

Supplemental Table 3. Grey Literature Environmental Results and Breastfeeding (BF), Healthy Eating (HE), and Physical Activity (PA) Promotion in Rural Settings (n=24).

Source		Behavior			Results	
Source Author	Citation in AMA format	Setting(s)	BF	HE	PA	Environment
Alabama Extension at Auburn University SNAP-Ed	Alabama Extension at Auburn University SNAP-Ed. <i>Live Well Faith Communities: Creating a Healthier Rural Alabama</i> . United States Department of Agriculture. 2018.	Food retail; church; community garden				People participating in Live Well Faith Communities reported significant improvement in how often they think about healthy food choices when deciding what to feed their families, compare prices before buying food, use the “Nutrition Facts” on the food label to make food choices, buy food with lower added sugar, and eat vegetables. Several faith communities adopted new guidelines for healthy choices at meals or snacks such as requiring fruits, vegetables, non-fried foods, and foods with low or no added sugar. One faith community started an onsite garden. One faith community started adding exercise breaks at meetings or functions. One faith community started offering aerobics classes.
Live Well Faith Communities: Creating a Healthier Rural Alabama				X	X	
Bishop et al.	Bishop B, Koukel S, John D, Gunter K. <i>Tucumcari HEAL MAPPS Community Report</i> . Oregon State University Extension Service; 2015.	Recreation facilities; schools; parks; playgrounds; streets; food retail				The HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using All routes Participatory Photographic Surveys) tool was used to discuss support for PA with community members in focus groups, which included indoor recreation and exercise facilities, pools, gym facilities, public parks and playgrounds, and community use of track and high school gyms during the summer. The HEAL MAPPS™ was also used to address barriers to PA that included walkability, parks and playgrounds not well maintained, pedestrian safety, lack of exercise/recreation facilities. Barriers to healthy eating were mentioned regarding the grocery store and food retailers; community members perceive there is a limited variety of food offered and that the foods offered are of lower quality.
Tucumcari HEAL MAPPS™ Community Report				X	X	

Calodich Port Townsend HEAL MAPPSTM Community Report	Calodich S. <i>Port Townsend HEAL MAPPSTM Community Report</i> . Oregon State University Extension Service. 2015	Recreation facilities; streets; parks; trails; schools; food retail; community gardens; food assistance programs	X	X	HEAL MAPPSTM (Healthy Eating Active Living - Mapping Attributes using Participatory Photographic Surveys) was used to discuss photographs and maps related to supports and barriers to PA. Support included bike lanes, bike racks, and bike shelters, programs such as Kid Fit, YMCA, outdoor trails and parks, a skate park, Memorial field, and the high school track; barriers for PA included active transpiration barriers, poorly maintained outdoor parks, pedestrian/cyclist safety concerns, limited walkability and lack of sidewalks and crosswalks, crime/safety concerns in public areas due to poor lighting. HEAL MAPPSTM tool was also used to discuss supports and barriers to HE. Supports included access to healthy, fresh and local foods, such as fruits vegetables and seafood, community gardens and farmers markets; barriers to HE included school food environment barriers such as poor school meals, and limited applications for Senior Farmers Market checks and limited hours at the Food Bank.
Case & Rojina Bonanza, Oregon HEAL MAPPSTM Community Report 2015	Case P, Rojina J. <i>Bonanza, Oregon HEAL MAPPSTM Community Report</i> . Klamath County Extension Family and Community Health. College of Public Health and Human Services. Oregon State University. 2015.	Food assistance programs; churches; food retail; parks; playgrounds; recreation facilities; schools; churches	X	X	HEAL MAPPSTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to discuss support for PA that included community parks, playgrounds, and open spaces (newly refurbished tennis courts), sports fields and courts (disc golf, Horse pits, basketball, etc.), school-based PA facilities (e.g. Track and Gym), and access to Gym and Classes (Zumba) at community churches; HEAL MAPPSTM was also used to discuss supports for HE, including homebased food retailers, farmer's market, U-pick/Farm stands, food bank (tasting table & recipes), community meals, and summer lunch programs.
Clifford et al. Leadville, CO HEAL MAPPSTM Community Report	Clifford J, Bellows L, Winfield T, Gunter K, John D. <i>Leadville, Colorado HEAL MAPPSTM Community Report</i> . Oregon State University Extension Service; 2015	Food retail; parks; schools; streets; trails; community garden	X	X	HEAL MAPPSTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool was used to discuss supports and barriers to PA in Leadville community. Supports included after school programs such as a swimming club, soccer and basketball programs, youth hockey, ice skating and school sports fields, a local pool, mineral belt trail, park, winter sports areas, open trail space, bike racks, bike club, paved trails, some traffic calming features such as signals, signs and crosswalks; barriers to PA include lack of transportation, sidewalks, a bike lane, maintenance at some resources, and lack of sidewalk maintenance. HEAL MAPPSTM was also used to discuss HE supports and barriers in Leadville.

					Supports included a wellness program at school, school lunches that included healthier foods, a library gardening program; barriers to HE included need to drive outside of town to get groceries, people shopping where they work and not within the community so there wasn't really a demand of healthier food options, and lack of transportation to access healthy food.	
Clifford et al. Ignacio, CO HEAL MAPPS™ Community Report	Clifford J, Winfield T, Bellows L, John D, Gunter K. <i>Ignacio, Colorado HEAL MAPPS Community Report</i> . Oregon State University Extension Service; 2015.	Recreation facilities; schools; parks; playgrounds; streets; food retail; local food producers; community garden		X	X	The HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool was used to discuss PA supports and barriers; HE supports and barriers in focus groups. PA facilities included recreation center, summer games and Pow Wows held by Southern Utes, a new track and field at high school, a school garden, and outdoor parks and playgrounds; barriers to PA included distance to school (most students ride bus to school), road safety and lack of sidewalks. Supports for HE included a garden program, and a fresh fruit and vegetable program, healthy food store, new grocery store being built, some healthy options at local restaurants and cattle farms; barriers to HE included shopping at convenience stores because grocery store were under construction. Within the school environment, teachers reward students with candy.
Feldman, 2017 Year One of the USDA FINI Program: Incentivizing the Purchase of Fruits and Vegetables Among SNAP Customers at the Farmers Market	Feldman B. <i>Year One of the USDA FINI Program: Incentivizing the Purchase of Fruits and Vegetables Among SNAP Customers at the Farmers Market</i> . Farmers Market Coalition. 2017.	Food assistance programs; food retail		X		Financial incentives are most effective when coupled with experiential nutrition education. There is no one, best way to implement an incentive program. The incentive level and delivery mechanism are less important than the commitment and enthusiasm of market leadership, farmers, and partners. SNAP households participate when they understand the program, incentives are easy to earn and use, and they feel good about the shopping experience. Effective communications with SNAP households requires that information come from a trusted source.
Fredericks et al.	Fredericks G, Ghavami A, Winfield T, John D, Gunter K. <i>Kalama, Washington HEAL MAPPS Community Report</i> . Oregon State University Extension Service. 2015	Parks; playgrounds; schools; streets; food assistance programs; community gardens; food retail		X	X	The HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool was used to discuss supports for PA, including public parks and playgrounds, new sports facilities at school (batting cage). HEAL MAPPS™ was also used to discuss barriers to PA, which included lack of sidewalks and lack of maintaining walkways and outdoor

Kalama, Washington HEAL MAPPS™ Community Report					stairs. Supports for HE include: healthy, fresh fruits and vegetables are available; one grocery store, which carries an adequate variety of produce; food assistance programs; community garden provides space for community members to rent and donates produce to Helping Hands food bank.	
Haas et al. Wray, CO HEAL MAPPS™ Community Report	Haas J, Bellows L, John D, Gunter K. <i>Wray, Colorado HEAL MAPPS Community Report</i> . Oregon State University Extension Service; 2015.	Food retail; parks; recreation facilities; streets; schools; trails		X	X	The HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool was used to discuss supports and barriers for PA; supports and barriers for HE. Supports for PA included active leisure sports such as indoor recreation and exercise facilities, outdoor trails and parks; barriers to PA included walkability due to lack of sidewalks and unmaintained crosswalks. Lack of available and accessible exercise and recreation facilities. Supports for HE included offering salads for lunch at school and also more fresh fruits for breakfast, there is also only one grocery store in this area; barriers to HE included limited access to health, fresh fruits and vegetables and few foods retail options.
Halverson Molalla HEAL MAPPS™ Community Report 2015	Halverson B. <i>Molalla HEAL MAPPS Community Report</i> . Clackamas County Extension Family and Community Health and Oregon State University Extension Service. 2015	Churches; parks; playgrounds; recreation facilities; schools; streets		X	X	HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool to discuss photographs and maps that support and barriers to PA, which included PA facilities like a fitness center and dance studios that offer classes, parks and playgrounds, a BMX track, and a disc golf course; barriers to PA included availability and accessibility of PA resources, and active transportation for weight health; HEAL MAPPS™ was also used to discuss supports for HE, including Foothills Community Church Resource Center, and school-based summer meal sites
Halverson & Devlin Estacada HEAL MAPPS™ Community Report 2015	Halverson B, Devlin E. <i>Estacada HEAL MAPPS Community Report</i> . Clackamas County Extension Family and Community Health. Oregon State University Extension Service; 2015.	Food assistance programs; church; food retail; parks; schools; streets		X	X	HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool was used to assess HE supports and barriers. Support included farm/produce stands, food assistance in the form of the school district's summer food program, food banks, and events like church food drives; barriers to HE included cost and transportation. HEAL MAPPS™ was also used to discuss supports and barriers for PA, including the availability of the skate park, schools, the senior and community centers, the bike station for repairing bikes downtown; barriers to PA included lack of information or knowledge of resources and spatial access.

<p>Harden & Rudolph</p> <p>Rainier HEAL MAPPSTM Community Report 2015</p>	<p>Harden L, Rudolph J. <i>Rainier HEAL MAPPSTM Community Report</i>. Columbia County Extension Family and Community Health. Oregon State University Extension Service; 2015</p>	<p>Food retail; natural environment; natural parks; playgrounds; recreational facilities; schools; streets; trails</p>	<p>X X</p>	<p>HEAL MAPPSTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool was used to assess supports for HE and PA as well as barriers to HE and PA. Supports to HE included schools in the area that offer healthy snacks and meals such as a salad bar, local resources such as farms and hunting and foraging in abundant natural areas and a school-based health center. Barriers to HE included lack of access due to economic or spatial attributes, lack of transportation supports and lack of a grocery store. PA supports included sports fields and courts and programs for youth and adults, resources at the school, and local parks, playgrounds and trails supports for camping, fishing, hiking, and sports fields. Renier's school district also utilizes an activity bus 3 days a week to help kids get to and from various activities. Barriers to PA included spatial proximity to resources, lack of transportation and lack of low or no cost indoor PA options.</p>
<p>Harden & Rudolf</p> <p>Clatskanie HEAL MAPPSTM Community Report 2015</p>	<p>Harden L, Rudolf J. <i>Clatskanie HEAL MAPPSTM Community Report</i>. Columbia County Extension Family and Community Health. Oregon State University Extension Service. 2015.</p>	<p>Food assistance programs; food retail; parks; playgrounds; recreational facilities; schools; trails</p>	<p>X X</p>	<p>HEAL MAPPSTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to discuss maps and photographs that supports HE and PA. HE supports included a farmer's market, community and school gardens, the salad bar at school; PA supports included maps and photographs of public parks and playgrounds (some have been recently updated or had significant improvements), a community pool, a skate park, the new toddler track, community and school sports, and trails and walking paths. HEAL MAPPSTM was also used to assess barriers to PA and HE that included spatial and socioeconomic barriers to access, and a lack of healthy food options.</p>
<p>Jensen et al.</p> <p>Grangeville, ID HEAL MAPPSTM Community Report</p>	<p>Jensen K, Tift K, Winfield T, John D, Gunter K. <i>Grangeville, ID HEAL MAPPSTM Community Report</i>. Oregon State University Extension Service; 2015.</p>	<p>Food retail; parks; playgrounds; recreation facilities; schools</p>	<p>X X</p>	<p>The HEAL MAPPSTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) tool was used to discuss PA supports and barriers. Supports included organized sports leagues, sports fields and courts, access to school district resources, local public parks and playgrounds, and fee-based recreation opportunities; barriers to PA included lack of access to these resources. The HEAL MAPPSTM was also used to discuss current efforts to support HE, such as, a seasonal farmer's market, several local businesses that sell fresh</p>

					fruits and vegetables, and restaurants offering healthy options, and a scratch made lunch at the senior center.	
Lewis et al. Carson Valley HEAL MAPPST TM Community Report	Lewis S, Coughenour C, Lindsay A, John D, Gunter K. <i>Carson Valley HEAL MAPPSTTM Community Report</i> . Oregon State University Extension Service; 2015.	Community garden; food retail; local food producers; parks; playgrounds; recreation facilities; schools; streets; trails		X	X	HEAL MAPPST TM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to determine supports and barriers to PA. Supports included outdoor trails and parks and playgrounds, swim center, basketball and tennis courts and a new community center; barriers to PA included few school recreation programs/initiatives. Lack of active transportation supports such as bike lanes or road shoulders, roads are poorly maintained, impediments to walkability. HEAL MAPPST TM was also used to discuss supports for HE via assessing resources, including local food resource centers that connect local food production with distribution, a farmer's market and community garden. Food retailers offer healthy options, such as, Subway and Raley's; barriers to HE included lack of affordable healthy food and beverage options, short lunch periods at schools and meals needing improvement.
Gatzke et al. Caliente, NV HEAL MAPPST TM Community Report	Gatzke H, Coughenour C, Lindsay A, John D, Gunter K. <i>Caliente, NV HEAL MAPPSTTM Community Report</i> . Oregon State University Extension Service; 2015	Food retail; local food producers; parks; playgrounds; recreation facilities; schools; streets; trails; community garden		X	X	HEAL MAPPST TM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to discuss supports and barriers to PA via focus group discussion. Support to PA included outdoor trails and parks and playgrounds, swim center, basketball and tennis courts and a new community center; barriers to PA, included few school recreation programs/initiatives, lack of active transportation supports such as bike lanes or road shoulders, roads are poorly maintained, impediments to walkability. HEAL MAPPST TM was also used to discuss supports and barriers to HE via assessing resources, including local food resource centers that connect local food production with distribution, a farmer's market and community garden, and food retailers such as Subway and Raley's that offer healthy options; barriers to HE, included lack of affordable healthy food and beverage options, short lunch periods at schools and meals needing improvement.
Marcusson et al.	Marcusson D, Coughenour C, Lindsay A, John D, Gunter K. <i>Laughlin HEAL MAPPSTTM Community Report</i> . Oregon State University Extension Service; 2015	Community gardens; food retail; parks; recreation facilities; streets; trails; natural environment		X	X	HEAL MAPPST TM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to determine supports and barriers to PA. Supports included outdoor trails and parks, public transportation, fee assistance for recreational programs, a skate park and aquatic center, fitness classes and activities offered through

Laughlin HEAL
MAPPSTM
Community Report

the community and senior center; barriers to PA included features of public transportation because buses lack shade covers, lack of available and accessible programs and facilities, accessibility to parks and natural landscape, lack of walkability supports; HEAL MAPPSTM was also used to determine supports to HE such as, a new community garden and barriers to HE that include limited access to affordable, fresh fruits and veggies.

National Physical
Activity Society

National Physical Activity Society. *Stories from Small Towns: Soap Lake, Washington*; 2016.

Parks

X

Benefits have included an overall improvement in the community's appearance, as well as new interest from developers and businesses. The community saw such success from working together that they are updating their park plan.

Stories from Small
Towns: Soap Lake,
Washington

Peutz

Peutz.J. *Fruitland, Idaho HEAL MAPPSTM Community Report*. Oregon State University Extension Service; 2015.

Streets, recreation
facilities; schools;
food retail; parks;
playgrounds; trails

X

X

HEAL MAPPSTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to discuss supports and barriers for PA. Supports included sidewalks, tunnel under the highway, crosswalks, crossing signals, and bike paths, tennis courts with lights for night activity, sports fields, tracks, parks and playgrounds, a community center, gyms/exercise centers, and a dance studio. Barriers for PA include bike paths and sidewalks are not consistent or connected or are lacking in certain areas, lack of traffic calming features, high speed limits, lack of access to private pools, gyms, and dance studios cost money. HEAL MAPPSTM was also used to discuss supports and barriers for HE some support resources included free summer lunch, a honey store (that provides honey and other healthy options), and a natural health store. Barriers to HE included no grocery store, and no healthy snack options.

Fruitland, Idaho
HEAL MAPPSTM
Community Report

Powers-Hammond et
al.

Powers-Hammond L, Calodich S, John D, Gunter K. *Connell HEAL MAPPSTM Community Report*. Oregon State University Extension Service; 2015

Food retail; local food
producers; school;
parks; recreation
facilities; schools;
streets; trails

X

X

HEAL MAPPSTM (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to discuss supports and barriers for PA. Supports included outdoor trails and parks, sports fields, swimming pool, free bowling; barriers to PA include walkability, lack of sidewalks and railroad/rail lines that divide the town and block intersections, lack of accessible and affordable recreational programs and facilities. In addition, school policies allow facilities to be used by community members, including the new cross

Connell HEAL
MAPPSTM
Community Report

				country track. HEAL MAPPS™ was also used to discuss barriers to HE, which include limited availability/variety of affordable healthy food/beverage options in Connell and bridging local food production with distribution including the farmers market, community garden, and vegetable swap.
Sant et al. Preston, ID HEAL MAPPS™ Community Report	Sant LL, Winfield T, John D, Gunter K. <i>Preston, ID HEAL MAPPS Community Report</i> . Oregon State University Extension Service. 2015.	Churches; food assistance programs; natural environment; community garden; food retail; local food producers; streets; parks; recreation facilities	X X	HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to discuss supports and barriers for PA and HE. Supports for PA included roads, farms for kids to work on and be active, parks and play areas such as a skate park, tennis courts, ball fields, a community garden, local business support of PA activities such as little leagues, nice sidewalks, gyms (free programs at local gyms for seniors), traffic calming and safety devices for walking/biking, health fair, silver sneakers program, local churches have gym access, health and wellness code, and exercise groups. Barriers to PA included weather as a barrier for outdoor PA, lack of indoor spaces, long distances to resources, lack of handicapped supports at parks, free running dogs. HE supports included a grocery store that had quality produce and produce deals, local farms, healthy options at local restaurants and convenience stores, food drives, food banks, and a health department (SNAP/WIC). Barriers included having only one grocery store, remoteness of the area, weather as a barrier to growing vegetables.
Tingey et al. Wells, NV HEAL MAPPS™ Community Report	Tingey J, Coughenour C, Lindsay A, John D, Gunter K. <i>Wells, NV HEAL MAPPS Community Report</i> . Oregon State University Extension Service. 2015	Trails; food retail; local food producers; parks; playgrounds; recreation facilitates; streets; schools	X X	HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to discuss supports and barriers for PA and HE. Supports for PA include youth recreation sports programs, a community center, an intertribal council gym, Chimney Rock golf course, outdoor trails and parks, playgrounds, and some sidewalks. In addition, school recreation programs and facilities include recess and after school sports programs. Barriers to PA included lack of sidewalks or lack of maintaining sidewalks, affordability of existing exercise facilities, safety concerns at public parks and trails. Supports for HE includes hot lunch served at school, vending machines that include healthy snacks, local produce available through farmers and co-op, healthy food retail options such as Subway. Barriers to HE includes no

hot lunch at the middle and high school, and lack of local food production.

Wayne	Wayne L. <i>Chiloquin, Oregon HEAL MAPPs Community Report</i> . Oregon State University Extension Service; 2015	Community garden; food assistance programs; food retail; parks; playgrounds; recreation facilities; streets	X	X	HEAL MAPPs™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) was used to assess HE supports and barriers, and PA support and barriers. HE supports included a community garden, weekly Farmer's Market, food pantries and meal delivery services such as the Blessing Pot. PA supports identified included state and county parks, new playground equipment and exercise classes at a local community center. HEAL MAPPs™ was also used to discuss barriers for PA that included difficulty accessing outdoor recreational activities for those without a vehicle, lack of bike lanes, crosswalks, or sidewalks within the community, park safety, lack of indoor facilities, and limited access to affordable fresh fruits and vegetables. Most organized PA activities and grocery stores are more than 26 miles away.
Chiloquin, Oregon HEAL MAPPs Community Report					
Worthen et al.	Worthen J, Bellows L, John D, Gunter K. <i>Fleming, Colorado HEAL MAPPs Community Report</i> . Oregon State University Extension Service; 2015.	Parks; recreation facilities; schools; streets; trails; local food producers; food retail; community gardens	X	X	HEAL MAPPs™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) to discuss supports and barriers to PA. Supports included maps and photographs of school recreation programs and youth sports programs, outdoor trails and parks such as playgrounds, a skate park and sports court; barriers to PA included lack of recreation programs/facilities, no indoor PA facilities, parks, and sports fields not being well maintained, lack of sidewalks and strong reliance on personal motor vehicle due to distances to resources. Perceived barriers to HE include no access to healthy, fresh fruits and vegetables, no grocery stores, and no healthy retail options. Supports for HE included school gardens and local foods production including local agriculture.
Fleming, Colorado HEAL MAPPs™ Community Report					