



# **RAPID HEALTH IMPACT ASSESSMENT CROOK COUNTY/CITY OF PRINEVILLE BICYCLE AND PEDESTRIAN SAFETY PLAN**



**PREPARED BY  
CROOK COUNTY PUBLIC HEALTH DEPARTMENT  
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## EXECUTIVE SUMMARY

### **Purpose**

The impetus of the Crook County/City of Prineville is the goal of creating an Active Community – a place where residents and visitors can readily participate in everyday physical activity. From a transportation perspective, such activity can be as simple as a short walk to the grocery store or traveling by bicycle to and from work and school. Crook County Public Health conducted this Health Impact Assessment with two goals; the primary goal of evaluating the current pedestrian and bicycle situation in Prineville in the context of health impacts, and supports the Prineville Planning Department and Crook County Parks and Recreation through recommendations from the Health Impact Assessment that will be incorporated into the updated community plan and approved by the City Council of Prineville. This assessment estimates impacts in terms of health benefits derived from increased opportunity for physical activity. More people walking and riding bicycles contribute to a healthier population, safer streets, stronger communities, and high environmental quality. Active forms of travel have the obvious result of increasing levels of physical activity, which reduces the risk of heart disease, high blood pressure, diabetes, obesity, and some cancers.

The Prineville / Crook County HIA was addressed due to the interest of the Public Health Department to improve health in Crook County and their interest in learning the HIA process. Health Impact Assessment brings a health focus into the planning process so that planning policy decisions take into account the health of the population. The recommendations from this project can shape decisions for improved health in Crook County.

An HIA is a process that identifies and measures potential health impacts, both positive and negative, that may result from a particular policy or project. The HIA begins with a broad definition of “health” from the World Health Organization: “a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity.” It is further grounded in the Crook County’s vision of “A Healthy and Safe Future for the People of Crook County”.

Health Impact Assessment (HIA) is an emerging practice in the United States and it is widely promoted by the Centers for Disease Control and Prevention (CDC) as a tool to influence decisions that have short and long-term health consequences. HIA is commonly defined as “a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population” (Gothenburg, WHO, 1999).

In summary, the purpose of this HIA is two-fold: (1) Evaluate pedestrian and bicycle safety in Prineville in the context of community health by addressing the health impacts; and (2) Support the Prineville Planning Department and Crook County Parks and Recreation through recommendations from the Health Impact Assessment that will be incorporated into the updated community plan and approved by the City Council of Prineville.

## **Methodology**

The research conducted in this project used standard HIA steps as recommended by the CDC. These include: Screening, Scoping, Assessment, Reporting and Monitoring. In addition to this framework, the project used community engagement to form an advisory council, including representatives from the public health, city planning, county GIS, parks and recreation, public safety, and healthcare sectors as well as Prineville residents and community advocates. The Advisory Council informed key activities including the organization of community listening sessions as well as identification of the scope of the HIA around three policy focus areas:

- Improving the safety and accessibility of sidewalks and walking paths in Prineville
- Improving the safety and accessibility of bicycle use in Prineville
- Identifying key areas in our community for pedestrian safety

## **CROOK COUNTY/CITY OF PRINEVILLE BICYCLE AND PEDESTRIAN SAFETY RECOMMENDATIONS**

### **Findings and Recommendations**

The HIA found that the elements of the process and recommendations will have positive impacts on public health by increasing opportunities for physical activity, improving safety, and providing better access to health promoting goods and services. The results should be increased walking and bicycling throughout the city of Prineville. The principal findings and recommendations that promote positive health outcomes relative to the three HIA focus areas are:

#### ***Improving the safety and accessibility of sidewalks and walking paths in Prineville:***

Key improvements in Prineville include increasing connectivity of existing sidewalks and increasing overall existence of sidewalks, using current codes as new sidewalks are built.

- Increase current sidewalk connectivity (Harwood St., Elm St., Ochoco Creek Park, Lynn Blvd., Combs Flat Rd., etc.).
- Pursue “Rails to Trails” funding to increase the number of mile of pedestrian trails.

#### ***Improving the safety and accessibility of bicycle use in Prineville:***

Key improvements in the safety and accessibility of bicycle use in Prineville would include maintaining and upgrading existing bike lanes, and increasing overall amount of bike lanes

- Increase existence of bicycle lanes in Prineville / Crook County.
- Create connectivity of bicycle lanes.
- Reduce/eliminate parked cars in bicycle lanes.
- Bicycle safety education and enforcement.
- Increased bicycle parking facilities throughout Prineville.

***Identifying key areas in our community for pedestrian safety:***

Key improvements for pedestrian safety in Prineville would include strategically reviewing speed limit zones and creating safe pedestrian crossing in key traffic areas.

- Develop a process for prioritizing pedestrian route improvements based on demand, existing conditions, and proximity to a designated Safe Route to School corridors.
- Signage to direct individuals to walking paths in the community.
- Develop a pedestrian education campaign.
- Implement traffic calming, including clear identification of school speed zones, specifically on Lynn Blvd for Crook County High School and Crook County Christian School.
- Improve sight distances for turning cars where needed.
- Create a safe crossing area for Highway 126 near (or under) Crooked River bridge
- Create strategic plan for student drop off and pick up around all school zones and educate students and parent regarding the plan.

## RATIONALE FOR THE STUDY

Community health is profoundly impacted by multiple economic sectors and policies. Transportation policies, for example, can play a major role in traffic injuries as well as in noise and air pollution to nearby public or residential areas. Conversely, transportation policies that are developed with the intent to improve health outcomes will both help reduce these risks as well as promote healthy behavior choices such as walking and cycling. The value of conducting a Health Impact Assessment (HIA) and contributing a health perspective to the process in Crook County includes advancing population health by bringing public health research to bear on questions of public policy. There is a realization that some of our health problems are the results of our built environment and using this HIA process will bring decision makers together to understand the health consequences of the projects and policies they are considering and make better informed decisions.

This project will affect the community of Prineville residents and the many school children in the community who could have the benefit of walking to school. Crook County has the highest unemployment rate in the state of Oregon, a minimal bus system, and lack of infrastructure for bicycle safety and pedestrian safety. This creates disparities and affects residents' health. The new data and awareness through the HIA will provide opportunities to improve the ability for Crook County and the City of Prineville to create an environment for safe walking and bicycling for residents to improve their health.

Community members and other stakeholders, including county officials, city of Prineville officials, planning department, Rimrock Health Alliance, and Healthy Communities CHART (Community Health Action Response Team) members expressed interest in this project. We spoke to county officials, City of Prineville Planning Department, and school officials to receive buy-in for the project. The City of Prineville applied for and received a "Safe Routes to School" grant during the HIA process to increase and improve current sidewalks and the city continues to apply for grant funding as opportunities arise. There was strong support for this project and the HIA identified health and social issues, built community capacity, facilitated public participation in the process, and highlighted the impact this work would advance in the community. We gained input from business leaders, media, education administrators, and the Chambers of Commerce board that would raise awareness of how health issues relate to the built environment.

With funding support, training and technical assistance from the Oregon Department of Environmental Health, Crook County Health Department and a team of community partners, we chose to implement an HIA on Pedestrian and Bicycle Safety in Prineville. The purpose of this HIA was two-fold: (1) Evaluate pedestrian and bicycle safety in Prineville in the context of community health by addressing the health impacts; and (2) Support the Prineville Planning Department and Crook County Parks and Recreation through recommendations from the Health Impact Assessment that will be incorporated into the updated community plan and approved by the City Council of Prineville.

## HEALTH IMPACT ASSESSMENT (HIA)

### **What is an HIA?**

A Health Impact Assessment, or HIA, is a process that uses a variety of methods and approaches to identify and measure potential health impacts, both positive and negative, that may result from a particular policy or project. Furthermore, an HIA seeks to link these impacts to a given segment of the population (for example, children, older adults, people living in poverty, or residents of a particular neighborhood).

While causal links between chronic health conditions and the built environment are still evolving, there is evidence that a relationship exists. Therefore, a need exists for tools and methodology to understand how changes in the built environment might affect public health. One such tool is a Health Impact Assessment, or HIA. Widely used in other countries and recently rising in use in the United States, an HIA is often defined as “a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.” (Gothenburg, WHO, 1999)

Four Values are integral to the HIA: democracy, equity, sustainable development, and the ethical use of evidence that emphasizes a rigorous structured analysis based on different scientific disciplines and methodologies. HIAs explicitly consider social and environmental justice issues, adopt a multidisciplinary and participatory process, and use both qualitative and quantitative evidence as well as transparency in the process.

The HIA methodology is based on the social model of health accepted by various national and international agencies. There are three main types of HIAs. Prospective HIAs are conducted before a policy or project is implemented; retrospective HIAs take place after; and concurrent HIAs are simultaneous and are more common for projects or policies that are implemented over an extended period of time (Ison, 2000).

The final product of an HIA is a set of evidence-based recommendations intended to inform decision-makers and the general public about the health-related issues associated with the project. The recommendations provide practical solutions that seek to magnify positive health impacts, and remove or minimize negative impacts.

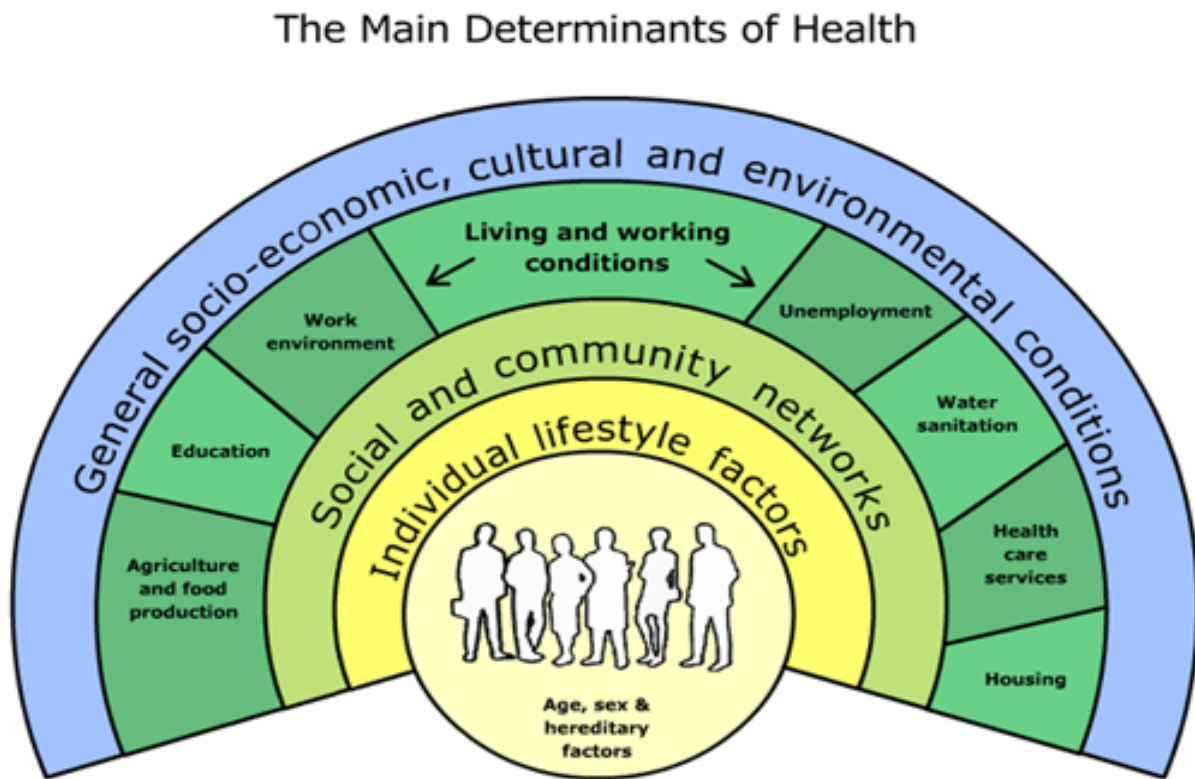
### **Defining Health**

Many people define health simply as the absence of disease – that living without cardiovascular or respiratory disease is to be healthy. Such a definition relegates health to the medical professional charged with protecting good health and overcoming or managing poor health. Such a narrow definition fails to recognize the multidimensional factors that influence health.



Health determinant factors influence the ability to be healthy (Figure 1) and these include biological, social and economical, environmental, lifestyle, services, and policy. Science has shown that the most significant determinants of health are very personal, based on genes, sex, and age (the biological factors) and behavior, like diet, activity levels, sexual behavior, and the consumption of drugs and alcohol. Yet many external factors – the environment where we live, work, play, and go to school, and those social and economic factors, policies, and services shaping the environment – affect the second half of the definition of health, the ability “to identify and realize aspirations, to satisfy needs, and to change or cope with the environment.”

**FIGURE 1: Influence on Health (Healthy People 2010)**



**Guiding Principles**

The Crook County HIA workgroup implemented this project according to a framework that has been established by the North American HIA Practice Standards Workgroup. Among standard HIA Components (see next section), an overarching set of principles are adhered to throughout each step of the process (Principles adapted by HIA Practice Standards Workgroup from Quigley et al, 2006).

**Democracy** – emphasizing the right of people to participate in the formulation and decisions of proposals that affect their life, both directly and through elected decision makers. In adhering to this value, the HIA method should involve and engage the public, and inform and influence decision makers. A distinction should be made between those who take risks voluntarily and those who are exposed to risks involuntarily.

**Equity** – emphasizing the desire to reduce inequity that results from avoidable differences in the health determinants and/or health status within and between different population groups. In adhering to this value, HIA should consider the distribution of health impacts across populations, paying specific attention to vulnerable groups and recommend ways to improve the proposed development for affected groups.

**Sustainable development** – emphasizing that development meets the needs of the present generation without compromising the ability of future generations to meet their own needs. In adhering to this value, the HIA method should judge short- and long-term impacts of a proposal and provide those judgments within a time frame to inform decision makers. Good health is the basis of resilience in the human communities that support development.

**Ethical use of evidence** – emphasizing that transparent and rigorous processes are used to synthesize and interpret the evidence, that the best available evidence from different disciplines and methodologies is utilized, that all evidence is valued, and that recommendations are developed impartially. In adhering to this value, the HIA method should use evidence to judge impacts and inform recommendations; it should not set out to support or refute any proposal, and it should be rigorous and transparent.

**Comprehensive approach to health** – emphasizing that physical, mental and social well-being is determined by a broad range of factors from all sectors of society (known as the wider determinants of health). In adhering to this value, the HIA method should be guided by the wider determinants of health.

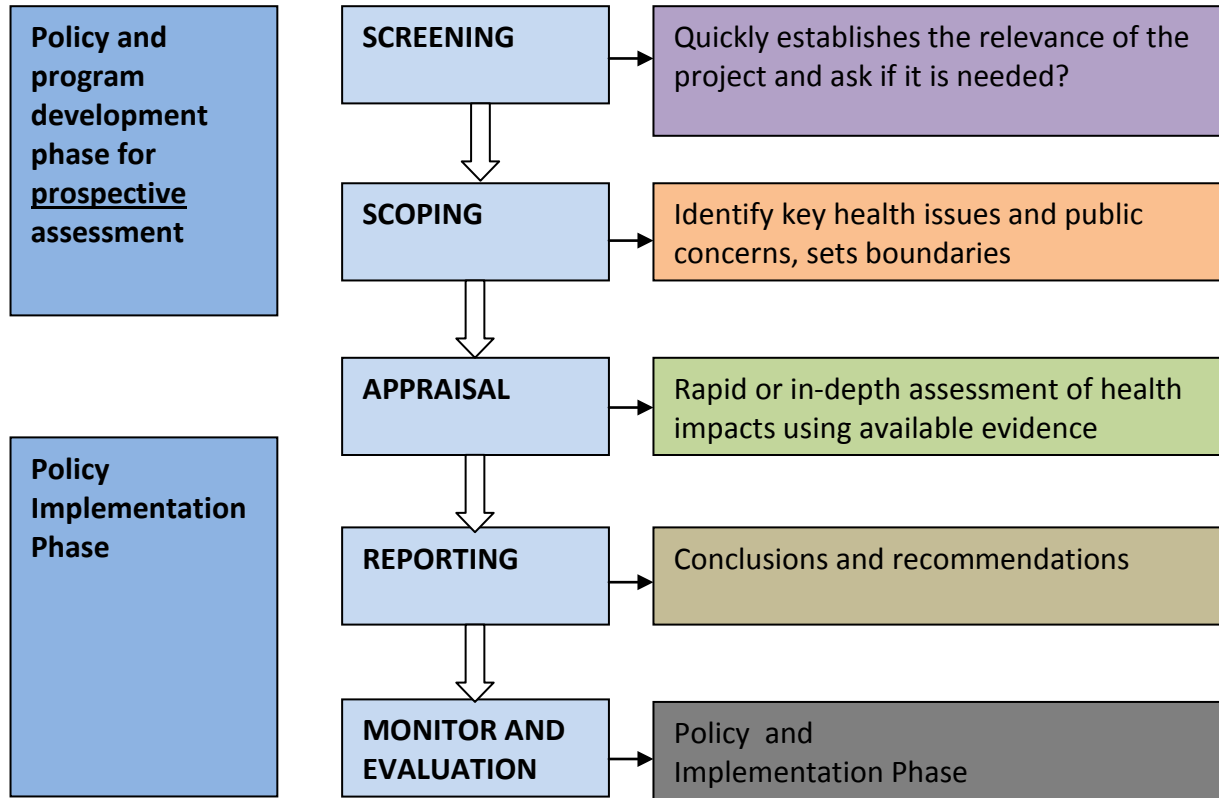
### **HIA Components**

HIA uses quantitative, qualitative and community participatory techniques to help decision-makers make choices about alternatives and improvements that can be made to prevent disease/injury and to actively promote health (World Health Organization, 2010). HIAs are implemented including the following five steps:

- 1) Screening which determines whether or not there exists the potential for significant and unknown health impacts as a results of a policy, program or project;
- 2) Scoping which establishes the study area boundaries, identifies possible consequences, and determines a management approach for the HIA including the health impacts to evaluate, the methods for analysis, and the plan to complete the assessment;
- 3) Risk Assessment which considers the nature and magnitude of health impacts and the affected population using data, research, expertise, and experience to judge the magnitude and direction of potential health impacts;

- 4) Reporting/Dissemination which circulates the results of the HIA to decision makers, individuals implementing the plan/policy, and community stakeholders; and
- 5) Monitoring and Evaluation which reviews the effectiveness of the HIA process and evaluates the actual health outcomes as a result of the project or policy.

**FIGURE 2: Created by CCHD**



This report concludes the Crook County Workgroup’s implementation of the first four steps of Prineville Pedestrian and Bicycle Safety Community HIA (screening, scoping, assessment, and reporting). Stage five (monitoring), will be an ongoing process, undertaken by the Workgroup after this report has been completed.

## PROFILE OF PRINEVILLE/CROOK COUNTY

Established in 1868, Prineville is the oldest community in Central Oregon, and one of the states's first incorporated cities. Prineville's origins are tied to the land in agriculture, forest products, the railroad, and manufacturing; and Crook County is known for its independent identity and spirit.

The proposed project will ask the question: "To what extent would an improved Bicycle and Pedestrian Master Plan in Prineville increase health benefits due to increased opportunities for physical activity?"

"Health begins where we live, work, and play." Crook County along with the City of Prineville is a good candidate for the Health Impact Assessment (HIA). With chronic disease and obesity on the rise in America, more and more focus is being placed on how built environment policy impacts community and population health. Research has shown that physical activity prevents or decreases the risk of obesity, cardiovascular disease, diabetes, colon cancer, and premature death.

### Demographics

Crook County, located in the geographic center of Oregon, encompasses 2,982 square miles and has one main community of Prineville, in which approximately 10,000 individuals live with the remaining population throughout the county. Although the county is considered rural/frontier; the region has grown 9.4% from 2000 – 2010.

**FIGURE 3: Crook County Population by Age: (US Census – 2010)**

2010 Population	0-17 years	18 to 64	65 and over
<b>20,978</b>	4,804	12,503	3,671
<b>Total %</b>	22.9%	59.6%	17.5%

**FIGURE 4: Male/Female %**

2010 Population	All ages
<b>Female Persons</b>	50.5%
<b>Male Persons</b>	49.5%
<b>Total %</b>	100%

The county is predominately white with the following demographics (2010 – US Census):

- **89.4%** White, not Hispanic Oregon 78.5%
- **0.2%** Black or African American Oregon 1.8%
- **7.0%** Latinos (Hispanics) Oregon 11.7%
- **1.4%** American Indian and Alaska Native Oregon 1.4%
- **0.5%** Asian Oregon 3.7%
- **0.0%** Native Hawaiian and Other Pacific Islanders Oregon .3%
- **1.5%** Other Oregon 3.8%

**FIGURE 5: Births and Deaths, Crook County 2000-2009 (Age Adjusted Rates, per 1000)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Births	214	242	215	235	248	221	251	287	218	220	179
Birth Rate	11.1	12.2	10.6	11.6	12.0	9.7	10.2	11.1	N/A	N/A	N/A
Deaths	205	196	179	208	173	202	206	217	198	190	
Death Rate	10.6	9.8	8.7	10.2	8.4	8.9	8.4	N/A	N/A	N/A	N/A

(OHA/Oregon Public Health: Center for Health Statistics)

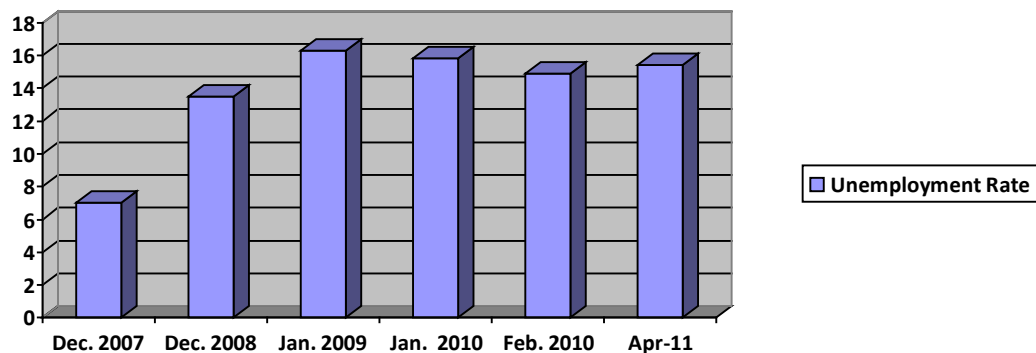
Based on the US Census Bureau 2009 estimate, 16.2% of Crook County residents lived below the federal poverty level compared to 14.3 for the Oregon. The poverty rate among single mothers reached 61% percent, 65% of Hispanics lived in poverty and one-quarter of the county’s children live in poverty. The county has seen steady population growth, yet the number of non-farm jobs grew only 15 percent from 2001-2007. With diversification of the economy and following the national trend of the economic upswing, Crook County reported improved employment rates consistently from 2004-2007 with an upswing in development and construction jobs. Between 2006 and 2007, the economic sectors of manufacturing, natural resources, and government lost jobs. The latest economic downturn has resulted in a plummeting of employment rates. In 2008 and 2009 unemployment rates rose dramatically, culminating in a 21.4% unemployment rate in March of 2009 before leveling out at averages of 15.6%-17.6% during the final months of 2009. From November 2007 to November 2008, unemployment claims increased 57% in Crook County. Currently for the spring of 2011, the unemployment rate in Crook County is at 14.8%.

In addition (Children’s First for Oregon Report – 2010):

- The level of educational achievement among the adult population consists of 80.5% high school graduates and 12.6% with a bachelor’s degree or higher.
- Children First for Oregon reported \$51,700 is the median family income, which is 16% lower than the state median (Children’s First for Oregon, 2010).
- The high school graduation rate improved to 91% in 2009.

- The unemployment rate in January 2008 was 8.9%; rose to 16.1% in February 2009, and declined to 15.8% in January 2010 and to 14.9% in February 2010.
- 8.4 per 1000 individuals filed bankruptcy in 2009, a 291% increase since 2006.
- Subprime loans made up 30.1% of all loans in the county in 2007.
- Currently, 21.4% of children ages 0-17 report living in poverty.
- Two major economic stressors currently exist: the cost of housing and the impact of lack of medical costs due to lack of health insurance or the ability to cover medical emergency expenses.

**FIGURE 6: Unemployment Rates – Crook County**



Hunger is most often a direct consequence of poverty and families with high poverty levels can only afford half of a basic family food budget. The economic downturn has increased the number of individuals requesting WIC services and 62.6% of public school children were eligible to receive free/reduced price lunches during the 2010 school year. On average, 1,055 (796 - 2009) children eat free/reduced lunches on a given day, while no children receive services during the summers due to lack of a summer lunch program.

Other indications of poverty in Crook County included:

- The homeless count for January 2010 documented 244 individuals and 111 households, with a total of 62 children (Crook County).
- The Crook County Overall Crime three year ranking in Oregon was 28th (County Health Rankings).

**Health Statistics: (OHA/Oregon Center for Health Statistics)**

Chronic diseases are a leading killer in Crook County and the single biggest cause of diminished quality of life. The percentage of adults who smoke is 27.3% compared to 18.7% in Oregon, and the county has the highest tobacco age-adjusted death rate (2000-2004) in the State of Oregon at 269.5 compared to 184.8 for Oregon. The leading causes of death are cancer and heart disease with rates higher than state rates and in addition 21% of pregnant women reported smoking in 2007. On average in Crook County, 64 people die from tobacco use yearly and the economic burden is over 11 million.

The 2004-2007 BFRSS data reported 39.1% of adults reporting being overweight, 23.6% obese, and only 16% reported eating appropriate portions of vegetables and fruits per day. In addition based on the Oregon Health Teen Surveys, 27.5% of 8<sup>th</sup> graders and 29.1% of 11<sup>th</sup> graders were at risk for being overweight; higher than state rates. Only 21.5% of 8<sup>th</sup> graders reported eating five servings of fruit and vegetables per day, and it dropped to 14.1% for 11<sup>th</sup> graders. Physical exercise reporting was a bit better with 60.2% (55.7 Ore.) of 8<sup>th</sup> graders reporting exercise, compared to 48.9 (48.6 Ore.) for 11<sup>th</sup> graders.

A widely publicized study that surveyed 2,500 residents of 13 rural communities cited environmental factors as being linked to obesity. Barriers perceived by residents, and most often by obese residents, included distance from recreational facilities/grocery as well as safety concerns related to lack of sidewalks or walking/biking trails on most streets (Brownson, et. al, 2001)

Crook County's health rankings were 14<sup>th</sup> out of 33 counties for Health Outcomes, 13<sup>th</sup> in mortality, 21<sup>st</sup> for health factors, 21<sup>st</sup> for health behaviors, 9<sup>th</sup> for clinical care, and finally 27<sup>th</sup> for social and economic factors. In spite of all of the challenges; Crook County is a strong, proud, resourceful community that sees value in positive change to improve health (County Health Rankings 2011).

### **Vulnerable Populations:**

**Rural residents:** While overweight and obesity numbers have been trending upward at an alarming rate in the United States, the problem may be growing disproportionately in rural settings. Texas A&M University has conducted research that finds people who live in rural communities have a higher risk for obesity which can lead to serious health conditions such as diabetes, cancer and cardiovascular disease. This is supported by national survey data and smaller regional studies. A shift has occurred in childhood overweight and obesity over the past 20 years as well involving a reversal of prevalence from urban to rural populations (Jihong, et. al, 2007).

**School-age children:** Headed by First Lady Michelle Obama, The White House Task Force on Childhood Obesity has set a goal of reducing childhood and adolescent obesity from the national average of approximately 30% to 5% by the year 2030. One of the recommended means of addressing this goal is increasing the amount of youths who walk and bike to school to 50% by 2015 ([www.LetsMove.gov](http://www.LetsMove.gov)).

### **Additional Data:**

Following are other findings related to walking and biking to school for parents and students in Prineville from the Safe Routes to School report:

Based on the Action Plan results for the three schools, only 9 to 12 percent of the students walk to school. By observation of staff and the Safe Routes Team, there are numerous students who currently utilize the route along Juniper Street either coming from the residential areas served by Hudspeth Rd. and Oregon Ave. or connecting to Juniper via the public trail that runs along the north side of Ochoco Creek.

The lack of safe sidewalks and pathways was identified by 23% of middle school parents and 34% to 36% of elementary school parents as a primary reason affecting their decision to allow their children to walk to school. Considering that only 25% to 46% of parents did not list distance as a primary concern (an indicator of the percent within walking distance), it is apparent that the majority of students who live within walking distance are prevented from walking at least in part by the lack of safe sidewalks. Other issues ranking high in all three action plans were amount of traffic (48% to 63%), speed of traffic (52% to 60%) and intersection/crossing safety (38% to 51%) Each of these relate directly to potential conflicts between pedestrian and vehicle traffic which would be improved with sidewalks, marked crossings and ADA ramps proposed in this project.

There are approximately 500 existing residences within a quarter mile of the proposed sidewalks along Hudspeth Rd. and Oregon Ave. Based on the surveys collected through the Action Plan process and personal testimony provided by parents, it is highly likely that the availability of sidewalk would significantly increase the number of students who would walk to school from this area of town. In addition to the existing residences, Iron Horse, one of the City's largest approved developments, is located at the north end of the project on Hudspeth Rd. This development will eventually add over 2,000 additional residences that will be served by the connection to the existing sidewalk on Hudspeth Rd., a primary access into the development.

All portions of the proposed project are within half a mile of at least one of the schools and would directly benefit elementary and middle school students who either currently travel along the unsafe route or who would walk, rather than ride in a personal vehicle, if provided a safe pedestrian route.

This project would contribute to a more livable community by significantly increasing pedestrian safety for a major residential area of the city and reducing the number of vehicles on city streets during peak school traffic hours. Fewer vehicles would also result in increased safety at the school sites where there is a great deal of potential of vehicle-pedestrian conflicts as children are dropped off at the same areas where walking students enter the school sites (Safe Routes to School grant proposal, 2009).



## LITERATURE REVIEW AND LOCAL CONDITIONS

**Part of HIA methodology is to examine existing conditions as well as establish any connections that may exist between proposed policies and positive or negative health outcomes. This particular phase involves an extensive literature review.**

### ***IMPROVING THE SAFETY AND ACCESSIBILITY OF SIDEWALKS AND WALKING PATHS IN PRINEVILLE - PHYSICAL ACTIVITY AND ACTIVE LIVING:***

The potential influences of the built environment on health was first recognized in the 19<sup>th</sup> century when cities were characterized by crowded, poor designed and maintained housing and deficient sanitary system that created disease. Minimum standards were then put in place to improve health. As evidence, in part of the success of these interventions and improvement in technology, infectious disease was replaced by chronic disease as the leading cause of death in the United States in 2000 (Schilling, 2005). Chronic diseases, such as cardiovascular disease, asthma, and diabetes, are more closely associated with lifestyle or environmental factors as opposed to infection. Chronic disease accounts for 7 of every 10 deaths and affects the quality of life of 90 million Americans. Although chronic diseases are among the most common and costly health problems today, they are also among the most preventable.

Adopting health behaviors such as eating nutritious food, being physically active and avoiding tobacco use can prevent or control the effects of these diseases. The statistics illustrate the importance of this issue. For example, physical inactivity and poor diet are responsible for an estimated 400,000 deaths annually from coronary heart disease, colon cancer, stroke and diabetes in the United States in 2000 (Mokdad, 2000). In the United States, most people, both adults and children, do not achieve the recommended amounts of physical activity. As a result, approximately \$24 billion a year in health care costs have been attributed to lack of physical activity (Colditz, 1999). This change in health issues – from infectious to chronic diseases necessitates an understanding of the relationship between health, planning, and the built environment. Environments that make everyday physical activity easy make a healthier population.

The built environment can have an effect on the levels and frequency of physical activity. Regular physical activity, defined as 30 minutes of physical activity per day, is beneficial to people of all ages, having positive effects on health, longevity, and quality of life (CDC, 2011). It has been found to improve self-image, self-esteem, physical and mental wellness, and overall health. Negative health effects associated with low physical activity include heart disease, certain types of cancers, high blood pressure, stroke, osteoporosis, obesity, diabetes, and higher mortality rates (Flourney, 2002).

Physical activity occurs not only through traditional means of exercise, such as walking, running, biking, and swimming, but also through daily activities such as taking the stairs, walking, and biking to run errands or get to work or school. The design of the physical environment can

either facilitate or reduce the opportunities for physical activity. Street connectivity, continuity of bike lanes, and pedestrian networks are all believed to contribute to positive health outcomes, as are the presence of the recreational facilities and parks. Changes in street connectivity, design, continuity, and safety can also have impacts on the health of users and encourage foot traffic (Ewing & Kreutzer, 2006).

Improving public health is linked directly to encouraging active transportation, which is of particular concern to populations with few transportation options, such as the elderly, disabled and the young (Shoup et al, 2010). Street design, the overall attractiveness of a community, and public safety affect the willingness of people to physically interact with their surroundings. Street design can facilitate or hinder walking and bicycling. Studies have shown that walking has positive effects on the accumulation of physical activity and therefore positive effects on health. A 2006 study found that a 5% increase in walkability was associated with a 32.1% increase in time spent engaging in physically active travel, 0.23 point reduction in BMI, and 6.5% fewer vehicle miles traveled in King County Washington (Frank, et al. 2006). Another study, conducted in 2003, found that people who live in walkable neighborhoods averaged an additional 30 minutes of walking for transportation each week and achieved more total physical activity (Saelens, et al., 2003).

Opportunities for children to play freely in natural spaces are dwindling, due to a multitude of factors that are interrelated. Access to natural and unstructured outdoor play is considered critical for childhood emotional and physical health (Burdette, 2005). The American Association of Pediatrics supports unstructured play as a critical strategy in combating childhood and adolescent overweight/obesity (AAP Policy Statement, *Journal Pediatrics*, 2006). Though the popular perception of childhood activities in rural settings may be romantic, the truth is that limited access to recreation amenities or programs, coupled with an increase in screen time and technology inside the home, and fear of danger from strangers, traffic and natural hazards outdoors may be driving more rural children and youth toward physical inactivity.

A widely publicized St. Louis School of Public Health study that surveyed 2,500 residents of 13 rural communities cited environmental factors as being linked to obesity. Barriers perceived by residents and most often by obese residents, included distance from recreational facilities and other destinations as well traffic safety concerns related to a lack of sidewalks or walking/biking trails on most streets (Brownson et. al., 2006).

In closing, this section active living is a way of life that integrates physical activity into daily routines. The goal is to accumulate at least 30 minutes of activity each day. Individuals may achieve this by walking or bicycling for transportation, exercise or pleasure, playing in the park, working in the yard, taking the stairs, and using recreational facilities. An active living community is designed to be pedestrian and bicycle friendly and provides opportunities and encouragement for people to incorporate physical activity into their daily lives (ICMA, 2005).

A community that emphasizes and provides for active living will especially benefit older adults and children. In a six-year longitudinal study, older adults who walked a mile at least once a

week were significantly less likely to develop functional limitations (Miller, 2000). Walking as a form of regular physical activity is also important for older adults with disabilities as a means to maintain their functional abilities and independence. Time spent outdoors is positively associated with physical activity for adults and children in all communities including Prineville.

***Prineville Local Conditions Related To Physical Activity:***

There are few bike lanes and a lack of connectivity in our sidewalks. Our community members are more likely to drive to local events than to walk or bike ride. Moreover, nearby recreational programs offered to children, youth and families are limited. Other local conditions include:

***Transportation Issues:***

- Prineville Reservoir is 15 miles outside of town and Ochoco Reservoir is 8 miles east of town. This makes it difficult for residents to access these resources by means other than driving.
- Prineville's/Crook County's scenery and rural roads could make it a popular destination for cyclists, however many of these roads lack shoulders, which increases risk of incident.
- The vast majority of school aged children are driven to school or take the bus.
- The City of Prineville and Crook County have numerous park resources including Ochoco Creek Park, Pioneer Park, Rimrock Park, Harwood Park, as well as, Prineville Reservoir and Ochoco Reservoir.
- There is a walking path along the Ochoco Creek in Prineville but it is not utilized well due to the disrepair of the path itself.
- The Ochoco State Park Viewpoint is within walking distance from the core of Prineville, but there is lack of adequate safety access to viewpoint.

***Health Outcomes:***

- Since 1990, obesity rates have doubled for adults in Oregon and tripled for children.
- The 2004-2007 BFRSS data reported 39.1% of Crook County adults reporting being overweight, 23.6% obese in Crook County.
- The leading causes of adult death in Crook County are cancer and heart disease; chronic conditions resulting largely from individual behavior choices and are primarily related to three behaviors: tobacco use, physical inactivity and poor nutrition (Oregon Health Promotion/Chronic Disease Prevention Program; Almanac of Chronic Disease, 2009).

FIGURE 7: Safe Routes to School: Sidewalks & Bike Routes

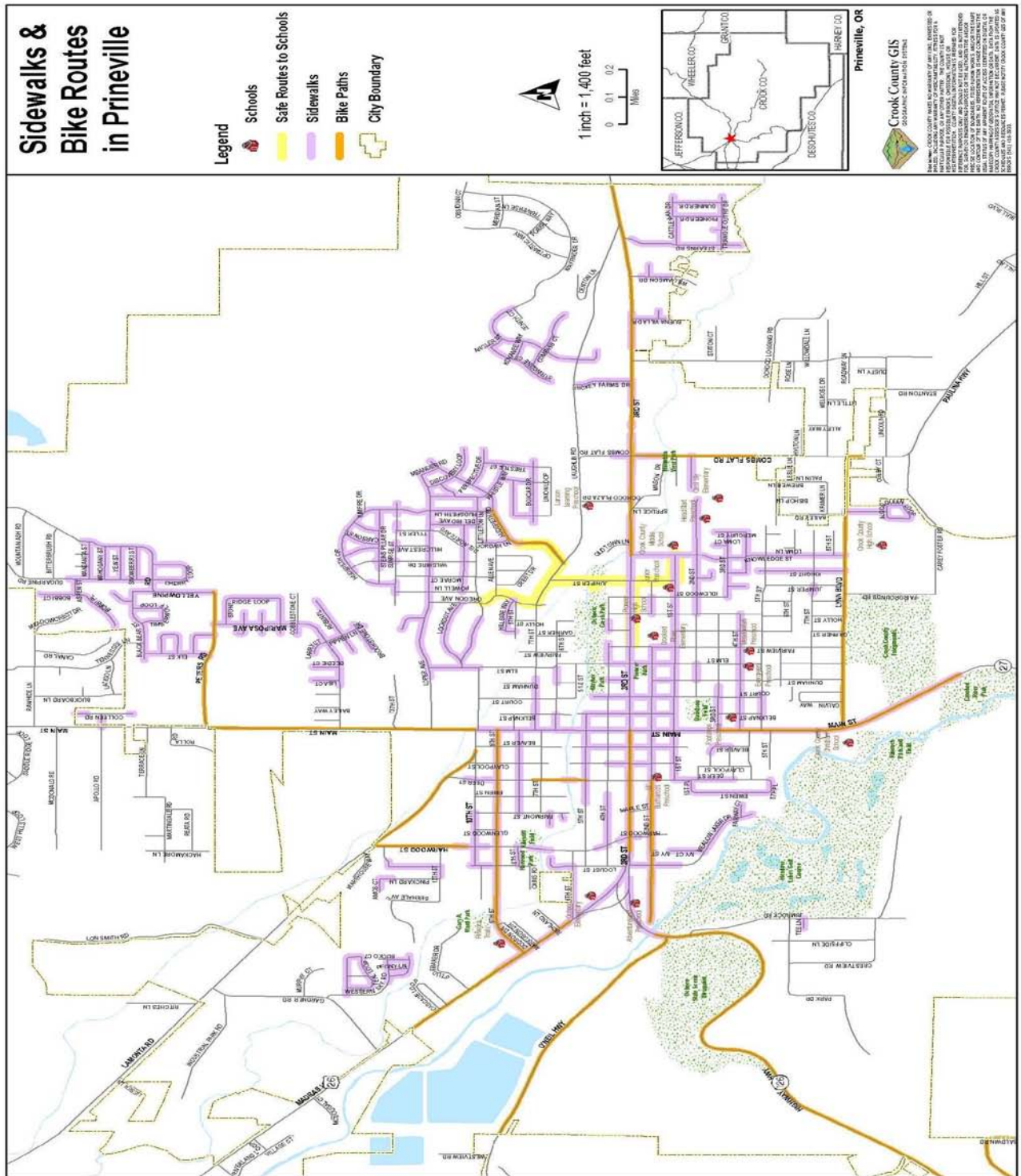


FIGURE 8: Recreation Opportunities in Prineville

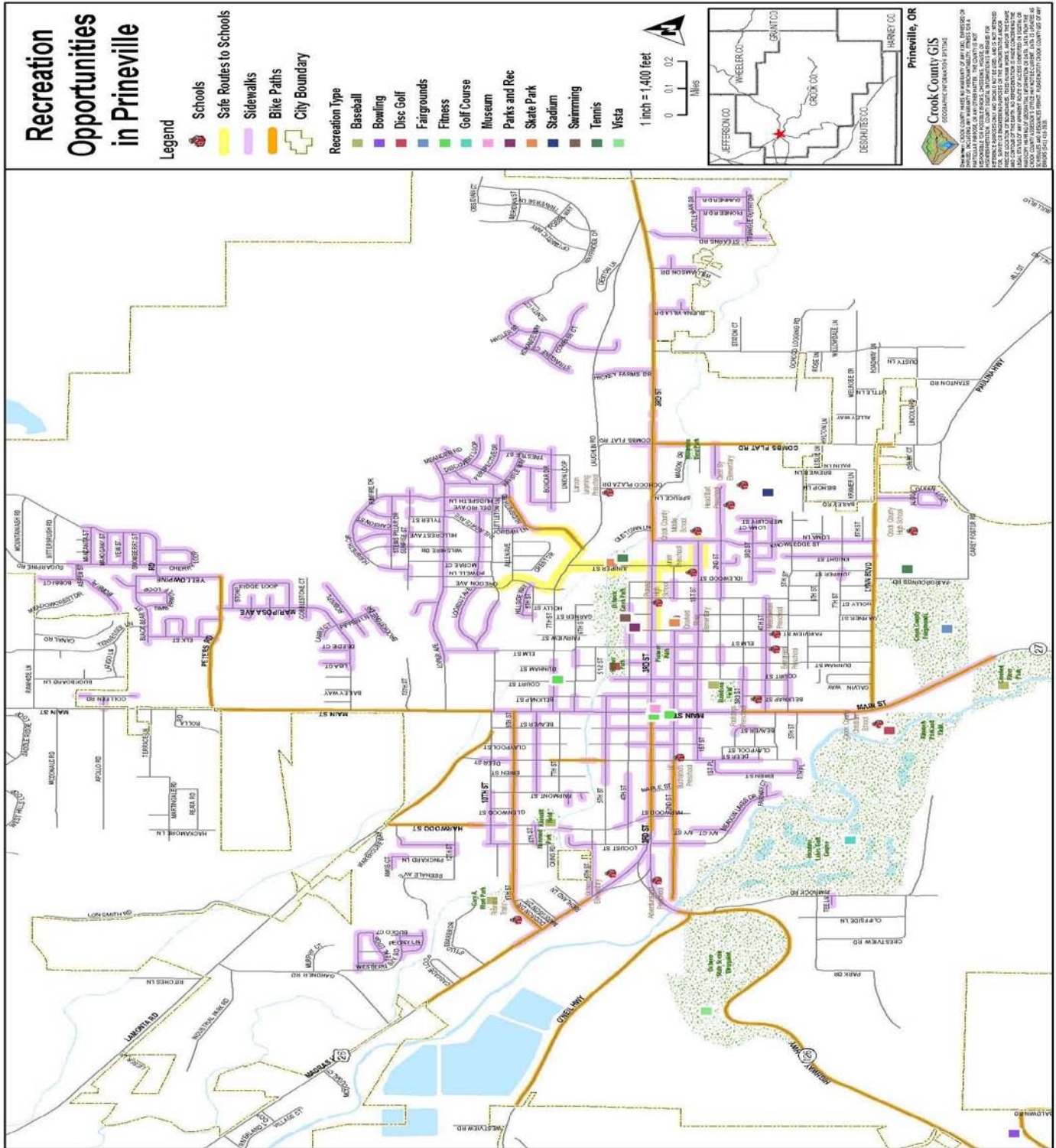
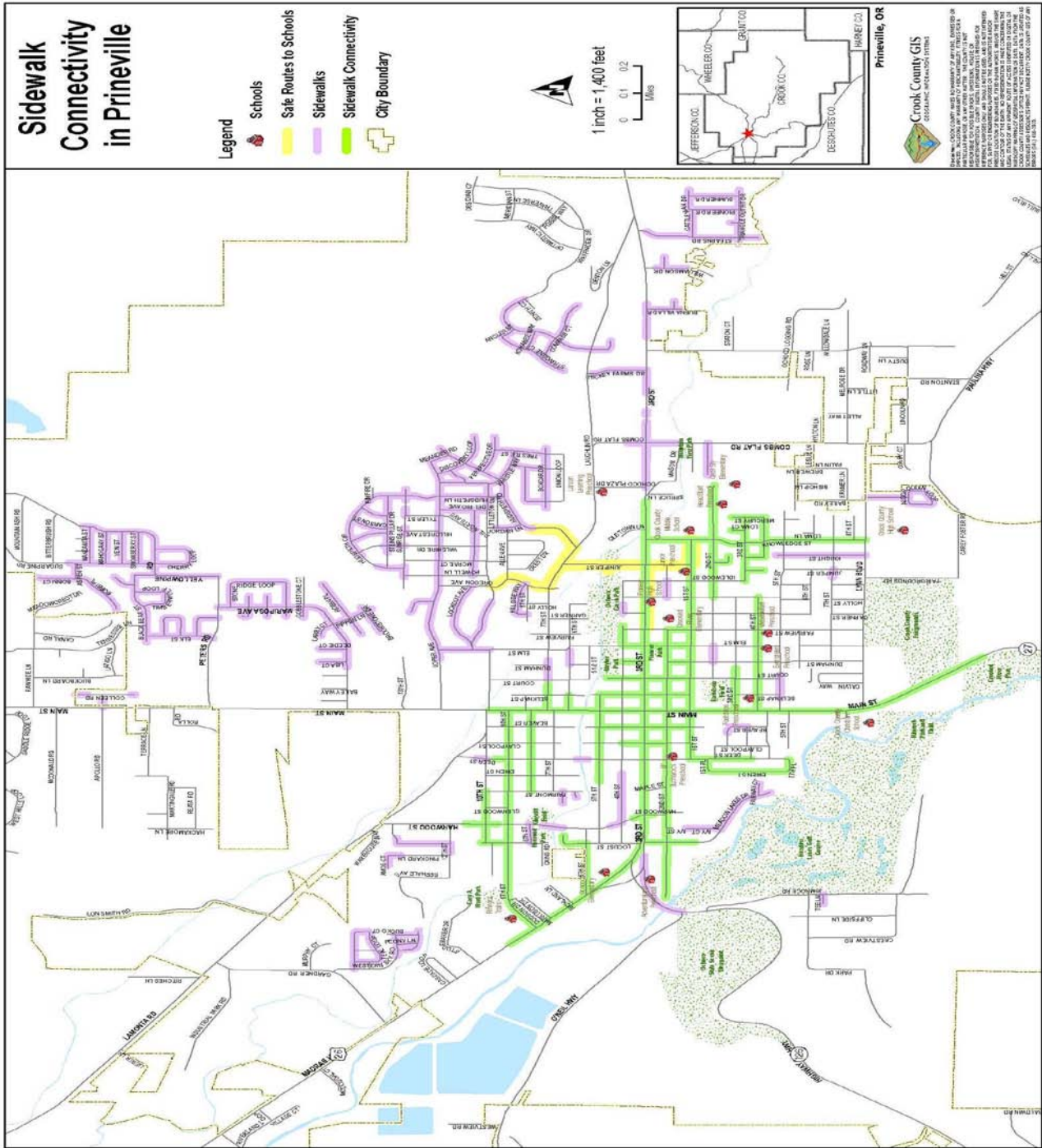


Figure 9: Sidewalk connectivity



## ***IMPROVING THE SAFETY AND ACCESSIBILITY OF SIDEWALKS AND WALKING PATHS IN PRINEVILLE – RURAL COMMUNITIES ACCESS TO HEALTHY OPTIONS***

Rural residents are particularly vulnerable to traffic related health impacts. This stems in part from the history of small towns designed to bring travelers through the center of town for economic reasons. As traffic increases, it brings with it increased safety issues and the main transportation corridor through Prineville is a state highway with high use. This scenario creates challenges and opportunities for connectivity in Prineville.

Creating a safer environment to access schools, nutritious food, food and services, recreational facilities, parks, and other public spaces has physical and economic impacts. Lack of access is a problem that plagues low-income communities and dramatically affects quality of life and health. However, difficulties with access affect anyone at any level who lives in a sprawling area lacking alternative transportation options. Those affected include children of pre-driving age, the elderly of post-driving age, those with health issues that prohibit driving, and those without access to a vehicle.

Neighborhood schools and recreational facilities that are within easy and safe walking distance encourage physical activity and access to nutritious food has direct health implications. Good neighborhood design attempts to resolve the lack of access via street connectivity and continuity of the bike and pedestrian network. In a review of literature on food access, Policy Link and The Food Trust found that access to grocery stores is associated with healthier food consumption and with lower risk of obesity (2010).

Walkability is also important to social networks which have bearing on healthful behavior by communicating information about available health care services, provide social support, and transmitting norms of acceptable behavior particularly related to lifestyle choices such as smoking, drinking, and diet (Ellen, et. al. 2001). In addition, views of and access to nature have also been shown to have positive health impacts resulting in increased recovery times for hospital patients, decreased mortality in seniors, lower blood pressure and decreased anxiety, and high level of attention in school-age children (Lavin, et. al. 2006).

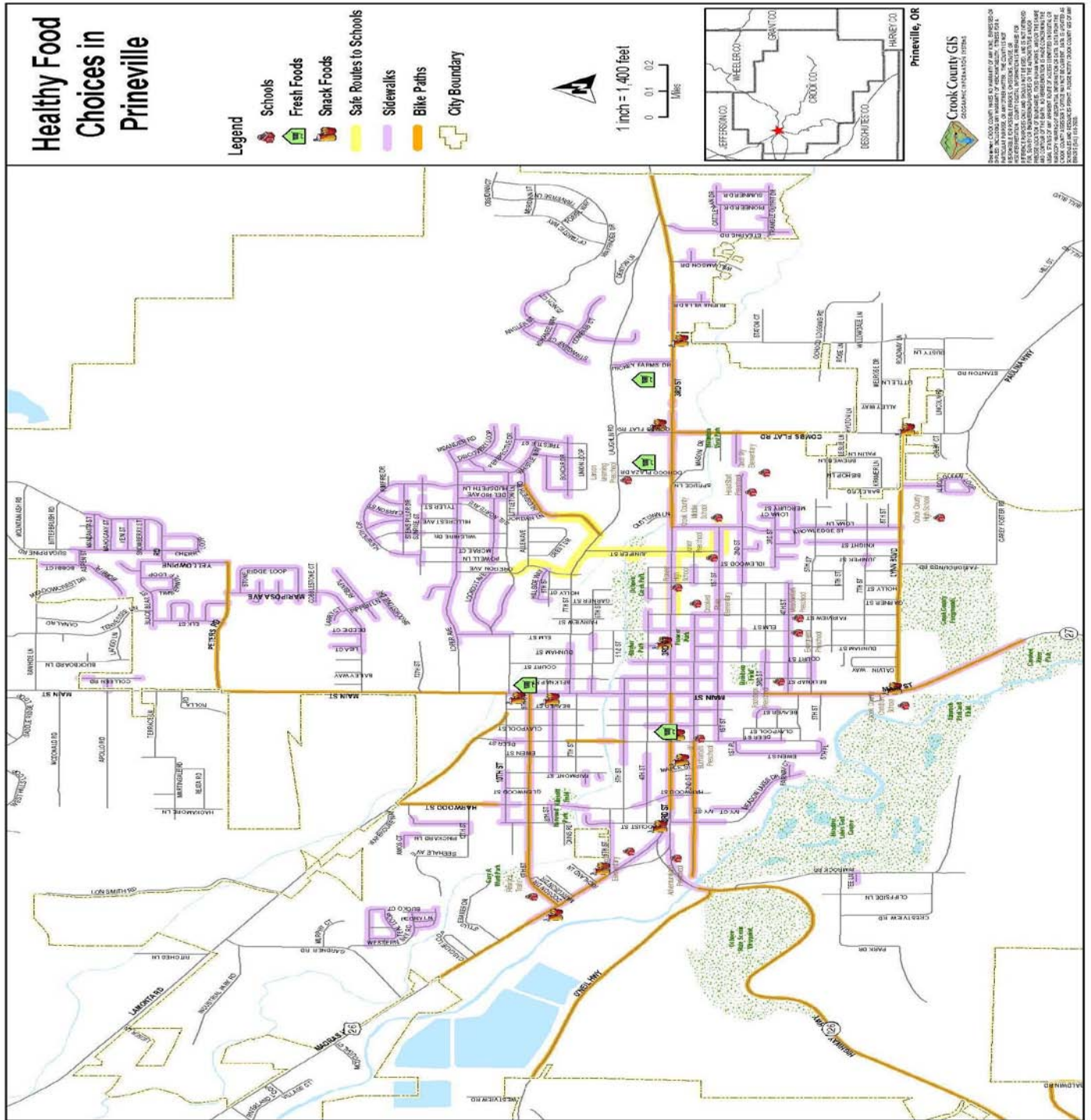
### ***Prineville Local Conditions Related To Rural Communities Access to Healthy Options:***

- State Highway 126 runs through the middle of Prineville.
- We have wide streets, which makes it possible to add the desired sidewalks and bicycle lanes.
- Since we are a small community, almost everything is within walking distance for those who live within the city limits and those who live just outside the city limits.
- We have light industry and low pollution and we have a low crime rate, which all work to create a safe outdoor activity environment.
- We have an abundance of parks. Five of our seven schools are within the core city area, for convenient walkability and bikeability.

- We have mild arid weather conditions, which make for great outdoor activity use.
- There are 4 main grocery stores in Prineville; 3 in the northeast quadrant of town and 1 in the northwest quadrant.
- Many of the local convenience stores have food options that are not nutritious, but they are regularly accessed by community members.
- There are no sidewalks or cross walks along Laughlin Ave., a main route to two of the larger grocery stores.
- There is a large, updated sidewalk along 3<sup>rd</sup> St. (Hwy 26) to the front of the large parking lot in front of these same two stores, but no sidewalk or walk area to the store itself without walking through the parking lots.
- Prineville is very spread out as a community which makes access an issue for some individuals.



FIGURE 10: Healthy Food Choices in Prineville



## ***ENVIRONMENTAL CONCERNS: IMPROVING THE PEDESTRIAN AND BICYCLE SAFETY; AND ACCESSIBILITY OF BICYCLE USE IN PRINEVILLE - TRAFFIC SAFETY***

The automobile has radically transformed the urban and rural landscape as well as the way in which Americans live. As urban cores grow and sprawl occurs, traffic is increased in surrounding communities. A growing reliance on the automobile has had obvious health consequences, including a decrease in physical activity and traffic speed is recognized as the key determinant for pedestrian injury risk for children (Jacobsen, 2000). Additionally community design over the past several decades has actually been shaped to accommodate vehicle travel.

Rural residents are particularly vulnerable to traffic related health impacts. This stems in part several decades ago, when small towns and service areas were designed to bring travelers through city centers for economic reasons – long before heavy truck traffic and automobile volumes existed or were of concern.

It is important to note that when physical activity is increased by walking and biking rather than using a car, positive results are achieved including:

- Reduction in air pollution: If 1% of auto travel is replaced by biking, motor vehicle emissions are reduced by 2-4% (Komanoff & Roelofs, 1993).
- Heavy traffic is related to more stress and less social interaction.
- Physical activity improves mood and relieves symptoms of depression and anxiety.
- Traditional neighborhood residents that walk more report more connect to community, more likely to know their neighborhoods and have more trust/faith in people (Leyden, 2003).
- Residents that live in a neighborhood with a high degree of social capital/sense of community report higher ratings of perceived health and physical activity levels (Kawachi, et al. 1997).
- When development allows safe convenient pedestrian and bike access, barriers to grocery stores, clean air, parks, employment, and educational institutions are broken. Access and the availability of affordable transportation are valuable to low-income residents in providing for their families.

### **Links between transportation, health and highways:**

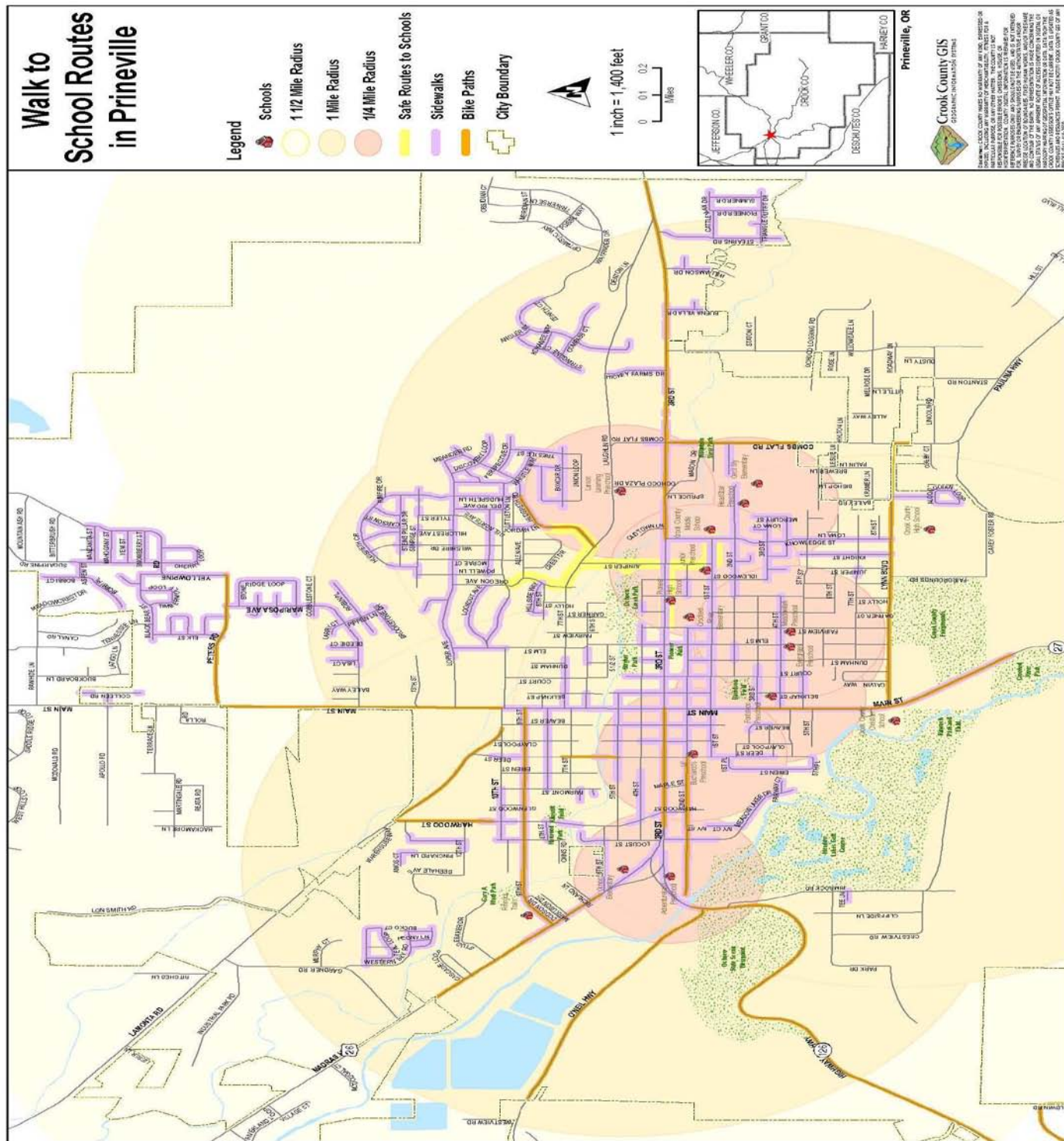
A majority of the commutes people make are short, less than 5 miles round trip, providing an opportunity for physical activity that can be built into their daily routine (Crook County, 2011). A reduction in vehicle use to make these short trips also reduces carbon monoxide and other air pollutants, as these chemicals are released at the beginning of a trip when a vehicle's engine is cold. Trails and greenways provide alternative transportation options, connecting neighborhoods and business districts so that people can walk or cycle to work and school, run errands, visit friends and utilize recreational areas like parks and playgrounds.

Walking is considered an important means of transportation, and pedestrians should be able to use the system safely and without unreasonable delay (Oregon Department of Transportation Traffic Manual).

***Local Conditions Related to Traffic Safety:***

- January 1, 2009 – February 11<sup>th</sup>, 2011 (City of Prineville) there were 6 bicycle accidents and 4 pedestrian accidents.
- We have 6 traffic lights in Prineville; at Harwood and 3<sup>rd</sup> (Hwy 26), Deer and 3<sup>rd</sup>, Main Street and 3<sup>rd</sup>, Elm St and 3<sup>rd</sup>, Combs Flat and 3<sup>rd</sup>, and Main St. and N, 10<sup>th</sup> Street.
- The City has received the Safe Routes to School grant for upgrading current sidewalks and adding new sidewalks for access to Cecil Sly, Crooked River Elementary, and Crook County Middle School.
- Pedestrians and bicyclists need a safe crossing route to get across Highway 126 near the Crooked River Bridge.
- We need to strategically review current drop off and pick up patterns of students in the school zones. Currently cars park in bike lanes, reducing the accessibility and safety for bicyclists.
- Need for traffic calming implementations on Lynn Blvd.
- Need for traffic calming at the base of the grade along with improved pedestrian safety options (additional safe crosswalks)

**FIGURE 9: Walk to School Routes in Prineville**



# A VISION FOR A HEALTHY ACTIVE PRINEVILLE

## HIA PROCESS/WORKSHOPS

### Screening

Strategies addressing convergence of population growth, transportation policy and rural design have typically involved conventional methods such as construction of highway by-passes to divert truck traffic from city centers. Smaller communities typically do not warrant projects of such magnitude, nor do they necessarily benefit from them. Therefore, other methods must be developed and employed. An inherent challenge in addressing growth and related issues such as traffic congestion is the need for County Planners to balance implementing land-use and transportation strategies with the public interest. Health, however, is not always at the forefront of this decision making process. It is the intent of Crook County HIA Workgroup to bring health considerations to light as a new influencing factor on both planners and community member's viewpoints on sidewalk, bike lane, and complete streets development policies.

The initial screening process identified the need to examine the sidewalks and bike lanes in Prineville/Crook County and evaluate the positive and/or negative consequences on public health. The HIA committee Advisory committee also considered the work of the Community Health Assessment Response Team (CHART) and the impact of the receiving the Safe Routes to School grant.

### Community Participation

#### **Advisory Committee (AC)**

The HIA Workgroup formed an advisory council (AC) of Prineville agencies, community advocates, and city planners to inform the scope, research and community engagement components of the project. The council included 11 people all of which were invited to attend monthly meetings beginning in January of 2011. These meetings introduced the project, conducted and revised scoping, and reviewed data. The final meeting in May had a final discussion about the HIA prior to the report completion. The meetings were advertised to the community, and information was presented on the HIA process at the Public Health Luncheon, a What's Brewing Breakfast, and at a City Council meeting. Email was used often to share resources and gather committee feedback. (Appendix #2)

#### **Listening Sessions**

Quotes from the listening sessions from both community members and business owners

illustrate community member perceptions of existing conditions related to each HIA policy area.

- “Lynn Boulevard is very dangerous with all the traffic and the school congestion.”
- “If you are trying to get to the library from O’Neil, you have to climb over abutments and there is a lot of traffic.”
- “Sidewalks would encourage more children to walk to school.”
- “This process is really exciting, to see how it can make a difference in our community.”
- “Drivers do not stop and let pedestrians cross the street. They cut through the intersection.”
- “There needs to be sidewalks to access the Prineville Hotshots Memorial.”
- “We really need to pursue the “Rails to Trails Project”.
- “There needs to more lighting by the high school, middle school, and downtown core area for pedestrian safety.”

### **Windshield Survey/Photos (Appendix #3)**

Health Department Staff and county GIS participated in several surveys of the community by taking photographs of various locations of concern for walking path, lack of sidewalks, and unsafe situations at crosswalks at the high school.

### **Media**

The Central Oregonian published an article about the HIA process in March of 2011 (Appendix #1).

### **Scoping**

The advisory council and community members identified the following three general policy areas to evaluate in this HIA:

- Walkability in Prineville
- Bicycle Safety in Prineville
- Identifying key areas in our community for pedestrian safety

Existing conditions and background data to assess health consequences that may be influenced by the above policies are presented in the following section. In HIA practice, these are known as proximal health impacts. For purposes of this HIA proximal health impacts we are focusing on:

- Physical activity
- Rural livability/access/nutrition
- Environmental/Traffic safety

Other proximal impacts that may be related but which this project did not focus on for time constraints and/or data uncertainty include:

- Air and noise pollution

- Mental health
- Climate change

## ASSESSMENT

### HEALTH IMPACTS OF COMMUNITY TRANSPORTATION PLAN INTERVENTIONS Pedestrian Recommendations

Plan Recommendations Network	Affected Populations and Health Impacts
<p>Develop a process for prioritizing pedestrian route improvements based on the demand, existing conditions, and proximity to designated Safe Route to School corridors.</p>	<p><b><u>Population affected:</u></b> -Existing pedestrians, Prineville residents in well-used areas, school children.</p> <p><b><u>Potential Health Impacts:</u></b> -Greater use of pedestrian walkways will improve the number of individuals in the community walking, which in turn could lead to lower risk of health problems such as heart disease, high blood pressure, obesity, diabetes and some types of cancer. (CDC, 2001) -Creating or improving access to places for physical activity (sidewalks, trails, bike lanes, etc.) can result in a 25% increase in the number of people who exercise at least three times per week. Studies show that this increase in physical activity can lead to reported weight loss or decreases in body fat. (CDC, 2001)</p>
<p>Signage to direct individuals to walking paths in the community.</p>	<p><b><u>Populations affected:</u></b> -Pedestrians, visitors</p> <p><b><u>Potential Health Impacts:</u></b> -Adding signage decreases stress, increases safety, and promotes physical activity in Prineville. Depending on the quality and availability, there is a hypothesized increase in use of alternative modes associated with wayfinding signage. Importantly, best practices include accompanying wayfinding with encouragement and marketing efforts. (VPTI, 2010)</p>
<p>Develop a pedestrian education campaign</p>	<p><b><u>Populations Affected:</u></b> -Pedestrians and drivers</p> <p><b><u>Potential Health Impacts:</u></b> Fewer potential injuries or deaths, increase knowledge of</p>

	<p>benefits of physical activity, reduce obesity and increased use of walking and bike lanes. Marketing programs have been successful in promoting behavior change. Such programs can increase the use of alternative (active) modes by 10-25% (Victoria Transportation Policy Institute [VTPI], 2010)</p>
<p>Implement traffic calming measures on local streets as needed. Measures to consider: neighborhood education, higher visibility crosswalks, active speed zone signs, radar speed trailers, police enforcement, speed bumps. Reduce speeds on Lynn Blvd. and Highway 126 coming down into Prineville. Place accurate signage to identify school zones</p>	<p><b><u>Populations Affected:</u></b> Pedestrians, bicyclists, automobile drivers, and residents on local streets.</p> <p><b><u>Potential Health Impacts:</u></b> -Taking pedestrians into account when designing streets. -Lower motor vehicle speeds could result in fewer accidents, with less risk of fatal or severe injury to pedestrians. (Retting, 2003) -Traffic calming measures can increase the sense of safety and appeal of pedestrian travel on local streets, which in turn can increase physical activity levels for all groups. -Increased use of curbs provided a traffic calming effect that reduces speeds without having to seek ODOT approval for speed limit reductions – Crook County Planning. -Slowing traffic speeds could bring health benefits, in the form of decreased risk from accidents. Vehicle speeds are associated with injury occurrence and injury severity for all road users. A literature review sponsored by the National Highway Traffic Safety Administration (NHTSA) found that pedestrians have a 5% change of fatal injury when hit by a car traveling 20 miles per hour or less. This risk increases to 40% at a vehicle speed of 30mph, 80% at 40mph, and nearly 100% at 50mph or more.</p>
<p>Improve sight distances for turning cars. Research specific intersections for implementation.</p>	<p><b><u>Populations Affected:</u></b> Drivers, pedestrians crossing intersections.</p> <p><b><u>Potential Health Impacts:</u></b> -Improving sight distances could decrease the risk of pedestrian auto crashes. Almost half of all nonfatal pedestrian injuries occur at intersections, while only 21% of fatal injuries occur at intersections. -Two-thirds of pedestrian deaths occur between 6 pm and 6 am and more than 80% of weekend deaths occur in the evening (NHTSA, 2005)</p>
<p>Improve existing trail facilities, pursue “rails to trails” funding to create trails that replace where</p>	<p><b><u>Population Affected:</u></b> Trail users, Prineville/Crook County residents looking for more recreational activities.</p>



<p>railroad tracks were located. Create connectivity with existing bike trail to needed sidewalks on Harwood St.</p>	<p><b><u>Potential Health Impacts:</u></b> -Connectivity and improved trails could increase the number of trail users, which in turn could increase a sense of community and physical activity. Recent studies have found that walkability is a highly significant predictor of physical activity independent of self-selection and socioeconomic status (Sallis et al, 2009). A review of studies on the built environment correlates of walking found that sidewalks and connectivity are commonly found to be significant correlates (Saelens &amp; Handy, 2008).</p>
<p>Opportunities for improved pedestrian facilities should be considered in the design or reconstruction of new or existing streets, recreational areas, or site developments.</p>	<p><b><u>Population Affected:</u></b> Prineville/Crook County residents, visitors, those wanting to walk more.</p> <p><b><u>Potential Health Impacts:</u></b> -Improving pedestrian access to recreational areas would improve the likelihood of people walking as a leisure activity. Greater land-use mixes, population and employment density, street connectivity, and continuity of bike and pedestrian network, are all believed to increase physical activity and contribute to positive health outcomes, as are the presence of recreational facilities and parks (Ewing and Kreutzer, 2006).</p>
<p>Opportunities for improved pedestrian and bicycle facilities in designing to increase likelihood individuals walk or ride to amenities, grocery stores, and recreational locations.</p>	<p><b><u>Population Affected:</u></b> Prineville/Crook County residents, visitors.</p> <p><b><u>Potential Health Impacts:</u></b> In a review of literature on food access, Policy Link and The Food Trust found that access to grocery stores is associated with healthier food consumption and with lower risk of obesity (2010). Of particular concern are inequalities in access based on socioeconomic status, as documented by Larson (2009).</p>
<p>Installation and construction of pedestrian facilities would be phased, with priority given to routes adjacent to and connecting to schools. Increase sidewalk connectivity as identified in the sidewalk connectivity maps (near Ochoco Creek park, Lynn Blvd., Combs</p>	<p><b><u>Population Affected:</u></b> Prineville/Crook County residents, visitors, wanting to walk more and increase school children walking to school.</p> <p><b><u>Potential Health Impacts:</u></b> -More residents exercising and walking, and more children walking to school. -Process could lead to more pedestrian-friendly development.</p>

Flat Rd., Elm St.)	
Install pedestrian crossing at Highway 126 and 2 <sup>nd</sup> Street	<p><b><u>Population Affected</u></b> Pedestrians and bicyclists wanting access to O’Neil Highway and the entrance to Ochoco State Park at View Point</p> <p><b><u>Potential Health Impacts:</u></b> Encourage more pedestrians and bicyclists to utilize paths at View Point and reduce unsafe crossing.</p>

## Bicycle Recommendations

Plan Recommendations Network	Affected Populations and Health Impacts
Propose new on-street routes and new off-street trails.	<p><b><u>Population Affected:</u></b> Current bicyclists and carless commuters able to afford a bicycle: car owners who might find it easier to reach destinations by bicycle.</p> <p><b><u>Potential Health Impacts:</u></b> Greater use of bicycles could lead to greater physical activity, which in turn could lead to lower risks of health problems such as heart disease, high blood pressure, obesity, diabetes and some types of cancer. The presence of sidewalks, trails, crosswalks, and bicycle lanes has a positive impact on increased physical activity (ICMA 2005).</p>
<p>Combination of on-street bicycle facilities, off-street trails, and “Share The Road” signage to educate both cyclists and motorists.</p> <ul style="list-style-type: none"> <li>• On street facilities may include bicycle lanes, wide outset lanes, and potentially “sharrow” style lane markings.</li> <li>• Off-street trails designated as multi-use facilities meeting AASHTO design guidelines.</li> </ul>	<p><b><u>Populations Affected:</u></b> Bicyclists and drivers who now share the road with bicyclists.</p> <p><b><u>Potential Health Impacts:</u></b> Greater education could reduce the risk of bicycle-car crashes. Bicycle lanes have been shown to reduce bicycle-motor crashes by 31%. (Note that bicycle lanes and shared-use paths are different types of facilities. Bicycle lanes are typically on-street, striped facilities, whereas shared-use path is an off-road facility.) There is consistent evidence that injury rates from crashes decrease as the number of cyclists and pedestrians increases (Jacobsen, 2003). As Jacobsen states, “Policies</p>

<ul style="list-style-type: none"> <li>• “Share the Road” signage used to educate cyclists and motorists along high volume corridors with lower traffic speeds; will also encourage a mix of bicycle and automobile traffic within the downtown core area.</li> </ul>	<p>that increase the numbers of people walking and bicycling appear to be an effective route to improving the safety of people walking and bicycling.”</p>
<p>Bicycle routes and facilities will be designated and implemented with consideration given to on-street car parking and the need for car parking on a corridor-specific basis.</p>	<p><b><u>Populations Affected:</u></b> -Bicyclists, those looking seriously at bicycling as an alternative to driving.</p> <p><b><u>Potential Health Impacts:</u></b> -Taking bicycling into account when designing on-street car parking, and vice versa, should reduce the risk of crashes between bicyclists and people entering or exiting parked cars.</p>
<p>Opportunities for bicycle facilities should be considered in the design or reconstruction of new or existing streets, recreational areas, or site developments.</p>	<p><b><u>Populations Affected:</u></b> -Residents, non-cyclists.</p> <p><b><u>Potential Health Impacts:</u></b> -Easier access to bicycle facilities should increase the attractiveness of bicycling and thus, in turn, increase the amount of physical activity through bicycling.</p>
<p>Installation and construction of bicycle facilities will be phased, with priority given to routes connecting schools.</p>	<p><b><u>Populations Affected:</u></b> -Children who might ride bicycles to school.</p> <p><b><u>Potential Health Impacts:</u></b> -Non-car commuting could increase physical activity levels of children and parents accompanying them to school. -Participating public schools in a California Safe Routes to School program reported an increase in school trips made by walking (64%), biking (114%), and carpooling (91%) and a decrease in trips by private vehicles carrying only one student (39%) (Staunton, et al. 2003).</p>
<p>Bicycle parking facilities throughout the city.</p>	<p><b><u>Populations Affected:</u></b> Current cyclists, those who work in Prineville.</p> <p><b><u>Potential Health Impacts:</u></b> -Allowing people to bicycle to work in Prineville would increase their chances to engage in physical activity. A study in Copenhagen, Denmark found that bicycling to work (average cycling time to work was three hours per</p>

	week) was related to a 38% decreased risk of mortality after adjusting for leisure-time physical activity, body mass index (BMI), blood lipid levels, smoking, and blood pressure (Anderson, et. al. 2000)
Bicycle safety education and enforcement	<p><b><u>Populations Affected:</u></b> Current and future cyclists in Prineville.</p> <p><b><u>Potential Health Impacts:</u></b> -A safe environment for both bicyclists and motorists is critical to encourage more use of bicycles as transportation, thereby increasing the health benefits of the physical activities related to regular bicycle use. -Reduced accidents involving bicycles reduces lost time/productivity and increases the overall health of the bicycle users.</p>

**NEXT STEPS**

The Crook County/Prineville HIA Bicycle and Pedestrian Safety Plan will help in making changes to the transportation infrastructure. The response to the HIA process was enthusiastic and the partners and community members are excited about using the results which will have positive impacts on public health by increasing the opportunities for physical activity, improving safety, and providing better access in Prineville. The HIA resulted in the identification of some potential negative health impacts that can be eliminated or mitigated by incorporating the findings and results into future planning. Crook County Public Health is working with the City of Prineville and County GIS to develop a forum for regular quarterly meetings to continue improvements based on the recommendations of this plan.

**RECOMMENDATIONS**

**Findings and Recommendations**

The HIA found that the elements of the process and recommendations will have positive impacts on public health by increasing opportunities for physical activity, improving safety, and providing better access to health promoting goods and services. The results should be increased walking and bicycling throughout the city of Prineville. The principal findings and recommendations that promote positive health outcomes relative to the three HIA focus areas are:

***Improving the safety and accessibility of sidewalks and walking paths in Prineville:***

Key improvements in Prineville include increasing connectivity of existing sidewalks and increasing overall existence of sidewalks, using current codes as new sidewalks are built.

- Increase current sidewalk connectivity (Harwood St., Elm St., Ochoco Creek Park, Lynn Blvd., Combs Flat Rd., etc.).
- Pursue “Rails to Trails” funding.

***Improving the safety and accessibility of bicycle use in Prineville:***

Key improvements in the safety and accessibility of bicycle use in Prineville would include maintaining and upgrading existing bike lanes, and increasing overall amount of bike lanes

- Increase existence of bicycle lanes in Prineville / Crook County.
- Create connectivity of bicycle lanes.
- Reduce/eliminate parked cars in bicycle lanes.
- Bicycle safety education and enforcement.
- Increased bicycle parking facilities throughout Prineville.

***Identifying key areas in our community for pedestrian safety:***

Key improvements for pedestrian safety in Prineville would include strategically reviewing speed limit zones and creating safe pedestrian crossing in key traffic areas.

- Develop a process for prioritizing pedestrian route improvements based on demand, existing conditions, and proximity to a designated Safe Route to School corridors.
- Signage to direct individuals to walking paths in the community.
- Develop a pedestrian education campaign.
- Implement traffic calming, including clear identification of school speed zones, specifically on Lynn Blvd for CCHS and CCCS.
- Improve sight distances for turning cars where needed.
- Create a safe crossing area for Highway 126 near (or under) Crooked River bridge
- Create strategic plan for student drop off and pick up around all school zones and educate students and parent regarding plan

The recommendations will be incorporated into future work through community wide campaigns, continuation of workgroup quarterly meetings, and development of a website page on the public health department site to monitor the work and improvements to Prineville and Crook County. In addition, the workgroup will establish baselines for health and set targets for improvement based on the RWJ County Health Report each spring, and monitoring of Behavior Risk Factor Surveillance Survey and Health Teen Survey. As the tri-county Central Oregon Health Council completes its Health Improvement Plan for the region, recommendations from the Crook County HIA process will be incorporated into the plan. The results of this plan will be communicated to the Crook County Court and the City Council of Prineville, along with a follow-up media release as to the completion of the plan and recommendations. In addition, the partners who developed this plan presented at one community event in June and will continue to communicate the progress. The City of Prineville and Crook County can capitalize on the fact that focusing on promoting community health can build consensus among a broader constituency and can help solve problems and make the most of opportunities for a Healthier Crook County. The design of a built environment can have an effect not only on physical activity but also on the sense of community.

## APPENDIX 1 Central Oregonian

# Public health officials, local agencies combine efforts to encourage fitness

*Work is geared toward making community more bike and pedestrian friendly*



JASON CHANEY/CENTRAL OREGONIAN

The crosswalk on Lynn Blvd., near Crook County High School, was targeted as a safety concern during initial meetings.

### Jason Chaney

March 31, 2011

Local public officials are looking for ways to encourage more community members to exercise and stay active.

To that end, they are joining forces with other community groups to increase pedestrian and bicycle travel throughout Crook County.

Crook County Health Department Director Muriel DeLaVergne-Brown and health educator Kris Williams are developing a Health Impact Assessment for Prineville that focuses on methods to encourage more walking and bicycling among local residents. The project is fueled by a \$12,500 grant and will include input from local law enforcement, planning, Parks and Recreation, and more.

Representatives from several agencies have already met twice with DeLaVergne-Brown and Williams to discuss ways to achieve their goals.

“How can you look at community design and transportation plans and think about them in a different way by adding health.” DeLaVergne-Brown said. “You think about making safe places for people to walk, safe places for people to bicycle.”

To that end, the meetings have helped the health department officials gather data about community development and law enforcement that will help them craft their assessment.

“From the public health side, if we haven’t been involved in community planning as much, we don’t know all their rules and all the guidelines they work under,” DeLaVergne-Brown stated.

At the same time, they can educate the other agencies on the health impacts of community development and law enforcement decisions.

“A lot of times, the engineers don’t think about the health impacts of what they are doing,” Williams offered as an example. “All they think about and worry about are the laws and complying with the laws.”

So far, the other community participants have embraced the process.

“It is one of several forums for getting public input,” said City of Prineville Senior Planner Scott Edelman. “When we have funds to spend, we have our TSP (transportation systems plan) to guide us, but this is one other forum that can help us make those decisions.”

Furthermore, Edelman said the assessment data would help city planning speed up grant application processes because less research would be necessary.

On the law enforcement side, the assessment helps determine pedestrian and bicycle safety concerns that need addressed. Crook County Sheriff Jim Hensley welcomes the help.

“You can’t do it alone,” he said. “We have to work together and get everybody’s ideas.”

Although the process has primarily involved other public agencies, DeLaVergne-Brown and Williams do not want to limit who participates.

“We would honestly like to gather more citizen input,” DeLaVergne-Brown said. Local residents are encouraged to contact the health department to find out more about the Health Impact Assessment and offer their thoughts.

Work will continue throughout the rest of April gathering additional data with DeLaVergne-Brown and Williams likely drafting the assessment in May. The report must be turned in to the state by June 1.

## APPENDIX 2

### Sample Agenda/Minutes from Meetings

<b>Subject:</b>	Health Impact Assessment Meeting	<b>Run Dates</b>	02/28/11
<b>Lead Facilitator:</b>	Muriel Delavergne-Brown, Kris Williams Donna Hamlin	<b>Time Start:</b>	1:30 PM
<b>Location:</b>	Prineville City Hall	<b>Time End:</b>	2:30 PM
<b>Attendees :</b>	<b>Task Force Members:</b> Muriel DeLaVergne-Brown, Kris Williams, Donna Hamlin Maureen Crawford, Duane Garner, Scott Smith, Melinda Lee, Jessica Williams, Scott Edelman, Jim Hensley, Stephanie Hill, Steve Dougill, Jeff Coffman, Eric Bush, Josh Smith, Bill Zelinka, Cheri Rassmussen		
<b>Desired Outcome:</b>	Scope of Focus and Assessment for Crook County HIA		

AGENDA			
Facilitator	Topic	Process	Duration
Muriel DeLaVergne-Brown Kris Williams Donna Hamlin	<p><b>1. Recap from Last Meeting – Review of Process</b></p> <p><b>What is a Health Impact Assessment (HIA)</b></p> <p><b>What:</b> A Health Impact Assessment is a tool that is used to assess plans, a project or policy, before they are implemented, that will predict the health impacts of the plan, project or policy.</p> <p><b>Where:</b> Examples of how HIA's are utilized; i.e. state policies (bills or laws) proposed, land use decisions, an organization's paid sick days policy, walkability study, other projects in OR.</p> <p><b>Why:</b> To inform or influence the decision making process in order to maximize health benefits and engage decision makers in considering the health impacts of their decisions.</p> <p><b>HIA steps:</b></p> <p style="padding-left: 20px;"><i>Screening:</i> Determines whether an HIA is appropriate on a particular project</p> <p style="padding-left: 20px;"><i>Scoping:</i> Planning and designing the HIA (where we are now in the process) – choosing areas of focus and creating a work plan</p> <p style="padding-left: 20px;"><i>Assessment:</i> Examining the information collected thus far to prioritize health impacts. Profiling of the community or population to be impacted by the proposal</p> <p style="padding-left: 20px;"><i>Recommendations &amp; Reporting:</i> Develop a set of action-oriented recommendations in a written report format.</p> <p style="padding-left: 20px;"><i>Monitoring &amp; Evaluation:</i> judging the</p>	Present Information	



	success of project via ongoing surveillance by project team and stakeholders.		
Kris	<b>2. Current Conditions: Input from Committee</b> <ul style="list-style-type: none"> <li><b>Requested Information</b></li> </ul>		
Muriel	<b>3. Scoping Process</b> Create an outline for the HIA by asking questions such as: What health effects should the HIA address? What concerns have stakeholders expressed about bicycle and pedestrian safety in Prineville? Who will be affected by the policy or project, and how?		
DeLaVergne-Brown	<b>4. Next Steps</b> <ol style="list-style-type: none"> <li><b>Assessment: Health Department Role</b>– <i>Has 2 parts:</i> (1) describes the baseline health of people and groups affected by the decision; and (2) performs an impact assessment that predicts the potential health effects of the decision.</li> <li><b>Recommendations, Implementation and Advocacy</b> - The HIA should point the way to a decision that protects and promotes health. The strategies and actions required to facilitate the adoption of an HIA’s recommendations into the final decision will vary.</li> <li><b>Reporting</b> - We disseminate the findings to decision makers, affected communities and other stakeholders, and solicit their feedback.</li> <li><b>Monitoring and Evaluation</b> - The HIA should identify indicators to track the outcomes of any implemented recommendations.</li> </ol>	Presentation Discussion	
Kris Williams	<b>Timeline - Meeting Calendar</b>	Discussion	
Muriel DeLaVergne-Brown	<b>Next Steps:</b> Identify and Assign tasks	Discussion	

### Notes 1/24/11 Meeting and Action Plan

#	Item(s)	Responsible Party	Target Date
1	Introduction of process and timelines		
2	Discussion centered around priorities for the County HIA – Items Noted Included: <ul style="list-style-type: none"> <li>• Areas by high school and Lynn Blvd. dark and crosswalk unsafe</li> <li>• Bike paths and sidewalk improvement needed south of Third Street for student safety to schools in that area.</li> <li>• ADA compliance issues</li> <li>• Bike path safety in parks an issue</li> <li>• Sidewalk in-fill should be a priority</li> </ul>		

3

Data and input needed from:

- School District
- Prineville Police Department (bicycle and pedestrian injury statistics)
- Senior Involvement in process
- Use of all crosswalks in count

Minutes from 2/28/11 Health Impact Assessment meeting.

Present: Steve Dougill, Scott Edelman, Scott Smith, JoAnne Bauer, Muriel DeLaVergne-Brown, Donna Hamlin and Kris Williams.

Muriel re-capped the last meeting and brought everyone up to speed on the HIA steps. Current conditions: City of Prineville did not receive the Rails to Trails grant. They did receive the Safe Route to Schools grant and are currently re-figuring engineering costs for implementation of infrastructure in the Laughlin/Oregon Ave area as well as the Skate Park.

Next steps outlined. The Pedestrian Environmental Quality Index and the Bicycle Environmental Quality Index will be used to assess the community in March. JoAnne will check with Prineville Police Dept. to determine their availability to help with this process using their eight community grids.

- The Health Department will recruit volunteers to assist.
- Crook County GIS will map the assessments to create a color-coded map of the existing conditions.
- Lighting and after dark issues were suggested for inclusion.
- City of Prineville would like the statistics for grant writing purposes.
- City was also concerned about the process after completion. Who would we target with the info and how would it be presented to media and community?

Timeline: March – Gather data

April-May – Compile information and print maps

June1- Submit findings to State of Oregon

## APPENDIX 3

### Current Conditions: Pictures from Community



Lynn Blvd 1



Lynn Blvd 2 Near High School



Laughlin St



**Laughlin Street**



**Juniper Street**



**Bike Path**

## APPENDIX 4

### Ideas for Traffic Calming



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