

Rural Community Food and Physical Activity Environment

Chiloquin Audit Results Maps 2013-2016



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 Patty Case and Janet Rojina (Klamath County Extension Family and Community Health), in partnership with the GROW HKC project campus team: Winfield, T., John, D., and Gunter, K.

GROW Healthy Kids & Communities Background Information

GROW HKC partners with rural people, organizations, and communities to generate local options to support weight healthy lifestyles – healthy eating and physical activity every day - for all children and families.

GROW engages people in the communities we serve in assessing the conditions that most affect them where they live, learn, work and play. We do this to identify what changes will best support weight healthy behaviors for children and families and improve food and physical activity resources in the community.

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.

GPS-Assisted Observational Survey Tool

GROW HKC

Community Food Environment Audit

Please use the provided Garmin (GPS) unit, in conjunction with this survey, to map, photograph, and log information about all the food environment and resources in your community. If you do not have access to a Garmin unit, you may use any other GPS mapping device, such as a QStarz or GPS app on your smartphone, along with a camera. For each photograph that you take, please take care not to include people in your photographs.

Specifically, you will map, photograph and log information about all possible food resources in your community. Once you complete the audit of your sector, please check off all of the food resource categories that you encountered in your sector.

- A. Grocery Stores
- B. Convenience Stores
- C. Roadside or Dockside Retailers
- D. Restaurants
- E. Vending Machines (in public spaces)
- F. Food Banks and Food Pantries
 - Food Assistance Programs, including:
 - G. Meals on Wheels
 - H. Gleaners
 - I. Free Meal Sites
 - J. Summer Meal Service Programs
- K. Farm Stands / U-Pick Operations
- L. Farmers Markets
- M. Community Gardens
- N. Hunting, Fishing and Foraging Supports
- O. Home-Based Food Retailers
- P. Other Community Food Resources

A. Grocery Stores

Name of Store: _____

A *grocery store* is a retailer where people buy most of their food for meals and snacks.

Photographs and Logs: Please photograph and log (with the Garmin unit) each grocery store you come across in your sector.

Take a photo of the front of the grocery store. Take a single photo, if you can capture the entire store and the sign with the store's name in a single shot. If you need to take more than one photo to capture the entire store and the sign, take the shot looking straight ahead, and as needed, 1-2 shot(s) looking to the left and to the right. Record your photo code(s), below.

- looking straight ahead DSC _____ .JPG
- looking to the left (as needed) DSC _____ .JPG
- looking to the right (as needed) DSC _____ .JPG

Take additional photographs that describe the access to this store. Examples of photographs to take are listed below. For each feature that is present, please take no more than one photo.

- Bike rack at the store DSC _____ .JPG
- Bus stop adjacent to the store DSC _____ .JPG
- Parking at the store. Also, note the type of parking, below. DSC _____ .JPG
 - Streetside
 - Parking lot
- Handicapped parking spaces at the store DSC _____ .JPG
- Ramps / curb cuts that promote handicap accessibility DSC _____ .JPG
- Evidence of walking access to the store
 - Sidewalk leading to store DSC _____ .JPG
 - Crosswalks DSC _____ .JPG
- Sign or poster that states the store hours DSC _____ .JPG
- Sign or poster that states that the store takes SNAP, EBT or Oregon Trail DSC _____ .JPG
- Sign or poster that states that the retailer is a WIC-authorized vendor DSC _____ .JPG
- Other access feature (Describe: _____) DSC _____ .JPG

Food Retailer Description: Please categorize this food retailer, by answering the questions below to the best of your knowledge.

Is a membership required to shop in this store (e.g., Bi-Mart, Costco, Sam's Club)?
 Yes No I don't know

Can you purchase products in bulk in this store?

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.

Rurality and Weight Health

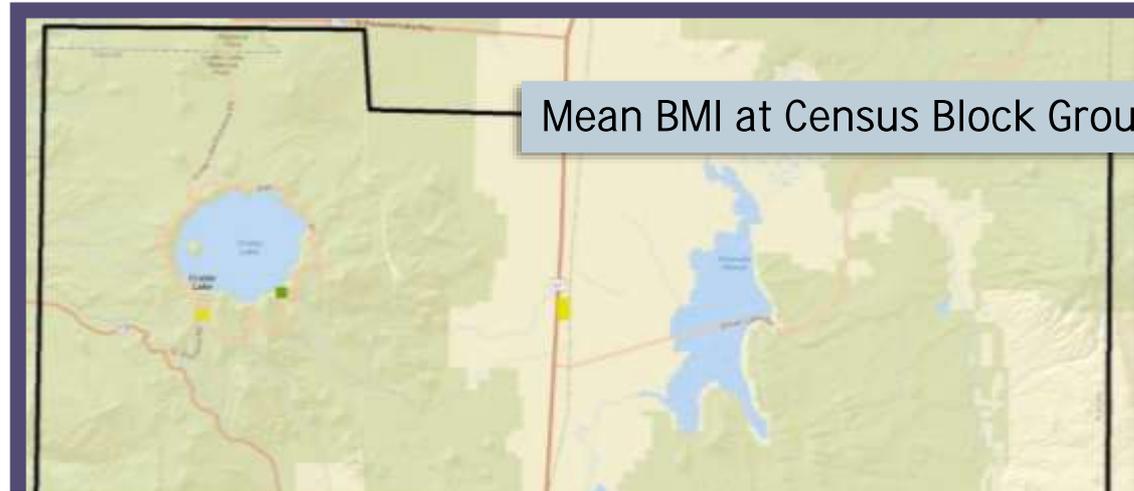


Many risk factors have been associated with childhood obesity, including rural residency

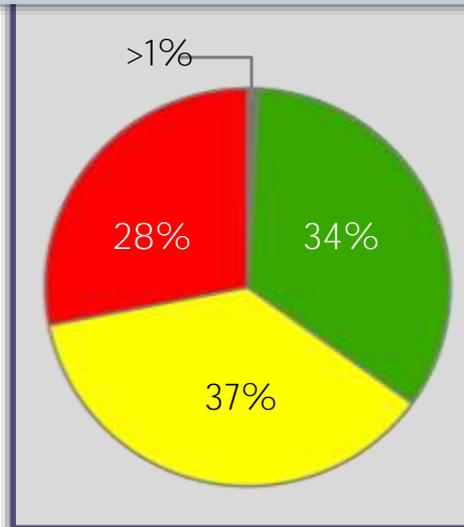
- Overweight/obesity prevalence is higher among children living in rural (36%) compared to urban (30%) areas
- Weight health and habits carry over into adulthood
- Rural communities face unique environmental challenges that can impact residents' healthy eating and physical activity lifestyle patterns
- Environmental strategies found to prevent obesity have focused on more urban areas

Chiloquin Community - Adult Weight Health (BMI)

Visualizing weight health in Chiloquin was enabled by the *Oregon Environmental Public Health Tracking Program



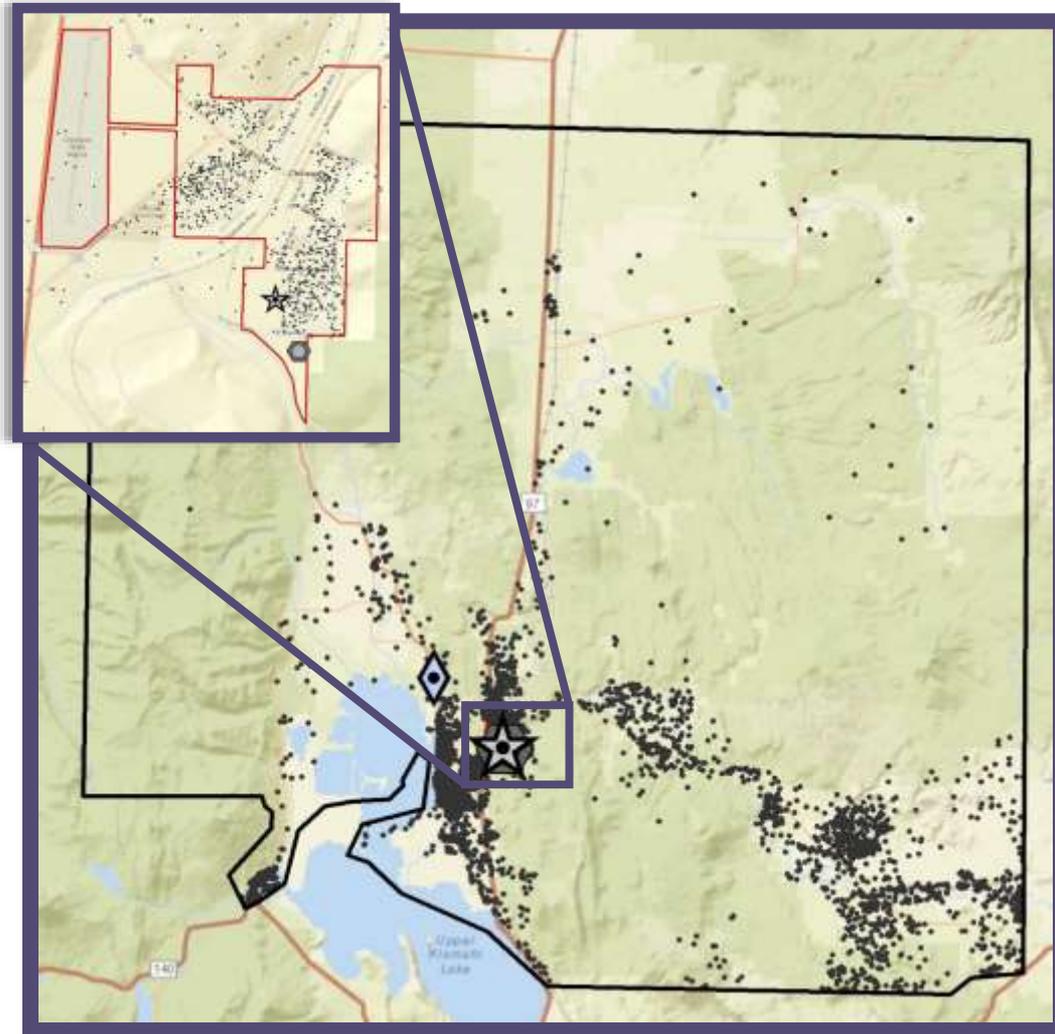
Mean % BMI at School District Level



*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 Chiloquin City Limits



Within the School District Boundary, Chiloquin has 4593 people living in 3048 households (2010 census) spatially dispersed in an area of about 1900 sq. mi.

Easy access to locally available resources is determined by proximity, transportation mode, ability to drive, cost & household income, etc., which will vary among families

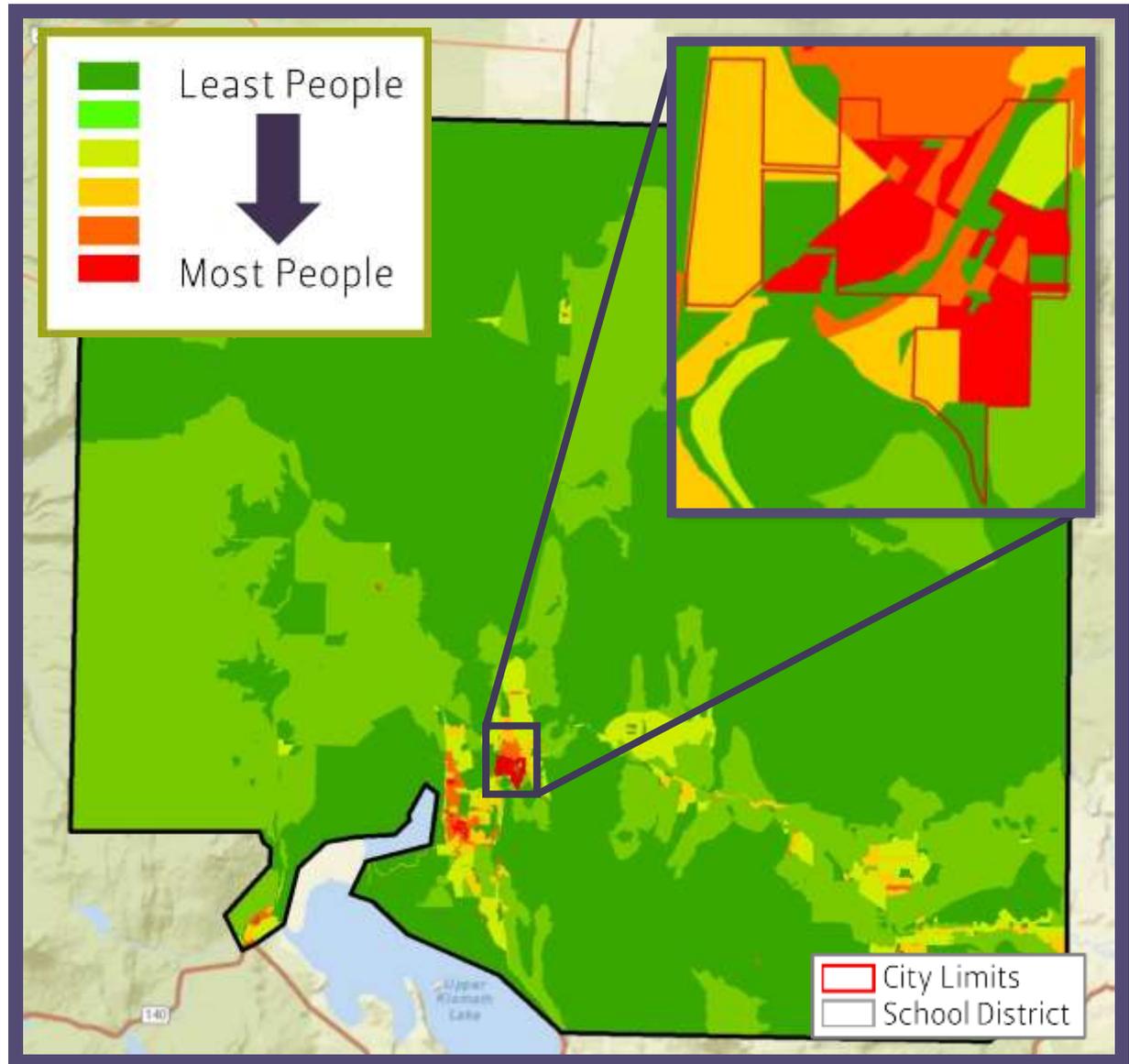
- ★ Chiloquin Elementary School
- ⬡ Chiloquin Jr/Sr. High School
- ◆ Sage Charter School
- ▭ City Limits
- ▭ School District Boundary
- Population
1 Dot = 1 Household

Using Maps to Show Where Most People Live...

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; Chiloquin is sparsely populated (greens) throughout much of the boundary area

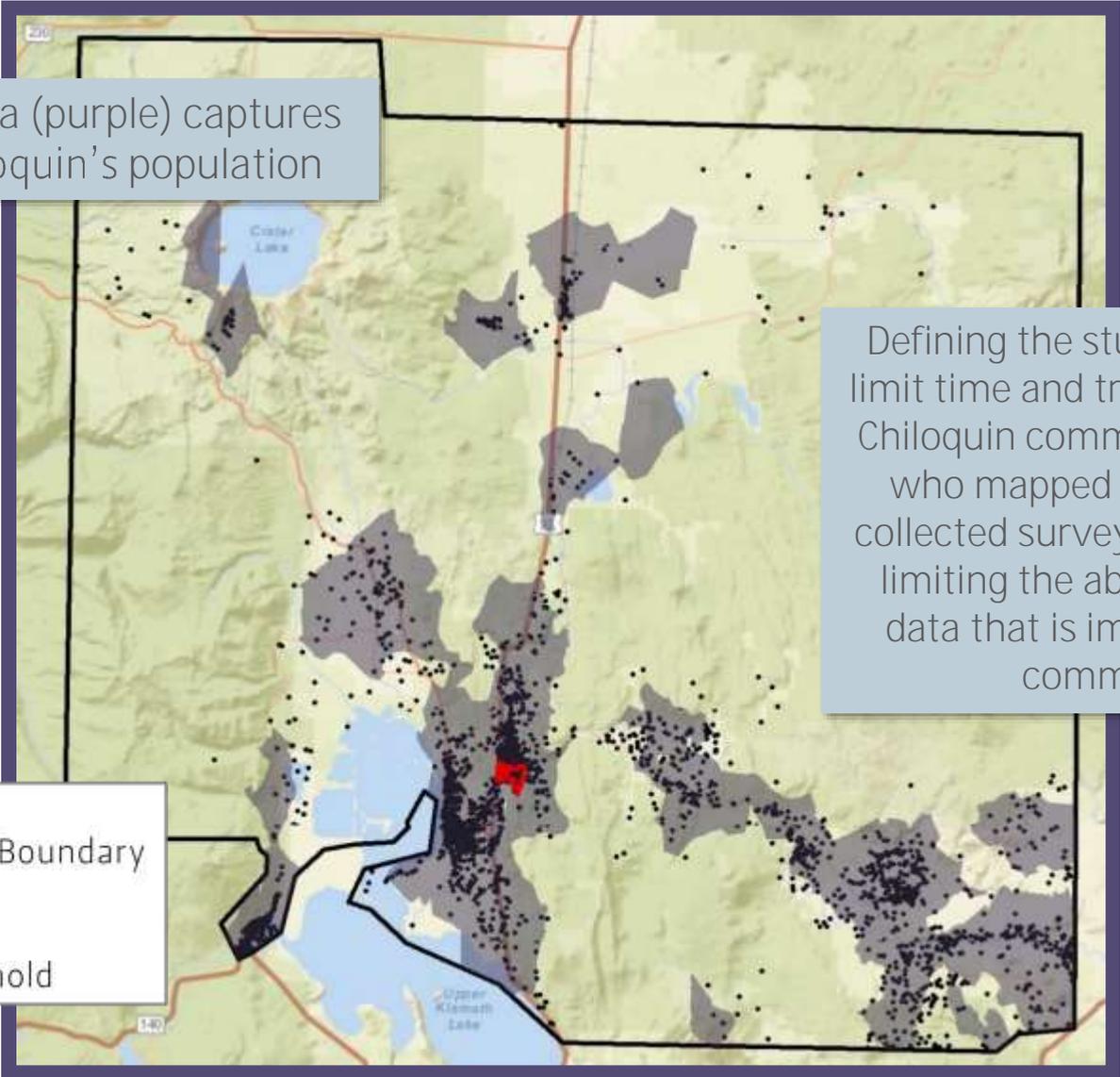


Using Maps to Show Where Most People Live: Study Area

In order to determine the food and physical activity resources relevant to where most people live, we defined a “study area” using the areas most densely populated locales.

The study area (purple) captures 98% of Chiloquin’s population

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

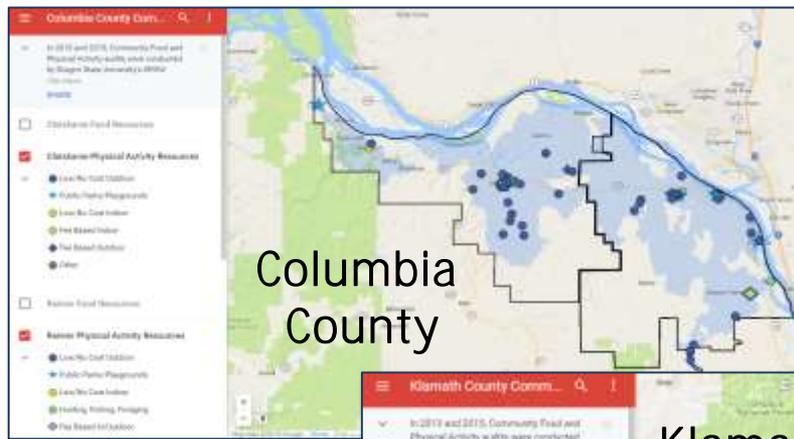
- 
- The map displays the geographical layout of Chiloquin, Oregon. A red outline indicates the city limits, while a black outline shows the school district boundary. A purple shaded region represents the study area, which is densely populated with black dots representing households. A red star marks a central location within the study area. Two lakes are labeled: Colyer Lake in the upper left and Upper Klamath Lake in the lower right. The map also shows various roads and terrain features.
- City Limits
 - School District Boundary
 - Study Area
 - Population
 - 1 Dot= 1 Household

Resource Maps

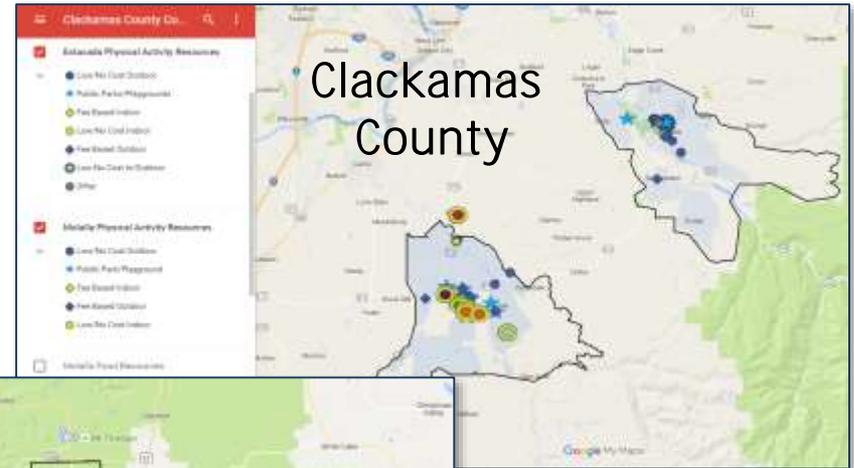
We collected information on resources in each community in 2014 and again in 2016 to assess any changes in resource availability and accessibility in our communities.

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:

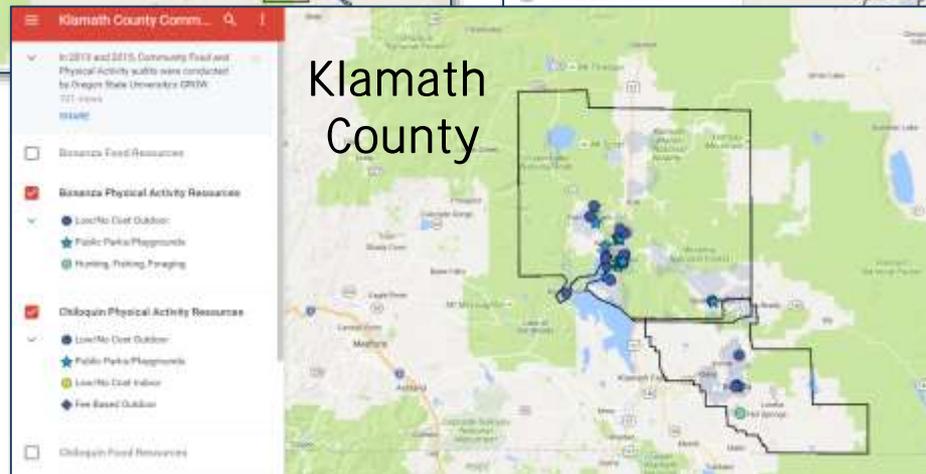
<http://extension.oregonstate.edu/growthkc/outputs/maps>



Columbia County

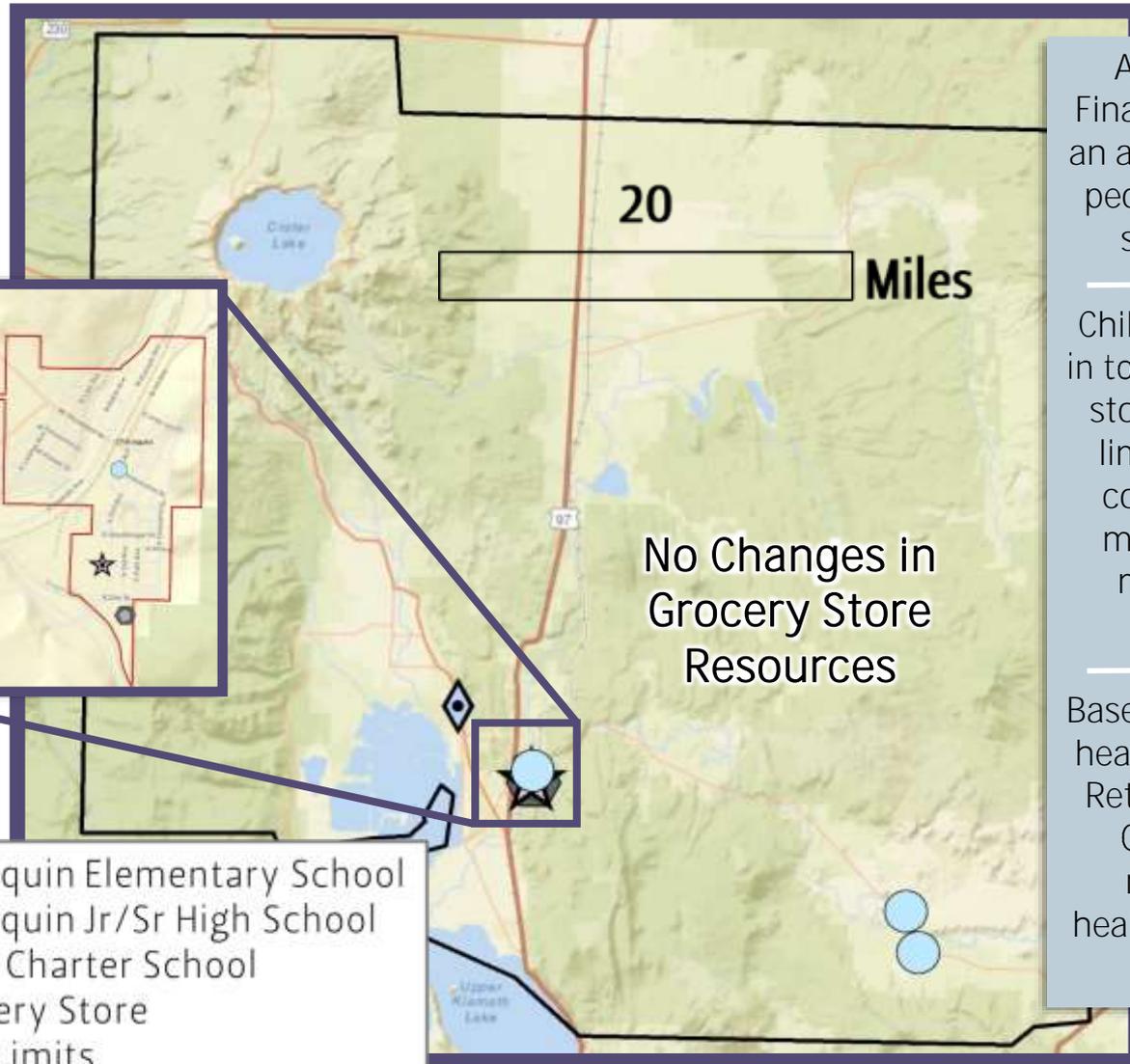


Clackamas County



Klamath County

Change in Resources for Grocery Stores



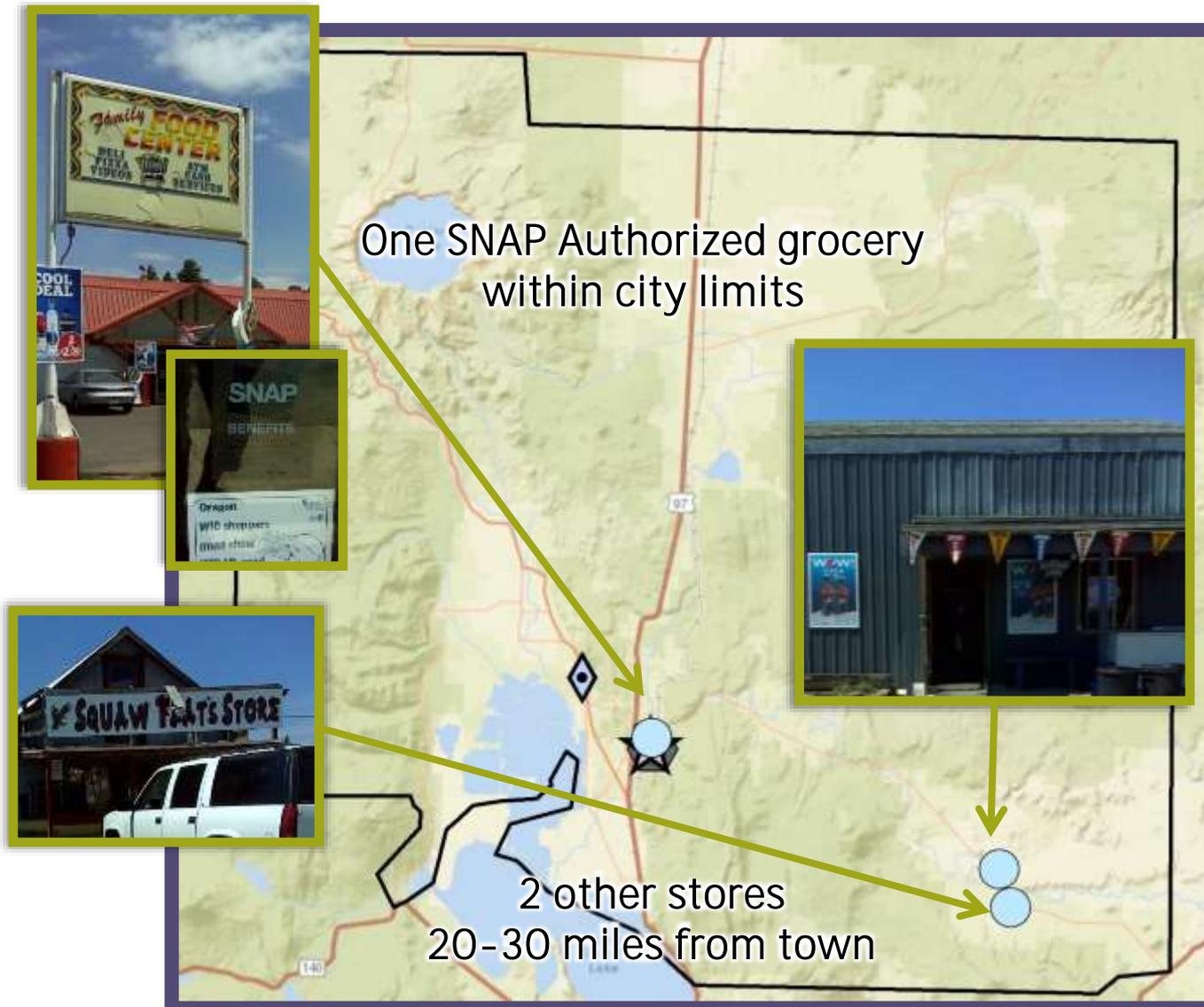
- ★ Chiloquin Elementary School
- ⬡ Chiloquin Jr/Sr High School
- ◆ Sage Charter School
- Grocery Store
- ▭ City Limits
- ▭ School District Boundary

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

Chiloquin has a small grocery store in town and other smaller “country” stores located well outside of city limits. However, Chiloquin is still considered a food desert, as the majority of residents live 20-30 miles away from a full service grocery store

Based on a measure of availability of healthy food options, the “Modified Retail Food Environmental Index,” Chiloquin scored “0” on scale ranging from 0 (no access to healthy food) to 100 (only access to healthy food)

Resources for Groceries Shown by Location



The Family Food Center is a small grocery store located within city limits and it is one of Chiloquin's SNAP retailers.

SNAP, or the Supplemental Nutrition Assistance Program, is a federal program that offers nutrition assistance to income eligible families and individuals

Limited access to affordable fresh produce is a barrier to healthy eating for people living in Chiloquin

The closest full service supermarket is 30 miles south of Chiloquin, meaning grocery access is car dependent, for most of Chiloquin

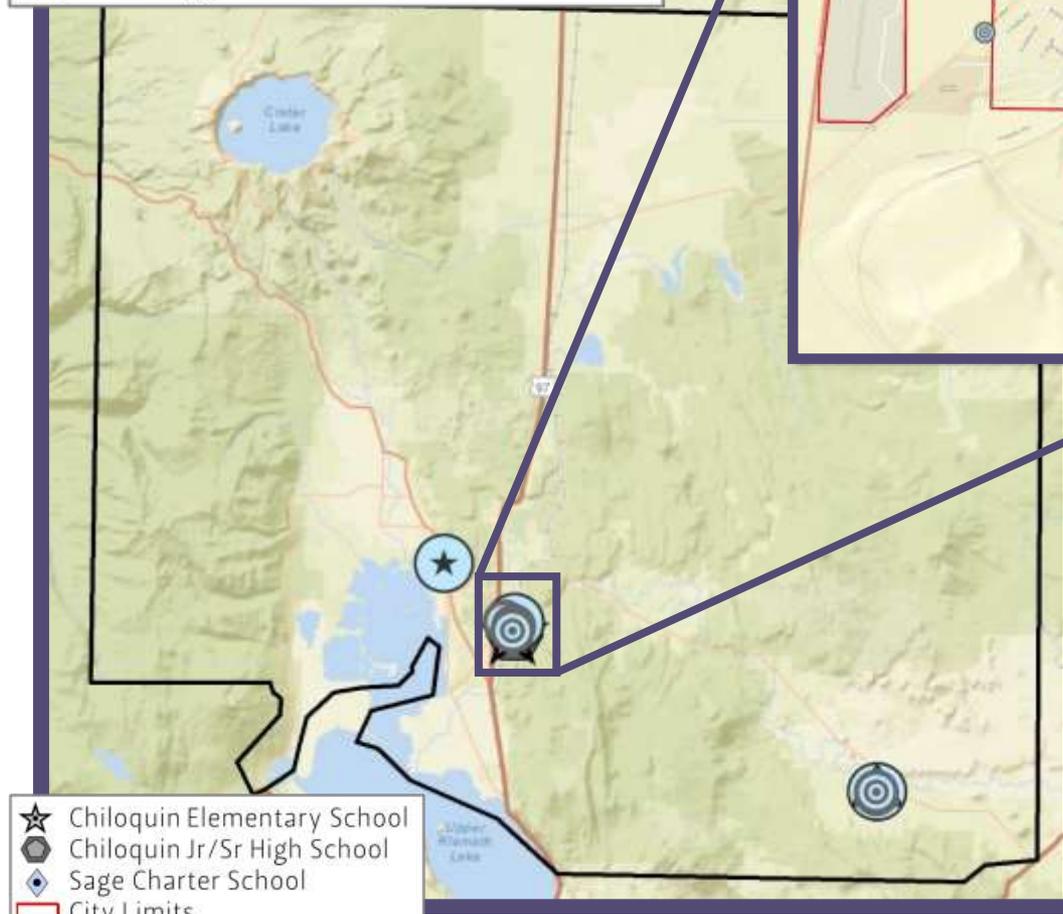
Change in Resources for Local Food, Agriculture, and Food Assistance

Chiloquin 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.

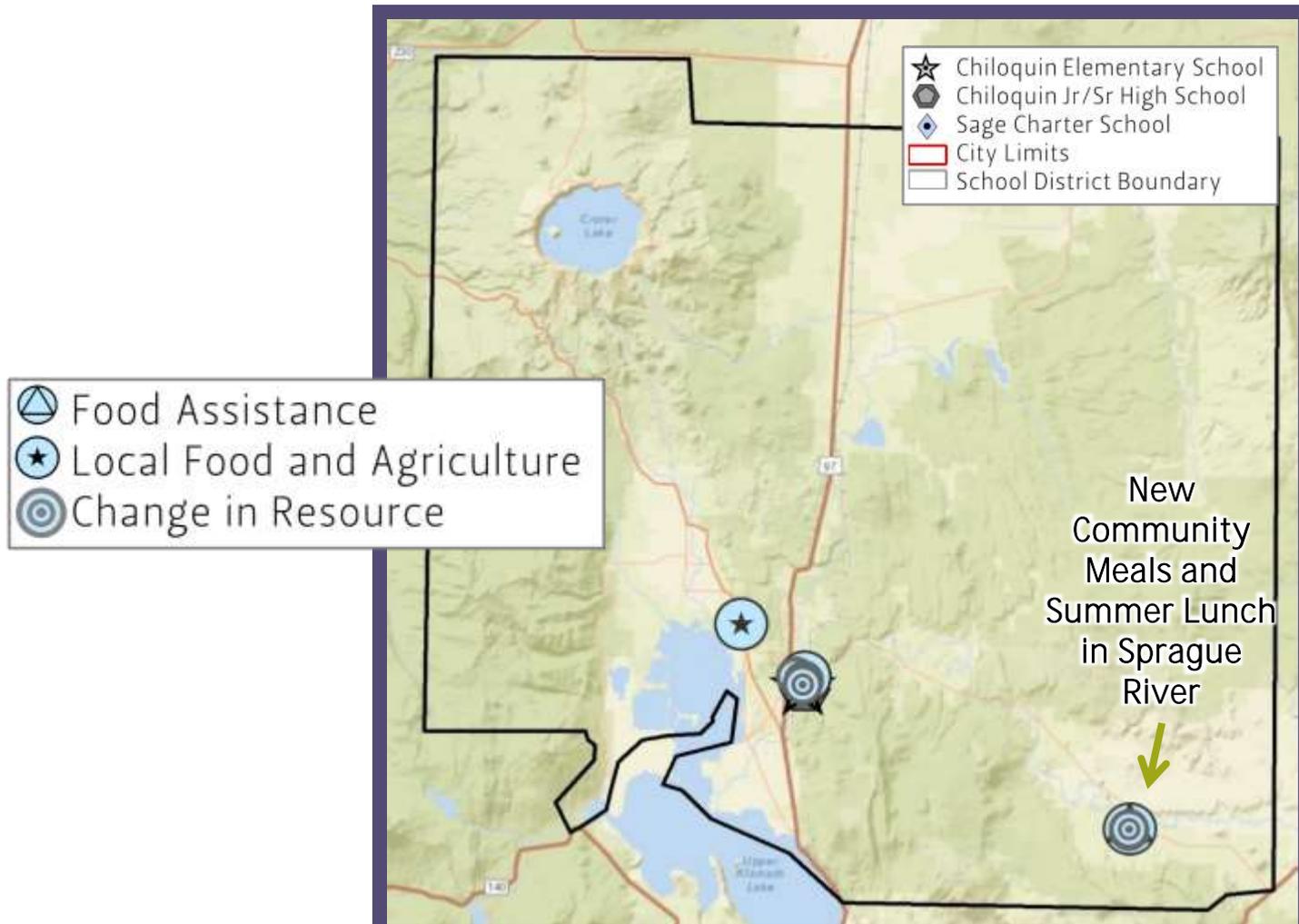
Food Assistance includes food banks, summer lunch programs, community meals and other supplemental food support programs.

- ◉ Food Assistance
- ★ Local Food and Agriculture
- ◉ Change in Resource



- ★ Chiloquin Elementary School
- ⬡ Chiloquin Jr/Sr High School
- ◆ Sage Charter School
- ▭ City Limits
- ▭ School District Boundary

Change in Resources for Local Food, Agriculture & Food Assistance Shown by Location

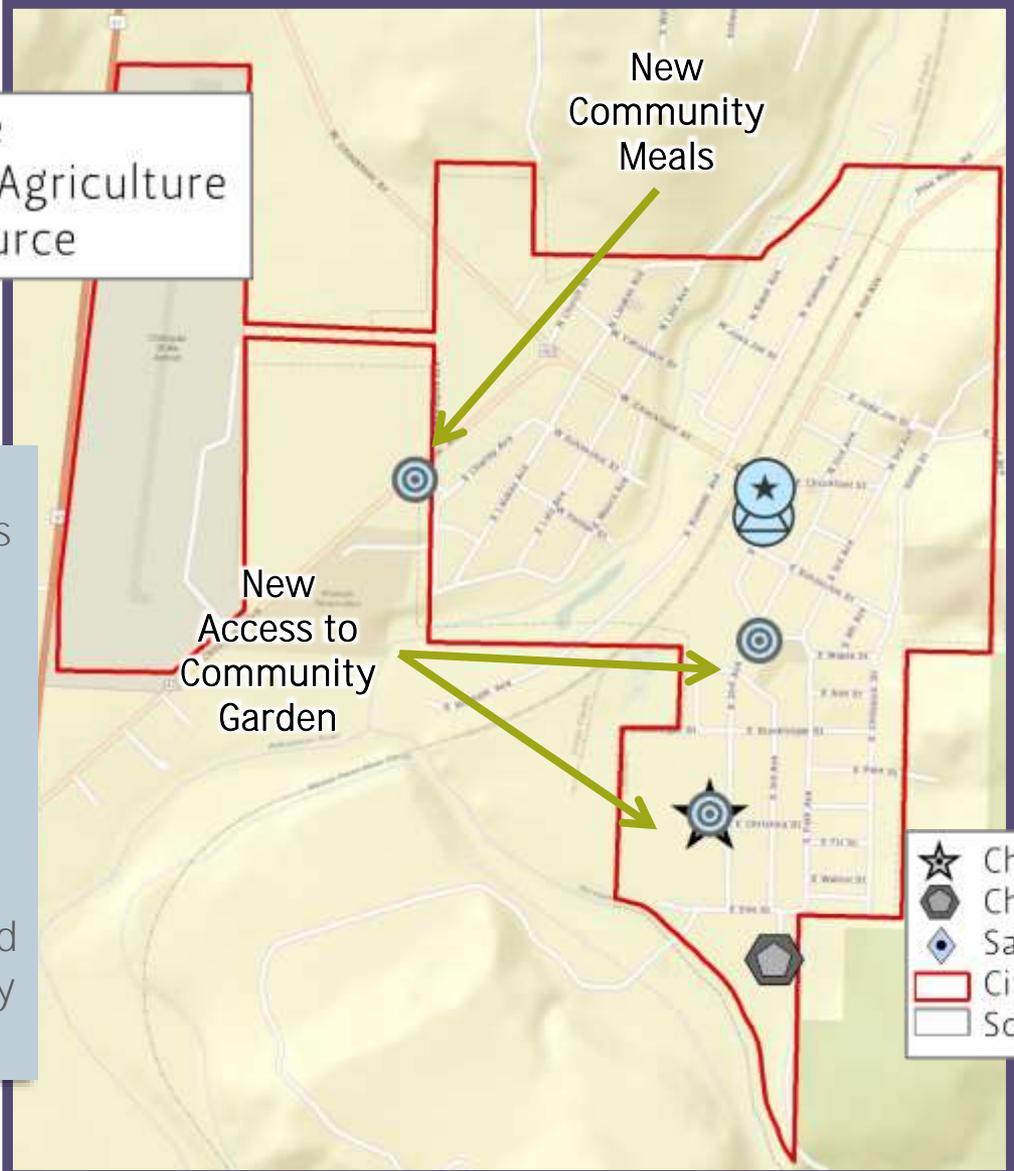


There have been a number of additions to both Local Food/Agriculture and Food Assistance in and around Chiloquin. Since the first Audit, there have been community meals added at the Sprague River community center and Summer Lunch at the Sprague River Library.

Change in Resources for Local Food, Agriculture & Food Assistance Shown by Location

- ⊕ Food Assistance
- ★ Local Food and Agriculture
- ⊙ Change in Resource

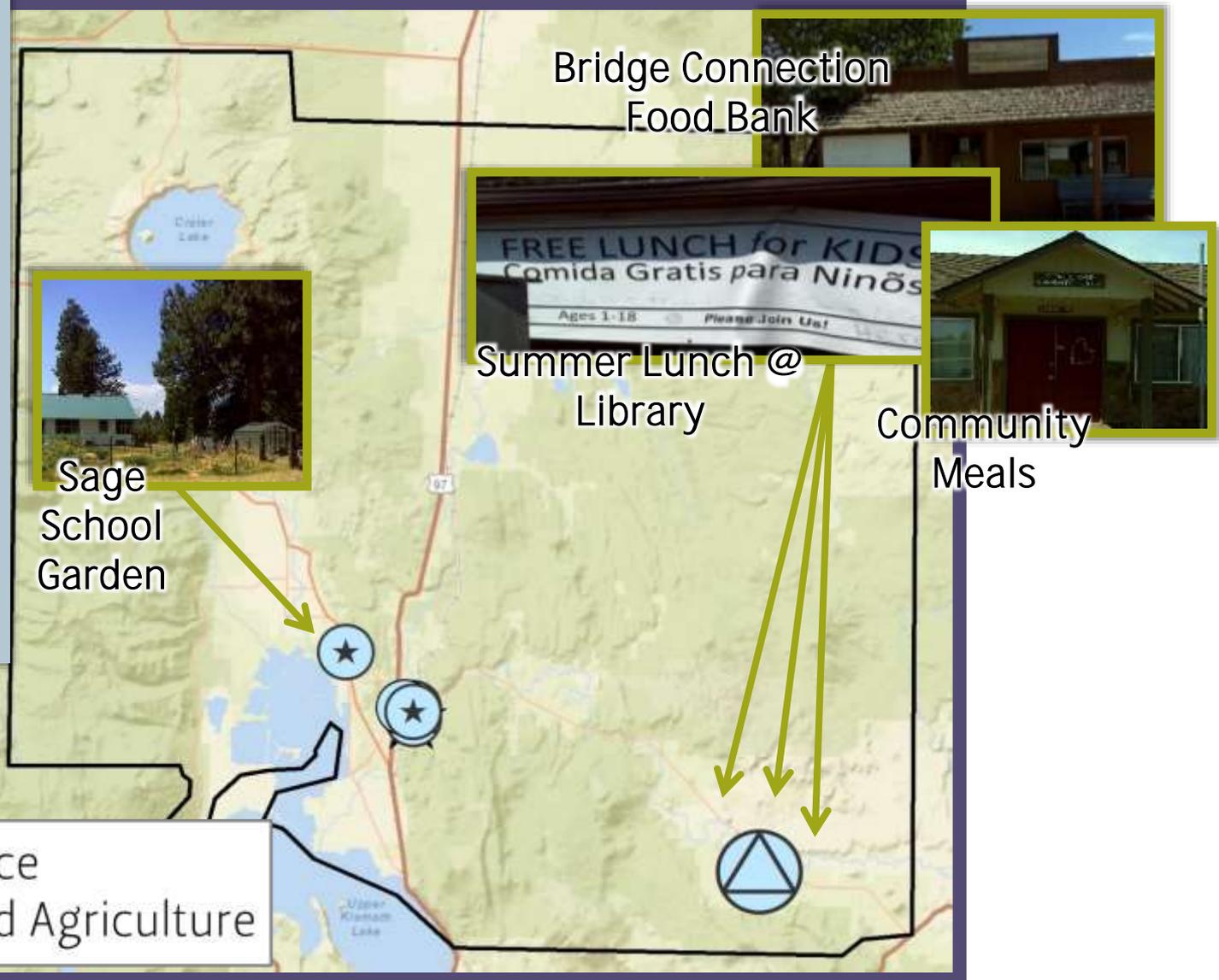
Within city limits, community members now have access to community meals (including home delivery) from the Christian Center and access to two gardens: one community based and one at the elementary school.



- ★ Chiloquin Elementary School
- ⬡ Chiloquin Jr/Sr High School
- ◆ Sage Charter School
- ⬜ City Limits
- ⬜ School District Boundary

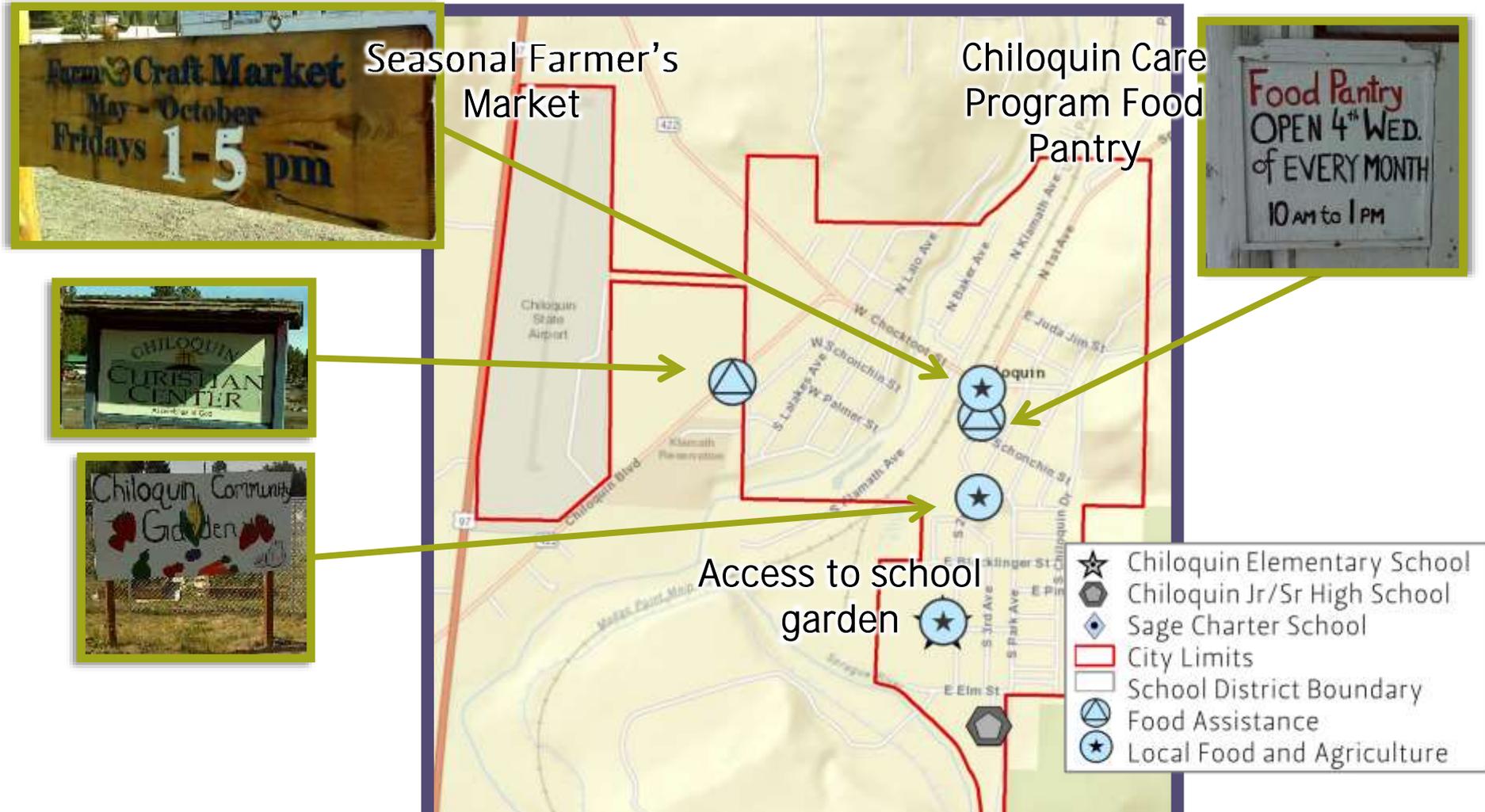
Resources for Local Food, Agriculture & Food Assistance Shown by Location

There are four resources that lie outside of Chiloquin city limits. There is a garden at the Sage Charter school and a number of food assistance resources in the Sprague River community: a Food Bank/Pantry, Summer lunch at the library, and community meals at the community center.



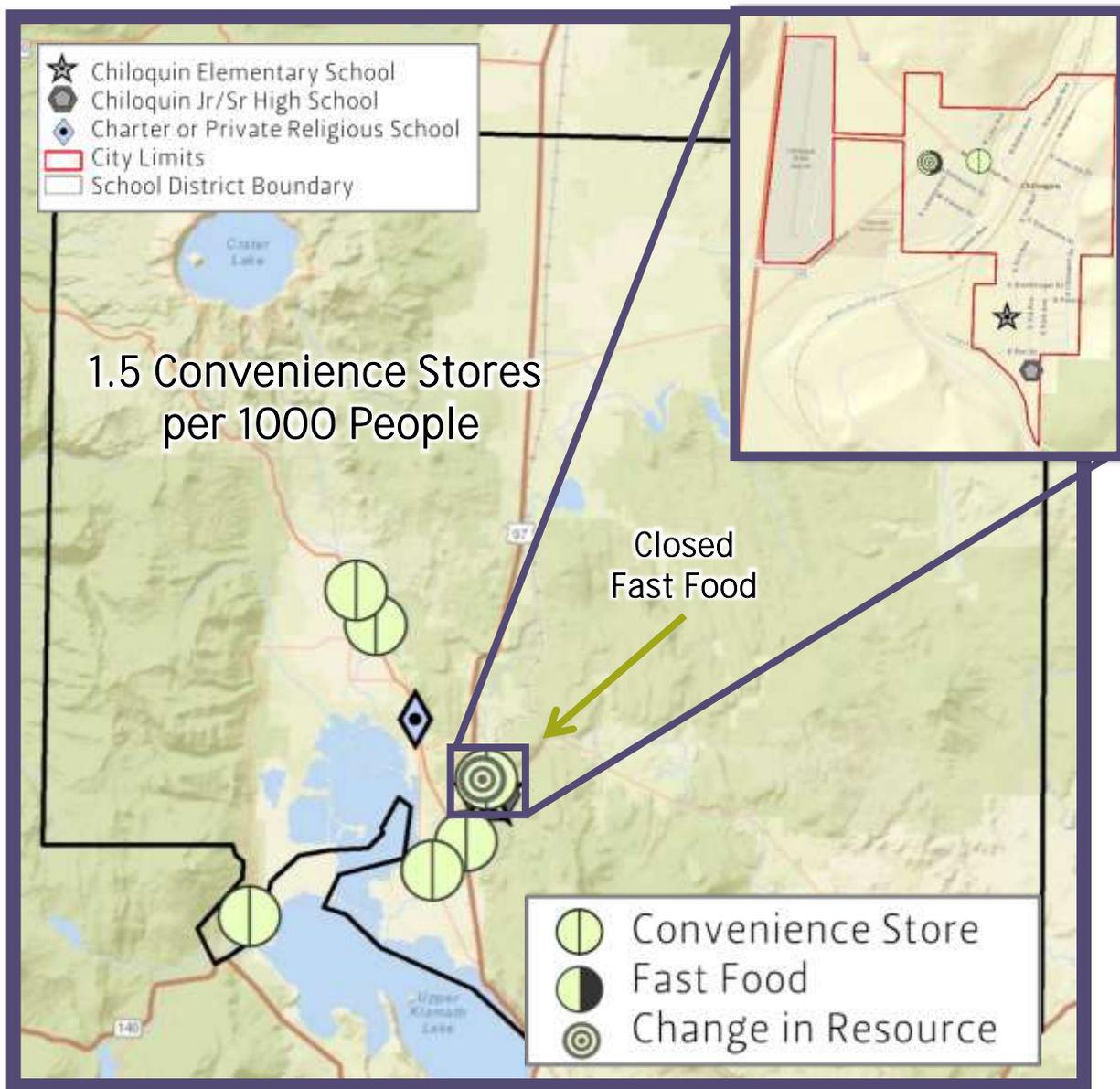
- △ Food Assistance
- ★ Local Food and Agriculture

Resources for Local Food, Agriculture & Food Assistance Shown by Location



Within Chiloquin's city limits, there is a seasonal Farmer's Market as well as access to both the community and the elementary school gardens. There is also a Food Bank/Pantry and community meals (with delivery) offered at the a local church.

Change in Convenience Stores and Fast Food Resources



Chiloquin has six convenience stores. Since the original Audit, the lone fast food restaurant (TP Burger) has closed

Chiloquin's "Modified Retail Food Environmental Index" score was 0. 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

Comparing the ratio of fast food establishments per 1000 people to the fact that Chiloquin has less than one grocery store per 1000 people, you can see why Chiloquin scores low on this index

Resources for Fast Food and Convenience Stores Shown by Location



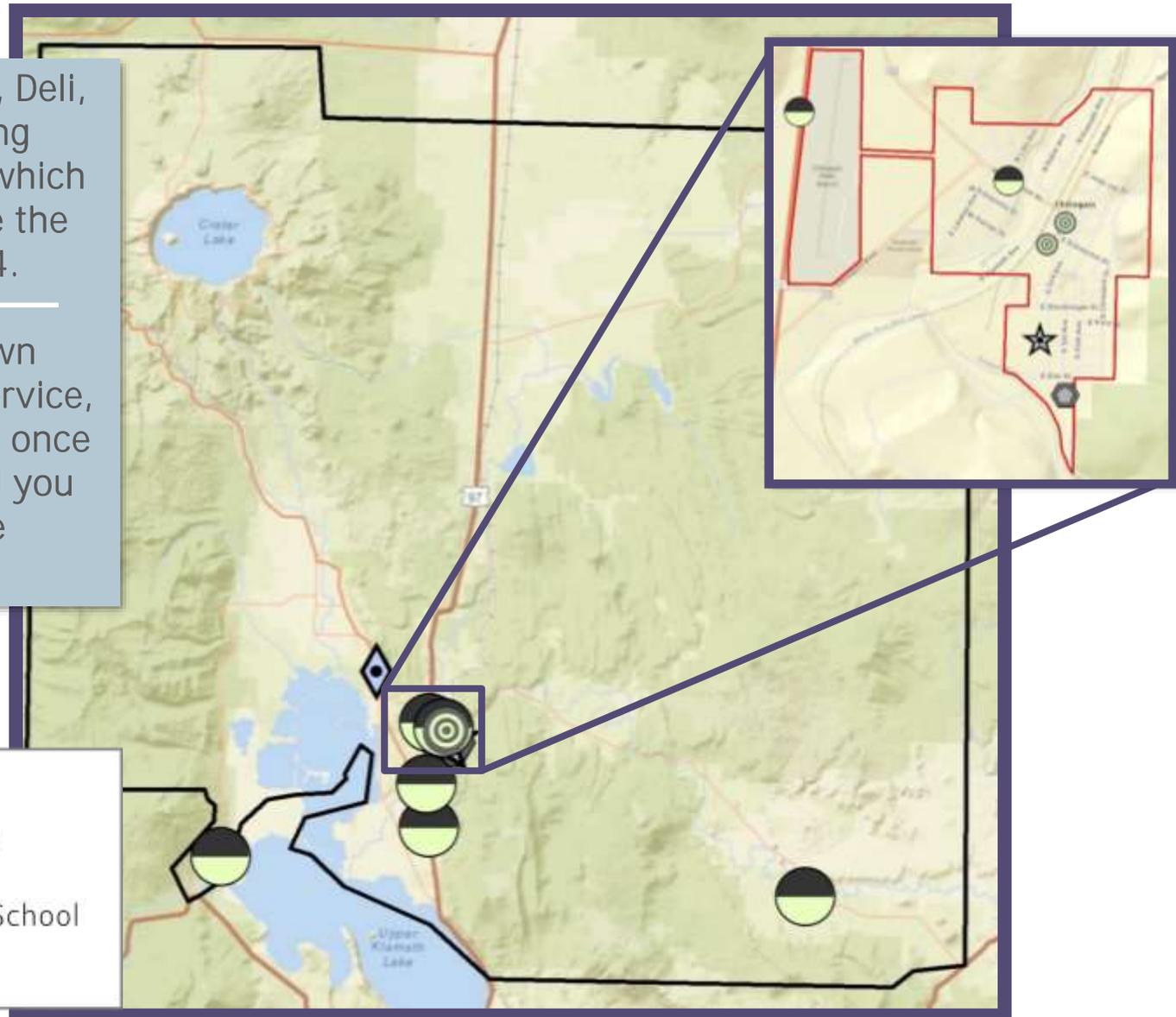
WIC is a SNAP program that provides supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age five who are found to be at nutritional risk

Change in Resources for Cafés, Delis, and Restaurants

Chiloquin has eight Café, Deli, Restaurant type eating establishments, two of which are new additions since the original audit in 2014.

There are five Sit-down restaurants with table service, one Deli/sandwich shop, once Café/Bakery and one all you can eat/buffet style establishment

- Café, Deli, Restaurant
- ◎ Change in Resource
- ★ Chiloquin Elementary School
- ⬠ Chiloquin Jr/Sr High School
- ◆ Charter or Private Religious School
- ▭ City Limits
- ▭ School District Boundary



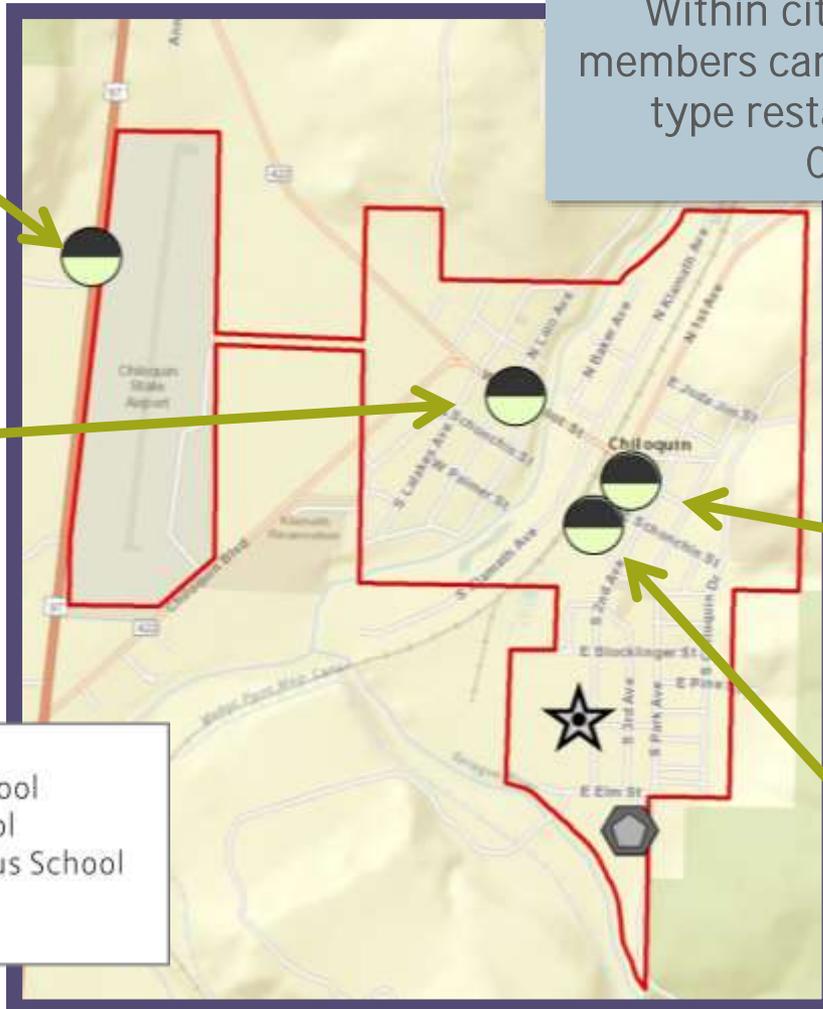
Resources for Cafés, Delis, & Restaurants Shown by Location

Outside of city limits community members can dine at an All You Can Eat Buffet, a Deli, a Mexican Restaurant and a Resort Based Restaurant

- Café, Deli, Restaurant
- ★ Chiloquin Elementary School
- ⬢ Chiloquin Jr/Sr High School
- ◆ Charter or Private Religious School
- ▭ City Limits
- ▭ School District Boundary



Resources for Cafés, Delis, & Restaurants Shown by Location



Within city limits community members can dine at three sit down type restaurants as well as a Café/Bakery



-  Café, Deli, Restaurant
-  Chiloquin Elementary School
-  Chiloquin Jr/Sr High School
-  Charter or Private Religious School
-  City Limits
-  School District Boundary

Change in Resources for Public Parks and Playgrounds

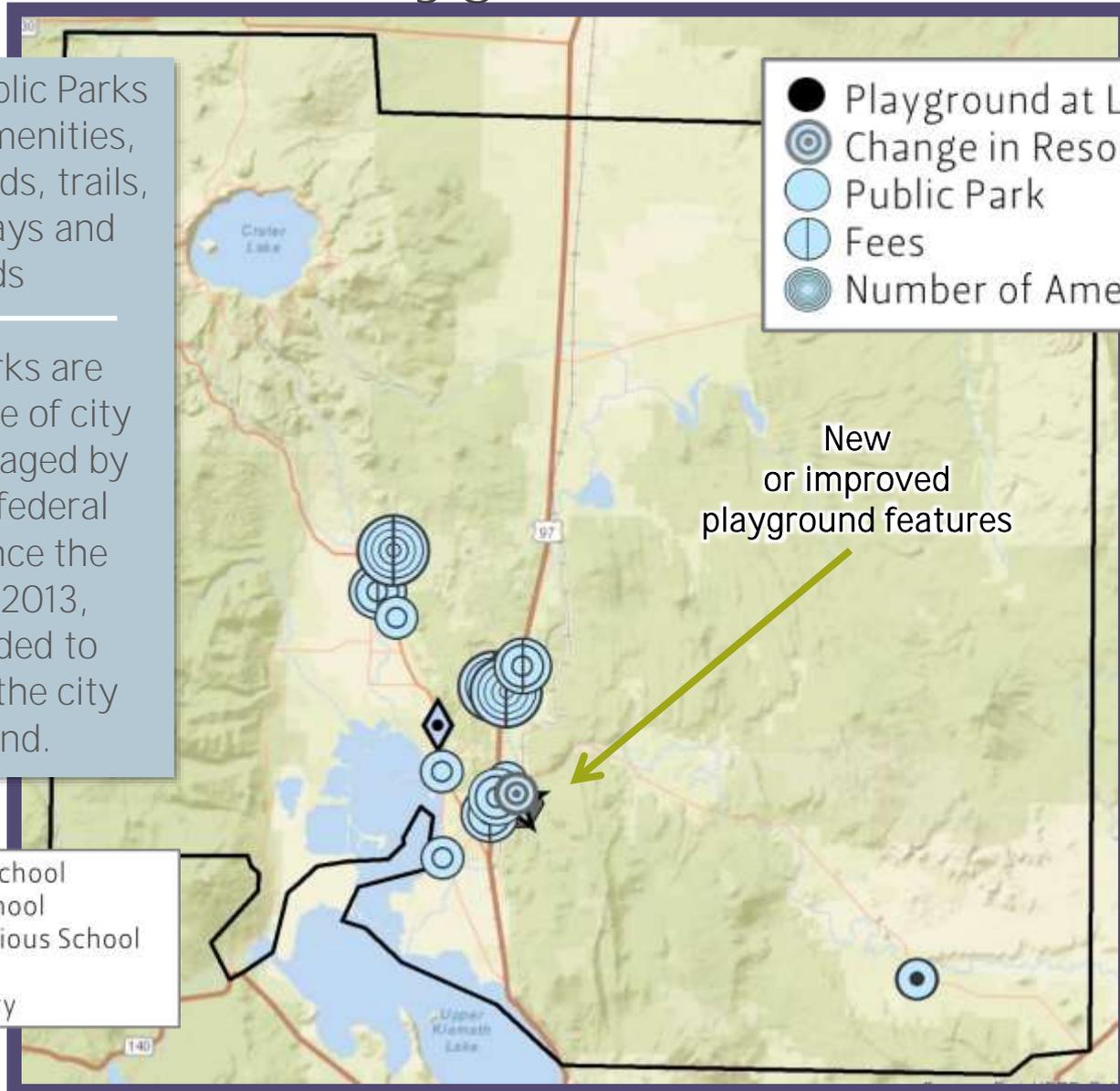
Chiloquin has 11 Public Parks with a variety of amenities, including playgrounds, trails, beaches/waterways and campgrounds

Most of these parks are located well outside of city limits and are managed by county, state, or federal organizations. Since the original Audit in 2013, Chiloquin has added to and/or improved the city park playground.

- Playground at Location
- ◎ Change in Resource
- Public Park
- ◐ Fees
- ◑ Number of Amenities (1-6)

New or improved playground features

- ★ Chiloquin Elementary School
- ⬢ Chiloquin Jr/Sr High School
- ◆ Charter or Private Religious School
- ▭ City Limits
- ▭ School District Boundary



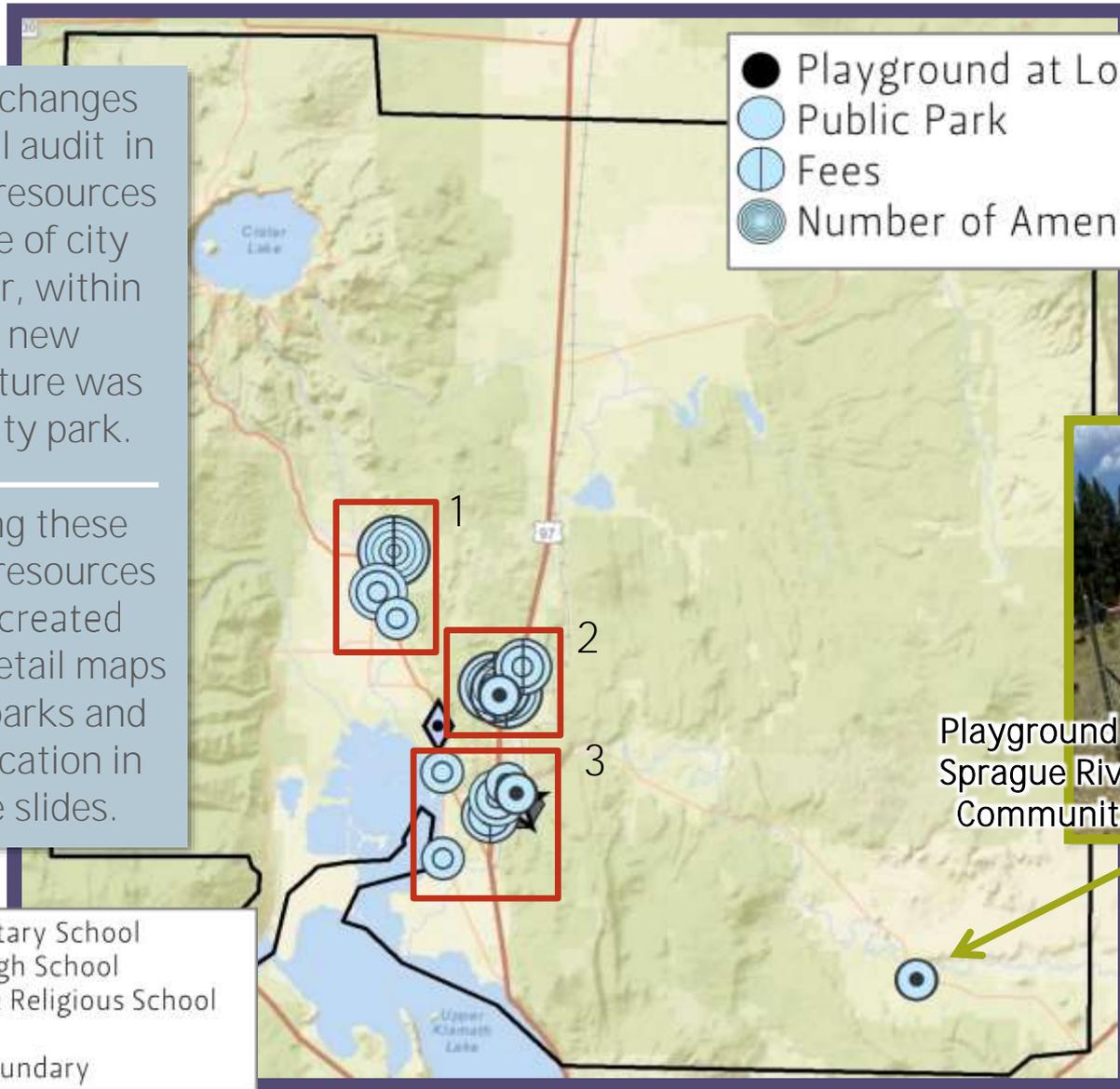
Resources and Amenities for Public Parks and Playgrounds Shown by Location

There were no changes from the original audit in any of the park resources located outside of city limits. However, within city limits a new playground feature was added to the city park.

To make seeing these parks and their resources easier, we've created three separate detail maps that show the parks and amenities by location in the next three slides.

- ★ Chiloquin Elementary School
- ⬠ Chiloquin Jr/Sr High School
- ◆ Charter or Private Religious School
- ▭ City Limits
- ▭ School District Boundary

- Playground at Location
- Public Park
- ◐ Fees
- ◑ Number of Amenities (1-6)



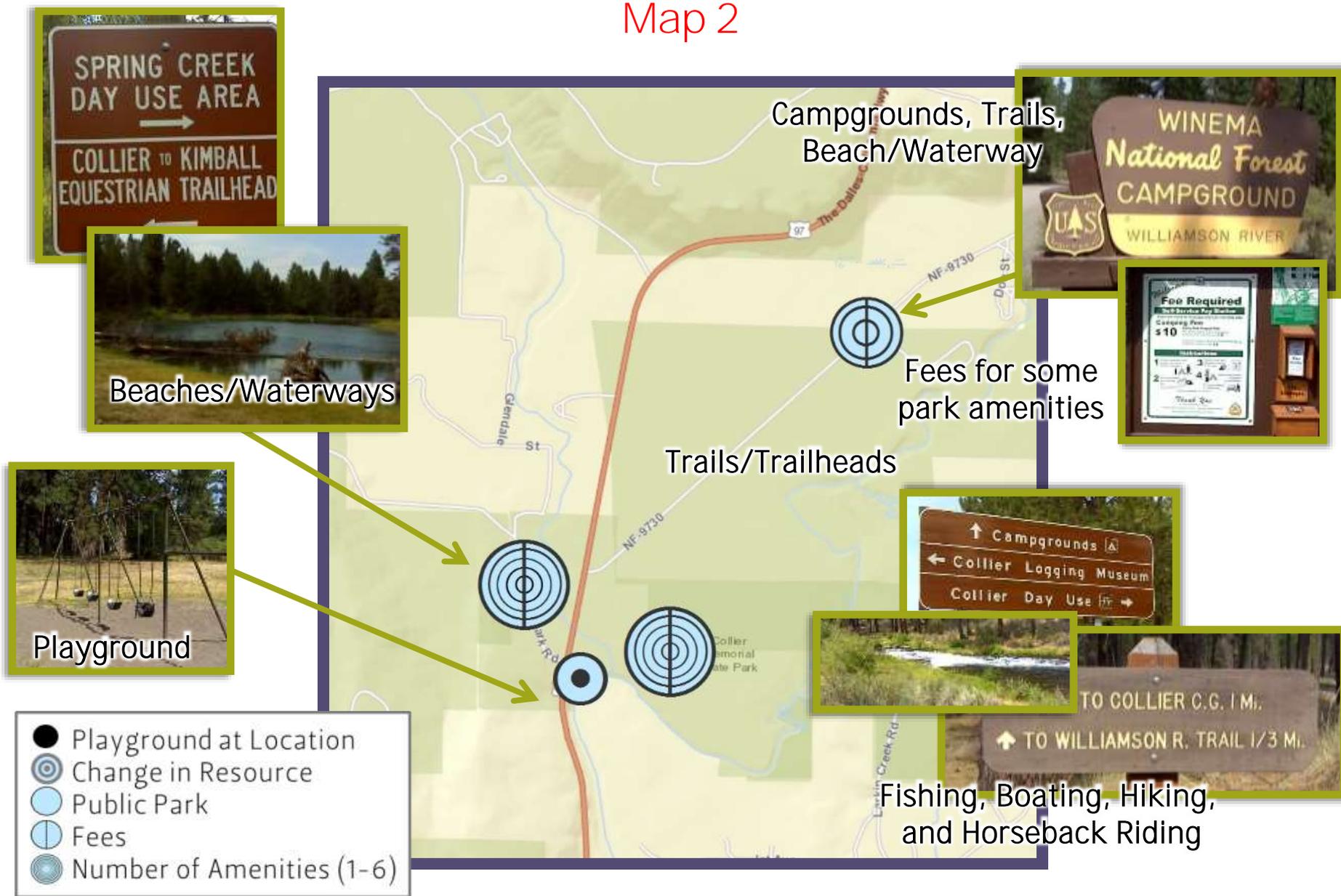
Resources and Amenities for Public Parks and Playgrounds Shown by Location

Map 1



Resources and Amenities for Public Parks and Playgrounds Shown by Location

Map 2



Resources and Amenities for Public Parks and Playgrounds Shown by Location

Map 3



Changes in Resources for Other Physical Activity

- ★ Chiloquin Elementary School
- Chiloquin Jr/Sr High School
- ◆ Charter or Private Religious School
- ▭ City Limits
- ▭ School District Boundary

No changes
in these resources
since the 2013 audit

Chiloquin has a variety of other physical activity options that take place both indoor and out, and may or may not require fees, these include amenities previously mentioned located within public parks

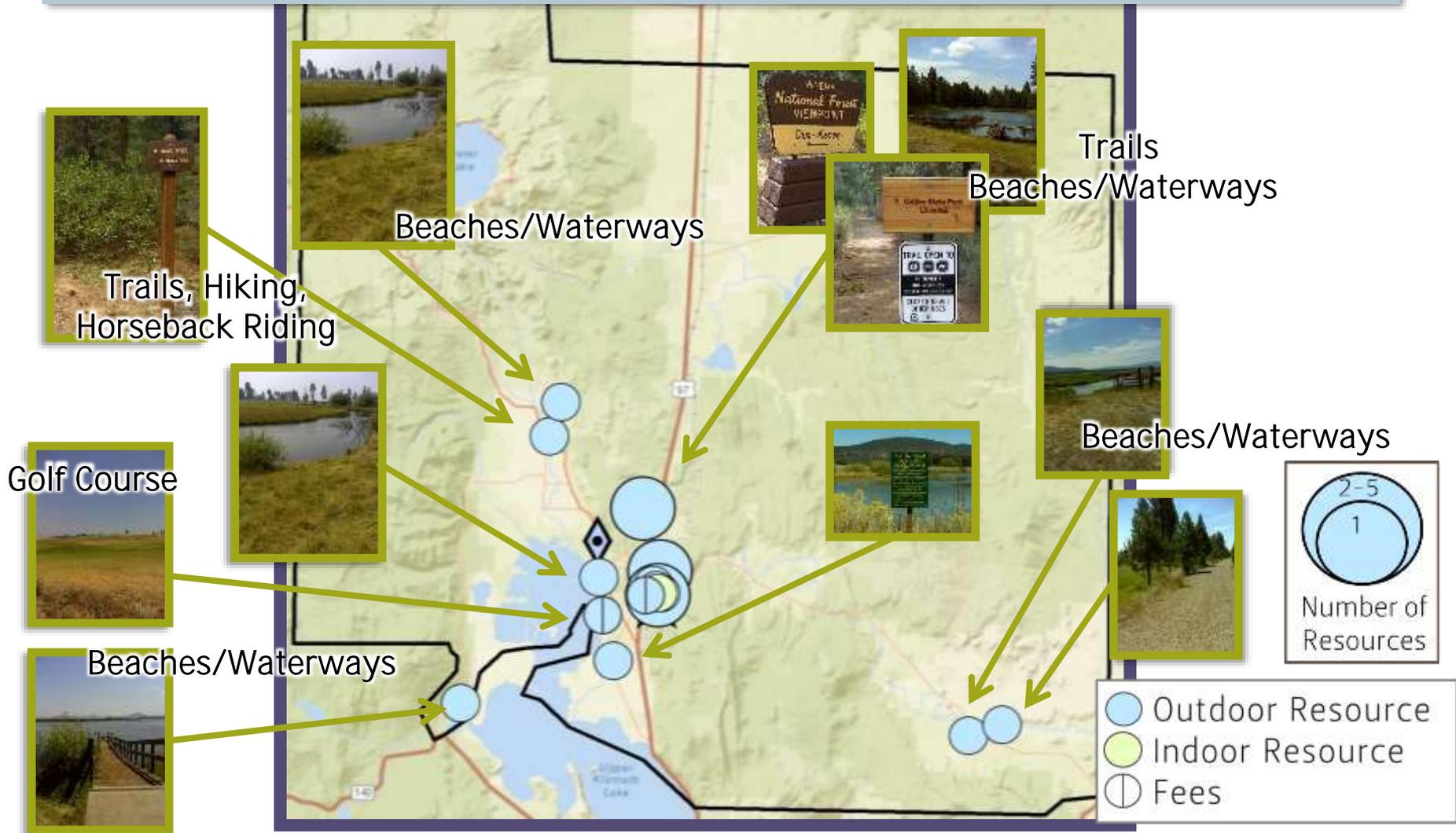


- Outdoor Resource
- Indoor Resource
- Fees



Resources and Amenities for Other Physical Activity Resources Shown by Location

Outside of city limits there are a number of low or not cost resources like trails or beaches/waterways, that offer hiking, horseback riding and boating and fishing activities. The community also has access to a golf course, which has fees associated with it. All of these resources are located outdoor.



Resources and Amenities for Other Physical Activity

Resources Shown by Location

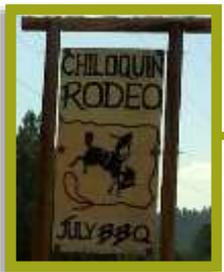
Within city limits there are a number of low or no cost resources like trails and beaches/waterways as well as two low/no cost indoor PA resources: an indoor basketball court and the community center.



Beaches/Waterways
Trails



Sports/Playing Fields and Courts



Beaches/Waterways



Community Center:
Aerobics, Dance,
Yoga Classes



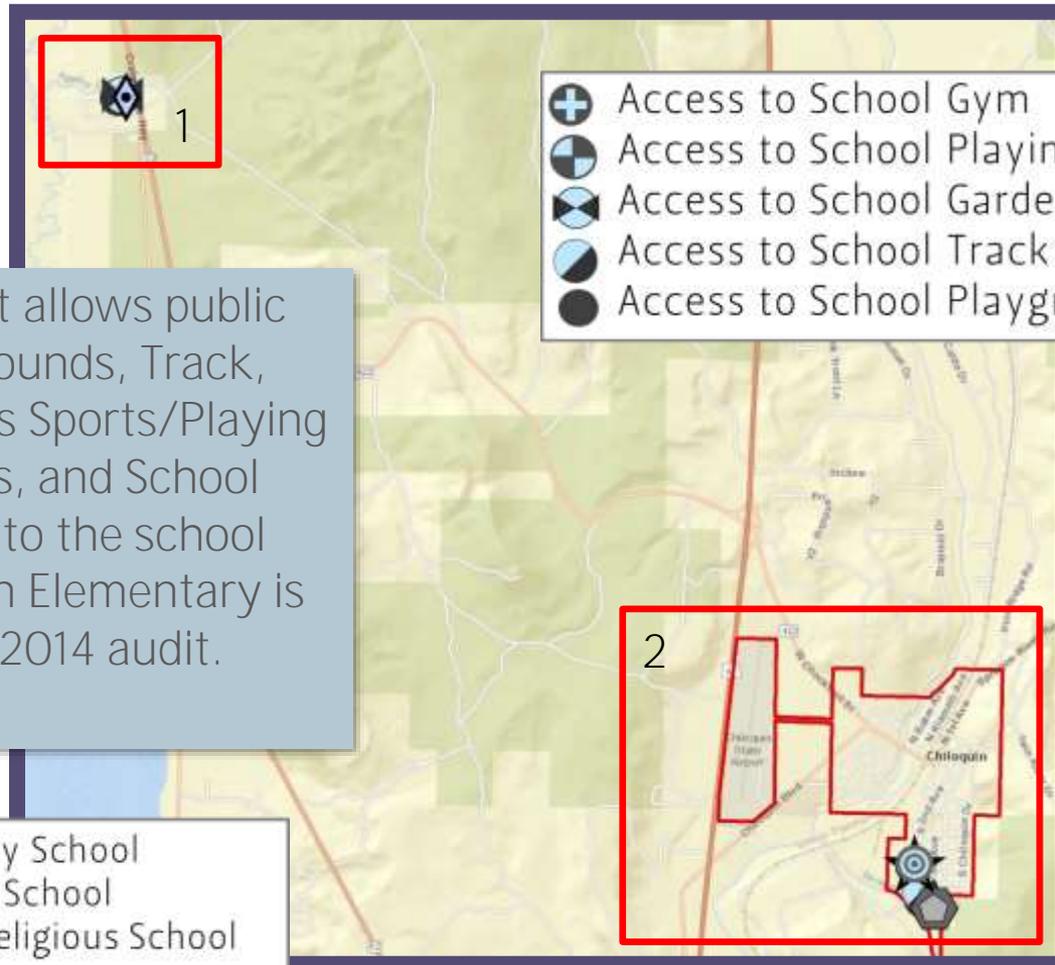
Indoor
Basketball Courts



- ★ Chilodquin Elementary School
- Chilodquin Jr/Sr High School
- ◆ Charter or Private Religious School
- ▭ City Limits
- ▭ School District Boundary

- Outdoor Resource
- Indoor Resource
- ⊖ Fees

Change in Resources for School Physical Activity

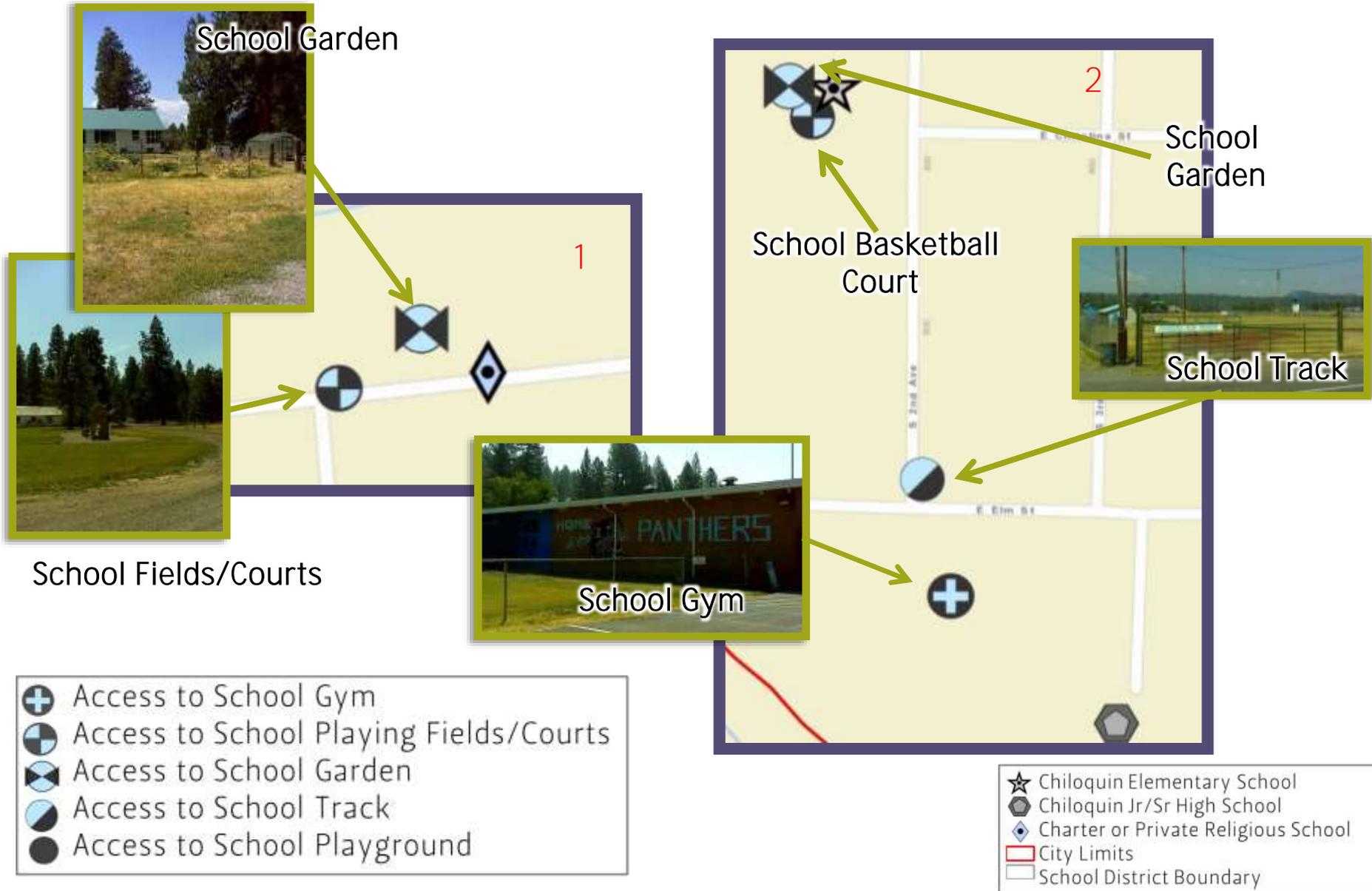


- ⊕ Access to School Gym
- ◐ Access to School Playing Fields/Courts
- ◑ Access to School Garden
- ◒ Access to School Track
- Access to School Playground

The school district allows public access to Playgrounds, Track, Gymnasium, various Sports/Playing Fields and Courts, and School Gardens. Access to the school garden at Chiloquin Elementary is new since the 2014 audit.

- ★ Chiloquin Elementary School
- ⬠ Chiloquin Jr/Sr High School
- ◆ Charter or Private Religious School
- ▭ City Limits
- ▭ School District Boundary

School Physical Activity Resources Shown by Location



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. Our goal was to include all potential community members, not just those with a means of transportation; therefore, we analyzed the proportion of community members who have “Easy Access” to resources.
- We described Easy Access as being located within a ¼ mile (walking distance) to a resource category.
- While Chiloquin does have some food and physical activity (PA) resources located close-in, the bulk of the PA 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

Low/No Cost PA Resources

Community Centers
Public lands/Parks & Playgrounds
Sports Fields/Courts

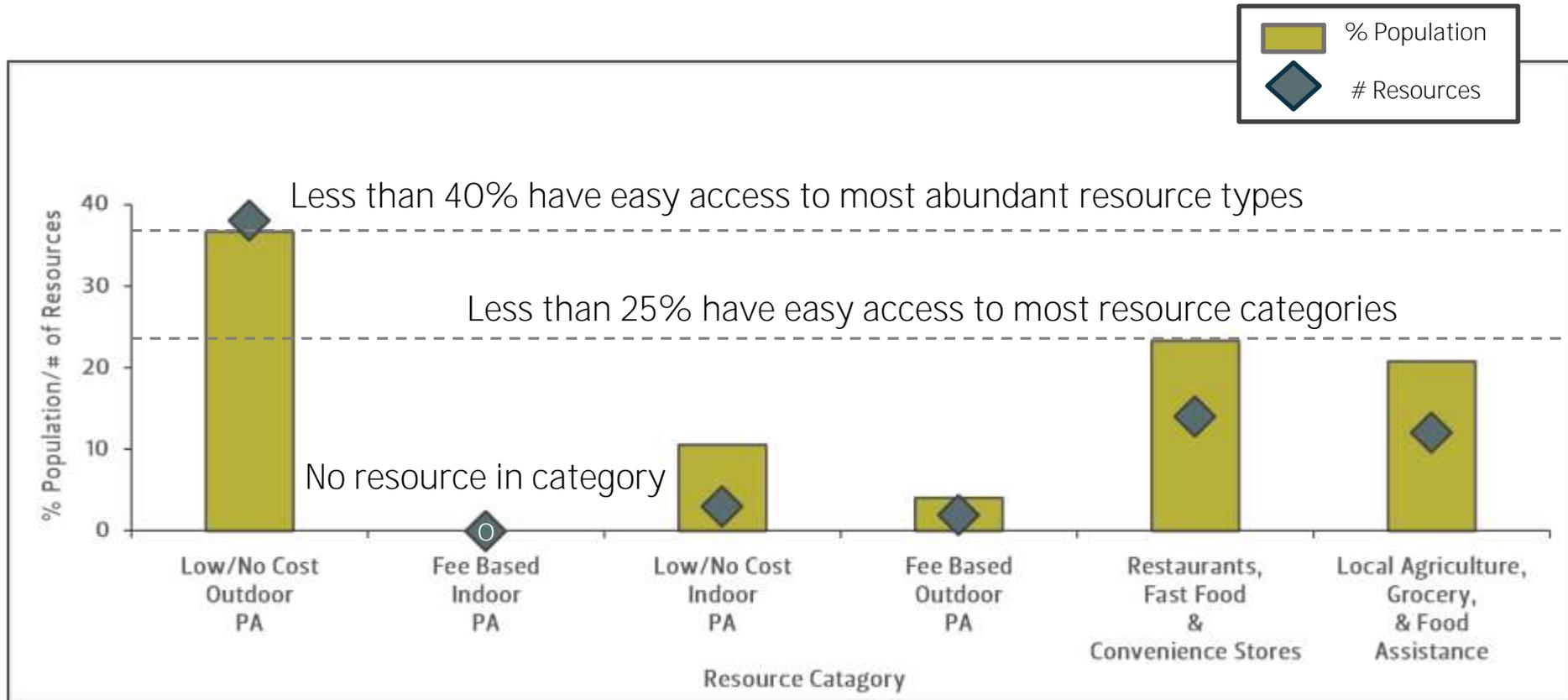
Fee-Based PA Resources

Golf Courses
Equestrian centers
Exercise/Fitness centers

Local Agriculture

Farm stands/U-picks
Farmer’s markets
Home-based sales (Eggs, Milk, Veggies)
Hunting/Fishing/Gleaning Supports

Ease of Access to Food and Physical Activity Resources *

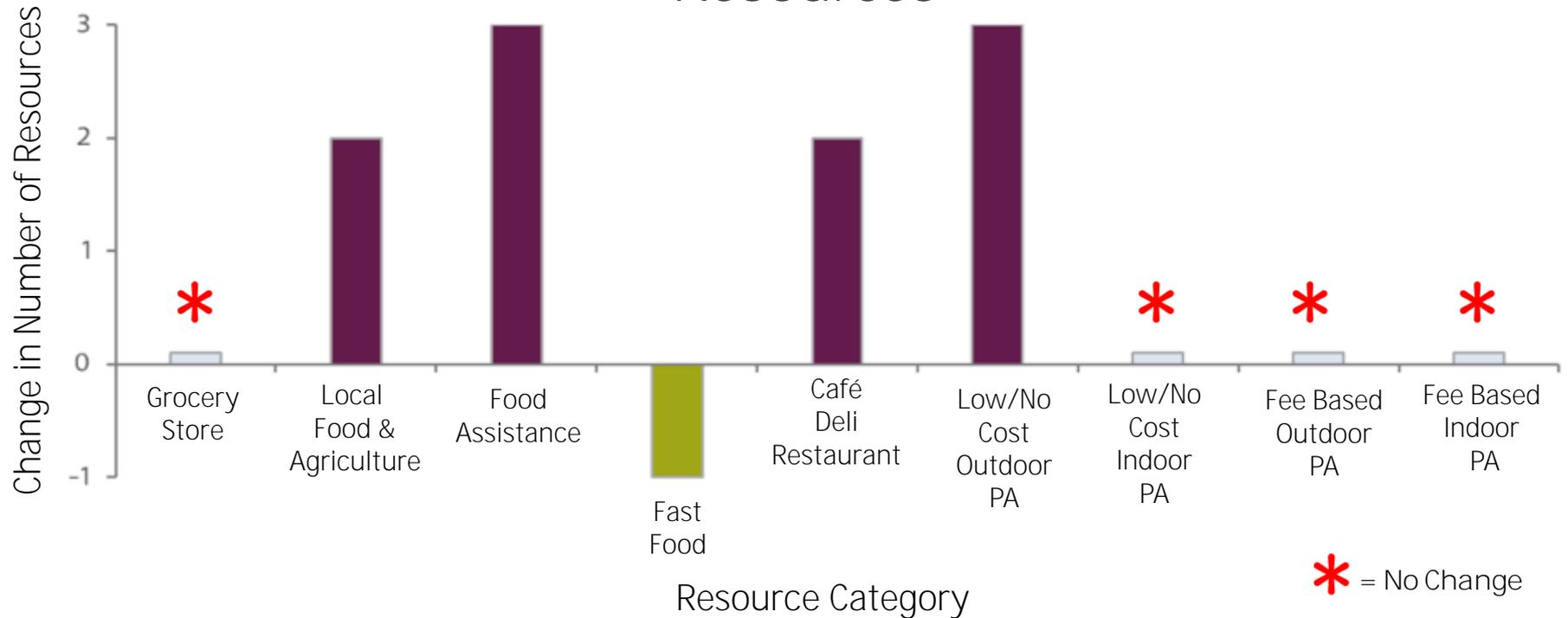


* Analyzed via a ¼ mile network buffer: approximately a 5 to 10 minute walk

Ease of access to resources remained relatively stable with some nominal changes: a 4% increase in access to resources for Restaurants, Fast Food, and Convenience Stores; a 3% increase in access to resources for Local Agriculture, Food Assistance and Grocery Stores. Still, less than 40% have easy access to the most abundant resources.

PA= Physical Activity

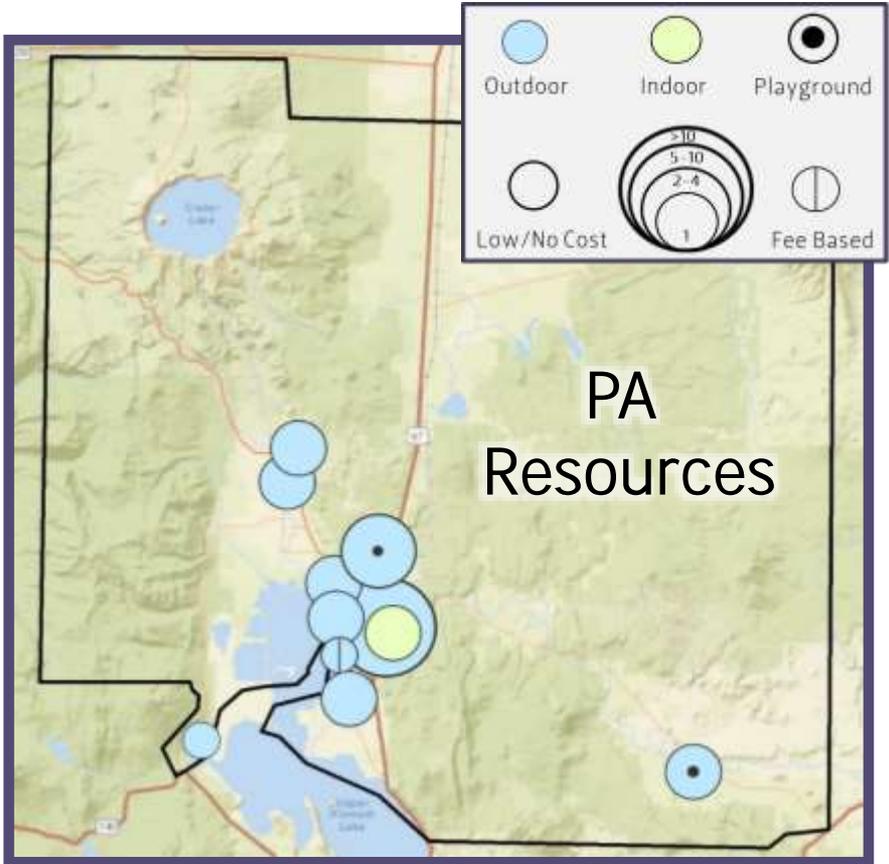
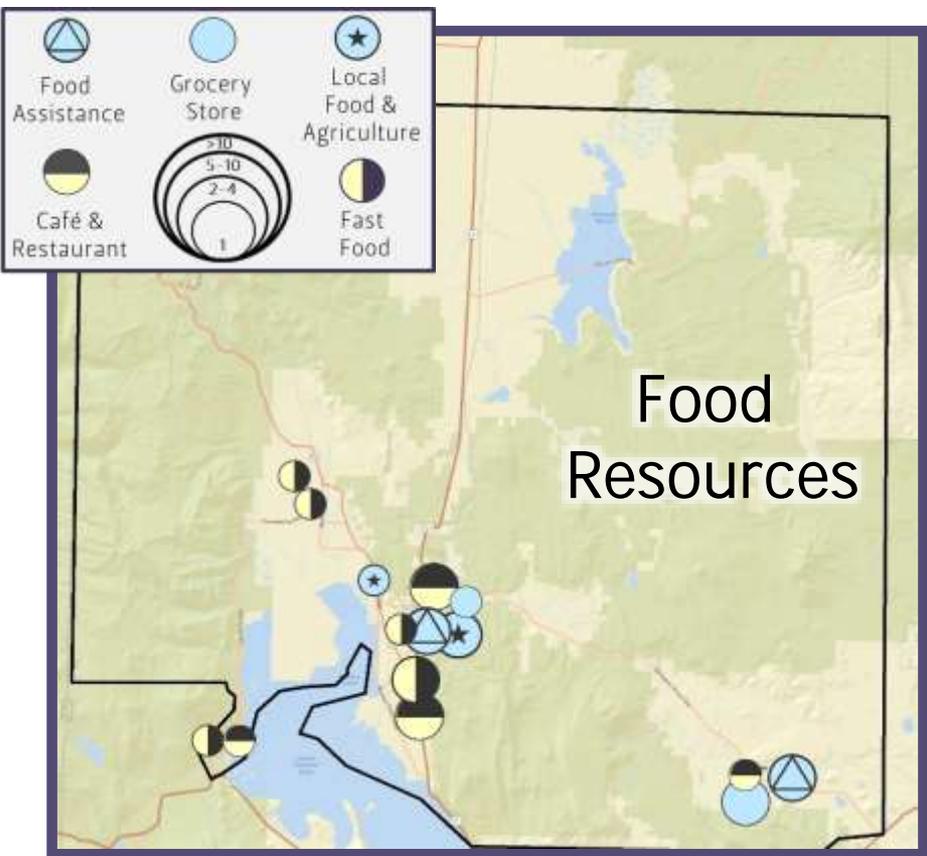
Change in Number of Food and Physical Activity Resources



Overall, there were no changes in the raw number of resources for Grocery Stores, or most PA categories except **Low/No Cost Outdoor PA**, where Chiloquin gained a Playground and access to two Community Gardens. There were also increase in resources in the **Food Assistance and Local Food and Agriculture** categories – due to the addition of multiple summer lunch sites as well as a number of community meal resources and in community garden access. Finally, Chiloquin Lost one Fast Food resource while gaining a Restaurant and a Café/Bakery.

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.