

Colorado

HEAL MAPPS™

Community Reports



Colorado 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 MAPPS™ 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.

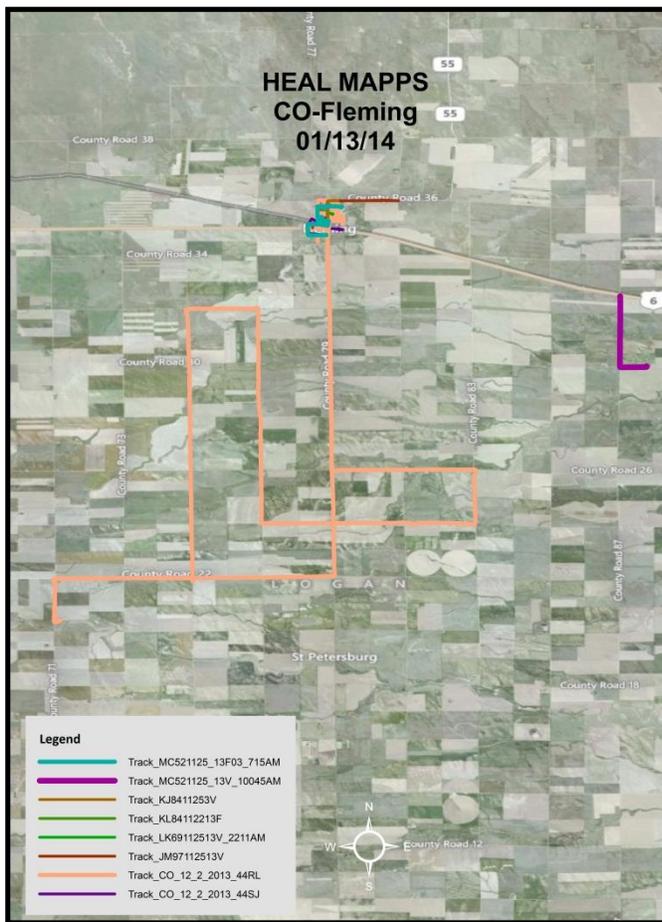
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Fleming Community HEAL MAPPS™ Report

Fleming is a rural community located in Logan County, Colorado. The population, based on the 2010 census, is 408.¹ The population has only slightly decreased since the 2000 census (pop. 426).² Fleming is a relatively young community, with a median age of 38 years, and over 60% of households are family households.¹ Fleming contains one school which houses grades K-12, one gas station, one restaurant, a community center, one bank, no grocery or convenience stores, and a grain co-op elevator where many residents are employed. There are three parks, a skate park, a football field, a track, and a baseball field, all of which may be utilized by community members outside of their general purposes.



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 Fleming 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). HEAL MAPPS™ is our community resource and readiness tool that evaluates community resources for and readiness to improve and implement

healthy eating and physical activity supports, along with environmental and policy actions, in order to facilitate 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 Fleming Community

According to the US Census Bureau, the percentage of families in Fleming with children under the age of 18 is 52.3%.³ The median household income is \$40,385 and the poverty rate is 16.2%.³ The percentage of families in Fleming that are below the federal poverty line is 8.4%; and 17.6% of these families have children under the age of 18.3 Colorado obesity rates for adults (20.5%) are the lowest in the nation, while Colorado ranks 23rd in the nation for childhood obesity with 23% of children, ages 2-14, being overweight or obese.⁴ Nearly a quarter (23.7%) of the population of Logan County residents were classified as obese in 2010.⁵ 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 Fleming.

Methods and Preliminary Results

A HEAL MAPPS™ team (n=12) comprised of Fleming community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Fleming community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 80 photographs were taken and mapped along 8 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 0.5 square miles of the city of Fleming 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 30 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Seven Fleming residents and stakeholders attended and participated in a community dinner and discussion held at the Fleming School on January 28, 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

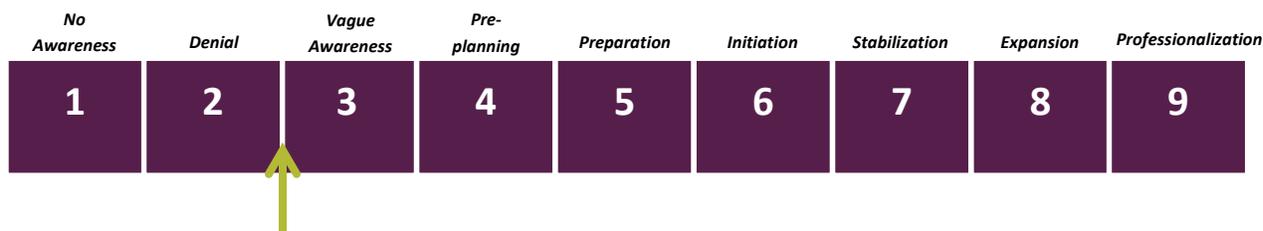
Communities differ in many ways, including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively implemented and supported by a community. Assessing the level of readiness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

The Community Readiness Assessment Model (CRM) is a tool we used to gain an understanding of the Fleming 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 Fleming Community Conversation, an Extension educator posed questions related to each of the dimensions and prompted discussion around Fleming’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.

Fleming’s stage of readiness to implement environmental and policy strategies to prevent obesity falls somewhere between stage **2** (denial) and stage **3** (vague awareness) as indicated by the arrow on the Stages of Readiness graph.

¹ The ‘mappers’ individually determined the community boundaries as within the city and unincorporated land approximately served by the Fleming school district.

Stages of Community Readiness



A few Fleming community organizations and efforts emerged as supports for healthy eating and physical activity, these included efforts by the school to establish a school garden and support athletic programs, and community-based athletic organizations. These efforts and organizations contributed positively to the readiness score given to the community.

Perceived barriers to healthy eating and physical activity include no access to healthy, fresh fruits and vegetables, unmaintained park/park equipment, and lack of recreational activities for youth not involved in sports or athletics. It seems community members are interested in developing community efforts to increase supports for physical activity and healthy eating; however, there is a lack of motivation to initiate the effort. Similarly, community members do not view this as an issue the community can address collectively, but instead are waiting for one or two individuals to take the lead. The narrative data revealed a disconnect between Fleming leaders interest in supporting weight healthy kids and communities, and community member's perception of leadership engagement in this effort. This provides an opportunity for Fleming leaders to become more engaged and to confirm their support for healthy eating and physical activity

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

- 1) Raise awareness that leaders in Fleming are committed to increasing supports and improving accessibility for physical activity and healthy eating for all community members.
- 2) 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.
- 3) Raise awareness that the community can do something about the problem, create a sense of urgency, communicate the magnitude of the problem, build and communicate Fleming'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 Fleming Community Conversation

Physical Activity

Supports

- School recreation programs/initiatives include youth sports programs.
- Outdoor trails and parks include playgrounds, skate park and sports court.

Barriers

- Lack of recreation programs/facilities for youth and adults.
- No indoor rec/exercise facilities, residents must travel to neighboring communities to use indoor facilities.
- Some parks and sports fields are not well maintained.
- Lack of sidewalks.
- Strong reliance on personal motor vehicle due to vast distances to resources.

Healthy Eating

Supports

- Efforts through the school include a new school garden.
- Local foods production including local agriculture.

Barriers

- Limited access to healthy, fresh fruits and vegetables; no grocery store.
- No healthy food retail options.

Resident-Informed Recommendations for Community Change

The following recommendations emerged from the data generated during the Fleming community conversation and represent those of the Fleming 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.

- Establish a food co-op in Fleming.

- Implement sports/non-sports afterschool recreation activities.
- Increase awareness among community members to become involved in this effort.
- Create a central location for information about Fleming, create a town website or a Google Document.

Figures 1 through 3 represent the routes navigated by local residents as they mapped the physical features of the Fleming community using participatory photographic survey methods.

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

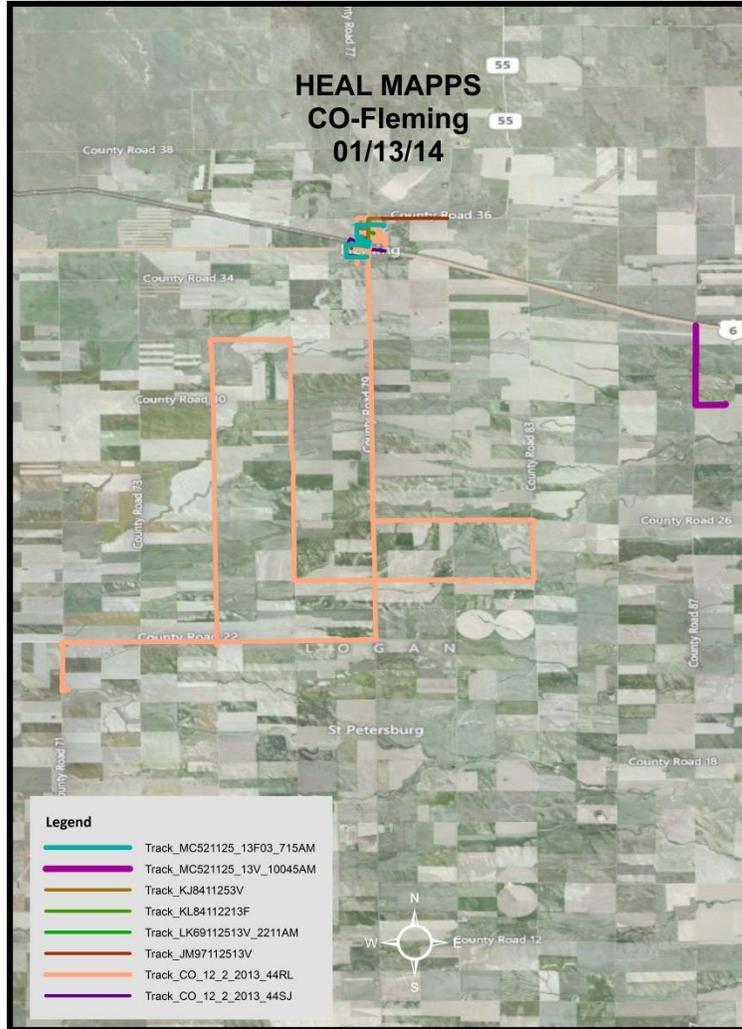


Figure 2. Represents an example of a route generated while using a personal motorized vehicle. All photograph location coordinates are in decimal degrees.

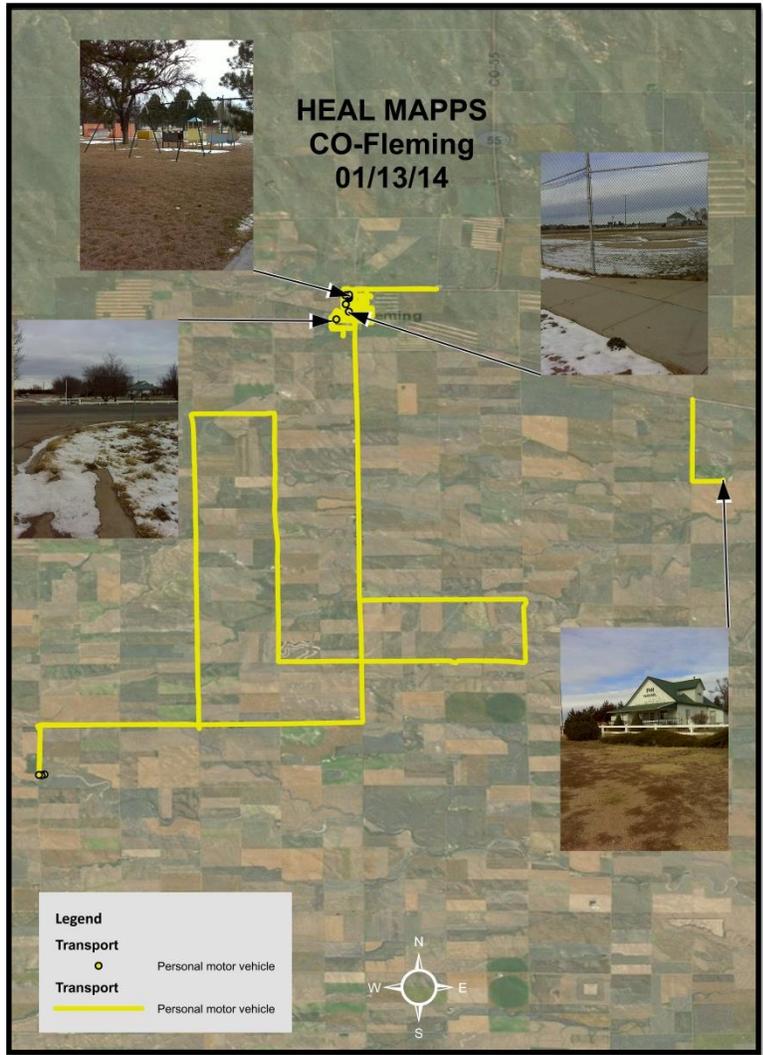
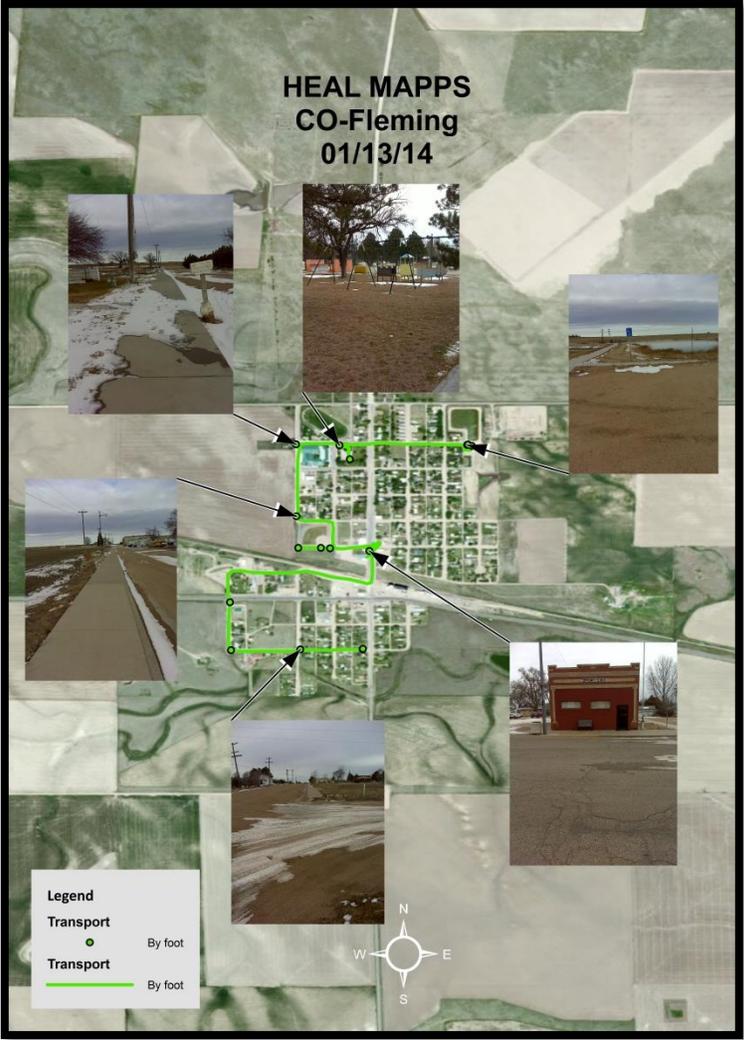


Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.



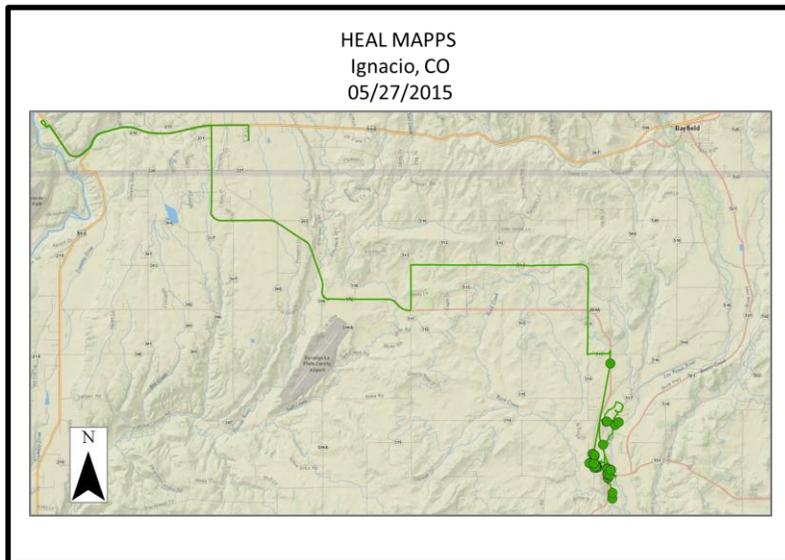
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1. Commerce USDo. Fleming town, Colorado. *Community Facts 2010*; http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml, 2014.
2. Bureau USC. Geographic Area: Fleming town, Colorado. 2000; <http://censtats.census.gov/data/CO/1600826875.pdf>. Accessed DP-1.
3. Bureau USC. Selected Economic Characteristics 200-2012 American Community Survey 5-Year Estimates. *American Fact Finder*: U.S. Department of Commerce; 2008-2012.
4. *Colorado Child Health Survey*: Colorado Department of Public Health and Environment;2010.
5. Obesity Prevalence, Year = 2010. In: Data C, ed: Centers for Disease Control; 2013.

Ignacio Community HEAL MAPPS™ Report

Ignacio is a rural city in LaPlata County, CO. Ignacio is located in the southeast corner of La Plata County and is situated near the Navajo Lake State Park, the San Juan Mountains and National Forest, the Mesa Verde National Park, and the Four Corners Region. Ignacio is home to the Southern Ute Indian Reservation and was named for their nineteenth-century leader, Chief Ignacio. ^{2,3} The average annual high temperature in Ignacio is 63.6 degrees Fahrenheit and the average annual low temperature is 29.6 degrees Fahrenheit with an annual average precipitation in rainfall of 14.0 inches. ⁴

Ignacio is a tri-ethnic community with a total population of 697. The population is 59.0% white, 16.9% American Indian and Alaska Native, 1.0% Black or African American, .10% Asian, 9.8% some other race, and 13.2% are two or more races. 47.1% are Hispanic or Latino of any race. ⁵ Ignacio is home to different businesses that include local family run restaurants, art galleries, grocery stores, banks, and clinics. ¹ The Ignacio School District 11-JT, including Elementary School, Middle School, and High School, serves hundreds of children from the Town all the way to the Colorado New Mexico Border. ⁶



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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

² <https://www.colorado.gov/pacific/ignacio/about-ignacio>

³ https://en.wikipedia.org/wiki/Ignacio,_Colorado

⁴ <http://www.usclimatedata.com/climate/ignacio/colorado/united-states/usco0203>

⁵ <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

⁶ <http://www.ignacioschools.org/IES/>

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 (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 Ignacio Community

The median household income in Ignacio is \$49,375, and 16.3% of the population is below the poverty line. The median age in Ignacio is 38.4 – 33.5% of households in Ignacio have children under the age of 18.⁷ The obesity rate for adults in LaPlata County is 16.2% compared to the state rate of 20.6%, and the percent of children aged 2-14 years in LaPlata County who are overweight or obese is 21.9% compared to the state rate of 28.1%. In 2013, 26.1% of children in LaPlata County reported eating fruits and vegetables five or more times per day, and 47.4% of them reported eating fast food one or more times in the past week. While physical activity data

⁷ http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

is limited for LaPlata County, data suggests that in Region 9 of CO, nearly 50% of children are not getting recommended amounts of physical activity.⁸

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 Ignacio.

Methods and Preliminary Results

A HEAL MAPPS™ team (n=8) comprised of Ignacio community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Ignacio community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 60 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 47 linear miles included within the 0.3 square miles of the city of Ignacio and included features in the surrounding unincorporated areas (see Figure 1).⁹ The HEAL MAPPS™ team reconvened to discuss the photographs and maps during a focus group meeting. The most relevant 34 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Five Ignacio residents and stakeholders attended and participated in a community dinner and discussion held at the Ignacio School District Administration Building on May, 5 2015. 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.

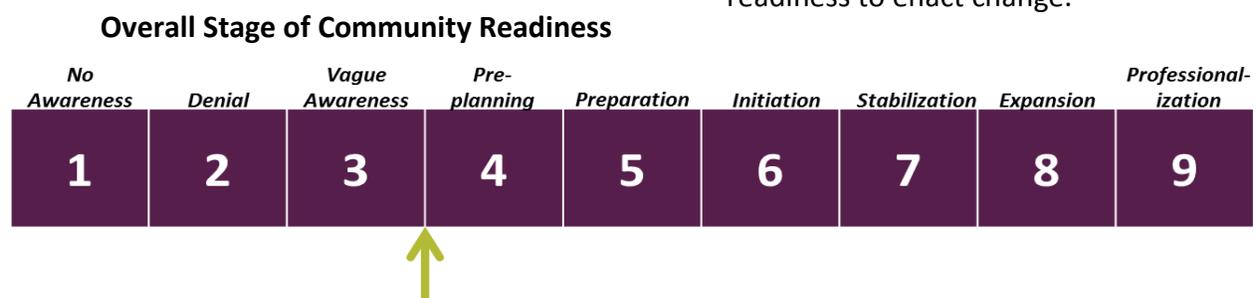
⁸ <http://www.chd.dphe.state.co.us/HealthIndicators/home/index>

⁹ The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the Ignacio school district.

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 Ignacio community's resources and collective 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. During the Ignacio Community Conversation, the audience was asked to focus on and discuss the photographed features, and were polled confidentially, prompted to share their opinions, and asked open-ended questions representing the various dimensions. Thus the discussion narrative revealed the collective perceptions of Ignacio's community readiness and preparedness for change. Two independent evaluators coded the narrative and conversation photographs into physical activity and nutrition resources and readiness dimensions. The data were organized according to an anchored rating scale and scored independently by evaluators and combined to provide a score for the overall stage of readiness to enact change.



Resources and Efforts

Several Ignacio community organizations and individuals emerged as resources and supportive efforts for healthy eating and physical activity. Schools emerged as a supportive resource for both physical activity and healthy eating. Specifically, the elementary school PE program and teacher reinforces physical activity by running with the kids and helping them mark their

progress using pedometers. Additionally, there is a fresh fruit and vegetable program grades K-5, which insures at least one serving a day of fruits or vegetables for every child. The Tribe also emerged as a support: they are aware of the benefits of being physically active and endorse efforts in that arena. For example, they support the schools and the community by awarding grant funding to the elementary school physical education teacher for healthy eating and active living education and the school garden; they also administer the shining mountain diabetes program. Finally, the recreation center also emerged as a support for physical activity for both adults and children alike. All of these resources positively influenced the community readiness scores for Ignacio.

Some of the resource gaps and major barriers to eating healthy and being physically active that emerged from the data were the lack of a full service grocery store and transportation. While a grocery store is being built in the community, the community is currently without a full service grocery store, causing many to shop at convenience stores. Transportation is an issue that is largely related to the rurality of the community and spatial access. For example, students who live far outside of city limits are bused to school. Families rely on personal motor vehicles to access resources. Those who don't or can't drive themselves may have no other means of transportation. The narrative data revealed the level of training (of community leaders), community knowledge of effective community strategies to address the issue of childhood obesity and prevent unhealthy weight gain as a barrier to community weight health.

Supports and barriers were considered together and influenced Ignacio's community readiness scores. Ignacio's overall stage of readiness to implement environmental and policy strategies to reduce rural obesity risk and prevent unhealthy weight gain among the community's children and families falls somewhere between stage **3** (Vague Awareness) and **4** (Pre-planning) as indicated by the arrow on the Stages of Readiness graph. Based on the Community Readiness Assessment Model, community efforts should focus on: 1) raising awareness that the community can do something about the problem, and 2) prioritizing where and how community efforts should be focused.

Vague Awareness: Get on the agendas and present HEAL MAPPS™ information at local community events and to unrelated community groups. Post results flyers, posters, and billboards. Begin to initiate your own events (potlucks, etc.) and use those opportunities to present information on and discuss the issue. Conduct informal local surveys and community readiness interviews with community people. Publish newspaper editorials and articles with general HEAL MAPPS™ findings and local implications.

Preplanning: Introduce HEAL MAPPS™ findings and other information about the issue through presentations and media. Visit and invest community leaders in the cause – share the results. Review existing efforts in the community (curriculum, programs, activities, etc.) to determine

who the target populations are and consider the degree of success of the efforts. Utilize HEAL MAPPS™ outcomes - data, reports, and presentations, to conduct local focus groups to discuss issues and expand partnerships to develop strategies. Increase media exposure through radio and television public service announcements.

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 the Community Tool Box at <http://ctb.ku.edu/en/table-of-contents/overview/models-for-community-health-and-development/community-readiness/main>.

Summary of Results based on Ignacio Community Conversation

Physical Activity (10 references)

Supports – 7 references

- Tribal
 - Facilities including the recreation center
 - Summer games, fun run and dances held by Southern Utes
 - Grant funding for education and garden support
- Schools
 - New track and field at High School
 - PE teacher leads runs with students
 - School Garden
- Outdoor parks and playgrounds

Barriers – 3 references

- Built Environment
 - Most children ride bus to school instead of walking or biking
 - Unsafe to walk and bike on some roads
- Economics and education level are barriers to be physically active for some

Healthy Eating (13 references)

Supports – 8 references

- Elementary school
 - Garden program including education on healthy lifestyles and eating
 - Fresh fruit and vegetable program
- Tribal
 - Diabetes program

- Grant support for education programs and school garden
- Retail Environment
 - Health food store
 - New grocery store being built
 - Some healthy options at local restaurants
- Local food
 - Cattle Farms

Barriers – 5 references

- Retail Environment
 - Community members forced to shop at convenience stores because grocery store is under construction
 - Food wagons only serve unhealthy food
- School Environment
 - Teachers reward students with candy
 - High school students are given unhealthy food by parents or are allowed to leave campus to purchase unhealthy foods
- Social determinants - income and education level – emerged as barriers to eating healthy for some (lower levels).

Resident-Informed Recommendations for Community Change

The following recommendations emerged from the data generated during the Ignacio community conversation and represent those of the Ignacio 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.

- Return to old style of local grocer with local, fresh, non-processed beef and other foods

Figures 1 through 3 represent the routes navigated by local residents as they mapped the physical features of the Ignacio community using participatory photographic survey methods.

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

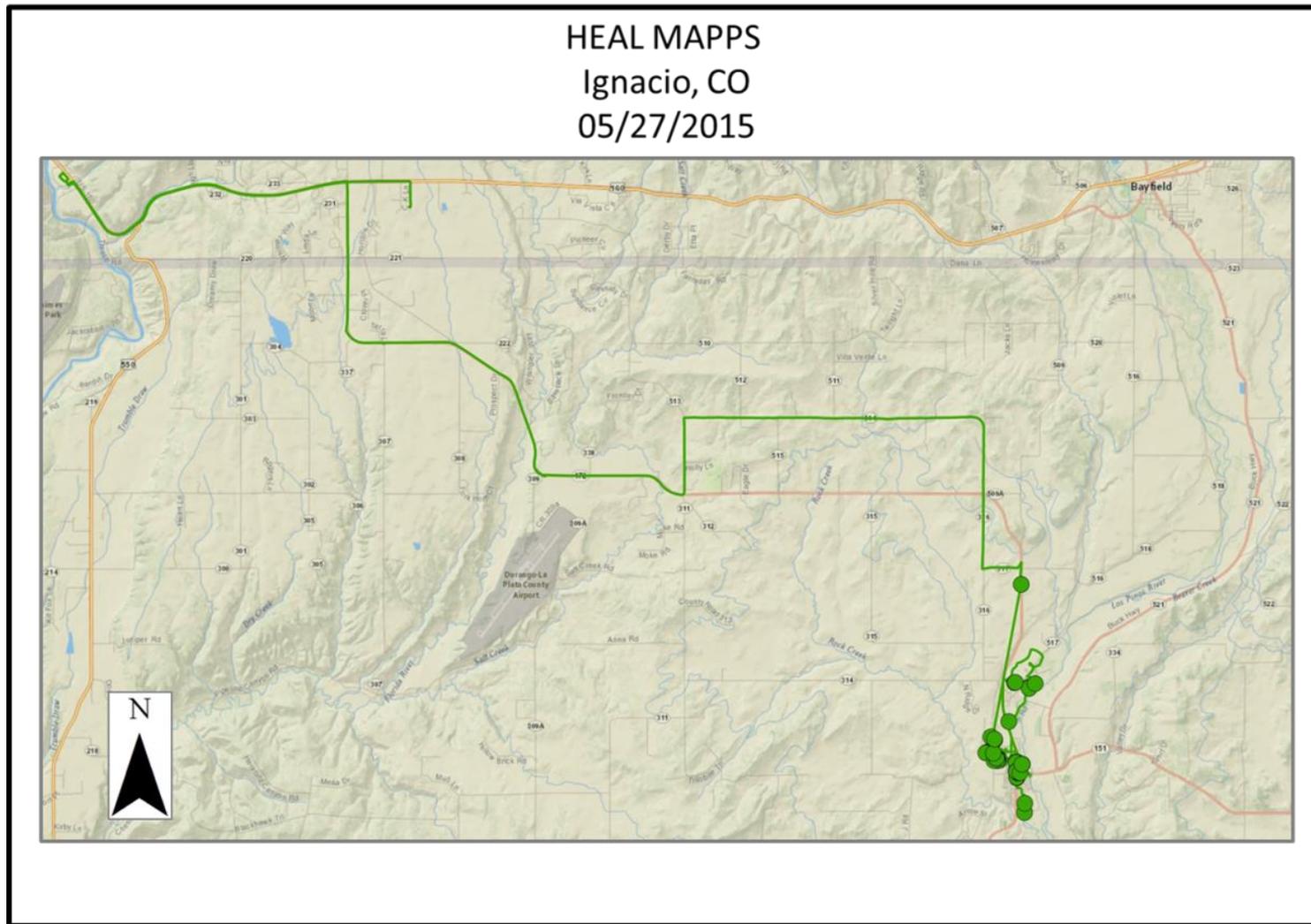


Figure 2. Represents an example of a route generated by the Ignacio community mappers and the barriers and supports encountered

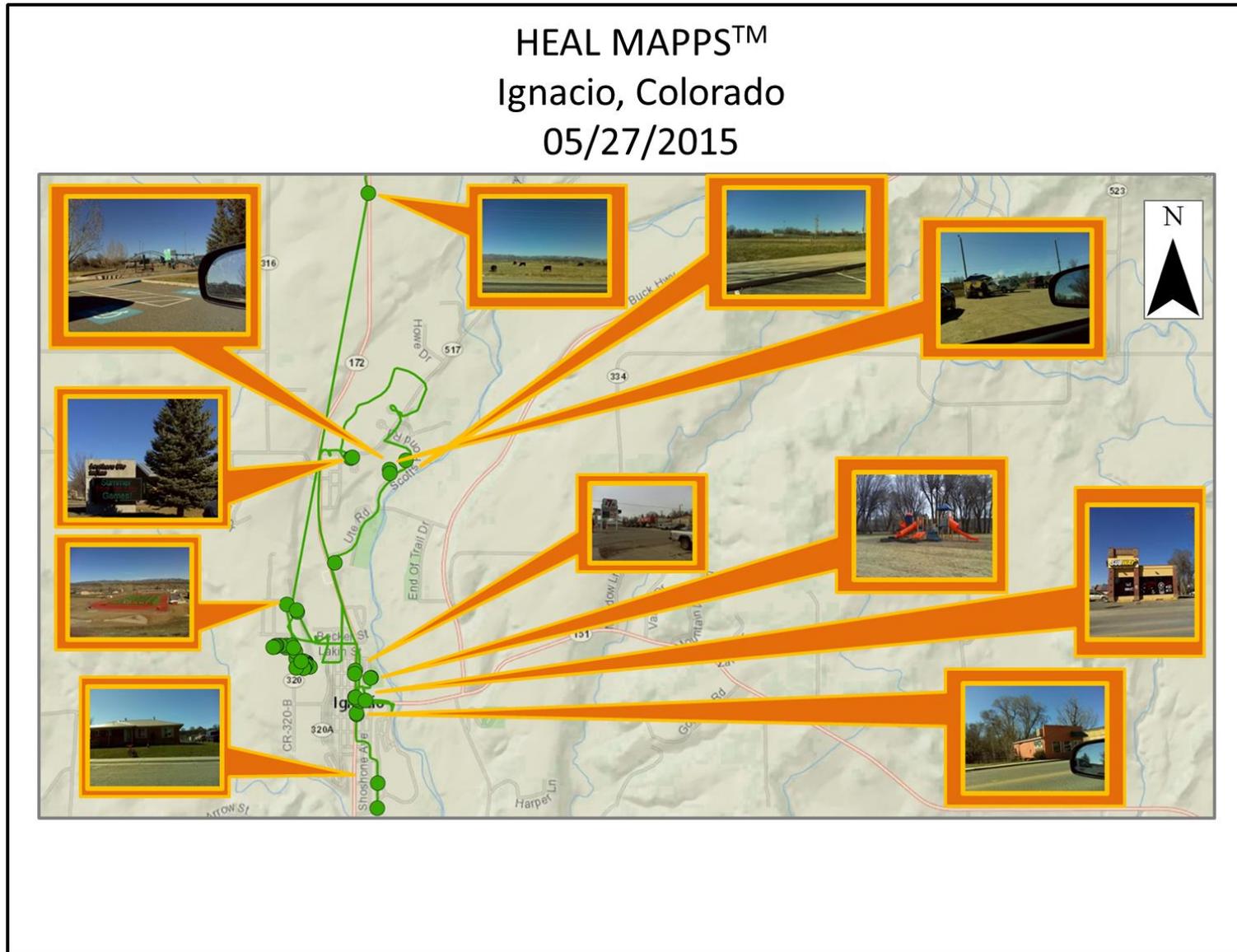
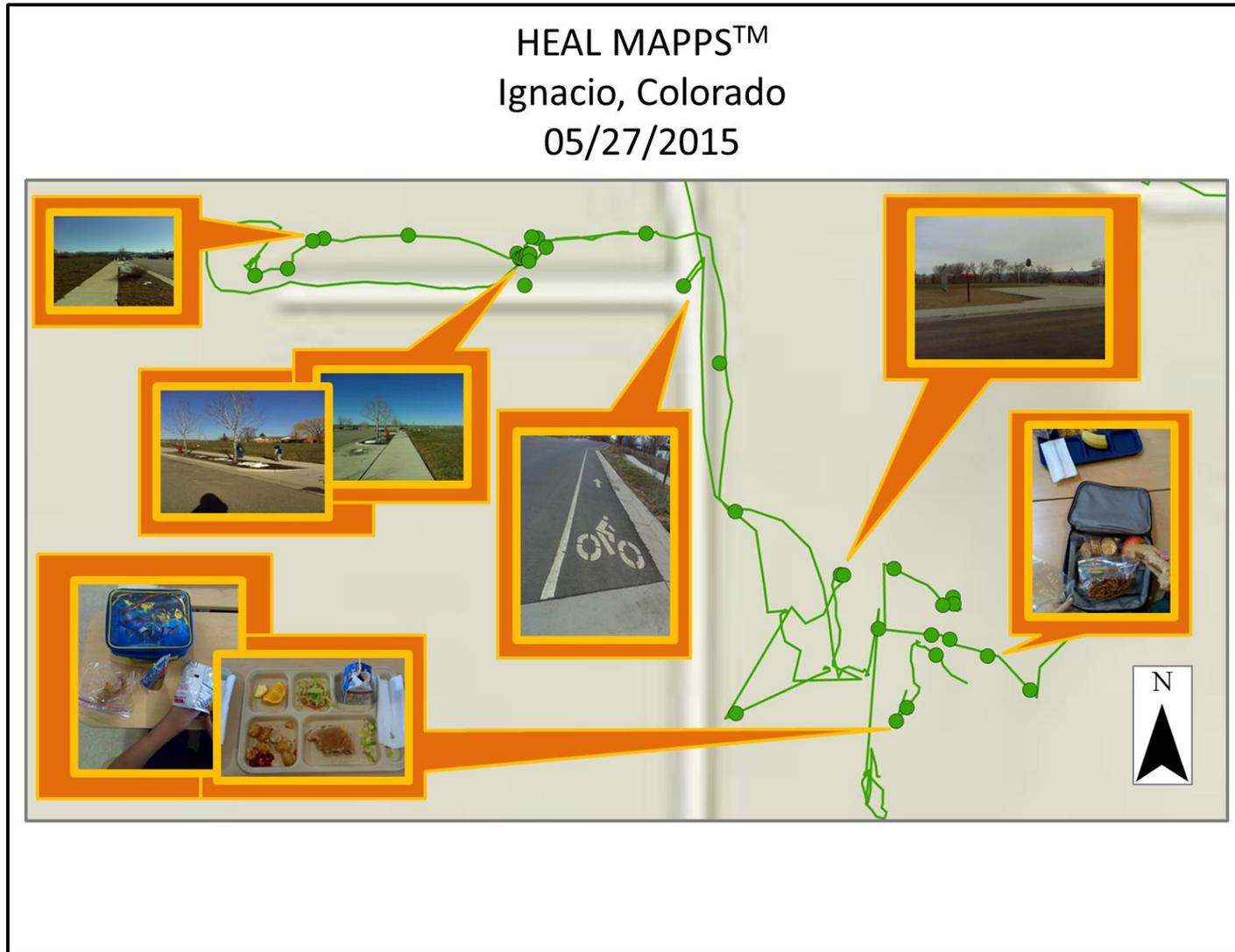


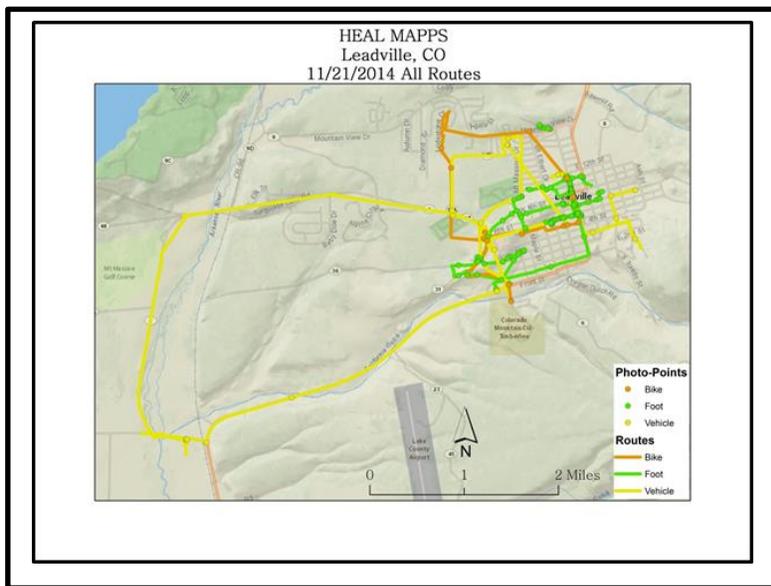
Figure 3. Represents an example of a route (zoomed in for detail) generated by the Ignacio community mappers and the barriers and supports encountered



Leadville Community HEAL MAPPS™ Report

Leadville is a rural city located in Lake County, Colorado. Situated in the heart of the Rocky Mountains, Leadville was once a silver mining town, whose economy was long sustained by mining. The city is situated at 10,152 feet and is the highest incorporated city in the United States.¹⁰ The annual average temperature in Leadville is 35 degrees Fahrenheit. Average annual precipitation is approximately 12 inches, and average annual snowfall can reach to over 200 inches.¹¹ The total population of Leadville is 2,821, which is comprised of 84% white, 0.14% African American, 1.3% Native American, 0.32% Asian, 0.11% Pacific Islander, 12% other races, and 2.3% from two or more races. Hispanic or Latino of any race accounts for 25-45% of the total population.¹²

The Lake County School District includes 4 schools that serve the community of Leadville: The Center Early Childhood Programs (Preschool), West Park Elementary School (Grades K-2nd), Lake County Intermediate School (Grades 3rd-6th), and Lake County High School (Grades 7th-12th).¹³ Leadville is also home to St. Vincent General Hospital, a 25-bed critical access hospital providing a variety of services.¹⁴ There are a plethora of recreational activities available in Leadville including hiking, biking, fishing, golfing, racing, marathons, skiing, and snowshoeing. To give one example, the Mineral Belt trail is an 11.6 mile non-motorized multi-use paved pathway that makes its way through the historic Leadville Mining District.³



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¹⁰ http://en.wikipedia.org/wiki/Leadville,_Colorado

¹¹ <http://www.usclimatedata.com/climate/leadville/colorado/united-states/usco0235>

¹² http://www.cityofleadville.com/#!/__demographics

¹³ <http://www.lakecountyschools.net/about-us/>

¹⁴ <http://www.svghd.org/about-us>

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 (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 Leadville Community

According to the US Census Bureau, 49% of family households in Leadville have children under the age of 18.¹⁵ The median household income is \$39,976, and approximately 7% of the population is below the poverty line. The obesity rate for adults in Lake County is 17% and for the whole of Region 13 of Colorado the rate is 22.7%, compared to the state average of 20%. The obesity rate for children aged 2-14 in Region 13 is 19% compared to the state average of 15%. In 2012, nearly 50% of children aged 1-14 ate fast food one or more times in the past week, and 23% consumed sugar-sweetened beverages one or more times per day. While

¹⁵ <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

physical activity data is lacking for children in this region and county, data shows that just under half of all adults in Lake County are not getting the recommended amount of daily physical activity.¹⁶

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 Leadville.

Methods and Preliminary Results

A HEAL MAPPS™ team (n=11) comprised of Leadville community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Leadville community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 117 photographs were taken and mapped along 12 routes that represented the community's active (i.e. walking, bicycling, skateboarding, etc.) and motor vehicle transportation system. The 'mappers' covered approximately 43 road miles included within the 1.1 square miles of the city of Leadville and included features in the surrounding unincorporated areas (see Figure 1).¹⁷ The HEAL MAPPS™ team reconvened to discuss the photographs and maps during a focus group meeting. The most relevant 36 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Leadville residents and stakeholders attended and participated in a community dinner and discussion held at the Colorado Community College on January 15, 2015. 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, approximately a dozen 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 Allison Collins and Tatyana Bartik.

¹⁶<http://www.chd.dphe.state.co.us/HealthIndicators/indicators.aspx?dID=5&sdID=32&clD=65&rID=13>

¹⁷ The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the Leadville school district.

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.

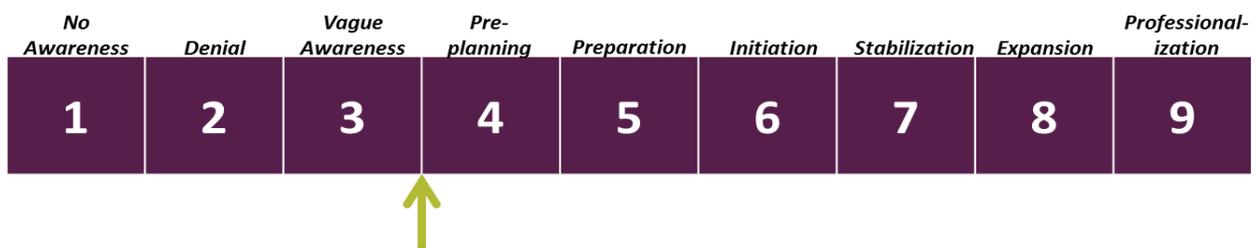
The Community Readiness Assessment Model is a tool we used to gain an understanding of the Leadville community's resources and readiness for obesity prevention efforts. The assessment is divided into six dimensions that explain where a community is situated in inclination to take action on an issue. 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 Leadville Community Conversation and the participants shared their perception of Leadville readiness and preparedness for change. Each dimension was then scored by two independent evaluators and combined to identify the overall stage of readiness.

To better understand the local resources and community efforts related to the issue of environmental factors that influence rural weight health, photographs and community conversation narratives were coded into "food/healthy eating" and "physical activity;" "supports" and "barriers." Several Leadville community organizations emerged as supports for healthy eating and physical activity. Of note were the efforts by the schools to address food and physical activity issues using the school wellness programs and school wellness teams, as well as measuring school health policies and practices. Also mentioned were several health non-profit groups conducting healthy eating active living surveys and program evaluations in the community (e.g. Colorado Health, Live Well, etc.). Other efforts that emerged as supports for eating healthy and being physically active were afterschool programs (e.g. swim club, youth hockey, basketball) as well as various outdoor recreation areas (e.g. mineral belt trail, sports fields, San Isabel National Forest). The level of supports for healthy eating and physical activity is reflected positively in Leadville's overall community readiness score.

Barriers, most specifically in terms of the existing community resources and community climate, contributed negatively to Leadville's overall readiness score. Leadville community members discussed their interest in eating healthy and explained efforts aimed at increasing local access to fresh produce. However, community members acknowledged that not all community members have easy access to healthy food and fresh produce. Transportation and distance to healthy food access, as well as the variety of options, were cited as major barriers to eating healthy for Leadville residents. Lack of transportation options resulting in a dependence on a personal motor vehicle was also cited as a barrier to daily physically active for some residents.

While some people were interested in growing produce at home, the high altitude climate and extremely short growing season was acknowledged as less than optimal for efforts such as those. Climate was also cited as a seasonal barrier for physical activity: during the winter months the trails and sidewalks are snow covered or icy. Lack of maintenance and/or funding for maintenance of resources was also cited as a barrier. Walking into town was discussed as an enjoyable activity by some community members. Generally, the absence of or unmaintained sidewalks and lack of traffic calming features emerged as barriers to walking for transportation or physical activity for many in the community. A community cultural barrier that emerged from the narrative was explained as low levels of community engagement, perceived as stemming from a lack of education, interest or time.

Stages of Community Readiness



Leadville’s overall stage of readiness to implement environmental and policy strategies to support weight healthy lifestyles and reduce rural obesity risk falls somewhere between Stage 3, Vague Awareness, and Stage 4, Pre-planning for Action, as indicated by the arrow on the graph. Based on the Community Readiness Model stage-matched strategies, community efforts should focus on: 1) raising awareness that the community can do something about the problem, and gathering/using existing information about the obesity problem, especially childhood obesity, the local food environment and physical activity resources in order to plan community actions; 2) providing suggestions, based on resident input and reliable data (e.g. identifying barriers) as to where and how efforts should be focused. Information should be presented at local community events, at events initiated by weight health stakeholders and partners, and information on the issue shared with unrelated groups; a media campaign - post flyers, posters, and billboards – should be used to spread the message. Work with academic and health partners, like Colorado State University and Extension, to gather additional information from other community residents and groups, write and publish newspaper articles and opinion editorials with general information related to local situation. Raise awareness that efforts to address childhood obesity are happening in Leadville and 3) start planning how to evaluate the successes of your efforts to change the context for weight health. For example, conduct height-weight assessments with youth recreation programs to track obesity risk among young people; sponsor a community picnic or fun-run to kick off the weight healthy community campaign; 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 Leadville'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 Leadville Community Conversation coded into Thematic Categories

Physical Activity (41 references)

Supports –23 references

Schools

- *Team in schools that addresses food and physical activity*
- *Get the lead out campaign*
- *After school programs: swimming club, soccer and basketball programs, youth hockey, ice skating*
- *School sports fields*

Active Recreation

- *Pool*
- *Mineral belt trail both for all season activities*
- *Park*
- *Recreation department programs*
- *Soccer fields, basketball courts*
- *Winter sports areas*
- *Open trail space in natural areas (car free?)*
- *San Isabel National Forest*
- *Leadville outdoor shop*

Active Transportation

- *Bike racks*
- *Bike club*
- *Paved trails*
- *Some traffic calming features (signals, signs, and crosswalks)*

Supportive Partners and Technologies

- *Websites, visitor center, and the newspaper for access to information*
- *Small groups evaluating and surveying programs (e.g. Colorado Health Grant, Live Well, etc.)*
- *“Build a generation” initiative*
- *Community champion*

Barriers –18 references

Structures/infrastructure

- *Hot tub is closed*
- *No big indoor space for seniors*

Transportation/automobile dependence

- *Lack of transportation to senior center*
- *Lack of sidewalks lack of connectivity and sidewalks are covered in ice/snow in winter*
- *Lack of traffic calming features on some roads*
- *Lack of transport for some*
- *Lack of traffic calming features (crosswalks) or they are ignored*
- *Lack of berm, bike lane or space to share the road*
- *Limited walkability/connectivity to town*

Economy/funding

- *Lack of maintenance at some resources (trash, old equipment)*
- *Lack of sidewalks or sidewalk maintenance (broken, ice covered etc.)*
- *Lack of funding for maintenance of facilities or for programs*

Communications/information systems

- *Lack of bilingual materials*
- *Lack of signage to promote road sharing*
- *Remoteness/spatial*
- *Very far from anything so getting someone who knows how to fix or maintain things is difficult*
- *Winter rec is equipment heavy and expensive*
- *Winter weather makes it difficult to walk/ride bikes*
- *Some community members adverse to change*

Healthy Eating (27 references)

Supports – 16 references

Schools

- *wellness program*
- *Team in schools that addresses food and physical activity*
- *School lunches include healthier foods*
- *Scratch cooking at school program*
- *School districts efforts to measure health policy and practice and put that information out*

Supportive Partners and Technologies

- *Building efforts towards bringing more fresh produce into town*
- *Community members are increasing interested in eating healthy*
- *Community members lend their expertise on nutrition*
- *Library gardening program*
- *Small groups evaluating and surveying programs (e.g. Colorado Health Grant, Live Well, etc.)*
- *Websites, visitor center, and the newspaper for access to information*
- *Build a generation*
- *Some community businesses offer healthy food options*

Barriers –11 references

Transportation/automobile dependence

- *Need to drive outside of town to get most groceries*
- *Lack of demand in community for healthy foods because people end of shopping where they work (outside of town).*
- *Access to, and variety of, healthy food is somewhat limited*
- *Lack of transportation to access healthy food*

Climate

- *Community members do not know how to eat healthy*
- *Community members do not have time to engage with schools or education.*
- *Lack of bilingual communication*
- *Climate is a barrier to growing food*

Economy/Funding

- *Lack of funding to support programs*
- *Lack of education supports*

Resident-Informed Recommendations for Community Change

The following recommendations, represented as paraphrased statements, emerged from the data generated during the **Leadville** community conversation and represent those of the **Leadville** 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 or Oregon State University; nor do they represent Colorado State University or CSU Cooperative Extension.

Participating residents and community leaders proclaimed:

Structural Changes

Sidewalks would help

In the winter [they] bike racks are completely buried under snow. The bike racks are not near the entrance. We would love to see more of this around town.

Beautifying streets (trees) and adding traffic calming features (bump-outs)

More bike racks or bike supports

Community Engagement

People need to attend meetings to express their opinion. Voices need to be heard, elected officials need to hear.

Collaboration

When people come together and talk about bike-ability and walkability, to collaborate and figure out what a solution would be, together we figure out how to make that happen. So often what we can do is get together with people to create solutions.

Academic-Community Partnerships

With all of the grants, etc. we need evaluation with everything.

Other organizations might be the best answer to this solution. They just need more man power.

Education

A huge portion of this community doesn't know how to eat healthy as it is. We need more education in the community.

More education in terms of healthy eating

Cultural Tailoring

Bilingual rec sports material and newspapers needed

Transportation/funding

Transportation is limited for some (seniors/folks with limited means)

Need ongoing funding for after school programs and to maintain facilities like the pool, hotub

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

Figure 1. Represents all routes generated by the Leadville, CO community mappers.

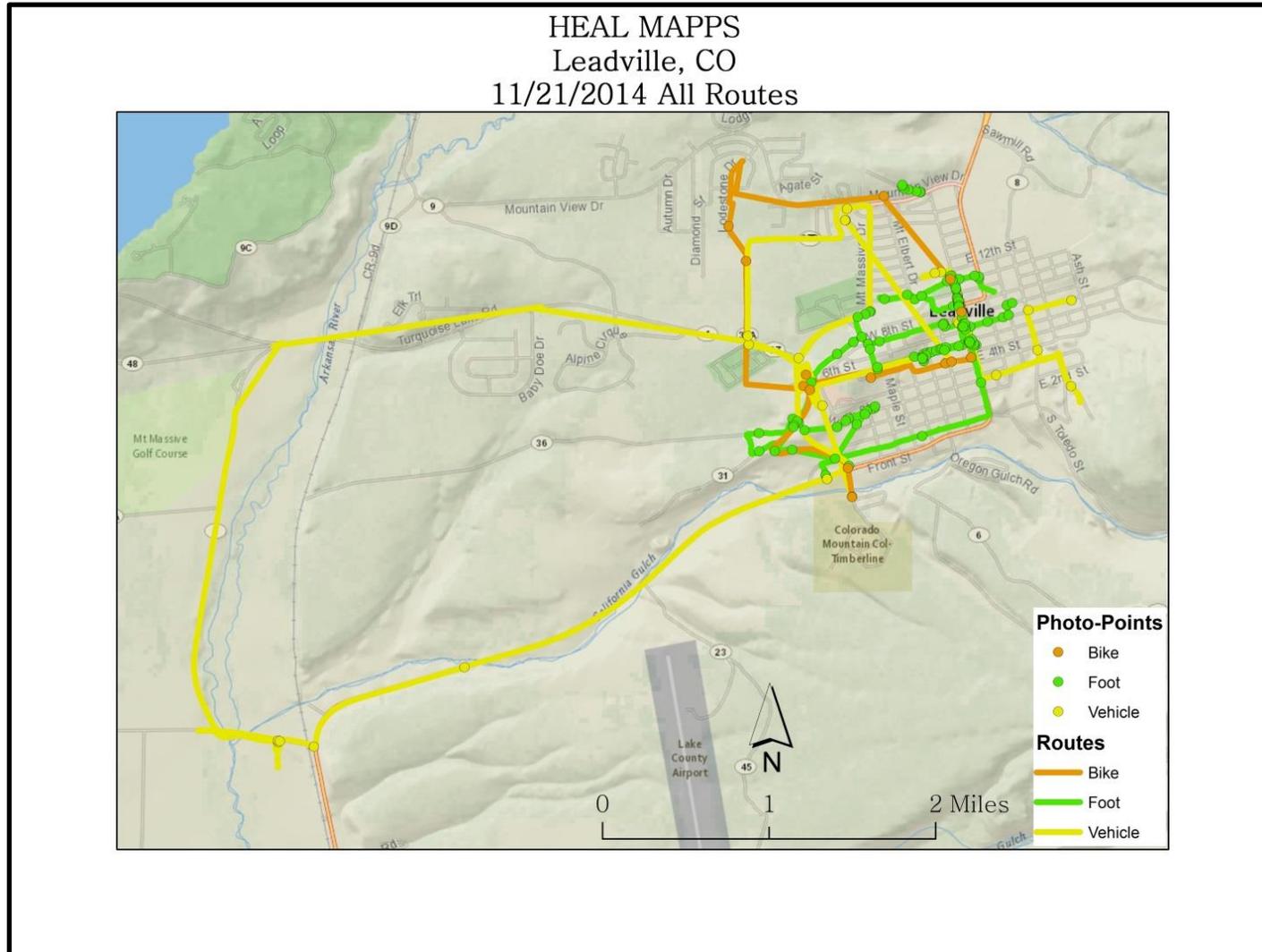


Figure 2. Represents an example of a route generated while using a personal motorized vehicle.

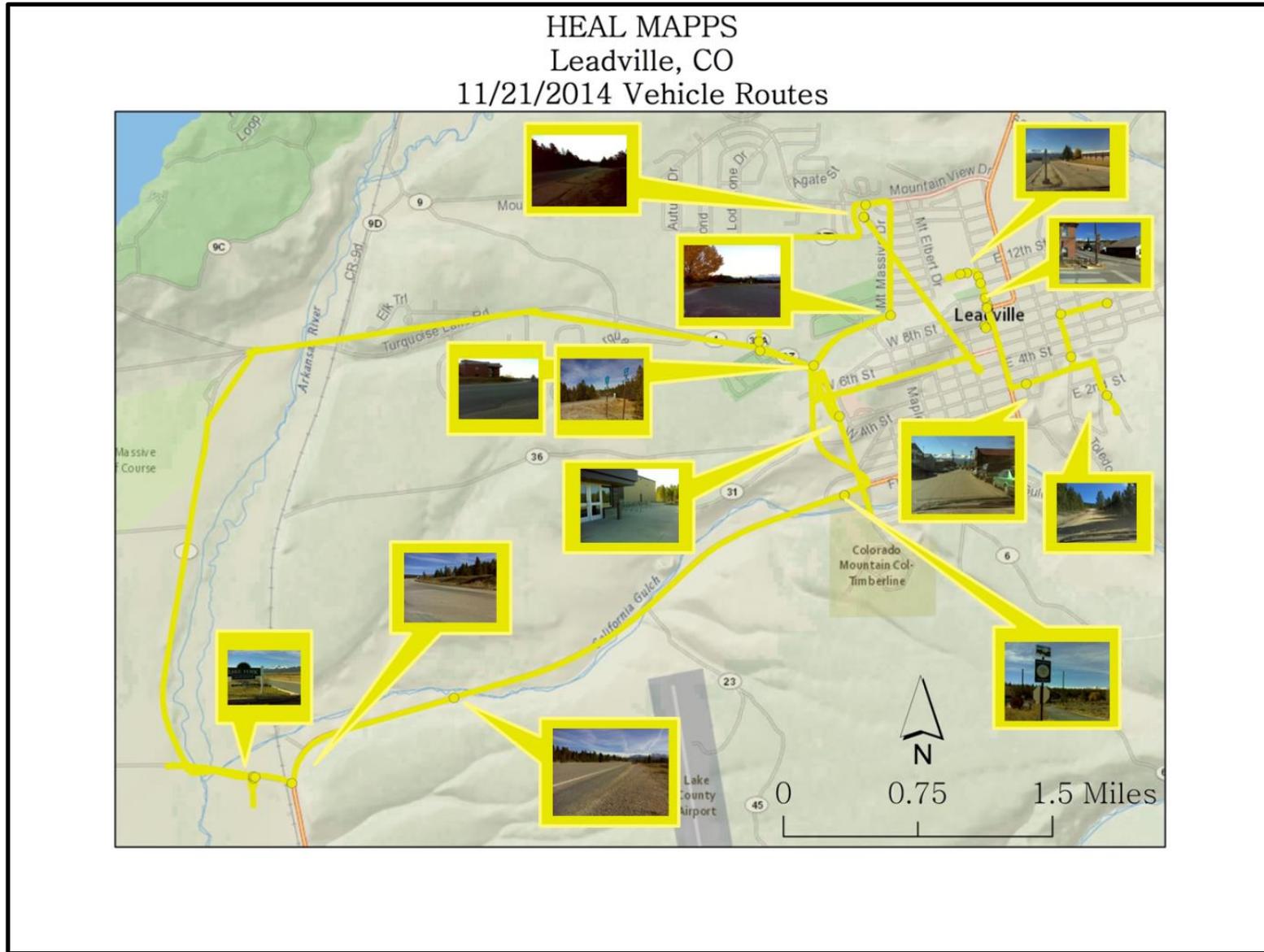
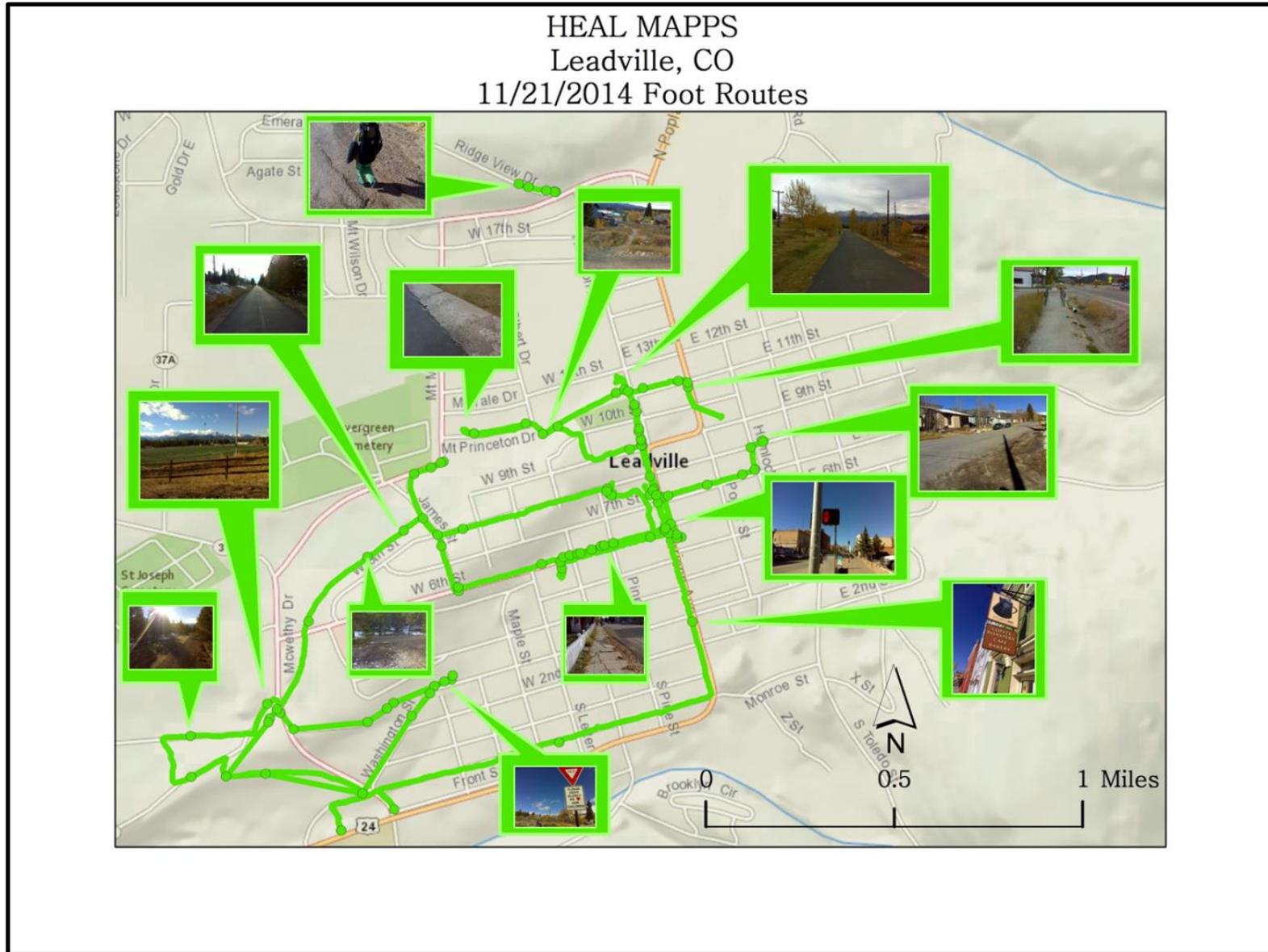


Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.



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. 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; in fact, 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 have targeted either behaviors 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 daily physical activity their easy and preferred choice.

Relevance for Wray Community

According to the US Census Bureau, 29% of family households in Wray have children under the age of 18 years.⁶ The median household income is \$34,901, and the poverty rate is 6.0%.²³ The obesity rate for adults in the North East Region (Region 1) of Colorado is 29%, compared to the state average of 20%. For children aged 2-14 the obesity rate is 20%, compared to the state average of 14%. In 2010, 59% of children in the North East Region aged 1-14 years ate fast food one or more times a week, and 42% consumed sugar sweetened beverages one or more times a day.²⁴ Additionally, over half of the adults and children in this community are not meeting daily physical activity recommendations.

Helping children develop healthy habits, and providing healthy eating and physical activity supports to balance their dietary energy intake with activity 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 Wray.

²³ U.S. Census Bureau, 2008-2012 American Community Survey 5-year Estimates
http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_5YR_B01003&prodType=table

²⁴<http://www.chd.dphe.state.co.us/HealthIndicators/indicators.aspx?dID=5&sdID=26&cID=125&rID=1>

Methods and Preliminary Results

A HEAL MAPPS™ team (n=16) comprised of Wray community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Wray community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 150 photographs were taken and mapped along 16 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 three square miles of the city of Wray 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 41 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Nine Wray residents and stakeholders attended and participated in a community dinner and discussion held at the Wray Rehabilitation and Activities Center on May 28, 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. Child care was generously provided by the daughters of Joy Akey, Yuma County Extension Agent.

Community Readiness

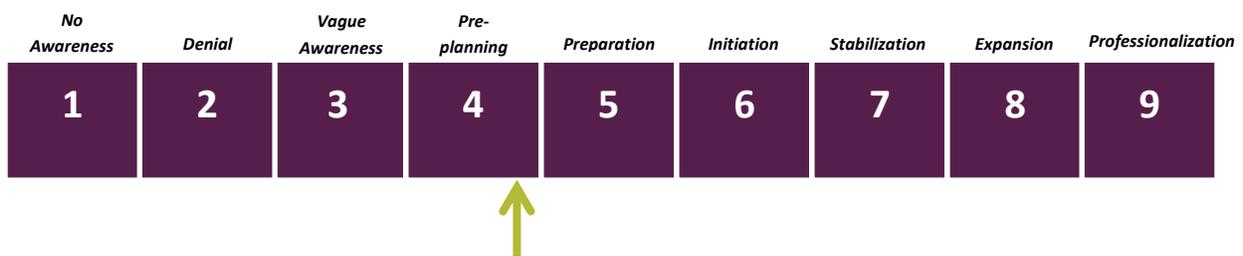
Communities differ in many ways, including their readiness to take action on an issue and implement relevant programs. The level of community readiness is a major factor in determining whether a particular program can be effectively implemented and supported by a community. Assessing the level of readiness 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 Wray 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 Wray Community Conversation, an Extension educator posed questions related to each of the dimensions and prompted discussion around Wray'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 were then scored by a researcher trained to utilize the CRM and combined to identify the overall stage of readiness.

^[1] The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the Wray school district.

Several Wray community organizations such as the Wray Rehabilitation and Activities Center (WRAC) and local schools, emerged as supports for healthy eating and physical activity. These organizations, as well as resources such as the twice-yearly health fairs and multiple engaged volunteers, contributed positively to the readiness score given to the community. Perceived barriers to healthy eating and physical activity include barriers to walkability, due to unmaintained sidewalks and crosswalks, and a scarcity of food retail outlets, including few fresh produce retailers and restaurants. Participants mentioned multiple resources and community efforts in Wray to support healthy kids and families, particularly the efforts by the WRAC to provide activities for all age groups, continually applying for grants to obtain funding, and conducting evaluations to determine effectiveness and participant needs. The numerous efforts in Wray to support a healthy community indicates strong leadership involvement, however, participants suggested that the conditions of the sidewalks and curbs may indicate a lack of leadership engagement in this area. One issue Wray leaders, and community members, should prioritize is the sustainability of the pool, as participants voiced the benefits of having a pool in Wray, but also their concern of a lack of funds to support the facility.

Stages of Community Readiness



Wray’s stage of readiness to implement environmental and policy strategies to prevent obesity was evaluated to be between pre-planning (stage 4) and preparation (stage 5) as indicated by the arrow on the **Stages of Community Readiness** graph. Preplanning indicates that there is clear recognition that something must be done, and there may even be a group addressing it. However, efforts are not focused or detailed. In the preparation stage, active leaders begin planning in earnest. The community offers modest support of their efforts. A community may be at different stages for healthy eating and physical activity readiness.

General strategies for progress in stage of community readiness are based on the CRM, including:

- 1) Gather existing and new local information about childhood obesity prevalence, the food environment, and physical activity resources in order to plan strategies. Conduct local focus groups to discuss issues and develop strategies. *The HEAL MAPPS activities and information provided in this report support these strategies.* Partner with schools to conduct annual height-weight assessments of students to track overweight and obesity prevalence.
- 2) Raise awareness that efforts to address childhood obesity are happening in Wray. Introduce information about the issue through presentations and media. Increase media exposures, such as articles in local newspapers, radio and television public service announcements. Sponsor a community

picnic or fun-run to kick off the effort, conduct public forums to develop strategies from the grassroots level, and utilize key leaders and influential people to speak to groups and participate in local radio and television.

3) Develop a framework or model for change, including a strategic action plan. Include a plan for evaluating the successes of your efforts. Review existing efforts in the community (curriculum, programs, activities, etc.) to determine who the target populations are and consider the degree of success of the efforts.

4) Visit and invest community leaders in the cause. Search for additional resources and potential funding. Build and communicate Wray'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 based on Wray Community Conversation

Physical Activity

Supports

- Multiple recreation programs and organizations for youth and adults.
- Active leisure supports include indoor recreation and exercise facilities.
- Outdoor trails and parks are well maintained and resourced.

Barriers

- Barriers to walkability due to a lack of sidewalks, existing sidewalks and crosswalks are not maintained.
- Lack of available and accessible (across demographic groups) exercise and recreation facilities; no/few activities for kids under 3 years old and the childcare fees associated with recreation facilities is prohibitive for some parents.

Healthy Eating

Supports

- Recent improvements to the school food environment, offering salads for lunch and more fresh fruits for breakfast.
- Some food retail options; one grocery store.

Barriers

- Limited access to health, fresh fruits and vegetables.

- Few food retail options, specifically restaurants.

Resident-Informed Recommendations for Community Change

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

- Encourage parks and recreation department to conduct evaluations on their programs, including how to engage more participants, and determine which groups (age, income, gender, etc.) they are not engaging to improve program impacts.

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

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

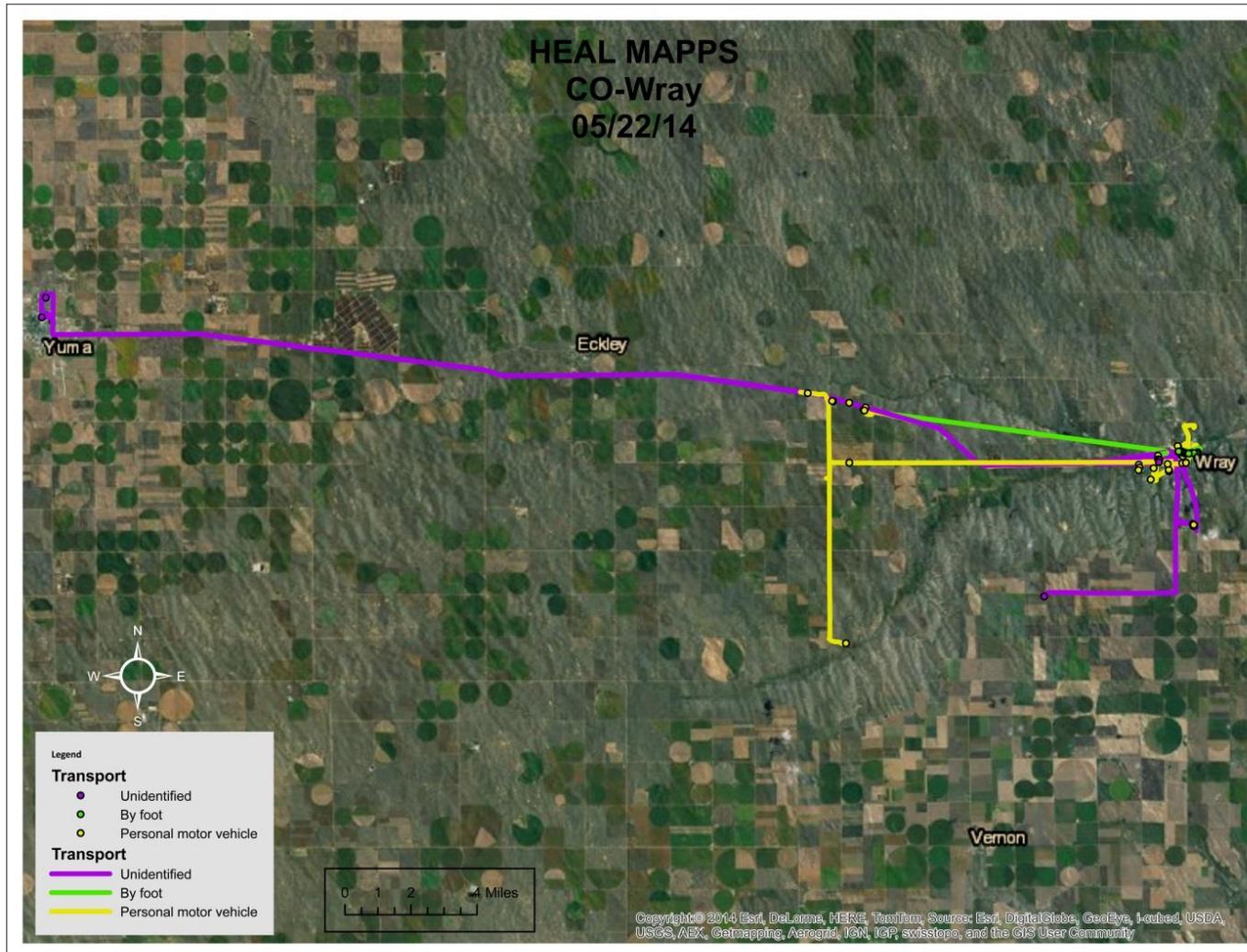


Figure 2. Represents an example of a route generated while using a personal motorized vehicle. All photograph location coordinates are in decimal degrees.

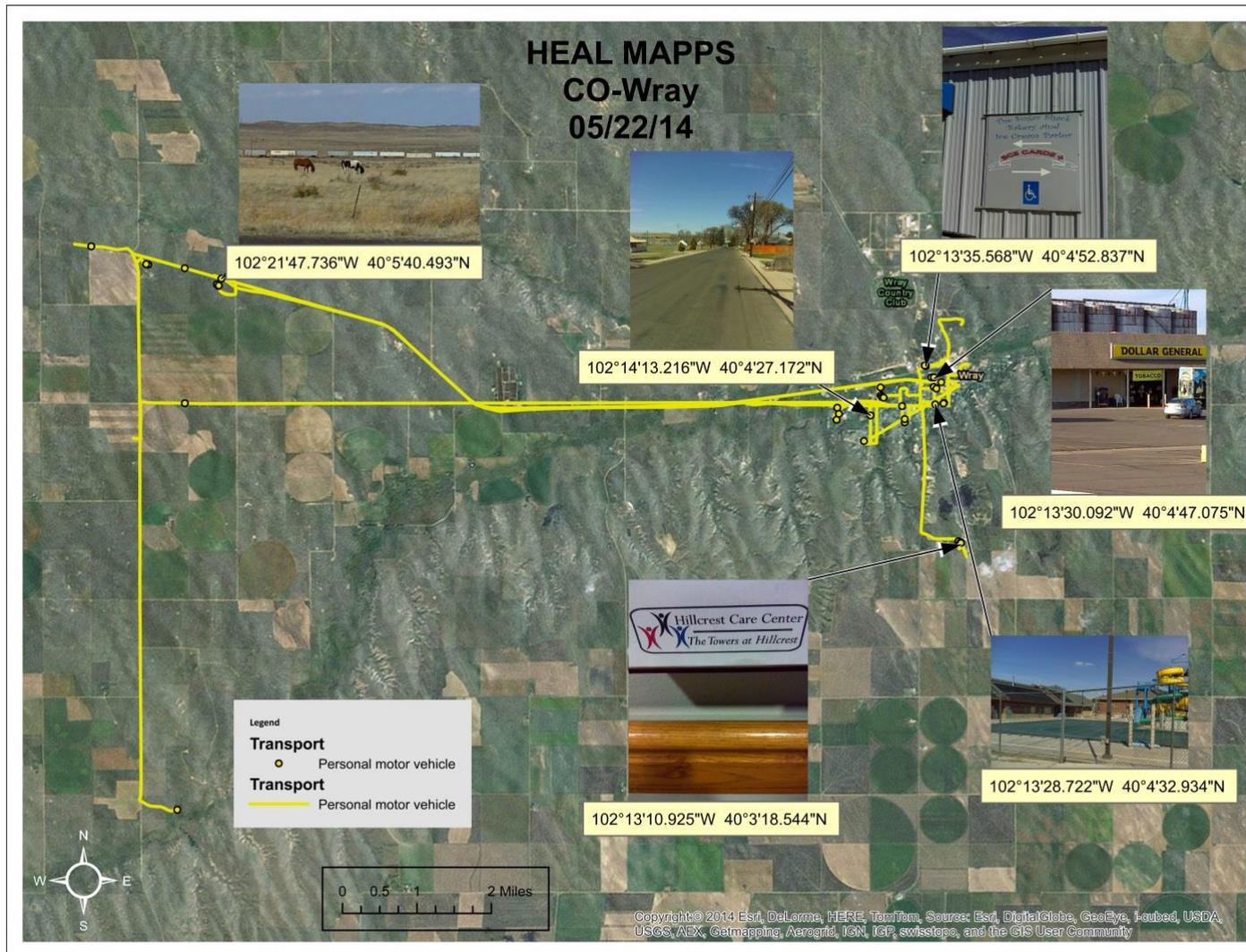


Figure 3. Represents a walking route and the features encountered along the route that enable or hinder healthy eating and/or physical activity.



Figure 4. Represents a route that was not identified by mode of transportation.

