

**Washington County  
Augusta Lane Bicycle and Pedestrian Bridge  
Health Impact Assessment**



**Prepared by:**

**Washington County Health and Human Services,  
Public Health Division**

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## **Contributors**

This project was funded by the Centers for Disease Control and Prevention through a grant administered by the Oregon Health Authority.

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## **Executive Summary**

In an effort to promote healthier communities, Washington County Department of Health and Human Services, Public Health Division, partnered with Washington County Department of Land Use & Transportation to conduct a rapid Health Impact Assessment (HIA). HIAs use data, existing literature and community input to identify the health consequences of new policies and projects and develop practical strategies to enhance their health benefits and minimize adverse effects. This HIA sought to identify the potential health impacts of constructing a bicycle and pedestrian bridge in Aloha-Reedville, an unincorporated area of Washington County. This project was identified through the extensive Aloha-Reedville Study and Livable Community Plan engagement efforts as a way to improve neighborhood connectivity to Beaver Acres Elementary School and the Tualatin Hills Nature Park by connecting Augusta Lane over Beaverton Creek.

The goals of this HIA were to: provide evidence-based research and community input to support leadership in their decision on whether to pursue funding for the construction of the bridge; promote consideration of health impacts in land-use and transportation planning decisions; strengthen relationships; and build capacity to conduct future HIAs.

A literature review on the potential positive and negative health impacts of the bridge was conducted and enhanced by input from community members and stakeholder agencies. The health impacts that were assessed included physical activity and chronic disease rates, school accessibility, school bus emissions, academic performance, perceived safety, and neighborhood connectivity. The HIA found that the bicycle and pedestrian bridge will primarily have positive impacts on the health of the community including decreased chronic disease rates through physical activity, greater social cohesion among neighbors and improved academic performance. The improved connectivity will expand the one mile walkshed of Beaver Acres Elementary to more than 900 households. One mother stated “This would give me more time with my kids in the morning. I could walk with them instead of making them take the school bus.”

Based on the literature review, community feedback and stakeholder input Washington County Health and Human Services recommends construction of the Augusta Lane Bridge while taking into account the neighborhood and community concerns voiced during engagement efforts. Special consideration and attention should be given to: addressing safety concerns such as crime, vandalism, maintenance, and management; utilizing bridge and adjacent neighborhood design treatments that protect users accessing the bridge from motor vehicles; designing bridge with a variety of features to promote community use; and undertaking education and engagement activities to promote bridge use and active transportation.

## Introduction

Washington County is one of five counties making up the Portland Metropolitan Statistical Area and the second most populous county in the state of Oregon. Within an area of 727 square miles, Washington County residents range from rural and migrant farm workers to high tech industry employees living in urban and suburban settings. While it is home to the fifth and sixth largest cities in the state, approximately half of county residents live in unincorporated areas and 7% of the population lives in a census-designated rural area.<sup>1</sup>

The county population has grown by approximately 70% since 1990, reaching nearly 547,672 residents in 2012.<sup>2</sup> The population is one of the most diverse in the state and continues to experience more growth in the Hispanic/Latino and Asian communities. In 2011, 13.2% of the county identified as Asian/Pacific Islander and 15.7% identified as Hispanic/Latino. Washington County has the second largest child population (0-17), representing 26.1% of the county population.

Aloha-Reedville is a nine square mile, mostly residential unincorporated area located between Beaverton and Hillsboro in Washington County. Although 50,000 residents live in the Aloha-Reedville area, much of the roads lack urban infrastructure such as sidewalks and street lighting, both on busy streets and in neighborhoods. Additionally, many areas lack adequate access to transit service.<sup>3</sup>

Aloha-Reedville is primarily a bedroom community to the larger cities that surround it, as evidenced by the area having only three percent of the county's employment base but roughly 10% of its population. The area has retained its reputation as providing high opportunity for affordable homeownership on the Metro Westside in spite of a 68% increase in population from 1990 to 2010.

While most of Aloha-Reedville continues to represent what would typically be referred to as a middle class community, 30% of Aloha-Reedville households did not make even half the Portland (MFI) of \$72,000 dollars for a family of four. The percentage of people below the federal poverty line is higher than the Metro region, or the state.<sup>4</sup> Overall, 20% of children in Aloha-Reedville are below the poverty line, compared to 13% county-wide.

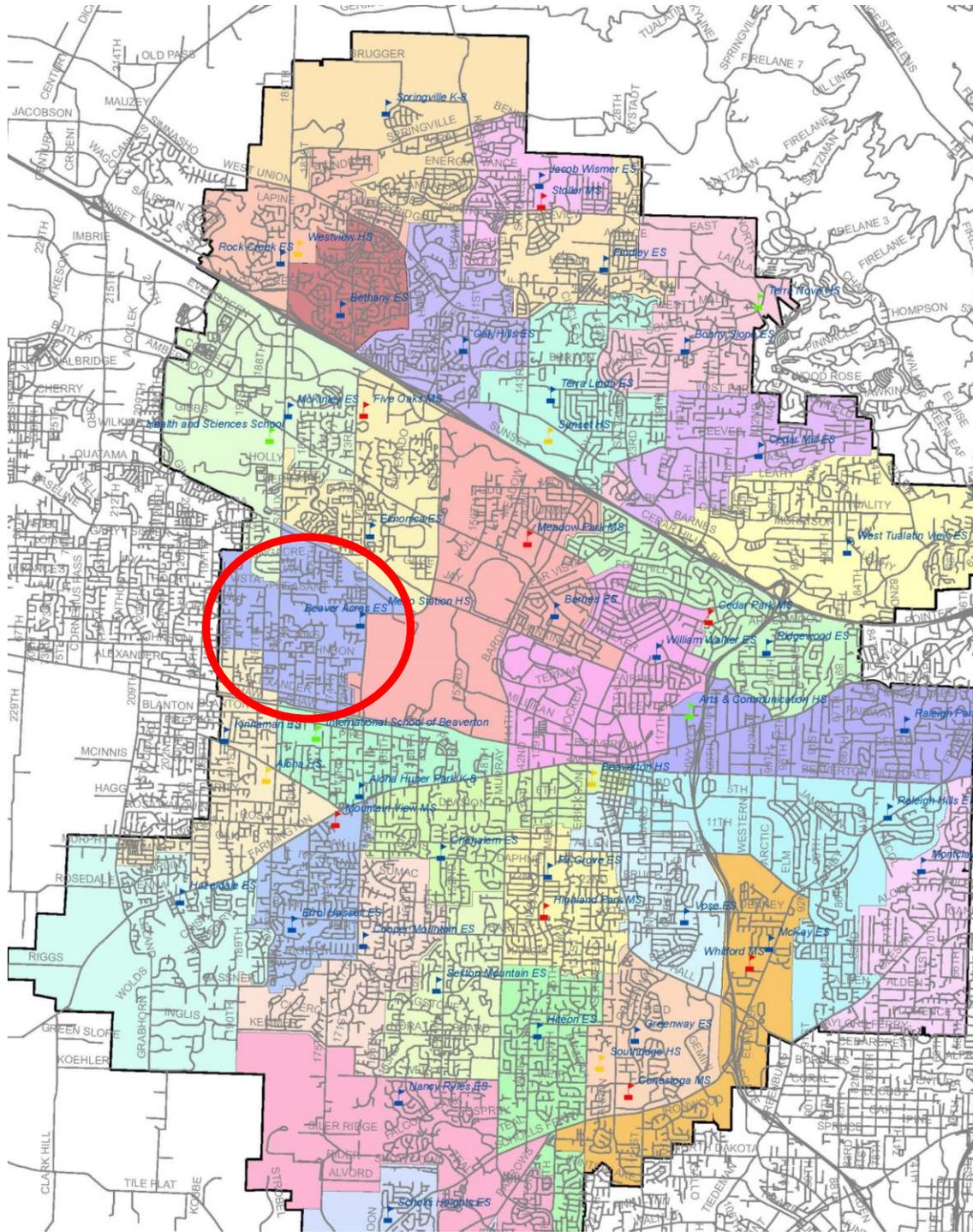
"Opportunity" maps created for the 2010-2015 Washington County Consolidated Plan revealed that the area suffered low and/or inconsistent access to a number of advantages or opportunities that are needed in our daily lives. Examples include:

- inconsistent sidewalk coverage,
- areas where access to a variety of nutritious food sources isn't present,
- inadequate access to child care,
- limited income potential as reflected by the large number of children eligible for the free or reduced school lunch program, and
- educational challenges as reflected by low math and reading test scores.

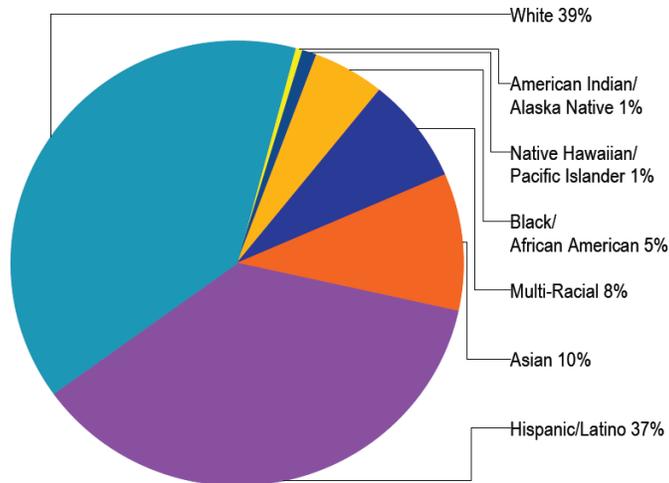
The three-year Aloha-Reedville Study and Livable Community Plan, conducted by Washington County Long Range Planning and Washington County Department of Housing Services, identifies a significant number of recommendations related to safety and connectivity in the area. Final recommendations reached through extensive community engagement and stakeholder input include improving access to each public school in the unincorporated Aloha-Reedville area. **One of these high priority projects is to construct a bicycle and pedestrian bridge connecting both ends of Augusta Lane over Beaverton Creek and near Beaver Acres Elementary School.**

The proposed bicycle and pedestrian bridge connecting Augusta Lane over Beaverton Creek would primarily impact children and families living near Beaver Acres Elementary, a school within the Beaverton School District in Washington County (Figure 1). The district is among the fastest growing districts in Oregon with a “high growth” district designation under ORS 195.110.<sup>5</sup>

Beaver Acres Elementary has an ethnically diverse student population of 782 students (Figure 2). Thirty-seven percent of the student body identifies as Hispanic/Latino, 10% Asian, and 5% Black.<sup>6</sup> There are 26 different languages spoken at the school with 34% of students who are considered English learners. The area’s high poverty rate is reflected in the 61.8% of students who are eligible for free and reduced lunch at Beaver Acres.<sup>7</sup> This is much higher than both the county and state figures for students eligible for free or reduced lunch: 33% and 43%, respectively.<sup>8</sup>



**Figure 1 - Beaver Acres Elementary School within the Beaverton School District**



**Figure 2 - Beaver Acres Elementary School is an ethnically diverse school of 782 students**

For students living west of Beaverton Creek, the natural barrier of the creek “forces students to travel over a mile out-of-direction and onto an arterial street to reach Beaver Acres School, which sits just a quarter mile away across the stream ‘as the crow flies’”.<sup>9</sup> The proposed bicycle and pedestrian bridge would reduce the travel distance from 1½ miles to under a ½ mile, potentially making active transportation a more realistic option for many students. Washington County Department of Land Use and Transportation staff have determined through GIS analysis that the project would expand the one-mile watershed of Beaver Acres Elementary by more than 700 households, to a total of 921.<sup>10</sup> Analysis also shows that the bridge would reduce current walk times to school by up to 25 minutes for some households. Furthermore, the proposed bridge would improve connectivity between the residential neighborhoods and amenities such as Tualatin Hills Nature Park, public transit stops, and other destinations.

## HIA Overview

The potential Augusta Lane bicycle and pedestrian bridge presents a valuable opportunity for conducting a Health Impact Assessment (HIA). An HIA provides a substantially more robust level of detail than is typically available for these types of projects by analyzing potential health impacts. The results of this HIA will be presented to Washington County’s Board of County Commissioners in late summer of 2014 and will become an integral supporting document when county staff are pursuing implementation funding and finalizing design for the bridge.

## HIA Methodology

HIA is “a structured process that uses scientific data, professional expertise, and stakeholder input to identify and evaluate public health consequences of proposals [or projects] and suggests actions that could be taken to minimize adverse health impacts and optimize beneficial ones”.<sup>11</sup> HIA uses quantitative, qualitative, and community participatory techniques to help decision makers make policy choices to prevent disease and injury and actively promote health.<sup>12</sup> An HIA is a systematic evaluation that includes the following five steps:

- Screening: Determining the need and value of a HIA
- Scoping: Determining which health impacts to evaluate, the methods for analysis, and developing a plan to complete the assessment
- Assessment: Using data, research, expertise, and experience to judge the magnitude and direction of potential health impacts
- Reporting: Communicating the results to stakeholders and decision makers
- Monitoring: Tracking the effects of the HIA recommendations and the decision on health

The project team involved a broad range of staff from Washington County Health and Human Services (WCHHS) and Department of Land Use and Transportation (WCDLUT), with technical assistance from Oregon Health Authority (OHA) Health Impact Assessment Program staff. Funding for the HIA came from a grant through the Oregon Health Authority, with in-kind contributions from WCHHS and WCDLUT.

The scoping process was conducted by representatives from Washington County Health and Human Services (WCHHS), Washington County Department of Land Use and Transportation (WCDLUT) and the Center for Intercultural Organizing (CIO). Facilitation and assistance was provided by staff from the Oregon Health Authority. A scoping meeting was held in February 2014 and attended by representatives from WCHHS, WCDLUT, CIO and OHA (Appendix A). At the scoping meeting, participants identified the goals, the key research question, and potentially impacted communities for the HIA. Additionally, possible assessment methods and potential benefits and challenges were discussed.

Through the screening and scoping processes the team agreed that the research question to be addressed by the HIA is “If a bicycle and pedestrian bridge is constructed over Beaverton Creek, how will it impact health?” This decision will provide WCDLUT leadership with valuable information when they decide whether or not to pursue funding for this project. A series of secondary questions were

defined by the team as well and will help guide this research. These questions include:

- What are the health benefits of kids walking to school?
- What are the barriers that might prevent kids from walking more?
- What are the safety concerns the community has regarding a bridge?
- What can be done to address the safety concerns?
- How would the construction of the bridge impact bus service?

The primary goals for this HIA are to:

- Provide evidence-based recommendations to support leadership in their decision on whether or not to pursue funding for the construction of a bicycle and pedestrian bridge connecting Augusta Lane over Beaverton Creek.
- Provide an opportunity for community members (particularly vulnerable populations) to provide feedback about the bridge design and possible construction
- Promote consideration of health impacts in land-use and transportation planning decisions.
- Strengthen relationships between Washington County Public Health Division and Washington County Department of Land Use and Transportation.
- Build capacity within Washington County Public Health Division to utilize the HIA process for other decisions impacting the county.

The following agencies and organizations were identified as key partners in the Augusta Lane Bridge project:

- Tualatin Hills Parks and Recreation Department
- Clean Water Services
- Washington County Sheriff's Office
- Department of Land Use and Transportation
- Beaverton School District
- Beaver Acres Elementary School
- Center for Intercultural Organizing

These partners were identified as having significant knowledge of and investment within the community. They provided valuable perspectives on the proposed project as they already had existing relationships with area residents.

## **Community Engagement Process**

The demographics of the school indicate a need to connect with the low income and minority families in the area. Utilizing the Center for Intercultural Organizing (CIO) to connect with these groups served as an effective approach to ensure that all



## Literature Review and Local Conditions

A literature review and examination of local conditions were conducted to better understand the health and safety implications of a bike and pedestrian bridge. These findings, together with the feedback from community members, provide an overview of the opportunities and challenges related to this project.

### *Physical Activity and Chronic Disease*

According to the CDC<sup>13</sup>, regular physical activity helps improve overall health and fitness and reduces the risk for chronic diseases. As bicycling and walking levels in the United States have decreased, overweight and obesity levels have reached all time highs, demonstrating an important correlation between physical activity and obesity.<sup>14</sup> National data shows that states with the lowest bicycling and walking rates have the highest rates of obesity, diabetes, and high blood pressure.<sup>15</sup>

A study of land use and physical activity in eleven countries including the U.S. concluded: "Neighborhoods built to support physical activity have a strong potential to contribute to increased physical activity. Designing neighborhoods to support physical activity can now be defined as an international public health issue."<sup>16</sup>

It has been found that "a lack of efficient alternatives to automobile travel disproportionately affects vulnerable populations such as the poor, the elderly, people who have disabilities, and children by limiting access to jobs, health care, social interaction, and healthy foods."<sup>17</sup> Households in locations with poor accessibility and no alternatives to driving tend to spend more on transportation creating a financial burden for those most vulnerable.<sup>18</sup> Evidence-based recommendations for improving health outcomes through transportation projects include promoting active transportation to improve safety for all users and ensure equitable access to transportation networks. Having safe places to walk and bicycle is especially important to older adults and children who cannot or choose not to drive.

Physical inactivity is of major concern for residents of Washington County, both children and adults. Unfortunately only a quarter of 8th graders and one fifth of 11th graders are getting the recommended level of physical activity. Low physical activity is correlated with increased overweight/obesity rates, which is the case in Washington County. Recently, 22.4% of 8th graders and 24.9% of 11th graders surveyed were overweight or obese. This is compounded by the fact that 10.9% of 8<sup>th</sup> graders and 64% of 11th graders do not have physical education during any days at school.<sup>19</sup> Among younger children in 2010, 34% of 2-5 years olds receiving benefits through the Washington County WIC program were at or above the 85<sup>th</sup> percentile for weight; higher than the state average.

In 2009, 25.6% of older adults in Oregon reported no physical activity in the last month.<sup>20</sup> Safe and accessible physical activity opportunities for older adults improve

cardio-respiratory and muscular fitness, bone health, and reduce the risk of depression and cognitive decline. Walking is the most common form of physical activity among older adults<sup>21</sup> and the CDC recommends enhancing community environments to support walking as an approach to increasing physical activity among this population. Older adults, particularly those aging in place, and disabled communities may rely more heavily on active transportation as their mode for getting to essential destinations.

Feedback from community members and neighborhood residents suggests that the proposed Augusta Lane Bridge would provide more opportunities for fitness and would be used by people of various ages and abilities. It was noted that while students could use the bridge to walk and bike to school other residents would use the bridge too. One resident said, “The bridge would be used by adults and kids; lots of people could use it”.

### ***Active School Transportation (AST) & School Accessibility***

Concurrent with the rise in childhood obesity and other diseases there has been a sharp decline in the numbers of children who walk and bike to school. In 1969, 89% of K-8<sup>th</sup> grade students who lived within one mile of school walked or biked to school. In 2009, that percentage had dropped to 30%.<sup>22</sup> Recent studies have found that during the peak morning commute time, 20% of all cars on the road are transporting children to school and often this trip is for very short distances.<sup>23</sup> Additionally, a 2009 study found that 40% of parents returned home immediately after dropping their children off at school.<sup>24</sup>

Active transportation to school offers financial savings, encourages social interaction, and promotes independent mobility and maturation in children.<sup>25</sup> Active transportation to school is a great way for children to get the CDC’s recommended 60 minutes of physical activity per day.<sup>26</sup> It’s been shown that children living within ½ mile of school are 5-10 times more likely to walk or bike to school than those living further than ½ mile.<sup>27</sup> Creating built environments that encourage active transportation to school is critical in getting a higher percentage of kids choosing an active mode.

Community members were very supportive of the proposed bridge saying that it would allow more students to walk or bike to school. Community feedback supported the findings on active commuting to school and independence with residents saying that the proposed bridge would encourage children to be more mobile and independent. One mother at the meeting said “this would give me more times with my kids in the morning. I could walk with them instead of making them take the school bus”.

### ***School Bus Emissions***

Beaverton School District transportation staff report that increasing the walkshed around Beaver Acres Elementary through the construction of the Augusta Lane Bridge would eliminate the need for three school bus routes to transport students.

According to Safe Routes to School data, eliminating just one bus route, “based on average per-pupil expenditure and average number of pupils per bus, would save a school district approximately \$45,000 per year.”<sup>28</sup> The potential reduction of school bus routes was mentioned at the community engagement session and residents were not concerned with this idea. As noted by one mother in regards to her children riding the bus versus walking, “I would love to see my kids walk to school”.

Not only are there economic benefits to the reduction in school buses but also environmental. Diesel powers most school buses in the United States, with an average school bus ride lasting 30 minutes each way. Diesel exhaust contains more than 40 chemicals listed as Hazardous Air Pollutants under the Clean Air Act. According to the Public Health Air Surveillance Evaluation (PHASE), Washington County experienced 32 days in 2010 where air quality was unhealthy for sensitive populations due to fine particulate matter.<sup>29</sup> This is significantly higher than the overall state average of 12 days.

Children are particularly susceptible to the negative health impacts of air pollution, due to the rapid growth and development that occurs during childhood and adolescence. Because of their physical make up, children breathe 50% more air than adults, increasing the amount of air pollutants they are inhaling. The inhalation of fine particulate matter (PM), including the toxins produced by diesel emissions, has been associated with many health impacts, including: respiratory illness such as asthma, bronchitis and infections; hospital and emergency room visits; increased use of medications; and premature mortality.<sup>30</sup> In 2011, approximately 67,000 Oregon children had asthma.<sup>31</sup> In Washington County, there are larger percentages of 8<sup>th</sup> and 11<sup>th</sup> graders who report a history of asthma when compared to Oregon and the U.S.<sup>32</sup> Reducing the number of children dependent on buses and other motor vehicles to get to school, reduces the amount of emissions created. It also reduces children’s exposure to unsafe toxins and potentially encourages the use of active transportation to school.

The Beaverton School District, in collaboration with the Department of Environmental Quality, is making great strides to reduce school bus emissions by retrofitting buses with tail pipe and engine exhaust controls. While this is an important step, there is still no known safe level of diesel emissions exposure, particularly for children with respiratory issues. Due to this fact and the lack of evidence demonstrating health effects of these newer exhaust controls, the reduction in bus service remains an important health indicator to consider for this project.

### ***Health and Academic Performance***

Physical activity, combined with other healthy lifestyle choices such as nutrition, leads to healthier and more productive students. There is a positive correlation between physical activity and academic performance with just 20 minutes of physical activity leading to an increase of brain activity and functions.<sup>33</sup> This

increase positively impacts cognitive performance, behavior and academic achievement, as well as fitness levels.

A 2013 study of second- and third-graders looked at the relationship between physical activity and academic performance and found that students who engaged in physical activity throughout the week performed better on standardized tests for reading, math, and spelling.<sup>34</sup> The study concluded that regardless of the type and length of physical activity the total time spent per week has a positive impact on student health and school performance.

### ***Perceived Safety***

Research has shown that there are many factors that influence parental decisions regarding active transportation for commuting to school. The CDC found that distance to school and traffic-related danger were the leading reasons why children did not walk and bike more regularly.<sup>35</sup>

It is estimated that parental concerns regarding traffic and safety deter 40%, approximately 20 million, of students from using active transportation to school in the US annually. Traffic control measures and the presence of safe crossings such as crosswalks are necessary for parents to allow their children to use active transportation.<sup>36</sup> One study found that girls were more likely to engage in physical activity in neighborhoods that were well lit and when “other walkers and joggers were visible in the area.”<sup>37</sup> This supports the notion of eyes on the street where the perceived safety of an area increases as more users are present.

Residents from the community expressed concern for safety issues related to the bridge. There is some concern over an increase in foot and vehicle traffic in the neighborhood as well as for a potential increase in litter and vandalism. Community feedback brought up the need to incorporate lighting on both the bridge and the street leading up to the bridge as well as sidewalks on the streets approaching the bridge. Residents are also interested in increasing police patrols in the area and a neighborhood watch presence. Some residents felt that the bridge would actually increase safety by creating more activity on the street, “This could make the neighborhood safer, more people, less vandalism.” Community members and the Washington County Sheriff’s Office expressed that the bridge should be designed with personal safety in mind including a design with clear sight lines and adequate lighting.

Parents and neighborhood residents at the community engagement session expressed an interest in adult supervision on the bridge such as having a crossing guard stationed on the bridge before and after school to supervise students commuting on the bridge.

### ***Neighborhood Connectivity***

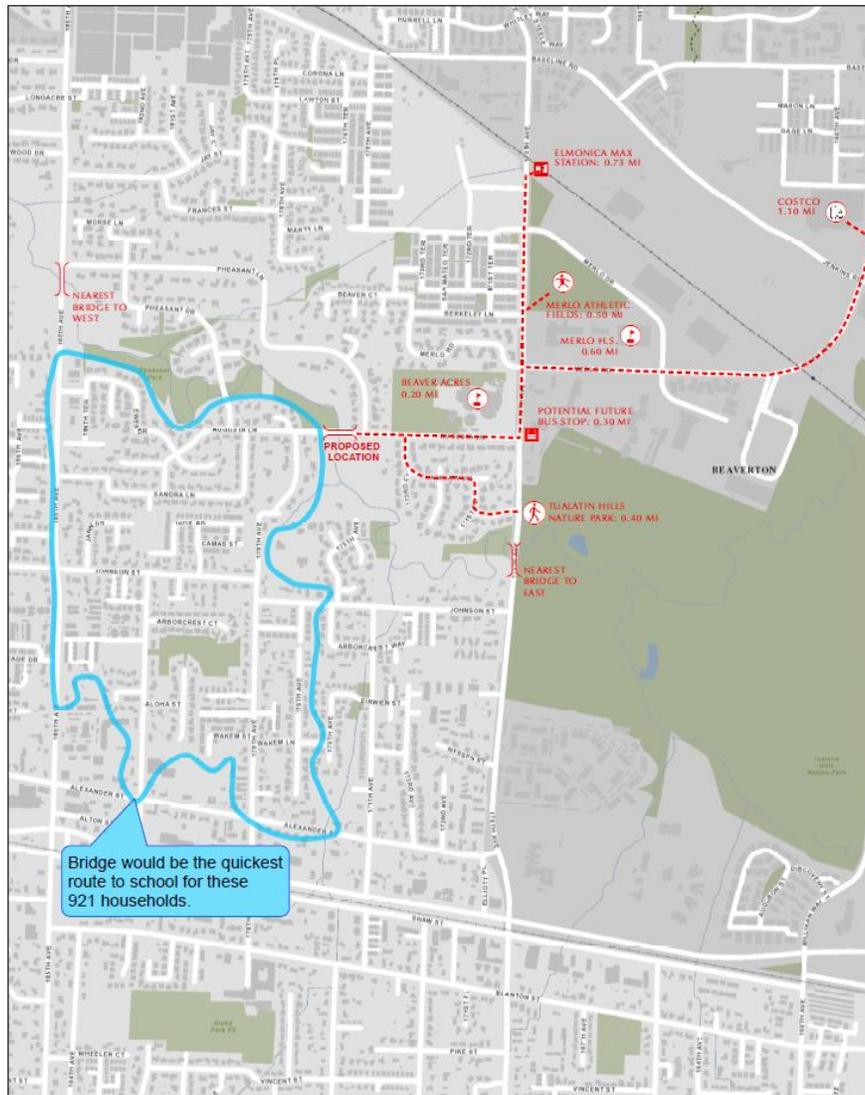
Community trails are safe and convenient places for people to incorporate physical activity into their normal routines. The presence of trails increases physical activity

in neighborhood residents through an increase in biking and walking.<sup>38</sup> An important aspect of trails is their connectivity to the surrounding area as this can influence decisions on biking and walking. Another important facet of healthy, connected neighborhoods is the ability to access parks, open space, public spaces, and trails.<sup>39</sup>

The proposed Augusta Lane Bridge would not only increase connectivity for those at Beaver Acres Elementary, it would have a positive impact on both neighborhood and regional connectivity. The bridge is noted as a priority for the Washington County Neighborhood Bikeway Plan<sup>40</sup> as it would provide an important link in the regional trail system, specifically the Beaverton Creek, Waterhouse and West Side Trails. The bridge would also provide connectivity between the neighborhood and the Tualatin Hills Nature Park. The 222-acre park features five miles of trails and offers educational programs, athletic classes, and day camps for children and adults.<sup>41</sup>

One resident expressed concern that the bridge would decrease property values. However according to many studies neighborhood connectivity and walkability actually increases property values. One study of 94,000 real estate transactions in 15,000 markets found that higher levels of walkability translated to higher real estate values.<sup>42</sup> Walkability is generally defined as how many destinations are located within a short distance, typically between one-quarter mile and one mile of a home. This study found that a home located within a walkable neighborhood was valued up to 12% higher than a comparable home in a less walkable area. Residents said they would use the bridge to walk and bike to local businesses that are currently inconvenient to actively commute to.

Community members of all ages expressed excitement about the increased access between the residential neighborhood and the surrounding amenities, including several public transit stops, commercial destinations, and the Tualatin Hills Nature Park (Figure 4). Access to nearby parks and natural settings is associated with improved mental health, physical health, and healthy weight among children. Parks users are more likely to achieve recommended levels of physical activity compared with non-users.<sup>43</sup> One resident, referring to the busy arterials currently used, noted “kids shouldn’t have to cross a major thoroughfare to get to the park.”



**Figure 4 – Increased Neighborhood Connectivity from the proposed Augusta Lane Bridge**

## Recommendations

Based on the literature review, community feedback and stakeholder input Washington County Health and Human Services recommends construction of the Augusta Lane Bridge while taking into account the neighborhood and community concerns voiced during engagement efforts.

The community engagement session provided valuable community input regarding benefits and potential concerns. The design of the bridge will need to be developed with careful consideration of the surrounding neighborhood, pedestrian and bicyclist safety, and community concerns. Additional outreach should be conducted to inform students, parents, and school staff about the bridge with outreach before construction begins to get people excited about the project.

➤ **Address safety concerns such as crime, vandalism, maintenance, and management**

The American Association of State Highway and Transportation Officials (AASHTO) recommends creating well-lit facilities that enhance the feeling of safety and security, both real and perceived.<sup>44</sup> Community members noted that in order to feel safe on the bridge they would like to see lighting on the bridge, clear lines of sight, as well as street lights and sidewalks for the approach leading up to the bridge. Additionally, ideas were voiced for increased sheriff patrols and to be constructed to allow for motorcycle patrol. While these adjustments may raise potential construction costs they are likely to reduce crime and make residents feel safer thus increasing usage.

➤ **Utilize bridge and adjacent neighborhood design treatments that protect users accessing the bridge from motor vehicles**

Research and community input suggest that the Augusta Lane bridge will likely increase bicycle and pedestrian traffic through the surrounding neighborhoods. To take into account this influx of active transportation users, measures should be taken to ensure safety for bicyclists and pedestrians in relation to motor vehicle traffic. Although the bridge will not allow motor vehicles, many of the streets leading up to the bridge lack sidewalks and vehicles often travel at high speeds. Considering reductions in speed, stop sign placement or flashing speeds signs may improve safety and perception of safety among users. Additionally incorporating the bridge into the neighborhood bikeway plan and indicating this with signage may offer additional safety measures. Washington County Sheriff's Office data support this recommendation as over 50% of incidents that staff responded to in the neighborhood were traffic related.<sup>45</sup>

➤ **Design bridge with a variety of features including benches and educational signage to promote community use**

While the proposed Augusta Lane Bridge will primarily serve to connect the surrounding residents with the elementary school and Tualatin Hills Nature Park it

should also incorporate elements that make it an attractive and interesting neighborhood destination.<sup>46</sup> Architectural features, that add a sense of aesthetic value, can be incorporated into the bridge design. They include, but are not limited to, interesting lighting, plantings, and pavement texturing and coloring.<sup>47</sup> Community members responded positively to the example of a pedestrian bridge at Reed College, noting that the bridge provided clear sight lines and was visually interesting (Figure 5). It was also expressed that residents would like the bridge to be a destination place where people are encouraged to spend time. Amenities could include benches, look out points, and places for environmental education opportunities such as signage describing the flora and fauna of the site.

The Washington County Sheriff's Office voiced some concern over this based on experience with loitering and crime in similar settings. The recommendation is that if benches are to be utilized they should be placed at the entry points to the bridge rather than in the middle to ensure proper sight lines. It was expressed that with new construction often comes vandalism; to curb this materials should be chosen that can easily be repainted or refinished. THPRD has experience with this



Figure 5 – Reed College pedestrian bridge

➤ **Undertake education and engagement activities to promote bridge use and active transportation**

In addition to the construction of the Augusta Lane Bridge education and encouragement programs should be enacted to ensure students and parents feel safe and comfortable using the bridge. Across the country schools have been starting Safe Routes to School (SRTS) programs. Community members were interested in having a crossing guard stationed on the bridge before and after school to supervise students commuting on the bridge.

The recommendation to enact a SRTS program can be done with support from Joy Chang, Washington County's SRTS coordinator. In September 2013 Washington County received a grant to fund a SRTS coordinator for three years. This coordinator will help boost the number of SRTS programs and activities throughout the county while building valuable SRTS partnerships among city and county agencies, schools, community organizations, and neighborhoods. The SRTS coordinator will lead these partners in coordination efforts as well as leverage expertise, resources, and

program elements that consider the "5 E's of Safe Routes to School:" engineering; enforcement; encouragement; education; evaluation.

Although assessment has been limited, studies suggest that programs such as Safe Routes to School have positive impacts on children using active transportation to school.<sup>48</sup> A study in California showed numerous benefits of SRTS, including a 49% decrease in collision rates between children and vehicles and an increase in walking and bicycling of 20 to 200 percent.<sup>49</sup>

The recommended next step for Beaver Acres Elementary School is to create an Action Plan for implementing a Safe Routes to School program. Additionally parent and student surveys should be administered to collect baseline data on existing travel behavior.

## Appendix A

### Scoping Team

Name	Role	Title	Tasks
Andrea Hamberg		Environmental Public Health, Oregon Health Authority	
Amanda Garcia-Snell	Program Lead	Health Promotion Supervisor, WCHHS	
Rose Sherwood	Project Lead	Health Promotion Program Coordinator, WCHHS	Facilitated the HIA advisory committee, the compilation of the final report and all other project deliverables.
Mike Dahlstrom		Senior Planner, WC DLUT	Served on the HIA advisory committee and provided contacts and connections to other interested stakeholders.
Steve Szigethy		Senior Planner, WC DLUT	Served on the HIA advisory committee and provided contacts and connections to other interested stakeholders
Gena Gastaldi	Project Support	Portland State University MURP Intern	Provided support to the HIA through literature review and existing conditions report, compiled reference materials, and assisted with all advisory committee and community engagement sessions.
Carmen Madrid		Center for Intercultural Organizing	Facilitated community engagement through neighborhood outreach and feedback sessions

**Appendix B**  
Community Engagement Flyer



# BEAVERTON CREEK BRIDGE

Center for Intercultural Organizing in partnership with Washington County will be providing information on the development of the Beaverton Creek bicycle and pedestrian bridge along Augusta Lane. Your feedback is important so join us to share your thoughts at this informational and feedback session as we work together as a community for the best possible outcomes!

**JUNE 10**  
**6pm – 8pm**  
**Beaver Acres**  
**Elementary School**  
**Cafeteria**

**TELL US WHAT**  
**YOU THINK!**

**A Community**  
**Informational and**  
**Feedback Session**

**Dinner, Childcare**  
**and Interpretation**  
**provided**

**FOR MORE**  
**INFORMATION**  
**CONTACT:**

Carmen Madrid: 503-913-6969

Kayse Jama: 503-913-5154

## **Appendix C**

Community Engagement Feedback

Beaver Acres Elementary School, June 10, 2014

### **1. What benefits do you see in having a pedestrian and bicycle bridge to access schools and nature parks?**

- Environmental
  - Less dependence on cars
  - More emphasis/opportunities on walking/biking
  - Walking and biking will be even more important in the future
  - Environmental education opportunities at bridge
- Access
  - School
  - Work
  - Transit – Max and Bus
  - Access to businesses, food, groceries, increased bikeshed
  - Recreation
  - Nature Park
- Physical Activity
  - More opportunities for fitness
  - More active kids, less driving
  - Kids can be more mobile/independent
- Connectivity
  - More places to walk recreationally
  - “pleasure walking shortcut”
- Safety
  - Could be safer than existing routes (Pheasant Lane, 170<sup>th</sup>, 185<sup>th</sup>)
  - “kids shouldn’t have to cross a major thoroughfare to get to the park
- Social Cohesion
  - Getting to know neighbors
  - Getting to know the people your kids go to school with

### **2. What concerns do you have?**

- Safety
  - Speeders on Augusta/Pheasant
  - Students will run across Augusta at the curve instead of walking up to crosswalk
  - Public safety
  - Younger children not allowed to walk
  - Clear line of sight
  - Increased traffic
  - Need for lighting at access points

- Higher crime
  - Litter, vandalism
  - Potential for illegal dumping into creek
  - Will sheriff's office increase patrols of area?
- Residents Near Bridge
  - Privacy
  - Impact on property value
- Equity
  - Benefits the residents on west side of bridge more than east side
- Maintenance and Logistics
  - Beaverton Creek floods
  - Who will maintain? Brush will grow up
  - Is Johnson St more important? Better use of funds?
- Buses going away?

**3. Would you use this bridge? Who do you think would use the bridge most often?**

Kids walking to school  
 Transit users (Bus and Max)  
 Parents with kids  
 Running and Walking Groups

**4. Any other comments?**

Neighborhood watch  
 Volunteer crossing guards at bridge  
 Floodlight at either end pointing to middle of bridge  
 Build bridge so motorcycle police can go through  
 Call it a park, deed to THPRD for maintenance  
 Add signage  
 Webcam  
 Walking school bus

**5. Quotes from the meeting**

"Bridge would be awesome"  
 "Excellent idea"  
 "Would make my bike route much shorter"  
 "Would love to see my kids walk to school"  
 "Concerned with more people entering into the neighborhood"  
 "This could make the neighborhood safer, more people, less vandalism."  
 "Would be used by adults and kids; lots of people could use it."  
 "This would give me more time with my kids in the morning. I could walk with them instead of making them take the school bus."

**Appendix D**  
Stakeholder Advisory Committee

Name	Title
Tom Hjort	Member, Tualatin Hills Parks and Recreation District Trails Advisory Committee
Tim Bonnin	Park Planner, Tualatin Hills Parks and Recreation District
Dale Swall	Deputy, Washington County Sheriff's Office
Amanda Garcia-Snell	Health Promotion Supervisor, WCHHS
Rose Sherwood	Health Promotion Program Coordinator, WCHHS
Joy Chang	Safe Routes to School Coordinator, WCDLUT
Shelley Oylear	Bicycle and Pedestrian Coordinator, WCDLUT
Mike Dahlstrom	Senior Planner, WCDLUT
Steve Szigethy	Senior Planner, WCDLUT
Carmen Madrid	Center for Intercultural Organizing

## References

- <sup>1</sup> *Communities Reporter*. (2010). Retrieved from <http://oe.oregonexplorer.info/rural/CommunitiesReporter/>
- <sup>2</sup> *United States Census: Washington County Quick facts*. (2014, February 19). Retrieved from <http://quickfacts.census.gov/qfd/states/41/41067.html>
- <sup>3</sup> Aloha-Reedville Study and Livable Community Plan
- <sup>4</sup> Aloha-Reedville Study and Livable Community Plan
- <sup>5</sup> Beaverton School District. Retrieved from <https://www.beaverton.k12.or.us/depts/facilities/Pages/Long-Range-Planning-and-Development.aspx>
- <sup>6</sup> Oregon Department of Education. Report Card. Retrieved from <http://www.ode.state.or.us/data/reportcard/reports.aspx>
- <sup>7</sup> Oregon Department of Education. Students Eligible for Free/Reduced Lunch. Retrieved from <http://www.ode.state.or.us/sfda/reports/r0061Select2.asp>
- <sup>8</sup> "How Healthy Is Your County?" County Health Rankings." *County Health Rankings & Roadmaps*. 2014. Web. Retrieved April 18 2014.
- <sup>9</sup> Aloha-Reedville Study and Livable Community Plan
- <sup>10</sup> Aloha-Reedville Trail Improvements Study. HDR Engineering Trails and Bridge Assessment Report - December, 2013
- <sup>11</sup> National Research Council. (2011). *Improving Health in the United States: The role of health impact assessment*. Washington, DC: The National Academies Press. Retrieved from [http://www.nap.edu/catalog.php?record\\_id=13229](http://www.nap.edu/catalog.php?record_id=13229)
- <sup>12</sup> World Health Organization. (2010). *Health Impact Assessment*. Retrieved from <http://www.who.int/hia/en/>
- <sup>13</sup> Centers for Disease Control & Prevention. (2011). *Physical activity for everyone*. Retrieved from <http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html>
- <sup>14</sup> Ogden, C., & Carrol, M. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2010). *Prevalence of obesity among children and adolescents: United States, trends 1963-1965 through 2007-2008* National Center for Health Statistics.
- <sup>15</sup> Alliance for Biking and Walking, 2012- BRFSS 2009, ACS 2009
- <sup>16</sup> J. Sallis, et al. "Neighborhood Environments and Physical Activity among Adults in 11 Countries," *American Journal of Preventative Medicine*. 2009; 36 (6): 484- 490.
- <sup>17</sup> Centers for Disease Control & Prevention. (2011). *Cdc transportation recommendations*. Retrieved from <http://www.cdc.gov/transportation/recommendation.htm>
- <sup>18</sup> Environmental Protection Agency. (2011). *Smart growth*. Retrieved from <http://www.epa.gov/smartgrowth/>
- <sup>19</sup> 2013 Oregon Healthy Teens survey
- <sup>20</sup> Centers for Disease Control & Prevention. (2009). *Respiratory Health and Air Pollution*. Retrieved from <http://www.cdc.gov/healthyplaces/healthtopics/airpollution.htm>
- <sup>21</sup> Centers for Disease Control and Prevention and The Merck Company Foundation. (2007). *The State of Aging and Health in America 2007*. Whitehouse Station, NJ: The Merck Company Foundation.
- <sup>22</sup> Yeung, Jennifer, Scott Wearing, and Andrew P. Hills. "Child Transport Practices and Perceived Barriers in Active Commuting to School." *Transportation Research Part A: Policy and Practice* 42.6 (2008).
- <sup>23</sup> B. Giles-Cortie, et al. *Encouraging Walking for Transport and Physical Activity in Children*. *Sports Medicine* (2009).
- <sup>24</sup> The National Center for Safe Routes to School (2011). *How Children Get to School: Travel Patterns from 1969 to 2009*. Accessed April 25, 2014. Available: [http://saferoutesinfo.org/sites/default/files/resources/NHTS\\_school\\_travel\\_report\\_2011\\_0.pdf](http://saferoutesinfo.org/sites/default/files/resources/NHTS_school_travel_report_2011_0.pdf)
- <sup>25</sup> Yeung, Jennifer, Scott Wearing, and Andrew P. Hills. "Child Transport Practices and Perceived Barriers in Active Commuting to School." *Transportation Research Part A: Policy and Practice* 42.6 (2008).
- <sup>26</sup> Centers for Disease Control & Prevention. (2011). *Physical activity for everyone*. Retrieved from <http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html>
- <sup>27</sup> B. Giles-Cortie, et al. *Encouraging Walking for Transport and Physical Activity in Children*. *Sports Medicine* (2009).
- <sup>28</sup> Digest of Education Statistics, 2010. Table 184. U.S. Department of Education, National Center for Education Statistics, 2011 AND "School Bus Safety Overview." *School Transportation News*, [http://www.stnonline.com/stn/data\\_statistics/safetyoverview/index.htm](http://www.stnonline.com/stn/data_statistics/safetyoverview/index.htm)
- <sup>29</sup> Centers for Disease Control & Prevention. (2011). *Physical activity for everyone*. Retrieved from <http://www.cdc.gov/physicalactivity/everyone/guidelines/index.html>
- <sup>30</sup> J. Wargo. *Children's Exposure to Diesel Exhaust on School Buses*. Environment and Human Health Inc. (2002).
- <sup>31</sup> Oregon Asthma Program. 2013. *The Burden of Asthma in Oregon: 2013*. Available online at [http://public.health.oregon.gov/DiseasesConditions/ChronicDisease/Asthma/Documents/burden/or\\_asthma2013.pdf](http://public.health.oregon.gov/DiseasesConditions/ChronicDisease/Asthma/Documents/burden/or_asthma2013.pdf)

- 
- <sup>32</sup> 2013 Oregon Healthy Teens survey
- <sup>33</sup> *The Wellness Impact: Enhancing Academic Success Through Healthy School Environments*. Rep. Generation Youth Foundation.
- <sup>34</sup> Donnelly JE, et al. Physical Activity Across the Curriculum (PAAC): a randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children. *Preventive Medicine*. 2009;49(4):336–341.
- <sup>35</sup> Pedestrian and Bicycle Information Center. (2009). *The decline of walking and bicycling*. [http://guide.saferoutesinfo.org/introduction/the\\_decline\\_of\\_walking\\_and\\_bicycling.cfm](http://guide.saferoutesinfo.org/introduction/the_decline_of_walking_and_bicycling.cfm)
- <sup>36</sup> B. Giles-Cortie, et al. *Encouraging Walking for Transport and Physical Activity in Children*. Sports Medicine (2009).
- <sup>37</sup> Kelly, Evenson. "Girls' Perception of Neighborhood Factors on Physical Activity, Sedentary Behavior, and BMI." *Obesity* 15.2 (2007): 430-45. Web. 29 Apr. 2014.
- <sup>38</sup> Vernez Moudon, Anne, and Chanam Lee. "Physical Activity and Environment Research in the Health Field: Implications for Urban and Transportation." *SAGE Journal of Planning Literature*, Nov. 2014. Web. 9 May 2014.
- <sup>39</sup> Trevino, Evelyn. "Trails Help Build Healthier Communities in San Bernardino County." *National Trails Training Partnership*. American Trails, Aug. 2008. Web. 09 May 2014.
- <sup>40</sup> Washington County Neighborhood Bikeway Plan. April 2014. Retrieved from <http://www.co.washington.or.us/LUT/Divisions/TrafficEngineering/DesignInformation/neighborhood-bikeway-plan.cfm>
- <sup>41</sup> Retrieved from <http://www.thprd.org/nature/programs/natureparkinterpretivecenter.cfm>
- <sup>42</sup> Cortright, Joe. "Walking the Walk." *Walking the Walk | CEOs for Cities*. Impreza, Aug. 2009. Web. 20 June 2014.
- <sup>43</sup> McCormack G, Rock M, Toohey A, et al. 2010. Characteristics of urban parks associated with park use and physical activity: a review of the qualitative research. *Health Place* 16:712–26. Available at: <http://www.med.upenn.edu/beat/docs/McCormack2010HealthPlaceparkuseandPA.pdf>
- <sup>44</sup> AASHTO Pedestrian Guide, 95.
- <sup>45</sup> Washington County Sheriff's Office data (retrieved Aug. 6, 2014) . Patrol CrossCAD search.
- <sup>46</sup> Institute of Transportation Engineers. *Improving the Pedestrian Environment through Innovative Transportation Design*. 2005. pg 19.
- <sup>47</sup> Renfro, Rory. *Pedestrian and Bicycle Overcrossings*. Retrieved from [http://web.pdx.edu/~jdill/Files/Renfro\\_Bike-Ped\\_Overcrossings\\_Report.pdf](http://web.pdx.edu/~jdill/Files/Renfro_Bike-Ped_Overcrossings_Report.pdf).
- <sup>48</sup> Davison KK, Werder JL, Lawson CT. Children's active commuting to school: current knowledge and future directions. *Prev Chronic Dis* 2008;5(3).
- <sup>49</sup> Marla R. Orenstein, Nicolas Gutierrez, Thomas M. Rice, Jill F. Cooper, and David R. Ragland, "Safe Routes to School Safety and Mobility Analysis" (April 1, 2007). *UC Berkeley Traffic Safety Center*. Paper UCB-TSC-RR-2007-1. <http://repositories.cdlib.org/its/tsc/UCB-TSC-RR-2007-1>