The information contained in this report can be used to drive decisions about land use and siting for new resources, to secure funding to improve the community food system, parks and recreation resources, and transportation planning. It can also be used by community members to seek out locally available and affordable, healthy food and physical activity options.

This report was generated by Erin Devlin and Beret Halverson (Clackamas County Extension Family and Community Health), in partnership with the GROW HKC project campus team: Winfield, T., John, D., and Gunter, K.
HEAL MAPPS, one of the GROW programs, helped residents to tell their story of life in the community, their personal experiences or encounters with food and physical activity resources as either supporting or hindering weight healthy choices and habits.

People’s lived experiences are very important for understanding how and why healthy habits develop.

In order to have the most complete picture of the food and physical activity environment, we need to know about all of the available resources: who makes food and physical activity available, what types of food and physical activity are available, where are they located, and is there a cost?

The Rural Community Food and Physical Activity Environment Audit is a participatory survey of all of the food and physical activity resources in the community. The auditors use camera-enabled GPS units and photomapping methods to document and survey resource availability and location. These surveys were done twice: first in 2013 and then again in 2016.

OSU faculty integrate community data with other geographic information systems (GIS) data to provide a visual report of the relationship between the location and types of food and physical activity assets and where most people live in the community.
Community Audit activities yield rich attribute data that can be associated with resource photos and tracks. Community members collect this information while mapping by using a survey that integrates two research-based measures: the rural active living assessment and the community food security assessment. OSU researchers included additional items known to be influential in the rural food and physical activity systems, such as hunting, fishing, and foraging supports.
Many risk factors have been associated with childhood obesity, including rural residency:

- Overweight/obesity prevalence is higher among children living in rural (36%) compared to urban (30%) areas.
- Weight health and habits carry over into adulthood.
- Rural communities face unique environmental challenges that can impact residents’ healthy eating and physical activity lifestyle patterns.
- Environmental strategies found to prevent obesity have focused on more urban areas.
Visualizing weight health in Estacada was enabled by the Oregon Environmental Public Health Tracking Program.

Mean BMI at Census Block Group Level

Mean % BMI at School District Level

*2014 DMV records used to calculate BMI reliably illustrate the BMI distribution despite underestimation.
Where People Live Matters for Easy Access to Resources

Community Boundaries Include the Approximate School District Catchment Area ("School District Boundary") for Three Schools and Estacada City Limits.

Within the School District Boundary, Estacada has 10,516 people living in 4,246 households (2010 census) spatially dispersed in the school district boundary, an area of about 70 sq. mi. 2,695 individuals reside within Estacada’s city limits.

Easy access to locally available resources is determined by proximity, transportation mode, ability to drive, cost & household income, etc. which will vary among families.
Within audit boundaries, we calculated statistically significant clusters of population based on population density.

The geographic centers of these clusters were used to create network buffers, ranging in size from 2 to 5 miles, that captured 85% or more of the community population.

The yellow to red areas are the most highly populated; Estacada is sparsely populated (greens) throughout much of the boundary area.
Using Maps to Show Where Most People Live: Study Area

A “study area” was defined using the areas most densely populated, in order to determine the food and physical activity resources relevant to where most people live.

The study area (purple) captures 95% of Estacada’s population.

Defining the study area helped limit time and travel distance for Estacada community members who mapped resources and collected survey data, while not limiting the ability to capture data that is important to the community.
Resource Maps

We collected information on resources in each community in 2014 and again in 2016 to assess any changes in resource availability and accessibility in our communities. We created publicly available resource maps for each community and offer them in this report as well as online via google maps. These can be found by visiting the community maps section of the GROW HKC project website: http://extension.oregonstate.edu/growhkc/outputs/maps
According to the Healthy Food Financing Initiative, a food desert is an area where a larger proportion of people have low or no access to a supermarket or grocery store.

Estacada has four grocery stores, three within city limits and one outside. However, Estacada is still considered a partial food desert.

Based on a measure of availability of healthy food options, the “Modified Retail Food Environmental Index,” Estacada scored “12.5” on a scale ranging from 0 (no access to healthy food) to 100 (only access to healthy food).
Resources for Groceries Shown by Location

There was no change in the number or location of grocery stores that fell outside of Estacada City Limits. The View Point Grocery, a small store and one of the SNAP authorized dealers in the Estacada area, is the only grocery that lies outside of city limits.

SNAP, or the Supplemental Nutrition Assistance Program, is a federal program that offers nutrition assistance to income eligible families and individuals.
Within Estacada there remain three grocery stores; a full service Thriftway, a discount or bargain outlet store, and a smaller market style grocery. The discount grocer is under new ownership and has changed it’s name to “River Market”

All of these grocers are SNAP authorized retailers. Additionally, the Thriftway is also a WIC (Woman Infants and Children) authorized retailers.

WIC is a SNAP program that provides supplemental foods, health care referrals, and nutrition education for low income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age five who are found to be at nutritional risk.
Estacada has a number of “Local Food, Agriculture, and Food Assistance” resources

Local Food and Agriculture includes farm stands, u-picks, home-based food retailers, farmer’s markets, and hunting/fishing/gleaning supports.

Food Assistance includes food banks, summer lunch programs, community meals and other supplemental food support programs.

Change in Resources for Local Food, Agriculture, and Food Assistance
Estacada has 6 local food/agriculture and food assistance options that lie outside of city limits; including a farm stand/u-pick type operation, as well as a number of home-based retailers that offer things like eggs and vegetables for sale. The lone food assistance resource are the community meals (monthly breakfasts) offered at the Springwater Grange. Since the 2015 mapping two home-based food retailers have closed.
Change in Resources for Local Food, Agriculture & Food Assistance Shown by Location

Within city limits, Estacada has a seasonal farmer’s market, now located at the Wade Creek House, which is also the location of a home based food retailer and a church based community garden.

There are a number of summer meal program sites some offering breakfast as well as lunch. Local churches are also offering a number of food assistance resources to community members; there are four church based food banks/pantries and a community meal.

Since the 2014 mapping, two resources were removed: the community meal at the Estacada 1st Baptist church and the foraging supports at the Ranger station, as the signs promoting those resources have been removed.
Resources for Local Food, Agriculture & Food Assistance Shown by Location

Within city limits, Estacada has a home based food vendor and a seasonal farmer’s market – both located at the Wade Creek House, Hunting and Fishing supports, a summer meal program with a number of locations, and two church facilitated community meals. Local churches also offer a number of other supports for food assistance, including three food bank/pantries.
Estacada has six convenience stores, one located outside city limits and five located within. Estacada also has seven fast food establishments, all located within city limits.

For our purposes here, fast food is considered any place that sells prepared foods or drinks and does not have seating, or if it does have seating, then it also has a drive through.

Estacada’s “Modified Retail Food Environmental Index” score was 12.5. A lower score indicating a higher number of places that don’t typically have healthy food and lower numbers of places that would typically have healthy food options.
Three changes have occurred since the 2014 Mapping: Estacada has gained both a fast food establishment (Lew’s Drive In) and a Convenience Store (Just in Video). Finally, Rico’s taco cart, has changed its name to Pepe’s Taco Cart.
In addition to four convenience stores, Estacada’s fast food environment consists of drive through coffee huts, food carts, national chains like A&W, as well as local establishments like Sparkey’s take out pizza. SNAP benefits are accepted at some convenience stores.

SNAP, or the Supplemental Nutrition Assistance Program, is a federal program that offers nutrition assistance to income eligible families and individuals.
Estacada has 16 Café, Deli, Restaurant type eating establishments, all but one located within city limits. Two changes have occurred since the 2014 mapping: the Curinsville deli (located outside of city limits) is closed due to a fire and a new sit down restaurant – the Mason Jar – has opened in town.
Outside of city limits there is one dining option – a sit-down restaurant with wait staff.
Within city limits there are a variety of dining establishments from café/bakeries, to deli/sandwich and pizza shops, to full service Sit-Down restaurants.
Change in Resources for Public Parks and Playgrounds

Within city limits, Estacada has two Public Parks and a total of four playgrounds. The parks offer a variety of amenities and opportunities for physical activity (PA). Estacada also has one State park located outside of city limits.

Since the original audit, there have been two changes: The playground at River Mill, not previously mapped, is now included and the playground at a local church was removed as it is not a public resource.
Resources and Amenities for Public Parks and Playgrounds Shown by Location

Resources and Amenities include: picnic shelters, overnight camping, boating/fishing, areas to walk dogs, sports/playing fields and courts, playgrounds and Restrooms.

There are fees associated with certain amenities (e.g. camping) at Milo McIver State park.
Estacada has a variety of other physical activity options, both indoor and out, that may or may not have fees associated with them. This includes those resources and amenities previously mentioned at public parks. Since the 2014 mapping, a number of changes have occurred: Estacada has gained a Bike Plaza, Fitness Center, and River Outfitters within city limits and lost access to a sports field at a local church and an equestrian center due to its closure.
Resources that lie outside of Estacada city limits consist of a golf course and a beach/waterway. PA options include swimming, boating, fishing, and golfing.

*PA=Physical Activity
Resources and amenities include a Bike Plaza, with a workstation, bike racks and water bottle fill station, basketball and volleyball courts, a skate park, a community recreation center, two martial arts studios, and a fitness center.
School Physical Activity Resources

The School District allows public access to Gyms, Gardens, Tracks, Playgrounds, and various Sports/Playing Fields and Courts.
School Physical Activity Resources Shown by Location

- Estacada Elementary School
- Estacada Jr. High School
- Estacada Sr. High School
- River Mill Elementary School
- Access to School Gym
- Access to School Playing Fields/Courts
- Access to School Garden
- Access to School Playing Fields/Courts, Gymnasium, Garden, and Track

Legend:
- City Limits
- School District Boundary
Ease of Access to Resources

- Spatial accessibility is relative: if you have a car and gas money, your spatial access to resources is potentially only limited by how much time you want to spend in the car. As our goal is to include all potential community members, not just those with a means of transportation, we analyzed the proportion of community members who have “Easy Access” to resources.

- We described Easy Access as being located within a ¼ mile distance to a resource category.

- While Estacada does have some food and physical activity (PA) resources located close-in, the bulk of the PA and Local Food resources are located outside of city limits.

- Resources have been aggregated into 6 categories: Low/No Cost Outdoor PA, Low/No Cost Indoor PA, Fee-Based Outdoor PA, Fee-Based Indoor PA, Local Agriculture, Grocery and Food Assistance, Fast Food/Convenience Store and Restaurant

<table>
<thead>
<tr>
<th>Low/No Cost PA Resources</th>
<th>Fee-Based PA Resources</th>
<th>Local Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Centers</td>
<td>Golf Courses</td>
<td>Farm stands/U-picks</td>
</tr>
<tr>
<td>Public lands/Parks &amp; Playgrounds</td>
<td>Equestrian centers</td>
<td>Farmer’s markets</td>
</tr>
<tr>
<td>Sports Fields/Courts</td>
<td>Exercise/Fitness centers</td>
<td>Home-based sales (Eggs, Milk, Veggies)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hunting/Fishing/Gleaning Supports</td>
</tr>
</tbody>
</table>
Ease of Access to Food and Physical Activity Resources

Estacada's ease of access to resources remained relatively stable with some nominal changes: a 5% increase in access for Low/No cost Outdoor PA, a 10% increase for Low/No cost Indoor PA, and slight decreases (<5%) in both food categories. Still, less than 40% have easy access to the most healthy food sources, and less than 15% have access to any Indoor PA.

PA=Physical Activity
Overall, there were no changes in the raw number of resources for Grocery Stores, Café/ Deli/ Restaurants, or any PA category except Fee Based Indoor (One new Fitness Center). The largest change in resources was found in the Food Assistance category – due to the addition of multiple summer lunch sites as well as three food banks operated by faith based organizations. Finally, Estacada Lost two Local Food/ Agriculture resources (home- based types) and gained two Fast Food resources: one restaurant and one convenience store. PA=Physical Activity
Conclusions

In rural communities, a lack of available resources and accessibility to existing resources may make developing and maintaining healthy dietary and activity habits difficult.

Resources are available, but mainly located within city limits, leaving those who live in more rural areas without easy access. Supports need to be affordable and accessible from where people live and work.