

Independence Bike Lane Health Impact Assessment

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Executive Summary

As part of the Health Department's initiative of Building a Healthier Independence, the Public Works Department passed a complete street policy for the City of Independence in June of 2011. Part of the implementation process of the complete street policy included the addition of bike lanes, the Health Department determined there was a need for an assessment of health impacts on all major infrastructure changes.

The Independence Health Department conducted a desktop Health Impact Assessment (HIA) to look at the health impacts of implementing the first steps of the complete streets policy, specifically the addition of bike lanes. For this HIA, the Health Department chose to look at access, including opportunities for physical activity, healthy food, and safety.

The recommendations and concepts resulting from the desktop HIA can have many different health impacts. The HIA found that phase I of the implementation of bike lanes will have a positive impact on public health by increasing opportunities for physical activity, better access to healthy foods, and improving safety, which will reduce chronic diseases. While the majority health impacts are positive, there are some potentially negative health impacts.

The recommendations listed below are ways to reduce the negative health impacts and to further promote the positive impacts. These recommendations are to be considered in the planning process.

- Ensure traffic safety; to reduce the negative impact of injury and perceived danger: high speed traffic can be an issue not only for drivers but for would-be bicyclists and pedestrians who might not feel safe. Explore various speed reduction strategies to meet the needs of drivers and pedestrians. Develop an educational campaign or partner with advocacy groups to educate cyclists and drivers on road safety, sharing the road, and traffic safety (crosswalks, traffic signals, and signage).
- Provide connectivity; promote the positive impact of physical activity & healthy food access: connectivity between paths, trails, retail, and transit would make non-motorized forms of transportation easier, more attractive to use, increase access to healthy foods and increase physical activity. When planning bike lane locations look for connectivity to destinations along the route for recreational use and for mode of transportation usage.

Section I: Introduction

What is a Health Impact Assessment

A health impact assessment is a process used to determine the health impacts of a policy or project before a decision on that policy or project has been made. A HIA can determine the policy or project to have positive, negative or null impacts on the health of the impacted population. The HIA framework is used to bring potential public health impacts and considerations to the decision-making process for plans, projects, and policies that fall outside traditional public health arenas, such as transportation and land use (6).

HIA's are made up of six main phases. The phases include, screening, scoping, assessment, recommendations, reporting, and monitoring/evaluation. This will be discussed throughout the report.

1. **Screening:** Determines whether the HIA is likely to succeed and add value. Questions include: What specific proposed project, program or policy decision will the HIA address?
2. **Scoping:** Creates objectives for the HIA, and an outline for the steps of the HIA process.
3. **Assessment:** Involves two steps, describing the baseline health of people and groups affected by the decision, and then predicting the potential health effects.

4. **Recommendations:** The HIA should point the way to decisions that protect and promote health. These products should provide practical, specific actions that can be taken in order to promote health and avoid, minimize or mitigate adverse consequences.
5. **Reporting:** The findings are disseminated to decision makers, affected communities and other stakeholders with a request for feedback.
6. **Monitoring and Evaluation:** There are three types of evaluation in HIA: 1) process evaluation; 2) impact evaluation; and 3) outcome evaluation. Monitoring tracks indicators that can be used to inform process, impact and outcome evaluations.

(Health Impact Project, <http://healthimpactproject.org/hia/process>).

Screening:

In the spring of 2011 the Independence Health Department was awarded a Social Innovation for Missouri (SIM) grant. The SIM grant has enabled the Independence Health Department to work towards Building a Healthier Independence. One of the grant objectives is to increase physical activity and active transportation. As part of the objectives Public Works Department passed a complete streets policy in June of 2011. Now that the complete street policy is in place the next step is implementing the policy. As part of the implementation process, it was determined that an assessment of health impact on all major infrastructure changes was needed.

The City Council is very supportive of the complete street policy and is one of the first cities within the Kansas City Metro area to have a complete streets policy. One of the first major infrastructure changes that the Public Works Department is going to look at is bike lanes.

Stakeholder Matrix: stakeholders who are affected by the prospective change (bike lanes). The matrix is used in the screening phase to help identify stakeholders and to use as a reference for subsequent HIA activities.

Stakeholder group/ key contact	Interest in HIA or related decision	Power to influence the decision	How and when (what stage) to engage?	Potential role in HIA
Health	HIA and decision	High	Screening- beginning	Resource, assessment
Bicyclist transportation	Decision- lack of HIA knowledge	Medium/High	Assessment	
Bike clubs	Decision- lack of HIA knowledge	Medium	Assessment	
Vulnerable Populations- scooter, low incomes	Decision- lack of HIA knowledge	Medium/ High	Assessment	Inequities
Bus owners	Decision- lack of HIA knowledge	Medium/ High	Assessment	
City Council	Both	High	Screening- Beginning	Resource, assessment
Public Works	Both	High	Scoping	Resource, assessment, knowledge
Parks and Rec	Both- more decision	High	Scoping	

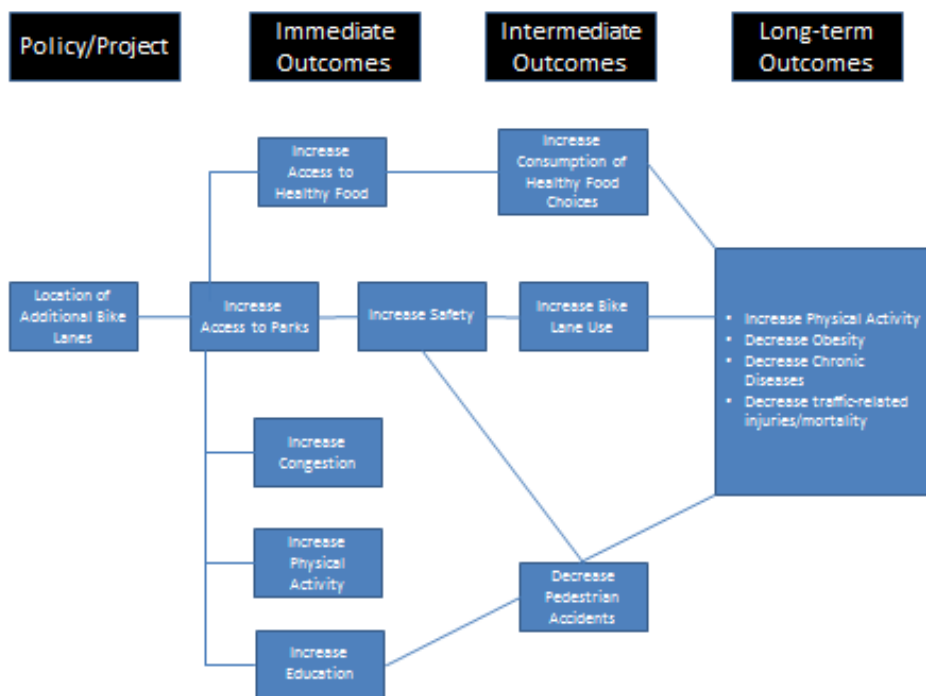
Scoping:

In September 2011, the City Council appointed a council bike committee to look at what streets in the city need bike lanes. As per Resolution #5695, a Bicycle Transportation Committee was established to act as an advisory committee to the City of Independence City Council. Members of the Bicycle Transportation Committee include Councilmember's Jim Schultz, Jim Engelman and Marcie Gragg. Others in attendance throughout the duration of committee meetings include Parks and Recreation Director, Eric Urfer; Public Works Director, John Powell; Assistant City Manager, John Pinch; Health Director, Larry Jones. The overall purpose of the Bicycle Transportation Committee is to make recommendations to the City Council on a bicycle transportation master plan, review possible bicycle route alignments, consult with affected parties, including bicycle clubs and residents, and receive reports and oral presentations of report findings from the City staff.

At the initial Bicycle Transportation Committee meeting, Committee members discussed the fact that there is a large bicycle community in the area including both families who ride for recreation and exercise and organized bicycle clubs. The Committee expressed their desire to provide safe routes for cyclists for recreation, exercise, and access to grocery stores and other public facilities. The health impact assessment would help the council committee justify to City Council on where to put the bike lanes. A HIA would allow Independence to look at health outcomes involving increased access to physical activity, grocery stores, and safety. According to the USDA's food desert maps, the City

of Independence has several food deserts. The deserts identified with in Independence are located in low income and accessibility neighborhoods. Within the neighborhoods identified sidewalks are missing, and deteriorating.

Pathway Diagram: is introduced during the scoping phase to describe pathways of the proposed plan and to identify potential health outcomes resulting from the health determinants.



Section II: Background

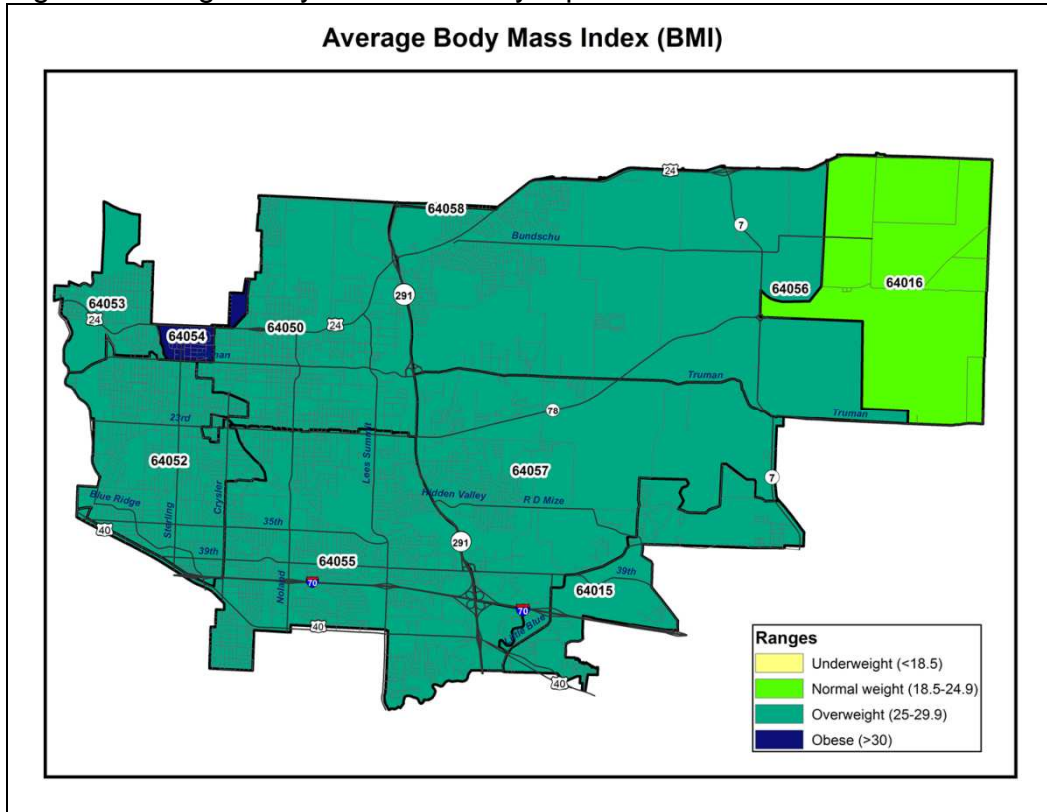
Assessment:

Independence is the fourth largest city in the state of Missouri with a current population of 121,212. In Independence, 55% of female only households with children under five

live below the poverty line (US Census). According to the US Censes, 10.6% of residents have reported being on food stamps within the last 12 months. For the 2009-2010 school year, the Independence School District's screenings on children grades K through 5 shows that 40% are overweight or obese. According to the County Health Rankings 31% of adults are obese in Jackson County, this is 6% higher than the national average. Also, according to the CDC, 1 in 3 children will be diagnosed with diabetes and will be the first generation with a life expectancy shorter than their parents.

The IHD completed a health survey of residents in Independence. From that survey we found the following on health rating, and obesity. Seventy-three percent (73%) of respondents from the Independence Health Survey reported that they were in good or excellent health, while 27% reported that they were in poor or fair health. Thirty five percent (35%) of respondents from the health survey were overweight and 35% were obese using their reported height and weight to calculate Body Mass Index (BMI). On average, the respondents within the 64054 and 64058 zip codes were obese, respondents within the 64016 zip code were normal, and all remaining zip codes were overweight.

Figure: Average Body Mass Index by Zip code



Section III: Desktop Assessment-Access

Assessment:

Bike Committee:

The Bicycle Transportation Committee reviewed an evaluation accomplished by the City of Independence Public Works Department on 21 miles of possible street locations where bike lanes or share the road signage could be added. A community planner from

Trailnet also performed an evaluation of the 6 selected streets. The streets assessed include Lee's Summit Road, Westport Road, 35th Street, Sterling Avenue, Winner Road, and Bundschu Road.

After the initial evaluations of the selected streets were completed, the Bicycle Transportation Committee and other representatives from various City departments devised a cycling survey to gain and receive community input related to bike route options and cycling issues in the city. Survey Monkey was utilized to create the survey. The survey was only available online and only targeted individuals who are already cycling in the city. It was determined a second survey would be conducted, possibly in December of 2012, to receive results focused on why certain individuals choose not to ride bikes in the area.

The survey was available to cyclists from February 2012-March 2012. Cyclists could access the survey on the City's website. Flyers were placed at local businesses, recreation sites, and schools. Business cards with a QR code were also distributed directly to cyclists asking them to go online and complete the survey. Once the survey was closed, results of the survey were assessed and reviewed by Committee members.

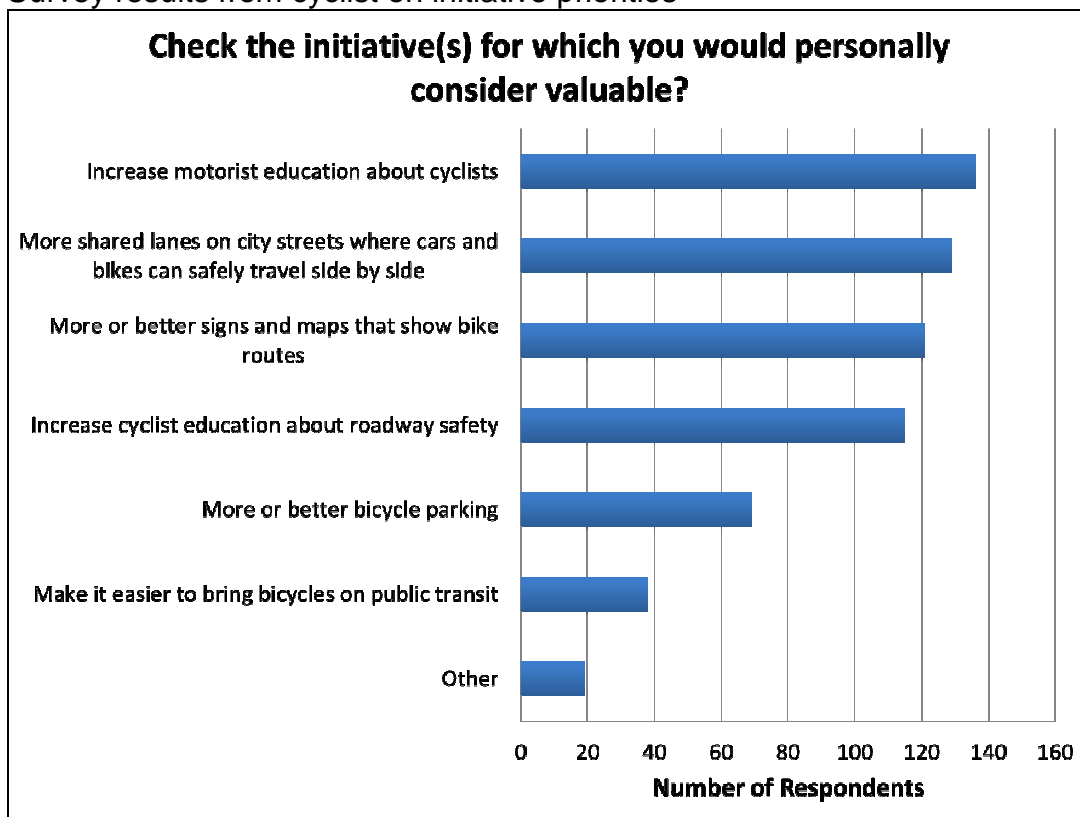
Bike Survey Results

Type of Rider Sixty-four percent (64%) of respondents reported that they consider themselves a recreational rider and only 4% consider themselves a bicycle commuter.

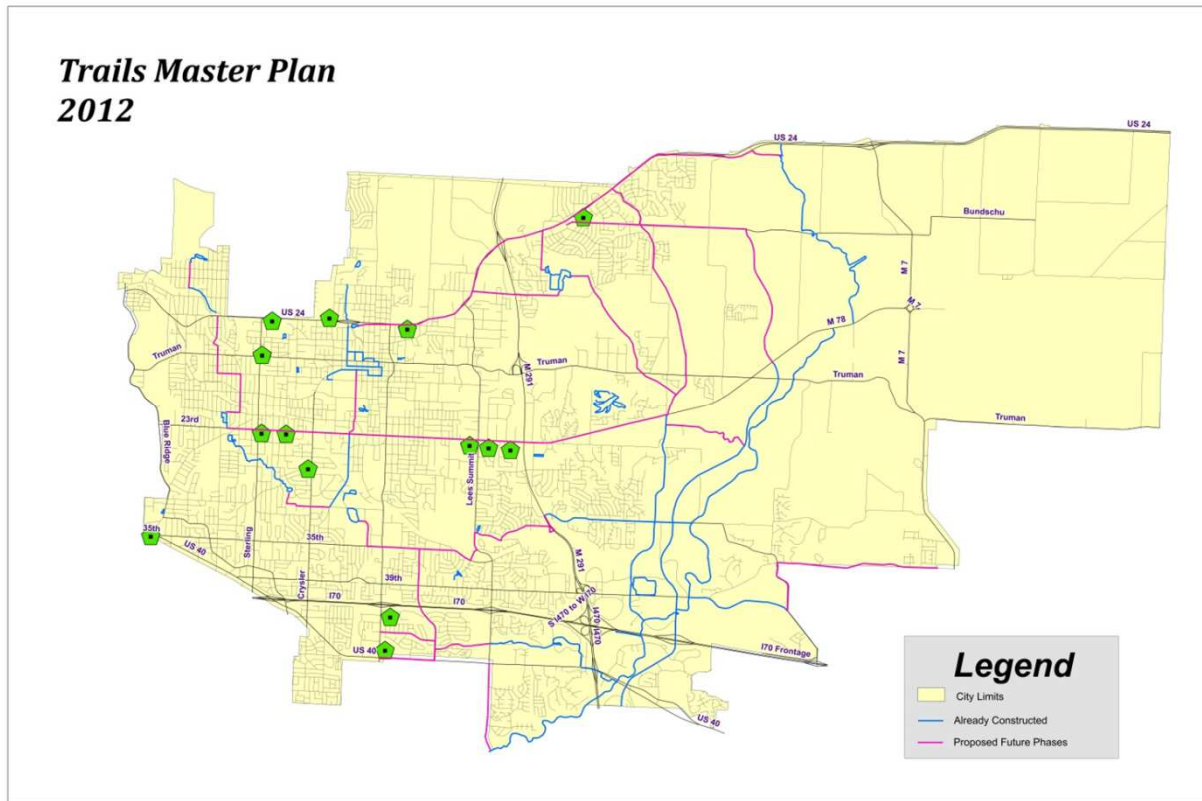
Riding Locations The top three locations respondents reported riding their bikes in the past 12 months were: off-road trails (23%), two lane streets (19%), and neighborhood streets (17%).

Level of comfort. The top three locations respondents reported feeling comfortable cycling were: quiet residential roads where you would normally find only local traffic (23%), paved pathways that are not too busy with pedestrians, cyclists or other users (19%), and off-road trails (18.2%).

Survey results from cyclist on initiative priorities



The Trails Master Plan-use for connectivity of bike lanes



*green dots indicate grocery/cornerstore

A public forum was held at City Hall on April 5, 2012. Members of the community and cyclists had an opportunity to speak with members of the Bicycle Transportation Committee about cycling issues. Displays were also set-up that displayed the master trails network, proposed bike lane and share the road signage streets and cycling survey results. The public also had the opportunity to fill out comment sheets which were later reviewed by Committee members.

Based on the evaluation and survey results, Sterling Avenue was selected for share the road signage and 35th Street was selected for the new construction of a designated bike

lane. Share the road signs will be placed at ½ mile intervals from 24 Highway to 40 Highway. Fourteen signs will be placed in each direction. A designated bike lane will be completed at 35th Street which will allow greater access to area businesses and an elementary school. The construction of a designated bike lane on 35th street and share the road signage on Sterling Avenue will conclude Phase I of the project plan.

Phase II will consist of an additional survey directed to non-cyclists to determine why individuals choose not to cycle. Further streets will be selected based on further evaluations and recommendations for bike lane or share the road implementation.

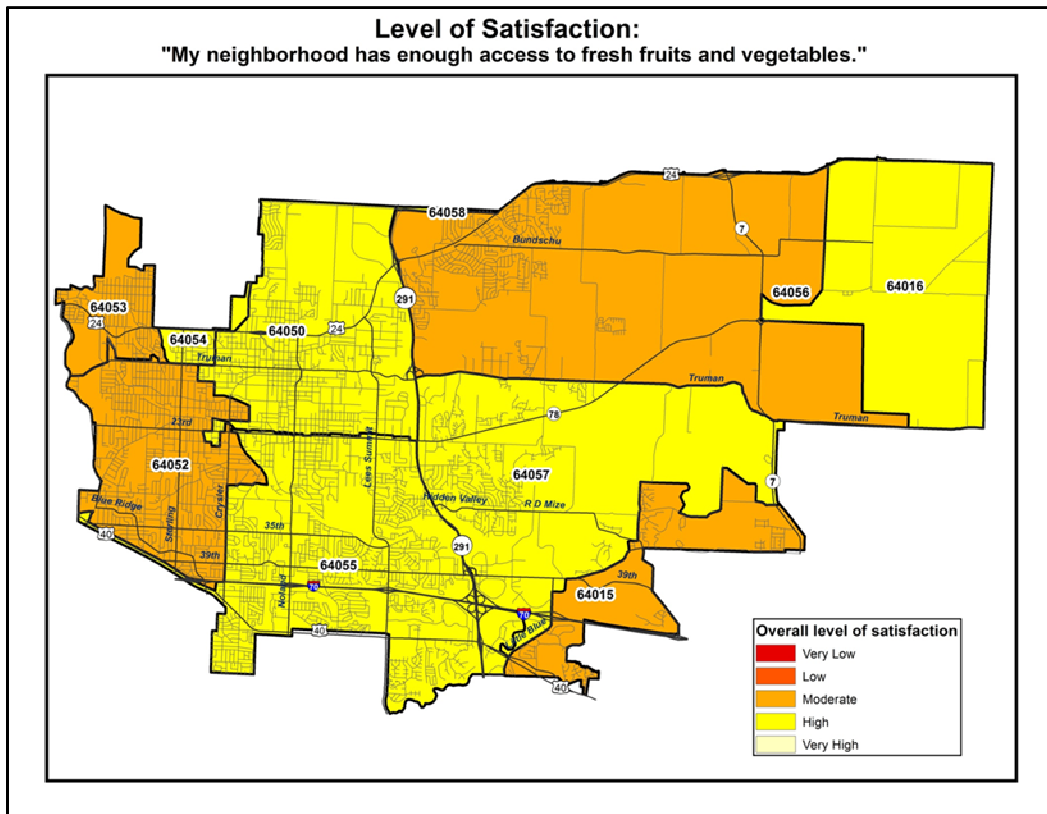
Access

Access plays an important part in our health. The ability to access schools, transit, nutritious food, goods and services, recreational facilities, parks and other public spaces has physical and economic impacts. Lack of access typically implies that one is physically unable to access any or all of the above items (1).

The creation of bike lanes and shared roads can increase access especially in low income communities. Grocery stores, drug stores, and other retail establishments often are hesitant to locate to low income communities, and as a result residents must travel greater distances, which takes time and money, to secure nutritious food or rely on resources at hand which are usually less healthy. The lack of access to food and goods and services is exacerbated by the lack of access to transit, which further limits options

(1). Obesity, due to a combination of poor nutrition, high caloric intake, and lack of physical activity, plagues low income communities (7).

Access to Fresh Fruits and Vegetables. Seventy-four percent (74%) of respondents reported that they are satisfied or very satisfied with the access to fresh fruits and vegetables in their neighborhood.



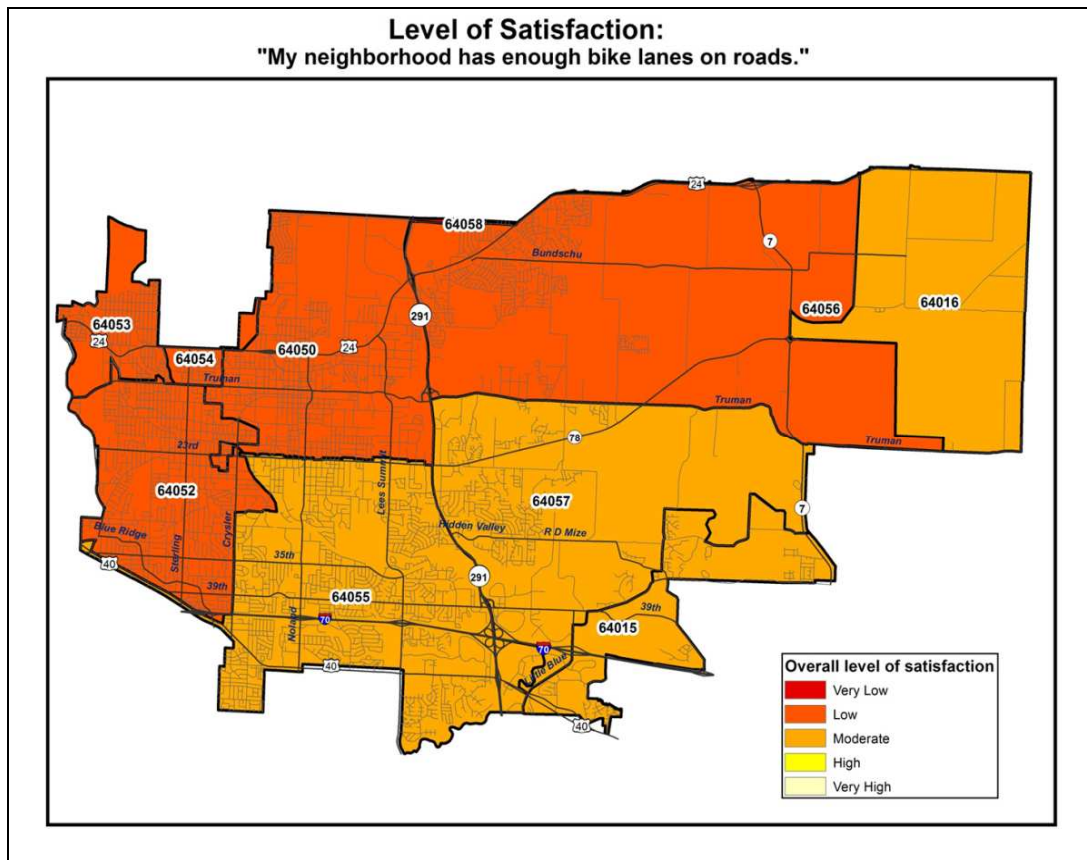
The availability of safety and connectivity increases physical activity and positively impacts reducing obesity. A study showed that neighborhoods with high population density, good land use mix, and high connectivity are more likely to encourage walking and cycling (3).

Physical Activity

The Center for Disease Control and Prevention states that the average person should get sixty minutes of physical activity per day for positive effects on health, longevity and quality of life (6). Lack of physical activity is linked to chronic diseases such as heart disease, high blood pressure, strokes, obesity, and diabetes. Without or lack of pedestrian and bicycle-friendly streets and trails is recognized as some of the leading systemic causes for failure to achieve minimum amounts of physical activity in urban environments in the U.S. (2). In another study done the absence of sidewalks increased the likelihood of obesity by 180% (3).

The places we live, work, and play can have positive and negative impacts on our health. The street design and safety can have impacts on the health of its users (8). The presence of sidewalks, crosswalks and bicycle lanes has a positive impact on increased physical activity (9). In San Francisco the number of cyclists increased dramatically after bike lanes were added or lanes were widened along several streets (2).

Bike Lanes on Roads. Sixty-four percent (64%) of respondents reported that they are dissatisfied or very dissatisfied with the number of bike lanes on roads in their neighborhood. The respondents within the 64058 zip code were least satisfied with the bike lanes on roads in their neighborhood.



Safety

Safety can be defined as real and perceived danger related to pedestrians and bicyclists. Negative real or perceived safety can deter individuals from choosing non-motorized methods of transportation (4). If bike lanes and shared roads are not perceived safe the negative health impacts could include increased fear, stress, and decreased physical activity. It is imperative to include safety in the bike lane planning (2). The designation of crosswalks, traffic signals, pedestrian signage, and traffic speed are recognized as key determinants for pedestrian safety and lower injury risk (10).

Section IV: Recommendations

Recommendations:

Recommendations to current Phase I

The recommendations and concepts resulting from the desktop HIA can have many different health impacts. For this HIA the focus is on health impacts related to food access, physical activity, and safety. The recommendations listed below are ways to reduce the negative health impacts and to further promote the positive impacts. These recommendations should be considered in the planning process.

- Traffic safety, to reduce the negative impact of injury and perceived danger: high speed traffic can be an issue not only for drivers but for would-be bicyclists and pedestrians who might not feel safe. Explore various speed reduction strategies to meet the needs of drivers and pedestrians. Develop an educational campaign or partner with advocacy groups to educate cyclists and drivers on road safety, sharing the road, and traffic safety (crosswalks, traffic signals, and signage). Refer to 2009 MUTCD and AASHTO.
- Connectivity, promote positive impact of physical activity & healthy food access: connectivity between paths, trails, retail, and transit would make non-motorized forms of transportation easier, more attractive to use, increase access to healthy foods and increase physical activity. When planning bike lane locations look for

connectivity for cyclists to destinations along the route for recreational use and for mode of transportation usage.

The table below lists the recommendations for phase I of the bike lane implementation. The first column describes the proposed streets and bicycling plans. The second column details the affected populations and the potential health impacts as they relate to food access, physical activity, and safety. The recommendations are derived from various sources including, the desktop assessment review, and feedback from outside resources with specialties in bike lane planning and implementation.

Plan Recommendations	Affected Populations and Health Impacts
Physical Bike Lane along 35 th St. (40 Hwy to Lee's Summit Road)	<p>Affected populations: Trail users, Independence residents looking for more recreation opportunities. Current bicyclists and carless commuters able to afford a bicycle; car owners who might find it easier to reach destinations by bicycle. Residents living along proposed bike lane.</p> <p>Physical Activity: access to parks, and proposed trail connection</p> <p>Food Access: access to library, retail center and Genealogy Center. Also runs through a food desert.</p> <p>Safety: given the narrow lane widths of 12 feet, there is not enough space on the roadway for a motor vehicle to pass a cyclist without crossing the centerline. Widening to add a bike lane would reduce the risk of automobiles edging cyclists off the road. 2009 MUTCD</p>
Share the Road Signs along Sterling Ave	Affected populations: Bicyclists, drivers who now share the road with bicyclists. Current bicyclists and carless commuters

(24 Hwy to south of 40 Hwy)	<p>able to afford a bicycle; car owners who might find it easier to reach destinations by bicycle. Residents living along proposed bike lane.</p> <p>Physical Activity: no connection to parks, access to multiple transit stops</p> <p>Food Access: access to retail stores along major connection streets. Runs through food desert.</p> <p>Safety: Consider Sharrows, it is an accepted and effective pavement marking to help cyclists and motorists determine proper lane positioning for cyclists and keep cyclists from putting themselves in compromising situations. 2009 MUTCD, AASHTO Guide for the Planning Design and Operation of Bicycle Facilities.</p>
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Future Recommendations

The development of a comprehensive bike network plan, this plan could be part of the Parks and Recreation Master Trails Plan. The plan would incorporate connectivity, access and physical activity to increase positive health impacts. Having a comprehensive bike network would also increase the majority of bicyclists who bike for recreational purposes.

Incorporate extensive community involvement in process of bike lanes and or the bike network. Citizen input accounts for a relatively minor portion of the project ideas, although many were identified by citizens at community meetings early in the planning

process (4). Getting the community engaged will help create a network of community advocates and will help the community take ownership in development of bike lanes in Independence.

Ideal partners that should be involved with the bike network include Public Works, Community Development, Parks and Recreation, and the Health Department. Having the different City departments work together will not only develop strong working relationship but will also increase knowledge and expertise at different phases of the plan. Other partners should also include bike clubs and groups, community advocacy groups and pedestrian safety education organizations.

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