Health Impact Assessment June 20, 2011

Duluth, Minnesota's Complete Streets Resolution, Mobility in the Hillside Neighborhoods and The Schematic Redesign of Sixth Avenue East

St. Louis County Public Health & Human Services

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Public Health

Health Impact Assessment

June 20, 2011

Duluth, Minnesota's Complete Streets Resolution, Mobility in the Hillside Neighborhood and The Sixth Avenue East Schematic Redesign Study

Executive Summary

A **Health Impact Assessment (HIA)** is a combination of procedures, methods and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population. The HIA is used to inform decision-makers about potential health impacts so they can make the most informed decision. The HIA uses health indicators to determine its recommendations. **Health Indicators**, when changed, produce an effect on the health of a population. They are measurable and related to an aspect of health. Examples are the proportion of pervious to impervious ground surfaces, the ratio of miles of bike lanes and paths to roadways and the number of vehicle crashes when compared to similar roads.

This HIA builds upon the Sixth Avenue East Schematic Redesign Study. The Redesign Study arose out of the community's concern for the safety of pedestrians and bicyclists using this road. Multi-modal transportation challenges exist throughout the corridor. The Redesign Study evaluated the balance of transportation modes and found solutions to obtain a true multi-modal approach. Secondarily, it addressed the health benefits of a well-designed and environmentally sound corridor.

The Redesign Study was selected for a HIA, because the roadway has been an ongoing source of concern, plus the Safe & Walkable Hillside Coalition goal is to create a safe, walkable, greener, cleaner neighborhood, with emphasis on helping school children walk or bike safely. Additionally, when Nettleton Elementary School is closed in 2012, the District will bus all children across Sixth Avenue East to Grant Elementary School.

The first step is to **screen.** Screening determines if there would be a benefit from conducting a HIA. The HIA team asked several questions like, "Is there enough time to complete a HIA before decisions are made?" and "Would the HIA findings have the ability to alter the outcomes of the project?" The second step is to **scope**. The scoping step begins to identify health concerns and to determine the health categories and indicators for evaluation in the **assessment** step. During a public scoping workshop, the health categories to receive further study were determined. The stakeholder discussions and the final assessment of the participants and the HIA Team resulted in the health categories of **Accessibility & Safety, Physical Activity,**

Livability, Pollution, and Food Access. Due to time constraints and the level of funding available, the health categories of pollution and food access were not assessed for this report.

The following recommendations should be taken into consideration for future planning and engineering initiatives associated with the redesign and reconstruction of Sixth Avenue East. They are intended as a foundation to meet the public's health needs and concerns identified through the HIA process. They should be considered by all parties, agencies and organizations that have a role in meeting the needs of the community within the HIA project area.

SELECTED HIA RECOMMENDATIONS

Health Category #1 - Accessibility and Safety

- **Add additional bus stops to the redesign study and install shelters where ridership warrants.**
- **The addition of a traffic signal at Sixth Avenue East and Seventh Street reinforces the Redesign Study, which recommended that option be explored and implemented, if possible.**
- **Implement measures to reduce crashes at the highest crash intersections, such as Sixth Avenue East and Fourth Street.**
- **Establish an official bike route on Sixth Avenue East, with corresponding changes in the physical environment including separation of bicyclists from cars to improve bicyclists' safety.**
- **Develop a plan to clear snow from the medians at the Sixth and Eighth Street pedestrian crossings.**
- **Provide safe crosswalks for school children, along with designating Sixth Avenue East north of Fourth Street a School Crossing Zone.**

Health Category #2 - Physical Activity

- **Development patterns should encourage mixed uses, compact design, and a variety of transportation choices that promotes physical activity.**
- **Use the Metropolitan Interstate Council's sidewalk assessment as a guide to create a friendlier and more complete sidewalk network in the Hillside.**
- **Assist Duluth Parks and Recreation, Fit City Duluth, Safe and Walkable Hillside Coalition and other groups as they work to make Duluth and the Hillside a more easily active neighborhood.**
- **The project area should provide safe, convenient and affordable access to housing, worksites, schools and community services.**

Health Category #3 – Livability

- **Merge into one, unified Hillside Neighborhood Revitalization Plan and consider inclusion of a livability component.**
- **Implement the city's Unified Development Chapter parking standards within the Hillside neighborhoods completely, especially along the lower areas of the corridor, to greatly improve connectivity and livability for residents.**
- **Priority areas for "green" improvement are large parking lots around in the medical district. Improvements, such as border gardens, fences and the capture of additional rain water should be considered.**

- **Through innovative roadway design, as well as the use of design exceptions and/or variances, shorten the crossing distance at intersections to allow for pedestrians to cross more safely.**
- **Include amenities like lighting, benches, decorative fences, smaller localized pocket parks, trash receptacles, recycling containers, and rain gardens along the Sixth Avenue East corridor to create a neighborhood enhancing environment.**
- **Consider adding amenities outside of the right-of-way to create greener, more neighborhood-friendly development.**

HIA Conclusions

1. The recommendations in this HIA should become an addendum to the Sixth Avenue East Schematic Redesign Study, and be paired with an upcoming traffic study on Sixth Avenue East.
2. The recommendations in this HIA would positively impact all health categories and better serve the users of and residents in the Hillside.
3. Duluth's Comprehensive Plan provides additional language to support the redesign, or a similar, improved design which supports all modes of transportation.
4. The roadway redesign is a feasible project.
5. Over time, enhancements outside the corridor are feasible.
6. With existing city policies and the HIA recommendations, the renewal of the corridor would greatly contribute to the unification of the Hillside and improve the health of its residents.

HIA Introduction

St. Louis County Public Health and Human Services, in partnership with the Minnesota Department of Health (MDH), began conducting a Health Impact Assessment (HIA) in January, 2011. The purpose was to determine: 1) the potential health impacts of the Sixth Avenue East Schematic Redesign Study, 2) if the redesign is embracing Duluth's Complete Streets Resolution and 3) how the redesign study could be improved to provide additional health benefits to users of the corridor. The HIA was funded in part by a grant received from the Association of State and Territorial Health Officials and the Centers for Disease Control and Prevention. It was supplemented with funds from Minnesota's Statewide Health Improvement Program (SHIP).

A HIA is a combination of procedures, methods and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population and the distribution of those effects within the population. It assesses the potential health effects of a project, program or policy before it is built or implemented. It provides recommendations to increase positive and minimize adverse health outcomes. The HIA framework is used to inform decision-makers about the potential public health impacts of the project, program or policy so that they can make the most informed decision. They are typically performed for plans, projects and policies that fall outside of traditional public health arenas, such as transportation and land use.

The following report summarizes the HIA process and suggests recommendations for implementing the Complete Streets Resolution and improving the Sixth Avenue East Schematic Redesign Study, so that decision-makers consider a broader range of health impacts.

Background on the Sixth Avenue East Schematic Redesign Study

The HIA builds upon work done previously for the Sixth Avenue East Schematic Redesign Study. In the fall of 2010, the City of Duluth, along with its partners, Fit City Duluth, Neighborhood Housing Services, and Local Initiative Support Corporation commissioned a Sixth Avenue East Schematic Redesign Study. The request arose out of the community's concern for the safety of pedestrians and bicyclists using the avenue. This concern, combined with its aesthetically displeasing design and the large volumes of untreated storm water runoff following rain events and snow melt, are why the study was initiated.

The Sixth Avenue East corridor divides the Central and East Hillside neighborhoods and is an impediment for bicycle and pedestrian mobility (see figure #1). The corridor lacks an environment that supports walking and other non-motorized mobility for residents and others who work and obtain services in the area. The schematic redesign was an important first step to focus on how to restore livability, environmental stewardship, and multi-modal transportation compatibility to the area. The outcomes of the study established a vision and determined the needs for Sixth Avenue East. The avenue is a challenge not only for bicyclists, disabled, children, elderly and most pedestrians, but Sixth Avenue East poses a problem for the automobile, as well. As designed, the many modes of transportation compete to use the corridor, let alone co-exist compatibly.

Multi-modal transportation challenges exist throughout the Sixth Avenue East corridor. Traditionally, design problems and solutions centered on optimizing results for motorized transportation. The redesign study was an effort to evaluate the balance and find solutions that expand transportation options to obtain a true multi-modal approach that provides safe movement options for all modes.

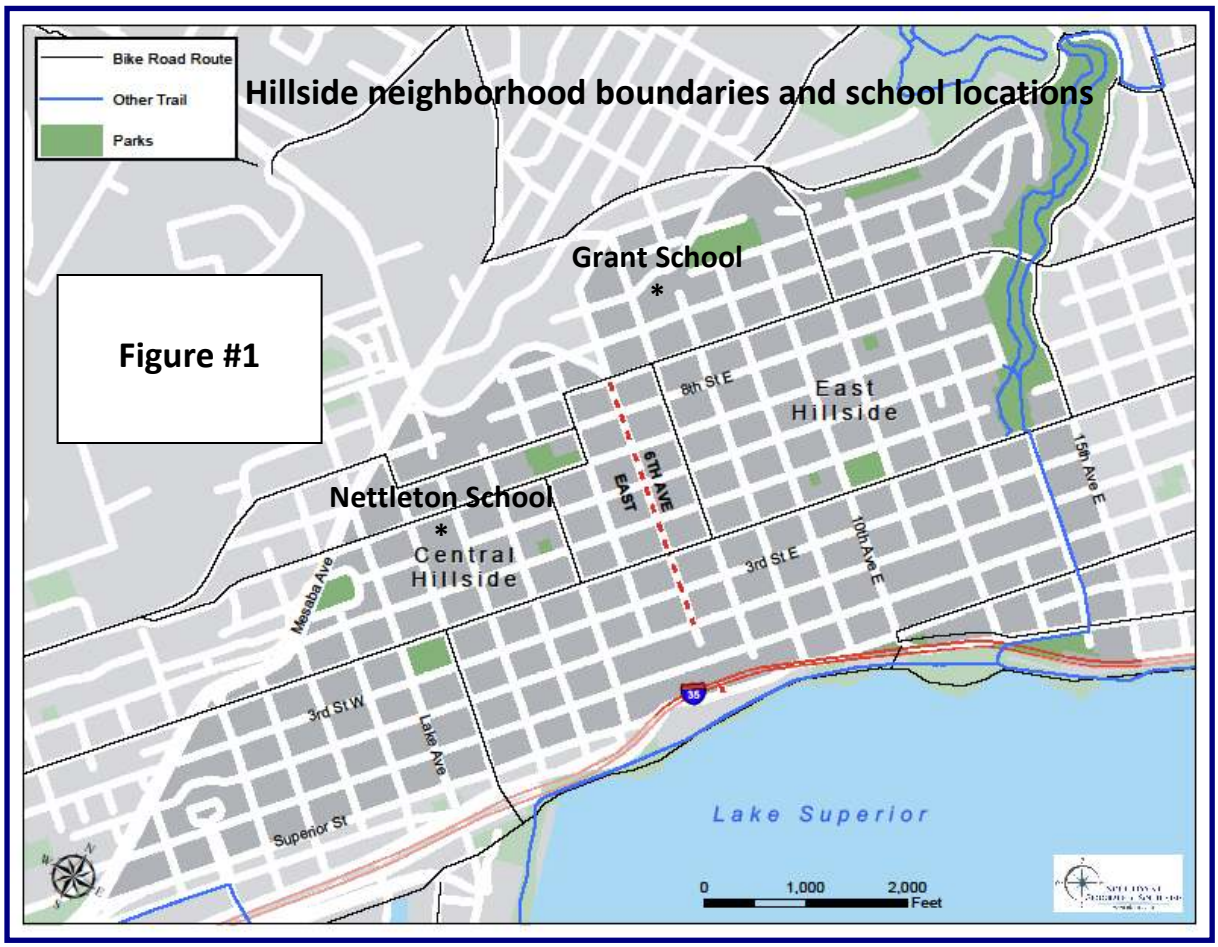
Mid-day on 6th Avenue East

Transportation projects are typically developed from the perspective of the person in the motorized vehicle. But not all people who travel are using the same mode. It is typically those corridors that have the greatest use by multiple modes that also have the greatest range of conflicts. The needs of the pedestrian commuter are different from the needs of the car commuter and the bicycle commuter. Attention to non-motorized and mass transit safety can occur while still maintaining an acceptable level of mobility for the motorized traveler and creating a system of sustainable transportation for all. The parameters of the Sixth Avenue East Schematic Redesign Study include the corridor environment and elementary school student safety before and after school.

Corridor Environment: Sixth Avenue East is a four-lane, undivided, Municipal State-Aid (MSA) principal arterial that runs from Second Street uphill to Ninth Street. It's about one-half

mile long with 66 feet of right-of-way. It's a remnant of Minnesota State Trunk Highway 194 and was turned over to the city when I-35 was completed in the 1980s. Every day, thousands of people interact with Sixth Avenue East. About 16,000 people are in cars, 3% to 4% of those are in trucks, many others are pedestrians, bicyclists, transit riders, and others. The speed limit is 30 miles per hour.

The neighborhood environment around Sixth Avenue East includes single-family and multiplex homes alongside businesses, such as gas stations, medical supply, and shoe repair, much like principle arterials anywhere. Sixth Avenue East is a dividing line between the two most urban and centrally located neighborhoods in the city, Central and East Hillside. Central Hillside's boundaries are approximately Mesaba Avenue to Sixth Avenue East and East Hillside is from Sixth Avenue East to Twenty-first Avenue East. These are two of the lowest income neighborhoods in the city with poverty rates of 28% and 37%, respectively. Owner-occupancy rates are at about 20% and 35%, respectively. For the two blocks on either side of Sixth Avenue East, the owner-occupancy rate drops to 10 - 15%. The college student population is increasing in the area, mostly from Seventh Street down to Fourth Street.



Student Safety: For nearly a century, children in Central Hillside attended Nettleton Elementary School and the East Hillside children attended Grant Elementary School. Beginning in the fall of 2012, the combined school populations will occupy a remodeled Grant School. The school district will bus all Central Hillside students across Sixth Avenue East, as the District

deems the avenue unsafe to cross. In the 2010/2011 school year, 151 students attend Nettleton in the area bounded by Sixth Avenue East, Mesaba Avenue and Lake Superior. 139 students attend Nettleton from the area bounded by Sixth Avenue East, Fifteenth Avenue East, Kenwood Avenue and Lake Superior. Despite the cautionary plans by the school district, it is anticipated that elementary-age school children will cross Sixth Avenue East, nonetheless. Although the closing of Nettleton School was a main impetus for the redesign study, other issues and shortcomings exist and are discussed in this HIA. School locations and neighborhood boundaries are illustrated on the preceding map (see figure #1).

The Health Impact Assessment Process

HIA Screening Step

The first step of a HIA process is to screen the potential project, program or policy to determine if it would benefit from a HIA. The HIA team asked questions like: 1) Is there enough time to complete a Health Impact Assessment before decisions are made? 2) Would the HIA findings have the ability to alter the outcomes of the project? and 3) Would a HIA be of interest or benefit to the stakeholders involved in the project?

Since the Sixth Avenue East Schematic Redesign Study was completed the month prior to beginning the HIA process, and since no immediate funding or definite plans to begin a reconstruction project was imminent, it was determined that sufficient time was available to perform a HIA on the study and the corridor. Additionally, since the redesign study did make an attempt to evaluate the transportation corridor from a walkability, bikability and livability perspective, many of the project discussions and indicators that surfaced would be directly applicable and benefit from further analysis through a HIA.

The redesign study focused on alternatives for rebuilding the transportation corridor within the existing right-of-way. During the study, some health impacts were considered as they arose in public discussion, but the public was not prompted to think about health nor did the recommendations speak directly to outcomes and benefits for the public's health. Major construction projects have a direct and lasting impact on the health of the people it serves, but transportation projects in particular have a far-reaching and long-lasting impact on a community and a neighborhood. Thus, it seemed reasonable to move forward with implementing a HIA on Sixth Avenue East and the redesign study.

Why Evaluate Sixth Avenue East in Duluth, Minnesota?
The Sixth Avenue East Schematic Redesign Study was selected for use in the HIA for the following reasons:

1. The roadway has been an ongoing source of concern for many years.
2. The Safe & Walkable Hillside Coalition's Action Plan identified these goals:
    - Creating a safe and walkable Hillside for everyone;
    - Creating a cleaner, greener and more inviting Hillside; and
    - Making certain that children can walk and bike safely to and from school.

3. The Duluth School District is closing Nettleton Elementary School and assigning those children to attend Grant Elementary School. Sixth Avenue East has been identified by the School District as too dangerous for children to cross. This necessitates increased busing and discourages walking to and from school.

HIA Scoping Step

The second step of a HIA process is to scope the project. The scoping step begins to identify the health concerns associated with the proposed project and helps to determine the health indicators that will be evaluated in the third step, the assessment step. This process also identifies the responsible parties for conducting the HIA, who will oversee the process and who will be involved. Most importantly, it is an excellent opportunity to engage the public.

Public Involvement
The Sixth Avenue East Schematic Redesign Study process included numerous public outreach and engagement opportunities. The study invited a wide range of users and stakeholders to participate. Those who would benefit from or be affected by changes to Sixth Avenue East include residents, businesses, community and religious groups, pedestrians, bicyclists, motorized travelers, transit users, children, and others. Through three public outreach events, two public open houses, eight meetings with project partners, technical advisors, and stakeholders, many opinions, thoughts, and ideas were collected and tabulated.

The public outreach for this HIA built off of the extensive public outreach work accomplished during the Sixth Avenue East Schematic Redesign Study, as well as the ongoing activities of the Central and East Hillside Community Clubs and the Safe & Walkable Coalition. Using the contacts from these efforts, invitations were sent to over 100 people requesting participation in the HIA Scoping Workshop.

HIA Scoping Workshop
The purpose of the HIA Scoping Workshop was to establish the scope of the HIA and to determine what health categories would receive further study. The stakeholders were asked to evaluate which health concerns were present, which were pressing and which were of the highest priority. On March 3, 2011, SHIP led and facilitated the HIA workshop which was held at Gloria Dei Lutheran Church located at the lower end of Sixth Avenue East. A diverse group of 25 participants met to offer their views of how the current and future redesign of Sixth Avenue East might impact them. The round table discussions and the final assessment of the participants and the HIA Team resulted in the following health categories:

1. Accessibility & Safety,
2. Physical Activity,
3. Livability,
4. Pollution, and
5. Food Access.

Due to time constraints and the level of funding available, the health categories of pollution and food access were not assessed for this report.

HIA Assessment Step

Health Indicators
A Health Indicator is an item or category, when changed, produces an effect on the health of a population. Typically, health indicators are measurable statements that are related to an aspect of health. A master list, developed at the San Francisco Department of Public Health, includes 125 health indicators. Under the broad category of Environmental Stewardship, two of the health indicators are: 1) the number of trees within a certain geographic area and 2) the proportion of pervious to impervious ground surfaces. In another broad category, Sustainable and Safe Transportation, two health indicator examples are: 1) the ratio of miles of bike lanes and paths to roadway miles and 2) the number of motor vehicle collisions when compared to similar roads in another area.

Health Categories
The public's input received during the workshop provided direction for three health categories to be evaluated during the assessment step. Within those health categories, the HIA project team developed and addressed a number of different health indicators to determine if the Sixth Avenue East Redesign Study considered the public's health concerns. Some health indicators were relevant to more than one health category. For this report, the health indicator was addressed under the health category it was most relevant to, knowing that it could have been addressed under other health categories.

Health Category #1 - Accessibility and Safety

Accessibility
Accessibility is the extent to which people can easily access a variety of destinations (e.g., jobs, financial institutions, social contacts, health services, groceries, etc.) to support daily activities. The extent of access considers the array of transportation modes available, such as transit, biking, walking, ADA accessibility, automobile and more. The Sixth Avenue East corridor was designed to optimize mobility for motorized vehicles. Therefore, in this HIA, accessibility is primarily focused on all modes of transportation, except motorized vehicles. All other modes are underserved by the corridor.

The proximity of the corridor to high-density residential neighborhoods delineates a particular need for walking, bicycling and transit mobility. Particularly for the elderly, the young or the financially disadvantaged, transit is the mode of transportation that provides such access, where walking or bicycling is too burdensome. This corridor's proximity to health care, shopping, education institutions and downtown, require this HIA to focus attention on the improvements required for access using multiple modes.

Health Indicator – Bus Accessibility: Number of Bus Routes and Bus Stops
The Duluth Transit Authority (DTA) buses stop at regular intervals along Sixth Avenue East with 12 stops total. The number of stops proposed in the Sixth Avenue East Schematic Redesign Study was decreased to six. During the HIA Scoping Step, the DTA expressed that this new proposal would not work well for their riders. Many riders are disabled and/or

elderly. Most would not be able or find it very difficult to walk the extra block or two up or down hill if only six stops were implemented. Also, it is important for the DTA to serve people who do not have and cannot afford to own their own vehicle. The central area of Duluth, including the Hillside, has a high concentration of citizens who do not own a car and/or do not have a driver's license. The routes along the Sixth Avenue East are efficient connections for riders going to downtown, the two closest colleges, and the Miller Hill Mall, as well as a destination to area businesses and the two medical campuses.

The HIA recommends increasing the number of bus stops in the schematic redesign to 12 stops to continue accessible service for all who use mass transit.

Safety

Safety in this HIA will focus on the health aspects that directly relate to elements of the built environment. It will address safety by reducing transportation-related crashes (i.e., crashes between vehicles; crashes between vehicles and bikes; crashes between vehicles and pedestrians). The health indicators addressed in this section generally relate to the following categories: motor vehicle traffic, crash rates and pedestrian and bicyclist comfort and safety.

Health Indicator – Motor Vehicle Count on Sixth Avenue East per Day

The 2010 traffic counts show that nearly 16,000 vehicles use Sixth Avenue East every day, especially north of East Fourth Street. This number of vehicles is typical for a street classified as a principal arterial. Several factors, such as employment, the price of gas, new development, and housing all have a bearing on whether that number will increase or decrease over time. This health indicator serves as a way of understanding the level of traffic on Sixth Avenue East. There are no recommendations for this health indicator.

Health Indicator – Speed of Vehicles on Sixth Avenue East

The National Highway Traffic Safety Administration (NHTSA) recently published information about the relationship between vehicle crash speeds and resulting pedestrian injury. The data indicated that higher vehicle speeds are strongly associated with both a greater likelihood of pedestrian crash occurrence and more serious pedestrian injury. It was estimated that only 5 percent of pedestrians would die when struck by a vehicle traveling at 20 miles per hour or less. This compares with fatality rates of 40, 80, and nearly 100 percent for striking speeds of 30, 40, and 50 miles per hour or more respectively (Source: U. S. DOT, NHTSA, HS 809, 012 October 1999, Literature Review on Vehicle Travel Speeds and Pedestrian Injuries). The posted speed limit along Sixth Avenue East is 30 mph, but anecdotal evidence suggests that motorists exceed the posted limit regularly. This suggests a need for traffic calming measures that slow the speed of traffic to the posted speed limit. See the following health indicator on crashes for additional discussion and recommendations.

Health Indicator – Crashes Occurring on Sixth Avenue East

State and county highways that go through the city have traffic volume data gathered every two years, as well as traffic volumes on Municipal State Aid (MSA) roadways. The crash rates, their severity and comparison to like roadways is not gathered on MSA routes, unless a specific request or need for that information arises. Then, the data is obtained via the MN Department of Public Safety's *MN-Crash* system. Gathering crash data on non-MSA routes in the city is cumbersome. The City of Duluth does not have a simple mechanism for analyzing the crash

information collected by the Department of Public Safety to enable tracking crashes or evaluating and comparing crash rates of similar routes.

Five years (2005-2009) of crash data (see figure #2) along Sixth Avenue East from Second to Ninth Street was obtained from the Duluth Police Department. The data revealed that 292 crashes occurred along Sixth Avenue East, including 139 crashes at the Fourth Street intersection. It is unknown if the number of crashes are statistically higher for this type of roadway and traffic volume. The scope of the HIA precluded performing a comparison with similar streets. However, the data showed that for each of the five years of data reviewed, no one year had a number of crashes that was different from any other year. Reported crashes are divided into these codes:

- Property Damage (PD)
- Personal Injury (PI)
- Personal Injury Pedestrian (PIP)
- Hit and Run (HR), or a combination of codes

Figure #2 - Sixth Avenue East Crash Data Summary

Of the 292 recorded crashes along Sixth Avenue East, 25 were PI/PIP type crashes. Of the 25 reports, the Duluth Police Department was able to provide the written reports for 17 of the crashes. The other 8 were not filed or not available for some other reason. The 17 reports showed the following:

- 8 involved vehicle to vehicle
- 3 involved bike to vehicle
- 6 involved pedestrian to vehicle

Of the 17 PI/PIP crashes that had written reports available within the 5 year period, 53% involved bikes or pedestrians and all of

the crashes resulted in a personal injury to the bicyclist or pedestrian.

The high number of crashes, and of crashes that involve pedestrians suggest that improved safety measures, such as traffic calming measures and separation of cars from bicyclist and pedestrians, could help improve the safety of Sixth Avenue and prevent more crashes in the future. The preferred redesign alternative took traffic calming, in addition to bicyclist, and pedestrian safety into consideration. Sidewalks would be separated from the roadway with wider than average planted boulevards (6 to 7 feet, as opposed to 4 to 5 feet). A vegetated median would be provided from Fifth Street to Ninth Street. Crosswalks are proposed to be highly visible and with shorter crossing distances. A designated bike lane would be provided on the uphill side of the road and a four-foot wide shoulder on the downhill side. No additional traffic calming measures are recommended.

Health Indicator – Number of Bicyclists Using Sixth Avenue East

Sixth Avenue East is not currently designated as a bike route. The accompanying photo shows an easterly view of East Ninth Street from the west side of Sixth Avenue East. Ninth Street is a designated bike route (see figure #3). A biker riding towards the camera on that route would need to cross the intersection, proceed around the guard rail with the red, reflective signs, across the grass or sidewalk to access the bike route on 5th Avenue East. It is one example of how the current bicycle network does not serve the user. A bicycle connectivity study was completed in 2010. It revealed that bicyclists would prefer to use Sixth Avenue East if it were safely designed for bicycle use. The number of bicyclists using Sixth Avenue East is unknown, although it is thought to be little used because it is not a designated route and to use it would be unsafe.

Looking east across Sixth Avenue East at Ninth Street

The HIA recommends, as does the redesign study, establishing an official bike route on Sixth Avenue East with the corresponding changes in the roadway's physical environment, including separation of bicyclists from motor vehicles to improve bicyclists' safety.

Health Indicator – Walkability of Sixth Avenue East: Pedestrians and School Routes

A Walkability Audit was performed by the HIA Team on March 28, 2011, on Sixth Avenue East from Second to Ninth Street comprising both sides of the roadway. Various items were

measured and observed. Several "sub" health indicators were assessed during the Walkability Audit. The overall results from the audit are shown in table #1:

Table #1

ITEM	ASSESSMENT
General condition of sidewalks	Good concrete; poor snow, weed and grass removal, brush overhang removal; lack of sidewalk edging
Parking lots directly abutting sidewalks	Yes, in most cases
Buffer between sidewalks and parking lots	None
Buffer between road and sidewalks	None
Curb cuts in sidewalks	Yes – Alleys, business entrances, and driveways
Tree planted boulevards	None on Sixth Avenue East
Crosswalks	Paint very faded or not present
Stop signs	At cross streets where signal lights are absent
Stop lights for traffic control	At Second, Third, Fourth and Ninth Streets
Street lights	Standard 40' Cobra Head MNDOT poles for vehicle lighting
Benches	2 – both in bus shelters
Trash receptacles	1 at East Fourth Street
Bus stops	12
Bus Shelters	2 (included in total # of stops)
Bike lanes	None

Overall, the walkability audit showed that additional changes are needed to Sixth Avenue East to make it a safe and friendly place to walk and bike. The changes are particularly urgent, given the re-opening of Grant Elementary School and the permanent closure of Nettleton Elementary School in the summer of 2012. Specific HIA recommendations are listed within the following health indicators.

Health Indicator – Sidewalk Condition

The condition of the sidewalks on Sixth Avenue East are in generally fair condition, meaning the concrete panels are relatively smooth, flat and solid, as opposed to broken, crumbling and heaved. The sidewalks are generally 5 feet wide and run adjacent to the curb that edges the outside lane of the roadway. During the Walkability Audit, it was noted that the sidewalks were littered with sand and small pebbles from winter street maintenance operations. In some places, remnant snow and ice were still covering the edges of the sidewalk, narrowing the usable sidewalk space. When the City deposits snow on sidewalks during the plowing process, it assumes the responsibility for clearing that snow.

Figure #3 - Amenities with Sidewalks

In 2012, approximately 150 children from the Central Hillside neighborhood will attend Grant Elementary School. Despite the provision of busing from the school district, it is anticipated that many of those children will choose to walk to Grant and need to cross Sixth Avenue East. Presently, Sixth Avenue East is not designated a "School Crossing Zone," nor do any crosswalks exist north of Fourth Street, except at Ninth Street.

The preferred redesign alternative took pedestrian safety and comfort into consideration. Sidewalks are proposed to be separated from the roadway with wider than average planted boulevards. That will provide the pedestrian a buffer from motorized traffic. The boulevard also protects the sidewalk from the snow, salt and sand of winter road maintenance that gets deposited on the sidewalk. In the redesign, the responsibility for sidewalk snow clearing would fall to the property owner, as opposed to the City.

The HIA recommends providing improved, safer crosswalks for school children, along with designating Sixth Avenue East north of East Fourth Street, a "School Crossing Zone."

Health Indicator – Number and Types of Street Lighting
Along the corridor, there are 24 standard 40′ cobra head MNDOT light poles (see figure #3). Their purpose is to illuminate the roadway for motorists. The redesign study did not address street lighting.

Lighting standards exist that are designed specifically for pedestrians and crosswalks. Lighting should add to travelers' comfort and safety. Crime Prevention Though Environmental Design (CPTED) has demonstrated improved safety for pedestrians with proper roadway lighting for both pedestrians and vehicles.

The HIA recommends incorporating CPTED lights that are as consistent as is possible with newer lighting on East Fourth Street.

Health Indicator - Noise
Neither the Sixth Avenue East Schematic Redesign Study, nor this HIA had the budget to perform a noise study. But, anecdotal evidence and personal testimonies indicate noise as ever present and unavoidable. Comments from the scoping workshop describe how difficult it is to hold a conversation when on the sidewalk. The HIA Team's walkability audit bore this out.

The HIA recommends that a noise study be done on Sixth Avenue East and that noise mitigation measures be incorporated into the redesign, if warranted.

Health Indicator - Duluth policies that facilitate the mobility of all street users
A Complete Streets Resolution was adopted by Duluth's city council on March 8, 2010. Its language recognizes and identifies the needs of all potential users within the local transportation system in a comprehensive manner. Complete Streets recognizes there are multiple user groups, in addition to traditional car and truck traffic. They include bicyclists, roller bladers, motorcyclists, wheel chair users, pedestrians and other groups. The goal of Complete Streets is to have the needs of all user groups considered in the design and construction of new or reconstructed streets, and to have their needs met to the extent possible.

Duluth, through its Complete Streets Resolution, wishes to ensure that all users of our transportation system are able to travel safely and conveniently on all streets and roadways within the public right-of-way in Duluth. The following principles are included in the resolution:

- All users includes citizens of all income levels, all ages and all abilities, including but not limited to young children, families, senior citizens, those with limited mobility, vision and hearing.
- Automobile, pedestrian, transit and bicycle connectivity are all part of Duluth's goal of having an interconnected transportation system.
- The city of Duluth wants the absolute best value for taxpayer funds put into street construction and reconstruction.
- Integrating sidewalks, bike facilities, transit amenities and appropriate crossings into the initial design of street projects avoids the expense of retrofits later.
- Streets are a critical component of public space and play a major role in establishing the image and identity of a city and its neighborhoods, providing a key framework for current and future development.
- Complete Streets have public health benefits, such as encouraging physical activity and improving air quality, by providing the opportunity for more people to walk and bike safely.
- A Complete Streets policy will solicit significant public input from those who both live on and use the streets.
- Communities that support active living strive to create amenities that will enhance the quality of life of its residents, improve the physical and social environment in ways that attract businesses and workers, and contribute to economic development.
- A Complete Street should encourage design that allows for snow removal in ways that limit the impact on any particular group of users.
- Complete Streets are essential in providing safe routes to school for children.

The Complete Streets Task Force had discussed the importance of public education to make the implementation of the resolution a smoother and more complete process. The roadway projects in 2011 had varying success in staying true to the above complete streets principles. Some public education had been done following the passage of the resolution, but the public meetings on each road project still proved to be a challenge for city officials and project engineers.

The HIA supports the Complete Streets Resolution and continuing public education. Many of the Complete Street's principles are already incorporated into the schematic redesign, including bike lanes, a median for safer crossing, a boulevard for walking comfort and safety, additional turn lanes and several others. There are no additional recommendations for this health indicator.

RECOMMENDATIONS
Health Category #1 - Accessibility and Safety

The following recommendations should be taken into consideration for future planning and engineering initiatives associated with the Schematic Redesign of Sixth Avenue East. These recommendations are intended to serve as a foundation in meeting the public health issues and concerns identified through the HIA process. The recommendations should be considered by all parties, agencies and organizations that have a role in meeting the needs of the community within the HIA project area.

- **Continue to work with the Duluth Transit Authority and city officials to maximize the transit service provided.**

- **Add additional bus stops to the redesign study and install shelters where ridership warrants.**

- **Develop plans or mitigation efforts to reduce speeds on Fourth Street and Fifth and Seventh Avenues.**

- **The addition of a traffic signal at Sixth Avenue East and Seventh Street reinforces the Redesign Study, which recommended that option be explored and implemented, if possible.**

- **Continue to monitor traffic crashes on local streets and apply mitigation measures to address problem areas.**

- **Implement measures to reduce crashes at the highest crash intersections, such as Sixth Avenue East and Fourth Street.**

- **Establish an official bike route on Sixth Avenue East with the corresponding changes in the physical environment including separation of bicyclists from cars to improve bicyclists' safety.**

- **Maintain 6′ sidewalks in existing plans and add them whenever possible.**

- **Develop a plan to clear snow from the medians at the Sixth and Eighth Street pedestrian crossings.**

- **Provide safe crosswalks for school children, along with designating Sixth Avenue East north of Fourth Street a School Crossing Zone.**

- **Conduct education in schools to promote safe walking and biking to and from school.**

- **Promote property owner maintenance of sidewalks in the summer. Many are overgrown with soil and vegetation.**

- **Improve replacement of street lamps in the Hillside. If existing Fourth Street lights work well both for pedestrians and vehicles, install them on Sixth Avenue East to unify the look of the Hillside.**

- **Incorporate CEPTD principles into the schematic redesign, especially related to lighting.**

- **Perform a noise study on Sixth Avenue East to determine if noise abatement measures are needed.**

- **Conduct complete streets education with decision makers and the community on an ongoing basis.**

Health Category #2 - Physical Activity

Being physically active as a matter of daily living and eating a moderate, wholesome diet are two keys to maintaining a healthy weight and being physically fit. As we go about our daily routines, many aspects of our culture impede the natural process for maintaining a healthy lifestyle. By recreating environments that are conducive to healthy, active lifestyles, communities can eventually have an environment that contributes to the positive health of its residents. The current design of Sixth Avenue East does not make it easy for people to maintain a healthy lifestyle. Providing an environment that facilitates walking and biking to and from our home, work, school and errands helps to incorporate physical activity into our daily routine.

Brush overhang near 6th Avenue East

Health Indicator – Winter Connectivity

A network of traditional sidewalks exists throughout both Hillside neighborhoods. They are generally in need of re-assessment and some repair. The Metropolitan Interstate Council began a sidewalk assessment in the late spring of 2011. Low owner-occupied residences and a general lack of personal investment in neighborhood upkeep, tends to lead to the neglect of sidewalk maintenance and snow removal. Both factors make winter-time walking a more difficult choice, even for able bodied residents. A community-driven snow removal effort, Duluth Digs, is being co-led by Community Action Duluth and Fit City Duluth. It should result in improved conditions, but a long-term solution for this neighborhood and the community remains elusive.

The HIA recommends augmenting the Duluth Digs program and developing a community service campaign to encourage snow removal during winter.

Winter access to Duluth's downtown is made more convenient through the skywalk system from the East Fourth Street entrance to Essentia Health. Within a few years, it is anticipated that the skywalk through the downtown will be completed from Greysolon Plaza to the Duluth Technology Village. While walking through the medical campus can be done, it is somewhat cumbersome. A direct, easy connection to the Lakewalk from Sixth Avenue East does not exist. One could use the skywalk or the existing network of sidewalks. The freeway prohibits easy access, since there are no through avenues between Fourth and Eighth Avenues East to connect the Hillside to Superior Street and the Lakewalk.

The HIA recommends that Essentia Health improve skywalk signage on their campus, the city pursue the remaining sections to complete the skywalk, and the community study how to create a more direct pedestrian connection from Sixth Avenue East to the Lakewalk.

Health Indicator – Trail Connectivity for Bicycle and Pedestrian Commuting
A Duluth Trail and Bikeway Plan is in development, but bicycle commuting remains a mostly unsafe endeavor along Sixth Avenue East. Duluth has a bicycle network of routes which have signs. However, the network generally does not have striped bike lanes or pavement symbols to visually inform the motorist that biking belongs here. The Schematic Redesign of Sixth Avenue East includes a four foot striped shoulder going downhill and a full six feet wide, striped and marked bike lane on the uphill side. Enhancing the ability for people to commute via bicycle dramatically increases physical activity of those who bike.

The HIA recommends adoption and implementation of the Trail and Bikeway Plan.

Another way to improve physical activity is to encourage biking on off-road trails. No off-road connections from the Hillside to a planned off-road bike trail system are currently in the works. There are some opportunities that could be taken advantage of should funds be found to allow for trail construction. The Cyclists of Gitchee Gumee Shores (COGGS) are working with the City to connect Enger Park to Chester Park as a mid-portion of the off-road, cross-city bike trail. Areas around Grant Elementary School, First United Methodist Church and a natural area below Marshall School near Kingsbury Creek are all possibilities to utilize for a trail connection. Because the Hillside is the oldest and mostly tightly built neighborhood, the opportunities for trail connections are fewer than in other areas of the city.

This HIA recommends additional trail connection planning, coupled with seeking funds to implement the community's priority on and off-road connector trails.

A walking trail from Grant Elementary School to the College of St. Scholastica (CSS) could serve as a connector trail. While the trail currently exists in concept only, there is much undeveloped and natural school district, city and college property between the two destinations. Students of both educational institutions would use the walking trail to move between their respective campuses. When built, it would also provide a walking connection from the East Hillside to a major trail that is in development from Rice Lake Road and Lowell Elementary School through CSS and the Mt. Royal area, along Tischer Creek, past Congdon Elementary School to the Lakewalk Extension. Bicyclists have a newly installed sharrow (shared bicycle and motor vehicle lane) to use on Kenwood Avenue.

The HIA recommends that a Grant Elementary School to CSS walking trail be planned and constructed.

Health Indicator - Policies and Plans That Support Bicycling and Walking
Many policies and plans that support bicycling and walking are currently in place. Minnesota Legislation in 2010, provided support for Complete Streets, both with state and local roadways. The MN Department of Transportation is currently working to implement that legislation. There are also requirements to allow local units of government additional leeway from state standards to implement innovations at their level.

As previously discussed in the Accessibility & Safety health category, the Duluth City Council passed a Complete Streets Resolution on March 8, 2010. An internal working group is guiding the implementation and a Complete Streets Task Force can be called upon for assistance. The

City passed a new Master Parks Plan and is working on a non-motorized trail and bikeway plan. The preceding plans and legislation set the stage to encourage and drive change. The HIA sees the implementation of the Complete Streets Resolution as supporting the reconstruction of the Sixth Avenue East Schematic Redesign with the suggested changes highlighted in this report.

The Duluth School District has looked at its bicycling policy for students and concluded that it did not need to be updated. They are proceeding to conduct Safe Routes to School programming at each school in the district, beginning with elementary schools. As a part of the Safe Routes to School process, the district and the city will look at how make the most logical routes to school safer for students. The decision by each building Principal to allow biking to school or not will be made easier because of the student, staff and parent education received and the route assessment work done by staff and parents. The decision to allow biking or not, will still rest with each building Principal.

The city has a snow removal policy in Chapter 45, Article VI of the city code. The legal authority exists to ensure snow removal, but staffing levels and other priorities usually leave this task to whatever the neighborhood norms require. As previously discussed, a city-wide effort, Duluth Digs, has increased visibility of the snow removal, but whether this is sustained remains to be seen. The city does remove snow that lands on sidewalks adjacent to roadways by using a wing plow or snow blower, because plowing the road deposits snow on the sidewalk. The city's sidewalk repair and new construction is currently done by request of the property owner and can also be included in street reconstruction projects.

There is language in the newly adopted city code that encourages walking and bicycling through the addition of streetscape amenities, such as benches, trash receptacles, planters, pole lights, kiosks, decorative fences, newsstands, drinking fountains and bike racks. These types of amenities add greatly to the livability of the neighborhood. The HIA will make amenities recommendations in the Livability health category.

Physical Activity and Livability Relationship

The Sixth Avenue East Schematic Redesign Study identified the goal of creating as green a roadway as possible. A greenway, accentuated by trees, shrubs, flowers and slower, more evenly moving vehicles is an excellent way to achieve that end. Greenways and water features could be incorporated to provide natural non-motorized open space corridors. This should retain and clean storm water, while enhancing the opportunity for physical activity. With additional right-of-way purchases along Sixth Avenue East, this corridor could be converted into a greenway. With a modified redesign, Sixth Avenue East could serve as a grand, greener entrance into the neighborhood which would add greatly to the safety and enjoyment of walkers and bikers, while improving the livability of the Hillside.

Skyline Parkway, the Lakewalk, Chester Bowl, a future Grant Elementary to CSS trail, and the six Hillside parks offer excellent views and/or close contract with the natural world around us. These green spaces are all in, or close, to the East and Central Hillside neighborhoods. Skyline Parkway, for example, could be better utilized as a walking and biking route through the upper part of both neighborhoods. Connections to Skyline Parkway could be made attractive, which would increase usage and physical activity levels.

The HIA recommends further exploration of improved walking and biking connections to these natural amenities.

Health Indicator – Number of Street Trees

Street trees make an environment more pleasant, help calm traffic, increase walkability, and help improve storm water retention. Sixty street trees are being planted this summer along East Fourth Street from Mesaba Avenue to the vicinity of East Fourteenth Street. Street trees serve to calm traffic by slowing speeds and offer pedestrians additional comfort and protection. This encourages increased use of non-motorized transportation.

Hillside Public Orchard

The HIA supports the planting of additional street trees, by redesigning roadways whenever possible.

RECOMMENDATIONS
Health Category #2 - Physical Activity

The following recommendations should be taken into consideration for future planning and engineering initiatives associated with the Schematic Redesign of Sixth Avenue East. These recommendations are intended to serve as a foundation in meeting the public health issues and concerns identified through the HIA process. The recommendations should be considered by parties, agencies and organizations that have a role in meeting the needs of the community within the HIA project area.

- **Many new plans and city resolutions support progressive infrastructure improvements that can benefit all citizens. Invested citizens and groups should monitor and use these polices to promote healthy development of Sixth Avenue East.**

- **Development patterns should encourage mixed uses, compact design, and a variety of transportation choices that promotes physical activity.**

- **Continue to support sidewalk maintenance and snow removal programs, like "Duluth Digs."**

- **Use the Metropolitan Interstate Council's sidewalk assessment as a guide to create a friendlier and more complete sidewalk network in the Hillside.**

- **Continue to support parks, green space and trail connections within the project area. Specific connectivity recommendations include:**

    - **Develop a walking trail from Grant Elementary School to the CSS to facilitate the ongoing sharing of the two educational institutions. This could connect to a trail in the planning stages that would connect UMD and CSS.**

    - **Make the implementation of an upcoming Duluth Trail and Bikeway Plan a priority, by setting timelines and goals for the city.**

- **Support amenities and public spaces, such as the Fourth Street Public Arts Garden, that encourage people to gather and interact.**

- **Assist Duluth Parks and Recreation, Fit City Duluth, Safe and Walkable Hillside Coalition and other groups as they work to make Duluth and the Hillside a more easily active neighborhood.**

- **Add bicycle amenities wherever warranted, such as bicycle racks or covered bicycle parking to encourage biking.**

- **Work together, so that everyone, regardless of age, gender, language, ethnicity, economic status or ability, should have safe, affordable choices for physical activity.**

- **The project area should provide safe, convenient and affordable access to housing, worksites, schools and community services.**

Health Category #3 - Livability

The Partnership for Liveable Communities defines livability as the sum of the factors that add up to a community's quality of life—including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities.[1]

Neighborhood Environment

The Central and East Hillside neighborhoods are home to approximately 13,750 residents with diverse ethnic, racial and socio-economic backgrounds. The two neighborhoods share a business district along Fourth Street and the Essentia Health Medical Campus which encompasses a number of City blocks, between First and Fifth streets. Sidewalks exist throughout the neighborhoods.

[1] Partners for Livable Communities (2009) *What is Livability?*. Retrieved April 25, 2011 from, http://livable.org/about-us/what-is-livability

The Central Hillside is above Duluth's core downtown and overlooks Lake Superior and the harbor; the neighborhood is one of the oldest and most historic in Duluth. The area is predominantly urban residential and consists of single family homes, duplexes, triplexes, and apartment buildings. Some important amenities are the city parks, neighborhood commercial services and the large medical district.

Residents of the East Hillside neighborhood value its affordable housing, close proximity to jobs, medical services, two college campuses, convenient transit service and parks. The bulk of the area is residential; however it also has an active business district. The neighborhood is projected to continue to see increases in population and has an active community club, Campus Neighbors group and extensive opportunities for community involvement.

The medical campuses are located on a number of city blocks in the lower sections of both neighborhoods from First to Fifth Street and on both sides of Sixth Avenue East. The buildings located on Second and Third streets have asphalt parking lot surfaces adjacent to them. The lots cover a number of city blocks. The size and number of surface parking lots hinder neighborhood cohesiveness and make the area feel uncomfortable.

Health Indicator – Policies that support neighborhood livability
Central and East Hillside Neighborhood Revitalization Plans
The City of Duluth and local community partners have completed nine separate plans since 1983 to address and prioritize neighborhood revitalization strategies related to community development, streetscapes and housing. The 2007 Central and East Hillside Neighborhood Revitalization Plans focus on addressing improvements for economic, housing and community opportunities. Additionally, the Central Hillside Plan also focused on physical infrastructure to improve the pedestrian environment. The East Hillside Plan identified areas within the neighborhood to prioritize efforts. These identified areas for improvements have the potential to positively affect the livable environment for residents creating inviting public spaces to use and connect with their neighbors. Following are the goals from each of the neighborhoods plans which strongly correlate to supporting neighborhood livability and the 6th Avenue.

1. Central Hillside Revitalization Plan
The Central Hillside Plan's four primary revitalization focus areas are: 1) Economic Development, 2) Housing, 3) Community Development and 4) Physical Infrastructure. The HIA focused the review of the neighborhood plan goals to those which impacted livability as it related to housing, access to services, community and transportation. Due to time constrains the HIA did not review goals that addressed the health indicators around issues of resident employment.

Economic Development Goals
Two goals with this section strongly supported livability by addressing convenient access to goods and services within the neighborhood and the encouragement of mixed-use buildings.

> **Goal 1.** Have a neighborhood with businesses that are easily accessible and supply convenience, but also provide the opportunity for residents to invest in their local community. Expansions to existing businesses and new businesses should include cafes, smaller retail, and grocery stores.

Goal 5. Improve storefronts of businesses in the area and encourage lower-level retail with upper-level residential units.

Housing Goals
Four housing goals addressed improving the housing stock in the neighborhood and increasing resident investment in the neighborhood. Progress on these three housing goals would positively impact livability.

Goal 1. Convert rental units into owner-occupied residences. Achieving a higher owner-occupied percentage will provide more stability in the neighborhood.
Goal 3. Improve the overall quality of housing by conducting necessary maintenance and renovation upgrades.
Goal 4. Develop new housing infill on vacant or abandoned lots.
Goal 5. Provide better living conditions and rental opportunities for the rental population.

Community Development Goal
One goal in this section supports the definition of livability by providing residents with opportunities to network and increase social capital.

Goal 1. Create an inviting and more livable environment that is characteristic of a close knit community. Increase public services to support a diverse community.

Physical Infrastructure Goals
This section has the most goals within the plan and addresses opportunities around the neighborhood street environment. The goals strive to create streets which provide a comfortable and encouraging environment for residents to live on and utilize.

Goal 1. Solve inadequate parking in Central Hillside.
Goal 2. Reduce crime throughout the neighborhood.
Goal 3. Eliminate tax-forfeit lots and other vacant/blighted areas to reduce loitering and other crime-related behaviors.
Goal 4. Increase pedestrian and vehicular safety.
Goal 5. Beautify the neighborhood with more green space.
Goal 6. Repair damaged streets, alleys, curb ramps and driveways.
Goal 7. Provide for better street and area lighting throughout the neighborhood.

2. East Hillside Revitalization Plan
The East Hillside Plan identified areas within the neighborhood to prioritize efforts. These identified areas for improvements have the potential to positively affect the livable environment for residents creating inviting public spaces to use and connect with their neighborhood.

Housing Goal
The plan provides one housing goal to increase homeownership rates within the neighborhood. Accompanying this goal are numerous strategies for achievement.

Goal 1. Increase homeownership in the East Hillside neighborhood over the next five years by five units per year (and into future years) until the neighborhood achieves a home ownership rate of 50 percent by implementing a number of strategies.

Community Development
The two Community Development goals in the East Hillside Plan complement the goal in the Central Hillside Plan. These two goals are specific with measureable outcomes for community development in creating opportunities for residents to gather and becoming a Health District. The goals strive for increased social investment in the community.

> **Goal 1.** Establish and support programs for youth, teenagers, family and neighbors to gather in safe places at appropriate times. Serve at least 150 households.
> **Goal 2.** Create a neighborhood that's a healthy place to live, work and place through the designation of the neighborhood as a Health District.

Both the Central and East Hillside neighborhood revitalization plans are scheduled to be updated by November 2011. The planning process has begun and the consensus of the two neighborhoods during an initial public gathering was to combine the two plans and create one updated Hillside Neighborhood Plan. This indicates the neighborhoods acknowledgment of similar goals and a desire to create a better connection by working together on one plan and physically by improving the connection for residents on both sides of Sixth Avenue East.

The HIA supports the decision to update one Hillside Neighborhood Plan and recommends that the update plan consider inclusion of a livability component.

Duluth Comprehensive Land Use Plan
The city's Comprehensive Plan was adopted in 2006. The plan's Future Land Use Maps, Policies and Implementation Sections were developed based on twelve governing principles. The principles address land use and reuse, natural areas, economic development, neighborhood transportation, sustainability, etc. Two principles directly relate to the Sixth Avenue East Schematic Redesign Study by addressing strengthening neighborhoods, and by creating and maintaining connectivity on streets.

The principles are incorporated into seven policy categories: 1) Preservation and Protection, 2) Infrastructure and Public Services, 3) Urban Design, 4) Economic Development, 5) Parks and Recreation, 6) Transportation, and 7) Development Process. The seven policy categories have subsections which address a range of interconnected issues. The HIA reviewed the Duluth Comprehensive Plan for policies which influence and strongly impact resident health and the Sixth Avenue East Schematic Redesign Study. Time constraints on the HIA allowed for a review of policies in the Infrastructure and Pubic Services, Urban Design, Economic Development, Parks and Recreation and Transportation categories. The policy statements reviewed support livability by supporting existing public infrastructure, housing stock, neighborhoods, pedestrian, bicycle and transit connections to destinations and pedestrian-friendly building and lot design. Since 2006 and the adoption of the plan, the city has worked to address the urban design policies by completing the Duluth Unified Development Chapter.

The following policies are selected from the 2006 Duluth Comprehensive Land Use Plan which highlight and strongly support livability in the Hillside.

Infrastructure and Public Service Policies (I&PS)
One policy was reviewed in this section because of direct impact on the Sixth Avenue East corridor. The policy prioritizes investment in existing streets and neighborhoods and mixed

use areas; all aspects that are important to supporting the livability of the Hillside neighborhoods.

I&PS 3. Public investment in streets and other infrastructure should support continued private reinvestment in housing stock, neighborhood commercial districts, and new mixed use areas.

Urban Design Policies (UD)

Urban Design policies support livability by addressing pedestrian and bicycle-friendly environments within zoning regulations, such as the new Unified Development Chapter.

UD 1. To ensure that different land uses "mix well," compatible building scale and sensitivity to neighborhood context is essential. The city will develop form-based standards and design guidelines that:

a. Allow a variety of land uses to coexist within buildings when the building is of appropriate size and character.
b. Recognize and reflect unique or traditional neighborhood building patterns and street and block layouts.
c. Provide adequate transitions to lower-density neighborhoods and districts.
d. Keep sufficient separation between clearly incompatible uses, such as between intensive industrial or auto-oriented commercial and residential neighborhoods.

UD 3. The city will encourage a mix use of housing densities and housing types within existing neighborhoods to diversify housing stock and bring new vitality to existing neighborhoods. Considerations that affect the appropriate mix of housing type within neighborhoods include:

a. Achieve a mix of housing types and densities while respecting neighborhood character and continuity of building styles, such as the historic street layout of Morgan Park, the architectural diversity of single family building styles in East area neighborhoods, or the massing and historic look of Central Hillside's building stock,
b. Carefully distribute higher-density housing and new housing types in limited quantities within residential neighborhoods, to sustain the primary land use and housing style and limit impacts from more intensive uses. These might include accessory dwellings, small groups of attached units, or small multi-family buildings designed to resemble single-family houses,
c. In designated areas, create form and material standards based on an area's context, as established by predominant building character, street pattern, and land use,
d. Develop standards for off-site institutional and rental housing to allow for choice of housing types and neighborhoods, accommodate institutional growth and protect or enhance neighborhood integrity.

UD 4. Expand housing opportunities in and around the primary downtown district through various public actions, including code changes to support rehabilitation, mixed use goals, or change of use historic building stock.

UD 6. The city will promote a mix of affordability ranges in housing stock.

UD 8. Strengthen pedestrian movement between compatible land uses with sidewalks in street right of way, sidewalks and paths independent of streets, and attractive connections to parking areas and building entrances. Institutional land owners should be encouraged to connect with pedestrian systems on the perimeter of their properties.

UD 9. Encourage site design which shares elements of pedestrian access, parking coordinated landscaping, linked open space and green infrastructure for storm water management and water quality improvement.

UD 11. Avoid surface parking between buildings and the street to reduce the visual impact of parking lots and provide landscape screening from public areas for all surface parking areas.
UD 12. Create pedestrian-oriented environments by placing buildings and building entrances close to the street, providing windows along street frontages, and enlivening building facades with creative use of architectural detail or materials.
UD 13. Encourage transit and bicycle use by providing facilities such as transit stops, comfortable shelters, and bicycle access and parking in convenient and visible locations.
UD 14. Implement "light pollution" standards for street and security (parking lots and buildings) lighting through:

a. The use of downlighting design that directs light towards sidewalks, streets, parking lots, building entrances, yard features and away from neighboring properties and the sky,
b. The use of street, parking lot, and building security lights designed to direct light towards only security points and away from the night sky,
c. Addition of shield to existing lights.

<u>Economic Development Policies</u> (ED)
Two of the economic development policies address the need for improved connections between the medical districts, neighborhood commercial districts and residential areas and contribute to supporting livability within the neighborhood and the Sixth Avenue East corridor.
ED 5. The city will work cooperatively with medical institutions to accommodate their growth within medical districts, including the following policies:

a. Support new investment within the medical district,
b. Improve physical, social and business connections with the larger community,
c. Support housing affordability and choice with and adjacent to the medical district,
d. Support medical district improvements and neighborhood transitions identified in sub-area plans developed with significant public involvement,
e. Preserve, restore, and reuse historic structures.

ED 11. The city will work to sustain primary and secondary downtown areas, neighborhood commercial nodes, commercial corridors, large scale regional commercial assets, and mixed use commercial/residential development with:

a. Land use regulation which distinguishes types of commercial uses that are appropriate for surrounding land uses, such as specific retail or entertainment activities that integrate well with traditional neighborhood areas,
b. A mix of commercial uses at commercial nodes that create synergy and sustain the nodes over the long term,
d. Housing density in Urban Residential and Traditional Neighborhood neighborhoods at the higher end of the density range near commercial nodes to enhance local market size and better sustain commercial investment,
e. Preservation, restoration or commercial reuse of historic structures by creating flexible restoration and reuse standards,
f. Allowing low-intensity commercial use in residential neighborhoods, designed with attention to context and subject to performance standards. Land use regulation should acknowledge the desirability of mixed use in most neighborhoods, while retaining the primary protection for the preferred land use designated on the future land use map,

g. Areas of mixed land use that allow higher residential densities along with commercial land uses of vertical mixed use buildings,
h. Form-based standards to enhance the character of prominent commercial areas, such as primary and secondary downtown areas, Plaza district and nearby residential areas in downtown and East Hillside.

Parks and Recreation Policies (P&R)

Access to sufficient green space for neighborhoods is important to livability. The HIA highlighted two policies addressing access and complete connections to parks and trails.

P&R 1. Duluth has a great deal of open space and unbuilt land. But not all open space is park land, access to some parks is limited, and some neighborhoods have few park options within typical park service areas. The city will:

a. Work to ensure reasonable access to parks and levels of service for recreational programs by type of park: passive (wilderness) parks, playgrounds, community centers and recreational fields,
b. Create a level of service goal for access to various types of parks,
c. Assess the need for park dedication provision that serves to improve recreation and open space levels of service in underserved neighborhood areas,
d. Consider modifying the functional classification of its park areas to better meet the needs of residents and visitors,
e. Consider land exchanges that improve recreation, park and open space levels of service.

P&R 4. Trails provide both recreational opportunities and alternative travel modes to the automobile. The city will enhance its trail system to improve connectivity including:

a. Connecting the major trail networks with each other, including the Munger Trail, Lakewalk and Superior Hiking Trail,
b. Connecting neighborhoods, parks and commercial areas to the major trail network through the use of trail spurs,
c. Improving trail connections to major institutions, particularly higher education facilities, but also destination retail (such as Miller Hill and Lincoln Park's secondary downtown area) and employment centers (such as the medical district and primary downtown area), protect designated trails with easements or other legal definitions of the corridor.

Transportation Policies (T)

Many of the Comprehensive Plan transportation policies impact the Sixth Avenue corridor and the Hillside neighborhoods. The HIA emphasized eight policies due to their emphasis on the street environment for walking and bicycling, such as creating service standards for pedestrians, bicycle networks, traffic calming, street trees, enforcement of sidewalk ordinances and improving safe street crossings for pedestrians. The policies do support livability and are areas that are addressed within the Sixth Avenue East Redesign Study.

T 3. The city will develop a pedestrian level–of-service standard.

T 5. Road construction and street improvement plans shall consider retaining existing trees and leaving adequate space for tree planting.

T 8. The city will evaluate traffic calming strategies as a means of reducing cut-through traffic and increasing pedestrian safety. The city will focus traffic calming strategies in appropriate situations, including:

a. Where requested by residents,
b. When needed to address new development in an existing neighborhood,
c. When considering Street Improvement Program guidelines in areas of the city with narrow streets and mature street trees,
d. When evaluating on-street parking standards,
e. When traffic calming will slow traffic to appropriate speeds and not divert traffic from one neighborhood street to another,
f. Where a lack of street trees contribute to excessive speeds.

T 10. Adopt procedures and enforce ordinances to keep sidewalks adjacent to public and private property clear of obstructions, snow and ice.

T 11. Identify standards for improving bicycle safety and encouraging greater bicycle commuting through street design improvements, identification of bicycle arterial routes, and maintenance needs to extend bicycling seasons.

T 13. The city will create a schedule for improving pedestrian access in critical pedestrian areas as identified in Metropolitan Interstate Commission pedestrian access plans.

T 16. Within areas of higher density, the city will work with land owners and businesses to attempt to meet parking needs through transportation planning that incorporates creative parking solutions, use of transit, accommodations of shared vehicles or bicycles, and pedestrian access.

T 21. Evaluate parking policies and decisions, public and private, for their impacts on the viability of public transit. Subsidized parking, when provided to commuters and consumers, lessens their incentive to walk, bike or use transit. The city's parking authority should work with the DTA to promote transit use among commuters and maximize efficient use of both parking and transit investments.

Unified Development Chapter's Urban Design Policies

The city adopted a new 2010 Unified Development Chapter (UDC) to develop requirements to meet the Comprehensive Plan. The UDC requirements are meant to ensure new development and redevelopment in neighborhoods throughout the City to enhance existing land use as guided in the Comprehensive Land Use Plan. The HIA reviewed the sections that address parking and the five form-based districts.

Health Indicator- Number of large, unattractive parking lots

There are a significant number of surface parking lots in Central Hillside. Most of them are associated with medical facilities, and three are adjacent to Sixth Avenue East Corridor. These lots lack pedestrian amenities or greenery in or along the perimeter. The large spaces feel unwelcoming and create a connection barrier for residents who live, work or need to travel by them. The Sixth Avenue East Schematic Redesign Study indicated the need for designated pedestrian space, but did not recommend improvements for parking lots beyond the right of way.

Parking abutting sidewalk

The UDC's Parking and Loading Section has provisions aimed to provide parking with a focus on efficient use of space and compatibility with neighboring uses. Provisions and requirements for off-street parking are determined by use and the lot's proximity to mass transit. The

minimum off-street parking requirements for any development or redevelopment located within a quarter mile of the existing DTA routes in operation for one year or more may be reduced by 30 percent. This encompasses the Central and East hillside neighborhoods. The UDC provisions for surface parking lots and garages include pedestrian accommodation, landscaping and screening.

Example of lot screening

The HIA recommends full implementation of the UDC parking standards within the Hillside neighborhoods, especially along the Sixth Avenue East corridor, to greatly improve connectivity and livability for residents along the corridor and in the neighborhoods.

Health Indicator - Urban Design and Form-based Districts
Duluth's UDC specifies guidelines for neighborhoods that focus on making sure that new development and redevelopment compliments the existing residential uses. UDC redevelopment requirements will apply when a change to previously existing, improved property occurs, including but not limited to the demolition or building of structures, filling, grading, paving or excavating. It may be awhile before the neighborhoods and the Sixth Avenue East corridor realize the positive livability affect of the UDC due to the built-out nature of the area.

Five form-based districts are part of the UDC. Form-based districts focus on the form of development and have regulations which support pedestrian-friendly commercial centers, building types chosen as part of a public Visual Preference survey and are meant to be located in traditional shopping areas designed to fit into existing context. The districts will allow for a mix of residential and commercial uses. The Central and East Hillside neighborhoods are included in the third district called Mid-Rise Community Shopping. The building type created, Main Street Building II, is meant to preserve the style of development in the neighborhood and provide standards for future infill development to emulate the existing style. Main Street Building II, has a small build-to zone, requiring the building to be constructed fairly close to the front property line.

The HIA supports form-based districts as a tool to creating more pedestrian friendly building fronts which complement the neighborhood and livability.

Health Indicator - Residential Area: Housing stock quality
The Central and East Hillsides are established, fully developed neighborhoods. They have an older housing stock, some of which is in poor or fair condition. To address the housing quality the Community Development Block Grant program provides funds to local nonprofits to work on a wide range of activities that build, buy and/or rehabilitate affordable housing for rent or homeownership, or to provide direct rental assistance to low-income people.

The HIA supports the continued assistance to home owners and renters to improve livability in the neighborhood.

Health Indicator – Areas of incompatible neighborhood uses

The aerial photo below shows Hillside neighborhoods that are affected by incompatible uses. Efforts are underway to remedy incompatible neighboring land uses which affect housing quality and livability. Residential units adjacent to commercial and industrial uses contend with excess noise, traffic or roadway lighting if proper screening is not in place. This is a problem for residents living on or near Sixth Avenue East. They contend with motor vehicle noise, limited front yard space and no boulevard between the sidewalk and travel lanes making the front yards uninviting for residents to gather and unsafe for children to play. The width of the street (as mentioned in the accessibility section) also deters residents from knowing their neighbors across the street contributing to the lack of community connections.

Figure #4 - Residents by neighboring parking lots or commercial uses, contend with noise, light and excess traffic, if not protected by sufficient screening.

The Sixth Avenue East Schematic Redesign Study recommends the addition of boulevards and trees to provide a buffer for residential units. It includes medians to provide a safer opportunity for residents to cross the street in two stages. However, the schematic design does not reduce the street width, and therefore the barrier, for residents to conveniently interact across the avenue.

The HIA recommends shortening the crossing distance for pedestrians to allow for a closer connection to both sides of the avenue.

As two of the original neighborhoods to be established in Duluth, the Central and East Hillside have smaller lot sizes and blocks. Therefore, the opportunity exists for greater population densities. The City Comprehensive Land Use Plan identified target density, use intensity and design for all land use types. For the residential areas around Sixth Avenue East, the Plan specifies four to eight residential units per acre. A residential unit density of four to seven units per acre assists in encouraging walkability and thus increases the neighborhoods livability.

The HIA does not recommend any changes to neighborhood density.

RECOMMENDATIONS
Health Category #3 – Livability

The following recommendations should be taken into consideration for future planning and engineering initiatives associated with the Schematic Redesign of Sixth Avenue East. These recommendations are intended to serve as a foundation in meeting the public health issues and concerns identified through the HIA process. The recommendations should be considered by parties, agencies and organizations that have a role in meeting the needs of the community within the HIA project area.

- **Merge into one, unified Hillside Neighborhood Revitalization Plan and consider inclusion of a livability component.**

- **Implement the city's Unified Development Chapter parking standards within the Hillside neighborhoods completely, especially along the lower areas of the corridor to greatly improve connectivity and livability for residents.**

- **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.**

- **Continue to implement form-based districts as a tool to create more pedestrian-friendly building fronts which complement the neighborhood and add livability.**

- **Continue to focus assistance to home owners and renters within the Hillside.**

- **Ensure that affordable housing is maintained or increased so that current residents are not forced to leave the neighborhood.**

- **Through innovative roadway design, as well as the use of design exceptions and/or variances, shorten the crossing distance at intersections to allow for pedestrians to cross more safely.**

- **Include amenities like lighting, benches, decorative fences, smaller localized pocket parks, trash receptacles, recycling containers and rain gardens along the Sixth Avenue East corridor to create a neighborhood enhancing environment.**

- **Consider adding amenities outside of the right-of-way to create greener, more neighborhood-friendly development.**

- **Consider linear pathways (connector trails), parks, or other green space that can capture rain water and enhance Hillside streets.**

HIA Reporting Step

In late June and throughout the summer of 2011, the HIA team will make the report and its recommendations public through a variety of communication strategies. Documents to be created and steps to be taken to complete the process are:

- Completed Final Report, with Executive Summary
- Executive Summaries printed and distributed to key officials and the community
- Press release sent and media event held
- Formal written and verbal communication with city officials

HIA Monitoring Step

Invested organizations should continue to work with city officials to secure engineering and construction funds for the reconstruction of the Sixth Avenue East corridor.

The Complete Streets Task Force and other invested organizations should monitor the implementation of Duluth's Complete Streets Resolution to determine Duluth's fidelity to its Complete Streets principles.

St. Louis County Public Health staff will monitor how the community uses the recommendations as it moves forward in the Hillside.

HIA Conclusions

1. The recommendations in this HIA should become an addendum to the Sixth Avenue East Schematic Redesign Study, and be paired with an upcoming traffic study on Sixth Avenue East.
2. The recommendations in this HIA would positively impact all health categories and better serve the users of and residents in the Hillside.
3. Duluth's Comprehensive Plan provides additional language to support the redesign, or a similar, improved design which supports all modes of transportation.
4. The roadway redesign is a feasible project.
5. Over time, enhancements outside the corridor are feasible.
6. Existing city polices and the HIA recommendations, the renewal of the corridor would greatly contribute to the unification of the Hillside and improve the health of its residents.

The HIA team hopes to set a new direction for the redesign of the Sixth Avenue East corridor, the neighborhood and its people. It is the intent of the HIA that the discussion generated by this report brings the Central and East Hillside together, in a more active and vital manner.

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