Running Head: HIA OF TRANSIT-ORIENTED DEVELOPMENT WITHIN NASHVILLE'S NORTHEAST CORRIDOR

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Health Impact Assessment of Transit-Oriented Development within Nashville's Northeast Corridor

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A Health Impact Assessment (HIA) is defined as "a combination of procedures, methods, and tools by which a policy, project, or program may be judged as to its potential effects on the health of a population and the distribution of those effects within the population (CDC, 2009).
The following document describes the process behind planning a Health Impact Assessment for the future transit development (and accompanying urban design) which has been proposed by members of the Nashville Metropolitan Planning Organization for Nashville's Northeast Corridor along Gallatin Pike and Viet Nam Veterans Highway. The following summary of the project has been adapted from the format of a survey of Health Impact Assessments.

PART ONE:
Health Impact Assessment for Transit-Oriented Development of Nashville's Northeast Corridor, Nashville Area MPO, Nashville, Tennessee (March, 2011)

Policy, plan, program, or project?

Area *plan* for transit development and accompanying urban design

Methods

Review of current health status of Davidson and Sumner Counties using CDC BRFSS SMART data, review of literature and planning documents, creation and future implementation of three community focus groups and approximately 1,000 surveys within half-mile radial areas of Madison, Hendersonville, and Gallatin TOD locations

Scoping: Health determinants affected by the decision

Transportation access, physical activity, access to healthy foods, access to parks and greenspace, social cohesion, pedestrian and bicyclist safety

Assessment: Population affected

Residents living within a walkable distance of proposed transit stations as pulled from GIS mapping of Gallatin, Madison, Hendersonville; residents and workers commuting to and from the Northeast Corridor of Nashville

Recommendations to decision-makers and stakeholders

Optimize design to enhance connectivity and physical activity for all members of the community, including vulnerable populations such as children, older adults, low-income individuals, persons with disabilities

Impact

Pending: survey and focus group protocol has been developed through partnerships with the Nashville Metro Public Health Department, the Nashville Area Metro Planning Organization, and Meharry-Vanderbilt Community Engaged Research Core – these instruments will be implemented by June, 2011.

Executive Summary and Overview

This document outlines the creation of two community engagement pieces intended to enhance the writing of a Health Impact Assessment (HIA) for Nashville's Northeast Corridor extending from Madison to Gallatin, Tennessee. The HIA will be completed after the implementation of focus groups and survey distributions: these tasks will be accomplished by the end of May, 2011. The HIA will review the effects of the current design of the built environment in three radial areas surrounding proposed transit station sites in Madison, Hendersonville, and Gallatin.

The paper which follows provides a general description of the Health Impact Assessment as a tool, the formation of the present study and the relatedness of the task to the Community Development Action program at Vanderbilt. Following these introductions, the paper will then describe the specific locations where the transit-oriented development has been proposed for each community, a brief history of the development of the area, and the demographic characteristics for each community. After the scene has been described briefly, I will then discuss the conceptualization of the man-made elements of the physical community's design as it relates to public health outcomes, and finally, discuss the proposal of community engagement pieces intended to enhance this work.

It is hoped that the focus groups and community survey will enhance future transit development of the Northeast Corridor.

Grant funding received from the Meharry-Vanderbilt Community Engaged Research Core has made the creation of these community engagement pieces possible.

Health Impact Assessment

What is an HIA?

The World Health Organization defines a Health Impact Assessment, or HIA, as "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" (CDC, 2009). According to the CDC, HIAs can be either voluntary or regulatory processes which can focus on "health outcomes such as obesity, physical inactivity, asthma, injuries, and social equity" (CDC, 2009). As recognized by multiple health organizations, HIAs are currently not put within a framework which considers a specific set of health criteria; additionally, there is no standard or reliable method for conducting an HIA (Lock, 2000).

Though there is not an agreed-upon rubric for evaluating the effectiveness of an HIA, there is a well-accepted system of conducting the process, including five important steps: screening, scoping, risk assessment, dissemination, and monitoring and evaluation (CDC, 2009). The screening process within the HIA requires the authors of an HIA to assess whether or not an HIA is necessary to evaluate a project, policy, or program. The scoping process, following the screening process, identifies which health effects to consider within the HIA; due to relevance in a particular setting. After deciding upon which variables are most pertinent to the study, "assessing risks and benefits" then means that researchers must identify which people may be affected, and how they may be affected. Next, researchers and practitioners are then assigned to develop recommendations for changes to proposals which would promote positive, or, mitigate adverse health effects. The final step of this process asks that researchers report, or,

present, the results of the study to decision-makers, and retrospectively, determine the effects of the HIA on the decision in evaluating the HIA process.

Formation of the present study

For many years, planners within the Nashville Area MPO have been dedicated to finding equitable urban planning solutions for a multitude of communities within the greater Nashville Area. One Senior Planner, Leslie Meehan, initially sought the assistance of two graduate interns in the fall of 2009 from the Community Development Action program at Vanderbilt University's Peabody College. These two students, Emily Stewart and Laura Stamm, began conducting a "pilot" HIA for the Northeast Corridor; working with architecture students from the University of Tennessee at Knoxville and Hawkins Partners Consulting in order to design a "healthy" prototypical community within the setting of Madison, Tennessee.

The "pilot" study also reviewed the use of the HIA in urban planning, as well as literature reviews assessing the impact of the built environment on personal health outcomes. Though the pilot study generated online survey data as well as recommendations for the future development within the region, the research team was interested in continuing the process of understanding the development implications of future planning efforts on the personal health outcomes of the individuals living in a certain radius of TOD sites in Madison, Hendersonville, and Gallatin.

In April 2010, our team received a grant from the Meharry-Vanderbilt Community Engaged Research Core to pursue this goal of generating more community input regarding future TOD design in each proposed location. The grant funding will support focus groups and survey distribution in these three sites – it is the research team's

hope that these focus groups and surveys will generate genuine discourse on the topic of community health and the built environment.

Health as it relates to the community

Most pertinent to this study is the discovery of variables which inhibit or encourage healthy community behaviors, as revealed by focus group and survey responses. The research interests of this study include factors which would promote or hinder community members from engaging in "active transportation" (i.e. walking, bicycling) as part of daily routine. Other issues include accessibility to healthy food destinations, connectivity of streets, green space, air quality, housing, and safety. The purpose of discovering these variables is to engage community voices and to be as comprehensive as possible in writing the Health Impact Assessment. These factors can be evaluated and possibly improved on the community level by conscious planning of transit-oriented development.

Summary of Northeast Corridor Transportation Development

Transportation plans for Nashville: 2035

The Northeast Corridor, as defined by the Nashville Area Metropolitan Planning Organization (MPO), is a 30-mile corridor between downtown Nashville and Gallatin, Tennessee. This rapidly growing area is more specifically defined along US 31 (Gallatin Road/Nashville Pike), Interstate 65, and SR 386 (Vietnam Veterans Boulevard), and it generally encompasses areas of East Nashville, Madison, Goodlettsville, Hendersonville, and Gallatin (Nashville Area MPO, 2008). Over the next 25 years, the Metro Nashville area expects to have an additional influx of nearly one million people; therefore, the MPO has made a broad-reaching goal of expanding networks of mass transit

opportunities for the metro Nashville area. Additionally, the MPO has made another substantive goal of increasing "active transportation" (i.e. walking, bicycling) choices by assisting in creating healthier, more "walkable" communities and more "connected" streets.

Currently, Hendersonville and Gallatin are experiencing rapid population growth with newer residential and commercial development – which is occurring in less concentrated suburban development patterns (MPO, 2008). The need for transit development is specifically important to this area. According to the Northeast Corridor Mobility Study, (conducted by the MPO over the past few years) in 2004, the Nashville Metropolitan Transit Authority's route between downtown Nashville and Rivergate Mall was the route with the overall highest ridership – and, in 2007, data showed a "substantial" increase in volume. A 2006 survey showed that 54 percent of MTA transit riders had no working vehicle, and that 74 percent of transit riders had incomes which were less than $15,000 per year – which would indicate dependence on the MTA system. Most significant to the present discussion, no fixed route bus service exists between Davidson County and the City of Gallatin.

Transit-Oriented Development: Locations

The MPO has focused on "Transit-Oriented Development" in these three outlying communities as a framework to expand service to the Northeast Corridor in the future: Madison, Hendersonville, and Gallatin. Transit-oriented development can be defined as higher-density mixed-use development which is usually within walking distance of transit stations. The Centers for Disease Control defines Transit-Oriented Development, or TOD, as compact, mixed-use development near transit facilities with high-quality

walking environments. It is a common assumption that well-designed TOD will encourage active transportation and healthier community environments (CDC, 2009).

The proposed transit station in Madison for what may accommodate a bus-rapid transit (BRT) line is located in the middle of Gallatin Pike, just north of Neely's Bend Road; and it is suggested that appropriate TOD accompany this and other stations within a small radial area. In Hendersonville, the proposed station for the Greenfield Prototype Area is on SR-386 (Viet Nam Veterans Highway) at the Indian Lake Village Development and just west of the Saundersville Road exit ramp. This Hendersonville development will incorporate slip ramps for the dedicated lanes, providing access to the development. And finally, the new station in Gallatin (proposed as the "end of the line") is just south of Harris Lane, in-between Harris Lane and the CSX railroad tracks, just south of the track is the Gap distribution center. It is possible that other stops will populate the line between the downtown Nashville stop and Gallatin in the future, but the document to follow will focus specifically on the stops between Madison, Hendersonville, and Gallatin. (See Appendix 1 to reference maps for each area of proposed transit-oriented development.)

The Health Impact Assessment to follow will focus on the Transit-Oriented Development surrounding, as well as transit service available between, these three targeted transit stops.

Profile of the Northeast Corridor

History of Madison, Hendersonville, and Gallatin

Long after initial settlers came to the area once known as Madison Station in the late 1700s, Madison became a center of employment in the mid-20th century; and began

offering suburban community retailers to supply to its residents in 1956 (Discover Madison, 2011). Hendersonville was initially settled in the late 1700s, however, after the impounding of Old Hickory Lake and after the improvements made to Gallatin Road and new development of highway infrastructure in the 1960s, Hendersonville became a more populous area (Takacs, 1992). Gallatin, the county seat of Sumner County, also serves as a bedroom community to Nashville, although numerous industries make their homes here. Within the development of each community, the influence of the automobile is apparent – and the commuting behavior of residents along the Northeast Corridor is quite prevalent.

Within metro Nashville area in 1960, there mere more people living in Davidson County than within what was considered to be "Metropolitan Nashville" at that time (NCDC, 2005). This means that the majority of citizens in the area were living in the suburbs – and, that the car was the method of enabling people to commute between relatively inexpensive houses on less expensive land, neighborhood shopping centers, and industrial centers. As put by a historical account by *The Plan of Nashville*, "People who migrated to the suburbs were exchanging decaying urban neighborhoods for a brand new house, a green lawn, new schools and stores" (2005, p33). Plans which would allow for the connectivity between areas were not accommodated, as the city and the county were divided by agency of legal authority and funding. In 1963, the conglomerated Metropolitan Nashville-Davidson County government came into its present existence. Other than stabilizing the tax base of Davidson County's suburbs and urban areas, this served to reduce the duplication of government services (NCDC, 2005, p. 34). Most appropriate to this paper is the consideration of the negative implications which resulted from a previously disjointed bureaucracy. The new "Metro" government had failed to

recognize the implications of land use patterns, and never made it necessary to have development be "compact" or connected (NCDC, 2005, p. 34). The resulting "problem" as we see it today in 2011 is what is referred to as "sprawl."

Demographics

In 2008, Madison was reported to have a total population of 35,529 individuals, occupying 15,937 households. Of these individuals, 68.5 percent were white, 21.6 percent were black, 9.2 percent were Hispanic, 1.5 percent were Asian alone, less than one percent were American Indian alone, 5.5 percent reported that they were of some other race, and 2.4 percent reported they were of two or more races. The median household income of Madison in 2008 was $43,412 (U.S. Census Bureau, 2011).

Hendersonville was home to 46,218 people in 2006; which was a 12.8 percent increase from the 2000 U.S. Census. In 2000, 92.9 percent of residents were white, 4.1 percent were black, 1.7 percent were Hispanic or Latino, 1.1 percent were Asian, and less than one percent of individuals were American Indian, or reported two or more races. The median household income in 1999 for Hendersonville residents was $50,108 (U.S. Census Bureau, 2011).

Gallatin is smaller than its neighboring communities of Hendersonville and Madison; in 2000, 23,230 people lived here. It was projected at this time that by 2010, 28,677 individuals would be living in Gallatin. The median household given in 2000 for Gallatin was $34,737, with an estimated per capita income of $18,550 (U.S. Census Bureau, 2011).

Health Statistics

Obesity, defined as a Body Mass Index equivalent to or greater than 30, is strongly associated with many chronic health conditions which are on the rise in the U.S. (Frank, Andresen, & Schmid, 2004). The measure of obesity is pivotal to the present topic of study: the calculation relies on the specific measure of weight in kilograms divided by the square of height in meters (Lopez-Zetina, Lee, & Friis, 2006, p.658). As healthcare and chronic health conditions are in the forefront of much public discourse, pertinent to our overall consideration is how to improve individual health outcomes. Bell and Cohen (2009) purport this profound concept, especially as sedentary lifestyles influence the onset of chronic disease. Making our communities more conducive to active transportation options then holds great potential to foster healthier living.

What is the health status of individuals in Metro Nashville?

According to 2009 CDC BRFSS SMART data, Weight classification by BMI for Metro Nashville area residents was as follows: 34 percent were neither overweight nor obese; 38.9 percent were overweight (with a BMI between 25.0 and 29.9), and 27.1 percent were obese (CDC, 2009). Also in 2009, only 20.9 percent of Metro Nashville residents reported that they engaged in 20 or more minutes of vigorous physical activity, three or more days per week. (Nearly 60 percent said they did not take part in 30 or more minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20 or more minutes three or more days per week.)

Nutrition appears to be of concern within the Metro Nashville area; only 27.7 percent of adult residents consume five or more servings of fruits and vegetables per day. According to the U.S. Department of Health and Human Services, it is recommended that

one should eat two or more servings of fruit and three or more servings of vegetables each day. This may indicate the need for individual behavior change, but it also may indicate the need for an environment more supportive of the purchasing of fruits and vegetables.

It was also shown in 2009 that 15.3 percent of residents did not have any kind of health coverage. Health conditions such as diabetes, hypertension, high cholesterol, asthma, and mental and physical disabilities affect individuals on a wide scale; 6.5 percent of residents reported that they had ever been told by a doctor that they had diabetes (non-pregnancy related); 2.6 percent were pre-diabetes/borderline diabetic, 26.3 percent of adults had been told they had high blood pressure (Hypertension awareness), 28.2 percent of adults who had their blood cholesterol checked were told it was high, 6.5 percent of adults had been told they currently have asthma, and 18.4 percent reported that they were limited in any activity because of physical, mental, or emotionally disabled. (6.1 percent reported the need for special equipment to assist with health problems) (CDC, 2009).

Literature review: The Built Environment and Public Health

There is perhaps a bit of imagination required to initially see the connection between the "built environment" of sidewalks, streets, and buildings, and, public *health*. It is necessary that we begin to make these linkages, as research shows that many of our health outcomes are indeed a product of our environment.

But, what *is* the "built environment?" Northridge et al. define this concept as "that part of the physical environment made by people for people, including buildings, transportation systems, and open spaces (2003, p.558). Any other element of the

environment we see can then be considered the "natural" environment. Our space has been altered by the choices of planners, engineers, developers, and the like. Choices which have been made to alter physical space are not often done with a more general comprehension of how spaces fit together. Development which ignores the community as a whole often creates disjointed patterns of sidewalks, bike paths, absences of fresh food markets in certain radiuses (and heavy concentrations of them in other locations), neighborhood streets which are secluded by cul-de-sacs, a dearth of healthy and equitable housing stock – and the list goes on. The community is thus designed to promote the use of the automobile – even if just to get to the supermarket around the corner.

The Centers for Disease Control has recognized that "healthy community design" can have positive health outcomes: increasing physical activity, reducing injury, increasing access to healthy food, improve air and water quality, decrease mental health stresses, strengthen the social fabric of a community, and provide fair access to livelihood, education, and resources (2010). The "urban form" created by transportation planners and city engineers has a great deal to do with the connectivity of streets and the accessibility of walking to local businesses and community organizations. For example, safety, from car traffic beside an arterial highway, or the regularity of walking traffic (Miles, Panton, Jang, & Haymes, 2008) are considered as factors in the decision to commute by foot or car. Net residential density and mixed use zoning also come into play (Frank, Andresen, & Schmid, 2004): those that can walk to a grocery store or to church will perhaps be more likely to make the choice of walking. As much research explores, there is a growing list of factors which are being evaluated to specifically assess the impact of the built environment on physical activity and other healthy behaviors. Dannenberg et al.

(2003) write that data shows that the proximity of recreational facilities, street design, housing density, and accommodation for safe pedestrian, bicycle, and wheelchair use play a significant role in promoting or discouraging physical activity. As our transportation infrastructure is increasingly planned for cars rather than pedestrians, the result is a car-dependent, sedentary population. Sedentary lifestyles have serious implications for serious consequences for individual health outcomes (Frumkin et al., 2004, p.90). Conditions such as overweight and type 2 diabetes have reached epidemic proportions.

Dannenberg et al. (2003) have explored neighborhood factors and community level factors which may be relevant to health – Neighborhood-level examples may include front porches, sidewalks, traffic calming measures and green space; Community-level examples may include residential density, housing features, land use mix, quantity and quality of space, connectivity, and transportation systems. Other community-level characteristics of relevant variables related to public health may also include proximity of recreational facilities, street design, housing density, and the accommodations made for safe pedestrian, bicycle, and wheelchair use (Dannenberg et al., 2003).

The level of social capital of a community is strongly affected by the design of the environment, also. Social capital in this case can refer to a person's network of relationships, trust in others, a shared emotional connection and feeling of membership among people within the community. How might social capital be increased or reduced by the man-made elements which encapsulate a community? "Activity-friendly" communities reduce social isolation by providing opportunities to leave the seclusion of the home in order to interact with other people in informal and formal ways (ICMA, 2003,

p.5). Certain physical characteristics enhance this probability for social engagement: Close proximity of residential units (especially when facing another unit), living on a busy street, or having a residence directly connected to major pedestrian paths or meeting areas (Evans, 2003, p.544). Sprawl influences social capital by reducing the opportunity for residents to engage in informal social interaction, restricts the time and energy people have for civic involvement, and segregates groups of ethnicities and incomes into separate and unequal neighborhoods (Frumkin et al., 2004, p.171-173). Research has shown that social capital prolongs life; and, that loneliness and isolation are toxic, and social relationships are health (Frumkin et al., 2004, p.166, p.29).

The amount of social capital perceived by an individual affects mental health, as do other factors pertinent to this study. Housing and neighborhood qualities have an inverse relationship with psychological distress in both adults and children (Evans, 2003, p.537-538). Moreover, people seem to feel better and have improved mental health when they perceive control related to their physical surroundings. Elements such as the presence of tall structures, absence of group meeting spaces, and poor visual surveillance capability influence feelings of territorial control and ownership – and, these elements also have been associated with both the fear of crime and higher levels of actual crime (Evans, 2003, p.544).

According to Northridge et al. (2003), it is also important to consider the *distribution* of health determinants within and across social groups defined by age, gender, race and ethnicity, class, and sexuality (p.566). There is much literature which explores the effect of the built environment on the health impacts many vulnerable groups. For example, it is likely that low-income and minority children stand to benefit

more than their peers from interventions directed at Safe Routes to School and other interventions aimed at encouraging a safer built environment (by more connected sidewalks, traffic calming measures, reduced speed limits in areas of high pedestrian traffic, and more). In areas with high air pollution, asthma is highly prevalent among children especially – as children (particularly with low body weight) have narrower airways and breathe more rapidly than their adult counterparts (Frumkin et al, 2004). The ability to enjoy a healthy environment plays a large hand in the obesity epidemic which has "fallen heavily" upon children – more so among African American and Hispanic children than their peers. Overweight children are said to face an increased risk of diabetes, and hyperlipidemia, and perhaps sleep apnea, polycystic ovaries and orthopedic ailments – and are much more likely to become overweight adults (Frumkin et al., 2004). On the other end of the age spectrum, the elderly have a high need for having pedestrian-friendly and safe areas. A younger adult may not consider the implication of having a crosswalk timed for individuals who are brisk walkers (Frumkin et al., 2004, p.195). The International City/County Management Association suggests that promoting active aging relies on a community's ability to provide safe and walkable streets, a range of transportation options, and land use patterns that permit easy access to services and amenities (2003). Independence among older adults is greatly influenced by being able to engage in "active living," which can be defined as a way of life that integrates physical activity into daily routines" (ICMA, 2003). Older adults sometimes do not walk due to the distance between destinations, difficulty walking, poor sidewalks, a lack of places to rest, or a fear of crime. Therefore, "smart growth" for older adults would include improving and maintaining sidewalks, ensuring safe street crossings, including

streetscape amenities such as benches and resting places, signage which is legible, and appropriate lighting for all times of day (ICMA, 2003, p.11).

Health statistics: Chronic Disease Indicators

Within Tennessee, certain factors which influence individuals' quality of life should be addressed. Using Chronic Disease Indicators comparatively between Tennessee and the United States, there are specific issues which must be considered as areas which need improvement. Some of the indicators which show that Tennessee is falling behind U.S. averages are: fruit and vegetable consumption among youth, obesity (and overweight or obesity) among adults, obesity among youth, recommended physical activity among adults over 18, television viewing among youth, and prevalence of diabetes among adults. More somber statistics of health among Tennesseans are incidence of cancer mortality, rate of stroke mortality, and mortality associated with congestive heart failure and other heart diseases. Overarching conditions which indicate necessary areas for improvement (as indicated by Tennessee's statistics being below average rates for the United States) are: lack of health insurance among adults aged 18-64, high school completion among adults 18-24 years, poverty rate, life expectancy, premature mortality among adults 45-64, fair or poor self-rated health status, and rate of dental care among adults.

In considering these health statistics, we must consider the systemic elements which affect a community's ability to gain physical activity on a regular basis – and also, what desirable destinations might be within a specific and remote area.

Community engagement: Focus groups, Surveys

Most pertinent to this study are the discovery of variables which inhibit or encourage healthy community behaviors, as discovered by focus group and survey responses. The research interests of the researchers include factors which would hinder community members from engaging in "active transportation" (i.e. walking, cycling) as part of daily routine. Other issues include accessibility to healthy food destinations, connectivity of streets, green space, air quality, housing, and safety. The purpose of discovering these variables is to engage community voices and to be as comprehensive as possible in the writing of an HIA. The team will utilize Action Research and Community Organizing principles as underpinning concepts within this process.

The types of responses from residents and community members (from Madison, Hendersonville and Gallatin) which this project seeks are related to health impacts which are related to the available transportation options, and the "built environment" of the Northeast Corridor, including the presence or absence of: sidewalks, roads, buildings, homes, et cetera. As this project is intended to inform the development and design of the future Bus-Rapid Transit line which will be implemented in the Northeast Corridor area, the ultimate interest of this project is to discover how the built environment of this region will influence the healthy behaviors of individuals.

HIA Focus Groups

Focus group participants will be recruited from a variety of locations within each of the three communities. Since the plans of implementing Transit-Oriented Development around a Bus Rapid Transit system have impacts within a local setting, our research team has chosen to use convenience sampling – with special consideration of

including voices among vulnerable groups in each community. HIA focus groups will take place at the Madison Public Library, the Hendersonville Public Library, and the Gallatin Public Library. We will conduct three focus groups, each of three with approximately 10-15 participants, and each composed of members from Madison, then Hendersonville, and finally, Gallatin. Within these focus groups, the moderator, Mary Beth Ikard (Communications Director for the MPO) will request feedback regarding the relationship between the built environment and general community health concerns. No specific questions will be asked about personal health concerns; the intent is to discover barriers to engaging in healthy activities (i.e. walking, biking, accessing healthy foods, building social capital between fellow community members, et cetera).

The research team will implement a "Community Tree" exercise in order to make the connection between the built environment and public health outcomes. This activity has been suggested by Jimmy Dills, of the Metro Nashville Public Health Department – as a way to creatively engage the community in a way which would be constructive to the specific concerns of the HIA. (Please see Appendix 2 to review Focus Group Protocol.)

With the findings from the focus group process the research team will assess the qualitative variables which seem to influence healthy outcomes within each area. Additionally, there will be a comparison made between these variables between TOD sites – in order to understand overlapping systemic forces which affect the Northeast Corridor on the whole.

HIA Surveys

Approximately 1,000 surveys will be distributed among community members in Madison, Hendersonville, and Gallatin. The survey has been designed through a

collaboration between Jimmy Dills (Metro Health Department), Michael Skipper (MPO), Leslie Meehan (MPO), Yvonne Joosten (CERC), and Laura Stamm (CDA). (Please see Appendix 3 to review the survey instrument.) The surveys will be distributed according to GIS maps which have been created for each area with the assistance of Max Baker from the Nashville MPO, Fred Rogers of the Hendersonville Planning Department, and Jim Svoboda of the City of Gallatin Codes/Planning Department. Addresses will be randomly selected from the lists of addresses compiled from these half-mile radial areas (a distance easily accessible by foot, or "active transportation" means) surrounding proposed TOD. A second mailing will be sent two weeks after the initial mailing, in order to reach a higher return rate. It is intended that the surveys will be returned within two weeks of the initial mailing. The research team expects approximately 20 percent of the surveys will be returned.

Results from the focus group and survey process will discuss the response rate, qualitative and quantitative variables which influence healthy outcomes within the areas of Madison, Hendersonville, and Gallatin, and will make comparisons between the proposed TOD sites.

Recommendations based on literature and research

Within the recommendations based on literature reviews and research, the team intends to create recommendations for transportation design, as well as TOD elements desirable to the residents in each area. The team intends to build connectivity between these three communities, as well as connectivity to the neighboring communities of Metro Nashville. The future design should build social capital and minimize adverse affects of negative social determinants of health. Perhaps most importantly, the team

intends to create a plan which will preserve the positive elements of community in a sustainable fashion.

Next steps

Following the completion of presenting this study to the faculty and students among the Community Development and Action program at Vanderbilt University for review, this plan of the Northeast Corridor HIA will be given to the Nashville Area MPO. It is hoped that the document will provide helpful community input to influence the transit development for the Northeast Corridor.

PART TWO: *Descriptive summary connecting the work of the project with the theoretical foundations of the CDA program*

Community Development Action

How do you engage a community in a democratic fashion in order to bring about positive change? How do you remain mindful and respectful of a community's treasured resources, in order to bring about more good than harm? How do you equitably provide resources among different members of the community – of all ethnicities, races, economic backgrounds, physical capabilities, ages, and persuasions? These questions, and many others, are a few of the considerations we bear in mind as members of the Vanderbilt Community Development Action program. I believe that these considerations are crucial underpinnings of this project.

It is most important to mention that this project has been focused on and intended for the ***current residents***, rather than a different set of future residents, of Madison, Hendersonville, and Gallatin. This project has been designed to look at the health

outcomes and life experiences of current residents, as the goal of this project is not to create a more ideal setting for other people to establish themselves in "up-and-coming" (or perhaps, gentrifying) areas of Nashville. It is possible that the Northeast Corridor will become a more popular place in which to reside after transportation investments have been made here; however, equity and justice remain part of the description of the Health Impact Assessment – and are a most important goal to consider.

According to the Practice Standards for Health Impact Assessments from the North American HIA Practice Standards Working Group, there are five principles which one must keep in mind when considering development of a transitional nature. The first of these principles is democracy – that people have the right to participate in the creation and decisions which affect their lives – and the HIA must "involve and engage" the public as a result (WHO, 2001). Equity must also be a core value among developers and writers of HIAs. In paying equity its due, planners must give mind to how an array of health impacts will be distributed among different demographics, with specific focus on vulnerable groups. The HIA must take a "comprehensive approach to health," with consideration to the influence that wider determinants of health have on the physical, mental, and social well-being of the residents of an area. The development of an area must be sustainable – and the HIA must evaluate the short and long term impacts of development. Finally, methods used must be ethical in that evidence "should not set out to support or refute any proposal, and it should be rigorous and transparent" (North American HIA Practice Standards Working Group, 2009). Within my experience in the CDA program at Vanderbilt, I have been encouraged to always seek understanding of how systems affect change among individuals. Particularly, I have been encouraged to

understand how vulnerable groups are affected by proposed changes. With a hopeful view of how the HIA can be used to critically assess a particular program, project, or policy, I believe that if the HIA truly does not seek to support or refute a proposed measure, it will be a most valuable tool for me to have within my personal experience.

The HIA can be a useful tool for developers and planners, to be dutiful to the genuine needs and concerns of the people living in an area – with consideration of the following question: "development for whom?" It has long been suggested that experts and academics alike should work "in partnership with low-income families as equal partners contributing different strengths to the comprehensive process of reshaping the city" (Jackson, 2008, p.233). It is a mandate that those individuals involved in bureaucracies and development include community voice authentically among the research which directs the path of development.

In the interest of creating a healthier community, we are channeling some of the core principles of the CDA program. It is absolutely appropriate to evaluate programs which will positively influence those within the community. However, in keeping a critical eye to the purpose of development, it is important to consider some developmental theories in order to place our efforts within a balanced context. Harvey Molotch, in *The Political Economy of Growth Machines,* wrote that cities (as actors of growth) usually have ways of promoting developmental change as though it is rational and that it is for the public good; however, though these changes might make *some* sense, they are not inevitable (Molotch, 1993, p.32). The views of Economic Modernization, as written by Bert Hoselitz, have been that "generative cities" have produced new ideas and economic practices; rural areas have often not. Hoselitz emphasized the importance of

small-scale private developers and modernizers in political power (Peet & Hardwick, 2009, p.124). These writings were produced with the view that industrialism, mass production, and material wealth were the primary goals of civilization. The foundation of these ideas was built on the *need* for those in underdeveloped areas to gain access to improved education, *mobility, flexibility, and influence in politics* (Peet & Hardwick, 2009, p.122). According to these theories of modernization, a traditional society would adapt, and become more modern, or it would be overtaken by more "progressive" development. Capitalist modernization is aimed at bolstering efficiency and progress in order to build economic growth (Peet & Hardwick, 2009, p.277, p.280). *Critical* Modernism holds a view which is critical of the power systems put in place by capitalism, due to the class ownership of productive resources; distrusting elite individuals, and hearing the voices of the disempowered. It is my hope, and the hope of my fellow researchers involved in this team, that we hear the voices of the disempowered in order to create a plan for the Northeast Corridor which is sympathetic to all. Amartya Sen (1999) wrote that though old machinery may be eagerly discarded by those interested in new technologies, lost traditions are quite different (p.241). Little consolation is necessarily given that more modern societies are 'fitter' or 'better' than traditional ones. So, it is crucial that we remain mindful of the locus of power and rationale behind large-scale development. In the case of this particular transit development effort, the intent and rationale is to increase the mobility and access of the communities within the Northeast Corridor – and, to incorporate the Northeast Corridor in a sustainable transit network as the population of Nashville continues to grow.

Within the setting of the Northeast Corridor, and with consideration to the residents of the neighborhoods abutting Gallatin and Viet Nam Veterans' Parkway, and the business owners and frequent visitors of civic spaces along the corridor, we must consider the interests of those among the community when we attempt to be agents of positive change. We must consider *how* we can do more good than harm in orienting the area toward a new means of transportation.

Action Research

An important tool within this process has been Action Research. Gaventa and Cornwall (2006) write that "advocates of Participatory Action Research have focused their critique of conventional research strategies on structural relationships of power and the ways through which they are maintained by the monopolies of knowledge, arguing that participatory knowledge strategies can challenge deep-rooted power inequities" (Reason & Bradbury, p.71). There are two action research feedback loops which we are to consider within this project. First is the relationship between the MPO and myself – and another graduate intern last year, Emily Stewart. We shared resources in order to develop a common understanding among our team: the literature which examines the built environment and public health, and, as well as practical planning materials. The discourse between student and planner was based within a continual curiosity to search out the link between environmental factors and personal outcomes. The second feedback loop which the research team (composed of members of MPO and CDA initially) has attempted to create is with the community in specific regard to planning efforts and health. Although the MPO frequently solicits public opinion and feedback on their efforts, the discussion of health between MPO and community is fairly new. Heron and

Reason (2006) have written that "in cooperative inquiry, these exclusive roles [of researcher and subject] are replaced by a cooperative relationship, so that all those involved work together as co-researchers and co-subjects … Everyone is involved in the design and management of the inquiry, everyone gets into the experience and action that is being explored; everyone is involved in making sense and drawing conclusions; thus everyone involved can take initiative and exert influence on the project." Moving forward, the community must also become engaged in this research process – to become a part of inquiry circles, moving between research, action, and reflection.

PART THREE*: Concluding professional piece about the student's personal growth and learning as a result of the experience*

I am very thankful for an opportunity to translate very specific research into an action plan with a local government organization. I am even more thankful that I had partnerships with these specific individuals at the MPO who would advocate for the research which was being done and would bring the discussion of *health* to the attention of those in attendance of several different meetings.

The biggest lesson and learning experience I gained from this practicum was in writing the Meharry-Vanderbilt Community Engaged Research Core (CERC) grant for enhancing the future writing of an HIA for Nashville's Northeast Corridor. The Request for Proposals had asked for grant applications which showed genuine partnerships between Meharry and/or Vanderbilt students and community agencies; these partnerships were asked to have a special focus on improving the health of communities. I was encouraged by Dr. Susan Saegert and Leslie Meehan of the MPO to apply for this grant

in order to fund community focus groups and surveys. I was notified at the end of April that we had received funding for about $1,800.00 for our basic needs to meet the goal of somehow engaging the community in the discourse of future planning efforts. Feeling the confidence in applying for institutional research funds was not something that came easily for me – but having this experience in my background will absolutely enhance my confidence in future grant writing efforts. It was wonderful to put knowledge gained within a grant writing course to use to secure these funds. In the future, however, I hope to plan more meticulously for a successful outcome. I did not do this before the grant proposal was submitted, leaving me wondering about how I would actually recruit focus group participants – what I would include in the focus group protocol *exactly*, and what my survey would look like in reality.

Thus, after the funding was approved by the CERC, I was charged with actually creating community engagement pieces which would fulfill the promises made to the granting agency. I was assisted in the creation of the focus group agenda with the support and advice of Jimmy Dills, the HIA Coordinator for the Nashville Metro Public Health Department (MPHD) – with his advice, the focus group protocol was taken from a Health Impact Partners exercise called "Talking about Health, Place, and Policy – Tree Exercise." The community survey was created with the advice of Leslie Meehan and Michael Skipper of the MPO, Jimmy Dills of the MPHD and Yvonne Joosten of the CERC.

After the creation of the project design and instrument designs, I and my MPO team attempted to go the IRB approval process. This proved to be the most arduous task of the project design. In moving forward in a constructive manner, I will say that I have

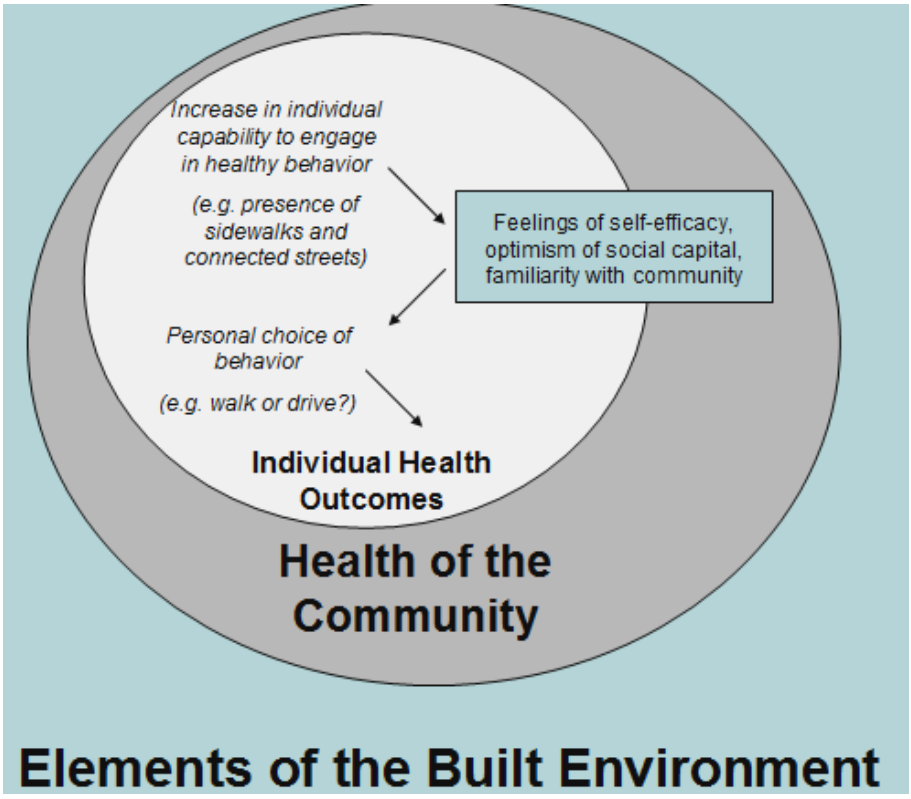
learned much about pacing oneself though the IRB process. The application and supporting documents were initially sent as a request for *exemption* – the selection of which was incorrect, as we were hopeful to engage in focus groups. Following the realization of our incorrect submittal (which took six weeks); I resubmitted our application to the IRB as an expedited request. Fortunately, our request was approved in a very timely manner after our initial complications. The IRB process helped me to more specifically outline the process of the project which would take place, and, helped me to understand the measures of accountability between MPO, Vanderbilt, and myself. If I were to go through this IRB process again, I would surely keep in constant communication with the IRB in order to ensure that all correct forms have been completed.

The conceptualization of how health is impacted by our physical environment, and the variables which accompany the study of this connection, has been the focus of my readings and study – thus, I have learned about specific content related to the application of research and practice. I have been fortunate enough to have been able to focus on this topic within a literature review for a Research Methods course as well as a Readings and Research course; and I have been able to see the linkages within internship experiences at the Nashville Area MPO. I am eager to see how the Health Impact Assessment as a tool is utilized to encourage "healthy" community design in the future.

Perhaps the most distinct lesson learned within my experience is that one should always be critical of the development processes which either promise to create necessary and positive change, or threaten to erase the elements of community among those currently creating livelihoods in the area of question. In this case, it is hoped that

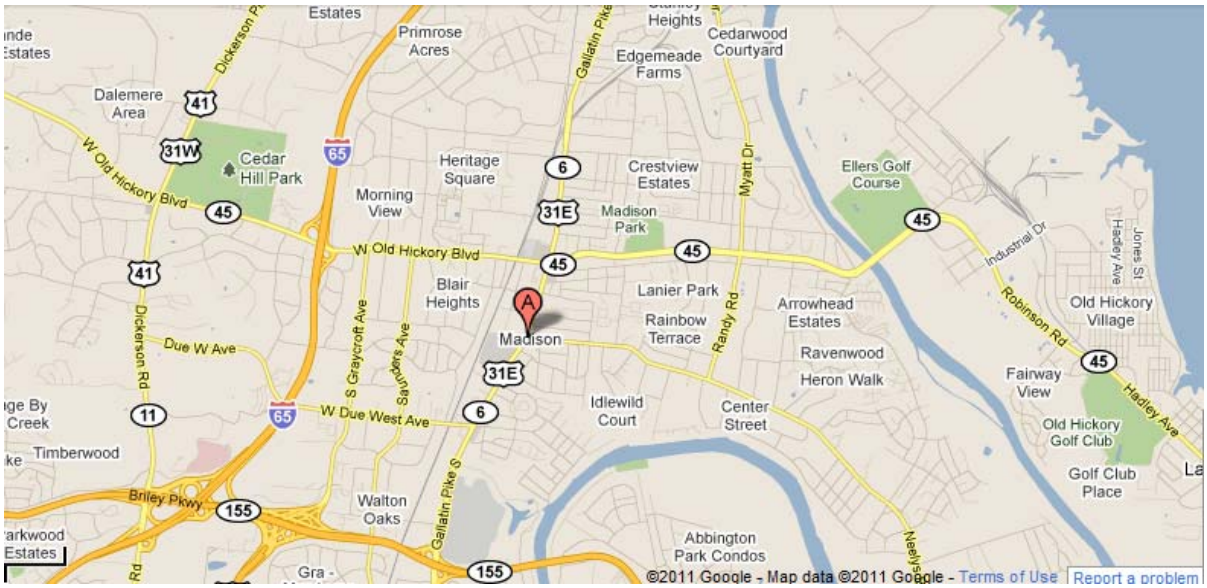
creating small-scale TOD and a more efficient transit system will better the community in a sustainable way.

A Framework for individual and community health outcomes within the systems dictated by the "Built Environment":

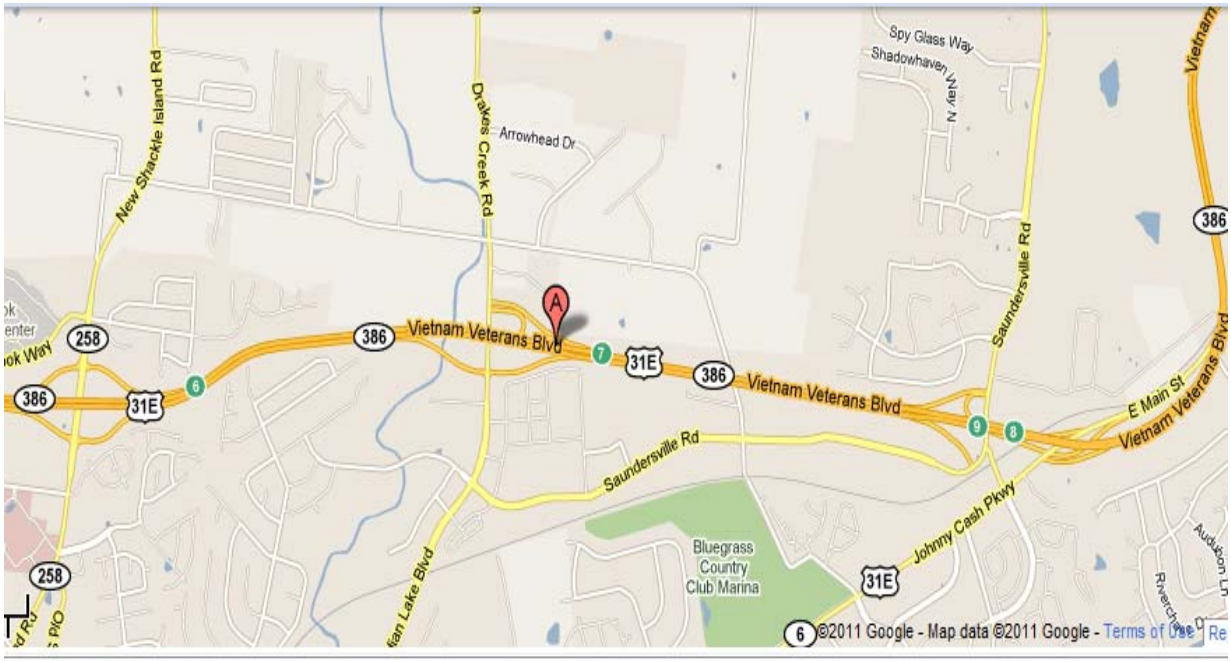


Appendix 1: Maps of Proposed Transit Stations

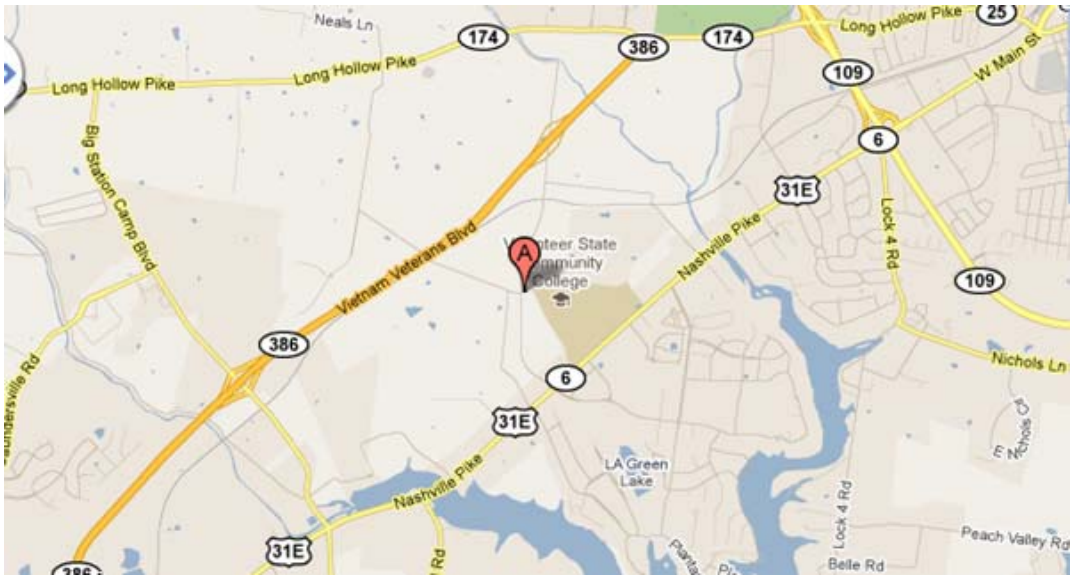
Madison



Hendersonville



Gallatin



Appendix 2: Focus Group Protocol

Focus Group Script

Community Tree Exercise:

- First, I'd like for us to do an exercise which will connect how land use impacts many community issues – and will make connections between our concerns and different components of "Transit-Oriented Development"

- We will use a flip chart and markers.

(The facilitator will draw a large tree on the flip chart, with many roots and branches, including plenty of space around the trunk as well.)
(To get conversation started, the facilitator will ask the following questions)

- How many of you are concerned about your community becoming less affordable for you and your family?

- How many of you wish the environment was better protected- preserving open space and parks and/or better air quality in your neighborhood?

- How many of you are concerned about regional issues such as sprawl and traffic congestion?

The MPO is trying to gain more knowledge about what else it can achieve through future development – such as healthier and more engaged communities.

- Now, let's fill out this community tree to determine what sorts of concerns planning can address!

- Let's start with some concerns about your neighborhood. We identified some of your concerns already, but let's talk a little bit further. What are some concerns that you and your family have in your community?

Write out the community concerns on the branches. *Examples can include traffic, crime, lack of jobs, lack of diversity, poverty, asthma, obesity, heart disease, substance abuse, depression/mental health, injuries (pedestrian, auto, bicycle), diabetes, access to health care (language barriers), etc.*

- Well, there must be causes of these problems. What are causes of some of these concerns, e.g. what causes asthma?

Write out causes on the roots on the tree picture. *Examples can include too many cars, not enough police, not enough jobs, mold in my house, pollution from nearby industry, etc.*

- If we don't understand and address the causes of these concerns, these problems will continue. Oftentimes, we react to the problems that already exist, but we can address our concerns in a proactive way by planning healthy, safe, and vibrant communities.

- So if you're planning a community- the buildings and services and how land is used- what pieces would make a good transit station area plan? What would you like to see?
- On the bottom, I'm going to reveal the components of a station area plan, like the one that's being developed in your neighborhood. This will provide the base of our tree- because that's what we have to work with. (This refers to a Community Health Tree that was created ahead of time by the facilitator)

Uncover the tree to show the components already written on the bottom.

- Some of the components of a station area plan are: Housing, Transportation, Community Benefits, Public Spaces, Design, Traffic and Circulation.

- How are these concerns and causes linked to planning? For example, in order to address pollution that causes asthma, we must have better air quality. What components of the station area plan are related to having better air quality? Having better air quality can be related to the following elements: traffic and circulation and public space.

Ask the participants to help you make the appropriate connections. Draw lines from roots to branches to make those connections.

- What other concerns outside of our community can be linked to planning and these other local problems? What issues in our community contribute to larger issues at a regional, or even global scale?

- Now, there are a few more questions I'd like for us to discuss while we're here tonight.

- First, do you all live in Madison? Or work in Madison? (Or Hendersonville, Gallatin for second and third focus groups)
- Do you belong to any groups or organizations related to transportation, physical activity, access to healthy food, green environments, etc?
- Are there things you try to do to be healthy? If so, what?
- Do you feel your community's environment encourages or discourages physical activity? How?
- How easy or difficult is it for you to buy healthy food in your community?
- Are there other ways that you feel your community's health is being affected by the built environment?

Appendix 3: Survey Format

COMMUNITY SURVEY

Thank you for your interest in completing this survey. The information you provide will help to inform community planners who are considering future transportation options for your area.

This first set of questions will give a basic understanding of your household and your community.

About your Household:

How many years have you lived in the Madison area?	
Including yourself, how many people live in your household?	
>>Of those, how many are under the age of 16 years?	
>>Of those, how many are 65 years or Older?	
How many vehicles in working condition are available to your household?	
What is the nearest intersection to your residence?	
Street 1:	Street 2:

About your Community:

Please rate your community for each of the following:				
	Poor	**Fair**	**Good**	**Excellent**
Friendly Neighbors	○	○	○	○
Public Schools	○	○	○	○
A Place to Raise a Family	○	○	○	○
Personal Safety from Crime	○	○	○	○
Recreational Opportunities	○	○	○	○
Number of Community Events	○	○	○	○
Proximity to Places you Want to Go	○	○	○	○
Ease of Walking or Bicycling	○	○	○	○
Presence of Litter or Trash	○	○	○	○
Landscaping or Natural Beauty	○	○	○	○
Amount of Open Space or Parks	○	○	○	○

Community Character or Charm	○	○	○	○

Transportation Issues:

This next set of questions will relate to your transportation activities.

How often do you use any of the following types of transportation:					
	Daily	**Weekly**	**Monthly**	**Rarely**	**Never**
Drive Alone in Private Auto	○	○	○	○	○
Ride with Someone in Private Auto	○	○	○	○	○
Public Transit Bus or Train	○	○	○	○	○
Walk – For Exercise or Recreation	○	○	○	○	○
Walk – To Go Somewhere	○	○	○	○	○
Bicycle – For Exercise or Recreation	○	○	○	○	○
Bicycle – To Go Somewhere	○	○	○	○	○
Taxi or Hired Car	○	○	○	○	○
Other (Specify_____)	○	○	○	○	○

Please indicate the following three factors that would make you more likely to use TRANSIT more often or to start using transit. *Please select your top three options, so that we might target changes; and rank them 1, 2, or 3 with 1 being most important, and 3 being least important.*			
SELECT ONLY THREE	**#1**	**#2**	**#3**
More Direct Service to Where I Want to Go	○	○	○
More Frequent Service – Less Wait Times	○	○	○
Friendlier Drivers	○	○	○
More Comfortable Seating	○	○	○
Bus Stops Closer to My Home	○	○	○
More Bike Racks at Stops	○	○	○
Easier to Walk to and From Bus Stops	○	○	○
If It Were Safer from Crime	○	○	○
Other (Specify_____)	○	○	○

Please indicate the following three factors that would make you more likely to WALK more often to place you want to go. *Please select your top three options, so that we might target changes; and rank them 1, 2, or 3, with 1 being most important, and 3 being least important.*			
SELECT ONLY THREE	**#1**	**#2**	**#3**
More Sidewalks	○	○	○
If Sidewalks were in Better Condition	○	○	○
Safer Intersections (e.g., Crosswalks, Signals, etc.)	○	○	○
Better Automobile Driver Behaviors	○	○	○
Lower Speed Limits for Cars	○	○	○
Improved Personal Safety from Crime	○	○	○
More Visually Appealing Surroundings	○	○	○
More Time in My Personal Schedule	○	○	○
Less Distance to My Preferred Destinations	○	○	○
Better Weather Conditions	○	○	○
Better Knowledge of Area	○	○	○
Other (Specify_____)	○	○	○
Please indicate the following three factors that would make you more likely to BICYCLE more often to place you want to go. *Please select your top three options, so that we might target changes; and rank them 1, 2, or 3, with 1 being most important, and 3 being least important.*			
SELECT ONLY THREE	**#1**	**#2**	**#3**
More Bike Lanes	○	○	○
If Bike Lanes were in Better Condition	○	○	○
Safer Intersections (e.g., Crosswalks, Signals, etc.)	○	○	○
Better Automobile Driver Behaviors	○	○	○
Lower Speed Limits for Cars	○	○	○
Improved Personal Safety from Crime	○	○	○
More Visually Appealing Surroundings	○	○	○
More Time in My Personal Schedule	○	○	○
Less Distance to My Preferred Destinations	○	○	○

Better Weather Conditions	○	○	○
Better Knowledge of Area	○	○	○
Other (Specify_____)	○	○	○

Health Issues:

We'd also like to know a little more about your health and what is available to you and your community.

How would you rate your overall health?	**Poor**	**Fair**	**Good**	**Excellent**
	○	○	○	○
How easy or difficult is for you to buy fruits and vegetables in your community?	**Very Difficult**	**Somewhat Difficult**	**Somewhat Easy**	**Very Easy**
	○	○	○	○
How would you rate your overall diet?	**Poor**	**Fair**	**Good**	**Excellent**
	○	○	○	○

Which of the following three factors would increase your chances of eating healthier?			
SELECT ONLY THREE *Please select your top three options, so that we might target changes; and rank them 1, 2, or 3, with 1 being most important, and 3 being least important.*	**#1**	**#2**	**#3**
If there was a supermarket closer to my house	○	○	○
If there was healthier food in the grocery stores near my house	○	○	○
If healthy food was more affordable	○	○	○
If I had more time to plan out my meals	○	○	○
If I had more time to shop for healthier food	○	○	○
If I had better transportation to/ from grocery stores	○	○	○
Other (Specify_____)	○	○	○

How often do you do any of the following:					
	Daily	**Weekly**	**Monthly**	**Rarely**	**Never**
Eat out or Eat Fast Food	○	○	○	○	○
Visit a convenience store or quick market	○	○	○	○	○
Visit a full grocery or supermarket	○	○	○	○	○
Visit a farmer's market or fruit stand	○	○	○	○	○

Eat a home-cooked meal at home	○	○	○	○	○

In the past year, how many times have you visited a medical doctor or emergency room?	

About You:

Please remember that this survey will remain anonymous – None of this information will ever be linked to your name. We are just interested in doing a good job of representing your community.

What is your Age?		
What is your Gender?	M	F
Are you of Hispanic Ethnicity?	Y	N
Which best describes your race?		
White/ Caucasian	○	
Black/ African American	○	
Asian	○	
Pacific Islander	○	
Native American	○	
Other	○	
What is your estimated annual <u>Household</u> Income ?		
Below $10,000 per year	○	
Between $10,000 and $25,000	○	
Between $**2**5,000 and $50,000	○	
Between $50,000 and $75,000	○	
Between $75,000 and $100,000	○	
More than $100,000	○	

Appendix 4: CERC Grant Application

Meharry-Vanderbilt Community Engaged Research Program Mini-Grant Application

Contact Information

Name: Laura Stamm
Title: Vanderbilt Graduate Student (M.Ed. – Community Development and Action)
Organization: Nashville Area Metropolitan Planning Organization
Address: 2005a Ashwood Avenue, Nashville, TN 37212
Phone Number: 864-497-6828
Email Address: laura.k.stamm@Vanderbilt.edu

1. **Name of Project**: Health Impact Assessment for Nashville's Northeast Corridor

2. **Academic and Community Partners:** Please list all collaborating agencies and/or individuals. Describe how each partner will be involved with the project. Explain how community representatives have been involved in the development of this project. Projects must include a research partner from Meharry Medical College and/or Vanderbilt University.

   Laura Stamm, Vanderbilt University Graduate Student: will act as the primary contact between the Vanderbilt University Center for Community Studies (CCS) and the Nashville Area Metropolitan Planning Organization (MPO). Laura has worked with this project since the beginning of October of 2009; she has completed a literature review regarding the relationship between the built environment and health, and she has worked in a group capacity for Action Research 3621 to develop an ongoing list of recommendations based on the review of other local Health Impact Assessments.

   Dr. Susan Saegert, Vanderbilt University Professor and Center for Community Studies Director: will provide guidance in research and data-gathering processes. Dr. Saegert has been involved in the development of this project as the professor of Action Research 3621; and has recommended the pursuit of this grant in order to enhance the creation of a Health Impact Assessment for Nashville's future transit-oriented development.

   Leslie Meehan, Senior Planner with the Nashville Area MPO: Leslie initially asked for research assistance in the scoping process of the writing of a Health Impact Assessment for Nashville at a CCS meeting in late September, 2009. At this CCS meeting, Leslie discussed specific interest of gathering data from within the "Northeast corridor" of Metro Nashville, extending from Downtown Nashville to Gallatin, Tennessee. Leslie has been the primary point of contact within the MPO for Laura and Emily as MPO interns, and will oversee the MPO's role in this project.

   Felix Castrodad, Senior Planner with the Nashville Area MPO: Felix will be able to provide supplementary information collected from the Northeast Corridor, consisting of data from Nashville, Madison, Hendersonville, and Gallatin. Felix has been responsible for the Northeast Corridor Study conducted by the MPO last fall.

Michael Skipper, Executive Director of the Nashville Area Metropolitan Planning Organization: will also provide guidance and approval of materials given to community and information dispersed from Health Impact Assessment process.

3. **Brief statement of purpose**: What do you intend to accomplish and how will you accomplish it?

The funds from this grant are intended to further community involvement and interest in the future transit-oriented development of the Northeast Corridor, with specific focus on the health impact this development may have on the community in 15 years (based on projected completion time given by MPO). The data gathered from community members in the "Northeast Corridor" (meaning those in the communities of Madison, Hendersonville, and Gallatin) from focus groups and surveys are meant to enhance the writing of a Health Impact Assessment.

The Centers for Disease Control (CDC) describes a Health Impact Assessment (HIA) as being able to "bring potential public health impacts and considerations to the decision-making process for plans, projects, and policies that fall outside of traditional public health arenas, such as transportation and land use" (CDC, 2009). As the future development of the Music City Star (and other connecting mass transit lines) will certainly have a tangible impact on community members in the Northeast Corridor, it is the team's intention to gather data in order to generate informed community dialogue to include in the writing of a Health Impact Assessment for the Nashville Area Metro Planning Organization. We would like to understand the health concerns specific to the Northeast Corridor; specifically in how the "built environment" influences issues of accessibility and physical activity.

The "urban form" created by transportation planners and city engineers has a great deal to do with the connectivity of streets and the accessibility of walking to local businesses and community organizations. For example, safety, from car traffic beside an arterial highway, or the regularity of walking traffic (Miles, Panton, Jang, & Haymes, 2008) are considered as factors in the decision to commute by foot or car. Net residential density and mixed use zoning also come into play (Frank, Andresen, & Schmid, 2004): those that can walk to a grocery store or to church will perhaps be more likely to make the choice of walking. As much research explores, there is a growing list of factors which are being explored to specifically assess the impact of the built environment on physical activity and other healthy behaviors.

The research team would like to conduct three focus groups: in Madison, Hendersonville, and Gallatin, TN. Within the meetings, we would like to discuss pedestrian access and connectivity in each of these areas with community participants. It is believed that this qualitative data will enhance the understanding of the health-related benefits and problems associated with transit-oriented development, within the context of each community's physical environment.

Currently, the MPO has qualitative pilot data which has been gathered from several participants who have been to community meetings in the Northeast Corridor regarding the transportation development there. This data is perhaps not representative of the communities; many participants in these meetings lived in varied communities throughout Nashville, and many represented special interest groups. Moreover, the sampling of these community members was not random. The development of the Health Impact Assessment would be greatly enhanced by having a random sample of surveys from residents of Nashville. Therefore, we would like to distribute surveys to a representative sample of community members from the Northeast Corridor. The construction of the survey questions will be based on qualitative responses from the Madison, Hendersonville, and Gallatin focus groups. These surveys will be quantitative and will provide substantial data for the Health Impact Assessment.

It is desirable to involve the community voice in the discussion of how the projected transit development will affect the livelihood and well-being of those who live in Madison, Hendersonville, and Gallatin.

4. **Research Interests:** please describe any specific areas of research that are of interest to your organization.

Impacts on public health have not historically been considered in conventional transportation planning analysis (PolicyLink, 2009, p.39). Auspiciously, government agencies are beginning to invest in public health through focusing on transportation reform. Two such agencies are the Centers for Disease Control (U.S.) (Berrigan & Troiano, 2002) and the World Health Organization (Brown & Bell, 2006). Potential exists in the conceptualization of 'good' transportation design; as "active transportation" which incorporates any combination of options like walking, biking, mass transit can increase the amount of daily exercise of individuals; lowering the risk of obesity. Inversely, it has been proposed that the time spent in a car is directly related to the likelihood of being obese (PolicyLink, 2009, p.24). A Health Impact Assessment is one tool which can assist in creating a "healthy" transit-oriented development.

Most pertinent to this study are the discovery of variables which inhibit or encourage healthy community behaviors, as discovered by focus group and survey responses. The research interests of the CCS and MPO team include factors which would hinder community members from engaging in "active transportation" (i.e. walking, cycling) as part of daily routine. Other issues include accessibility to healthy food destinations, connectivity of streets, green space, air quality, housing, and safety. The purpose of discovering these variables is to engage community voices and to be as comprehensive as possible in writing the Health Impact Assessment.

5. **Timeline:** (projects must be completed within 12 months of the funding date)

May -- July:

- Create focus group topics
- Complete IRB process with Vanderbilt University under the advisement of Dr. Susan Saegert

- Work with MPO to gather contact information of individuals in Madison, Hendersonville, and Gallatin.
- Set dates to hold focus groups in August, define locations and times for focus group meetings to be held in Madison, Hendersonville, and Gallatin
- Begin building a list of potential survey candidates for random surveys to be sent out to Davidson County Area

August:

- Hold focus group meeting in Madison
- Hold focus group in Hendersonville
- Hold Focus group in Gallatin
- Qualitatively assess responses gathered from these three focus groups

September:

- Build survey based on responses
- Distribute survey
- Begin survey data collection

October:

- Continue analyzing data collected from focus groups
- Begin analyzing data from survey responses
- Work to build community organization oriented toward HIA issues
- Organize data and begin writing the Health Impact Assessment
- Study model Health Impact Assessments

November:

- Continue writing Health Impact Assessment using baseline health information from Public Health Departments
- Use data on file from MPO to assess current condition of connectivity, environmental quality, air quality, accessibility, housing options, 'walkability' and 'bikeability', traffic speed limits, and safety in these three communities

December-February:

- Continue writing and complete Health Impact Assessment for Northeast Corridor
- Plan public meetings: Madison, Hendersonville, Gallatin: in order to discuss the future health implications of transit-oriented development
- Work with MPO staff to engage both MPO and community in dialogue
- Set dates, times, locations for each of three follow-up meetings with community

March:

- Hold meeting in Madison: make a presentation about the Health Impact Assessment and its specific discussion of concerns from Madison residents. Provide a copy of Health Impact Assessment for each participant in meeting

- Hold meeting in Hendersonville: make presentation about the Health Impact Assessment and its specific discussion of concerns from Hendersonville residents. Provide a copy of Health Impact Assessment for each participant in meeting
- Hold meeting in Gallatin: make presentation about the Health Impact Assessment and its specific discussion of concerns from Gallatin residents. Provide a copy of Health Impact Assessment for each participant in meeting

April:

- Wrap up project; disseminate Health Impact Assessment to Nashville politicians and policy makers in order to continue awareness of health concerns as they relate to mass transit.

6. **Budget:**

Focus Group Expenses:

Rental of meeting space in Madison*	$20
Rental of meeting space in Hendersonville*	$20
Rental of meeting space in Gallatin*	$20
Incentive ($15 gift card) for 15 focus group participants in each location	$675

Survey Expenses:

Postage for dissemination of 1,000 surveys	$420
Postage for 1,000 return envelopes	$420
Printing costs of survey (at .12 each)	$120
Envelopes for Surveys (500/box at $8.29 each): 4 boxes	$33.16

Follow-up Community Meeting/HIA Presentation Expenses

Printing presentation copies for community meetings (100 at .55 each)	$55
Rental of meeting space in Madison*	$20
Rental of meeting space in Hendersonville*	$20
Rental of meeting space in Gallatin*	$20
Total Expenses:	**$1,843.16**

*Public Meetings to take place at Public Library in each community.

7. **Expected outcome:** How will the academic and community partners benefit from this project? How will this activity contribute to a sustainable community-academic research partnership?

Already between Vanderbilt's Center for Community Studies and the Nashville Area Metropolitan Planning Organization there has been knowledge-building which pertains to the relationship between issues of access and

connectivity and transportation design. Laura Stamm and Emily Stewart have been working with the Nashville Area MPO on behalf of Vanderbilt University's CCS, as well as serving as research students with Action Research 3621, since October, 2009. During this time, these two students have worked for the MPO in conducting two separate literature reviews to inform the work of the scoping process in advance of the writing of the Health Impact Assessment. As requested by Leslie Meehan, Stamm and Stewart have additionally reviewed several Health Impact Assessments which have been written for other cities' MPOs/ TPOs; and used the information gathered to make recommendations for the design of Madison's TOD. These students have also attended conferences, meetings, and workshops with Leslie Meehan, Felix Castrodad, and Michael Skipper. The CERP Mini Grant will lead to the enhancement and extension of this community-academic research partnership, as it will create another project opportunity between the MPO and the CCS.

Vanderbilt University's CCS stands to benefit from this grant, as community engagement is the intended goal of the study. If the grant is gained for this study, the research findings will be shared with the CCS group in the form of a formal presentation. Additionally, Dr. Aaron Wernham, Project Director for the Health Impact Project has expressed an interest in this project (as it currently exists) to Leslie Meehan. Dr. Wernham expressed that this may be a project his organization wants to feature on its website. Therefore, it would be greatly beneficial to the CCS and the MPO to have comprehensive data regarding the health of these three communities included in the final draft of the Health Impact Assessment for Nashville's Northeast Corridor.

Additionally, it is important to note that the project of writing the Health Impact Assessment for Nashville's Northeast Corridor will benefit the community members as well; as they will be able to contribute information to a document which may be used for the physical planning of their area. As it is anticipated that the document will be formally presented to interested community members in Madison, Hendersonville, and Gallatin, awareness will be created or continued by the discussion of the impact of the built environment on health.

8. **For requests of $2,000 or more**: Briefly explain the tangible benefits/outcomes of the proposed activity. Attach any publications or other relevant documents that support your organization's ability to achieve the expected outcome. Outcomes may include the following:
    - Publication
    - White paper/policy briefing
    - Collaborative grant proposal (within 12 months of the funding date)
    - Curricula/training modules
    - Change in clinical or community practices
    - Change in governmental or other organizational policy
    - Testimony or statement to policy making body
    - Other

Please view e-mail attachment for an exemplary Health Impact Assessment which was written for Decatur, Georgia by the Center for Quality Growth and Regional

Development (Georgia Institute of Technology). This is the type of document which is the intended goal for this project.

Application Due Dates: March 15, 2010
Notification of Grant Awards: April 16, 2010

For additional information, call (615) 936-5260 or send an email to Yvonne.joosten@vanderbilt.edu.

Submit requests to:
nisheba.m.wells@vanderbilt.edu

Appendix 5: References

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