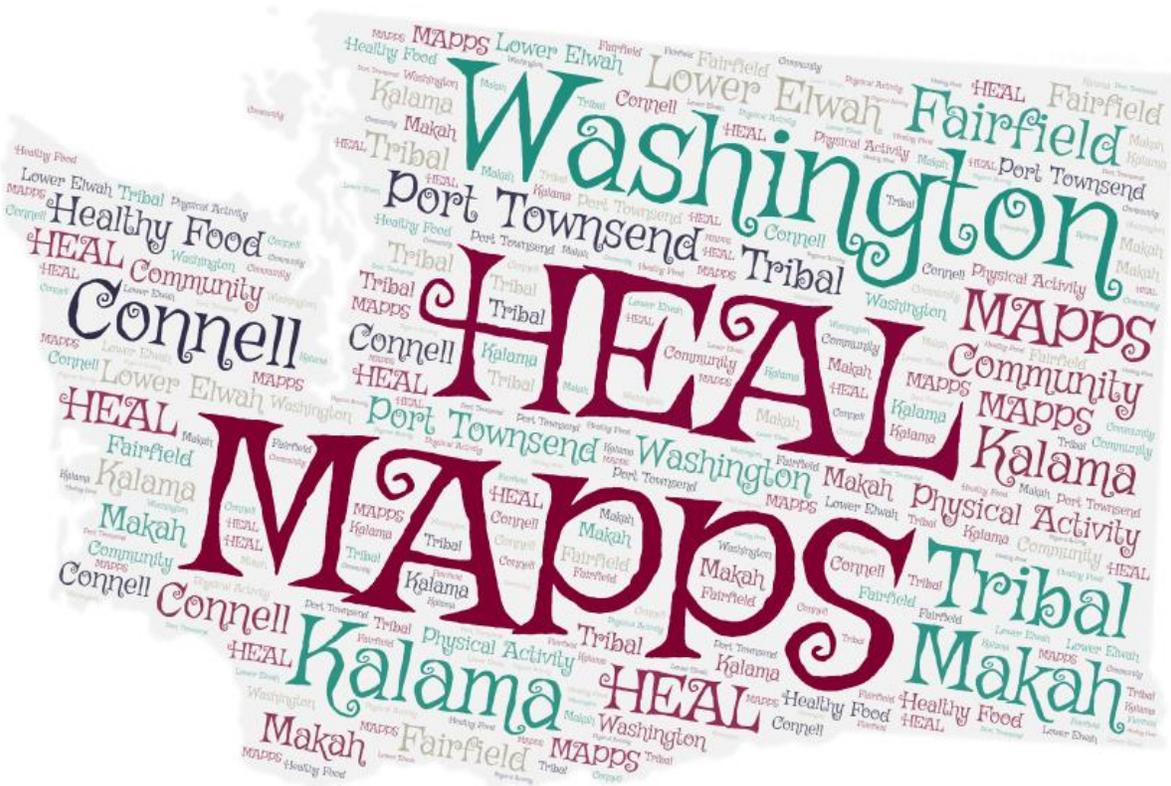


Washington HEAL MAPPSTM™ Community Reports



Washington State University Cooperative Extension, in partnership with Oregon State University Extension Family and Community Health (FCH), and Oregon State University College of Public Health and Human Sciences' Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC) program and the individual communities collectively supported these impacts. Using data collected during the HEAL MAPPSTM™ processes, these reports provided findings and recommendations to the community residents and decision-makers that were leveraged to maintain community actions to change the obesogenic context, create a culture of weight health, and prevent a rise in childhood obesity prevalence. This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award John and Gunter 2011-68001-30020.

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CONNELL, WA

HEAL MAPPS™

Community Report



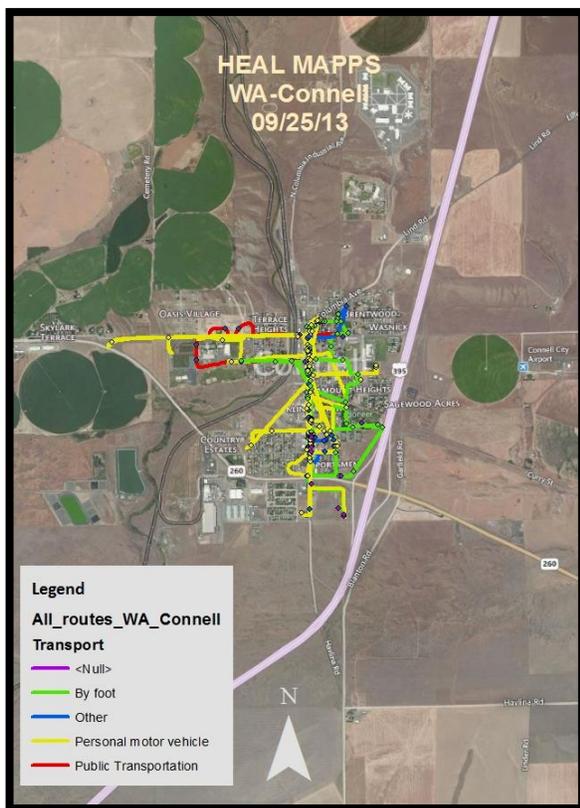
This report was generated by Lizann Powers-Hammond¹, Shirley Calodich¹, Deborah John, PhD², and Kathy Gunter, PhD², in partnership with Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC) using data collected during the HEAL MAPPS™ processes and provided to the Connell Community to support the community's initiative to prevent childhood obesity.

¹Washington State University Cooperative Extension, ²Oregon State University, College of Public Health and Human Sciences, Extension Family and Community Health

Connell Community HEAL MAPPS™ Report

Connell is a rural city located in Franklin County, Washington. The city is situated in North Franklin County. The population, based on the 2010 census, is 4,209. Connell has grown 28% in the last ten years largely attributed to the opening of the medium-security facility at Coyote Ridge Correctional Facility which opened in 1992. In addition to the correctional facility, the industrial base is agricultural including food processing and agricultural chemicals.

Connell is home to the North Franklin School District administrative offices, and is served by one high school, one middle school and one elementary school. The community has many well maintained parks including a city pool and water park. City athletic fields range from general purpose open space, to soccer and baseball fields.



Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC) is a USDA-funded, participatory childhood obesity prevention study conducted by Oregon State University’s Extension researchers in partnership with rural residents and communities. GROW HKC and the Connell community have partnered to map features of the local environment and discuss residents’ perceptions of the community supports and barriers to regularly eating healthy and being physically active, particularly for children and families. Community members were mobilized and trained to use HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys), our community resource and readiness tool, to assess community resources for and readiness to improve and implement healthy eating and physical activity supports – environmental and policy actions to make easier these obesity preventing behaviors.

HEAL MAPPS™ projects conducted in partnership with rural communities across several Western States (AZ, CO, NM, NV, OR, WA) will provide evidence and insights that will drive the development of a rural obesity prevention model. The model will be used as a framework for rural community actions aimed to promote healthy eating and physical activity behaviors, environments, and policies to prevent overweight and obesity among children and families.

The problem of obesity in children is in the forefront of nationwide research efforts and there are documented physical and mental health outcomes associated with childhood obesity that contribute to lifelong chronic health problems which may disproportionately affect people living in rural places. Rural

residency tends to increase the risk of overweight and obesity for children and adults; the prevalence of childhood overweight and obesity is higher among children living in rural areas.

To date, most evidence-based strategies to combat the childhood obesity epidemic have been developed and tested in non-rural settings and target either individuals or environments. The overall goal of the GROW Healthy Kids and Communities (HKC) project is to learn more about the factors influencing health behaviors in rural places in order to prevent obesity in rural children **by improving their behavioral environments – at home, in school, and in the community** – to make healthy eating and activity options their easy and preferred choice.

Relevance for Connell Community

According to the US Census Bureau, in 2010, the percentage of families in Connell with children under the age of 18 was 50.5%. The racial makeup of the city was 73.4% White, 6.4% African American, 1.9% Native American, 2.7% Asian, 0.4% Pacific Islander, 12.2% from other races, and 3.0% from two or more races. Hispanic or Latino of any race was 39.3% of the population. According to the 2000 census, the median household income is \$33,992 with a poverty rate of 19.5%. In 2012, 71.7% of Connell elementary aged children, 68.9% of middle school aged children and 62.2 % of high school youth qualified for free and reduced lunch.

Helping children develop healthy habits and providing healthy eating and activity supports to balance their energy intake with energy expenditure is an important aspect to maintaining healthy weight, preventing overweight and obesity, and minimizing chronic disease risk. Because obesity prevention among rural populations requires an understanding of the supports and barriers to healthy eating and active living within and among rural communities, we are pleased to provide this report of resources and readiness to prevent childhood obesity for the community of Connell.

Methods and Preliminary Results

A HEAL MAPPS™ team (n=6) comprised of Connell community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Connell community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 169 photographs were taken and mapped along fourteen routes that represented the community's active (i.e. walking, bicycling, skateboarding, etc.) and motor vehicle transportation system. The 'mappers' covered the area including the 7.9 square miles of the city of Connell and included features in the surrounding unincorporated areas (see Figure 1).¹ The HEAL MAPPS™ team reconvened to discuss the photographs and maps during a focus group meeting. The most relevant 47 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Over 15 Connell residents and stakeholders attended and participated in a community dinner and discussion held at the Connell Community Center on Wednesday, October 9, 2013. The community conversation was facilitated by a member of the GROW

¹ The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the North Franklin school district.

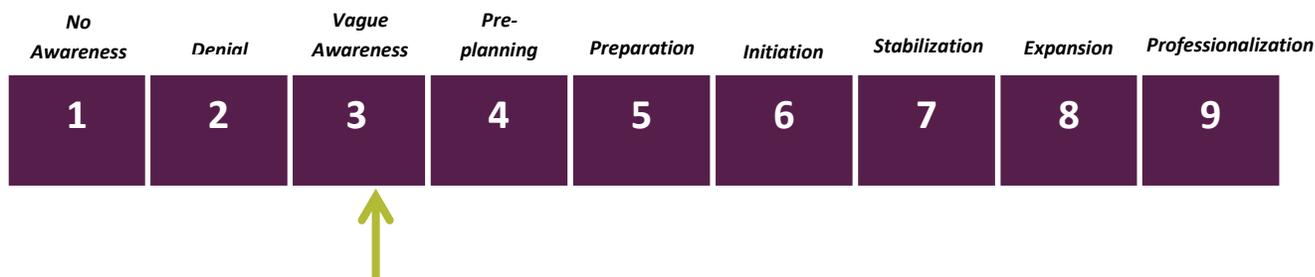
HKC team trained to conduct HEAL MAPPS™ processes. Following the community dinner, photographs were displayed, participants were polled as to whether the feature made eating healthy or being physically active easier or harder for themselves or others in the community, and discussed their thoughts and feelings that led to their ratings.

Community Readiness

Communities differ in many ways including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively implemented and supported by a community. Assessing the level of readiness for obesity prevention efforts is thereby a critical component of obesity prevention program planning and evaluation.

The Community Readiness Model (CRM) is a tool we used to gain an understanding of the Connell community’s resources and readiness for obesity prevention efforts. The model is comprised of six dimensions that influence a community’s readiness to take action on an issue. The six dimensions are: community knowledge about the issue, community efforts; community knowledge of the efforts, local leadership, community climate, and local resources related to the issue. Community readiness is issue specific, can vary across dimensions and community sectors. During the Connell Community Conversation, an Extension educator posed questions related to each of the dimensions and prompted discussion around Connell’s resources as supports or barriers to weight healthy behaviors. The entire conversation narrative was scribed verbatim and coded for themes by independent evaluators. The data related to each dimension was then scored by a researcher trained to utilize the CRM and combined to identify the overall stage of readiness.

Stages of Community Readiness



Connell stage of readiness to implement environmental and policy strategies to prevent obesity emerged around stage 3 (vague awareness) as indicated by the arrow on the Stages of Readiness graph.

Findings

Several community organizations (and leaders) emerged as supports for healthy eating and physical activity, such as school administrators, churches, and local businesses (employers). Several Connell community efforts to improve the food and physical activity environment were noted: efforts by local businesses and employers to support employee wellness through wellness programs and initiatives, a

community garden, and construction of a new park and cross country track. These efforts and organizations contributed positively to the readiness score given to the community.

Perceived barriers to healthy eating and physical activity include unmaintained and disconnected sidewalks and limited availability and variety of affordable, healthy food/beverage options in Connell. Though efforts and resources exist in Connell, participants frequently mentioned the low participation and engagement of community members in these activities, services and efforts but were unsure of the reasons for this outcome. Rather than discussing the role of the community built environment in supporting or hindering healthy behavior, the conversation focused more on the need for community health education programs and the responsibility of individuals to seek information and resources for themselves' to support personal behavior.

Based on the Community Readiness Assessment Model, community efforts should focus on:

- 1) Raise awareness that the community can do something about the problem by launching a media campaign, i.e. post flyers, posters, and billboard to advertise current efforts.
- 2) Provide suggestions on where and how efforts should be focused based on resident input and identified barriers, specifically as it relates to accessing and utilizing community resources.
- 3) Work with the Washington GROW Healthy Kids and Communities HEAL MAPPS™ team and utilize Extension GROW HKC, HEAL MAPPS™ and other resources.
 - a. Gather additional and ongoing input from others, including diverse groups of residents and community sectors;
 - b. Publish newspaper articles and editorials with general information related to the local food and physical activity situation and context;
 - c. Build and communicate Connell's capacity to change – *Our Community can GROW Healthy Kids.*

For more information about the Community Readiness Model, stages of community readiness, and stage-based strategies to increase community readiness to address health issues visit:

<http://triethniccenter.colostate.edu/communityReadiness.htm>

Summary of Results – Community Physical Activity and Healthy Eating Resources and Community Efforts (Supports or Barriers) emerging from Connell Community Conversation

Physical Activity

Supports

- Outdoor trails and parks that are well maintained, including public parks and playgrounds and walking paths.
- Active recreation supports include sports fields, swimming pool, and free bowling.
- School policies allow facilities to be used by community members, including the new cross country track.
- Some recreational programs offered through the Parks and Recreation department.

Barriers

- Barriers to walkability include a lack of sidewalks and railroad/rail lines divide the town and block intersections.
- Lack of available and accessible (across demographic groups) recreational programs and facilities; affordability of existing programs/facilities – fee structure hinders accessibility for some community members.

Healthy Eating

Supports

- Local food resource center bridging local food production with distribution including the farmers market, community garden, and vegetable swap.
- Food retailers include grocery stores and restaurants.

Barriers

- Limited availability and variety of affordable, healthy food/beverage options in Connell.

Resident-Informed Recommendations for Community Change

The following recommendations emerged from the data generated during the Connell community conversation and represent those of the Connell community members who shared their ideas during the facilitated discussion of the photographed community features. These recommendations do not represent those of the GROW Healthy Kids and Communities project members or Oregon State University.

- Offer educational resources to community members, such as nutrition and diabetes classes.
- Improve walkability by creating a pedestrian overpass and improving existing walkways and paths.
- Extend pool hours and class offerings to include options for adults and weekend swim.

Figures 1 through 5 represent the routes navigated by local residents as they mapped the physical features of the Connell community using participatory photographic survey methods.

Figure 1. Represents all routes generated by the Connell community mappers.

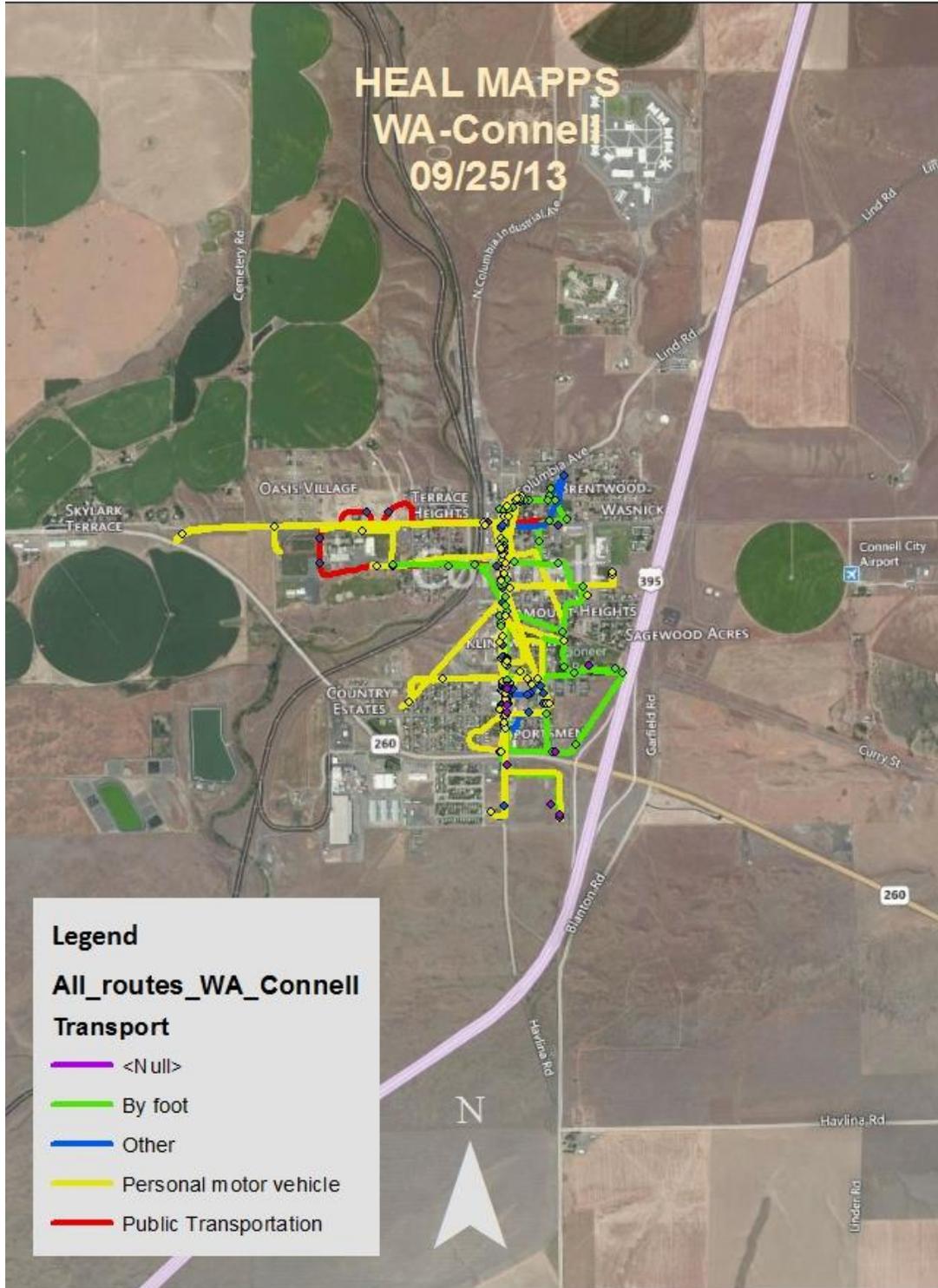


Figure 2. Represents an example of a route generated while using a personal motorized vehicle with supports and barriers encountered. All photograph location coordinates are in decimal degrees.

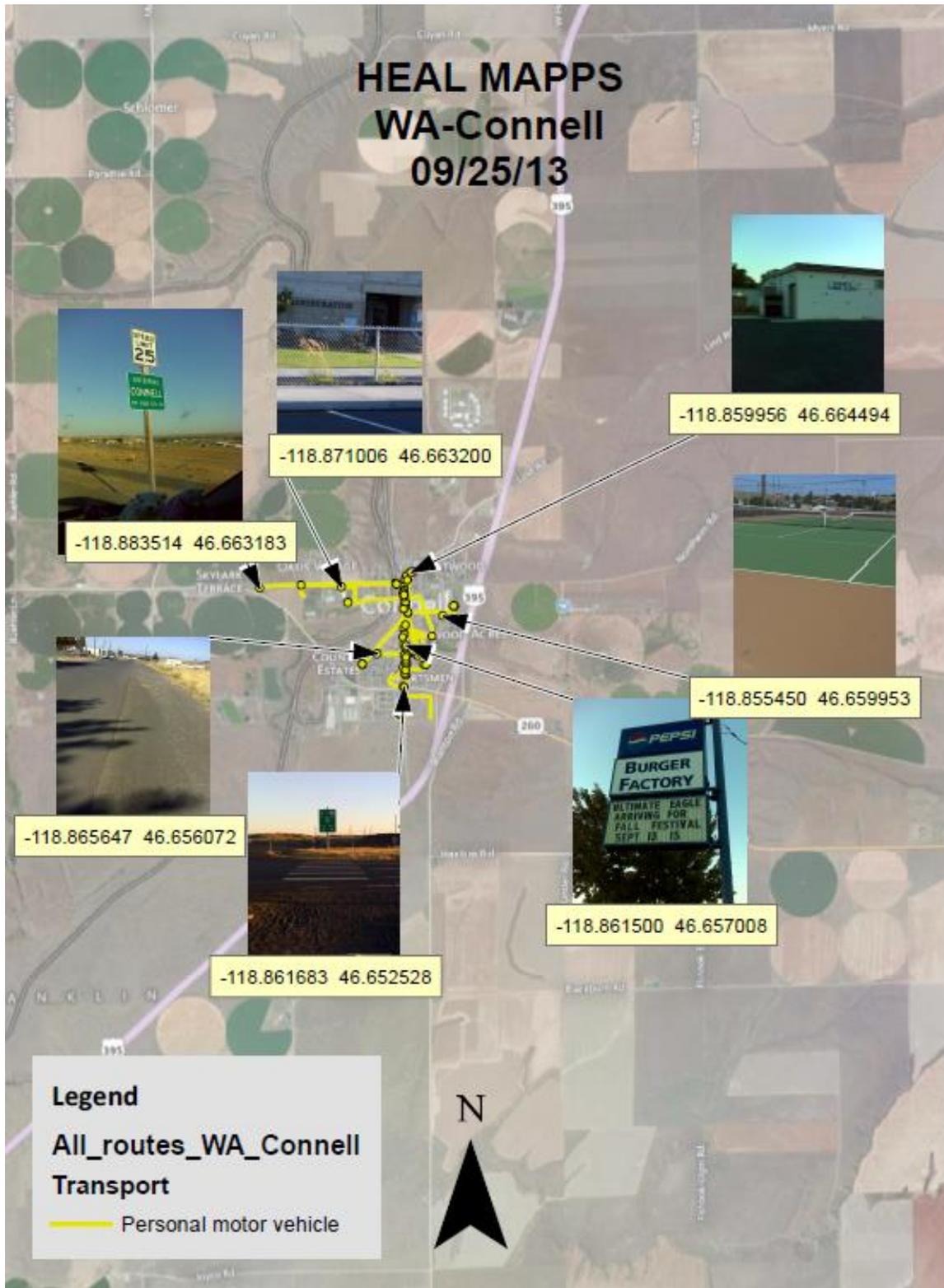
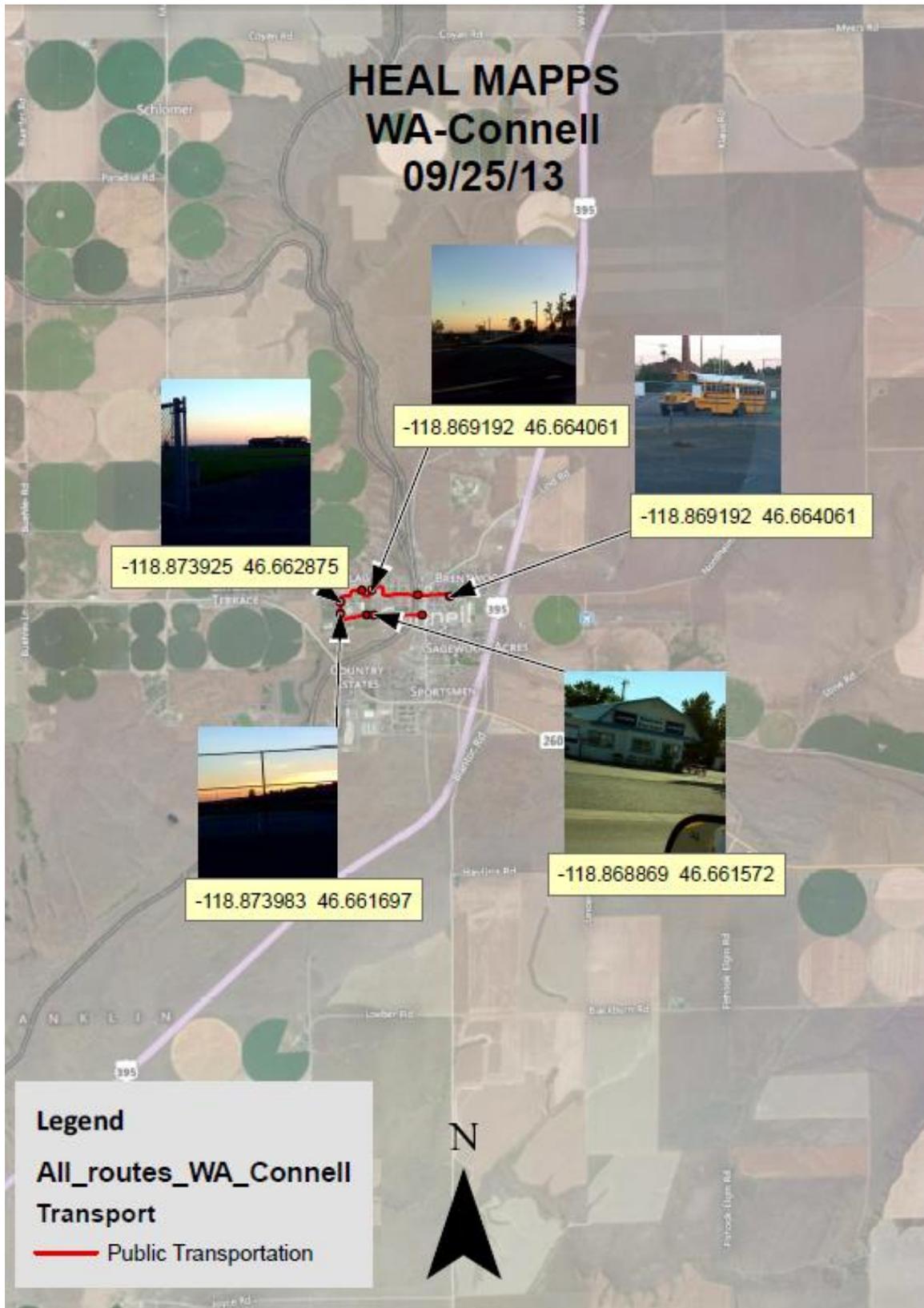


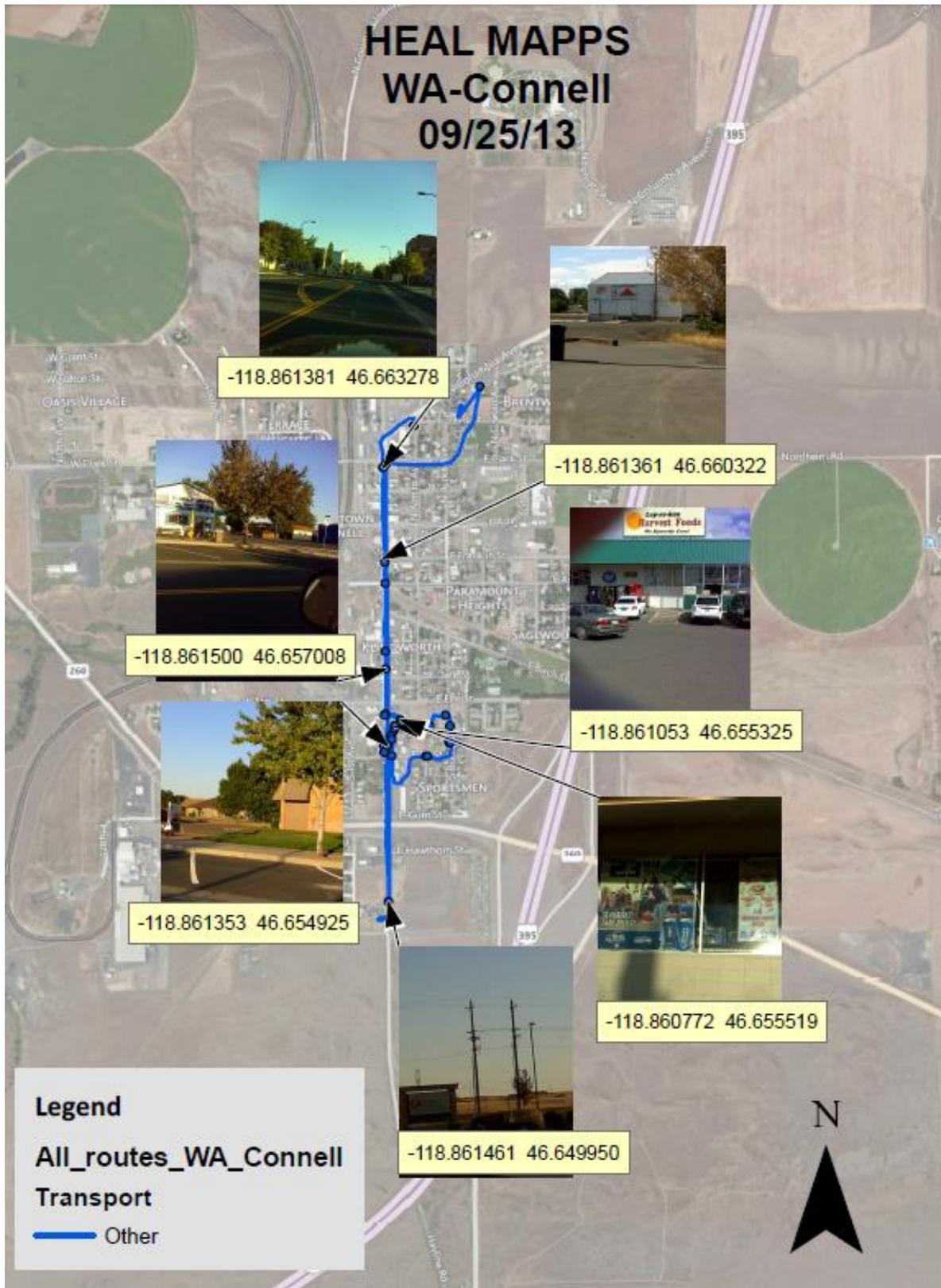
Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.



Figure 4. Represents a public transportation route with supports and barriers encountered.



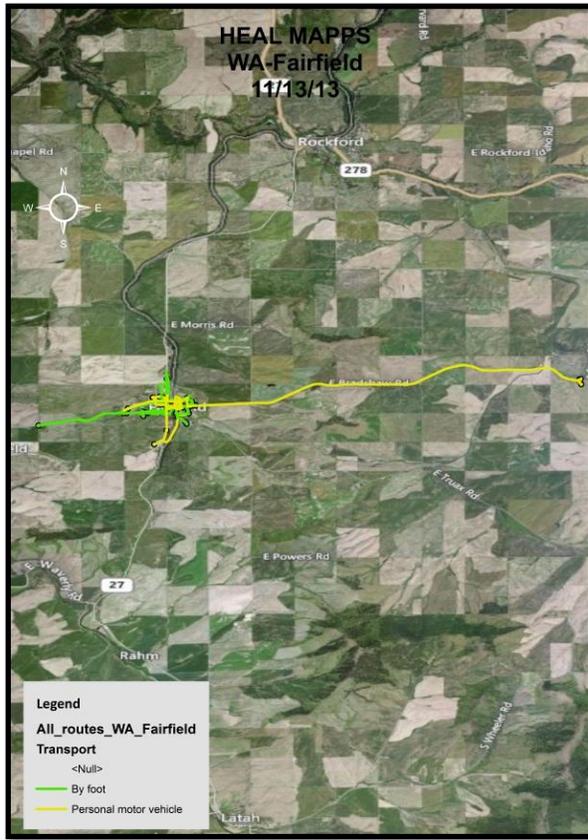
Route 5. Represents a route with an unidentified mode of transportation.



Town of Fairfield Community HEAL MAPPS™ Report

Fairfield is a rural city located about 30 miles southeast of the City of Spokane, in Spokane County, Washington. It is on the Palouse Scenic Byway, and is a part of the 208 miles of rolling hills and farmland that are known as “the Palouse”. Fairfield was named in 1888, by a local farmer after his wife’s hometown and was officially incorporated March 3, 1905. The total population of 610 people enjoys a beautiful rolling landscape with four distinct seasons, an average snowfall of 10 inches in the winter, 2.5 inches of rain in the spring, and summer highs approaching 90 degrees. It is a small farming community with a big heart, and it shows in the dedication of its people. In 2010 Fairfield became the first city in all of the U.S. to celebrate Flag Day for 100 years. ²

There are no schools in Fairfield; they were torn down several years ago and the kids have been bussed 25 miles to the Spangle community since then. The grocery store that serves them is also 25 miles away in Spokane Valley. The local Thriftway grocery store shut its doors in 2010. Local recreational opportunities include 2 small town parks, a county baseball park, and a small wellness center with a pool 10 miles south in the neighboring community of Tekoa. Fairfield’s main community event is its Flag Day Celebration that has been well attended for over 100 years.



Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC)

is a USDA-funded, participatory childhood obesity prevention study conducted by Oregon State University's Extension researchers, in partnership with rural residents and communities. GROW HKC and the Fairfield community have partnered to map features of the local environment and discuss residents' perceptions of the community supports and barriers to regularly eating healthy and being physically active, particularly for children and families. Community members were mobilized and trained to use HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys), our community resource and readiness tool, to assess community resources for, and readiness to, improve and implement

healthy eating and physical activity supports, along with environmental and policy actions to make easier these obesity preventing behaviors.

HEAL MAPPS™ projects, conducted in partnership with rural communities across several Western States (CO, ID, NM, NV, OR, WA), will provide evidence and insights that will drive the development of a rural obesity prevention model. This model will be used as a framework for rural community actions aimed to promote healthy eating and physical activity behaviors, environments, and policies to prevent overweight and obesity among children and families.

The problem of obesity in children is in the forefront of nationwide research efforts and there are documented physical and mental health outcomes associated with childhood obesity that contribute to lifelong chronic health problems which may disproportionately affect people living in rural places. Rural residency tends to increase the risk of overweight and obesity for children and adults; the prevalence of childhood overweight and obesity is higher among children living in rural areas compared to children in non-rural areas.

To date, most evidence-based strategies to combat the childhood obesity epidemic have been developed and tested in non-rural settings and target either individuals or environments. The overall goal of the GROW Healthy Kids and Communities (HKC) project is to learn more about

the factors influencing health behaviors in rural places in order to prevent obesity in rural children **by improving their behavioral environments – at home, in school, and in the community** – to make healthy eating and activity options their easy and preferred choice.

Relevance for Town of Fairfield Community

According to the US Census bureau, the percentage of families in Fairfield with children under the age of 18 is 32.4%. The median household income is \$37,831 and the poverty rate is 13.7%. The obesity rate for Spokane County adults in 2011 was 26% and 24% for adolescents in 2012, compared to the state rates of 27% for adults and 25% for adolescents respectively. In Spokane County, 45% of students were enrolled in the free and reduced lunch program. Helping children develop healthy habits and providing healthy eating and activity supports to balance their energy intake with energy expenditure is an important aspect to maintaining healthy weight, preventing overweight and obesity, and minimizing chronic disease risk. Because obesity prevention among rural populations requires an understanding of the supports and barriers to healthy eating and active living within and among rural communities, we are pleased to provide this report of resources and readiness to prevent childhood obesity for the community of Fairfield.

Methods and Preliminary Results

A HEAL MAPPS™ team (n=9), comprised of Fairfield community members with an interest in creating a healthier community, volunteered and were first trained to individually photograph and map the Fairfield community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 111 photographs were taken and mapped along 10 routes that represented the community's active (i.e. walking, bicycling, skateboarding, etc.) and motor vehicle transportation systems. The 'mappers' covered the land area included within the .62 square miles of the town of Fairfield and included features in the surrounding unincorporated areas (see Figure 1).³ The HEAL MAPPS™ team reconvened to discuss the photographs and maps during a focus group meeting. The most relevant 54 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Over 16 Fairfield residents and stakeholders attended and participated in a community dinner and discussion held at the Fairfield Community Center on December 10th 2013. The community conversation was facilitated by a

³ The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the Fairfield school district.

member of the GROW HKC team trained to conduct HEAL MAPPS™ processes. Following the community dinner, photographs were displayed, participants were polled as to whether the feature made eating healthy or being physically active easier or harder for themselves or others in the community, and discussed their thoughts and feelings that led to their ratings.

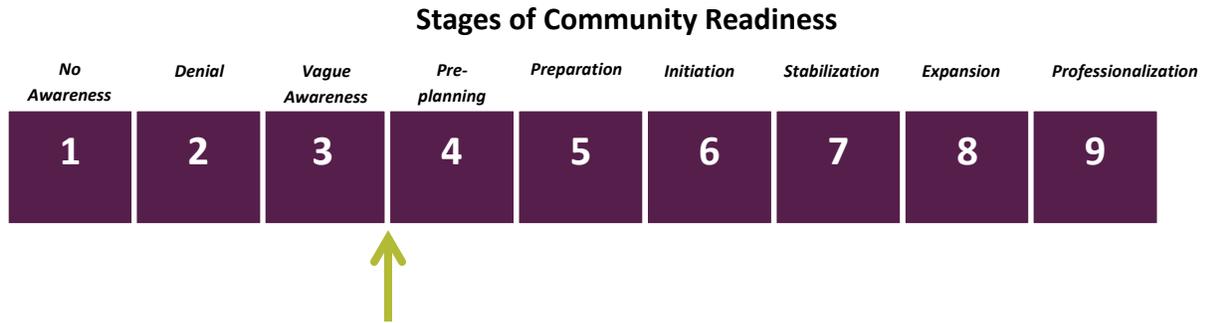
Community Readiness

Communities differ in many ways including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively implemented and supported by a community. Assessing the level of readiness for obesity prevention efforts is thereby a critical component of obesity prevention program planning and evaluation.

The Community Readiness Model (CRM) is an assessment tool we used to gain an understanding of the Fairfield community's resources and readiness for obesity prevention efforts. The model is comprised of six dimensions that influence a community's readiness to take action on an issue. The six dimensions are: community knowledge about the issue, community efforts, community knowledge of the efforts, local leadership, community climate, and local resources related to the issue. Community readiness is issue specific, can vary across dimensions and community sectors. During the Fairfield Community Conversation, an Extension educator posed questions related to each of the dimensions and prompted discussion around Fairfield's resources as supports or barriers to weight healthy behaviors. The entire conversation narrative was transcribed verbatim and coded for themes by independent evaluators. The data related to each dimension was then scored by an Extension researcher trained to utilize the CRM and combined to identify the overall stage of readiness.

Several Fairfield community organizations such as the Food Bank and other food assistance programs, including Thursday Night Meals and the Summer Meal Program, emerged as supports for healthy eating in the community. Recent efforts to increase supports for physical activity include street/crosswalk improvements and pursuing grants to increase physical activity resources for kids. Barriers to healthy eating and physical activity include a lack of affordable, fresh fruits and vegetables, pedestrian safety concerns and barriers to walkability (due to a lack of sidewalks). Participants frequently mentioned safety concerns as large barriers to engaging in physical activity, both safety concerns for adults and children, due to a lack of traffic calming features, sidewalks, unlit walkways, and unsafe park equipment. A consistent theme mentioned throughout the conversation emerged regarding a lack of, and need for, adequate communication networks. Participants recognized food and physical activity resources exist in Fairfield and agreed that there is a lack of communication and information sharing between the

schools, community members, family and parents, which makes it harder for some community members to access resources that make it easier to eat healthy and be physically active.



Fairfield’s stage of readiness to implement supportive environmental and policy strategies to prevent obesity falls somewhere between stage 3 (vague awareness) and stage 4 (preplanning) as indicated by the arrow on the Stages of Readiness graph.

General strategies for improving community readiness, based on the CRM include:

- 1) Raise awareness that the community can do something about the problem by improving communications and increasing local messaging about successful efforts.
- 2) Gather and utilize existing information about childhood obesity, the food environment, and physical activity resources in order to plan strategies aimed at improving resource availability, accessibility, and affordability.
- 3) Provide suggestions on where and how efforts should be focused based on resident input and identified barriers. Present information at local community events and to unrelated groups; launch a media campaign, post flyers, posters, and billboards.
- 4) Work with the Washington GROW Healthy Kids and Communities HEAL MAPPS™ team and utilize Extension GROW HKC, HEAL MAPPS™ and other resources to plan obesity preventing environment and policy efforts. Build and communicate Fairfield’s capacity to change – *Our Community can GROW Healthy Kids and Communities*.

For more information about the Community Readiness Model, stages of community readiness, and stage-based strategies to increase community readiness to address health issues visit:

<http://triethniccenter.colostate.edu/communityReadiness.htm>

Summary of Results based on Fairfield Community Conversation

Physical Activity

Supports

- Outdoor trails and parks include sports courts, skate park, and city/county parks.

Barriers

- Active transportation barriers include a lack of bike lanes and road shoulders.
- Pedestrian safety concerns due to a lack of traffic calming features, sidewalks, road shoulders, and unlit walkways.
- Barriers to walkability include a lack of sidewalks, crosswalks and disconnected trails.
- Community aesthetics could be improved.
- Safety concerns at parks due to unsafe play structures and inadequate fencing surrounding park.

Healthy Eating

Supports

- Food assistance programs include local food bank and various congregate meals in the community.
- Some healthy food retail options.

Barriers

- Limited access to affordable healthy, fresh fruits and vegetables; no grocery store.
- Absence of local food resource center bridging local food production with distribution; no community garden or farmer's market in Fairfield.

Resident-Informed Recommendations for Community Change

The following recommendations emerged from the data generated during the Fairfield community conversation and represent those of the Fairfield community members who shared their ideas during the facilitated discussion of the photographed community features. These recommendations do not represent those of the GROW Healthy Kids and Communities project members or Oregon State University.

- Improve infrastructure at parks: add equipment and make existing equipment safer; improve fencing; add activities and trails/walking paths for children and adults.

- Create/improve traffic calming features by adding speed bumps, increasing signage (e.g. signs to slow down).
- Utilizing open areas/park spaces for trails, community garden or other activities.
- Increase communication networks for community members to receive information regarding community and school activities; use a Facebook page, bulletin board, or reader board to increase awareness and communication.
- Develop sidewalks and crosswalks, specifically around parks and downtown areas.
- Improve community aesthetics.
- Create a community garden.
- Partner with Extension and other organizations in efforts.

Figures 1 through 3 represent the routes navigated by local residents as they mapped the physical features of the Fairfield community using participatory photographic survey methods. Figure 1. Represents all routes generated by the Fairfield community mappers.

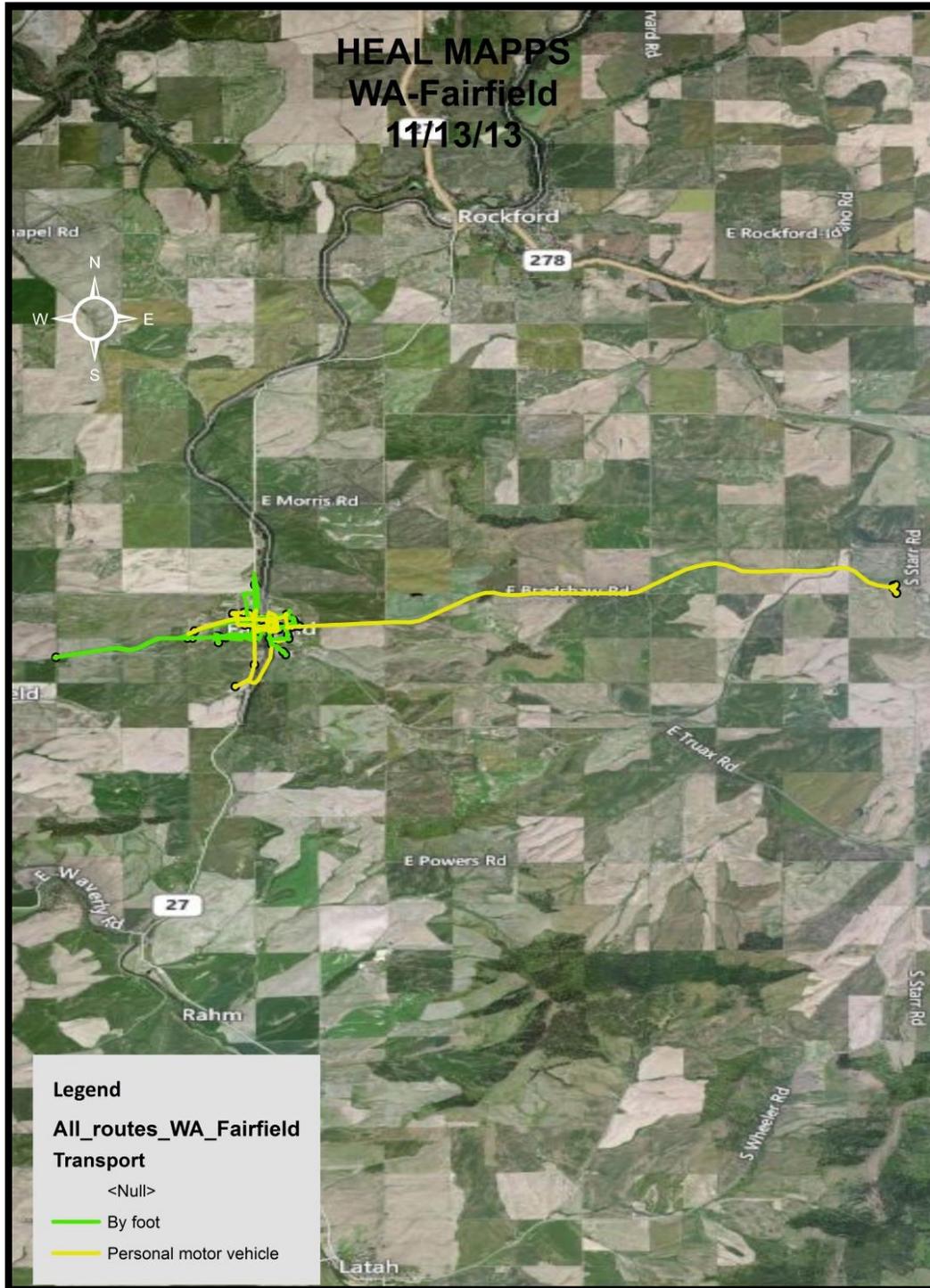


Figure 2. Represents an example of a route generated while using a personal motorized vehicle with supports and barriers encountered. All photograph location coordinates are in decimal degrees.



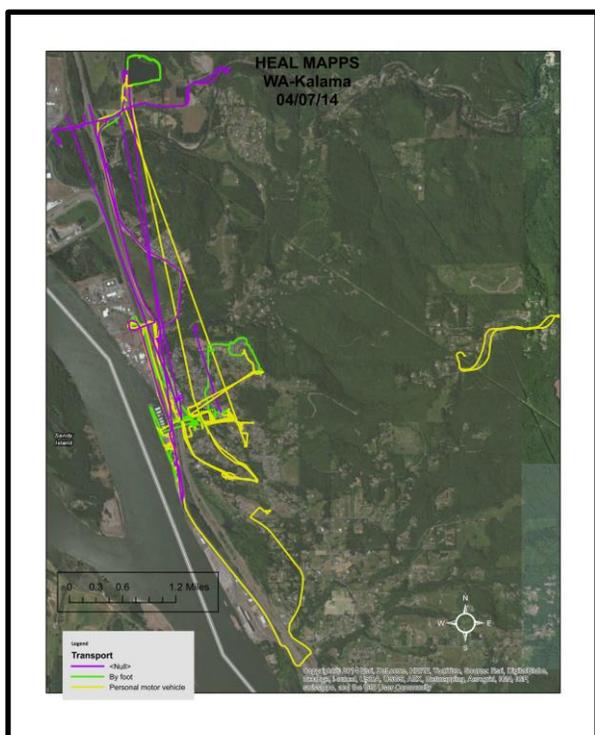
Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.



Kalama Community HEAL MAPPSTTM Report

Kalama is a rural city located in Cowlitz County, Washington. The city is situated on the Columbia River, 30 miles north of Portland, Oregon. Kalama's total population based on the 2010 census is 2,344⁴. Because of Kalama's proximity to the Columbia River Gorge, it experiences mild weather. In its coldest month Kalama experiences an average low of 35°F in January and in the hottest month of August has an average high of 79°F.⁵ The annual precipitation is on average 62.9 inches.⁶

There is one public high school, one middle school, and one elementary school. A grocery store, two convenience stores, and eight restaurants serve the Kalama community. The Port of Kalama ties a nearby railroad and major freeway to five marine terminals serving ships from across the world. Kalama is home to a large marina, over 20 businesses and a community park that accommodates fishing, camping and kayaking. Local recreation opportunities include Cress Lake for boating and fishing, several hiking trails, and four city parks. Annual events include Kalama City Fair and River to River Run in July; the Kalama Blues festival and Untouchables Car Show in August; and city celebrations such as the Christmas tree lighting.⁷



Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC) is a USDA-funded, community-based participatory research study aimed at childhood obesity prevention conducted by Oregon State University's Extension researchers in partnership with rural residents and communities. GROW HKC and the Kalama community have partnered to map features of the local environment and discuss residents' perceptions of the community supports and barriers to regularly eating healthy and being physically active, particularly for children and families. Community members were mobilized and trained to use HEAL MAPPSTTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) to assess community resources for and readiness to improve and implement local healthy eating and physical activity supports – environmental and policy actions to make easier these obesity

preventing behaviors for all community residents.

⁴ http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml

⁵ <http://www.weather.com/weather/wxclimatology/monthly/graph/98625>

⁶ <http://www.weatherbase.com/weather/weather>

⁷ <http://www.cityofkalama.com/home>

HEAL MAPPS™ programs conducted in partnership with rural communities across several Western States (CO, ID, NM, NV, OR, WA) will provide evidence and insights that will drive the development of a rural obesity prevention model. The model will be used as a framework for rural community actions aimed to promote healthy eating and physical activity behaviors, environments, and policies to prevent overweight and obesity among children and families.

The problem of obesity in children is in the forefront of nationwide research efforts and there are documented physical and mental health outcomes associated with childhood obesity that contribute to lifelong chronic health problems which may disproportionately affect people living in rural places. Rural residency tends to increase the risk of overweight and obesity for children and adults; the prevalence of childhood overweight and obesity is higher among children living in rural areas.

To date, most evidence-based strategies to combat the childhood obesity epidemic have been developed and tested in non-rural settings and target either individuals or environments. The overall goal of the GROW Healthy Kids and Communities (HKC) project is to learn more about the factors influencing health behaviors in rural places in order to prevent obesity in rural children **by improving their behavioral environments – at home, in school, and in the community** – to make healthy eating and activity options their easy and preferred choice.

Relevance for Kalama Community

According to the US Census Bureau, 17% of the Kalama population is under the age of 18 years. The median household income is \$58,145 and the poverty rate is 8%.⁸ In 2010, 30.9% of students enrolled at Kalama were eligible for free lunch.⁹ According to the Cowlitz County Healthy Communities Workbook, 14% of 10th graders smoke, 10% use smokeless tobacco, 40% do not get physical activity, 50% do not eat dinner with the family, and 20% drink sugar sweetened beverages at school seven times or more a week.¹⁰ Residents in Cowlitz County were asked, “In the past 12 months, did you or other adults in your household ever cut the size of your meals or skip meals because there was not enough money for food?” The report found that 50.6% responded yes, and 8.6% said they had cut a meal or skipped a meal for a child.¹¹

Helping children develop healthy habits and providing healthy eating and activity supports to balance their energy intake with energy expenditure is an important aspect to maintaining healthy weight, preventing overweight and obesity, and minimizing chronic disease risk. Because obesity prevention among rural populations requires an understanding of the supports and barriers to healthy eating and active living within and among rural communities, we are pleased to provide this report of resources and readiness to prevent childhood obesity for the community of Kalama.

⁸ http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml

⁹ <http://k12rate.com/washington176/cowlitz-county-schools.php>

¹⁰ http://depts.washington.edu/waaction/action/n2/DOH-HC_Workbook_Cowlitz.pdf

¹¹ http://www.pathways2020.org/sites/default/files/Report%20Card%20web%205%2029%2013_0.pdf

Methods and Preliminary Results

A HEAL MAPPS™ team, comprised of Kalama community members (n=10) with an interest in creating a healthier community, volunteered and were first trained to individually photograph and map the Kalama community features that they experienced as either supporting or hindering eating healthy and being physically active most every day. Collectively, over 313 photographs were taken and mapped along 23 routes that represented the community's active (i.e. walking, bicycling, skateboarding, etc.) and motor vehicle transportation system. The 'mappers' covered approximately 30% of the land area included within the two square miles of the city of Kalama and included features in the surrounding unincorporated areas (see Figure 1).¹² The HEAL MAPPS™ team reconvened to discuss the photographs and maps during a focus group meeting. The most relevant 33 photographs, based on group consensus, were included in a presentation to provoke a broader community conversation. Kalama residents and local stakeholders were invited to attend and participate in a community dinner and discussion held at the Kalama Community Center on April 10, 2014. The community conversation was facilitated by a member of the GROW HKC team trained to conduct HEAL MAPPS™ processes. Following the community dinner, photographs were displayed, participants were polled as to whether the feature made eating healthy or being physically active easier or harder for themselves or others in the community, and discussed their thoughts and feelings that led to their ratings.

Community Readiness

Communities differ in many ways, including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively carried out and supported by a community. Assessing the level of readiness for local obesity prevention efforts aimed at policies, systems, and environments is thereby a critical component of obesity prevention program planning, evaluation and impacts.

The Community Readiness Assessment Model (CRM) is a tool we used to gain an understanding of the Kalama community's resources and readiness for obesity prevention efforts. The model is comprised of six dimensions that influence a community's readiness to take action on an issue. The six dimensions are: community knowledge about the issue, community efforts, community knowledge of the efforts, local leadership, community climate, and local resources related to the issue. Community readiness is issue specific and can vary across dimensions and community sectors. During the Kalama Community Conversation, an Extension educator posed questions related to each of the dimensions and prompted discussion around Kalama's resources as supports or barriers to weight healthy behaviors. The entire conversation narrative was scribed verbatim and coded for themes by independent evaluators. The data related to each dimension was then scored by a researcher trained to utilize the CRM and combined to identify the overall

¹² The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the Kalama school district.

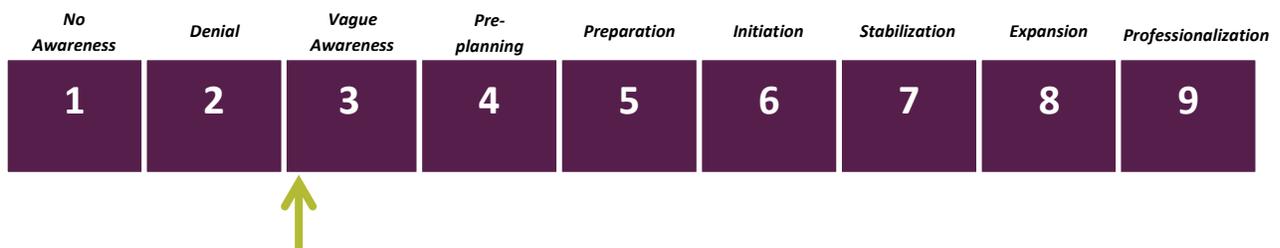
stage of community readiness to tackle the contextual factors that increase obesity risk for Kalama citizens.

Several Kalama community organizations and leaders emerged as supports for physical activity and healthy eating. Some efforts and resources to improve the local food and physical activity environment include new playground equipment at the park, new sports facilities and track, and the community garden which provides food to Helping Hands, the local food bank. These resources and efforts contributed positively to the readiness score given to the community. Furthermore, participants mentioned these resources and efforts were developed by community leaders and other community members.

Some barriers to physical activity include a lack of sidewalks in town, as well as the natural hilly landscape which was mentioned as a barrier to walkability for some residents; outdoor walkways and stairways are often unmaintained and covered in moss which is a safety concern. There was no mention of barriers to healthy food in the community, possibly because there was little discussion regarding the local food environment. Participants voiced their belief that recent improvements to parks and play facilities as well as other infrastructure reflect the leaders' interest and concern for the Kalama residents, including youth – as one participant commented, “Kalama works hard to take care of their residents.”

Though Kalama has some resources to support physical activity and healthy eating, there was no mention of *programs* in the community or in the schools to support healthy eating and physical activity for community members; it may be because there are no programs or participants are unaware of existing programs. A common sentiment among participants is pride in their community; it would be worthwhile for community members to identify and bring awareness to the existing programs and efforts that support healthy families in Kalama.

Stages of Community Readiness



Based on the conversation narrative, Kalama’s stage of readiness to implement local environmental and policy strategies to improve the obesity preventing context and promote healthy dietary and physical activity lifestyle habits falls on the lower end of stage 3, vague awareness, as indicated by the arrow on the Stages of Readiness graph.

General strategies to improving community readiness, based on the CRM include:

- 4) Raise awareness that the community can do something about the problem by launching a media campaign, i.e. post flyers, posters, and billboard to advertise current efforts aimed at supporting healthy eating and physical activity in and around Kalama.
- 5) Provide suggestions on where and how current and future efforts should be focused based on resident input and identified barriers, specifically as it relates to accessing and utilizing community resources.
- 6) Work with the Washington State University's GROW Healthy Kids and Communities HEAL MAPPS™ team and utilize Cooperative Extension GROW HKC, HEAL MAPPS™ and other resources.
 - a. Gather additional and ongoing input from others, including diverse groups of residents and community sectors;
 - b. Publish newspaper articles and opinion editorials with general information related to the local food and physical activity policies, situations, and environmental features;
 - c. Build and communicate Kalama's capacity to "change" reflecting the motto – *Our Community can GROW Healthy Kids.*

For more information about the Community Readiness Model, stages of community readiness and stage-based strategies to increase community readiness to address health issues visit:

<http://triethniccenter.colostate.edu/communityReadiness.htm>

Summary of Results based on Kalama Community Conversation

Physical Activity

Supports

- Public parks and playgrounds, which are well maintained and resourced.
- New sports facilities at school, including batting cage, track, and field – school policies allow facilities to be used by community members.

Barriers

- Lack of sidewalks and the steep natural landscape limit walkability – some walkways and outdoor stairs are not well maintained.

Healthy Eating

Supports

- Healthy, fresh fruits and vegetables are available; one grocery store, which carries an adequate variety of produce.
- Food assistance program

- Community garden provides space for community members to rent and donates produce to Helping Hands food bank.

Barriers

No barriers were mentioned.

Community Recommended Solutions

- Create and maintain sidewalks.
- Work with food retailers to serve and offer healthier options.

Figures 1 through 3 provide a visualization of the routes navigated by local residents as they mapped the features of the Kalama community using photographic survey methods. Included are routes representing each different mode of transportation used by mappers.

Figure 1. Represents all routes generated by the **Kalama** community mappers.

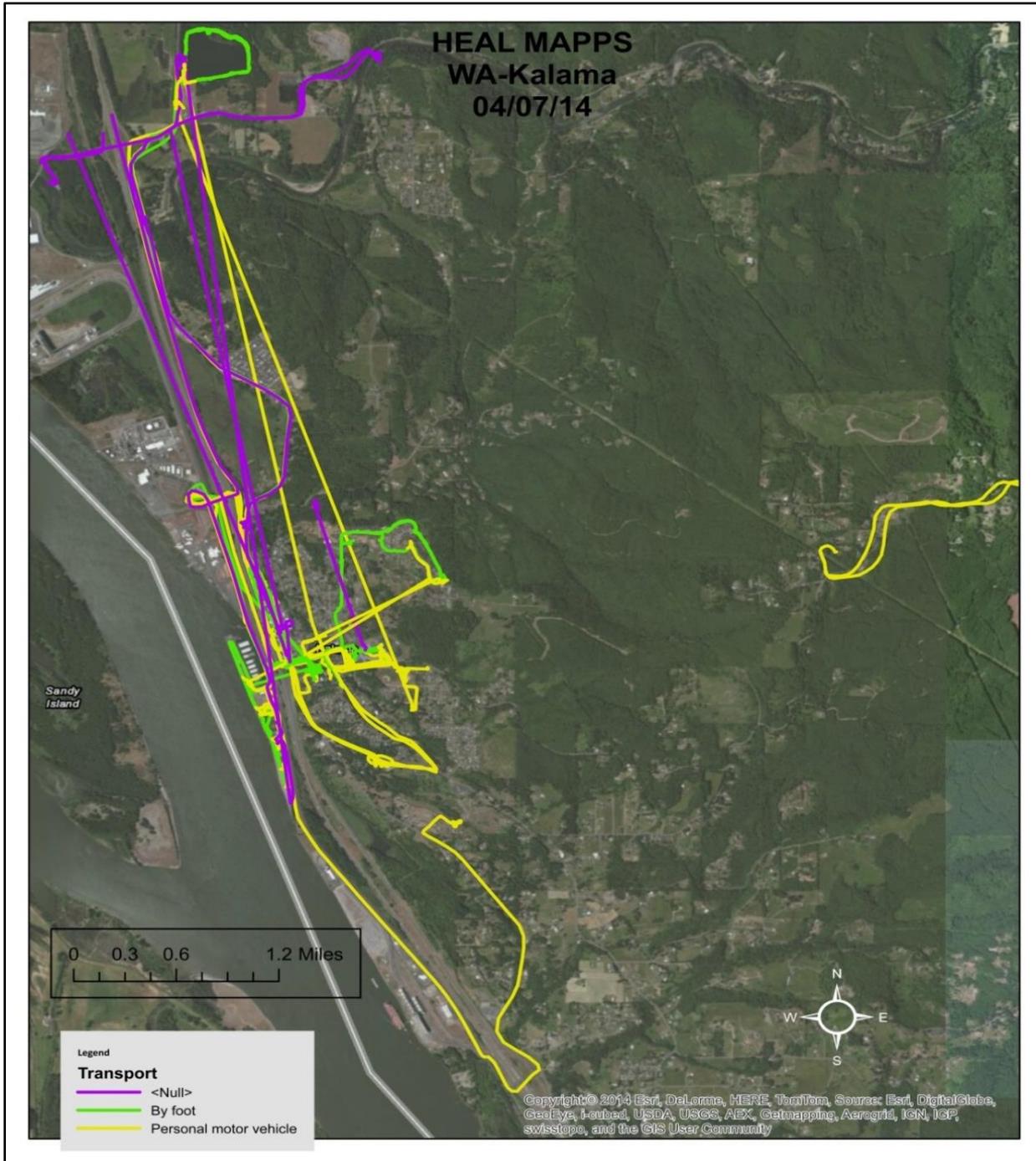


Figure 2. Represents an example of a route generated while using a personal motorized vehicle, with supports and barriers encountered. All photograph location coordinates are in decimal degrees.

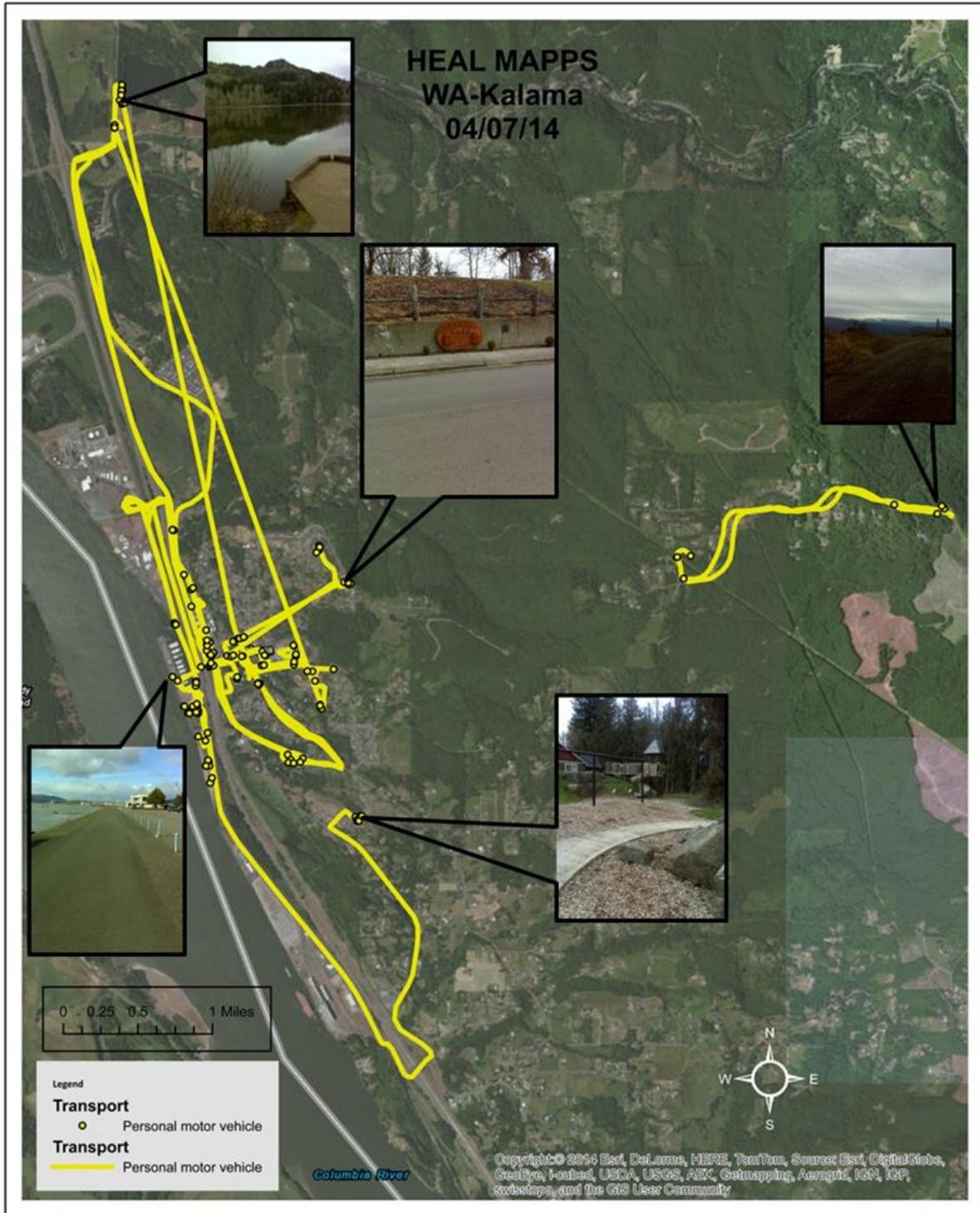
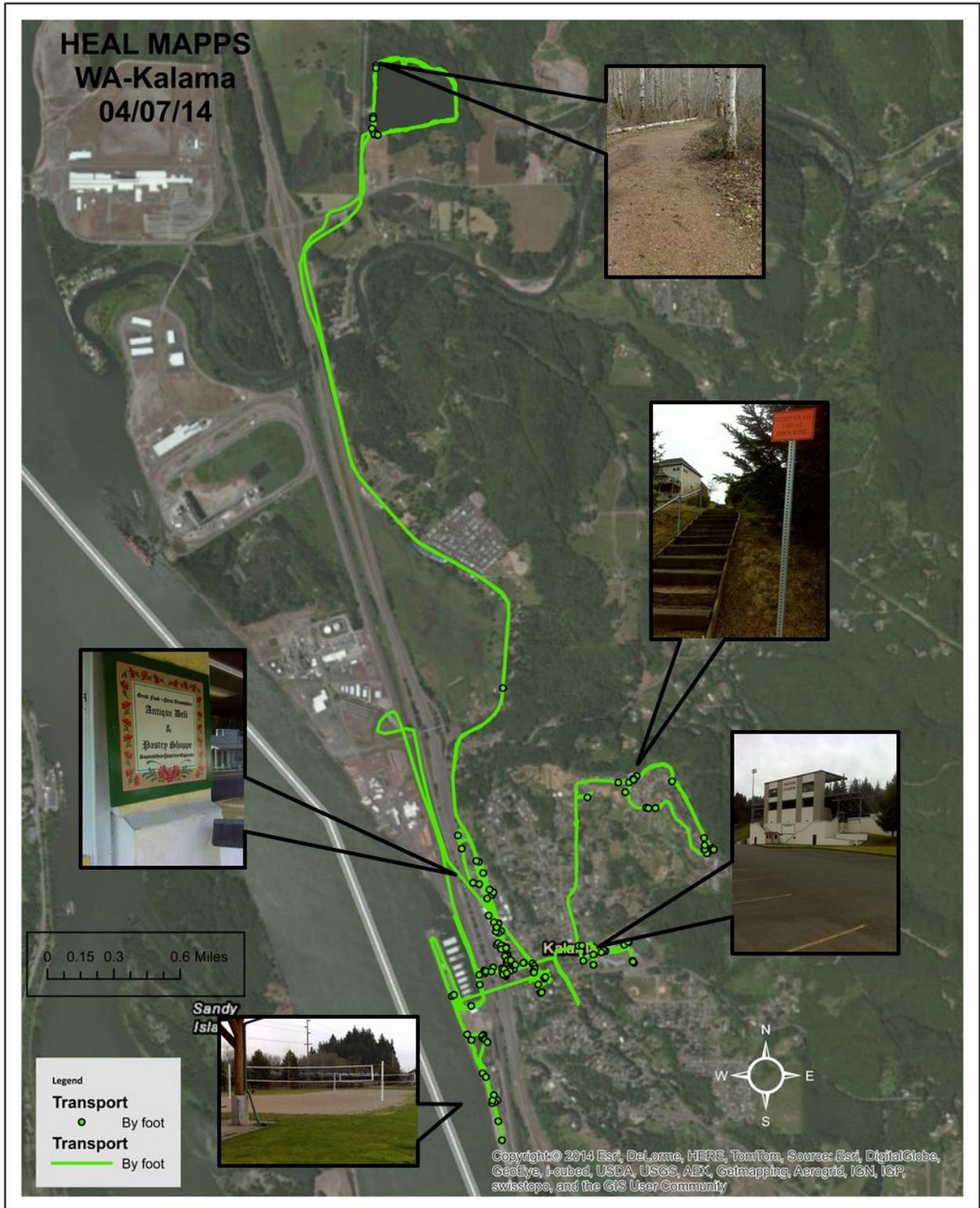


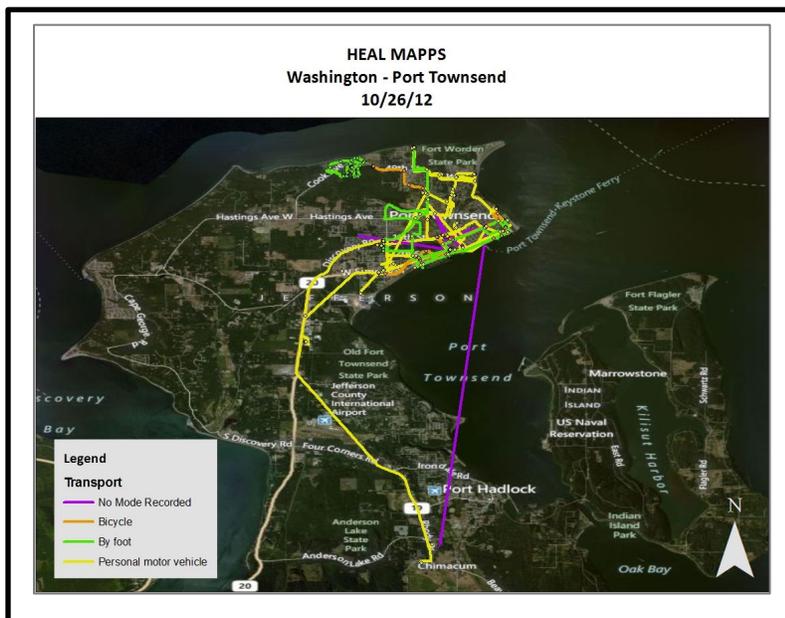
Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.



Port Townsend Community HEAL MAPPS Report

Port Townsend is a rural city located in Jefferson County, Washington. The city is situated on the Northwestern tip of the Olympic Peninsula, 40 miles northwest of Seattle. The total population is 9,113 based on the 2010 census.¹³ The weather is mild, with an average low of 43.6°F, and an average high of 57°F. Port Townsend is within the Olympic rain shadow, keeping annual precipitation to an average of 18.75".¹⁴

There is one public high school, one middle school, one elementary school and two private elementary/middle schools and one private high school. Four grocery stores, 4 convenience stores, and 41 restaurants serve the Port Townsend community.¹⁵ Local recreation opportunities include a community swimming pool, golf course, Skateboard Park, nineteen city parks, and four county parks. Fort Worden State Park a 433-acre multi-use park is at the northeastern tip of Port Townsend. Port Townsend is known as a Victorian Seaport and Arts community. Annual events include Wooden Boat Festival, Kinetic Sculpture Race, and a growing independent film festival.



Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC)

is a USDA-funded, participatory childhood obesity prevention study conducted by Oregon State University's Extension researchers in partnership with rural residents and communities. GROW HKC and the Port Townsend community have partnered to map features of the local environment and discuss residents' perceptions of the community supports and barriers to regularly eating healthy and being physically active, particularly for

children and families. Community members were mobilized and trained to use HEAL MAPPS (Healthy Eating Active Living - Mapping Attributes using Participatory Photographic Surveys), our community resource and readiness tool, to assess community resources for and readiness to improve and implement healthy eating and physical activity supports – environmental and policy actions to make easier these obesity preventing behaviors.

¹³ <http://quickfacts.census.gov/qfd/states/53/5355855.html>

¹⁴ http://en.wikipedia.org/wiki/Port_Townsend,_Washington

¹⁵ <http://www.ptguide.com/business-directory>

HEAL MAPPS projects conducted in partnership with rural communities across several Western States (AZ, CO, NM, NV, OR) will provide evidence and insights that will drive the development of a rural obesity prevention model. The model will be used as a framework for rural community actions aimed to promote healthy eating and physical activity behaviors, environments, and policies to prevent overweight and obesity among children and families.

The problem of obesity in children is in the forefront of nationwide research efforts and there are documented physical and mental health outcomes associated with childhood obesity that contribute to lifelong chronic health problems which may disproportionately affect people living in rural places. Rural residency tends to increase the risk of overweight and obesity for children and adults; the prevalence of childhood overweight and obesity is higher among children living in rural areas.

To date, most evidence-based strategies to combat the childhood obesity epidemic have been developed and tested in non-rural settings and target either individuals or environments. The overall goal of the GROW Healthy Kids and Communities (HKC) project is to learn more about the factors influencing health behaviors in rural places in order to prevent obesity in rural children **by improving their behavioral environments – at home, in school, and in the community** – to make healthy eating and activity options their easy and preferred choice.

Relevance for Port Townsend Community

According to the US Census Bureau, the percentage of the Port Townsend population under the age of 18 is 16%. The median household income is \$43,597 and the poverty rate is 17.3%.¹⁶ In 2011, 48.2% of students enrolled in the public school system received free or reduced price lunch.¹⁷

According to the 2008 Healthy Youth Survey for Jefferson County, 33% of 8th, 28% of 10th, and 19% of 12th graders are eating the recommended 5 servings of fruits and vegetables per day. In 2010 approximately, 45% of 6th graders, 27% of 8th graders, 58% of 10th graders, and 57% of 12th graders did not meet the daily physical activity recommendation. Approximately, 38% of eighth graders and 45% of sixth graders watched more than three hours of screen time per day.¹⁸

Helping children develop healthy habits and providing healthy eating and activity supports to balance their energy intake with energy expenditure is an important aspect to maintaining healthy weight, preventing overweight and obesity, and minimizing chronic disease risk. Because obesity prevention among rural populations requires an understanding of the supports and barriers to healthy eating and active living within and among rural communities, we are pleased to provide this report of resources and readiness to prevent childhood obesity for the community of Port Townsend.

¹⁶ <http://quickfacts.census.gov/qfd/states/53/5355855.html>

¹⁷ <http://www.k12.wa.us/ChildNutrition/Reports/ParticipationReport2011.aspx>

¹⁸ <http://www.askhys.net/layout.asp?page=reports/FactSheets>

Methods and Preliminary Results

A HEAL MAPPS team (n=10) comprised of Port Townsend community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Port Townsend community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 165 photographs were taken and mapped along 10 routes that represented the community's active (i.e. walking, bicycling, skateboarding, etc.) and motor vehicle transportation system. The 'mappers' covered approximately 90% of the land area included within the 9.46 square miles of the city of Port Townsend and included features in the surrounding unincorporated areas (see Figure 1).¹⁹ The HEAL MAPPS team reconvened to discuss the photographs and maps during a focus group meeting. The most relevant 54 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Over 10 Port Townsend residents and stakeholders attended and participated in a community dinner and discussion held at the Port Townsend Community Center on November 4, 2012. The community conversation was facilitated by a member of the GROW HKC team trained to conduct HEAL MAPPS processes. Following the community dinner, photographs were displayed, participants were polled as to whether the feature made eating healthy or being physically active easier or harder for themselves or others in the community, and discussed their thoughts and feelings that led to their ratings. Child care was generously provided by YMCA of Jefferson County.

Community Readiness

Communities differ in many ways including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively implemented and supported by a community. Assessing the level of readiness for obesity prevention efforts is thereby a critical component of obesity prevention program planning and evaluation.

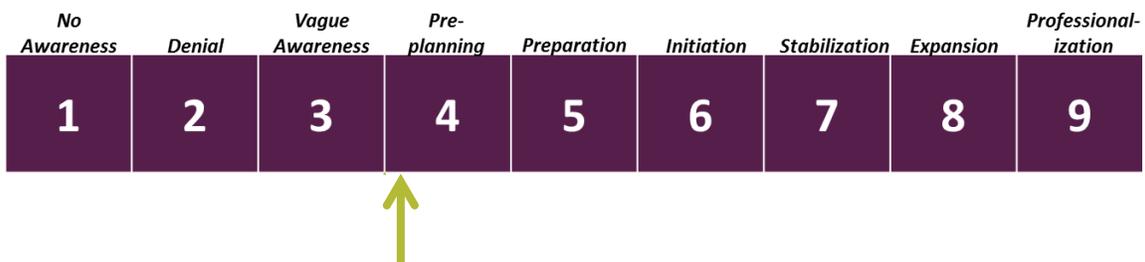
The Community Readiness Assessment Model is a tool we used to gain an understanding of the Port Townsend community's resources and readiness for obesity prevention efforts. The assessment is divided into six dimensions that influence a community's readiness to take action on an issue. The six dimensions are: community knowledge about the issue; community efforts; community knowledge of the efforts; local leadership; community climate; and local resources related to the issue. Questions representing each dimension were asked during the Port Townsend Community Conversation and the participants shared their perception of Port Townsend readiness and preparedness for change. Each dimension was then scored by two independent evaluators and combined to identify the overall stage of readiness.

There appear to be a fair number of groups working to improve the food and physical activity environment in Port Townsend, but only the Gleaners appear to be working cross-organizationally to increase access to fresh fruits and vegetables. Overall, responses at the Community Conversation

¹⁹ The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the Port Townsend school district.

suggest that groups in Port Townsend are not working together with shared goals around improving access to healthy eating and physical activity opportunities in order to prevent childhood obesity yet. Groups of people are working on implementing things like Safe Routes to School, Farm to School programs, community gardens, healthier school lunch options, and improvements to sidewalks, but appear to be struggling to realize their plans and do not have designated organizational leaders. Though there are these more nebulous groups in the community there are also some established organizations (WIC, the Food Bank, and the Gleaners) that have implemented programs or initiatives to improve people’s access to healthy foods at the farmer’s market, community gardens, food bank garden, and the orchard at Blue Heron School. The YMCA, Rotary, and the Soroptomist organizations have also implemented initiatives to improve the community’s access to physical activity opportunities. These groups and efforts signal that the community is aware of the factors related to childhood obesity in the community, but there is also evidence that there are limitations to the physical activity and food environment in Port Townsend. Some barriers perceived by residents to healthy eating and physical activity include school cafeteria policies, disconnected sidewalks, paths, and bike lanes, limited funds available for Seniors to get food from the farmer’s market, fee-based parks and recreation programs, and limited public transportation access to recreation areas. All of these factors indicate that Port Townsend’s stage of readiness to implement environmental and policy strategies to prevent obesity falls on the low end of stage 4, the pre-planning stage, as indicated by the arrow on the Stages of Readiness graph.

Stages of Community Readiness



Based on the Community Readiness Assessment Model²⁰, the goal is to raise awareness with concrete ideas to address the issue. Community efforts should focus on: 1) introducing information about childhood obesity, the need for prevention efforts focused on improving the community environmental supports for healthy eating and physical activity through presentations and media; 2) raise awareness that efforts to address childhood obesity are happening in Port Townsend and increase media exposure, including social media; 3) engage and develop support from community leaders, review existing efforts to determine who benefits and to what degree; and 4) initiate a group or coalition with a shared vision of childhood obesity prevention; start planning how to address your objectives and evaluate success of

²⁰ For additional information about the Community Readiness Model, visit <http://www.colostate.edu/Dept/TEC/article3.htm>.

the community's efforts. Encourage annual height-weight assessments among youth and healthy meals/snacks in schools; sponsor a community picnic and fun-run to kick off the effort; conduct public forums to develop strategies from the grassroots level; utilize key leaders and influential people to speak to groups and participate in local radio and television. Build and communicate Port Townsend's capacity to change – *Our Community can GROW Healthy Kids*. For more information about the Community Readiness Model, stages of community readiness, and stage-based strategies to increase community readiness to address health issues visit: <http://www.colostate.edu/Dept/TEC/article3.htm>.

Summary of Results based on Port Townsend Community Conversation

Physical Activity

Supports

- Active transportation supports include some bike lanes, bike racks and bike shelters.
- Recreational programs and organizations, such as Kid Fit, YMCA, and county rec.
- Accessible outdoor trails and parks that are resourced.
- Active leisure supports include outdoor rec/exercise facilities such as the skate park, Memorial field, and high school track.

Barriers

- Active transportation barriers include few/no options walking or bicycling to/from destinations and a lack of connected bike lanes and bike shelters.
- Policies related to transit and transportation, such as a lack of public transportation to parks and indirect bus routes.
- Sidewalks, paths, and trails are disconnected.
- Recreational program barriers include fee based private rec programs (YMCA) and a lack of physical activity initiatives for students, such as Safe Routes to School.
- Lack of connectivity to parks and trails.
- Inaccessible and poorly maintained outdoor parks due to a lack of connectivity, user fee, indirect transit routes and a need to improve/update play structures.
- Pedestrian/cyclist safety concerns due to accidents between cyclist/pedestrians when bike lanes turn into sidewalks, and paths.
- Limited walkability due to a lack of sidewalks and crosswalks.

- Decreased funding for recreational programs from the state.
- Crime/safety concerns in public areas due to poor lighting.

Healthy Eating

Supports

- Multiple food assistance programs, sponsored by the community and schools.
- Access to healthy, fresh and local foods, including fruits, vegetables and seafood.
- Many local food resource centers which bridge local food production with distribution, including grocery stores, community gardens, and the Farmer’s Market.
- School food environment supports include programs such as Farm to School, nutrition education, and food assistance for students.

Barriers

- School food environment barriers include poor school meals and a lack of kitchen facilities.
- Barriers to food assistance programs such as limited applications for Senior Farmers Market checks and limited hours at the Food Bank.

Resident-Informed Recommendations for Community Change

The following recommendations emerged from the data generated during the Port Townsend community conversation and represent those of the Port Townsend community members who shared their ideas during the facilitated discussion of the photographed community features. These recommendations do not represent those of the GROW Healthy Kids and Communities project members or Oregon State University.

- Incorporate fresh seafood and local, organic food in school meals by creating a central commercial kitchen facility for the Port Townsend schools.
- Establish community kitchen for individuals and groups to can and freeze food items.
- Increase food bank availability and accessibility.
- Encourage and improve safe routes to school.
- Educate residents regarding proper bike riding and pedestrian etiquette; suggestions include enforcement, signs, and bike bells.
- Create a consolidated calendar of community events.

- State programs, such as WIC, should allow residents to utilize their funds to access physical activity resources, such as purchasing a pool pass, bus pass, gym membership, and enrolling in county parks and rec programs.
- Residents suggested using WIC/DSHS money to fund a Discover Pass, offering a sliding scale for child swim lessons, and free pool passes to people who need it.
- Residents suggested increasing and improving activities for play for individuals, families, and multiple ages along with increasing accessibility of playing fields at the Memorial Field.

Figures 1 through 4 represent the routes navigated by local residents as they mapped the physical features of the Port Townsend community using participatory photographic survey methods.

Figure 1. Represents all routes generated by the Port Townsend community mappers.

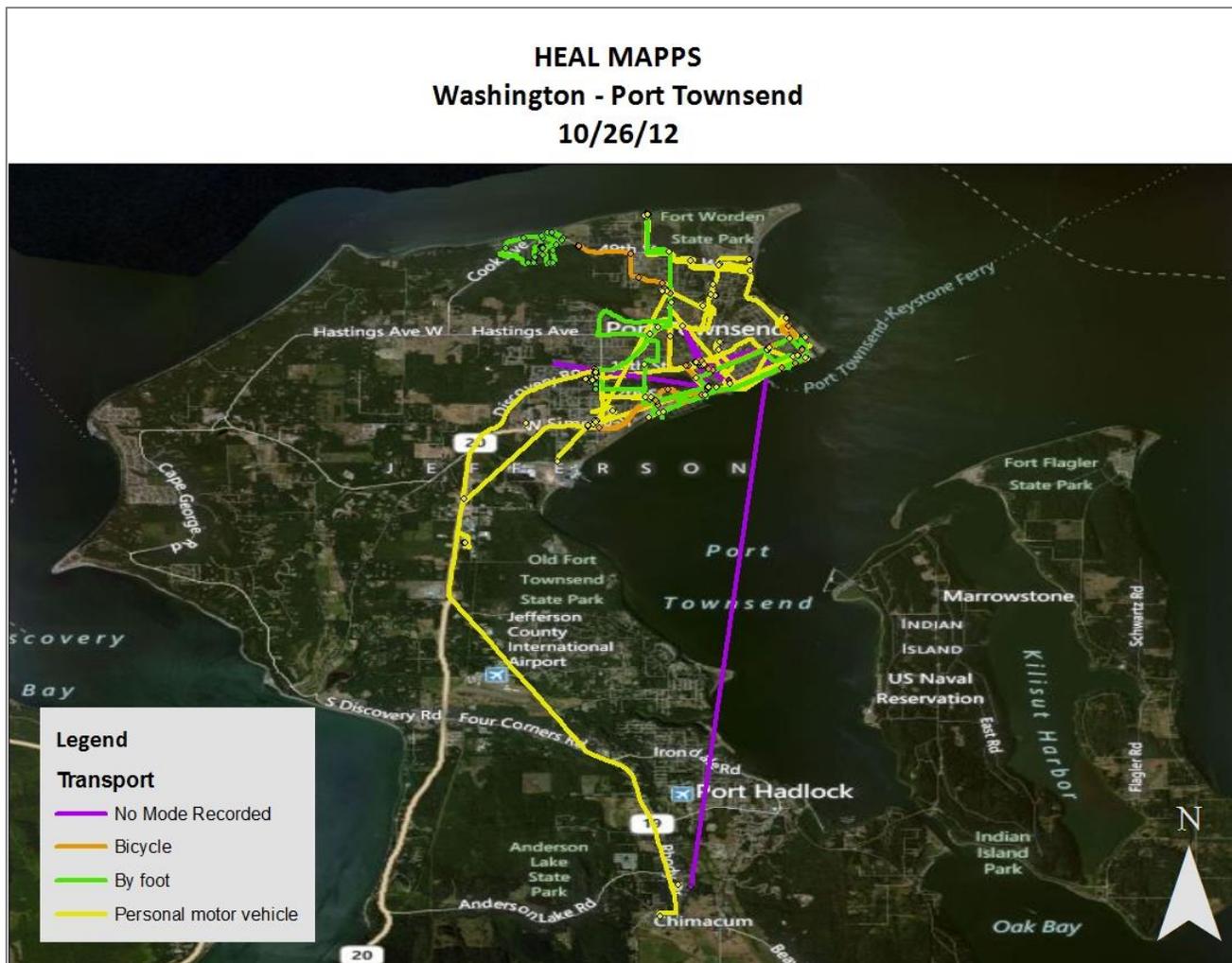


Figure 2. Represents all of the routes generated while using a personal motorized vehicle with supports and barriers encountered. All photograph location coordinates are in decimal degrees.



Figure 3. Represents all of the walking routes and the features encountered along the routes that enable or hinder healthy eating and/or physical activity.



Figure 4. Represents all of the bicycle routes and the features along those routes that enable or hinder healthy eating and/or physical activity.



HEAL MAPPS™

TRIBAL COMMUNITIES

A Washington State University Extension partner led the HEAL MAPPS™ effort with the tribal communities (additional to GROW project communities) and secured internal (WSU) funding to support the costs.

Lower Elwha Klallam Tribal Community HEAL MAPPS™ Report

The ᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲᑲᑲ or ‘Strong People,’ of the Lower Elwha Klallam Tribe (‘LEKT’ or the ‘Tribe’), have lived on or near lands near the Elwha River in Port Angeles and on coastal and river areas of Washington State’s Olympic Peninsula since time immemorial. Archaeological remains of tribal villages date back at least 2,700 years, with recent discoveries of habitation dating back 8,000 years.

The Tribe’s Reservation is located on 1,000 acres of land near the City of Port Angeles, Washington and its service area includes Clallam County, Washington. The LEK Tribal lands are arranged in a checkerboard arrangement, with the Lower Reservation located in the Elwha Valley and the Upper Reservation across the river beyond the bluffs. The health clinic and tribal police department are located on Highway 101, the apex of a triangle drawn between their location and the Upper and Lower Reservations. The Elwha Klallam Heritage Training Center and Klallam Counseling Services are located in the town of Port Angeles. Transportation between all of these areas is a significant challenge for many tribal community members. A pilot transportation project is currently underway, offering shuttle service between these areas on a regular basis.

Enrolled members of the Lower Elwha Klallam Tribe number 1003, with the tribal community numbering approximately 3,000. The nearby town of Port Angeles has a population of approximately 19,100²¹. Nestled between the Strait of Juan de Fuca and the majestic Olympic Mountains, the Port Angeles area enjoys a mild climate throughout the year. Daytime temperatures range from rarely below 25°F in winter months to rarely above 80°F in the summer months,¹ with 40°F to 70°F being the most common range. Average rain fall is 25 inches per year for Port Angeles, due to the rain shadow effect created by the Olympic Mountains,¹ rising over 7,000 feet to the south and west of the Elwha Klallam traditional lands.

Public school education is provided by two school districts: the Port Angeles School District which operates five elementary schools, one middle school, a high school, an alternative high school and a vocational school¹ and the Crescent School District which operates one school serving K-12 students.

Peninsula College is a community college based in Port Angeles that serves the Olympic Peninsula, offering two-year associates degrees in liberal arts, science, and numerous professional-technical fields, as well as a four-year bachelor of applied science in business management.

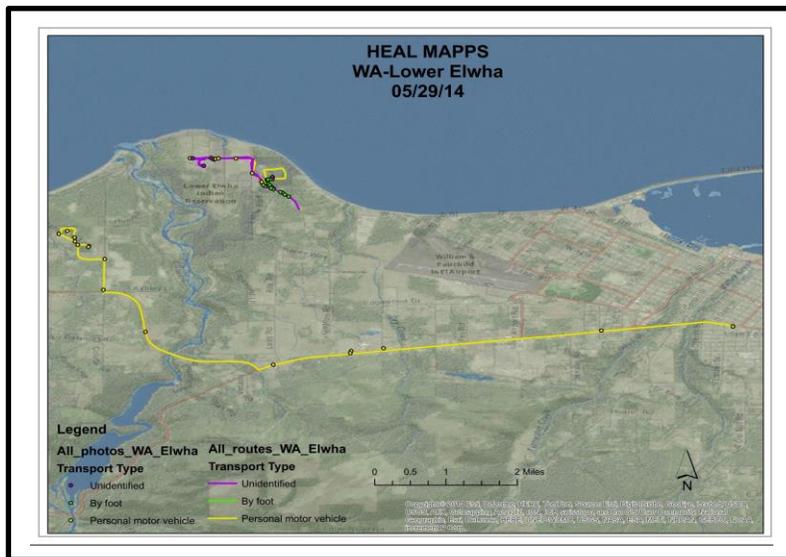
There is one store on the reservation itself, The Lower Elwha Smoke Shop, located in the Tribal Center at the Lower Reservation. The convenience-style store has increased its efforts in the past year to offer fruits, vegetables, and other healthy, fresh foods – in addition to the packaged food stocked on the majority of its shelves. Additionally, a Tribal Resolution was passed in 2012 banning the sale of energy drinks and related products to youth under the age of 18. A food pantry is also operated by the Tribal TANF program and located in the Social Services Building, also on the Lower Reservation. The River’s Edge Deli at the Elwha River Casino offers fresh salads, sandwiches made to order, burgers, fish and chips, and house-made soups.

²¹ http://en.wikipedia.org/wiki/Port_Angeles,_Washington

The nearest full grocery store is 7.4 miles from the Tribal Center. There are three other full grocery stores in Port Angeles. The large discount grocery outlet is located 11.5 miles from the Tribal Center, and requires a 57 minute bus ride each way. There are also 14 convenience stores. Fast-food restaurants number 10, with 72 full-service restaurants available in the Port Angeles area.²²

Recreational activities on Tribal lands include a gymnasium located in the Tribal Center. The gym hosts a basketball court with markings for pickle ball, a weight room, two saunas, showering facilities, and two personal trainers to help community members achieve their personal fitness goals. Inter-tribal basketball games and youth vs. police games are a regular occurrence. Three walking trails are available – the Warrior Path near the Elwha River Estuary, the Short Cut path between Head Start and Housing, and the Eagle Heights Trail Loop behind the Eagle’s Bluff housing area. The nearby Olympic Discovery Trail offers hiking and bicycling possibilities, including access to the Elwha River near the Tribal-owned fish hatchery.

Recreational opportunities in Port Angeles include the YMCA, four fitness centers, including the Vern Burton Community Center, the Port Angeles Senior Community Center and the William Shore Memorial Pool. The City of Port Angeles Parks and Recreation Department offers a variety of sports programs including youth and adult soccer, basketball and softball. Also provided are open gym sessions for pickle ball, basketball, and volley ball.²³ The Lower Elwha Health Clinic offers free swim passes for open swims to enrolled LEKT members and their families, as well as grant-funded vouchers for pool classes for patients with diabetes and/or chronic pain challenges. The community is near the Olympic National Park which has multiple hiking trails; the community itself has 22 public parks.



Improving Community Health and Growing Local Food Systems in Western Clallam and Jefferson Tribal Communities is a WSU-funded project. In partnership with the Lower Elwha Tribe community members were mobilized and trained to use HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys), a community resource and readiness tool, to assess community resources for and readiness to

improve and implement healthy eating and physical activity supports – environmental and policy actions to make easier these obesity and chronic disease preventing behaviors.

²² www.yellowpages.com/portangles

²³ www.cityofpa.us accessed 8.14

HEAL MAPPS™ is a compilation of evidence-based engagement and assessment tools that have been aggregated into a single approach by Oregon State University's Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC) project.

The challenge of disease prevention and health promotion is in the forefront of nationwide research efforts and there are documented risk factors that contribute to lifelong chronic health problems that may disproportionately affect people living in rural places. Rural residency tends to increase the risk of overweight, obesity, and chronic disease for families and adults; the prevalence of health risk factor is higher rural areas.

To date, most evidence-based strategies to impact health risk factors have been developed and tested in non-rural settings and target either individuals or environments. The overall goal of the **Improving Community Health and Growing Local Food Systems in Western Clallam and Jefferson Tribal Communities** project is to work with tribal communities to learn more about the factors influencing health behaviors in rural tribal places in order to improve health **by improving their behavioral environments – at home, in school, and in the community** – to make healthy eating and activity options their easy and preferred choice.

Relevance for the Lower Elwha Klallam Tribal Community

Traditional foods are an important part of Lower Elwha Klallam Tribal Culture. Hunting, fishing, and gathering of plants for both food and medicine have always been an integral part of the tribal life. The loss of tribal lands through the arrival of the settler population has had a devastating effect on the health of the Elwha Klallam people. Reliance on commodity foods foreign to the traditional diet has led to record rates of obesity, diabetes, and heart disease. In 2011, 61% of the Tribe's population lived below the federal poverty level, compared to 16% of non-Indians in Clallam County, with 26% of the Tribal population experiencing unemployment, compared to 11% in Clallam County overall.

More than one-half of the tribal community (50.7%) reports a sedentary lifestyle – compared to the 30.8% state average. This sedentary lifestyle has resulted in a very high percentage of the community whose lifestyle is significantly limited by health problems – 33.1% of the community has health problems limiting their activity, compared to 22.8% of statewide population. Almost one-half of the community – 49.5% – is obese. This rate of obesity is almost twice the rate of similar size towns in Washington (27.6%) or the state average (25.9%) The propensity towards Indian obesity starts at a very young age; data provided by the Tribe's Head Start program in 2012 shows that 27.5% of the children in the program are overweight by BMI for age, and 15% are at risk of being overweight.

Helping children develop healthy habits and providing healthy dietary and activity supports to balance their energy intake with energy expenditure is an important aspect to maintaining healthy weight, preventing overweight and obesity, and minimizing chronic disease risk. Because obesity prevention among rural populations requires an understanding of the environmental supports and barriers to healthy dietary and active lifestyle behaviors within and among rural communities, we are pleased to

provide this report of resources and readiness to prevent childhood obesity for the community of the Lower Elwha Klallam Tribe.

Methods and Preliminary Results

A HEAL MAPPS™ team (n=5) comprised of Lower Elwha Klallam community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Lower Elwha Klallam community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 56 photographs were taken and mapped along 3 routes that represented the community's active (i.e. walking, bicycling, skateboarding, etc.) and motor vehicle transportation system. The 'mappers' covered approximately 21 linear miles of roadway included within the approximately 1 square mile of the Lower Elwha Klallam tribal reservation as well as features in the surrounding non-tribal areas (see Figure 1).²⁴ The HEAL MAPPS™ team reconvened to discuss the photographs and maps during a focus group meeting. The most relevant 33 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Over 29 Lower Elwha Klallam residents and stakeholders attended and participated in a community dinner and discussion held at the Lower Elwha Tribal Center on June 19, 2014. The community conversation was facilitated by a member of the WSU HEAL MAPPS team trained to conduct HEAL MAPPS™ processes. Following the community dinner, photographs were displayed, participants were polled as to whether the feature made eating healthy or being physically active easier or harder for themselves or others in the community, and discussed their thoughts and feelings that led to their ratings.

Community Readiness

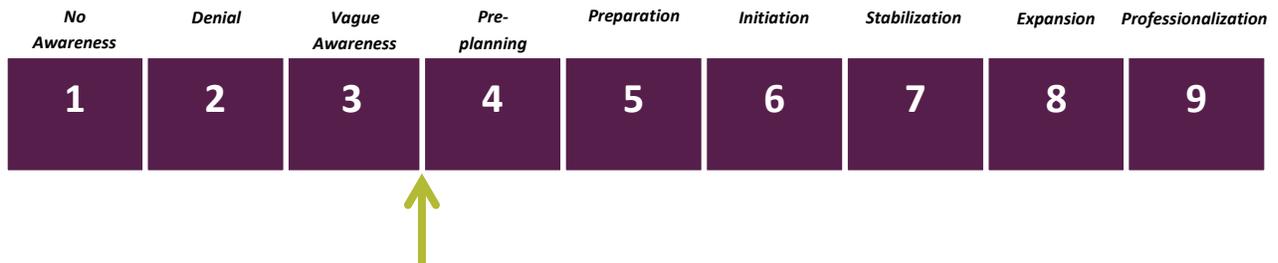
Communities differ in many ways including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively implemented and supported by a community. Assessing the level of readiness for obesity prevention efforts is thereby a critical component of obesity prevention program planning and evaluation.

The Community Readiness Model is a tool we used to gain an understanding of the Lower Elwha Klallam community's resources and readiness for addressing the health issue of obesity through prevention efforts. The assessment model is divided into six dimensions or components that influence a community's readiness to take action on an issue. The six dimensions are: community *knowledge about the issue*, community *efforts*, community *knowledge of the efforts*, local *leadership*, community *climate*, and local *resources* related to the issue. Questions representing each dimension were posed by the facilitator during the Lower Elwha Klallam Community Conversation. Participants responded to the questions sharing their perceptions of Lower Elwha Klallam resources, readiness and preparedness for

²⁴ The 'mappers' individually determined the community boundaries as within the Lower Elwha tribal jurisdiction and surrounding areas of Port Angeles.

change. Each dimension was then scored by three independent evaluators and combined to identify the overall stage of readiness.

Stages of Community Readiness



Lower Elwha’s stage of readiness – to implement environmental and policy strategies to prevent obesity – is between 3 (*Vague Awareness*) and 4 (*Pre-Planning*) as indicated by the arrow on the Stages of Readiness graph. At this level, community members are aware of the issues and of some efforts, and are eager to be engaged in these efforts. However, resources are generally lacking and there are issues with accessing resources, as well as a perceived lack of leadership involvement.

Several Lower Elwha Klallam community organizations, such as tribal resources like the gym, the heritage center, and the health clinic emerged as supports for eating healthy and being physically active. Supportive efforts to improve the food and physical activity environment were noted, including the new greenhouse, healthy cooking and pain management classes, the Wisdom Warriors program, the tribal gym and the swimming pool. These all reflected positively on Lower Elwha’s community readiness score. Perceived barriers to healthy eating and physical activity included few walkability, active transportation or public transit supports and limited access to healthy, affordable fresh fruits and vegetables. While Lower Elwha has several physical activity resources, members expressed barriers to access including limited hours of operation and the need for a private vehicle due to the lack of transportation, and few or no active transportation supports. The community perception is that the leadership is either not aware of the issues, or are not directly engaged in solutions. This perception coupled with the reported barriers to access negatively impacted the overall community readiness score. Thus, while Lower Elwha has some resources available, the existing resources are inaccessible for many residents. Increasing access to available resources is an opportunity for Lower Elwha leaders to demonstrate their support for efforts to promote healthy kids and communities, as many participants were unaware of leadership engagement in this domain.

Based on strategies recommended by Community Readiness Model for the community’s assessed level of readiness, community efforts should focus on:

- 1) Gather existing local information about childhood obesity, the food environment, and physical activity resources in order to plan local strategies.

2) Raise awareness that efforts to address childhood obesity are happening in Lower Elwha and who is helping the effort.

3) Start planning how to target efforts based on assessed barriers, and evaluate and communicate the successes of your efforts. For example, conduct annual height-weight assessments among youth as a surveillance strategy; sponsor a community healthy food feast or fun-walk/run event to kick off the effort; hold public forums to solicit input and develop strategies from the grassroots level; utilize key leaders and influential people to speak to groups and participate in local media communications. Build evaluation into your program planning and use data to secure funding and drive change. Build and communicate Lower Elwha's capacity to change – and improve community health.

For more information about the Community Readiness Model, stages of community readiness and stage-based strategies to increase community readiness to address health issues visit:

<http://www.colostate.edu/Dept/TEC/article3.htm>.

Summary of Results based on Lower Elwha Community Conversation

Physical Activity

Supports

- Active leisure supports include swimming pool and tribal gym
- Pain management class
- Wisdom Warriors

Barriers

- Lack of transportation options
- Some parks and facilities are inaccessible to community members due to hours of operation or lack of maintenance
- Few walkability supports like sidewalks, berms, and lighting.

Healthy Eating

Supports

- Classes that support healthy eating
- New community garden
- Wisdom Warriors

Barriers (totaling 22 references in three general categories)

- Lack of transportation options
- Limited access to fresh fruits and vegetables
- Few or no healthy food retail options

Resident-Informed Recommendations for Community Change

The following recommendations emerged from the data generated during Lower Elwha community conversation and represent those of the Lower Elwha community members who shared their ideas during the facilitated discussion of the photographed community features. These recommendations do not represent those of the WSU Extension or Oregon State University.

- Increase transportation options
- Install sidewalks and lighting to make community more walkable.
- Install a bike path and maintain trails and parks
- Trail map
- Expand fresh food options at the food bank and in the community at large
- Start a volunteer page for the community to organize members to open the gym or volunteer at the greenhouse/community garden
- More gardening efforts at individual and community level

Figures 1 through 4 provide a visualization of the routes navigated by local residents as they mapped the physical features of the Lower Elwha community using participatory photographic survey methods

Figure 1. Represents all routes generated by the Lower Elwha community mappers.

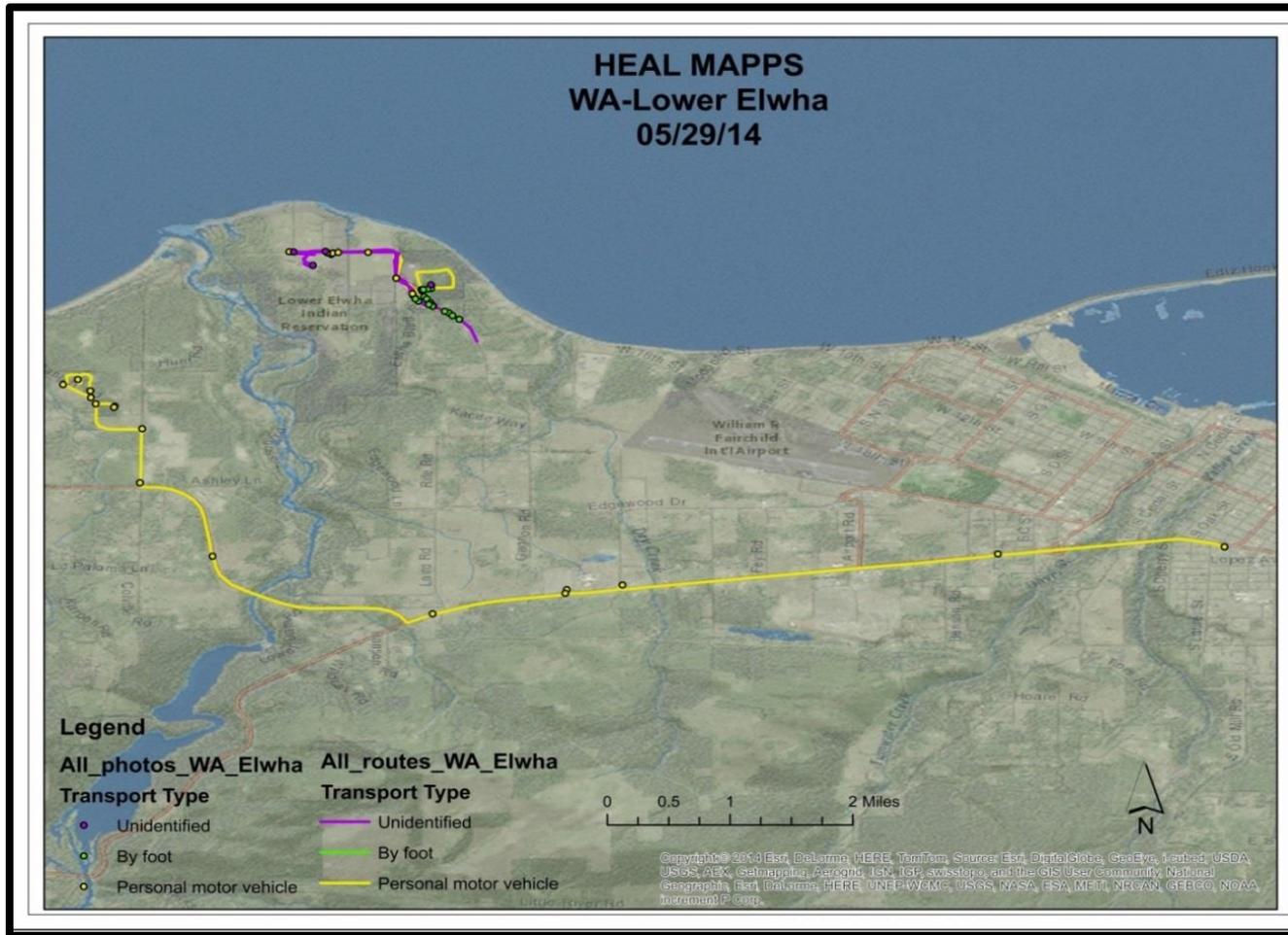


Figure 2. Represents an example of a route generated while using a personal motorized vehicle. All photograph location coordinates are in decimal degrees.

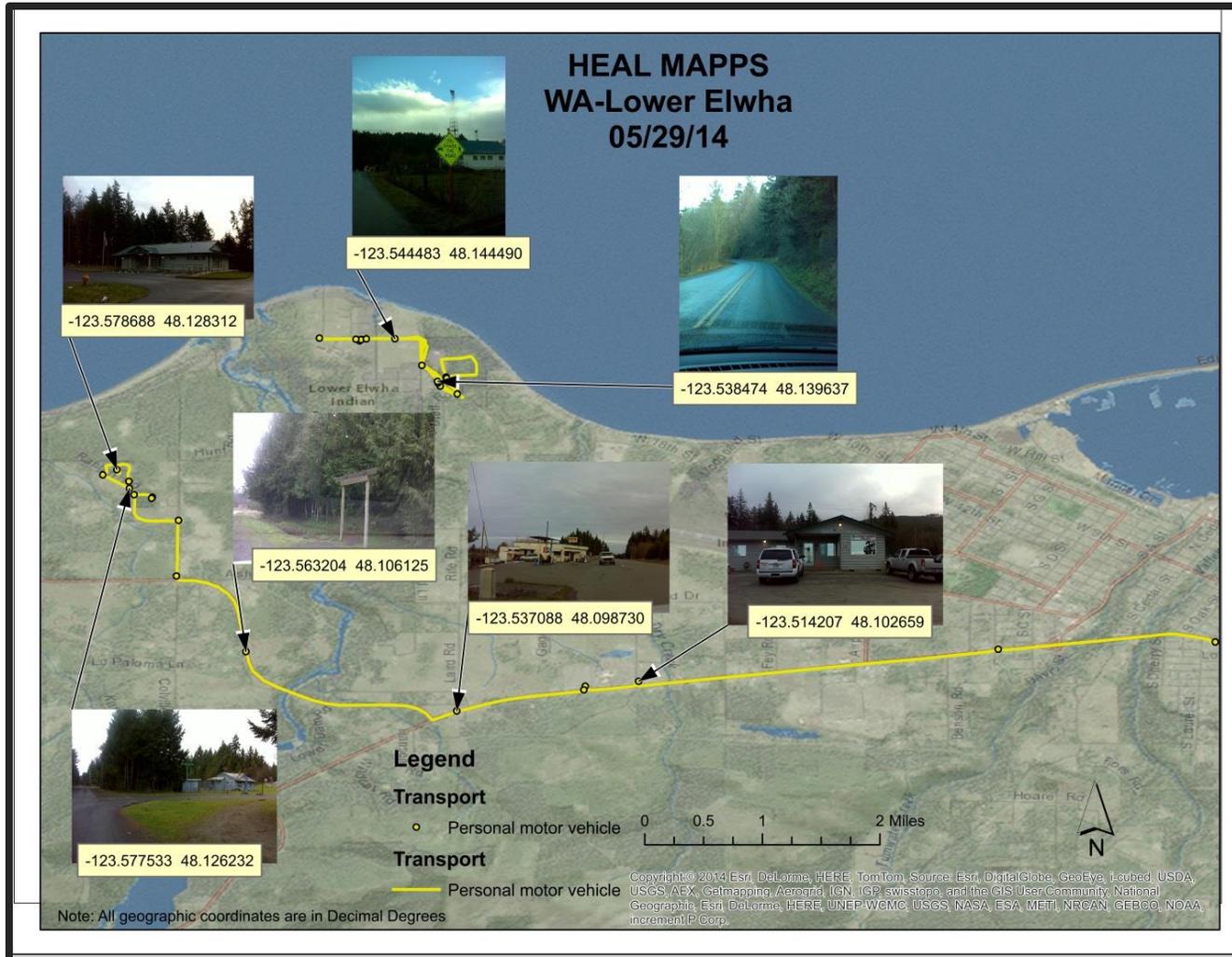


Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.

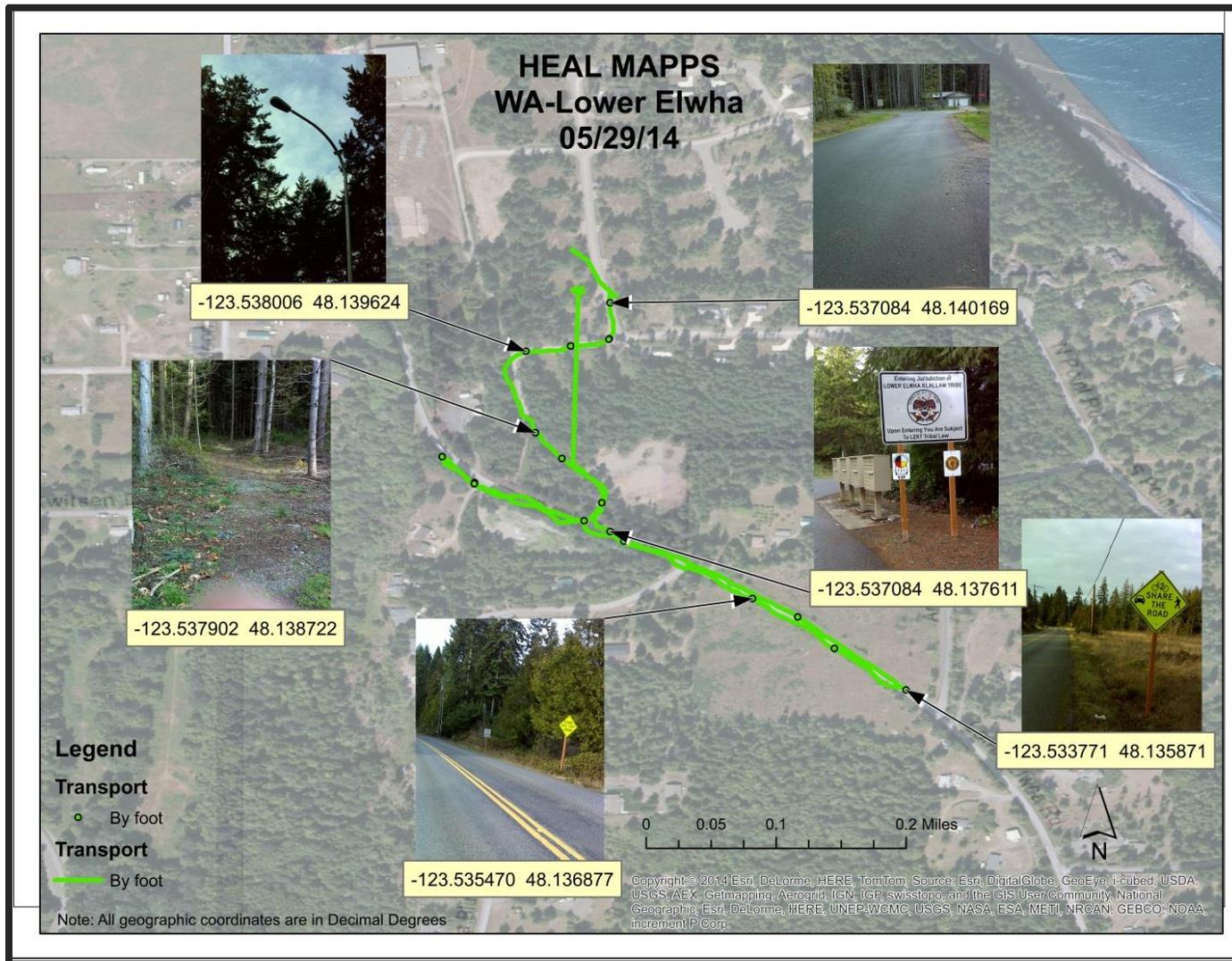
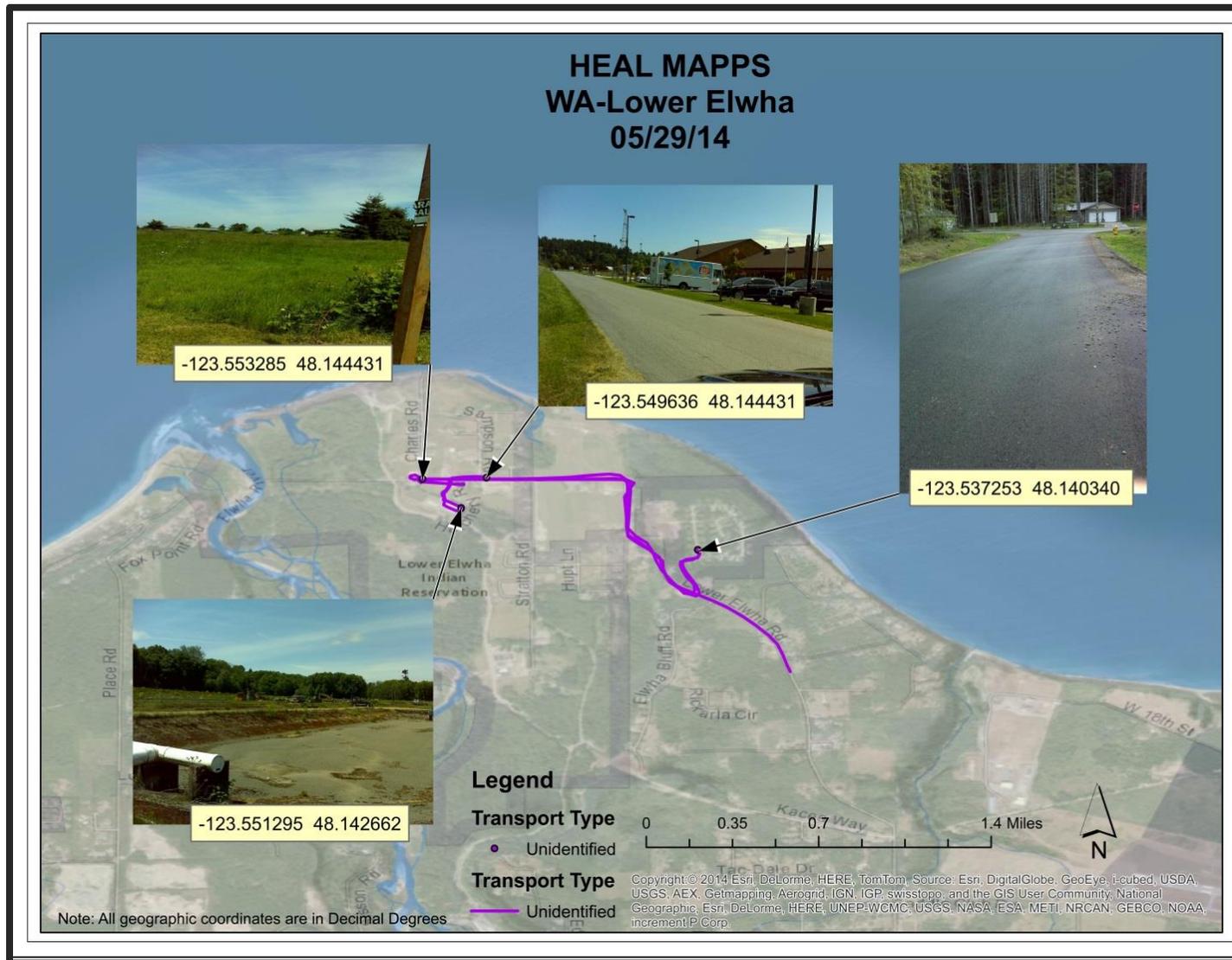


Figure 4. Represents a route with unknown mode of transportation.



Makah HEAL MAPPS Community Report

August 2013

This report was generated by Makah Public Health, in partnership with WSU Extension of Clallam County and Generating Rural Options for Healthy Kids and Communities (GROW HKC) through Oregon State University. The data found in this report was collected during the HEAL MAPPS™ process.

Makah Community HEAL MAPPS Report

The Makah people call themselves q^widiččaʔa-tx, — “Kwih-dich-chuh-ahtx” or “people who live by the rocks and seagulls”ⁱⁱⁱ The Makah people traditionally utilized the abundant resources in the ocean, the tidelands, the forests and the rivers that surrounded them. For thousands of years, they have hunted whales and fished the waters surrounding the reservation.ⁱⁱ

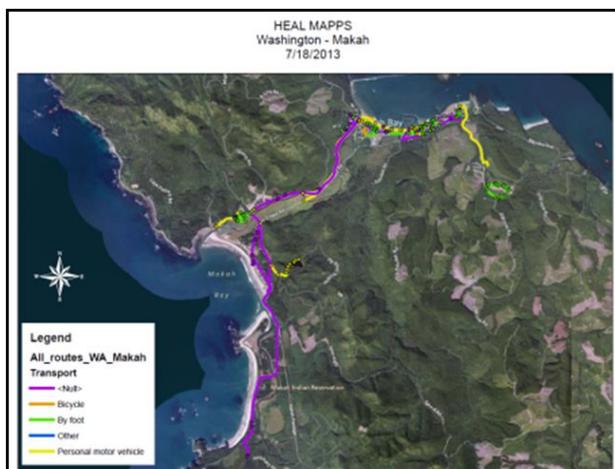
Makah Tribe Indian Reservation is located in Clallam County, Washington. The Reservation is situated in the most northwester point of Washington State where the waters of the Strait of Juan de Fuca meet the Pacific Ocean. The reservation has a population of 1,454 of which 73% are American Indian.ⁱⁱⁱ There are 2,886 enrolled Makah tribal members of which, 1,175 live on reservation.^{iv}

The Makah Reservation currently has many contemporary facilities and services including a cultural museum, a public school, a general store, a health clinic, a gas station and a few restaurants.

Relevance for Makah Community

According to the US Census Bureau, 50% of families with the Makah community have children under the age of 18. The median household income is \$32,027 and the poverty rate is 25%.^v In 2012, 65% of Neah Bay’s school children qualify for free and reduced lunch.^{vi} The adult obesity rate (ages 18 and older) on the Makah reservation is 47% while the obesity rate in Clallam County is 27%.^{vii} With this in mind, rural communities such as the Makah Reservation face unique challenges when it comes to healthy eating and active living. Like many rural communities, the Makah community has limited access to affordable and nutritious food. In looking at the factors that influence obesity in rural communities, it is important to consider the supports and barriers to healthy eating and active living. Helping children and adults further improve healthy eating and physical activity habits has been shown to minimize the risk of developing chronic diseases, such as diabetes and heart disease.

Generating Rural Options for Weight Healthy Kids and Communities (GROW HKC) is a USDA-funded, participatory childhood obesity prevention study conducted by Oregon State University’s Extension researchers in partnership with rural residents and communities. Community members were mobilized and trained to use HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys), our community resource and readiness tool, to assess community resources for



and readiness to improve and implement healthy eating and physical activity supports – environmental and policy actions to make easier these obesity preventing behaviors.

HEAL MAPPS™ projects conducted in partnership with rural communities across several Western States (AZ, CO, NM, NV, OR, WA) will provide evidence and insights that will drive the development of a rural obesity prevention model. The model will be used as a framework for rural community actions aimed to promote healthy

eating and physical activity behaviors, environments, and policies to prevent overweight and obesity among children and families.

The problem of obesity in children is in the forefront of nationwide research efforts and there are documented physical and mental health outcomes associated with childhood obesity that contribute to lifelong chronic health problems which may disproportionately affect people living in rural places. Rural residency tends to increase the risk of overweight and obesity for children and adults; the prevalence of childhood overweight and obesity is higher among children living in rural areas.

To date, most evidence-based strategies to combat the childhood obesity epidemic have been developed and tested in non-rural settings and target either individuals or environments. The overall goal of the GROW Healthy Kids and Communities (HKC) project is to learn more about the factors influencing health behaviors in rural places in order to prevent obesity in rural children **by improving their behavioral environments – at home, in school, and in the community** – to make healthy eating and activity options their easy and preferred choice.

Helping children develop healthy habits and providing healthy eating and activity supports to balance their energy intake with energy expenditure is an important aspect to maintaining healthy weight, preventing overweight and obesity, and minimizing chronic disease risk. Because obesity prevention among rural populations requires an understanding of the supports and barriers to healthy eating and active living within and among rural communities, we are pleased to provide this report of resources and readiness to prevent childhood obesity for the Makah community.

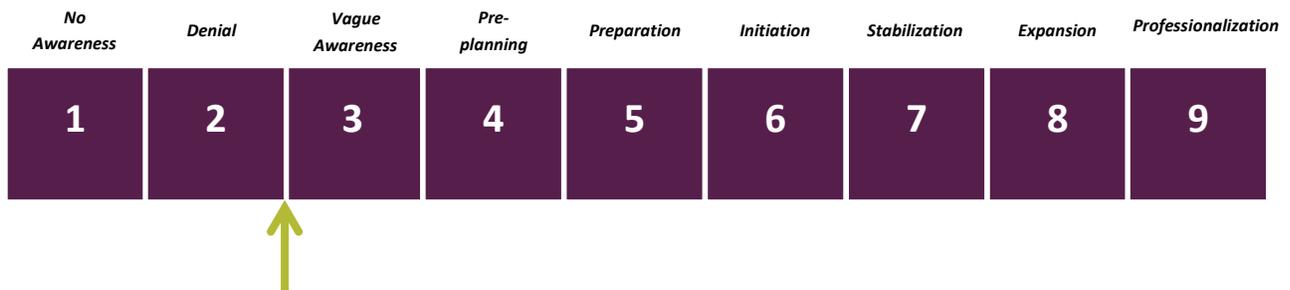
Methods and Preliminary Results

A HEAL MAPPS™ team (n=13) comprised of Makah community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Makah community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 180 photographs were taken and mapped along 15 routes that represented the community's active (i.e. walking, bicycling, skateboarding, etc.) and motor vehicle transportation system. The 'mappers' covered the land area included within the 46 square miles and included features in the surrounding unincorporated areas (see Figure 1). The HEAL MAPPS™ team reconvened to discuss the photographs and maps during a focus group meeting. Of the 181 photographs, the most relevant, based on group consensus, were included in a presentation to provoke a larger community conversation. Over 70 Makah residents and stakeholders attended and participated in a community dinner and discussion held at the Makah Community Hall on August 19th, 2013. The community conversation was facilitated by a member of the GROW HKC team trained to conduct HEAL MAPPS™ processes. Following the community dinner, photographs were displayed, participants were polled as to whether the feature made eating healthy or being physically active easier or harder for themselves or others in the community, and discussed their thoughts and feelings that led to their ratings.

Community Readiness

Communities differ in many ways including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively implemented and supported by a community. Therefore, assessing the level of readiness for obesity prevention efforts is a critical component of obesity prevention program planning and evaluation.

The Community Readiness Model is an assessment tool we apply to gain an understanding of the Makah community's resources and readiness for obesity prevention efforts. The assessment includes six dimensions that are known to influence a community's capacity and readiness to take action on an issue. The six dimensions are: community knowledge about the issue; community efforts; community knowledge of the efforts; local leadership; community climate; and local resources related to the issue. An overall score provides an indicator of the community's "stage of readiness" to address an issue. Makah's overall stage of readiness to implement environmental and policy strategies to prevent obesity is low on the scale, falling somewhere between stage 2 (denial) and stage 3 (vague awareness) as indicated by the arrow on the Stages of Readiness graph. Community readiness is issue and dimension specific – and may differ among groups within the community.



"The Community Readiness Model was developed at the Tri-Ethnic Center to assess how ready a community is to address an issue. The basic premise is that matching an intervention to a community's level of readiness is absolutely essential for success. Efforts that are too ambitious are likely to fail because community members will not be ready or able to respond. To maximize chances for success, the Community Readiness Model offers tools to measure readiness and to develop stage-appropriate strategies." More information about the model is available at:

http://triethniccenter.colostate.edu/communityReadiness_home.htm.

Assessment: Questions representing various aspects of each dimension were asked and explored during the Makah Community Conversation. Participant responses, reflecting the community members' experiences of resources and perceptions of Makah community readiness and preparedness for change, were transcribed verbatim. Each dimension was then coded and scored by three independent evaluators and combined to identify the overall stage of readiness.

Results: Several Makah community organizations such as the Tribal government and administration, the garden club and local fisherman emerged as supporting obesity preventing efforts that enable healthy

eating and physical activity habits. Makah community leaders are initiating and resourcing efforts directed towards improving physical activity resources (e.g. community center and fitness center, developing/connecting trail systems). Some local businesses and clubs supported and promoted healthy eating. These efforts and organizations contributed positively to the Makah community's overall readiness score.

A significant barrier that emerged across dimensions was a lack of consistent and planned communications around existing community efforts. Generally, information was not shared in a manner that was perceived as helpful for accessing available community resources or supporting obesity preventing behaviors, healthy eating and physical activity, and removing knowledge and environmental barriers to developing healthy lifestyle habits. The narrative data revealed that community members were unfamiliar with the role of the built environment on population health and preventive health behaviors; the conversation focused on individual needs and role of individual responsibility in overcoming barriers to poor health. Likewise, participants emphasized the importance of treating those who are already experiencing chronic health conditions related to lifestyle habits. Awareness of the need to prioritize and emphasize prevention efforts through improvements to the community healthy eating and physical activity environments and policies did not emerge. Specific environmental and/or policy barriers to physically active transportation and recreation were identified, including a lack of, unmaintained, and/or disconnected sidewalks, and pedestrian safety concerns due to an absence of lighting at trails and parks, traffic calming, and pet leashing regulations. The perceived barriers are included to provide information for community action groups to target efforts to improve the Makah food and physical activity environments to support obesity preventing behaviors and lifestyles.

Recommended Strategies Based on the Community Readiness Assessment Model

1. Suggest where and how current and future efforts to improve community and neighborhood conditions should be prioritized based on resident input and identified barriers; conduct public forums to develop strategies from the grassroots level; utilize key leaders and influential people to speak to groups and participate in local media, including newspaper, radio and television.
2. Strengthen communication networks to provide easy access for people to utilize information; publicize community events consistently and using various communication modes; provide information for others to get involved when they are ready.
3. Increase community members' knowledge and understanding about the relationship between the community environment and health; emphasize the importance of sharing how individuals experience barriers in the community--aspects that make engaging in healthy behaviors difficult.
4. Raise awareness that the leaders in Makah are committed to increasing supports and improving accessibility for physical activity and healthy eating for all community members.
5. Raise awareness that efforts to provide additional supports for behaviors to address childhood and community health are happening in Makah; launch a media campaign - post flyers, posters, and billboards to advertise current efforts.

6. Work with the WSU HEAL MAPPS™ team and utilize GROW Healthy Kids and Communities resources to gather more information from other community people; publish newspaper articles and editorials with general information related to the local situation around the food and physical activity environments. Build and communicate Makah's capacity to change – *Our Community can GROW Healthy Kids*.

For more information about the Community Readiness Model, stages of community readiness, and stage-based strategies to increase community readiness to address health issues visit:
<http://www.colostate.edu/Dept/TEC/article3.htm>.

For more information about GROW Healthy Kids and Communities visit:
<http://extension.oregonstate.edu/growthkc/about>.

Summary of Results based on Makah Community Conversation

Physical Activity

Supports

- Recent development of trails and paths which improve accessibility and walkability.
- Active leisure supports include the gym and wellness center.
- Public parks and playgrounds.

Barriers

- Lack of sidewalks and existing sidewalks are unmaintained or disconnected.
- Pedestrian safety concerns due to an absence of lighting in public places, traffic calming, and pet leashing regulations

Healthy Eating

Supports

- Community gardens and garden club provide access to healthy fresh fruits and vegetables for community members.
- Food assistance programs.
- Restaurant efforts to incorporate healthier foods.
- Head Start provides guidance around nutrition, healthy food and healthy living.

Barriers

- Lack of volunteers in the garden club to meet the demand of community members for raised beds.

Resident-Informed Recommendations for Community Change

The following recommendations emerged from the data generated during the Makah community conversation and represent those of the Makah community members who shared their ideas during the facilitated discussion of the photographed community features. These recommendations do not represent those of the GROW Healthy Kids and Communities project members or Oregon State University.

- Parking lots and road lines need to be painted; handicap parking spots should be marked to improve accessibility.
- Food sharing was recommended for community members who have gardens and would like to exchange their food for other types of food.

Figures 1 through 5 represent the routes navigated by local residents as they mapped the physical features of the Makah community using participatory photographic survey methods.

Figure 1. Represents all routes generated by the Makah community mappers.



Figure 2. Represents an example of a route generated while using a personal motorized vehicle. All photograph location coordinates are in decimal degrees.

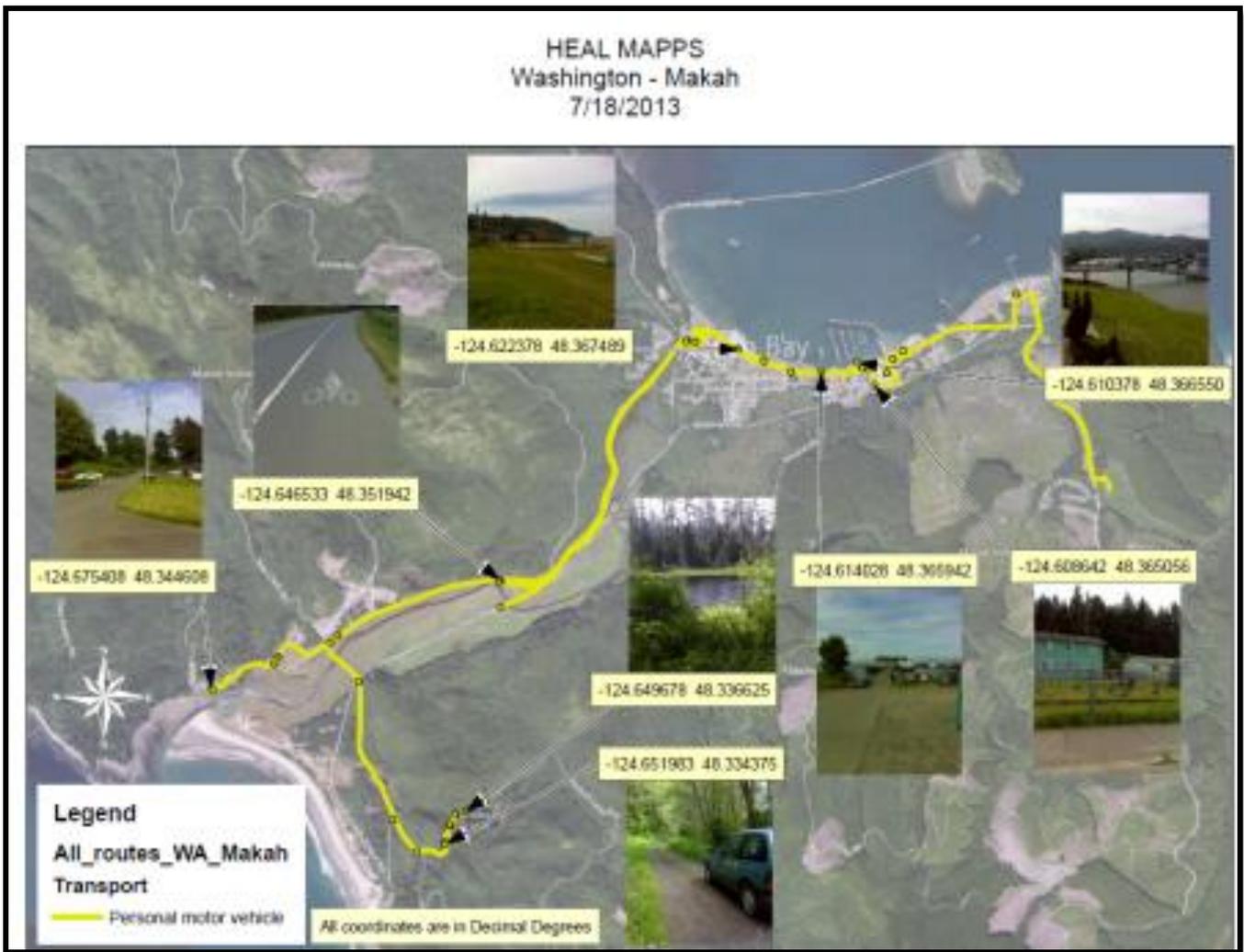


Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.

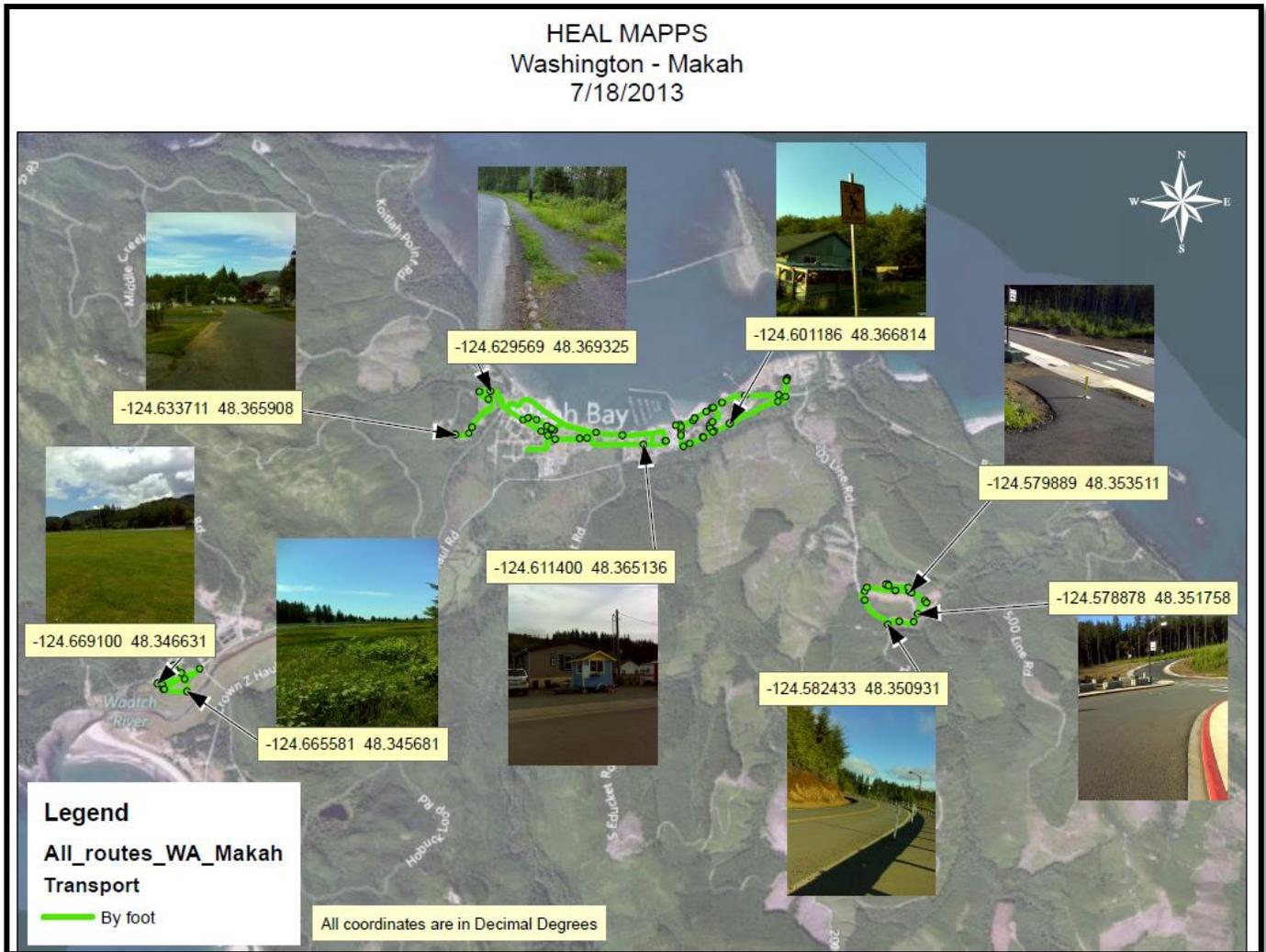
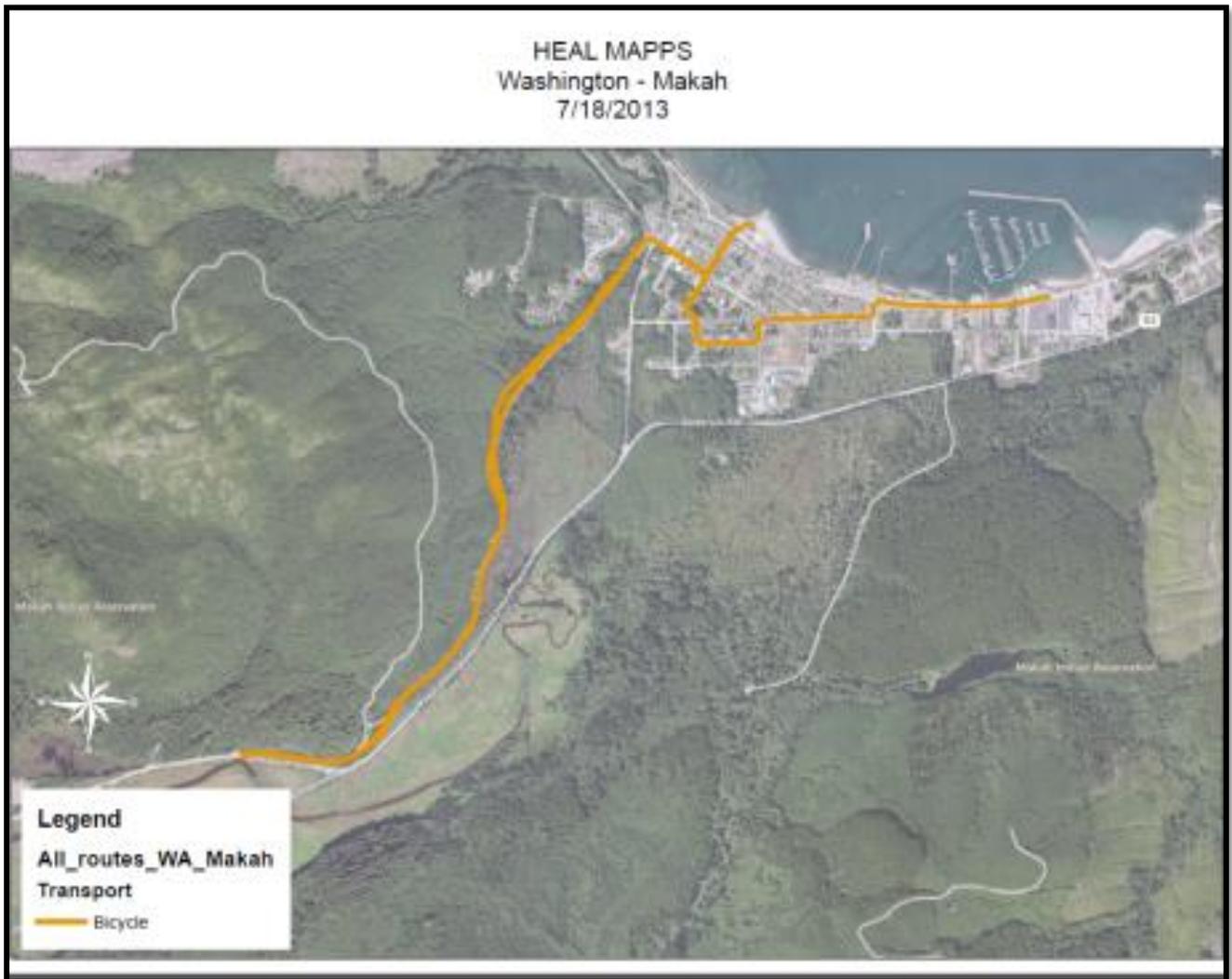
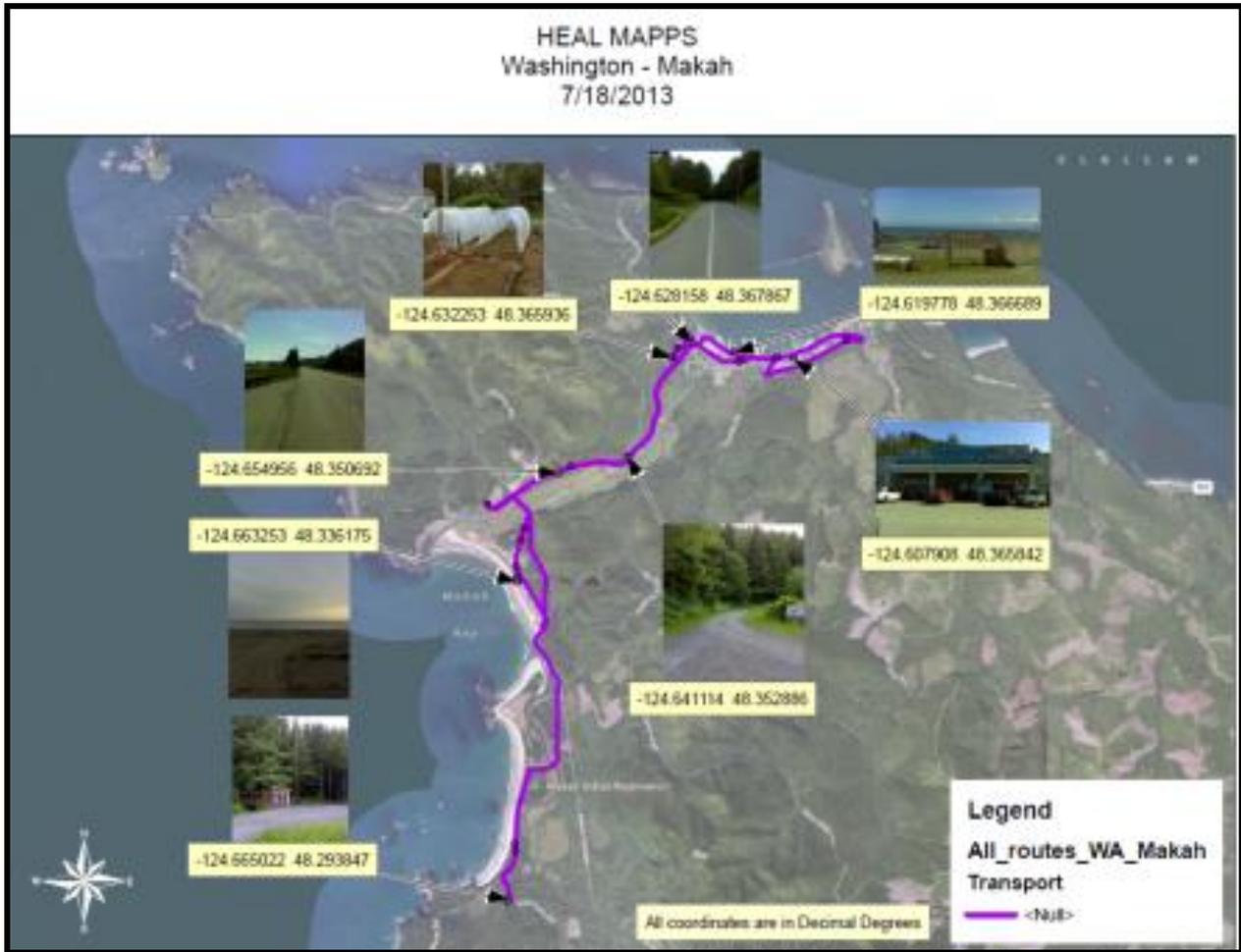


Figure 4. Represents a bicycle route.



Route 5. Represents a route generated by a mapper navigating the community by an unidentified mode of transportation.



References

- ⁱ Renker, Ann M., and Gunther, Erna (1990) —Makah in "Northwest Coast, ed. Wayne Suttles. Vol. 7 of *Handbook of North American Indians*, ed. William C. Sturtevant Washington, D.C.: Smithsonian Institution, pg. 429
- ⁱⁱ Renker Ann M, The Makah Tribe: People of the Sea and the Forest, Essay.
- ⁱⁱⁱ US Census Bureau, 2010.
- ^{iv} Makah Tribal Enrollment, 2012
- ^v US Census Bureau, 2007-2011 American Community Survey 5-Year Estimates
- ^{vi} Office of the Superintendent of Public Instructions, Washington State Report Card, 2000-2012.
- ^{vii} WA Behavioral Risk Factor Surveillance System, 2008-2010