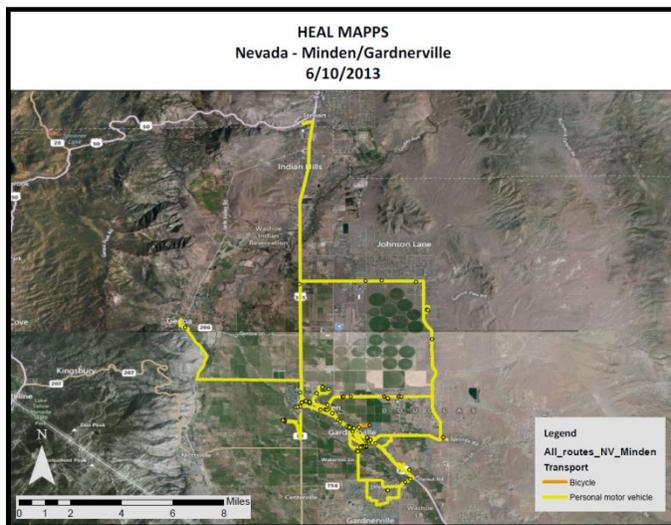


Carson Valley Community HEAL MAPPS™ Report

Gardnerville is a rural town located in the Carson Valley in Douglas County, NV. Located approximately 50 miles south of Reno, NV on the western border of the state, the Carson Valley is surrounded by the Carson Range of the Sierra Nevada to the west and the Pinenut Mountains to the east. At about 4,700 feet in elevation, the Carson Valley has 4 distinct seasons¹. Given this geography and climate the Carson Valley is an oasis for many outdoor recreational activities including fishing, hiking and biking.

The Carson Valley has a rich agricultural history and contains over 100 Centennial Farms and Ranches. A few of the current agricultural commodities include alfalfa, grass hay, cows/calves, horses, garlic seed, and pumpkins.²

The population within the Gardnerville-Minden census county division (CCD) is about 31,500 with over 95% of current residents report being born there³. The majority of residents are white (89.4%), followed by two or more races (3.6%), American Indian and Alaska Natives (2.8%), Asian (1.4%), and Native or Pacific Islander (0.1%), with 2.3% reporting other races⁴. Gardnerville-Minden contains 5 elementary schools, 2 middle schools, and 1 high school.⁵ The high school graduation rate is 92.5%, and 22.3% of residents have a bachelor's degree or greater.⁶



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 Carson Valley 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 engaged, trained, and mobilized to use HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys), a participatory assessment and action tool, to assess community resources for, and readiness to, improve and implement healthy eating and physical

¹ Carson Valley Chamber of Commerce. About Carson Valley. Retrieved June 3, 2013 from <http://www.carsonvalleynv.org/pages/AboutCarsonValley/>

² Douglas County Farm Bureau. Retrieved June 5, 2013 from <http://nvfb.org/douglas.html>

³ U.S. Census Bureau. ACS 5 year estimates (2011). Select social characteristics.

⁴ U.S. Census Bureau. ACS 5 year estimates (2011). Demographic and housing estimates.

⁵ Douglas County School District. Retrieved June 5, 2013 from <http://dcsd.k12.nv.us/main.aspx?pageid=96>

⁶ U.S. Census Bureau. ACS 5 year estimates (2011). Selected economic characteristics.

activity supports and determine 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. This model will be used as a framework for rural community actions aimed at promoting 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 at 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. Recent research has shown a correlation between rural residency and an increased risk of overweight and obesity in both children and adults.

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 communities 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 the Carson Valley Community

A little over sixty percent of Nevada adults and 33.2% of children are overweight or obese. Childhood overweight and obesity rates are higher than the national average of 31.3%.⁷ In Douglas County, NV 21.7% of adults were obese in 2009 and 10.7% of low income children entering preschool were obese⁸. The median household income in Gardnerville-Minden (CCD) is \$59,361⁹, and an average of 15.3% of households were food insecure between 2009 and 2011.¹⁰ This is concerning, as we know that food insecurity is linked to overweight and obesity.¹¹

⁷ The child and adolescent health measurement initiative. (2012). National Survey of children's health. Retrieved June 3, 2013 from

<http://www.childhealthdata.org/browse/survey/results?q=2415&r=30&r2=1>

⁸ USDA Food Atlas Data. (2009). Retrieved June 5, 2013 from <http://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas.aspx>

⁹ U.S. Census Bureau. ACS 5 year estimates (2011). Selected economic characteristics.

¹⁰ USDA Food Atlas Data. (2009). Retrieved June 5, 2013 from <http://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas.aspx>

¹¹ Dinour, L., Bergen, D., & Yeh, M. (2007). The food insecurity-obesity paradox: A review of the literature and role the food stamps may play. *Journal of the American Dietetic Association*, 107(11), 1952-1961.

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 Carson Valley community.

Methods and Preliminary Results

A HEAL MAPPS™ team (n=8) comprised of Carson Valley community members with an interest in creating a healthier community volunteered and were first trained to individually photograph and map the Carson Valley community features that they perceived as either supports or barriers to eating healthy and being physically active most every day. Collectively, over 120 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 10% of the land area included within the 80 square miles of the towns of Carson Valley 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 37 photographs, based on group consensus, were included in a presentation to provoke a larger community conversation. Twenty five Carson Valley residents and stakeholders attended and participated in a community dinner and discussion held at the CVIC Hall on June 18, 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 and 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 is a tool we used to gain an understanding of the Carson Valley 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 Carson Valley Community Conversation. Participants were polled and prompted with follow up questions to elaborate their opinions. During the

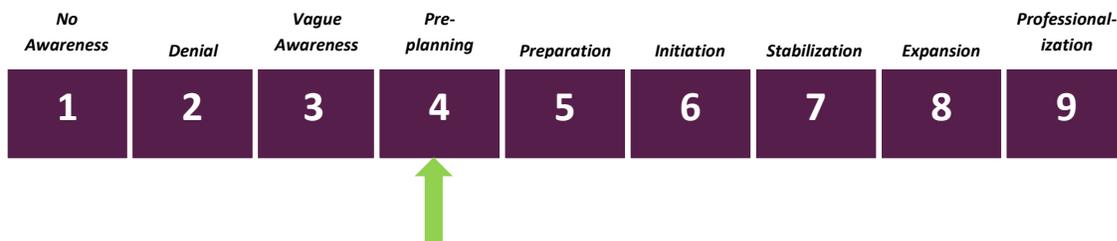
¹² The 'mappers' individually determined the community boundaries as within the city and unincorporated land approximately served by the Douglas County school district.

Community Conversation, participants shared their experiences of the Carson Valley resources and perception of Carson Valley readiness and preparedness for change. The Community Conversation was transcribed verbatim, the narrative content was coded using iterative processes by two coders, data were organized into six dimension categories, and each dimension was scored by an independent evaluator to identify the overall stage of readiness.

Several Carson Valley community organizations and local efforts such as the Road Bumps Task Force, Carson Valley Trail Association and the community garden, emerged as supports for healthy eating and physical activity, which contributed positively to the community readiness score given to the community. Several efforts are underway in Carson Valley to increase community physical activity resources such as the new community center, plans to develop a trail system from Lampe Park to Minden, and an initiative by the Road Bumps Task Force to identify funds to fix the roads. There are many resources in Carson Valley to support healthy eating and physical activity such as multiple parks, a swim center, tennis court, and a community garden. Though there are recreational opportunities available, there seem to be few recreational resources or programs specifically for adults. Also, there was little mention of resources or efforts by the local schools or school administration to improve the food and physical activity environment within the schools; rather, participants suggested the school food environment is one that makes it hard for children to eat healthy.

Perceived barriers to healthy eating and physical activity include a lack of active transportation supports (such as bike lanes and sidewalks) and a strong dependence on personal motor vehicle due to the vast distances between home, school and work. Other perceived barriers include limited access and availability of affordable, healthy food and beverage options in Carson Valley. Participants exhibited knowledge regarding the role of the environment in supporting or hindering physical activity and healthy eating; additionally, the conversational emphasis was on the role of the social environment in stimulating healthy behavior rather than the community built environment alone. Participants further suggested that a community culture of promoting and engaging in habitual physical activity and healthy eating could be developed and adopted.

Stages of Community Readiness



Carson Valley stage of readiness to implement environmental and policy strategies to prevent obesity is around stage 4, preplanning, as indicated by the arrow on the Stages of Readiness graph.

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

- 1) Decisions for where and how current and future efforts to improve community and neighborhood conditions should be prioritized based on resident input and identified barriers.
 - a. Conduct public forums to develop strategies from the grassroots level;
 - b. Utilize key leaders and influential people to speak to groups and participate in local media, including newspaper, radio and television;
 - c. Utilize report to support data-driven planning, preparations, and actions.
- 2) Direct efforts towards increasing social opportunities for residents to engage in physical activity and healthy eating, for example, establish a local running/walking club, intergenerational community garden programs.
- 3) Raise awareness that efforts to address childhood obesity are happening in Carson Valley by launching a media campaign, i.e. post flyers, posters, and billboards to advertise current efforts.
- 4) Start planning how to evaluate the success of efforts and include effort-specific assessments of immediate and sustained outcomes.
- 5) Work with the NV 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 Carson Valley'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 Carson Valley Community Conversation

Physical Activity

Supports

- Outdoor trails and parks are well maintained and resourced, including public parks and playgrounds.
- Active leisure supports include the swim center, basketball and tennis courts and the new community center.
- Some active transportation supports such as bike racks.

Barriers

- Few school recreation programs/initiatives, PE is non-existent in elementary schools.
- Lack of active transportation supports such as bike lanes or road shoulders, roads are poorly maintained and there is a strong dependence on personal motorized vehicles.
- Impediments to walkability due to a lack of sidewalks.

Healthy Eating

Supports

- Local food resource centers bridging local food production with distribution, including a farmer's market and a community garden.
- Food retailers which serve healthy food include Raley's and Subway, among others.

Barriers

- Lack of neighborhood availability of affordable, healthy food and beverage options.
- Participants perceive few school environmental supports, issues such as short lunch period and school meals needing improvement.

Resident-Informed Recommendations for Community Change

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

- Establish a consolidated list, possibly online, of community events and resources for physical activity and healthy eating.
- Incorporate and promote physical activity and healthy eating in the community social environment.
- Consider education as a means to increase passion and motivation around healthy lifestyles. Likewise, integrate and adapt other community's efforts and successes.

- Food retailers should change the store layout and food placement to encourage healthier purchases.

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

Figure 1. Represents all routes generated by the Carson Valley community mappers.

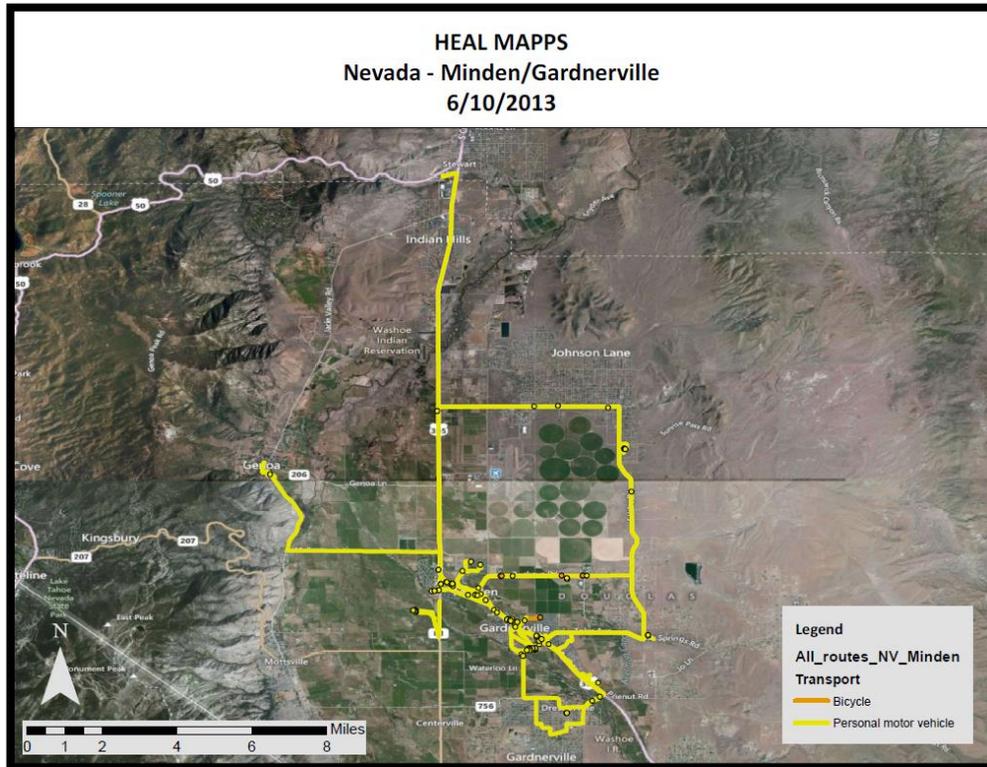


Figure 2. Represents an example of a route generated while using a personal motorized vehicle. All photograph location coordinates are in decimal degrees.

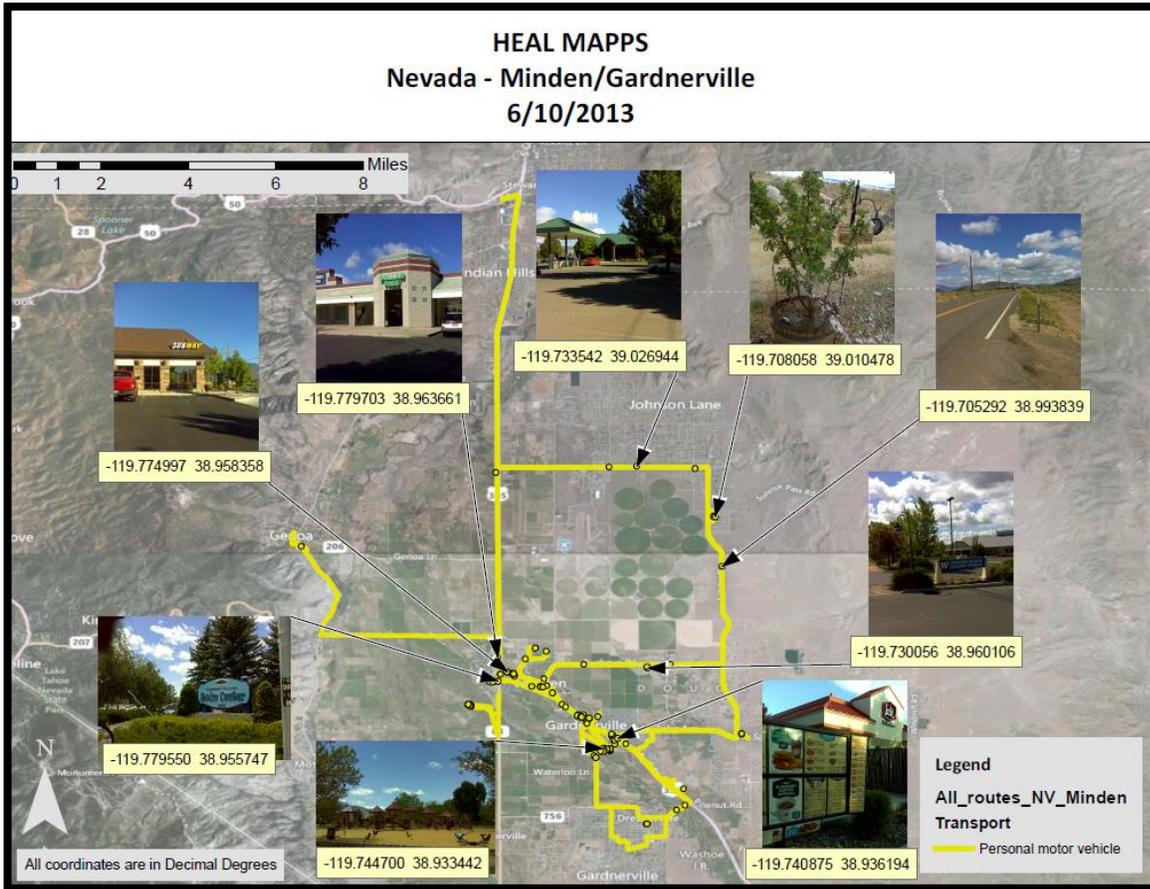


Figure 3. Represents a bicycle route.

