listed	-Soil Contamination	No
Seversins Unocal 76 (3401 Milwaukee St)	Closed – some contamination remains	-Unknown Substance -Petroleum	-Free Product -Groundwater Contamination -Soil Contamination	Yes
Triangle Super Service (3200 Milwaukee St)	Closed – some contamination remains	-Petroleum	-Soil Contamination	Yes
McCormick Lumber (3156 Milwaukee St)	Closed	-Petroleum	-Groundwater Contamination -Soil Contamination	Yes
McCormick Lumber (3156 Milwaukee St)	Closed	-not listed	-Groundwater Contamination -Soil Contamination	No
Headley Home Care Medical Supplies (3030 Milwaukee St)	Closed – some contamination remains	-not listed	-Soil Contamination	Yes
Klein Property (3029 Milwaukee St)	Closed – some contamination remains	-not listed	Soil Contamination	Yes

#### 6.2.4 Housing Affordability

Figure 15 (Appendix B) shows the percent owner-occupied households paying 30% or more of their income on mortgage for the entire City. Within the neighborhood, between 28.3% and 47.2% of owner-occupied housing units are paying 30% or more of their incomes on mortgage. The number of people within the neighborhood paying 30% or more of their income in mortgage is similar to most of the east side of Madison. The west side tends to have a lower percentage of homeowners paying 30% or more of their incomes in rent (between 18.0% and 28.2%). The only area in Madison with residents paying between 47.3% and 100.0% of their incomes as rent are two census blocks on campus downtown, primarily due to the large student population.

Fifty-three percent to 65.3% of renter-occupied housing units are paying 30% or more of their incomes on rent. Figure 16 (Appendix B) shows the number of renter-occupied households paying 30% or more of their income on rent. The number of people within the neighborhood paying 30% or more of their income in rent is similar to several other pockets within the City such as directly south of the UW-Madison campus, south of Lake Monona, South of the East Towne Mall, west of the airport and the far west side of the City of Madison. The largest area where 65.4% to

100.0% of renters are experiencing cost burden is again surrounding the campus area, and this is primarily driven by the large student population.

Median contract rent in the neighborhood is \$702 compared to \$856 in the City of Madison. Median value of owner occupied units in the neighborhood is \$161,000 compared to \$238,765 in the City of Madison. Although rents and homes are less costly in the neighborhood as compared to the City, the incomes of the people living in the neighborhood are lower, thus the housing units are not any more affordable to residents in the neighborhood than what the overall City of Madison is experiencing as evidenced by the high numbers of households paying 30% or more of their incomes on rent and mortgage.

#### 6.2.5 Age of Housing

The age of housing in the neighborhood is generally older (pre-1971) as evidenced by the lighter colors shown in the Age of Housing Stock Map (found in the Neighborhood Plan). This data is similar to what is found on Healthy Dane. According to data from Healthy Dane, the DWS neighborhood is included in part of the worst quartile for the number of houses built prior to 1950 compared to Dane County (68% compared to an overall County value of 16%). A concern with older homes is that they likely contain lead-based paints which are hazardous for children. Lead-based paint was banned for use in 1978 but any homes built prior to this year, likely contain lead-based paint. Another issue with older housing is that is not set up to accommodate older adults who may not be able to move around as they used to. This is a concern that was brought up at the focus group and open house meetings. Homes need things such as grab bars in bathrooms, washers and dryers moved to first floors, ramps leading up to the house, etc. to remain accessible for older adults who wish to age in place. Approximately 7% of the neighborhood is age 65 or older compared with 10% in the City of Madison.

#### 6.2.6 Vacant/Underutilized Parcels

The Existing Land Use Map (found in the Neighborhood Plan) shows several parcels that are vacant in the neighborhood, a total of 10.4 acres. The improvement of underutilized and vacant locations in the neighborhood is something that the groups discussed at focus group meetings. Specific locations that were mentioned included:

- Salvation Army parking lot at 3030 Darbo Drive
- Three lots on E Washington Ave Frontage Road
- Voit Farms
- Fair Oaks

#### 6.2.7 Parkland

Within the neighborhood planning area there are five parks (Parks and Open Space Map found in the Neighborhood Plan):

- Worthington Park -a 5.1-acre neighborhood park located at 3102 Worthington Ave. Facilities include drinking water, basketball court, an open field, picnic shelter and playground.
- Thurber Park 1.93-acre– located in the Town of Blooming Grove on Thurber Ave. Facilities include a picnic shelter, playground and open field.
- Dixon Greenway – a 3.2-acre open space area located at 2977 Milwaukee Street with no park facilities.
- Wirth Court Park – a 1.9-acre mini park located at 2801 Saint Paul Ave. behind the Goodman Community Center. Park facilities include drinking water, a basketball court and playground.
- Reger Park - a 1.0-acre mini park located at 201 Oak Street. Facilities include a playground.

In total there are approximately 13.1 acres of park within the neighborhood and all households in the neighborhood are within a half mile distance from a park. The number of parks in a neighborhood is important, and so are the facilities the parks offer. Neighborhood parks, such as Worthington Park, typically offer shelter facilities, grills, basketball courts, ball diamonds, lighting and toilet facilities. Residents mentioned they would like to see a ball field in the neighborhood. At the focus group meetings it was also mentioned that Worthington Park could use more lighting and that people loiter in the park, which deters potential park users.

#### 6.2.8 Noise

Figure 17 (Appendix B) indicates Day-Night Sound Level (DNL) which is based on sound levels that US EPA defines as an average day/night sound level. Areas within the 65, 70 and 75 DNL noise buffers are most impacted by traffic generated noise. The south and west portions of the neighborhood appear to be impacted most by sound from truck traffic. Neighborhood residents overall do not appear as impacted by noise from car traffic along E Washington Ave since much of this area is commercial. The Town of Blooming Grove and the residential area surrounding Milwaukee Street and South Fair Oaks Avenue appear to be impacted by noise from car traffic.

## 7. DIRECT MEASURES OF HEALTH

As discussed in the forward, the indicators discussed so far are all indirect measures of health that can only be linked by correlation to improved health outcomes. This section discusses direct measures of health which directly lead to a person being considered healthy or not. The direct measures of health that follow have been linked through the previous subsections titled “Connection to Health”. For instance, air pollution is greater near highly trafficked roads and people living near busy roads tend to have higher asthma rates. Asthma rates are a direct measure of health. It is also important to note that it takes many measurable indicators to give a full picture of health, so we would always like to have more data if possible. The measures we had access to for this report include asthma rates, childhood obesity and type 2 diabetes rates.



### 7.1 ASTHMA RATES

Within the neighborhood, the percentage of those who have asthma is between 13.1% and 14.0%, see Figure 18 (Appendix B). All of the neighborhoods adjacent to the study area have similar asthma rates. On the east side of Madison, asthma rates are highest (14.1% to 17%) surrounding the Dane County Regional Airport and Madison Area Technical College, which are both less than a ten minute drive from the DWS neighborhood. The south side of Madison also experiences high rates of asthma. According to data from Healthy Dane, the percentage of DWS neighborhood adults with current asthma is the same as the US overall (9%).

### 7.2 CHILDHOOD OBESITY

Within the neighborhood, the percentage of overweight and obese youth (ages 2-17) is between 18.1% and 22%, see Figure 19 (Appendix B). Compared to the City of Madison as a whole, this percentage is relatively low.

### 7.3 TYPE 2 DIABETES

Within the neighborhood, the percentage of the population with Type II Diabetes that is age 18 and older is between 3.9% and 6.6%, see Figure 20 in Appendix B. Compared to the City of Madison as a whole, this is relatively low. According to data from Healthy Dane, the percentage of DWS neighborhood adults with diabetes is lower than the US overall (6% versus an overall US value of 11%).

## 8. HEALTH IMPACTS & RECOMMENDATIONS

Based on review of the City's recommendations in the draft Neighborhood Plan, the following section discusses the predicted impacts of those recommendations as well as additional recommendations that should be considered to improve health outcomes in the DWS neighborhood. Two summary tables describing these impacts and suggested improvements to the Neighborhood Plan's recommendations are in Appendix C. The first table is based on recommendations included in the first draft of the Neighborhood Plan. The second table includes elements that were not mentioned in the first draft of the Neighborhood Plan. Both tables assesses the impact of each recommendation and break them into short-, mid- and long-term recommendations. At the end of this section there is also a table that contains funding opportunities that could be used to implement recommendations discussed in the HIA and Neighborhood Plan.

### 8.1 SAFETY

#### 8.1.1 Neighborhood Plan Recommendations to Improve Safety

The recommendations in the Neighborhood Plan that suggest strengthening relationships between the police and neighborhood as well as police and City staff will likely have a positive impact on safety in the neighborhood. The Plan recommends emphasizing the importance of reporting suspicious activities to the police which is an issue in the neighborhood due to fear of being labeled a "snitch". The Plan also recommends the consideration of turning crime reduction strategies proposed by residents into Madison Police Department initiatives. This will enable neighborhood residents to be active participants in crime reduction in the neighborhood. It is also recommended that areas with low

lighting be identified and assessed for whether or not they need additional street lights, tree trimming or other measures. Crime Prevention through Environmental Design (CPTED) is also recommended. CPTED principles guide the design of individual sites (e.g. using a single, clearly identifiable, point of entry to clearly differentiate between public and private space) and larger infrastructure features (e.g. designing streets to increase pedestrian and bicycle traffic which increases natural surveillance). Increasing communication between police and city staff about problem areas in the neighborhood will help direct the City to make CPTED improvements where needed and also direct additional resources to the neighborhood as needed.

#### 8.1.2 Additional Recommendations to Consider to Improve Safety

Continuing to build the relationship between police and neighbors is critical. It is also recommended that the neighborhood and police department consider implementing an outreach program to encourage crime reporting such as the “You Bet I Told” campaign in Rochester, NY<sup>55</sup>. The Madison Area Crime Stoppers anonymous call, text and online options for reporting crimes should also be promoted within the neighborhood as a safe place for residents to contact if they witness crimes (*Recommendation #22*).

Residents can also play an active role in improving safety. During the summer of 2016 the Union Triangle neighborhood (bounded by Milwaukee Street to the south, Clyde Gallagher Road to the east and E Washington Ave) worked with the Police Department to implement a Neighborhood Watch Program. The DWS neighborhood should consider building upon this effort and expanding it throughout the entire neighborhood. The neighborhood could also consider organizing neighborhood volunteer projects (similar to what was recommended in the Portland, OR HIA<sup>56</sup>). Currently the neighborhood holds a Starkweather Creek cleanup, but could also consider events that help people paint or repair their homes or add art to a public space (*Recommendation #38*).

As it relates to safety, residents are specifically concerned with crime and loitering at the Mobil Station at 3019 E. Washington Ave. The City should work with the store owner and prioritize replacement of security cameras at the gas station. The City should consider setting up a security camera system that would allow police to view direct feed, similar to the Detroit Police Department’s Project Green Light<sup>57</sup>. The City, in collaboration with the neighborhood and residents, should aggressively enforce existing laws and ordinances on the property to improve safety and work with the property owner to incorporate CPTED (*Recommendation #38*) Some examples could include:

- Ensuring cashier windows are free from any signage or product racks
- Remediating any areas where loitering can easily occur
- Maintaining exterior lighting
- Keeping area outside of store clean

During the stakeholder input sessions, the following areas were suggested as needing additional street lighting: Reger Park, Dixon Greenway, Wirth Court Park, intersection of Darbo Drive and North Marquette Street, and adjacent to the Mobil Station. The City should include these locations when determining where additional street lighting is needed (*Recommendation #22*).

## 8.2 MOBILITY & ACCESSIBILITY

### 8.2.1 Neighborhood Plan Recommendations to Improve Mobility & Accessibility

One of the most common themes that came out of the HIA stakeholder public involvement was the ability of people to move through and between the neighborhood and surrounding areas. Overall the Neighborhood Plan's recommendations for pedestrian amenities are likely to have a positive impact on the neighborhood. Repainting crosswalks, installing new crosswalks, completing sidewalk connections and rapid flash beacons all serve to improve the safety of pedestrians and increase mobility, though some of these techniques will be more effective than others. In particular, repainting crosswalks on E Washington Ave and Milwaukee Street may not be adequate to improve pedestrian safety.

Adding biking facilities will also improve bicycle access and facilitate biking for those who are traveling within and through the neighborhood. Adding walking and biking facilities alone will not increase the number of people who walk and bike, so the Plan also recommends the promotion of biking and walking by establishing regular bike skills education activities, identifying and promoting safe routes to school and helping to facilitate the distribution of lower cost bikes to residents. In addition the plan recommends identifying potential locations for B-Cycle stations and establishing subsidized memberships for low income residents. All of these recommendations will help make biking accessible to everyone.

The Plan recommends evaluating a potential Metro connection from the Eken Park Neighborhood into the Darbo-Worthington Neighborhood, possibly along extended N. Marquette St. The Eken Park Neighborhood is roughly bounded by Aberg Avenue/ WI 30, E Washington Avenue/US 151, Packers Avenue and North Street. This new connection would improve residents' access to Pick 'n Save where they can shop for fresh, healthy food. The Plan also recommends assessing the need for a bus stop in the Town of Blooming Grove along Fair Oaks Ave as there are currently no regular Metro routes that run through the portion of the Town in the DWS neighborhood.

One of the biggest issues that was brought up during stakeholder interviews and public open house meetings was access to healthy food. To address this the Neighborhood Plan recommends supporting and expanding community gardens and establishing a farmers market in or near the DWS neighborhood that is affordable and accessible for everyone. There will also hopefully be a grocery store going in near the neighborhood at the Union Corners development. The developer is currently in discussion with a few grocers who are interested in locating at the site. Union Corners also offers a health clinic, affordable housing and retail development on the formerly vacant two-block site along E Washington Avenue, Milwaukee Street and Winnebago Street.

### 8.2.2 Additional Recommendations to Consider to Improve Mobility & Accessibility

The plan's recommendations for pedestrian facilities could be enhanced by adjusting signal timing to increase the time pedestrians have at crosswalks (*Recommendation #1*). Stakeholders mentioned frequently that E Washington Ave is very difficult to cross due to inadequate crossing time and poor visibility of pedestrian median refuges. The Neighborhood Plan's recommendation to install a pedestrian flashing beacon at

Milwaukee Street/Starkweather Creek Path will likely be a helpful recommendation, however it should be a lower priority than improvements along E Washington Ave (*Recommendation #3*).

As far as specific improvements to trails, the City should consider restricting parking further north on Oak Street where it intersects with Milwaukee Street as this intersection can pose a hazard for turning bikes, according to stakeholders (*Recommendation #42*). Additionally, activities to promote biking in the neighborhood could be bolstered by the establishment of a free bike share program. The River Riders in Wisconsin Rapids is one example of a free bike share program that the City should research and could replicate<sup>58</sup>. To establish a free bike share program the City should meet with stakeholders who may be interested and work towards identifying a champion to lead the effort. For more information on how to implement a free bike share program, the City should reach out to the Department of Public Health in Wood County for development and implementation information (*Recommendation #7*).

The Neighborhood Plan already recommends identifying potential locations in the planning area for B-Cycle stations. Based on stakeholder feedback the City should contact B-Cycle Madison to suggest evaluating Woodman's as a potential location for B-Cycle and consider adding a tricycle option for those who are physically unable to ride a bicycle (*Recommendation #7*). To improve the existing Starkweather Creek Path for both bikers and pedestrians, the City should consider installing murals and art along the path to improve aesthetics and enhance the user experience. These elements should be similar to what is being proposed at the Madison East Shopping Center (*Recommendation #6*).

More specific recommendations for the farmers market include having multiple vendors and ensuring they are committed to showing up at the same times/days of the week. The neighborhood could consider replicating the seasonal, weekly Wednesday Capitol View Farmers Market in Madison's Grandview Commons neighborhood which also includes several food trucks. As far as venue for the farmers market, the neighborhood could consider using a park within DWS or developing a flexible market space that can be used by a variety of goods, services and events within the neighborhood (*Recommendation #25*). Additional recommendations for the community gardens include advertising the gardens (through brochures, flyers) and providing details about who to contact if residents are interested in garden plots (*Recommendation #27*).

If a grocery store locates at Union Corners, it should bring healthy, fresh foods into the neighborhood. After a grocery store has been established, the City should take a step back to consider its impact on the neighborhood: Is the food affordable to all? Is the grocery store easy for DWS residents to get to? If the answers to these questions are 'no', the City should work with the existing convenience stores and gas stations in the neighborhood to improve the selection and price point of non-packaged foods that they offer (*Recommendation #41*). The City has recently added several incentives to increase access to health foods:

- Healthy Retail Access Program – projects must be located in areas designated on the 'Food Access Improvement Map'. The DWS neighborhood is located in a target area. Funds are available for projects that improve access to affordable, healthy foods at retail locations.

- SEED Grants – funds are given out by the Madison Food Policy Council to projects that make local foods more accessible.
- Edible Landscapes – the City accepts applications to plant fruit, nut, vegetable and other edible species on city-owned land.

The City could consider increasing incentives for retail stores to offer affordable, healthy food. One option to consider is implementing a “healthy corner store retail program” similar to what was implemented in the City of Philadelphia (<http://thefoodtrust.org/what-we-do/corner-store>). This program increases the availability and awareness of healthy foods in corner stores through: increasing store capacity to sell and market healthy items, hosting in-store nutrition education classes, linking corner store owners to community partners and local farmers, and providing training for store owners on how to make healthy changes profitable (*Recommendation #41*).

### 8.3 SOCIAL CONNECTEDNESS & EMPOWERMENT

#### 8.3.1 Neighborhood Plan Recommendations to Improve Social Connectedness & Empowerment

The Neighborhood Plan suggests strengthening neighborhood associations and other neighborhood-based groups by building/expanding leadership and establishing a regular, visible presence in the neighborhood for these groups. This should have a positive impact on the neighborhood and will likely increase the number of neighborhood events and opportunities for engagement.

The plan also recommends increasing program and care options for children. This includes identifying gaps in before- and after-school care, establishing affordable childcare options, increasing educational and recreational programming for children and youth and educating residents on certification processes for First Aid and CPR and licensing for in-home childcare provision. This should be helpful since the neighborhood has a higher percentage of children under the age of 5 as compared to the City of Madison (6.7% vs. 5.8% respectively). A local non-profit daycare, Red Caboose, will be moving into the nearby Union Corners development which will also increase care options in the neighborhood. Red Caboose offers an income-based sliding fee scale for tuition.

Increasing health and fitness programs in the neighborhood for all ages such as women’s fitness classes, walking/running groups, healthy cooking and nutrition classes, youth sports, etc. is another recommendation from the Neighborhood Plan. This recommendation should have a positive impact on those living in the DWS neighborhood. The healthy cooking and nutrition classes in particular will complement the community gardens and farmers market by providing knowledge of what healthy food is and how it can be prepared.

The Plan also recommends increasing access to social services by creating a “one-stop shop” at a centralized location that could include tenant and landlord resources, health screenings, senior services, domestic abuse prevention, multi-lingual services, and more. This is something that was brought up at stakeholder meetings as residents don’t always know where to go to get these services or what services are available. Therefore, this consolidation will be very beneficial for the neighborhood.

### 8.3.2 Additional Recommendations to Consider to Improve Social Connectedness & Empowerment

The City should consider adding additional detail to the Neighborhood Plan's recommendation to strengthen neighborhood associations and neighborhood-based groups. Neighborhood groups typically struggle to maintain long-term memberships and continued participation. To try and increase participation, the DWS neighborhood groups should provide projects and activities for residents that don't require an ongoing commitment. Projects and activities should not require a substantial commitment but should still allow participants to make direct positive impacts to the neighborhood, such as a paint up/fix up project day. Neighborhood groups should also sustain frequent and robust outreach to inform people about meetings and events (*Recommendation #21*).

In addition to the "one-stop shop" of social services, it is recommended that the City compile and distribute a list of these services along with contact information. This could be done via website, posters, pamphlets, etc. Using a wide range of media will ensure that everyone has access to the information (*Recommendation #21*). It is also recommended that the City provide information to first-time parents on how to care for infants/children. This information could be shared in the form of parenting classes with supplemental materials (*Recommendation #26*).

Additional access to health and fitness programs will directly benefit the neighborhood. However for any increase in access to these programs, the City should work with the sponsoring agencies to ensure that programs are accessible to all. This includes financially, age- and ability-wise, etc. (*Recommendation #28*).

Another recommendation to the plan involves the Department of Corrections (DOC) office that is located in the neighborhood. When residents mentioned the DOC at focus groups, it tended to be negative. The DOC is part of the neighborhood and has a sizeable building footprint as well as employee base that comes into the neighborhood during weekdays. The City should encourage the DOC to host or sponsor events or activities in the neighborhood (*Recommendation #39*).

## 8.4 ENVIRONMENTAL & BUILT CONDITIONS

### 8.4.1 Neighborhood Plan Recommendations to Improve Environmental & Built Conditions

The Neighborhood Plan recommends evaluating noise levels along high-speed transportation corridors such as Highway 30 and E Washington Ave and considering mitigation steps such as living walls, noise abatement walls and other measures. This will have a positive impact on residential areas within the neighborhood as Figure 17 (Appendix B) shows the neighborhood is particularly impacted by truck traffic.

All three concepts the City created for the **Starkweather Green Corridor Focus Area** (see Neighborhood Plan) will increase opportunities for recreation for the neighborhood. Specifically, these concepts:

- Improve the safety of users and also promote passive and active recreation through pedestrian and bicycle enhancements (e.g. bike lanes, off-street paths).
- Expand the existing community gardens along the railroad corridor which will provide additional access to healthy food options.

- Provide stormwater management by preserving greenspace around Starkweather Creek which will filter runoff before it enters the Creek.
- The recreational center recommended in one of the concepts provides an opportunity to promote outdoor activities in nature.
- The bird watching trail/towers (Concept 1), water course improvements (Concept 2), and cyclo-cross track (Concept 3) all provide unique recreational features not currently found in the area/region.

The City has provided one concept for the **E. Washington Ave./Milwaukee St.: Mixed-use Activity Node Focus Area** (see Neighborhood Plan) which will increase density and also provide a variety of live, work and shop options for neighborhood residents. Specifically, the concept:

- Provides mixed uses which will give residents more places to walk to which will have a positive impact on health.
- Adds public art which will improve the appearance of the node.
- Adds a grocery store and other similar commercial uses to Union Corners which will provide a convenient supply of fresh foods.
- Increases residential density on all corners of the E Washington Ave/Milwaukee Street intersection which will provide more residents with convenient access to basic needs such as health care and groceries (thereby improving the supply of those goods and services).
- Promotes and encourages biking through the recommended bike connections along Milwaukee Street and Hermina Street which will also impact health positively.

All three concepts for the **Worthington Focus Area** (see Neighborhood Plan) will bring mixed uses, including additional multi-family housing into the neighborhood which will increase the opportunities for residents to walk within the neighborhood and possibly work and shop for goods and services near home. The bike boulevard, shown in all three concepts, will improve connectivity to the Starkweather Creek Path. Improvements (i.e. a new shelter, field area, community gardens and programmed activities) to Worthington Park will add amenities that will encourage more frequent use of the park.

The Community Facility and Community Campus will both bring additional needed services to residents and provide a community center where residents can recreate and socialize. The rehabilitation of existing public housing within the neighborhood in all three concepts will serve to preserve affordable housing in the neighborhood. Rehabilitation will also improve the quality of housing which can have positive effects on health<sup>59</sup>. Interior upgrades to these apartments could also save renters money through the installation of energy efficient appliances and fixtures.

Several other comments on the three different concept plans:

#### Concept 2

- Expanding Worthington Park and including a new field area, community gardens and sidewalks will provide additional opportunities for recreation and another location for community gardens.

### Concept 3

- A pop-up market/farmers market space would provide a space for the neighborhood farmers market as well as provide space for other groups needing market space, such as Mentoring Positives when selling its salsa or pizza.
- An urban farm will increase opportunities for community gardening and also promote healthy eating and outdoor recreation.

### Concepts 2 and 3

- A Community Service Campus would provide many things residents have mentioned they desire: community gathering space, a one-stop-shop for social services and opportunities for job training.
- Using some of the DOC parking lot for more intensive uses such as structured parking and multi-family housing will provide more benefit to the neighborhood than the existing parking lot.

The concept provided by the City for the **Madison East Shopping Center Focus Area** (see Neighborhood Plan) will generally facilitate social interaction, walking and biking, and improve the quality of the neighborhood. Specifically, the concept:

- Makes the Center more pedestrian friendly by adding bike/ped connections and bike amenities.
- Better utilizes the large parking lot by proposing to add new general commercial and employment buildings.
- Improves the aesthetics of the Center by rehabbing the existing buildings and adding temporary art improvements such as murals on permission walls, dumpster painting, sculpture gardens and wall space for chalk art.
- Upgrades the visibility of crosswalks at the intersections of Pawling Street and E Washington Ave which will make it easier for pedestrians to cross E Washington Ave, which will further promote walking/biking.
- Suggests new housing (replacing an underutilized parking lot) which will provide these residential units proximity to neighborhood commercial and food services. This convenience increases the probability that residents will walk rather than drive for basic needs.
- Recommends bike connections along Milwaukee Street and Hermina Street which will promote and encourage biking, especially with the Starkweather Creek Trail located just a few blocks east on Hermina Street.

#### 8.4.2 Additional Recommendations to Consider to Improve Environmental & Built Conditions

The Neighborhood Plan recommends evaluating noise levels along high-speed transportation corridors such as Highway 30, and E Washington Ave and considering mitigation measures. Residential areas within the 65, 70 and 75 DNL noise buffers are most impacted by traffic generated noise (e.g. Milwaukee Street, Fair Oaks Avenue and Highway 30). These areas are likely the best candidates for noise mitigation, but a noise study should be done for further analysis. Any residential areas found to be experiencing noise levels at 65 DNL or higher should be a priority for mitigation techniques (*Recommendation #12*).



There are no recommendations in the Neighborhood Plan that relate to water quality, however it is recommended that the water quality of Starkweather Creek is addressed. In addition to the settling pond that the City has been considering, the City should also focus on planting native vegetation adjacent to the Creek to filter pollutants before runoff enters the water (*Recommendation #44*). Throughout the neighborhood the City should also encourage developers to use low impact development and green infrastructure techniques to improve water quality of Starkweather Creek and the associated watersheds. The City should also continue to support the Madison Area Municipal Storm Water Partnership's (MAMSWaP's) education and outreach efforts which promote practices that reduce and improve stormwater runoff into Dane County lakes, rivers and streams. For example, each spring MAMSWaP coordinates Plant Dane which is a native plant cost-share program. Programs such as Plant Dane could be advertised in the neighborhood (*Recommendation #46*).

The City should also ensure that affordable housing is maintained so that current residents are not forced neighborhood. This is an important recommendation since more than 28% of homeowners are paying 30% or more of their incomes on mortgage and more than 53% of renter-households are paying 30% or more of their incomes on rent (*Recommendation #45*).

The Public Health Department should also consider providing literature to residents aimed at improving air quality at home through use of products with low VOCs, vacuums with allergen-reducing filters, opening windows when weather is warm, keeping humidity at an acceptable level, testing for radon and encouraging smoke-free homes to decrease respiratory issues. The Public Health Department could also consider holding a public event or having a booth at an existing neighborhood event that provides education on improving indoor air quality. This could include selling low-cost air filters, providing education on basic maintenance of furnaces, etc (*Recommendation #40*).

It is also recommended that the City consider adding permanent or portable restroom facilities as well as picnic tables under the existing shade trees in Worthington Park. The City should also assess lighting and increase it as necessary in and around the park. Restrooms and picnic tables in particular will encourage people to stay in the park. Residents have mentioned that there are some difficulties bringing children to the park to play due to no restrooms at the park. In Worthington and Reger Parks, the City should consider adding park amenities that will encourage use. In both parks, CPTED should be integrated (*Recommendation #43*). Examples of CPTED for parks and open space from the National Crime Prevention Council's CPTED Guidebook include<sup>60</sup>:

- Locating activities along the edges of parks, close to traffic or gathered together along pedestrian walkways.
- Locating restroom facilities near playgrounds.
- Programming space for a range of activities, even if they are passive uses. Clustering activity areas increases natural surveillance.



**Figure 42.** Example: Nevin Park in City of Richmond California (located in a neighborhood with high crime rates) uses picnic tables, permeable fence around play structure, clear visibility across park and a clustering of activities to deter unwanted activities.

Source: <http://www.connectourfuture.org/tools/crime-prevention-through-environmental-design-cpted/>

- Locating secure bike racks adjacent to activity areas.
- Displaying relevant telephone numbers so that users can be guided to report security problems.
- Installing picnic tables, grills and benches to encourage positive use of park.
- Removing some trees so parents and neighbors can visibly see across the entire park.
- Installing a permeable fence around a playground to keep children from running off and to signal to potential offenders that there is risk in selecting that target.
- Using natural access control such as fences or landscaping to signal where to walk and where not to walk.
- Providing a quantity and type of lighting that maintains good visibility at night.

#### Basic Principles of Crime Prevention through Environmental Design (CPTED)

1. **Natural Surveillance** - increase the number of “eyes on the street” to keep intruders under observation. This can be accomplished by removing some trees to ensure a clear line of sight across a park.
2. **Natural Access Control** – use doors, fences, shrubs and other physical barriers to keep unwanted intruders out of places they have no reason for being. Non-physical barriers can also be used such as paving textures, signs, or anything that makes an area unique.
3. **Territorial Reinforcement** – display clear boundaries between public and private spaces using physical elements such as art, landscaping, fencing, etc. to signify ownership. People tend to protect territory they feel is their own. Identifying intruders is also easier in well-defined spaces.
4. **Maintenance and Management** – maintenance creates a positive image and signals that people care about an area.

Source: <http://www.popcenter.org/tools/cpted/PDFs/NCPC.pdf>

In the concept provided by the City for the **E. Washington Ave./Milwaukee St. Focus Area**, the City should consider making the public art/gateway feature an entrance welcoming people to the DWS neighborhood, as a means of building up neighborhood pride and empowerment. Residents also mentioned they would like a gateway feature near the intersection of E Washington Ave and Starkweather Creek. This should be done in addition to the existing ‘Welcome to Worthington Park Neighborhood’ sign (*Recommendation #33*).

All three concepts for the **Worthington Focus Area** should also add park lighting and amenities that will bring families and children to the park such as a seasonal ice rink or splash pad. All concepts should also incorporate CPTED design guidelines (see suggestions for DWS parks above) (*Recommendations #34-36*).

In the concept for the **Madison East Shopping Center Focus Area**, the City should ensure that any artistic/creative bike racks meet recommended guidelines established by the City (<https://www.cityofmadison.com/bikemadison/documents/bikerackrequirements.pdf>). The City should also market the additional commercial spaces that are proposed (and/or the existing shopping center buildings) towards food establishments that provide fresh food options. The City should consider offering financial incentives for these types of businesses to locate in

the Madison East Shopping Center. The existing food-related establishments in the Center only provide fast food. The City should also focus on further enhancing the walkway from McDonalds to the Center to promote pedestrian access from E Washington Ave (*Recommendation #37*).

In general, for any redevelopment areas within the plan, the City should ensure that all new developments and redevelopments are at pedestrian scale and add to the livability and vibrancy of the neighborhood. In redevelopment areas within the plan, provide gathering spaces for residents (*Recommendation #47*).

## 8.5 FUNDING TO IMPLEMENT RECOMMENDATIONS

The following table is a list of funding opportunities that can be further explored to potentially fund some of the recommendations in the DWS Neighborhood Plan.

NAME & DESCRIPTION	GRANTING AGENCY	APPLICATION DEADLINE	ELIGIBILITY REQUIREMENTS	FUNDING MAXIMUM	LOCAL MATCH REQUIREMENT	RELATED RECOMMENDATIONS
<b>WATER QUALITY</b>						
<b>Urban Nonpoint Source &amp; Storm Water Management Grant Program</b>						
* A program that provides grants to local governments for planning and construction of projects to control stormwater runoff.	WDNR	2017 (last year's deadline was April 15, 2016)	Planning grants can fund stormwater management planning for urban areas, preparation of local stormwater ordinances, evaluation of storm water utilities, illicit discharge detection and elimination and public information and education activities. Construction grants can fund the engineering design and construction of BMPs, streambank stabilization, storm sewer rerouting and land acquisition and easement purchase.	\$150,000 (construction) \$85,000 (planning)	50% (construction) 70% (planning)	44
<b>Clean Water Fund Program</b>						
*A subsidized loan/grant program that provides financial assistance to municipalities for wastewater treatment facilities and urban stormwater runoff projects.	WDNR and WDOA	October 31	Primary eligible activities include construction of publicly owned sewage system facilities, collection system, lift stations, treatment plant; publicly owned, operated and controlled individual systems; public projects that mitigate or prevent groundwater pollution or surface water pollution.	\$650,000 maximum	None	44

NAME & DESCRIPTION	GRANTING AGENCY	APPLICATION DEADLINE	ELIGIBILITY REQUIREMENTS	FUNDING MAXIMUM	LOCAL MATCH REQUIREMENT	RELATED RECOMMENDATIONS
<b>Community Development Block Grant - Public Facilities (CDBG - PF)</b>						
*A grant program for critical infrastructure projects (water and sanitary system improvements, stormwater management improvements, etc.).	WDOA	May 2017	Eligible projects also include downtown enhancements, libraries, EMS/fire stations, senior centers, community centers, etc. Must demonstrate direct benefit to low-to-moderate income (LMI) households.	\$500,000	50%	34-36, 44
<b>TRANSPORTATION</b>						
<b>The Bus and Bus Facilities Program</b>						
*A federally-funded formula and discretionary capital grant program providing capital funding to public transit systems to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities.	WisDOT	2017 (last year's deadline was November 15, 2016)	WisDOT allocates funds to urban transit systems based upon formula, and also awards discretionary grants to transit systems serving a population of between 50,000 and 200,000 based on evaluation criteria such as consistency with local transit priorities, age and deferred maintenance of vehicles or facilities, and demonstrated commitment of local share.	unavailable	unavailable	17, 20

NAME & DESCRIPTION	GRANTING AGENCY	APPLICATION DEADLINE	ELIGIBILITY REQUIREMENTS	FUNDING MAXIMUM	LOCAL MATCH REQUIREMENT	RELATED RECOMMENDATIONS
<b>Transportation Alternative Program (TAP)</b>						
<p>* TAP provides for a variety of alternative transportation projects, including many that were previously eligible activities under separately funded programs. TAP incorporates the following three former WisDOT multi-modal transportation improvement programs:</p> <ul style="list-style-type: none"> <li>• Safe Routes to School (SRTS)</li> <li>• Transportation Enhancements (TE)</li> <li>• Bicycle &amp; Ped Facilities Program (BPFP)</li> </ul>	WisDOT	2017	Eligible activities include construction, planning and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation; construction, planning and design of infrastructure-related projects and systems that will provide safe routes for non-drivers; community improvement activities; environmental mitigation activities; recreational trails program; SRTS program; etc.	WisDOT reimburses project sponsors for the federal share of 80% of the approved project cost up to the limit of the award. The minimum project cost is \$300,000 including any design work.	20%	1-6, 8-11, 13, 16, 19, 30-37, 42
<b>State Infrastructure Bank (SIB) Program</b>						
* The State Infrastructure Bank (SIB) Program offers a range of loans and credit options to help finance eligible surface transportation projects. The Wisconsin SIB program is a revolving loan program.	WisDOT	Ongoing	Eligible projects include construction of parking facilities, bicycle lanes and pedestrian walkways to better facilitate customer traffic on or near retail centers and tourist attractions; providing signal lights, turn lanes and pedestrian walkways at busy highway intersections; improving an interchange for a new industrial park or commercial development; constructing or widening a road linking an intermodal facility or enhancing a road leading up to a brownfield property.	WisDOT charges a 2% interest rate on the loan principal and projects can be amortized up to 25 years.	N/A	1, 3, 10, 11, 13, 15, 33, 37

NAME & DESCRIPTION	GRANTING AGENCY	APPLICATION DEADLINE	ELIGIBILITY REQUIREMENTS	FUNDING MAXIMUM	LOCAL MATCH REQUIREMENT	RELATED RECOMMENDATIONS
<b>PeopleForBikes</b>						
* Funds bicycle infrastructure projects such as bike paths, lanes, trails, and bridges, mountain bike facilities, bike parks and pump tracks, BMX facilities, end-of-trip facilities (bike racks, storage), and more.	PeopleForBikes	April 7, 2017 and October 13, 2017	Applicants can be from city/county agencies or departments working on projects with a focus on bicycling, active transportation, or community development.	\$10,000	>50%	5-7, 10, 30-32, 37
<b>Congestion Mitigation and Air Quality Improvement Program (CMAQ)</b>						
* Encourages transportation projects that improve air quality. It includes efforts to enhance public transit, bicycle/pedestrian facilities, ridesharing programs and facilities, and technologies that improve traffic flow and vehicle emissions.	WisDOT	2017 (applications are solicited every other year - previous deadline was June 19, 2015)	Three broad categories are eligible for funding: 1. Projects that reduce the number of vehicle trips and/or vehicle miles traveled (VMT); 2. Projects that reduce emissions related to traffic congestion; and/or 3. Projects that reduce the per mile rate of vehicle emissions through improved vehicle and fuel technologies.	CMAQ is a reimbursement program. • Construction projects must have a total projected expense of \$200,000 or more • Non-construction projects must have a total projected expense of \$50,000 or more	20%	<i>Note: Madison currently meets air quality standards, therefore is not eligible for CMAQ funding. This is a potential funding source that could be used if air quality deteriorates.</i>

NAME & DESCRIPTION	GRANTING AGENCY	APPLICATION DEADLINE	ELIGIBILITY REQUIREMENTS	FUNDING MAXIMUM	LOCAL MATCH REQUIREMENT	RELATED RECOMMENDATIONS
<b>Recreational Trail Aids (RTA) Program</b>						
* Provides reimbursement for development and maintenance of recreational trails and trail-related facilities for both motorized and non-motorized recreational uses.	WDNR	May 1	Eligible projects in order of priority are: maintenance and restoration of existing trails; development and rehabilitation of trailside and trailhead facilities and trail linkages; construction of new trails; and acquisition of property for trails.	\$45,000	50%	3, 4, 6, 30-32
<b>PLACEMAKING OPPORTUNITIES</b>						
<b>Community Development Investment Grant</b>						
* Provides grants for local shovel-ready community initiatives, with an emphasis on downtown redevelopment. Grants are available for planning efforts or for implementation projects.	WEDC	Ongoing	Implementation grants include: a) development of significant destination attractions; b) rehabilitation and reuse of landmark buildings; c) infill development; d) upper story development; e) blight elimination in downtown locations; f) remediation of downtown industrial properties critical to area redevelopment; and others. Planning grants include: a) plans, feasibility studies and market analysis; b) district or site specific downtown redevelopment plans; c) historic preservation planning; d) branding and marketing; e) business recruitment campaigns; and f) vacant space strategy development.	\$50,000 (planning) \$500,000 (implementation)	30%	33-37



NAME & DESCRIPTION	GRANTING AGENCY	APPLICATION DEADLINE	ELIGIBILITY REQUIREMENTS	FUNDING MAXIMUM	LOCAL MATCH REQUIREMENT	RELATED RECOMMENDATIONS
<b>Our Town Grant</b>						
* Supports creative placemaking projects that deliberately integrate arts and culture into community revitalization work.	National Endowment for the Arts	September 2017	Placemaking projects require a partnership between a nonprofit organization and a local government entity, with one of the partners being a cultural organization.	\$200,000	100%	6, 37
<b>HEALTH</b>						
<b>Healthy Housing and Neighborhoods</b>						
* Supports policies and practices that promote safe, stable housing for vulnerable people. Especially community development efforts that foster health and connect low-income residents to opportunity.	Kresge Foundation	Ongoing	501 (c)(3) organizations and government entities are eligible.	Unknown	Unknown	34-36, 45
<b>BUILD Health Challenge</b>						
* Supports partnerships that increase the number and effectiveness of hospital, community and public health collaborations to improve health.	The BUILD Health Challenge	February 21, 2017	501 (c)(3) organization in partnership with a hospital or health system or local health department.	\$250,000 will be granted over the course of a two-year period.	100%	5, 7, 24, 25-29, 34-36
<b>Community Grant</b>						
* Supports efforts that fall into four core areas of giving: Hunger Relief & Healthy Eating, Sustainability, Women's Economic Empowerment and Opportunity.	Walmart Foundation	Ongoing	Organization must be a 501 (c)(3), (4), (6), or (19); government entity; k-12 school; or church or faith-based organization.	\$2,500	Unknown	24, 25, 27, 28, 30-32, 36, 41

## 9. CONCLUSION AND NEXT STEPS

This Health Impact Assessment was completed to evaluate the impact that the DWS Neighborhood Plan would have on the health of the neighborhood and propose recommendations to increase positive health outcomes. Current conditions of health indicators and direct measures of health in the neighborhood were evaluated during the planning process. The HIA was completed at the same time as the Neighborhood Plan, so recommendations from the HIA have been incorporated into the adopted Neighborhood Plan. The City should proceed with implementation as described in the plan.

The final stage of the Health Impact Assessment is the Monitoring and Evaluation phase. During this phase the City should evaluate three items: the Process, Impacts and Outcomes of the HIA. Evaluating the process will help the City determine whether the HIA was useful and how the City would change the process for future HIAs. The City should ask questions such as:

- What process was used and were there any changes that should be made next time?
- What data was analyzed in the HIA and how did it inform the recommendations?
- What stakeholders were involved in the HIA and should the methods of stakeholder engagement be altered next time?

Evaluating the impact of the HIA looks at changes that took place in the Neighborhood Plan-making and decision-making processes due to the HIA. The evaluation should be completed at least a year after the project is completed-when plan implementation is underway. At this time the City should ask questions such as:

- Were the HIA's recommendations incorporated into the Neighborhood Plan?
- If some recommendations were not incorporated, what was the reasoning?
- Were the recommendations implemented?
- Were the objectives of the HIA met?
- Were there any unanticipated impacts (e.g. unanticipated partnerships or new organizations developed)?

The final part of this phase is to assess any changes in the health status of the neighborhood. This can be accomplished by identifying any changes to health determinants and indicators discussed earlier in this report. For example, the City will want to assess whether safety has improved in the neighborhood. To help determine improvement, the City should re-evaluate crime rates within the neighborhood and compare them to the baseline conditions in this report. This evaluation can be difficult because cause and effect are not obvious, but re-evaluation of the indicators used earlier in the report will help the City monitor the health of the neighborhood and can be used to inform evaluation of the HIA.

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## APPENDIX A – LITERATURE REVIEW MEMO



# Memo

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**To:** City of Madison Planning Department

**From:** Becky Binz

**Subject:** Darbo-Worthington Park-Starkweather Neighborhood Plan  
Health Impact Assessment Literature Review

**Date:** June 10, 2016

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## Introduction

According to the World Health Organization, health determinants include social, economic and physical environments as well as individual characteristics and behaviors. These determinants are made up of things individuals can and cannot directly control such as income and social status, education, physical environment, social support networks, genetics, health services and gender (World Health Organization). See Figure 1 for a visual representation of these determinants. There is a wealth of research that supports the link between these determinants and health outcomes. A Health Impact Assessment (HIA) is a tool that can help to predict the impact that plans, policies and programs could have on a community's health by looking at health determinants. An HIA can also offer recommendations to mitigate negative impacts from proposed policies and offer additional recommendations that promote positive health impacts.

In order to move forward on the Darbo-Worthington Park-Starkweather Health Impact Assessment (HIA), MSA has completed a survey of HIAs from across the United States to review methodologies, start a compilation of research that supports the link between relevant determinants and health outcomes, related policies, guidelines and tools that may be useful. Since the Darbo-Worthington Park-Starkweather neighborhood planning area includes some of the busiest arterials in the City (East Washington Ave., Milwaukee St., and Highway 30), the City requested that MSA's survey include HIAs that evaluate major arterials, congestion near neighborhoods and the impact these factors can have on health. The literature review includes HIAs focused on residential areas that have racially diverse and low income populations. MSA completed an initial review of 17 HIAs that appeared relevant to the present study, and chose the following HIAs for an in-depth review of methodologies, health-based evidence and recommendations:

- Duluth, MN – 6<sup>th</sup> Avenue East Duluth HIA (2011)
- Portland, OR – SE 122<sup>nd</sup> Avenue Planning Study HIA (2010)
- Hartford, CT – Northeast Neighborhood Sustainability Plan HIA (2014)
- Denver, CO – How Neighborhood Planning Affects Health in Globeville and Elyria Swansea (2014)
- Detroit, MI – Healthy Neighborhoods for a Healthy Detroit (2015)

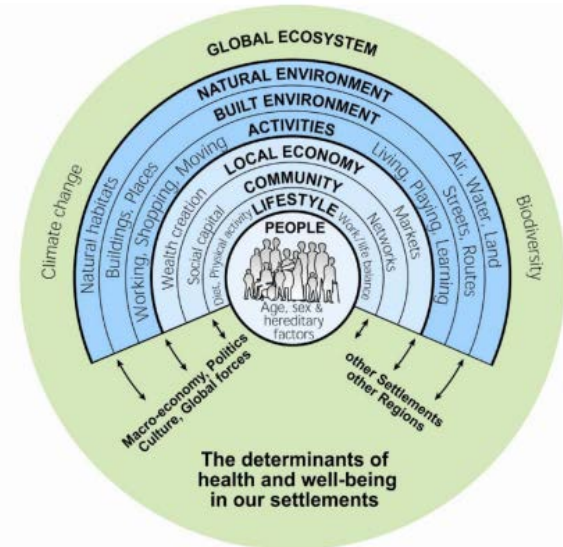


Figure 1. Health Map (Barton and Grant)

The following sections summarize these HIAs and the health research and recommendations that are relevant to the Darbo-Worthington Park-Starkweather HIA.



## **Duluth, MN - 6<sup>th</sup> Avenue East Duluth HIA**

This HIA analyzes the health impacts of the Sixth Avenue East Schematic Redesign Study and was completed due to concern over the safety of pedestrians and bicyclists who also use Sixth Avenue. After need had been determined for the HIA, the scoping step involved several public engagement activities to determine residents' health concerns.

A workshop was held and stakeholders were asked to evaluate three things: (1) which health concerns exist in the neighborhood, (2) which health concerns are most pressing and (3) which health concerns are the highest priority. This workshop resulted in the following health categories: accessibility & safety, physical activity, livability, pollution and access to food. Due to budget and time constraints, pollution and access to food were not analyzed in the report.

To identify health indicators related to the three health categories included in the study (accessibility & safety, physical activity and livability) the HIA project team used a master list developed by the San Francisco Department of Public Health (<http://www.sfindicatorproject.org/>) which includes 125 health indicators that relate to different health categories. The HIA team analyzed the chosen health indicators to determine how the Sixth Avenue East Redesign Study would affect the categories that stakeholders were concerned about. Indicators from the three categories were:

### **Category #1 – Accessibility & Safety Indicators:**

- Bus Accessibility – Number of Bus Routes and Bus Stops
- Motor Vehicle Count on Sixth Avenue East per day
- Speed of Vehicles on Sixth Avenue East
- Crashes Occurring on Sixth Avenue East
- Number of Bicyclists Using Sixth Avenue East
- Walkability of Sixth Avenue East – Pedestrians and School Routes
- Sidewalk Condition
- Number and Types of Street Lighting
- Noise
- Policies that facilitate the mobility of all street users

### **Category #2 – Physical Activity Indicators:**

- Winter Connectivity
- Trail Connectivity for Bicycle and Pedestrian Commuting

- Policies and Plans that Support Bicycling and Walking
- Number of Street Trees

#### Category #3 – Livability Indicators:

- Policies that support neighborhood livability in Central and East Hillside Neighborhood Revitalization Plans
- Number of large, unattractive parking lots
- Urban design and form-based districts
- Residential Area – Housing stock quality
- Areas of incompatible neighborhood uses

A qualitative and/or quantitative analysis was completed for each indicator. Based on the analysis under each category, recommendations were offered to best meet the needs of the community with the redesign of Sixth Avenue East. Examples of recommendations from each category include:

- **Category #1: Accessibility and Safety** – Promote property owner maintenance of sidewalks in the summer. Many are overgrown with soil and vegetation.
- **Category #2: Physical Activity** – Support amenities and public spaces, such as the Fourth Street Public Arts Garden, that encourage people to gather and interact.
- **Category #3: Livability** – Priority areas for “green” improvement are large parking lots around the medical district. Improvements, such as border gardens, fences and the capture of additional rain water should be considered.

#### Portland, OR - SE 122<sup>nd</sup> Avenue Planning Study HIA

The physical area this HIA focused on in Portland, OR was a “20-minute neighborhood” surrounding SE 122<sup>nd</sup> Avenue. The City was considering moving away from a traditional neighborhood concept to a 20-minute neighborhood concept, which is based on research that 20 minutes is the average that pedestrians will walk for goods and services. This term is essentially another name for “complete” communities which offer a safe environment for pedestrians, a mix of destinations, and enough density to support neighborhood commercial uses. The HIA assesses the health impacts that the 20-minute neighborhood concept could have on the SE 122<sup>nd</sup> Avenue neighborhood.

For the scoping phase of the HIA, the Citizen Working Group and Health Partners Working Group from the SE 122<sup>nd</sup> Ave Pilot Study were again used to scope the HIA. Based on existing conditions of the study area, scope of the pilot project, feedback from community workshops, prior community engagement efforts, and suggestions for several working groups, the HIA team decided to focus on the following health determinants:

- Opportunities for physical activity
- Opportunities for accessing healthy foods
- Opportunities for social engagement/cohesion
- Bicycle and pedestrian traffic safety
- Exposure to outdoor air pollutants

In the assessment phase, the following data analysis methods were used:

- Collection of demographic, land use and built form data
- Review research linking health to the built environment
- Get input from community at project meetings and workshops
- Review data previously gathered to analyze community input on health and livability issues
- Complete field visits and site observations of the study area
- Connect with community organizations to get information on under-represented groups (e.g. renters, low-income residents, etc.)

Using this data, each of the five health determinants was discussed citing research which links the determinant to health outcomes, existing conditions were shared and then a qualitative assessment of the Planning Study's positive and negative health impacts was completed for each determinant. The HIA suggested strategies to mitigate negative impacts and have additional positive impacts. Based on an analysis of this data, existing challenges were assessed and impacts that the study recommendations would have on the area were explored. The impacts for each topic are summarized in individual tables (see Figure 2 below). Based on these impacts, the HIA offered additional recommendations to mitigate negative health impacts and create additional positive health impacts.

= intended/likely **direct positive** impact

= intended/likely **indirect positive** impact

N

= intended/likely **direct negative** impact

N

= intended/likely **indirect negative** impact

Challenges		Recommendations		Physical Activity Factors						Air Pollutant	Traffic Safety	Social Cohesion	Food Access
				Retail Mix	Connectivity	Ped. Realm	Bike	Transit	Parks & OS				
<b>Amenities/Assets</b> <ul style="list-style-type: none"> <li>There is little protection for the area's signature Douglas Fir and other large trees in the development process.</li> <li>The area has few community gathering places (coffee shops, community spaces, etc.) particularly south of Holgate Boulevard.</li> <li>Little work has been done by public agencies to research and document the area's historic resources.</li> <li>Leach Botanical Garden and Zenger Farm are neighborhood amenities that many residents do not know exist.</li> </ul>	4K	Identify and inventory mid-century (and prior) historic resources in and near the study area as part of the Oregon State Historic Preservation Grant for East Portland.											
	4L	Continue and expand partnerships with local non-profits such as Friends of Trees and Ed Kerns to increase tree canopy, wildlife habitat, and community livability.											
	4M	Explore opportunity to create a community facility or community space for meetings, gatherings, etc.											
	4N	Encourage Leach Botanical Garden and Zenger Farm to continue to engage the neighbors and community stakeholders as expansion plans for each of these facilities are being developed.											
<b>Social Service Needs</b> <ul style="list-style-type: none"> <li>Neighbors are concerned that the area is receiving a disproportionate amount of low-income affordable housing.</li> <li>Local demand for social services has increased due to demographic changes in the area.</li> </ul>	4o	Ensure that affordable housing needs are being addressed on a citywide basis.											
	4P	Ensure that social services exist in areas close to the populations being served.											
<b>Neighborhood Safety and Appearance</b> <ul style="list-style-type: none"> <li>There is a perception of higher than average crime in this area, and people feel unsafe in parts of the study area.</li> <li>Maintenance of private property and public areas is lacking in some places, which may contribute to safety concerns.</li> </ul>	4Q	Encourage neighborhood participation in crime prevention programs such as Neighborhood Watch and Foot Patrols.											
	4R	Create a neighborhood "clean team" to periodically spruce-up places that need attention and to assist property owners with clean ups.											
	4S	Develop and focus non-profit and volunteer-based projects to assist with property clean ups and maintenance (ex: REACH paint-a-thon).											
	4T	Support and expand use of Crime Prevention Through Environmental Design (CEPTED) principles adopted by Portland City Council.											

Figure 2. Impacts of Community Amenities and Livability Recommendations on Health Determinants in the SE 122nd Ave Combined Study Area from Portland, OR HIA

### Hartford, CT - Northeast Neighborhood Sustainability (NNSP) Plan HIA

The Hartford, CT HIA was created to inform Hartford's Northeast Neighborhood Sustainability Plan (NNSP). This Sustainability Plan was intended to include "key opportunities for physical and environmental changes to improve the Northeast neighborhood and the health and well-being of its residents." The Northeast neighborhood suffers from high crime, unemployment, poverty and poor health outcomes.

The report began with a summary of baseline neighborhood conditions and a community health profile which looks at a variety of health indicators including asthma, diabetes, respiratory diseases, and infant mortality rate. The study then discussed the social determinants of health and how health is measured in communities. Sources used that discuss how to measure health in communities include the University of Wisconsin Population Health Institute, which has developed County Health Rankings that measure the health of a county by taking in many different factors (<http://www.countyhealthrankings.org/>). The report also discussed techniques from the United Nations Human Development Index which looks at life expectancy, educational attainment and income to analyze social outcomes. The Office of Disease Prevention and Health Promotion also maintains a list titled 'Healthy People 2020' which has a variety of health topics with associated indicators: (<https://www.healthypeople.gov/2020/Leading-Health-Indicators>).

To identify health-related neighborhood priorities, a door-to-door survey was administered. The conclusion of the survey was that the top health issues the community faces are: crime/violence, unemployment and lack of youth engagement. These issues seemed to have little relationship to what the HIA ultimately focused on. The project team used the survey results along with data from the City of Hartford Department of Health and Human Services and the Connecticut Health Equity Index to arrive at the greatest health risks for residents: cardiovascular disease, diabetes, obesity and asthma. These health risks appeared to hold the greatest weight in the outcome of the scoping process. The project team used this baseline research and stakeholder feedback to brainstorm improvements that could help solve some of the health-related issues in the neighborhood. Stakeholder engagement also involved an advisory committee which helped develop the stakeholder engagement process and identified others who should be involved, including an HIA champion.

A public workshop was held to inform the neighborhood about the project and review recommendations from the NNSP. After the workshop a survey was emailed to attendees to rank the opportunities that had emerged from the workshop. Based on this feedback, the final HIA scope included four opportunities. The identification of opportunities/recommendations during the scoping phase of the HIA was different than any of the other HIAs reviewed. The scoping process in the other HIAs reviewed typically produced health determinants. The opportunities/recommendations from the Hartford, CT HIA scope included:

- Safe Intersections: Make street crossings at intersections safer for pedestrians, and the intersections themselves safer for bicyclists.
- Productive Keney Park: Uncover and define methods through which Keney Park will become more actively productive for the Northeast neighborhood.
- Vacant Lot Reactivation: Turn City-owned vacant lots from a liability within the community into a resource for the community. Reactivation can include community gardens, wildflower meadows, rain gardens, outdoor gyms and play areas, and can support arts and cultural activities.
- Street Trees and Electric Service: Protect, maintain and expand the mature and abundant street tree forest that exists in the Northeast neighborhood.

The assessment phase analyzed baseline conditions and potential health impacts using research-based evidence. Pathways were drawn from the opportunities to their effects, then to health determinants and finally to health outcomes (see Figure 3 below).

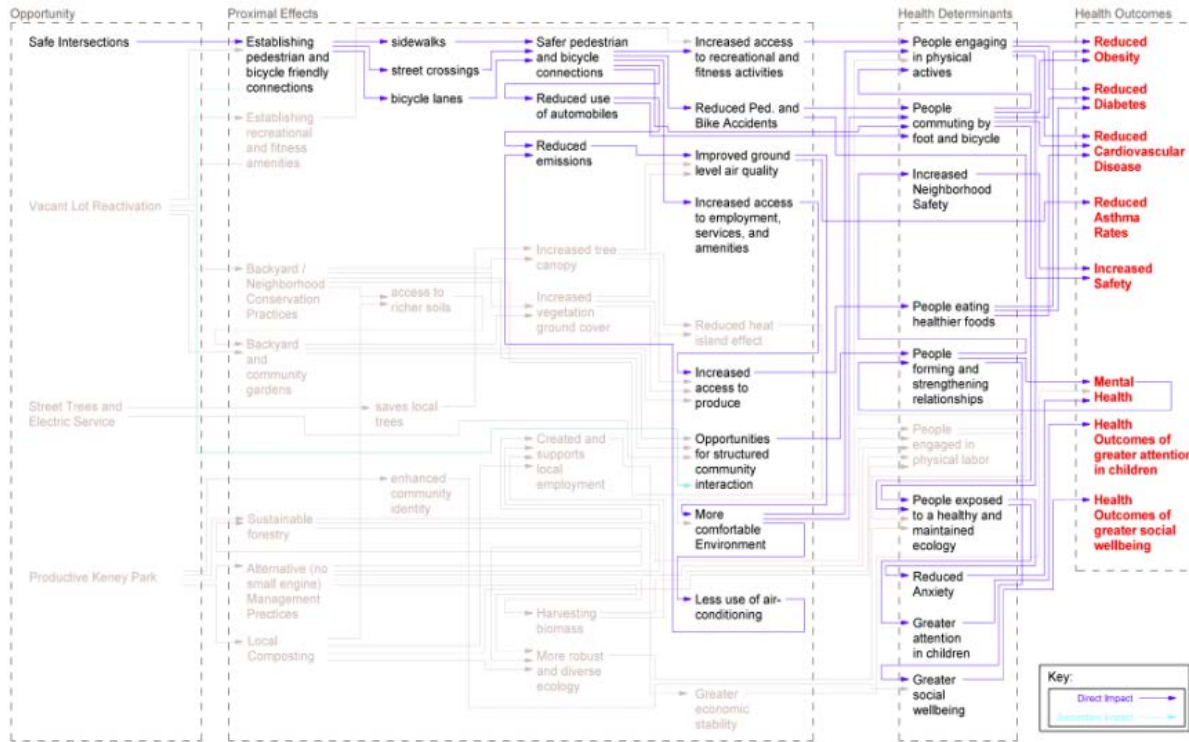


Figure 3. Pathways: Safe Intersections from Hartford, CT HIA

### Denver, CO - How Neighborhood Planning Affects Health in Globeville and Elyria Swansea

This HIA focused on the Globeville and Elyria Swansea neighborhoods in Denver. These neighborhoods include primarily Hispanic families with young children and have some of the highest rates of cardiovascular disease, diabetes, obesity, and asthma in the City. The HIA was intended to strengthen the Globeville and Elyria Swansea Neighborhood Plan and potentially improve residents' health.

To begin, the HIA discussed the history and environmental justice issues in the neighborhoods. This background explained the long history of industrial operations in the neighborhoods, the locations of major interstates between the neighborhoods and discussed how these two land uses have historically

impacted health and shaped the built environment of the neighborhoods. A summary of demographic and health data was provided to set baseline data for factors that influence health such as income, age, education, race, and chronic health conditions in the neighborhoods.

Residents assisted in developing the top concerns/determinants for the neighborhoods. These included:

- Environmental quality
- Connectivity and mobility
- Access to goods and services
- Community safety
- Mental wellbeing

For each of these determinants, the HIA summarized existing conditions, discussed how the determinant affects health, predicted how the Neighborhood Plan will affect the neighborhoods and discussed recommendations to improve outcomes under each health determinant. Examples of recommendations include:

- **Environmental Quality** – Minimize negative environmental impacts of industrial uses upon residential neighborhoods through land use designation, buffering or other means.
- **Connectivity and Mobility** – Improve connectivity to parks, trails and recreation, especially to the South Platte River parks and trails.
- **Access to Goods and Services** – Incentivize development of retail goods and services, including a grocery store.
- **Community Safety** – Enforce regulations regarding graffiti, vandalism, public drug use, stray animals and property maintenance to increase safety.
- **Mental Wellbeing** – Install new and upgraded street lighting.

#### **Detroit, MI - Healthy Neighborhoods for a Healthy Detroit**

Detroit's HIA was unique in that it did not evaluate a specific proposal or plan. It evaluated a Guiding Framework that had been adopted to renew the City. The HIA was led by the D-HIA, a partnership of the Detroit Urban Research Center. The Steering Committee was comprised of community members as well as academic associates. Project staff completed the literature review, data analysis and report while guided by the Steering Committee. The HIA looked at 4 health determinants: (1) neighborhood stability and integrity, (2) neighborhood safety, (3) environmental conditions, and (4) displacement, relocation and gentrification. The literature review resulted in the first three health determinants mentioned above and the fourth was added by the Steering Committee.

Neighborhood and individual health impacts of the Guiding Framework were summarized based on the four health determinants. From these summaries, health outcomes were listed. Impacts and outcomes were drawn in a pathway to show linkages between the framework policy, determinants and outcomes. The pathway diagram was completed based on the literature review and guidance from the community and academia (see Figure 4 below).

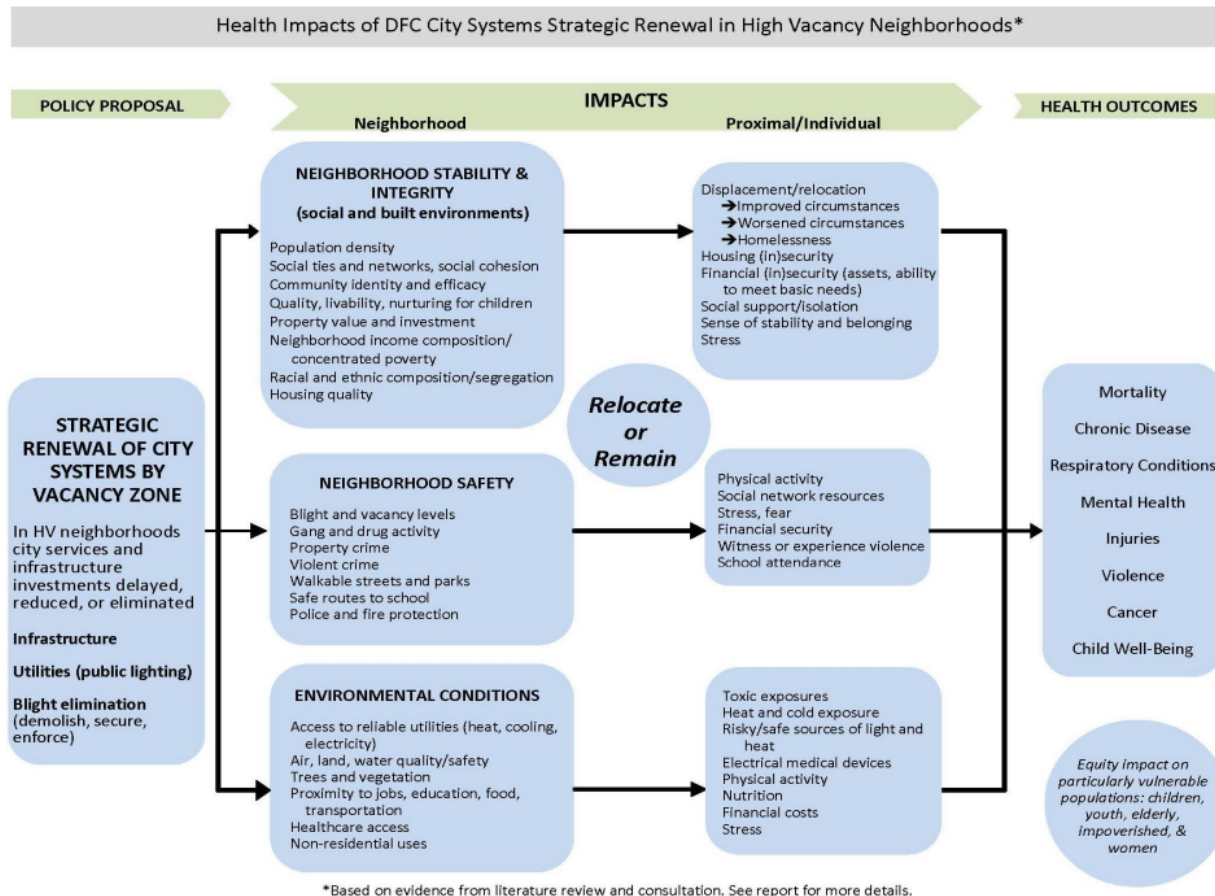


Figure 4. Health Impacts of DFC City Systems Strategic Renewal in High Vacancy Neighborhoods from Detroit, MI HIA



The assessment phase included creation of a profile of existing conditions, an in-depth literature review, consultations with a range of community experts, and a prediction of what impacts the Guiding Framework might be expected to have based on the data and evidence available.

### **Summary of Health Research Related to the Darbo-Worthington Park-Starkweather Neighborhood**

#### *Air Quality*

One of the health elements the City is interested in exploring is the health impacts of living near a major arterial with a lot of congestion. Research shows that living near congestion can have negative health impacts (Brauer, Hoek and Van Vliet) (California Air Resources Board) (Janssen, de Hartog and Harssema) (Venn, Lewis and Cooper) (U.S. Environmental Protection Agency) (McConnell, Islam and Shankardass). Research shows that adverse effects are strongest within a certain proximity to the roadway (within 300-600 feet of roadways) and that children are most sensitive to reduced lung function in relationship to living near high traffic counts (California Air Resources Board) (Janssen, de Hartog and Harssema). For all age groups living near congestion, there is an increase in asthma symptoms, particularly those living within 300 feet of a major roadway (Venn, Lewis and Cooper).

#### *Low Income*

Research shows that one of the most consistent predictors of health and disease has been income. People with low incomes have higher risks than those with higher incomes for giving birth to low-weight babies, suffering injuries or violence, getting cancer and chronic conditions (Yen and Bhatia). It is important to note that this is correlation, not causation.

#### *Noise Pollution*

The US EPA considers outdoor noise exceeding 55 decibels to be an annoyance (US Environmental Protection Agency). For reference, 55 decibels is equivalent to being 328' away from a car going past at 40 mph (Wind Energy Development LLC). Noise pollution can impact health in relationship to hearing, sleep disturbance, cardiovascular effects, psycho-physiologic effects, psychiatric symptoms and fetal development (International Dark-Sky Association) (Evans) (World Health Organization) (Brauer, Hoek and Van Vliet). Moderate levels of traffic noise can increase stress which is associated with a higher risk for hypertension, blood pressure and heart disease (Seto, Holt and Rivard). In children, exposure to high levels of traffic noise can also increase the risk of learning delays (Evans).

#### *Street Connectedness*

High rates of diabetes and obesity can be decreased through physical activity (Task Force on Community Preventative Services) and by having convenient access to healthy food (Black) (U.S. Centers for Disease Control and Prevention). One way physical activity can be increased is through increasing residential street connectedness (Bodea, Garrow and Meyer). Neighborhoods with an increase in density, mixed use and street connectivity have been shown to reduce the odds of obesity (Frank, Andresen and Schmid).

## *Obesity*

Obesity is particularly an issue among children of lower socioeconomic status; the differences in physical activity and calorie intake between children of low and high socio-economic status may contribute to this difference. Regardless of race, ethnicity or income, children in more walkable, bikeable neighborhoods have lower rates of obesity and being overweight (Timperio).

## *Access to Healthy Foods*

It is also important that neighborhood access to healthy food be convenient as the presence of a supermarket in a neighborhood often predicts higher fruit and vegetable consumption and reduced incidences of obesity and being overweight (Black). In a national sample of low-income households, low-income households with easy access to supermarkets showed increased household consumption of fruits as compared to those who did not have easy access (Bell, Mora and Hagan).

## **Summary of Related Policy Recommendations**

### *To Improve Air Quality Health Impacts*

- The Denver, CO HIA recommended that additional trees be planted and green infrastructure used.
- The Portland, OR HIA recommended improving bike and pedestrian infrastructure to help movement through the neighborhood so that pedestrian traffic is directed away from main arterials which will help to minimize exposure to air pollution and increase safety.

### *To Reduce Noise Pollution*

- The Denver, CO HIA recommended that sound walls or other noise mitigation measures be placed along congested roadways where sound levels are expected to increase in the future.

### *In Improve Street Connectedness*

- The Denver, CO HIA recommended improving connectivity to parks, trails and other recreation and prioritize street infrastructure such as sidewalks, bike lanes, bus stops and crosswalks to make it easier and safer for residents to walk to destinations.

### *To Increase Physical Activity*

- The Portland, OR HIA recommended involving immigrants and communities of color in improving existing parks and community gardens to meet their needs as different cultural groups have different preferences for park amenities.

- The Portland, OR HIA also recommended addressing any concerns the low-income population may have in regards to barriers to transit and work with the transit authority to address those barriers.
- The Duluth, MN HIA recommended encouraging mixed use and multi-modal transportation in the neighborhood.

#### *To Increase Access to Healthy Foods*

- The Denver, CO HIA recommended implementing a “healthy corner store retail program” which adds healthy food to existing convenience and corner stores.
- The Denver, CO HIA also recommended developing a flexible market space that can be used by a variety of goods, services and events within the neighborhood.
- The Portland, OR plan recommended creating a new zoning type for commercial uses – “healthy food zone” to prevent unhealthy food stores from locating near public places such as parks and schools.

#### **Methodology Recommendation**

Based on this HIA review, MSA has identified a process for moving through the scoping and assessment phases of the Darbo-Worthington Park-Starkweather HIA:

- 1) Based on input from focus groups, citizen panels, the Public Open House and Service Providers Meeting, MSA will work with the City to identify the **four** most important health concerns for the community. These health concerns will be translated by MSA and City Staff into the health determinants which will be analyzed in the HIA. The five HIAs surveyed by MSA each identified between 3 – 5 health determinants. If the Darbo-Worthington Park-Starkweather Neighborhood Plan HIA process reveals more than five health determinants, the City and MSA will work together to narrow the list down to less than five, ideally four, determinants.
- 2) If not already included in the Neighborhood Plan, the City should develop a short summary of the history of the Darbo-Worthington Park-Starkweather neighborhood. MSA will develop a baseline community conditions and a community health profile, similar to what was done for the Hartford, CT HIA. These profiles are important to understand where the community is starting from as well as predict and measure future change. The City of Madison is in the process of collecting information on the following broad topics: demographics, physical environment, social and economic factors, clinical care, neighborhood safety, access to food and housing quality and instability.
- 3) To evaluate health determinants, we will use measurable health indicators. MSA will use sources such as County Health Rankings (<http://www.countyhealthrankings.org/>), San Francisco Department of Public Health’s master list of indicators

(<http://www.sfindicatorproject.org/>) etc. to identify indicators that that can help to analyze the four health determinants identified in step 1 (similar to the Duluth, MN HIA). MSA will review literature that connects the identified health indicators and determinants. These sources include the 5 HIAs reviewed for this report and additional reports if needed. The indicators will be dependent on the data the City has access to.

For example, based on the neighborhood's proximity to busy arterials, one health determinant may end up being 'exposure to vehicular air pollutants'. Indicators that can be used to analyze this determinant include:

- Traffic Count (AADT)
- Number of homes within 300' of main arterial
- Air Quality Index (AQI)
- Occurrences of asthma/respiratory disease

- 4) For each health determinant, MSA will summarize existing conditions and complete a qualitative and/or quantitative analysis for each health indicator.
- 5) After an analysis has been completed, MSA will predict the impact that the Neighborhood Plan's Goals, Objectives and Policies will have on each health determinant. The Health and Places Initiative (HAPI) Interactive Spreadsheet Tool will be used as a guide to help predict impacts. Based on these impacts, MSA will suggest recommendations that mitigate negative impacts and increase the number of positive impacts the Neighborhood Plan could have. MSA will reference policy, design recommendations and programming from this survey of existing HIA literature.

MSA will create a table similar to Figure 5 below which will summarize findings and look at health-related impacts that policies, objectives, goals, programs, etc. from the Neighborhood Plan will have related to each health determinant.

Health Outcomes	Determinants/Intermediate Impacts	DFC Proposal <sup>70</sup>	Health Impact <sup>71</sup>	Likelihood <sup>72</sup>	Evidence <sup>73</sup>	Vulnerable Groups
Mortality (various)	Crime, stress, social and physical environment exposures	1, 2, 3	▲▲	Likely	***	Youth
Chronic diseases	Stress, air pollution, financial status Social support	1, 2, 3	▲▲	Likely	***	
Heart disease	Stress, air pollution, lead, maternal lifetime exposures Existing social support and social networks	1, 2, 3	▲▲ =	Likely	***	Elderly
Asthma, other Respiratory diseases	Air quality Housing condition Demolition dust fall	1, 3	= ▲	Possible	**	
Cancers (Lung, colorectal, breast, prostate)	Environmental exposures Food access	1, 3	=	Uncertain	?	
Injuries	Lighting Environmental conditions	1, 2, 3	= ▲	Possible	•	Elderly, women and girls
Mental health	Stress, crime, stability + poverty, vacancy, blight, financial insecurity, low social support	1, 2, 3	▲▲	Likely	***	
Homelessness	Financial stress Foreclosure Fire and blight	1, 2, 3	▲	Possible	•	
Homicides	Crime, blight	1, 2, 3	▲	Likely	***	Youth, young men of color
Youth death rate	Crime, stress, social and physical environments, employment	1, 2, 3	▲▲	Likely	***	Young men of color
Lead poisoning	Unprotected demolition Old housing in poor condition removed	1, 3	= ▲ ▼	Likely, Uncertain	**	Children, fetus (low birthweight)
Low birth weight (infant mortality)	Stress, air pollution, lead, maternal lifetime social/economic/environmental factors, social support	1, 2, 3	▲	Possible	***	African Americans

<sup>70</sup> 1 – Overall Strategic Renewal Implementation in HV Neighborhoods; 2 – Public Lighting Installation in HV zone as Last Priority; 3 – Demolition in HV zone No/Low priority, and Unprotected demolition

<sup>71</sup> Direction: ▲ Increase health outcome; ▼ Decrease health outcome    Extent of Health Impact: ▲▲▲ Severe impact; ▲▲ Moderate impact; ▲ Small impact; ? Uncertain; ■ No impact

<sup>72</sup> Likelihood of Impact: Likely; Possible; Unlikely; Uncertain

<sup>73</sup> Strength/Quality of Evidence: \*\*\* many strong studies; \*\* 1-2 good studies; • no studies but consistent with principles of public health.

Figure 5. Summary of Findings: Health Impact Analysis of DFC Strategic Renewal in High Vacancy Neighborhoods from Detroit, MI HIA.

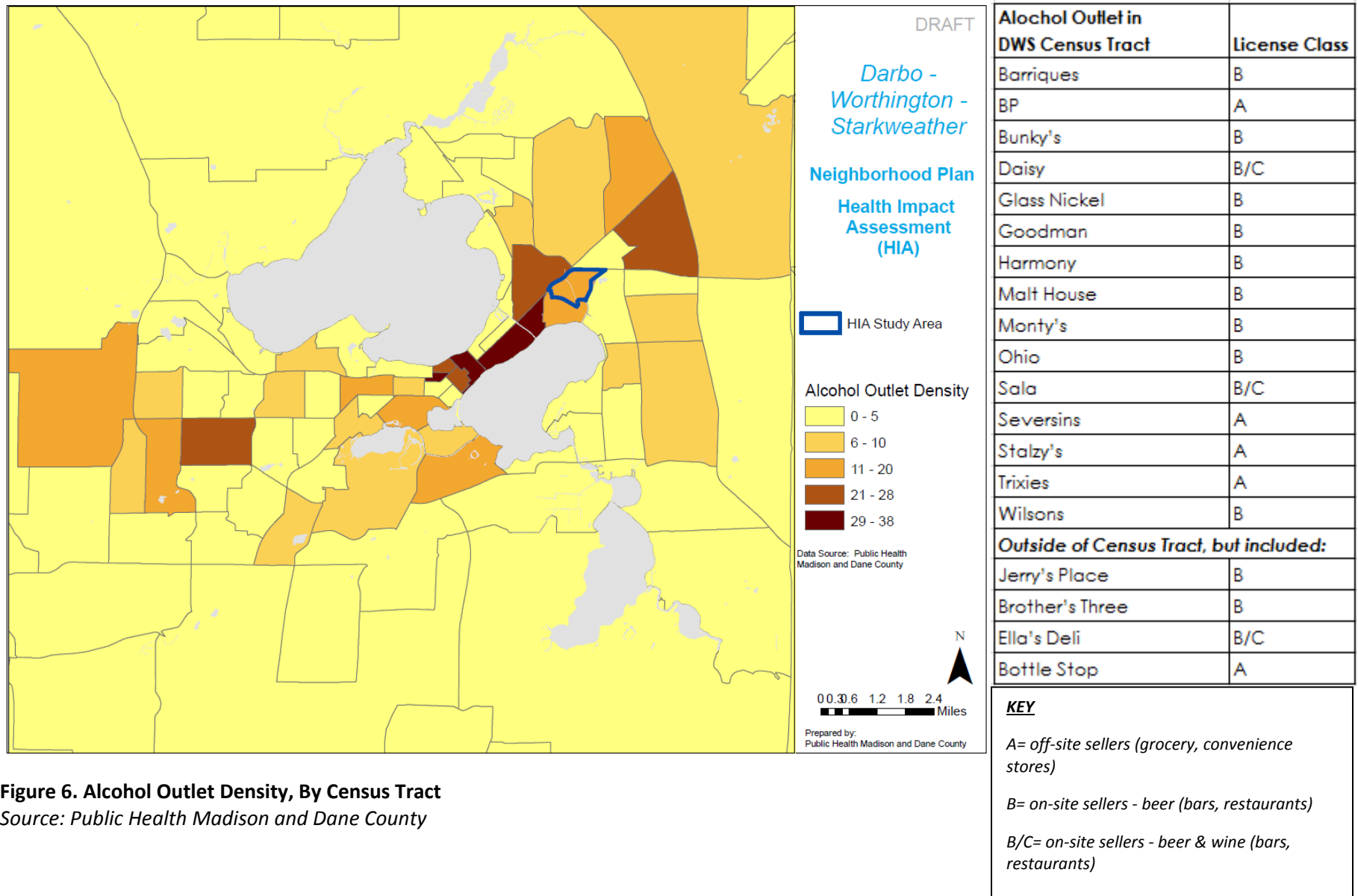
## Other Lessons Learned

Something that occurred in two of the five HIAs was that after the plan was completed, there was still someone, or multiple people, leading the plan's implementation. In the case of the Hartford, CT HIA, halfway through the planning process the HIA team hired a full-time community engagement coordinator to increase levels of neighborhood engagement. The person who was hired was a resident of the neighborhood. After the HIA was completed, this person was still employed in the same position and was responsible for leading implementation. In the Denver, CO HIA, each recommendation from the HIA designated an agency to lead implementation. The Denver Environmental Health organization is monitoring the implementation of all of the recommendations.

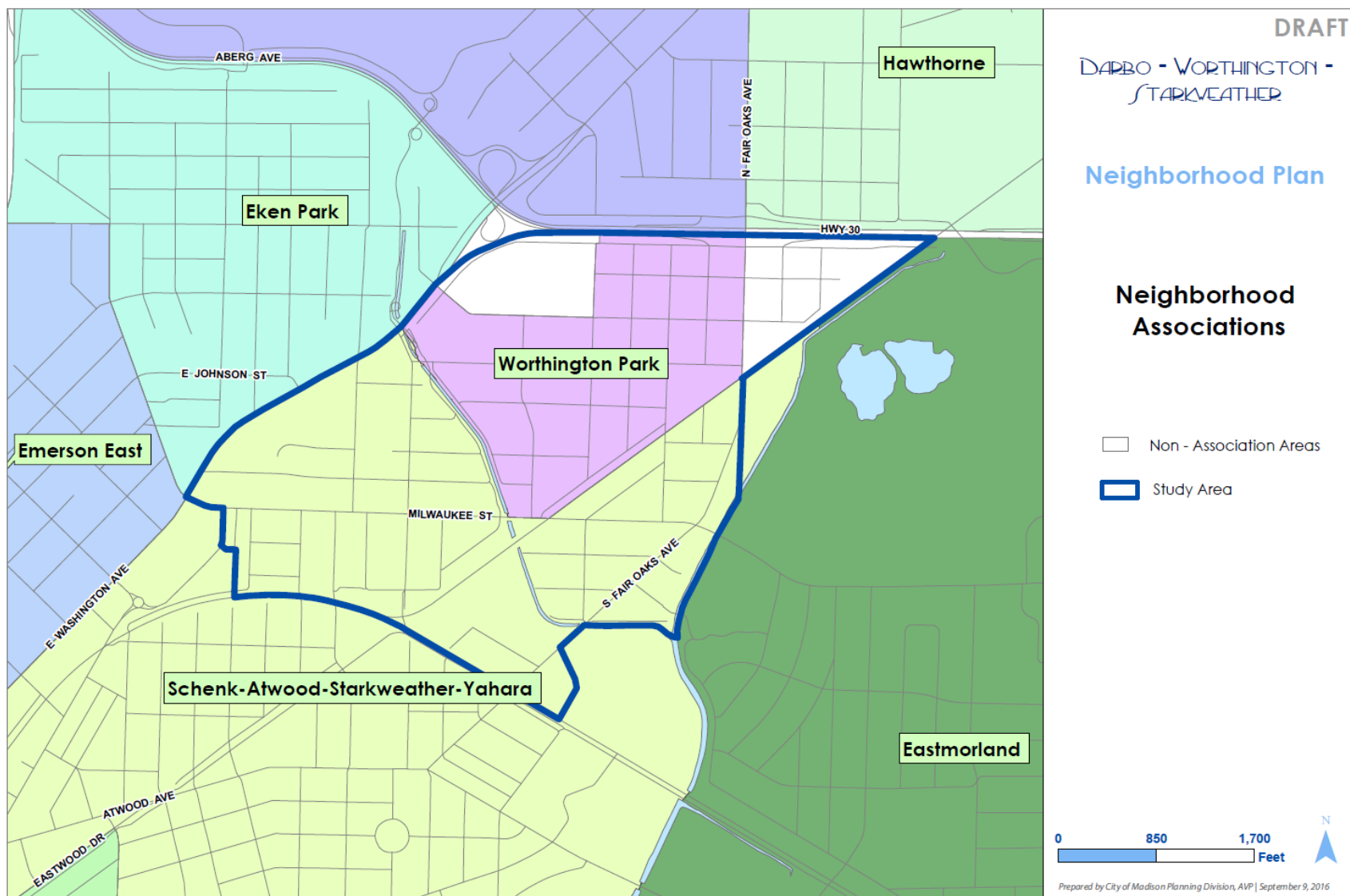
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## APPENDIX B – MAPS



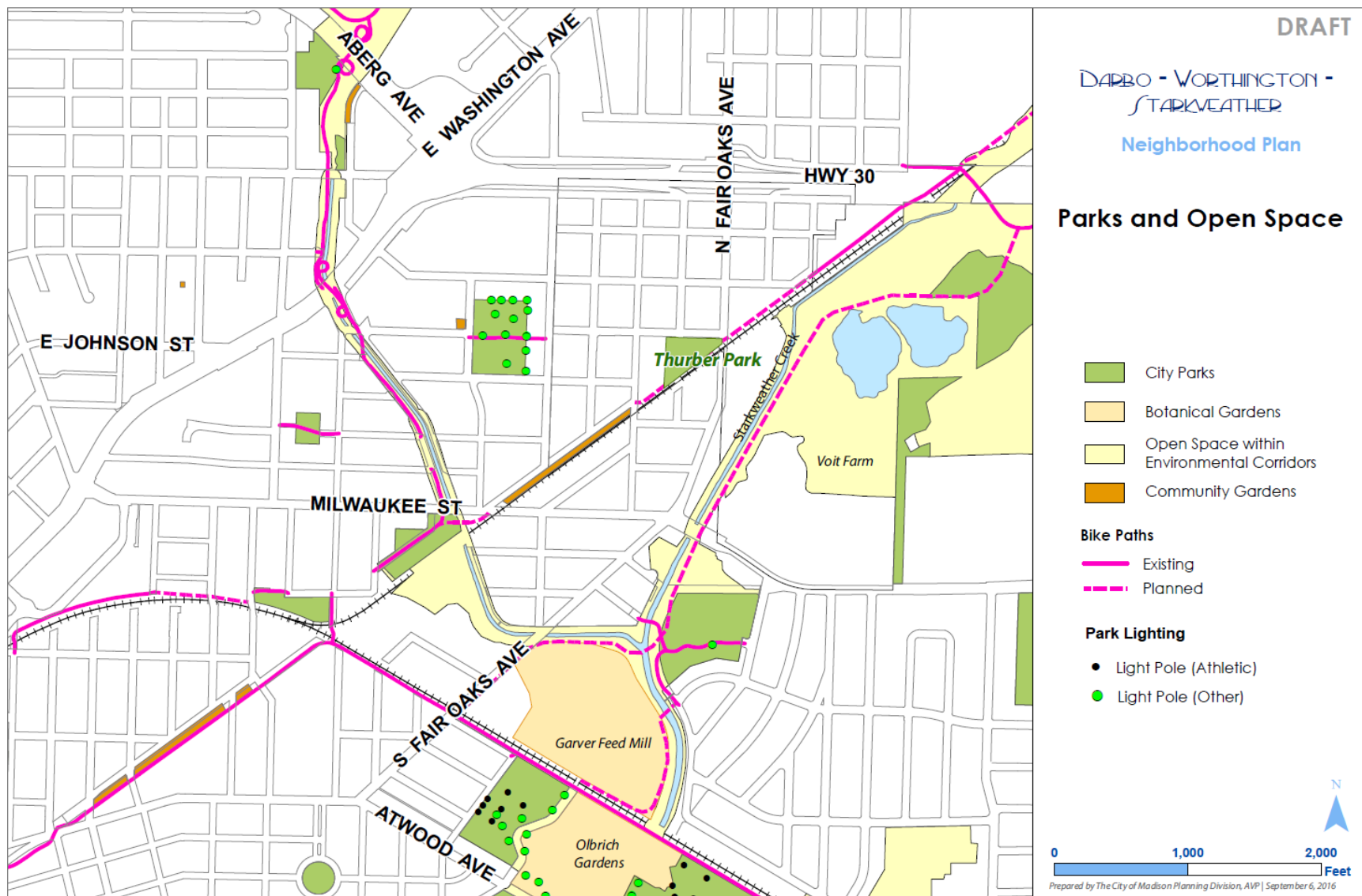
**Figure 6. Alcohol Outlet Density, By Census Tract**  
Source: Public Health Madison and Dane County



**Figure 7. Neighborhood Associations**

Source: City of Madison



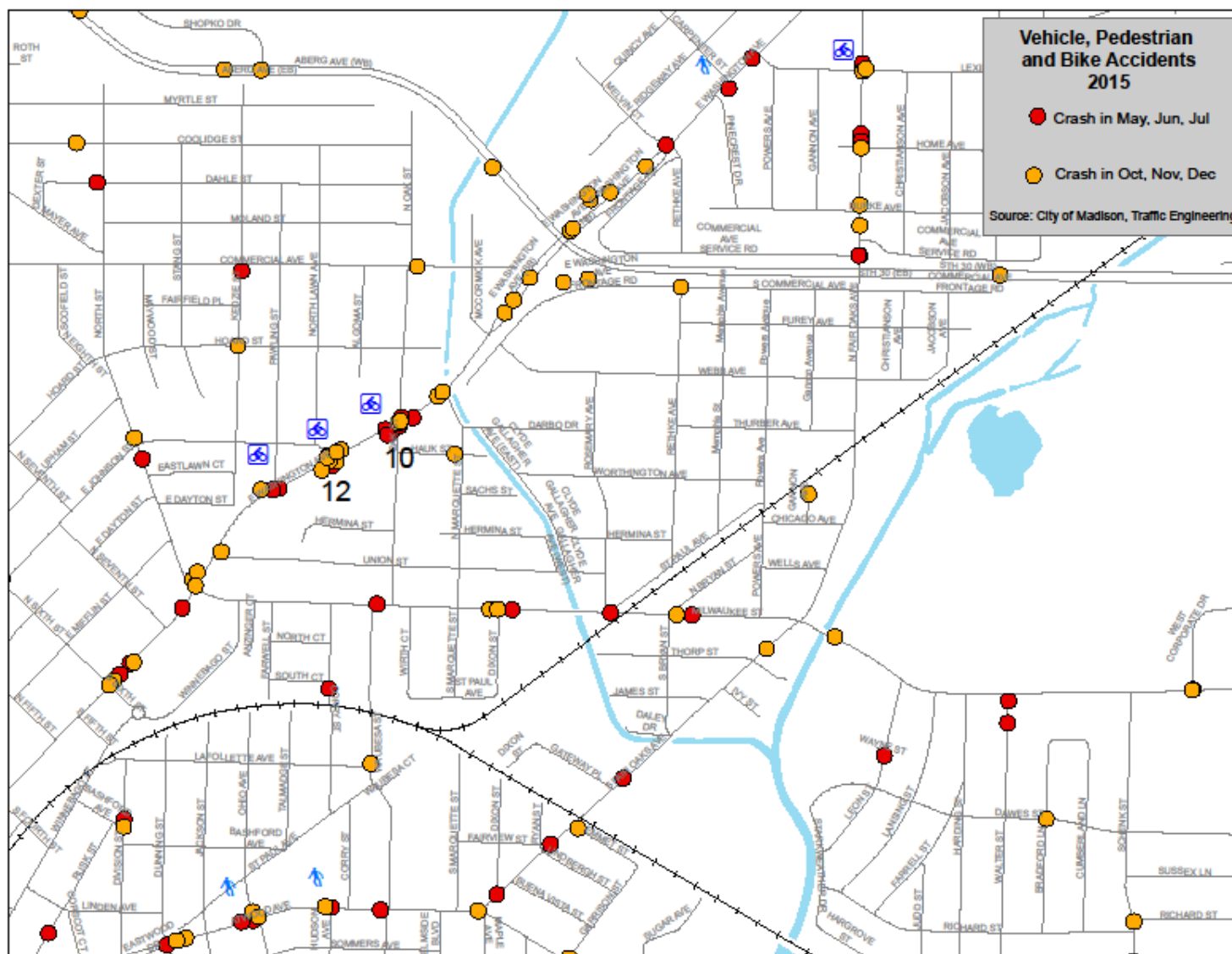


**Figure 8. Park Lighting**  
Source: City of Madison



**Figure 9. Street Lighting**

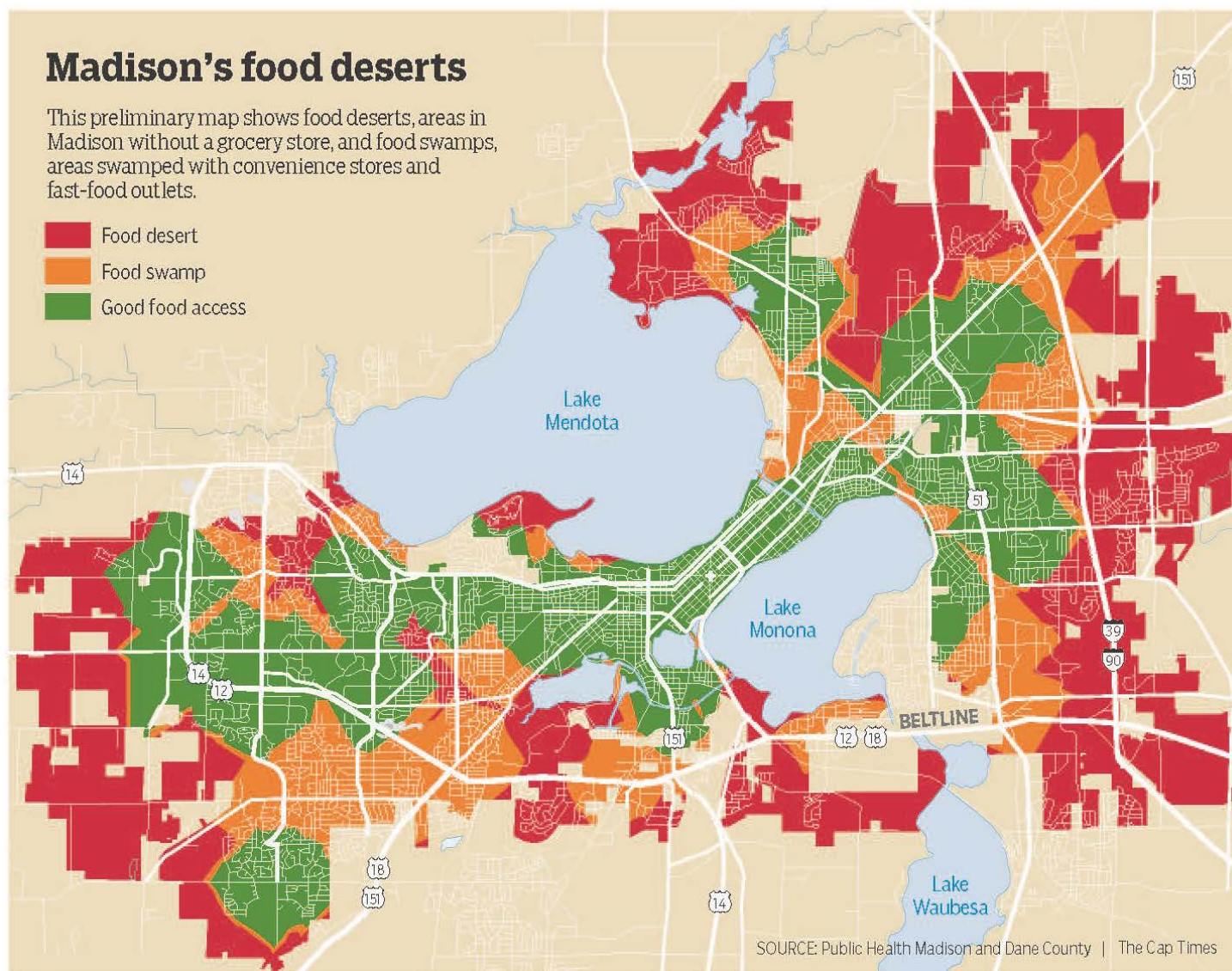
Source: City of Madison



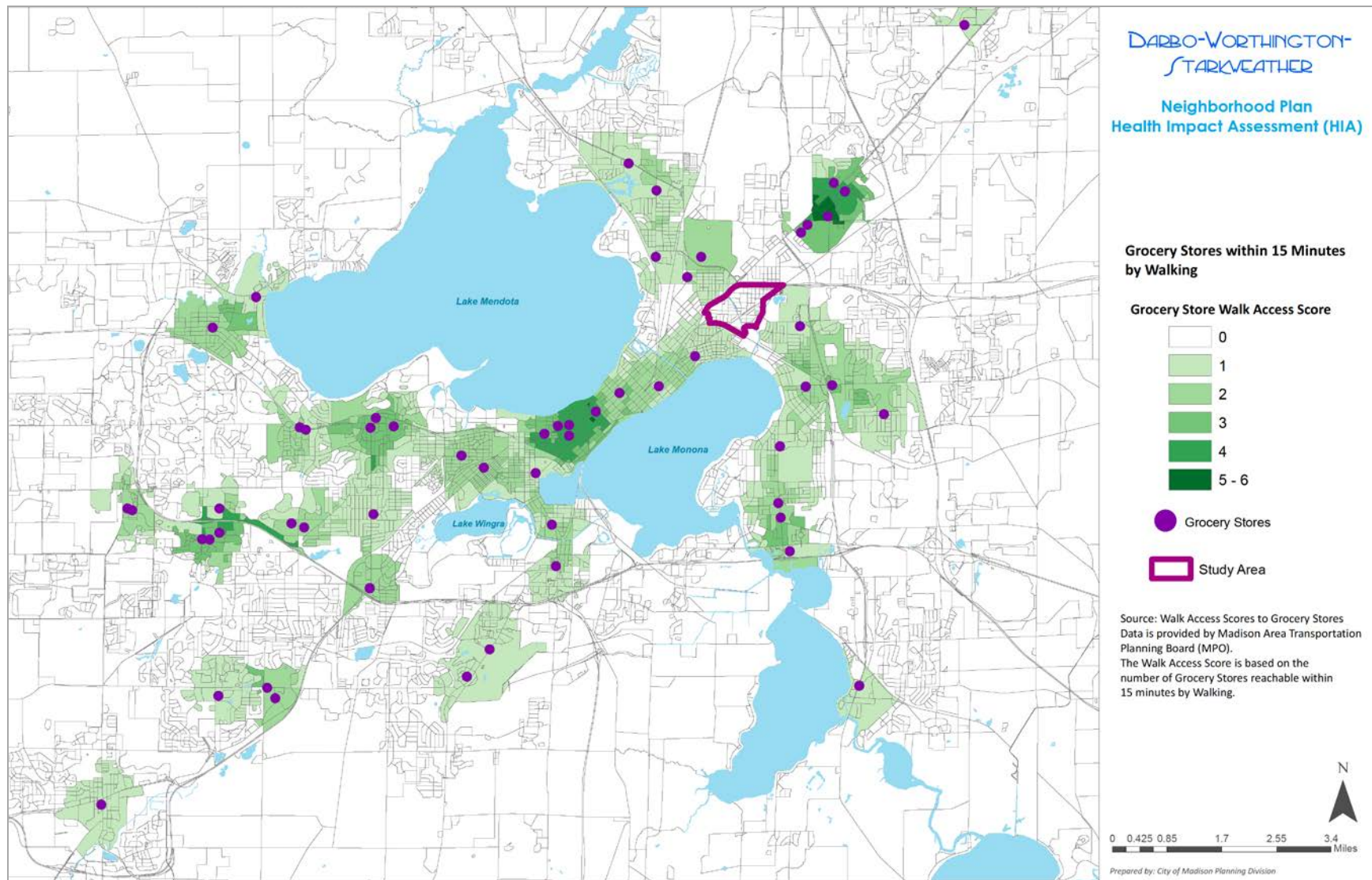
**Figure 7. Vehicle, Pedestrian and Bike Accidents (2015)**

*Source: City of Madison*



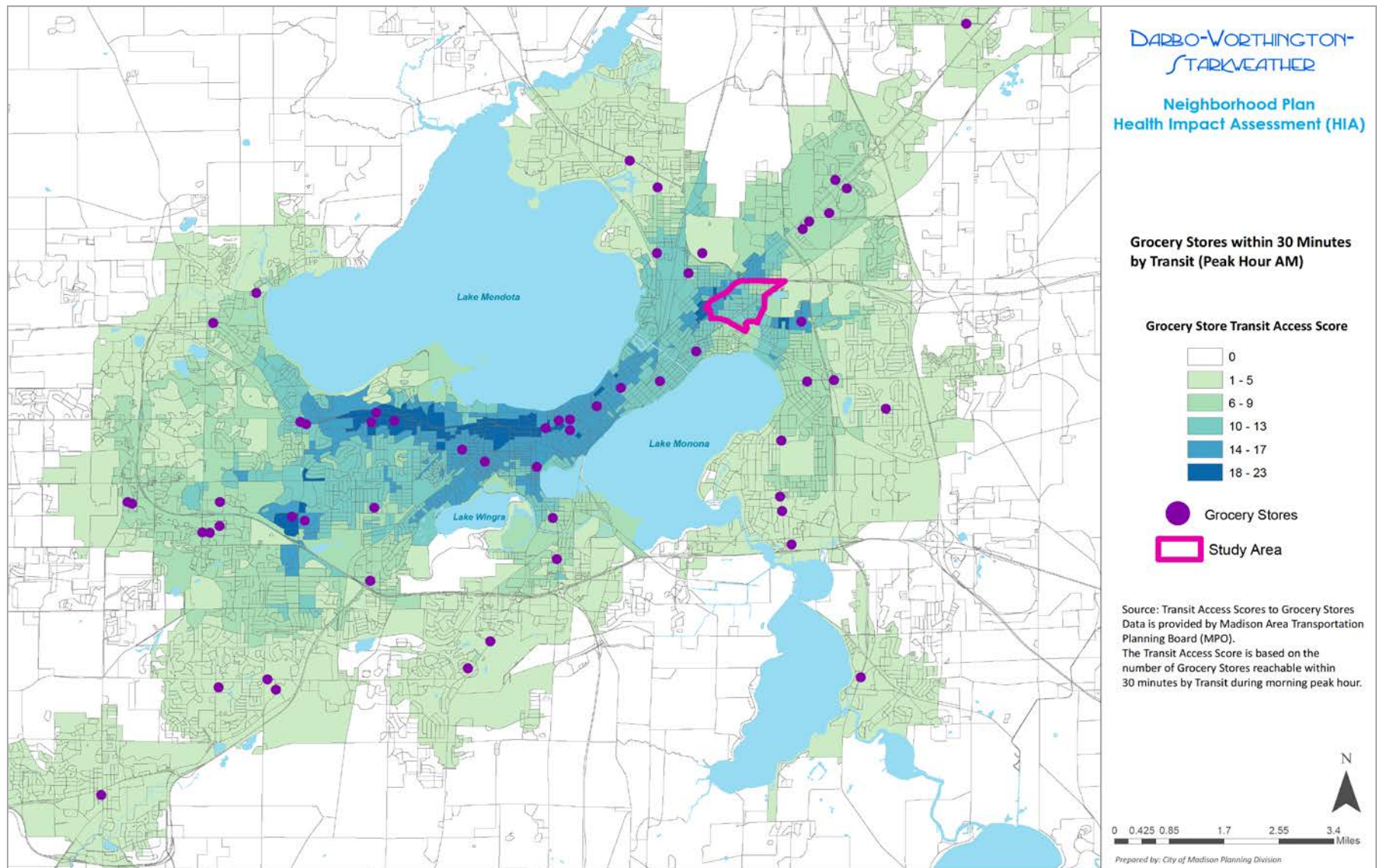


**Figure 8. Madison's Food Deserts, 2012**  
*Source: Public Health Madison and Dane County*

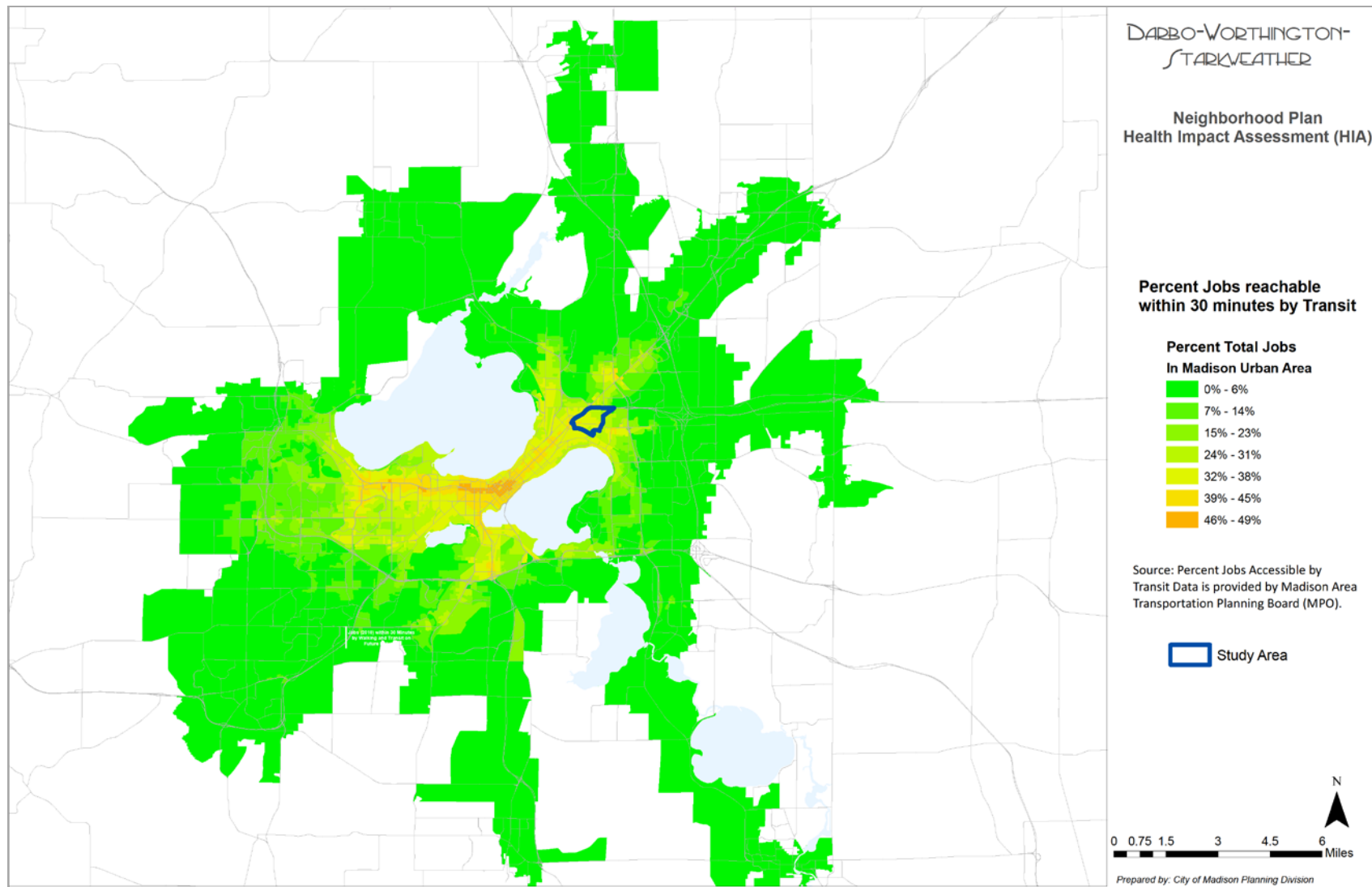


**Figure 910. Grocery Stores within 15 Minutes by Walking**  
Source: City of Madison





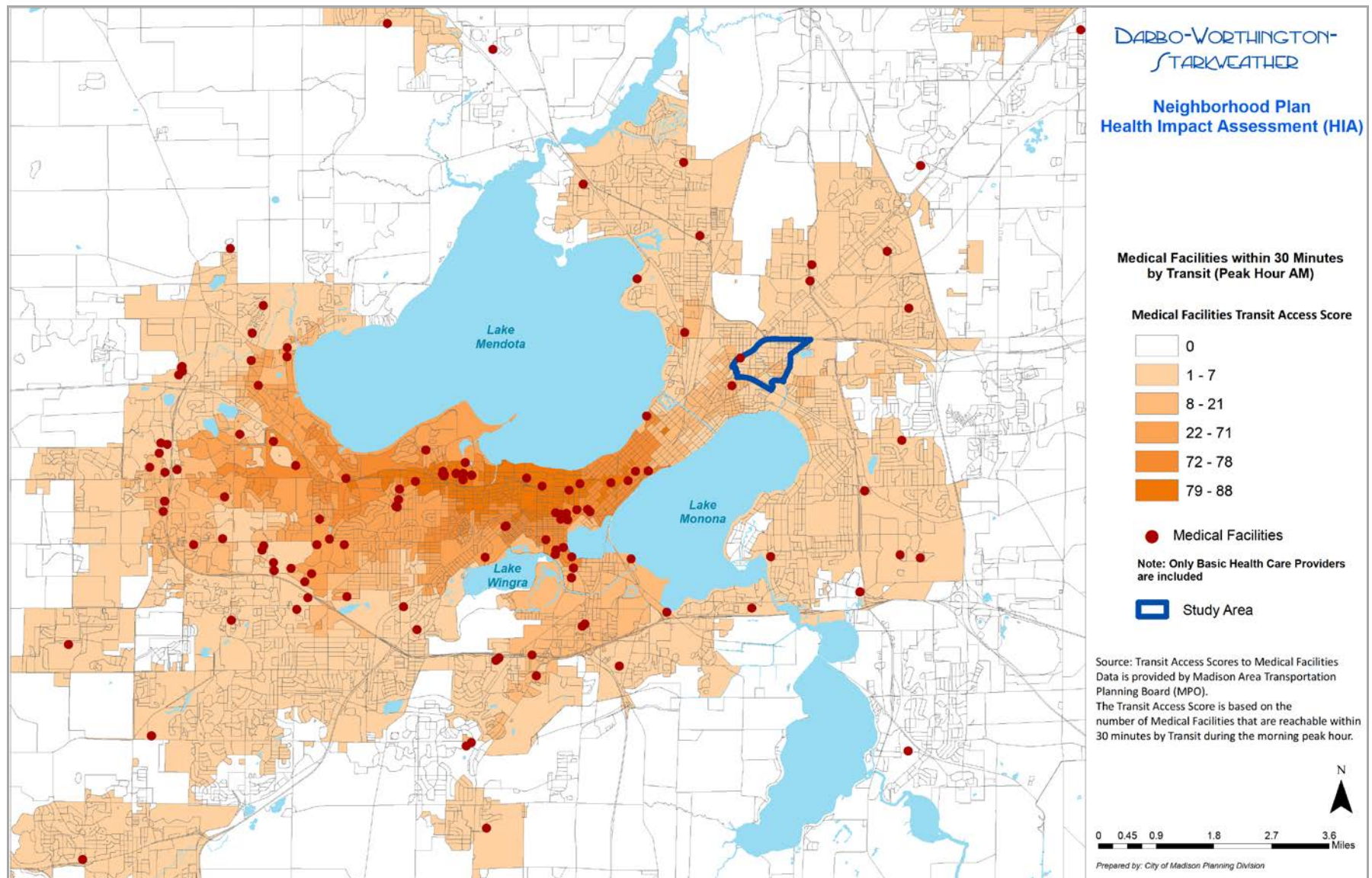
**Figure 11. Grocery Stores within 30 Minutes by Transit**  
 Source: City of Madison



**Figure 11. Percent of Jobs Reachable within 30 Minutes by Transit**

*Source: City of Madison*





**Figure 122. Medical Facilities within 30 Minutes by Transit**  
Source: City of Madison



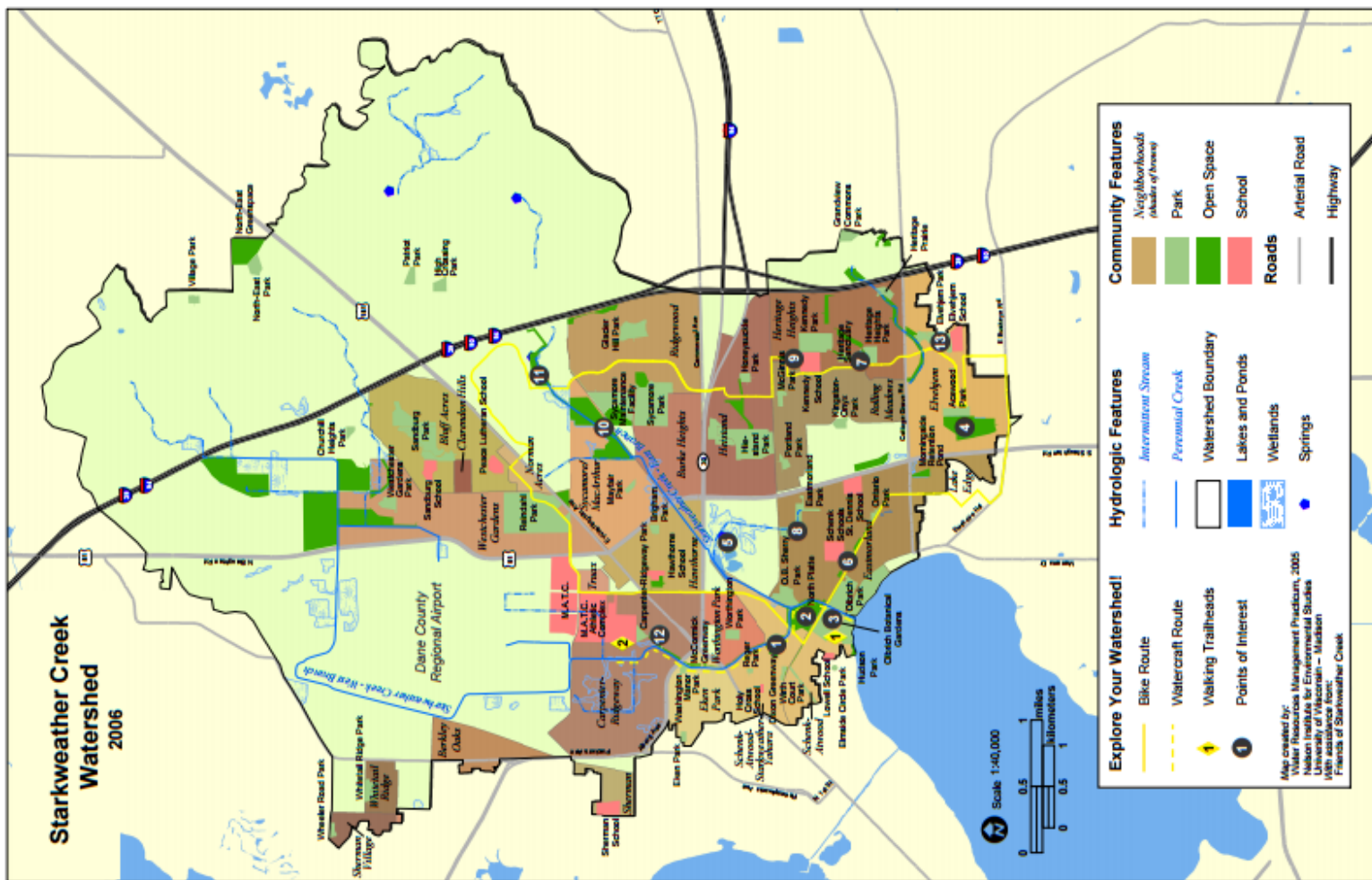
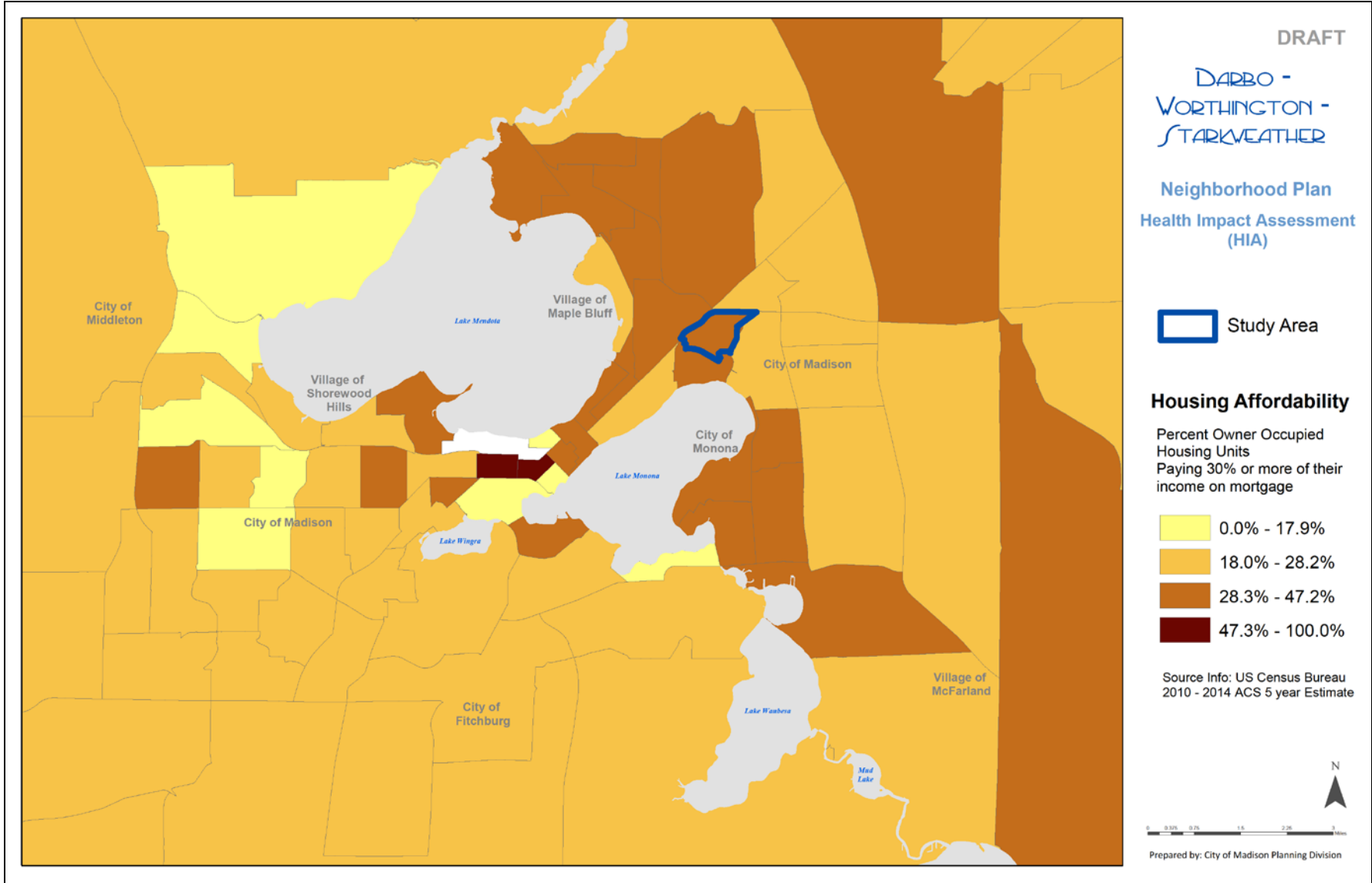


Figure 13. Starkweather Creek Watershed Map  
Source: <https://www.nelson.wisc.edu/docs/map.pdf>

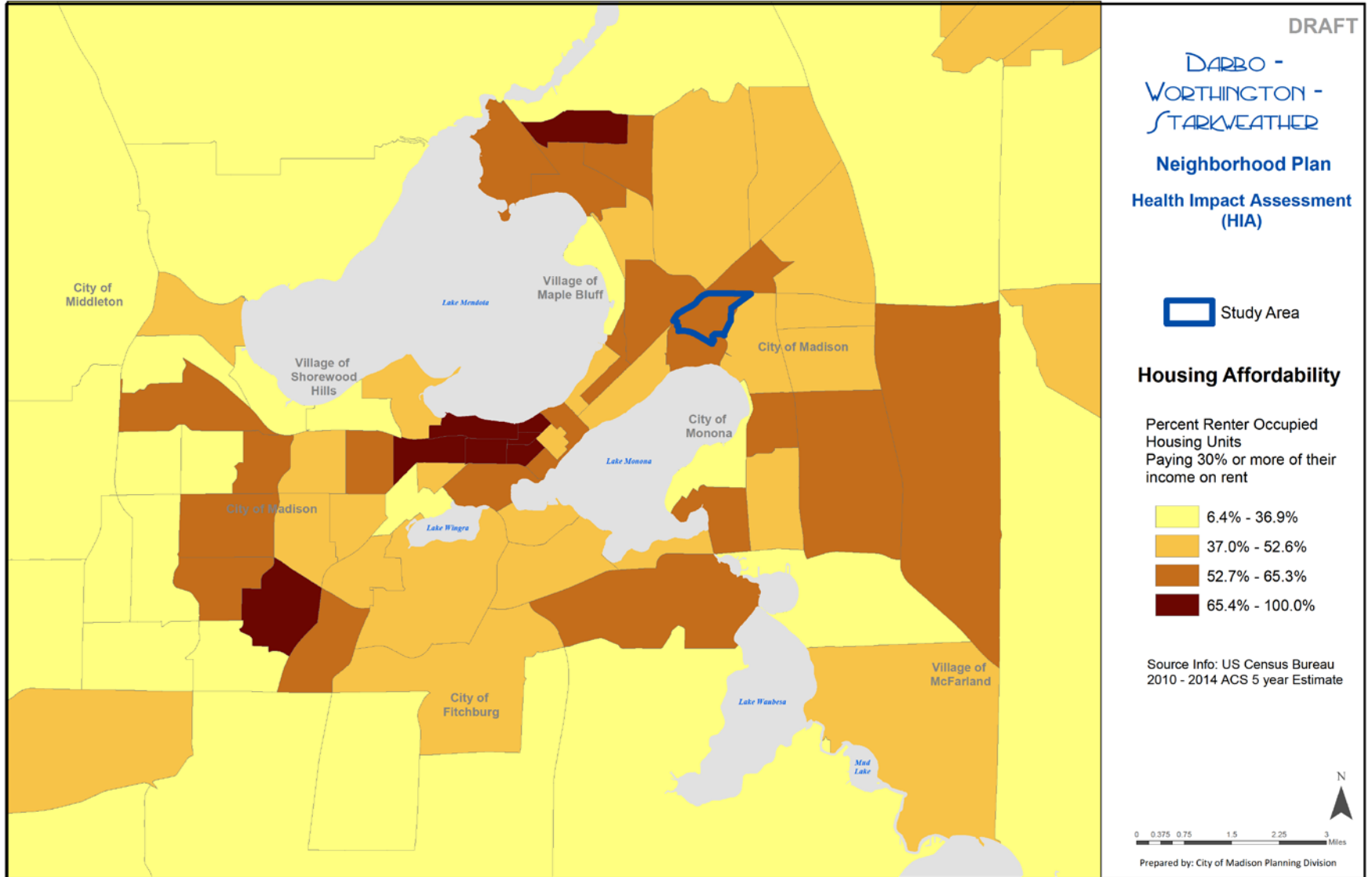






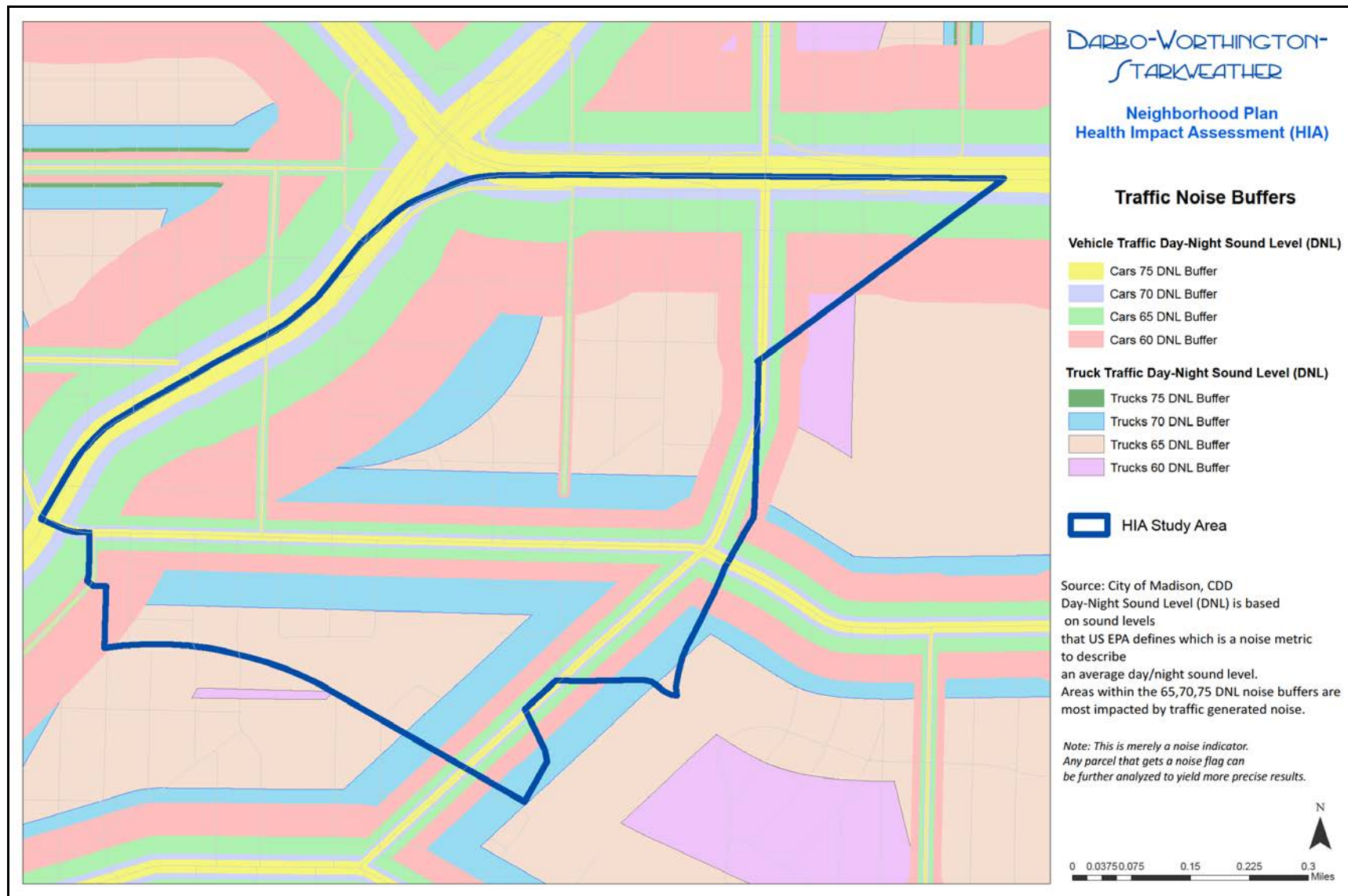


**Figure 15. Owner Occupied Housing Units Paying 30% or More of Their Income on Mortgage, By Census Tract**  
*Source: City of Madison*



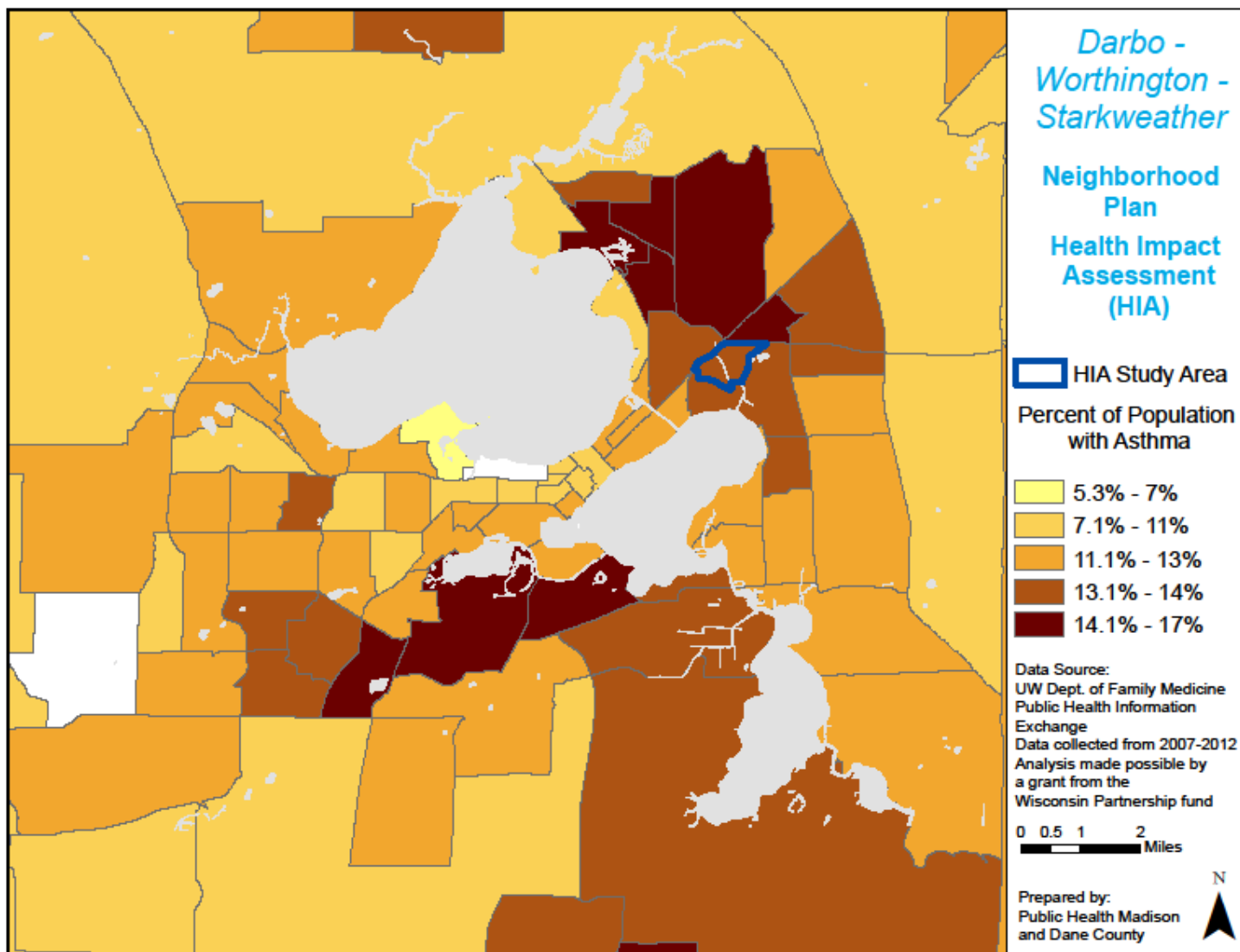
**Figure 16. Renter Occupied Housing Units Paying 30% or More of Their Income on Rent, By Census Tract**

Source: City of Madison

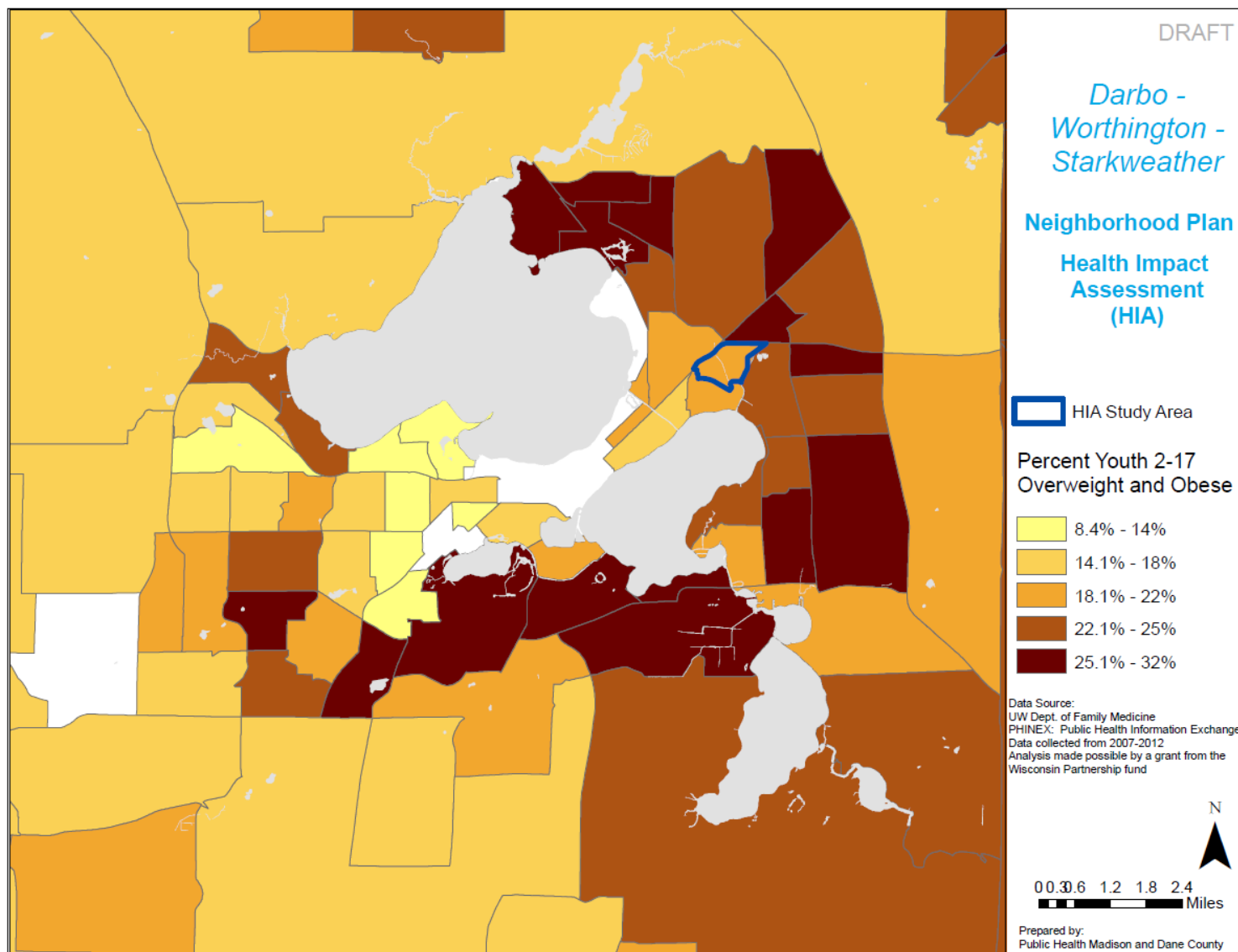


**Figure 16. Traffic Noise Buffers**

*Source: City of Madison*

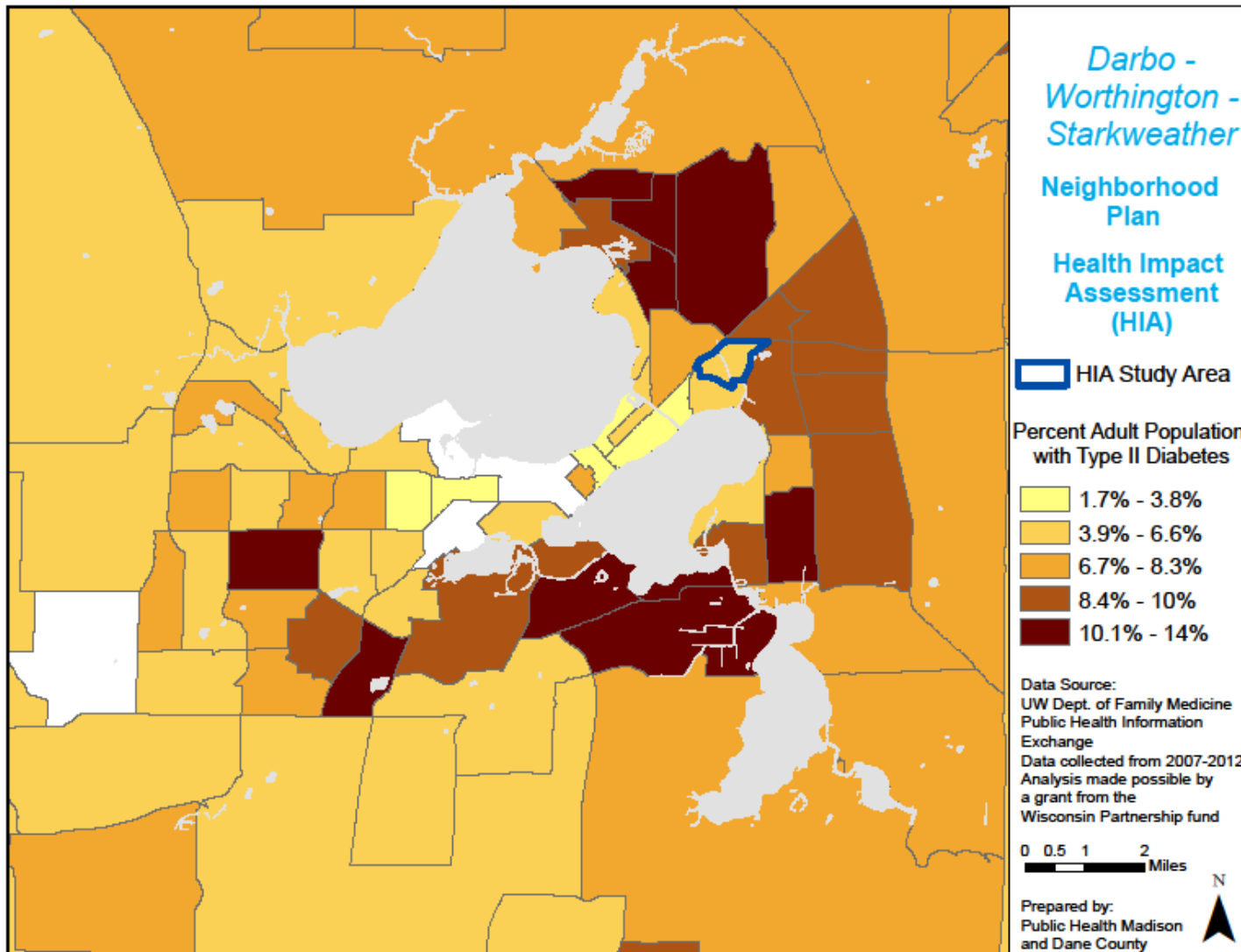


**Figure 18. Asthma Rates, By Census Tract**  
*Source: Public Health Madison and Dane County*



**Figure 19. Overweight and Obese Youth, By Census Tract**

*Source: Public Health Madison and Dane County*



**Figure 20. Type II Diabetes - Population 18 and Older, By Census Tract**

*Source: Public Health Madison and Dane County*



## APPENDIX C – SUMMARY OF IMPACTS AND RECOMMENDATIONS

Additional Recommendations Based on Items <u>Included</u> in First Draft of Neighborhood Plan Recommendations									
	Health Impacts (1 = low   2 = medium   3 = high)				Impact Score	Distribution	Additional Recommendations to Improve Health Outcomes	Implementing Agency for Additional Recommendations	Positive Health Benefits Based on HIA Literature Review
Neighborhood Plan Recommendation	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)			
Improve Connectivity to and within Neighborhood - Short Term Actions (0-2 Years)									
(1) Repaint crosswalks along E. Washington Ave. and Milwaukee St. in planning area.	1	1			2	People who live, work or shop in DWS neighborhood.	Repainting crosswalks may not be adequate to improve pedestrian safety. The City should review signal timing to see if it is feasible to increase the time pedestrians have at crosswalks.	City Engineering	Improve walkability → Decrease obesity
(2) Consider installing continental crosswalks at the following locations: Oak St. and N. Marquette St. entrances to Reger Park; intersections of Rosemary Ave./ Darbo Dr.; Rethke/Thurber Ave.; Fair Oaks/Commercial Ave.; Fair Oaks/ Thurber Ave.	2	1			3	People who live, work or shop in DWS neighborhood.			Improve walkability → Decrease obesity
(3) Install pedestrian flashing beacon at Milwaukee St./Starkweather Creek Path.	1	1			2	People who live in DWS neighborhood or recreate on Starkweather Creek Path.	This will be a useful improvement, however it should be a lower priority than installing any pedestrian improvements on E Washington Avenue. Stakeholders have the most concern about pedestrian safety crossing E Washington Ave.	City Engineering	Improve walkability → Decrease obesity
(4) Assess and increase lighting levels as necessary on Starkweather Creek Path from Darbo Dr. to Waubesa St.	2				2	People who recreate on Starkweather Creek Path.			Obesity Decrease fear of crime →Improve mental health

	Health Impacts (1 = low   2 = medium   3 = high)				Impact Score	Distribution	Additional Recommendations to Improve Health Outcomes	Implementing Agency for Additional Recommendations	Positive Health Benefits Based on HIA Literature Review
Neighborhood Plan Recommendation	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)			
Improve Connectivity to and within Neighborhood - Short Term Actions (0-2 Years)									
(5) Promote biking and walking among residents of all ages: • Establish regular bike skills education activities. • Identify and promote safe routes to school. • Help facilitate distribution of lower cost bikes to residents.	1	3	1		5	People who live in the DWS neighborhood.			Improve walkability, encourage exercise → Decrease obesity
(6) Install bike way-station with benches, bike pump and way-finding kiosk at Starkweather Creek Path and Milwaukee St. in the southeast corner.		1			1	People who live, work or shop in DWS neighborhood.	Install murals and art along Starkweather Creek path to improve aesthetics and make it an experience. Use similar elements to what is being proposed at the Madison East Shopping Center.	City Department of Planning, Community & Economic Development (DPCED)	
(7) Identify potential locations in the planning area for B-Cycle stations and consider establishing subsidized memberships for low income residents.		3			3	People who live, work or shop in DWS neighborhood.	*Consider establishing a free bike share program within the neighborhood. River Riders in Wisconsin Rapids is one example of a free bike share program that should be investigated further. * Based on stakeholder feedback, consider contacting B-Cycle of Madison and recommending Woodmans as another potential location for B-Cycle. At any new B-Cycle station, consider adding a tricycle option for people who are unable to ride a bicycle.	DPCED, B-Cycle, neighborhood groups	

	Health Impacts (1 = low   2 = medium   3 = high)				Impact Score	Distribution	Additional Recommendations to Improve Health Outcomes	Implementing Agency for Additional Recommendations	Positive Health Benefits Based on HIA Literature Review
Neighborhood Plan Recommendation	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)			
Improve Connectivity to and within Neighborhood - Mid-Term Actions (3 to 5 Years)									
(8) Create a bike boulevard along Thurber Ave. to Worthington Park Path, and continuing along Darbo Dr.	1	2			3	People who live or recreate in the DWS neighborhood.			
(9) Continue bike path from O.B. Sherry park along Starkweather Creek to connect to both branches of the proposed green corridor, from Thurber Park along the railroad track, from St Paul Ave to Farwell St.	1	2			3	People who live or recreate in the DWS neighborhood.			
(10) Improve bicycle and pedestrian access and amenities at East Madison Shopping Center.	1	2			3	People who live or shop in the DWS neighborhood.			Improve walkability → Decrease obesity
(11) Assess potential bicycle improvements along Milwaukee St. such as a bike lane on one or both sides of Milwaukee Street.	1	3			4	Commuters from the DWS neighborhood and from outside of the neighborhood.			
(12) Evaluate noise levels along high-speed transportation corridors such as Highway 30, and East Washington Ave. and consider mitigation steps such as living walls, noise abatement walls and other measures.				3	3	People who live in the DWS neighborhood.	Residential areas within the 65,70 and 75 DNL noise buffers are most impacted by traffic generated noise and should be priority areas for noise mitigation techniques.	City Engineering	Reduce exposure to high levels of noise → Decrease high blood pressure, hardening of the arteries & heart attacks
(13) Increase access to East Transfer Point by building sidewalk along north side of Milwaukee St. from W. Corporate Dr. to Regas Rd.	1	1			2	People who use the East Transfer Point and shop/work in the area.			Improve walkability → Decrease obesity

	Health Impacts (1 = low   2 = medium   3 = high)				Impact Score	Distribution	Additional Recommendations to Improve Health Outcomes	Implementing Agency for Additional Recommendations	Positive Health Benefits Based on HIA Literature Review
Neighborhood Plan Recommendation	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)			
Improve Connectivity to and within Neighborhood - Long-Term Actions (more than 5 years)									
(14) Create a new road connection from Darbo Dr. to Webb Ave.		2			2	People who live or shop in the DWS neighborhood.			
(15) Extend N. Marquette St. across E. Washington Ave. to Oak St. and extend E. Washington Ave. median at Oak St.		3			3	People who live in DWS and Eken neighborhoods as well as Madison Metro routes.			
(16) When the Town of Blooming Grove becomes part of Madison, make infrastructure improvements such as: • Evaluate and repair drainage issues on Memphis Ave. and other streets as necessary. • Complete sidewalks along residential and commercial streets.	1	3			4	People who live in DWS neighborhood.			Improve walkability → Decrease obesity
(17) Assess the need for a bus stop in the Town of Blooming Grove along Fair Oaks Avenue.		2			2	People who live in DWS neighborhood.			
(18) Extend Chicago Ave to Fair Oaks Ave.		1			1	People who live, work or shop in DWS neighborhood.			
(19) If/when Salvation Army property redevelops, install a sidewalk along Rosemary Ave.	1	1			2	People who live in DWS neighborhood.			Improve walkability → Decrease obesity
(20) Evaluate potential Metro Route connection from Eken Park Neighborhood into Darbo-Worthington Neighborhood, possibly along extended N. Marquette St.		2			2	People who live in DWS neighborhood.			
(21) Strengthen neighborhood associations and other neighborhood-based groups: • Build leadership capacity and expand leadership base to include individuals from all backgrounds. • Establish a regular, visible presence in the neighborhood through activities that attract participation from a broad spectrum of neighborhood residents including people of all backgrounds, renters and homeowners, businesses and others.	1		3		4	People who live in DWS neighborhood.	*Compile and distribute a list of events and services that are available to neighborhood residents. *Create materials that provide information about all neighborhood services and neighborhood events in one location. This could be done through website, pamphlets, posters, etc. *Neighborhood groups should provide projects/activities that don't require an ongoing commitment. *Neighborhood groups should increase the frequency of their outreach regarding meetings and events.	DPCED, neighborhood groups	Improve social cohesion → Improve mental health

	Health Impacts (1 = low   2 = medium   3 = high)				Impact Score	Distribution	Additional Recommendations to Improve Health Outcomes	Implementing Agency for Additional Recommendations	Positive Health Benefits Based on HIA Literature Review
Neighborhood Plan Recommendation	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)			
Enhance Community Health and Wellness - Short-Term Actions (0 to 2 years)									
(22) Strengthen relationships between the police and neighborhood: • Emphasize the importance of reporting suspicious activities to the police. • Consider integrating strategies proposed by residents into initiatives pursued by police department. • Utilize Crime Prevention Through Environmental Design strategies. • Identify areas of low lighting and assess where additional street lights, tree trimming and other measures are needed.	3		2	2	7	People who live in DWS neighborhood.	* Consider implementing an outreach program to encourage crime reporting such as "You Bet I Told" campaign in Rochester, NY. (https://ric-zai-inc.com/Publications/cops-p158-pub.pdf) *Promote Madison Area Crime Stoppers anonymous call, text and online options for reporting crimes. *Consider adding street lighting to Reger Park, Dixon Greenway, Wirth Court Park, intersection of Darbo Drive and N Marquette Street and adjacent to Mobil Station.	Madison Police, City Parks	Decrease fear of crime →Improve mental health
(23) Increase communication between police and city staff about problem areas in the neighborhood.	3				3	People who live in DWS neighborhood.			Decrease fear of crime →Improve mental health
(24) Ensure that produce vendor at Madison East Shopping Center is accessible to all including lower income individuals through supplemental income programs such as Women Infants and Children, Supplemental Security Income, etc.		2			2	People who live and shop in DWS neighborhood.			Improve access to healthy food →Decrease obesity, type II diabetes
(25) Establish a farmers market in or near Darbo Neighborhood that is affordable to all including lower income individuals through supplemental income programs such as Women Infants and Children, Supplemental Security Income, etc.		3			3	People who live in DWS neighborhood.	Include multiple vendors and ensure they are committed to showing up at the same times/days. Consider replicating weekly Wednesday farmers market in Grandview Commons which includes several food trucks. Consider bringing these events to the neighborhood's parks or developing a flexible market space that can be used by a variety of goods, services and events within the neighborhood (similar to what was proposed in the Denver, CO HIA).	DPCED	Improve access to healthy food →Decrease obesity, type II diabetes

	Health Impacts (1 = low   2 = medium   3 = high)				Impact Score	Distribution	Additional Recommendations to Improve Health Outcomes	Implementing Agency for Additional Recommendations	Positive Health Benefits Based on HIA Literature Review
Neighborhood Plan Recommendation	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)			
Enhance Community Health and Wellness - Mid-Term Actions (3 to 5 years)									
(26) Increase programming and care options for children: • Identify gaps in before and after school care. • Establish affordable childcare options. • Increase educational and recreational programming for children and youth. • Educate residents on certification processes for First Aid and CPR and licensing for in-home childcare provision.	1		3		4	Families/children who live in DWS neighborhood.	Provide access to information on caring for children for first time parents.	Department of Public Health	
(27) Support and expand community garden options: • Enhance community garden at the intersection of Milwaukee St. and St. Paul Ave. • Identify sites for a new community garden.		2			2	People who live in DWS neighborhood.	Advertise gardens (brochures, flyers) to neighborhood and provide details about who to contact if a neighborhood resident is interested in having a garden.	DPCED, neighborhood groups	Improve access to healthy food →Decrease obesity, type II diabetes
(28) Increase health and fitness programs in the area for all ages such as women’s fitness classes, walking/ running groups, healthy cooking and nutrition classes, youth sports, etc.		2	1		3	People who live in DWS neighborhood.	Ensure programs are accessible to all.	DPCED	Encourage exercise → Decrease obesity
(29) Increase access to social services by creating a “one-stop shop” at a centralized location that could include tenant and landlord resources, health screenings, senior services, domestic abuse prevention, multi-lingual services, and more.	3		3		6	People who live in DWS neighborhood.			

	Health Impacts (1 = low   2 = medium   3 = high)				Impact Score	Distribution	Additional Recommendations to Improve Health Outcomes	Implementing Agency for Additional Recommendations	Positive Health Benefits Based on HIA Literature Review
Neighborhood Plan Recommendation	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)			
Design Concepts									
(30) Starkweather Green Corridor Focus Area: Scenario 1 - Passive Recreational		2	1	3	6	People who live and recreate in the DWS neighborhood.			Improve walkability → Decrease obesity
(31) Starkweather Green Corridor Focus Area: Scenario 2 - Water Centric		2	1	3	6	People who live and recreate in the DWS neighborhood.			Improve walkability → Decrease obesity
(32) Starkweather Green Corridor Focus Area: Scenario 3 - Multifunctional Activity		3	1	3	7	People who live and recreate in the DWS neighborhood.			Improve walkability → Decrease obesity
(33) E. Washington Ave./Milwaukee St. Focus Area: Concept 1 - Mixed-use Activity Node		2		3	5	People who live, work and shop in DWS neighborhood.	For the public art/gateway feature, consider making this area an entrance welcoming people to the DWS neighborhood. Residents also mentioned they would like a gateway feature near the intersection of East Washington Avenue and Starkweather Creek Path.	DPCED	
(34) Worthington Focus Area: Concept 1		2	2	2	6	People who live in DWS neighborhood.	*Add park lighting and amenities that will bring families and children to the park such as a seasonal ice rink or splash pad. *All public spaces should incorporate CPTED standards.	City Parks, DPCED, City Engineering	
(35) Worthington Focus Area: Concept 2		2	2	2	6	People who live in DWS neighborhood.	*Add park lighting and amenities that will bring families and children to the park such as a seasonal ice rink or splash pad. *All public spaces should incorporate CPTED standards.	City Parks, DPCED, City Engineering	
(36) Worthington Focus Area: Concept 3		2	2	3	7	People who live in DWS neighborhood.	*Add park lighting and amenities that will bring families and children to the park such as a seasonal ice rink or splash pad. *All public spaces should incorporate CPTED standards.	City Parks, DPCED, City Engineering	
(37) Madison East Shopping Center Focus Area: Concept 1 - Immediate Improvements & Placemaking	1	3		3	7	People who live, work, and shop in DWS neighborhood.	*Ensure that artistic/creative bike racks meet recommended guidelines established by the City. *Market the additional commercial spaces that are proposed towards food establishments that provide fresh food options. Consider offering grocery stores or sit-down restaurants that offer healthy meals incentives to locate in these spaces. *Further enhance the walkway from McDonalds to the Shopping Center to promote pedestrian access from E. Washington Ave.	City Engineering, DPCED	Improve access to healthy food →Decrease obesity, type II diabetes



Additional Recommendations Based on Items <u>Not Included</u> in First Draft of Neighborhood Plan Recommendations								
	Health Impacts (1 = low 2 = medium 3 = high)				Impact Score	Distribution	Implementing Agency	Positive Health Benefits Based on HIA Literature Review
	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)		
Additional Recommendations - Short Term (0-2 Years)								
(38) <b>Crime:</b> *Residents have concern with crime and loitering at the Mobil Station. Work with the store owner and prioritize replacement of security cameras at the gas station. The City should consider setting up a system that would allow police to view direct feed, similar to what the Detroit Police Dept. has implemented. In collaboration with the neighborhood and residents, aggressively enforce existing laws and ordinances at the property to improve safety. Work with the property owner to incorporate Crime Prevention Through Environmental Design principles. *The neighborhood and City should collaborate to start a Neighborhood Watch program. Encourage neighborhood volunteer projects which assist with property maintenance and cleanups.	3		3		6	People who live in DWS neighborhood.	DPCED, Madison Police, neighborhood groups	Decrease fear of crime →Improve mental health  Improve social cohesion → Improve mental health
(39) <b>Land Use:</b> When residents mentioned the Department of Corrections (DOC) in the neighborhood, it tended to be negative. The DOC is part of the neighborhood and has a sizeable footprint plus employee base coming into the neighborhood. Encourage the DOC to host or sponsor events or activities.			2		2	People who live in DWS neighborhood.	DOC	
(40) <b>Housing:</b> *Provide literature to residents (especially to families with young chidlren) about improving air quality at home through use of products with low VOCs, vaccuums with allergen-reducing filters, opening windows when weather is warm, keeping humidity at an acceptable level, testing for radon and encouraging smoke free homes to decrease respiratory issues. *Hold a public event that provides education about indoor air quality. This could include selling low-cost air filters, providing education on basic maintenance of furnaces, etc.				3	3	People living in neighborhood, especially those with existing respiratory issues.	Public Health	Improve air quality → Decrease asthma

	Health Impacts (1 = low 2 = medium 3 = high)				Impact Score	Distribution	Implementing Agency	Positive Health Benefits Based on HIA Literature Review
	Safety	Mobility & Accessibility	Social Connectedness & Empowerment	Environ. & Built Conditions		(who is likely to be most affected)		
Additional Recommendations - Mid Term (3-5 Years)								
(41) <b>Food:</b> If a grocery store locates at Union Corners, consider its impact on the neighborhood; is the food affordable?, is it easy for DWS residents to get to?, etc. If the neighborhood still needs access to convenient healthy food, work with the convenience stores in the neighborhood to improve selections and price points of non-packaged foods that they offer. Offer incentives for existing neighborhood stores to offer healthy foods.		3			3	People who live in DWS neighborhood.	City Department of Planning, Community & Economic Development (DPCED)	Improve access to healthy food →Decrease obesity, type II diabetes
(42) <b>Trails:</b> Consider restricting parking further north on Oak Street where it intersects with Milwaukee Street. This intersection can be difficult for turning bikes.		1			1	Commuters from the DWS neighborhood and from outside of the neighborhood.	DPCED and City Engineering	
(43) <b>Parkland:</b> *Worthington Park - Consider adding permanent or portable restroom facilities. Assess lighting and increase it as necessary in and around the park. Add picnic tables under shade trees. Use Crime Prevention Through Environmental Design principles. * Reger Park- Consider adding park amenities that will encourage use of park (e.g. grills, permanent or portable restroom facilities). Use Crime Prevention Through Environmental Design principles.	2			3	5	People who live in DWS neighborhood.	City Parks	Decrease fear of crime →Improve mental health
(44) <b>Water Quality:</b> In addition to the settling pond the City is considering, focus on planting native vegetation adjacent to Starkweather Creek to filter pollutants before they reach the water.				2	2	Neighborhood and city-wide benefits of improved water quality.	City Engineering	
Additional Recommendations - Long Term (more than 5 years)								
(45) <b>Housing Affordability:</b> Ensure that affordable housing is maintained so that current residents are not forced to leave the neighborhood.				3	3	People who live in DWS neighborhood.	DPCED	Preserve affordable housing →Decrease stress
(46) <b>Water Quality:</b> *Encourage developers to use low impact development and green infrastructure techniques in new development and redevelopment to enhance water quality of Starkweather Creek and the associated watersheds. *The City should continue to support the Madison Area Municipal Storm Water Partnership's education and outreach program which promotes practices that reduce and improve stormwater runoff into Dane County lakes, rivers and streams.				2	2	Neighborhood and city-wide benefits of improved water quality.	DPCED and City Engineering	
(47) <b>Land Use:</b> Ensure that all new developments and redevelopments are at pedestrian scale and add to the livability and vibrancy of the neighborhood. In redevelopment areas within the plan, provide gathering spaces for residents.			2	3	5	People who live in DWS neighborhood.	DPCED	