

Hood River County Health Department Health Impact Assessment for the Barrett Property



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Table of Contents

Executive Summary	page 3
Introduction	page 5
Property Background	page 6
Location, Physical Setting, History	page 6
Screening Process Explained	page 9
Scoping Process Explained	page 10
Allowable Uses	page 11
Community Interest	page 11
Parks and Recreation Use	page 14
Assessment Findings	page 15
Demographics of Park District	page 15
Ethnic Minorities and Migrants	page 15
Poverty	page 16
Hood River Community Health-Related Needs	page 17
Chronic Disease Management	page 17
Nutrition and Food Insecurity	page 21
Community-based Behavioral and Social Health	page 24
Conclusion and Maximizing Health Benefits	page 26
Minimizing Health Risks	page 27
Recommendations	page 29
Monitoring the Outcome	page 31
Appendices	page 32
Appendix A	page 32
Appendix B	page 32
Appendix C	page 33
Appendix D	page 33
References	page 46

Executive Summary

In 2007, the Hood River Valley Parks and Recreation District bought a 30-acre former orchard property on Barrett Drive in Hood River, Oregon with the intention of developing it into land for recreational purposes. Due to the possibility of both positive and negative health impacts from development of this land, the Hood River County Health Department decided to do a Health Impact Assessment (HIA) on the potential park development. The scope of the HIA was to investigate the potential health impacts of turning the land into a community park with open play fields, trails, and community gardens.

Another goal of the HIA was to provide information to the community and to decision-makers about the HIA process. The process was meant to give community partners the opportunity to collaborate, learn and practice the HIA process for potential future projects. The final intention of the HIA was that the information gathered could aid in granting variance to the zoning of the land.

The Park District includes most of Hood River County, which is located on the eastern slope of the Cascade Mountains, extending north from Mt. Hood to the Columbia River. Hood River County is a small, rural county with a population of about 22,385 located in North Central Oregon along the Columbia River. The Hood River County population is about 73 percent Caucasian and 27 percent Latino, who are primarily first or second generation immigrants from Mexico. Hood River County is famous for its fruit production, which is heavily dependent upon the region's large Latino population of seasonal and migrant farm workers. Hood River County's most important economic industries include agriculture, timber, tourism, and retail trade. More recently, tourist recreation has become increasingly important for the Hood River economy due to its world class outdoor sports venues for windsurfing, kiteboarding, skiing and mountain-biking, among other sports.

The increasing number of visitors to Hood River impacts parks and recreational facilities, which serve both tourists and residents. Due to the number of available recreational opportunities, and the draw these opportunities have made during population growth, the population of the Park District is more active than average. This demands higher levels of recreational options and facilities (Hood River Valley Parks and Recreation District, 2010).

Through the scoping process, the HIA took into consideration the community interests in land use by reviewing open forum meetings and surveys from the Hood River Valley Parks and Recreation District, surveys to the Hood River Valley Latino community, and a focus group with Hood River Valley high school students (Community, 2011; Students, 2011; Hood River Valley Parks and Recreation District, 2010; Nuestra Comunidad Sana, 2011). The committee considered uses allowed on the land with planning and grant guidelines when making recommendations. The main categories of park features identified by the community included open play fields; trails around and throughout the property; child, adolescent, and adult play and exercise features; a community garden; and community gathering spaces such as covered picnic areas.

The HIA assessment considered specific variables when making recommendations for the development of the Barrett property, including a review of the demographic population of potential park users and the ways a park could address community health-related needs. It then determined ways to maximize potential health benefits through physical activity, enhanced nutrition and food security, and improved social and behavioral health. Lastly, it reviewed ways to minimize potential health risks of a park on the Barrett Property from exposure to residual pesticide chemicals on the former orchard land.

It was found that the Hood River County health-related needs that could be addressed with a park on the Barrett Property included chronic disease management and risk factors, nutrition and food insecurity, and behavioral and social health.

The HIA made ten recommendations to maximize the health impact of the Barrett Property on the Hood River County community. A summary of the recommendations are listed subsequently.

The first recommendation is that the Hood River Valley Parks and Recreation District grade and develop the property to prepare it for park development within a reasonable timeframe.

Second, that the soil is tested to determine potential chemical residues present on the land from previous pesticide use, specifically lead, arsenic, and organophosphates due to their potential for the greatest harm to human health. If contamination is found, the recommendation is to work with the Department of Environmental Quality to guide park feature design and minimize potential human exposure.

Third, that the development of the land be monitored for unintended consequences relative to health, including exposure to pesticide chemical residues, increased noise and traffic.

Fourth, that the development of land is monitored for unintended consequences relative to cost to aid in the financial sustainability of the project. If a phased approach to development is used, to use reasonable precaution in protecting park users from exposure to potential chemical residues from undeveloped land.

Fifth, that the identified health needs of the community are met by developing the land into a park with a variety of features to promote life-long wellness among a range of age groups, from children to elderly populations. Suggestions include, open play fields near picnic areas for people to gather, accessible walking trails, and community gardens.

Sixth, that the design of the park take into consideration the desired use of the land by the entire community, particularly vulnerable populations, so that they develop a sense of ownership and increase their potential use of the park.

Seventh, once developed, that the availability and accessibility of the park is promoted to vulnerable populations who are least fit, who are at-risk for becoming least fit, who are vulnerable to healthy inequities, and who are at-risk populations for chronic disease, poor nutrition, and food insecurity. Such populations include those of low socio-economic status, the Latino community, the elderly population, single parents, those with chronic disease or who are at-risk for chronic disease, and those who are obese or who are at risk for obesity.

Eighth, that partnerships with community groups and organizations are gained and maintained to attract wellness programming, organized activities and events to the park.

Ninth, that the acquisition of the surrounding trail structure is monitored to connect it to Indian Creek Trail and connect a four-mile trail to downtown. Eventually this could connect a proposed 14-mile loop that connects schools with downtown Hood River.

Lastly, that decision-makers such as the Hood River Valley Parks and Recreation District Board of Directors, the Hood River County Planning Commission, the Hood River County Board of County Commissioners, and state policy makers are educated about the Barrett Property Health Impact Assessment, along with the general public.

The HIA committee was made up of representatives from the Hood River County Health Department, Hood River County Environmental Health, Nuestra Comunidad Sana of The Next Door, Inc., the Hood River Valley Parks and Recreation District, and Oregon State University Extension Services.

Introduction

In 2007, the Hood River Valley Parks and Recreation District bought a 30-acre former orchard property on Barrett Drive in Hood River, Oregon with the intention of developing it into land for recreational purposes. Due to the possibility of both positive and negative health impacts from development of this land, the Hood River County Health Department decided to do a Health Impact Assessment (HIA) on the potential park development. The scope of the HIA was to investigate the potential health benefits of turning the land into a community park with open play fields, trails, and community gardens. Also, to investigate the potential health risks for users of the property from exposure to residual pesticide chemicals on the former orchard land.

A secondary goal of the HIA was to provide information to the community and to decision-makers, such as planners and the board of county commissioners about the HIA process and how an HIA might impact decision-making. The process was also meant to give community partners the opportunity to collaborate, learn and practice the HIA process for potential future projects that may be more politically charged, such as windmills. The final intention of the HIA was that the information gathered could aid in the granting of variance to the zoning of the land.

The HIA committee was made up of representatives from the Hood River County Health Department, Hood River County Environmental Health, Nuestra Comunidad Sana of The Next Door, Inc., the Hood River Valley Parks and Recreation District, and Oregon State University Extension Services. For the remainder of this document, the Hood River Valley Parks and Recreation District will be called the Park District. The committee completed all parts of the Health Impact Assessment including a screening process, scoping process, information gathering and compiling into report form, and a monitoring process. The HIA process was completed between March and July of 2011.

This report will describe the HIA process; review the assessment findings with a review of the Hood River County community health-related needs, ways to maximize health benefits of a park on the property, and ways to minimize potential health risks from developing the property into a park; make recommendations for development of the property and describe ways the HIA committee will monitor the outcome of the assessment.

Information is intended to be disseminated to decision-makers including the Hood River Valley Parks and Recreation District Board of Directors, the Hood River County Planning Commission, the Hood River County Board of Commissioners, state policy makers, and the general public. Following presentation of the HIA, the decision-making entities will have to come to some decisions about how to proceed. The Park District Board of Directors and their Barrett Park Development Committee will have to decide how to incorporate information presented in the HIA to their plan. The Hood River County Planning Commission will have to decide how the information will impact their decisions regarding the Barrett Park development and how this will influence future developments. The hope is that the process will influence local and state policies as well.

Property Background

In 2005, the Hood River Valley Parks and Recreation District identified the need to acquire land to increase the demand for play fields, fulfill the need of the growing athletic community, and to reduce the overuse of the Hood River County School District athletic fields (Hood River Valley Parks and Recreation District, 2010). After an extensive search of suitable properties, the Park District negotiated and purchased the 30-acre Barrett Property at 4010 Barrett Drive, Hood River, OR, in the summer of 2007. The property met the size, slope and optimum location requirements for the future recreational needs of the community.

Following this, the Park District received an Acquisition Grant in October 2007 from the lottery funded State Park Local Government Grant Program for \$325,800. The guideline of the grant is to provide outdoor park and recreation purposes. Within this guideline is that non-recreation uses on the property be terminated within three years of the date of acquisition (Hood River Valley Parks and Recreation District, 2010).

The Barrett Property was former orchard land and it is zoned exclusive farm use or EFU. There are specific uses allowed for EFU land, which are explained in the subsequent section. From the 1940's until the more recent owners, the land was part of a 75-acre plot that was used for pear and cherry crops (Previous Owner, 2011). The most recent owners, before the Park District bought the 30-acre plot, farmed 20 acres of apples and eight acres of pears on the land (Wanzak, 2011). The property has a natural buffer on its western and northern boundaries, providing separation from other properties as well as a natural area along Indian Creek Trail. The proposed trail on the Barrett property would generate the potential to add an additional 0.5 miles to Indian Creek Trail and connect a four-mile trail to the high school and to downtown Hood River. The potential trail and map of the property is illustrated in Figure 1 below.

Neighbors adjacent to the property include medium to large sized rural properties including agricultural areas, exclusive farm use land, and residential areas. The primary use of the properties is for farming orchards and the secondary use is residential.

Location, Physical Setting, and History of Hood River

The Park District includes most of Hood River County, which is located on the eastern slope of the Cascade Mountains, extending north from Mt. Hood to the Columbia River. This area of immense natural beauty lies in the heart of the Columbia River Gorge National Scenic Area, about 20 miles west of The Dalles, and 60 miles east of Portland, Oregon. The Historic Columbia River Highway (U.S. 30) also extends through Hood River (Hood River Valley Parks and Recreation District, 2010).

Hood River was founded in 1854 by Nathaniel and Mary Coe. In 1882, railroad service opened the local economy to new markets and prompted growth of timber and agricultural industries. Agriculture and timber are still important to Hood River, but the economy has diversified. The area has become a tourism and retail trade center. Tourism has become increasingly important for the Hood River economy due to its world class outdoor sports venues for windsurfing, kiteboarding, skiing and mountain-biking, among other sports.

The increasing number of visitors to Hood River impacts parks and recreational facilities, which serve both tourists and residents. Due to the number of available recreational opportunities, and the draw these opportunities have made during population growth, the population of the Park District is more active than average. This demands higher levels of recreational options and facilities (Hood River Valley Parks and Recreation District, 2010).

Screening Process Explained

The Barrett Park Project was selected for the Health Impact Assessment (HIA) process by the Hood River County Health Department after looking at potential projects for development in the county. Part of the selection criteria was a project that:

- Would have broad base of community support
- Was still in the planning stages
- Could contribute objective information in hopes of addressing policy issues in the county

The proposed project, policy, or program to be analyzed in the HIA became the Barrett Property Development because the Hood River Valley Parks and Recreation had recently purchased the land that was formerly used as an orchard. One of the goals for the property was to develop open land for general physical activity, to develop community garden plots, and initially to develop ball and athletic fields, however county planning guidelines restricted the land use of the latter.

The Barrett Property Development was a good candidate for the HIA process because there were foreseen potential health risks involved in converting former orchard use to generalized use by the public of land that may have had pesticide chemical residues present, especially the growing of food or children playing in the dirt. While there are potential health impact issues with this piece of property, the park development is supported by the community. The goal of the HIA process was to give the health department and community partners the opportunity to learn how to do an HIA, to present the findings to decision-makers and community members, and to realize the impact of development of this land over time. Land use planning and potential health issues have restricted the development and use of the land. This has allowed the Health Department time to conduct the HIA in order to provide input into decisions about the specific land uses before the property was developed.

Those who will be affected by the Barrett development include potential users of the property, neighbors of the property, the community-at-large, the Hood River Valley Parks and Recreation District, and decision-makers such as the Hood River County Planning Commission. One intention of the HIA was to provide information that could potentially aid in granting variance of zoning of the land. Additionally, it was to provide new information that was not currently available about potential pesticide chemical residues that might be in the soil.

People of all economic levels would potentially access open playing fields or trails for physical activity and lower income people would be especially interested in community garden plots. Lastly, an intention of the HIA was to confirm an access plan to the property since there is no sidewalk or bike path access to the property. There is question as to how this property might be able to contribute to an emerging pedestrian access route for the county by connecting Indian Creek Trail to downtown and to the schools.

The Park District has begun the process of determining how to develop the land. They have created a Barrett Park Development Committee, of which, members will need to be residents of the Park District and may include walkers, sports groups, Master Gardeners, Gorge Grown Food Network, neighbors, and other recreational user groups

that have an interest in the park's future. The Park Development Committee will be responsible for developing: a park plan, which will include a park design; a park expense estimate; funding recommendations to pay park costs; and a phased approach to development. The park development is being implemented into the latest Park District Comprehensive Master Plan, which will be completed by October 2011.

Those involved in the screening process included representatives from the Hood River Valley Parks and Recreation District; the Hood River County Health Department; Nuestra Comunidad Sana of The Next Door, a non-profit social service community organization; members of the Healthy Active Hood River County coalition; Gorge Grown Food Network; the Hood River County Planning Department; and the Hood River County Environmental Health Program.

Scoping Process Explained

The scoping process involved a meeting on March 30, 2011 where representatives from the Hood River County Health Department; the Hood River County Planning Department; Nuestra Comunidad Sana of The Next Door, a non-profit social service agency; Oregon State University Extension Services; the Hood River Valley Parks and Recreation District; the Hood River County Environmental Health Program; and the Hood River County Commission on Children and Families prevention staff determined the goals and objectives of the Barrett Property Health Impact Assessment. Most representatives of the Scoping Committee became the HIA committee. The scoping process was assisted by representatives from the Oregon Public Health Division.

At the scoping meeting, the Scoping Committee discussed the benefits of local parks and green space. During the meeting, participants considered the positive health implications of parks and green space, along with the potential negative health consequences of developing former orchard land into space for recreation.

The Scoping Committee considered various perspectives, while learning of the land use planning restrictions of the State of Oregon. Committee participants highlighted the importance of engaging a variety of community members and potential park users in the planning process. The group committed to gathering input from as many subpopulations of the community as possible.

In addition, the scoping meeting provided the HIA Committee with a valuable overview of the Health Impact Assessment process, ensuring a communal understanding of the subsequent steps within the timeframe of the assessment. The HIA Committee agreed that performing the HIA process on a well-supported project would help gain participation from local leaders, planners, developers, community members, and public health promoters. As such, future developments may be more open to and welcoming of the HIA process as a tool to help understand the spectrum of implications of new projects. Though there were disagreements during the meeting, the HIA process illustrated the power of the close-knit Hood River community to consider neighbors and community members who may be affected by decision-maker's resolutions.

The HIA Committee decided the scope for the HIA would be to determine potential benefits and risks of a park on the Barrett Property with open play fields, trails, and community gardens. The HIA would then make recommendations to maximize health benefits and minimize potential health risks.

Allowable Uses on Barrett Property, with Conditions

As EFU land, there are specific uses allowed on the Barrett Property. Planning and grant guidelines need to be considered in the HIA proposed use of the land. Conditional allowed land uses in accordance with planning and grant guidelines include: farm use; creation or restoration of wetlands and wildlife habitat; public parks; playgrounds; day use areas; picnic shelters; barbecue areas; open play fields; play structures; trails for walking, hiking, biking, and horseback riding; sites for the takeoff and landing of model aircraft; fenced informal play areas for dogs; neighborhood or community gardens; community supported agriculture including CSA production, packaging, delivery or pick-up; farm stands; and composting facilities.

Amenities related to park use are intended only for park visitors and employees including parking areas, laundry facilities, recreation shops, and snack shops not exceeding 1500 square feet of floor area. Support facilities serving only the park lands where the facility is located include water supply facilities, sewage collection and treatment facilities, storm water management facilities, electrical and communication facilities, restrooms and showers, recycling and trash collection facilities, registration buildings, roads and bridges, parking areas and walkways.

Park maintenance and management facilities located within a park include maintenance shops and yards, fuel stations for park vehicles, storage for park equipment and supplies, and administrative offices (Parks and Recreation District, 2011).

Community Interest in Land Use

It is commonly believed that community participation in decision-making results in improvements that meet local needs and preferences. These simultaneously enhance feelings of ownership and local pride, resulting in greater success and better use of facilities (Brown, 1985). The community's interest in the use of the Barrett Property was gathered from open forum meetings and surveys. Community interest covered a few main categories including: park features for physical activity for a range of age groups such as trails and open play fields, community gardens, and community gathering spaces.

Knowledge of community interests came from: an open community forum held by the Park District, attended by 65 community members on April 5, 2011; a focus group with 350 Hood River Valley High School students on April 4 and 5, 2011; a Park District public opinion poll of more than 330 community members of various ages from 2003; and a survey of 53 Latino community members by Nuestra Comunidad Sana of The Next Door (Community, 2011; Students, 2011; Hood River Valley Parks and Recreation District, 2010; Nuestra Comunidad Sana, 2011).

The specific community interests for the Barrett Property Development listed subsequently include activities that will conditionally be allowed on EFU land, taking

into consideration planning and grant guidelines. Park features meant to increase physical activity included: open space or open playing fields; trails around the property, including a non-technical paved bike trail, a cyclo-cross race track, a cross country trail to be used by the high school team, and a horse trail; a sledding hill; adolescent and adult exercise features or equipment; a playground for children; swings and a slide for teenagers; a disc golf course; a handball wall; a rock climbing wall; an ultimate Frisbee course; and a covered space for informal athletic use (Community, 2011; Students, 2011; Hood River Valley Parks and Recreation District, 2010; Nuestra Comunidad Sana, 2011).

Features of the community garden included: space to educate children and the community about foods, space shared with the Gorge Grown Food Network, space for the Future Farmers of America high school group, and a program with the community food bank (FISH) to increase food security for low income families (Community, 2011; Students, 2011; Hood River Valley Parks and Recreation District, 2010; Nuestra Comunidad Sana, 2011).

Features of community gathering spaces included: covered picnic and gathering areas with a sink; space for family activities, group activities, and socializing; and a community center (Community, 2011; Nuestra Comunidad Sana, 2011).

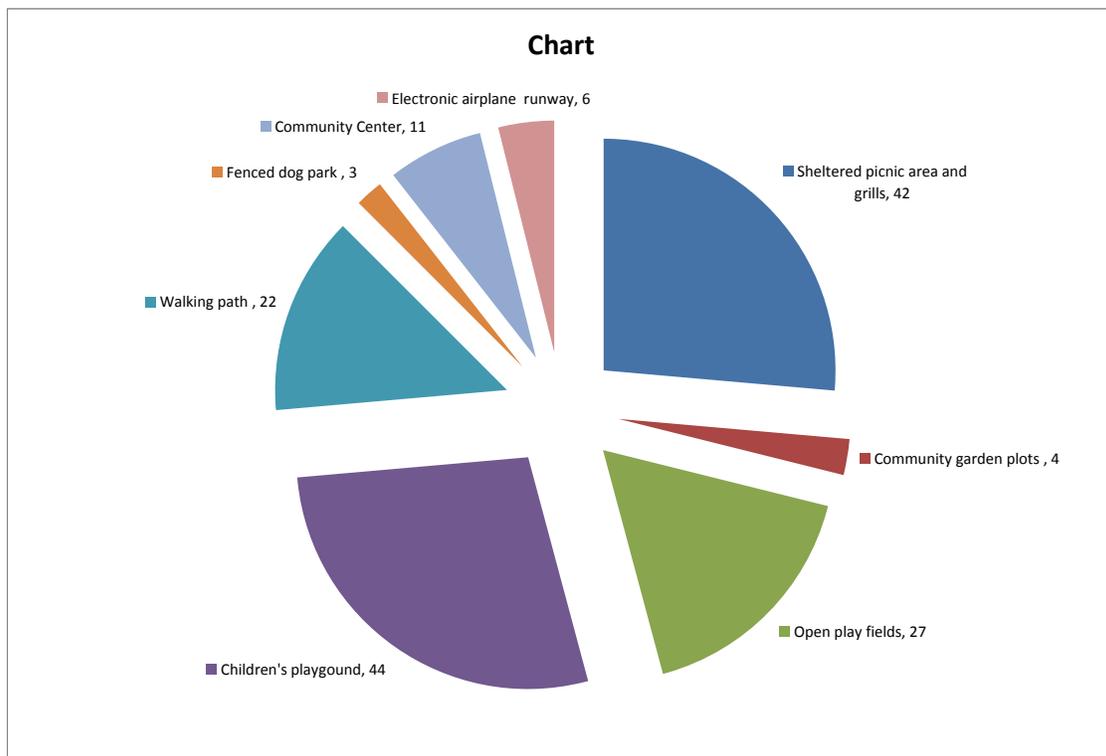
Miscellaneous park features included building natural habitat to connect children and adults with nature; a dog park; a runway and landing space for radio controlled model aircraft designed for community parks; an amphitheater for music, art, and theater; to make use of the barn on the property; parking areas with space for a park and ride; bathrooms and support facilities; and cooperative agreements for maintenance and use of the park (Community, 2011; Students, 2011).

A 2003 Hood River Valley Parks and Recreation District public opinion poll of more than 330 community members of various ages found that the top five most needed facilities or activities, in order, were: biking and hiking trails, wildlife access; a recreation center, community center, or indoor sports center; water access to whitewater and the Columbia River; ball fields and sports complexes; and community parks, including dog parks, new parks, and updated equipment (Hood River Valley Parks and Recreation District, 2010). The types of pathways that were most needed are unpaved trails, on-street commuter bike lanes and off-street paved trails. Other needs included natural trail areas, trails that extend long distances, and trails that link schools with parks (Hood River Valley Parks and Recreation District, 2010).

To include input from the Hood River County Latino Community, Nuestra Comunidad Sana (2011) conducted a community survey about the Barrett property development. Nuestra Comunidad Sana is a program of The Next Door, Inc., a local non-profit social service agency. Fifty-three Latinos from the Hood River Valley area participated, representing almost one percent of the 6,044 Latinos living in Hood River County (U.S. Census Bureau, 2009). The survey found that the majority of respondents wanted a “children’s play ground” (44 votes) and a “sheltered picnic area with grills” (42 votes). “Open play fields” came in third place with 27 votes, followed by “walking path” with 22 votes. The category with the lowest number of votes was “fenced dog play area” (3) followed closely by “community garden plots” (4). Responses are represented in the pie chart in Figure 2 (Nuestra Comunidad Sana, 2011).

The survey also included open-ended questions. Participants were asked, “In your opinion, how would having a new park benefit our community?” Not all participants responded to this question. The most responses (15) fell under the category of “benefits to families.” Most of these comments fell under the benefit of recreation, or a place to have fun as a family. Representative comments are, “Well, it would help families have a space to share and be together,” or “It would help in that there would be more places for families to have fun.” The second most responses (13) fell under the category of “benefits to children.” A representative comment was, “It would keep kids occupied and active and away from drugs.” The other categories included need based comments (5), benefit to society and community (4), benefits to health (4), and other varied responses (6). The top park use preferences, a children’s playground and sheltered picnic areas with grills, relate directly to the top perceived benefits, or benefits to families and children. Family, especially children, is a top cultural priority for Latinos (Nuestra Comunidad Sana, 2011).

Figure 2. Park Feature Preferences of the Hood River County Latino Population



Neighbors adjacent to the Barrett Property, who include medium to large sized properties with family homes and orchards, mentioned their concern for potential noise impact and increased traffic in the area with the development of a park (Community, 2011). It was suggested by the HIA committee that the Park District take into consideration features of the park design that will minimize noise levels for neighbors. Also, to minimize traffic danger for park attendees, passersby, and children from neighboring properties, it was suggested that multiple, small parking lots throughout the property be used. Roadside parking puts both park attendees and passersby at risk,

while one large parking area generates more concentrated traffic to and from one park access point.

Parks and Recreation Use in Hood River County

The Hood River Valley Parks and Recreation District serves various recreational facilities including neighborhood parks; community parks; trails, greenways, linear parks, open space, and wilderness; special use parks and facilities, public school-based facilities, and non-publicly owned facilities served by the Park District (Hood River Valley Parks and Recreation District, 2010). A detailed description of the existing recreational facilities in Hood River County is included in Appendix D.

It was important to look at the existing use of parks and recreational facilities in Hood River County when considering park features on the Barrett property to best serve the community's interests. According to the Park District opinion poll, the top five Park District facilities they visited, in order, were: the Columbia River waterfront sites, school playgrounds and sports fields, city and county parks, the aquatic center, and the Indian Creek Trail (Hood River Valley Parks and Recreation District, 2010). The top reasons stated for people not using parks were because they are too busy or do not have time, they do not know the park locations, they are not interested in using parks, or the parks are not enjoyable or interesting, respectively. Other reasons that did not score as high are that the parks are not conveniently located, they don't have adequate facilities, they are too crowded, they are unsafe, and other miscellaneous reasons (Hood River Valley Parks and Recreation District, 2010). Poverty, lack of childcare, transportation, and single parenting are other potential barriers to park use.

Assessment Findings

The most important variables the HIA considered when recommending development of the Barrett Property are reviewed subsequently. They include a review of the demographic population of potential property users; the ways a park could address community health-related needs, which include chronic disease management and risk factors, nutrition and food insecurity, and behavioral and social health; and maximizing health benefits and minimizing potential health risks if a park is developed on the property.

Demographics of the Park District

The population of Hood River County is 22,385 (County Health, 2011). The Park District serves 21,285 residents excluding Cascade Locks who chose not to participate in this Park District (Hood River Valley Parks and Recreation District, 2010). Other counties in Oregon comparable but smaller in population are: Baker, Crook, Curry, and Jefferson counties. Comparison counties larger in population are: Tillamook, Union, and Wasco Counties. The individual counties are all less than one percent of the state population and all eight counties comprise only 4.7 percent of the state population. They are located in Central and Eastern Oregon and along the Coast, reflecting a large variance in industry, density, and culture. The coastal counties have the highest percentage of population over 65 years. Hood River and Jefferson Counties have the highest rate of population under 18 years.

Twenty-seven percent of the Hood River County population is under the age of 18. This is higher than the State of Oregon average at 23 percent. In general, children use parks and recreational facilities more frequently and have different recreational needs than adults. There are 3,945 students enrolled in the Hood River County Public School System. About 60 percent of these students are white and about 40 percent are Hispanic or Latino. American Indian, Asian or Pacific Islander, and African American students make up a very small portion of the student population. About 13 percent of the Hood River County population is 65 years or older, which is 1 percent lower than the state average. This population also has different recreational needs than the general population.

Ethnic Minorities and Migrants

The majority of the adult population in Hood River County is Caucasian, however demographic change has been exceptionally rapid since the late 1980s. It is estimated that 6,044 permanent residents of the Hood River County are now Latino or of Latino descent (U.S. Census Bureau, 2009). These are primarily first or second generation immigrants from Mexico. Latinos make up the largest ethnic minority group in the area (County Health, 2011) at 27 percent. This is a 15 percent increase from 1990. Compared to other counties comparable in size, Hood River County has the highest Latino population. The state rate is 11 percent Latino.

The Oregon Health Division reports that nearly twice as many Latinos, compared with the general population, are medically uninsured and/or cannot afford to visit a doctor. The overall number of uninsured adults in Hood River County is high with 33 percent uninsured. The state percentage is 21 percent and the National Benchmark is 13 percent.

While school-age Latinos are growing up to be bilingual, most of their parents and grandparents are monolingual in Spanish and have limited educational attainment. This contributes to but does not explain the illiteracy rate. In contrast with comparable counties, Hood River County has the highest illiteracy rate at 17.8 percent compared to the state rate of 10.2 percent.

Poverty

Hood River County has been, and currently is considered an economically distressed area by the State of Oregon. It is among the poorest counties in the state. A county is considered economically distressed when its unemployment rate is eight percent or more. The local economy is based on a declining lumber and trade industry, agriculture and tourism. Hood River County is famous for its fruit production, which is heavily dependent upon the region's large Latino population of seasonal and migrant farm workers. In Hood River County, there were an estimated 794 migrant farm workers and 7,396 seasonal farm workers in 2005.

About 11.2 percent of individuals and 8.4 percent of families in Hood River County live in poverty (U.S. Census Bureau, 2009). Hood River County has the lowest seasonally adjusted unemployment rate at 7.8 percent. Crook County has the highest at 15.3 percent. The current state rate is 9.6 percent. The median income in Hood River is the highest among the comparison counties at \$48,895. Tillamook County is the lowest at \$36,454. Both of these percentages are below the state median income of \$50,165.

The childhood poverty rate in Hood River County for children under 18 years of age is 20 percent (County Health, 2011). This is higher in all the comparison counties compared to the state average, which is 18 percent. The national benchmark is 11 percent. Twenty six percent of families with a female as the head of the household and no husband present had incomes below the poverty level (U.S. Census Bureau, 2009). The percentage of children who qualify for free or reduced lunch in Hood River County is 58 percent (Oregon Department of Education, 2011). In Union County it is 50.6 percent and 61.6 percent in Tillamook County. The state school year rate for 2010 to 2011 was 58 percent.

For senior citizens in Hood River County, twelve percent of people 65 years and over live in poverty (U.S. Census Bureau, 2009). Poverty among Latinos is merciless with an average annual per capita income of \$7,630. Fifty percent of Hood River's Latino families are living in poverty compared to 11.2 percent of non-Latino families (County Health, 2011, Nuestra Comunidad Sana of The Next Door, 2010). To help improve the health of populations of low socioeconomic status, it is helpful to consider low to no-cost activities in the design of new recreational facilities.

Hood River Community Health-Related Needs in Regards to Park Use

Chronic disease support and management, basic needs, community-based behavioral health, and preventative health care were found to be the top needs of the Hood River County community, according to both providers and recipients of care (Providence Hood River Memorial Hospital, draft 2011). Addressing these needs in regards to a park could be mean low-cost or free opportunities to regularly address physical activity and stress relief. This could be realized through park features, such as open play fields and trails; improved nutrition through community gardens; behavioral health healing and stress reduction through time spent in green spaces; and community support and socialization through providing places to gather.

About 19 percent of the Hood River County population reported living in a state of poor or fair physical health (County Health, 2011). They also reported on average, about four days each month where they are physically unhealthy and about two and a half days where they are mentally unhealthy (County Health, 2011). By designing the Barrett Property into a community park and using it as a prevention tool, it could address these health-related needs.

Chronic Disease Management and Risk Protective Factors

A chronic disease is one that lasts three months or more, according to the U.S. National Center for Health Statistics. Chronic diseases generally cannot be prevented by a vaccine, cannot be cured by medication, and do not go away on their own (MedicineNet, 2011). Some leading chronic diseases in the U.S. include heart disease, stroke, cancer, diabetes, obesity, and arthritis. This section will review chronic disease in Hood River County, subpopulations vulnerable to chronic disease, risk factor associated with chronic disease, and how physical activity in parks can reduce chronic disease risk factors.

In Hood River County, 46 percent of respondents self-reported a chronic disease like diabetes, cancer, heart disease, or high blood pressure on a Providence Hood River Memorial Hospital Community Assets and Needs Assessment (draft 2011). About one out of every four people in Hood River County, or 27 percent, is obese. Obesity is associated with serious health problems, including Type 2 diabetes, asthma, high blood pressure, and high cholesterol. Seven percent of the Hood River County population have diabetes (County Health, 2011), although those who work exclusively with the Hood River County diabetic population believe the rate to be closer to 10 to 15 percent (Chambers & Price, 2011).

The top three leading causes of death in Hood River County in 2007 were heart disease, cancer, and cerebrovascular disease (Oregon Health Authority, 2007). Diabetes was the tenth leading cause of death in Hood River County in 2006 (County Health Ranking, 2011). Cancer causes 177 deaths per 100,000 people in Hood River County compared to 198 in Oregon. The rate of heart disease and stroke are one percent and two percent, respectively (Providence Hood River Memorial Hospital, draft 2011). Health-damaging behaviors such as poor eating habits, physical inactivity, tobacco use, and excessive alcohol consumption are major contributors to leading chronic diseases (CDC, 2010, 2011; MedicineNet, 2011).

Adolescent Obesity

Adolescent obesity in the U.S. is a growing trend that has many implications regarding the health and well-being of the individual and society. Medical costs in the U.S. due to overweight adolescents are estimated at more than \$14 billion per year (Trasande & Chatterjee, 2009). Obesity and poor nutrition combined with mental health disorders and emotional problems, violence and unintentional injury, substance use, and reproductive health problems all form part of a complex web of potential challenges to adolescents' emotional health and physical development (Steinberg, Dahl, Keating, Kupfer, Masten, & Pine, 2004).

Chronic Disease and Poverty

Obesity is also associated with poverty. More than two in five (41.6 percent) Oregon children in families below the poverty line are obese or overweight. About 3 out of every 10 low income Oregon children ages two to five year are overweight or obese, according to the 2006 Pediatric Nutrition Surveillance System (PedNSS). Although a park cannot reduce poverty, it can service populations who are at higher risk for obesity by providing features to increase physical activity and improve nutrition, like trails, open play fields, and community gardens.

Low-income community environments tend to encourage unhealthy eating and encourage physical inactivity. Limited purchasing power makes it harder to buy lower calorie, nutrient-rich foods because they tend to be more expensive. Long work hours limit parent's time available to prepare food, shop for food and for leisure-time physical activity. Parents may also lack transportation and money to support their children's participation in extramural sports, youth programs and other recreational activities (Nuestra Comunidad Sana of The Next Door, 2010). For children, play is critical in future success in that it develops muscle strength, coordination, language, reasoning, and thinking abilities (Gies, 2006).

In the rural landscape of Hood River County, it is not easy and many times not safe for children to walk or bike to school due to the roadway infrastructure and lack of bike lanes. In addition, cuts have been made to physical education and after school sports and activity programming. These factors, combined with the increase in stimulating sedentary entertainment through technology and media, increases the likelihood that children and adolescents are inactive for most of the day. The Centers for Disease Control and Prevention suggests that children and adolescents get 60 minutes or more of physical activity each day.

A sedentary lifestyle makes it challenging for outdoor recreational facilities and programs to compete for individuals' attention. Attracting people to new or improved parks may not be successful unless the physical changes are so remarkable that these alone draw people to them (Cohen et al., 2009). More recent research suggests that developing or improving upon recreational areas with features that already exist in the area may not be enough. Cohen et al.'s research suggests that marketing, programming, and other outreach efforts are needed to optimize a facility's benefit to local residents (2007; 2009; 2010; draft manuscript, 2011).

Latinos and Chronic Disease

Mexican-Americans make up the majority of the Latino population in Hood River County. They have been shown to have higher rates of overweight and obesity than other Latino and ethnic groups (Nuestra Comunidad Sana of The Next Door, 2010). A combination of factors put Mexican-Americans at a particularly high risk for obesity and diabetes. Risk factors include acculturation, poverty, lack of access to services, and less health-care coverage than any other groups in the Hood River County area.

Farm workers are uniquely affected by obesity and excess weight. Due to their documentation status, pay scale and intermittent work, they face deeper poverty, a greater lack of services and less health care coverage than any other group (Nuestra Comunidad Sana, 2010). Latina women are at an increased risk of physical inactivity. In part, this is due to compounding factors including the isolated, rural life they encounter in the U.S. and cultural barriers.

The Importance of Physical Activity

Physical activity is essential to overall health and chronic disease management. It can help control weight, reduce the risk of heart disease, chronic disease, and some cancers, strengthen bones and muscles, and improve mental health (Centers for Disease Control and Prevention, 2011). The level of activity needed to produce health benefits is disputed, but the greatest improvements in health status are seen when people who are least fit become physically active. In a Centers for Disease Control and Prevention (CDC) report, 60 percent of U.S. adults 18 and over did not engage in any leisure-time vigorous physical activity lasting longer than 10 minutes per week. In addition, adults with higher family incomes and higher levels of education were more likely to engage in vigorous physical activity during leisure time (Pleis, Benson, & Schiller, 2003).

Access to Recreation and Park Design

It has been found in the general population and with teenagers that their physical activity increases and their likelihood of overweight decreases when they are surrounded by more places to recreate (Kahn et al., 2002; Gordon-Larsen, et al., 2006; Maller et al., 2008). According to the U.S. Department of Health and Human Services, enhanced access to places for physical activity combined with information outreach produced a 48 percent increase in the frequency of physical activity (U.S. Department of Health and Human Services, 2001). According to Gies (2006), study after study shows that when people cannot reach parks, they often go without exercise, thereby increasing their risk for disease associated with inactivity. This is particularly true for low-income people who cannot afford gym memberships (Gies, 2006).

When parks are not placed in a central location of high density population, they need to have qualities that draw people to them (Cohen, Golinelli, Williamson, Sehgal, Marsh, & McKenzie, 2009). Playing fields are usually under-utilized when they are not being used for organized sports, and they are mainly used for occasional informal ball sports by children or by dog owners exercising their dogs (Corti, Donovan, & Holman, 1996). To increase walking in public open space, thoughtful design is required that creates large, attractive public open space in close proximity to people's homes with facilities that encourage active use by multiple users including walkers, sports participants, and picnickers (Giles-Corti et al., 2005). A community park on the Barrett

property with physical activity features, such as open play fields and trails, would provide additional places in Hood River County for those at-risk for chronic disease to recreate. Outreach programs to provide information and organize activities would attract them to the park to increase their frequency of physical activity.

Walking was the top outdoor activity in 2004 according to the National Sporting Goods Association. Enhancing opportunities for vulnerable populations to participate in low-impact, enjoyable activities such as walking outdoors would help increase their frequency of physical activity. Connecting the proposed trail on the Barrett Property to the Indian Creek Trail would provide additional access to the potential park development. Greenways in other areas have been useful in providing transportation alternatives, thereby increasing incidental exercise through running errands, and increasing physical activity through bike riding (Gies, 2006) or walking.

Vulnerable Populations

It is helpful to consider the interests of populations vulnerable to chronic disease such as Latinos, seniors (Centers for Disease Control and Prevention, 2011) and the disabled population in the design of new recreational facilities. A vulnerable population is a subgroup of society who has a greater probability for health risks. Due to their position in society, this group is exposed to unhealthy conditions at a higher rate than the rest of the population (Frohlich & Potvin, 2008). This is defined as health inequality. Health inequalities are differences in health status or in the distribution of factors that contribute to health between different populations (World Health Organization, 2011).

Public Health and Enhancing the External Environment

One goal of those working in public health in Hood River County is to change the health inequalities attributable to the vulnerable population's external environment. These are health inequalities that are mostly outside of the control of individuals. Ways to intervene and reduce health inequalities include reducing socioeconomic inequalities; increasing access to healthcare; removing physical, behavioral, and cultural barriers to health care; and designing public health strategies to reduce risk factors on a community level. An example of this is by changing the built environment to facilitate physical activity (Murray, et al., 2006). The presence and design of parks and trails, such as on the Barrett property, will be crucial in creating an environment that promotes physical activity to prevent chronic disease. Parks can also be used as a gathering place for existing community organizations to hold health screening fairs, classes, and other organized events that target at-risk vulnerable populations (Chambers & Price, 2011).

Attracting Users to Parks

It has been found that organized activities and events in parks, including sports competitions and other attractions, have the strongest correlation to increased park use and community-level physical activity (Cohen et al., 2007). For rural areas, aesthetics, safety from traffic and presence of safe recreational facilities, trails, or parks is also associated with increased physical activity (Frost, et al., 2010).

The appeal of a park environment changes with age. Younger individuals are attracted to more physically challenging and competitive environments while seniors, who risk fall or injury, prefer less vigorous activity (Cohen et al., draft manuscript 2011). Both paved and unpaved trails and wooded areas in a park were seven times more likely to be used for physical activity compared to parks without those features (Kaczynski, Potwarka, & Saelens, 2008). Paved trails are found to be more versatile and support a wider range of physical activities for a broader demographic of age and ability. Higher numbers of elderly using parks was associated with proximity of the park (Kaczynski, Potwarka, & Saelens, 2008). If senior citizen centers were on park premises, they were more likely to use the park (Cohen et al., 2007). The Hood River Valley Adult Center is about two miles from the Barrett Property. The park could be accessed with minimal transportation and would be appealing to elderly people if it had park features meant for less vigorous activity, such as paved trails. Special social programs or incentives for senior citizens (Cohen et al., draft manuscript 2011) help them to be physically active and use parks.

To close the gender gap and provide women with opportunities for exercise, it is important to incorporate adult activities near child-centered play areas or to simultaneously supply sources of care for their children (Cohen et al., 2007). A need identified by the Hood River County Health Department assessment (2010) includes more places that draw children of all ages where they can be casually supervised when not in school. When children are unsupervised, it increases their likelihood of engaging in risk behaviors and failing in school (County Health, 2011). One way to address this with a park would be to provide more female-oriented facilities, such as tracks, walking paths or adult exercise equipment near child play areas. Multiple distributors such as Northwest Playground Equipment, Playworld Systems, and TriActive America Inc. create outdoor exercise equipment and wheelchair accessible features. Some of these include rowing, elliptical, stationary bicycle, rowing, and weight machines (TriActive America, 2011).

A mixture of programming, staffing, low cost or free usage fees, increased operation hours, and community outreach play a larger role in park use than the quality of the facilities or the safety of the park (Cohen et al., 2009). Targeting the development of programs and activities that draw adults and families is necessary to serve a greater fraction of the population and to foster public support and provision for local public parks (Cohen et al., 2010). The Hood River County Health Department Community Health and Group Evaluation, or CHANGE Assessment Tool, found that there is a need to enhance physical activity in the community to reduce chronic disease risk factors. One assessment priority is to create affordable access to recreational facilities by working with the Park District (Hood River County Health Department, draft 2011). In order to provide the greatest benefits to the health of residents, interventions such as specific programming, park design, and utilization need to be aimed at those with the worst health (Murray, et al., 2006).

Nutrition and Food Insecurity

Improved nutrition and food security are basic needs of Hood River County that can be addressed with greater access to a larger selection of cheaper, locally grown food, according to Gorge Grown Food Network. Food insecurity, as defined by the U.S. Department of Agriculture, is when access to adequate food is limited by a lack of money and other resources (Nord, Andrews, & Carlson, 2009). In regard to the Barrett Property, food security and nutrition could be enhanced with a community garden on the land; a greenhouse to provide food during winter, the greatest time of need; or demonstration gardens to provide opportunities for education. Gorge Grown Food Network is a local non-profit that works to support sustainable food, farming and distribution in Hood River County and the Columbia River Gorge region. They are interested in providing more opportunities for the community by working with the Park District. This section will review food insecurity and nutrition in Hood River County and the ways community gardens could improve this health-related need.

Hood River County and Food Insecurity

The Mid-Columbia Gorge region, which includes Hood River County, is a heavily agricultural region; however access to nutrient-dense food is difficult for many residents (Gorge Grown Food Network, 2010). The Mid-Columbia region's population of over 75,000 is geographically dispersed across 7,500 square miles. This means many residents must drive long distances to access a full service grocery store. Others have limited incomes and depend on emergency food pantries to supplement their monthly food budget.

Individuals served by local food emergency services in Hood River County have increased by 48 percent since 2007 to an average of 1319 per month (Gorge Grown Food Network, 2010). There has been a greater need for food by adult males, homeless people, elderly, and children. Almost six out of every 10 students in Hood River County schools, or about 58 percent, are eligible for free and reduced meal programs (Oregon Department of Education, 2011). About 13 percent of respondents of a Gorge Grown Food Network assessment had skipped meals once a month or more because they couldn't afford to buy food. About eight percent had skipped meals so that their children could eat.

Vulnerable Subpopulations

Those especially at risk for food insecurity included Latinos, people under 35 years of age, and those with a household income below \$40,000 a year (Gorge Grown Food Network, 2010). These numbers represent a vulnerable subpopulation of Hood River County, who are at an increased risk of malnutrition due to their inability to afford not only the quantity, but also the quality of food needed to meet basic nutrition requirements.

The overall health of Mexican immigrants degrades greatly after three to five years of residence in the U.S. (Nuestra Comunidad Sana of The Next Door, 2010; Oregon Parks and Recreation Department, 2008). Immigrants often replace eating fresh foods and homemade meals with cheap, low-quality, prepackaged food high in fat and sugar. Compared to other ethnic groups the diets of Latino children are higher in dietary fat, sweetened beverages, and lower in fruits and vegetables (Giammattei, Blix, Marshah,

Wollitzer, & Pettitt, 2003; Oregon Parks and Recreation Department, 2008; Troiano et al., 2008). A community garden or demonstration garden in collaboration with community gardening outreach programs would provide Hood River County Mexican immigrants greater access to low-cost nutrient-dense foods.

Reducing Barriers with Community Gardens

Barriers to food security for vulnerable populations include transportation and accessibility of food (Gorge Grown Food Network, 2010). Ways to improve nutrition and food security among vulnerable populations, as suggested by Gorge Grown Food Network, are to expand and coordinate local gardening resources, including providing free or low-cost gardening classes to low-income populations. Gardening has been shown to have a positive impact on food security. For example, food insecurity was reduced by 28 percent in Hood River County families who introduced gardens into their homestead. In other words, those with gardens skipped meals less than those without gardens (Gorge Grown Food Network, 2010). In addition, a Nuestra Comunidad Sana study with 35 Hood River County Latino families found that when they had a home garden, adult family members ate vegetables 140 percent more and children ate vegetables 117 percent more. The families worried 80 percent less that they would run out of food before having money for more; adults skipped meals 78 percent less, and children skipped meals 100 percent less (Sprager, 2007).

Sharing gardening expenses, such as tools, storage, and compost, which currently limit gardeners, would help to improve gardening resources for a greater number of individuals (Gorge Grown Food Network, 2010). A community garden would mobilize the sharing of gardening expenses along with providing a space for apartment dwellers or those who are not allowed to garden at their residence. A goal of the Gorge Grown Food Network and a priority for The Hood River County Health Department Community Health and Group Evaluation, or CHANGE Assessment Tool, to reduce chronic disease risk factors is for 20 percent of the food consumed in Hood River County to be grown and sold locally by the year 2020 (Hood River County Health Department, draft 2011).

Community gardens have been found to increase community cohesion, reduce violence, and create a positive self-image in its residents (Maller et al., 2008). Improving and integrating food skills, nutrition, gardening, and self-sufficiency into youth and school programs would help children explore the partnership between growing and eating healthy food, especially vegetables (Gorge Grown Food Network, 2010). A summertime youth gardening program in collaboration with groups like Master Gardeners could also address the need to engage youth who might otherwise be unsupervised while improving summertime garden maintenance (Gorge Grown Food Network, 2010). While the benefits of community gardens are well documented, it will be beneficial to involve community organizations who are currently involved in gardening and community education to most effectively use the Barrett property land. On a side note, a Gorge Grown Food Network representative said that due to its location, the Barrett property may be better-suited for demonstration gardens, school gardens, and green house production than a community garden (Hackney, 2011).

Community-based Behavioral and Social Health

Improved community-based behavioral health services to address issues such as depression, drug and alcohol abuse, isolation, mental health issues, mood problems, and stress was one of the top priority needs reported on the Providence Hood River Memorial Hospital Community Assets and Needs Assessment (draft 2011) by both providers and recipients of care. Spending time in green spaces and parks has been found to have a positive impact on mental health. This section will review behavioral and social health in Hood River County and the ways a park on the Barrett property could foster psychological well-being by providing places to be physically active, open spaces for people to relax and enjoy nature, and places to gather and socialize with other community members.

Behavioral Health Data for Hood River County

Mental health is more than the absence of mental illness. It is the realization of an individual's potential and the capacity of individuals and groups to interact with one another and the environment in ways that promote well-being and optimize development (Maller, et al., 2008). In Hood River County, about nine percent of adults had a major depressive episode in the past year. This is associated with higher rates of heavy drinking, cigarette use and illicit drug use. Suicide is the most tragic consequence of major depressive disorders (State Epidemiological Outcomes Workgroup, Addictions and Mental Health Division, Oregon Health Authority, 2010).

About 25 percent of eighth graders and 22 percent of 11th graders had a depressive episode in the past year. High depression scores among youth are associated with low academic achievement, high scholastic anxiety and poor peer and teacher relationships (State Epidemiological Outcomes Workgroup, Addictions and Mental Health Division, Oregon Health Authority, 2010). Youth suicide attempts in Hood River County from 2004 to 2006 were in the highest 25th percent quartile in the state, at 24 attempts (County Health, 2011). Roughly two-thirds of adolescents with major depressive disorder also have another mental disorder (State Epidemiological Outcomes Workgroup, Addictions and Mental Health Division, Oregon Health Authority, 2010). The Mental Health Priority Area predicts depressive disorders will constitute the largest share of the burden of disease in the developing world and the second largest worldwide by 2020. In addition, it imposes high social and financial costs on society (Maller et al., 2008).

Outdoor Recreation and Behavioral Health Well-being

Physical activity has been proven to be equally as effective as medication in treating depression, particularly in elderly people (Maller, et al., 2008). In addition, exercising in green spaces has been found to have more positive mental health outcomes than exercising indoors (Maller et al., 2008). Access to nature plays a vital role in human health, well-being, and development that has not been fully recognized, according to a literature review from the School of Health and Social Development at Deakin University (Maller et al., 2008).

Parks and other natural environments have typically been seen as venues for leisure and sport. However, there is research that points to how simply spending time in green spaces, such as parks, can reduce crime, foster psychological well-being, reduce stress, boost immunity, enhance productivity, and promote healing (Maller et al., 2008). Parks allow community members to interact with each other and exercise, which are both stress-reducing activities and improve mental health. It is a free equivalent to what one might experience in a private health club (Gies, 2006).

Research shows that for elderly and mentally disadvantaged populations, spending time in green space and interacting with plants facilitates healing and improves mental capacity (Maller, et al., 2008). Working in, and viewing gardens of all kinds increase people's feelings of tranquility and peace. It also provides those with limited mobility or ability to access plants and flowers with a place to view nature (Maller, et al., 2008). Different mental health programs have used gardening as a therapeutic tool (Willson, 1995; Gies, 2006).

Access to green space on the Barrett Property could enhance the psychological well-being of mentally disadvantaged and elderly populations in Hood River County.

Improving Social Health

Increasing social support and reducing social isolation has been shown to reduce mortality and morbidity rates (Maller, et al., 2008) and has a positive influence on chronic disease management and exercise programs. A need for the Hood River County Latino community, based on a Nuestra Comunidad Sana survey of Latinos, are culturally sensitive places that promote free gatherings and allow for health-promotion activities of interest (Sprager, 2007; Hood River County Health Department, 2010).

Picnic areas or covered picnic shelters near open play fields and trails in a community park could provide a place for Latinos to gather, socialize and exercise together. Representation and social inclusion of the Latino/Hispanic populations to promote gatherings and health promotion activities can help increase their social cohesion and help reduce health risks they currently face (Villarejo, Lighthall, Bade, McCurdy, & Samuels, 2000).

A large body of research has found that contact with companion animals has multiple positive physiological and psychological effects on human health including: decreasing blood pressure, heart rate, and cholesterol; reducing anxiety and stress, which provides protection against stress-related diseases; provision of companionship and kinship; and the opportunity to nurture (Maller, et al., 2008). All of these factors improve quality of life and enhance health and well-being. Parks and other natural environments are important in providing a setting for pet-owners to interact with their pet, with other pet-owners, and other parks users. This can positively influence the social aspects of health.

In addition, parks with natural habitat are essential in the preservation of native wildlife, as well as providing people with the opportunity to observe or encounter animals in their natural environment (Maller, et al., 2008).

Hood River County Health Department (2010) identified a need for work crew opportunities for youth offenders to address recidivism and detention use. Work crews'

assistance in maintaining the park would provide them with an opportunity to complete community service hours and provide the park with a maintenance service.

Lastly, promoting tobacco-free places in an effort to reduce chronic disease risk factors is a priority of the Hood River County Health Department Community Health and Group Evaluation, or CHANGE Assessment Tool; therefore it is recommended that the Barrett Park Development be tobacco-free (Hood River County Health Department, draft 2011).

Conclusion of Health-related Needs and Maximizing Health Benefits on the Barrett Property

“By providing access to nature and protecting ecosystems, [parks] are an essential part of the infrastructure of our cities and communities” (Maller, Townsend, St Leger, Henderson-Wilson, Pryor, & Moore, 2008). Despite the unconventional view of a park as a center for health promotion, there are many health benefits parks can offer when features, programs, and community-organized events on-site are planned thoughtfully.

Given the consensus that the environment plays a key role in promoting energy expenditure, expanding opportunities to increase physical activity is a promising means of addressing sedentary behaviors associated with a variety of chronic illnesses (Cohen et al., 2007). For maximum health benefits, communities should be designed so that all people have a park within at least one mile of their residence (Cohen et al., 2007).

Developing the Barrett Property into a park could maximize the health benefits the land could provide for the surrounding community. This could be envisioned through access to low-cost or free opportunities to regularly address physical activity and stress relief in open play fields and trails, improved nutrition from community gardens, mental and behavioral health improvement by spending time in green spaces, and increased socialization in a healthy, outdoor gathering place. These park features in coordination with programs to help vulnerable populations access the park and learn how to improve their health behaviors would address some of the health-related needs of the Hood River County community.

Chronic diseases with well-established risk factors, including overweight and obesity, elevated blood pressure, cholesterol, and glucose, create the largest contribution to mortality disparities across the U.S. (Murray et al., 2006). Major determinants of health have less to do with the healthcare system, and more to do with environmental and social aspects of health. Parks are in a position to address both, along with other aspects of health and well-being (Hancock, 1999). Examples of how parks benefit health are through enhanced physical health, lowered risk of heart disease, lowered risk of diabetes, lowered risk of obesity, lower risk of overall mortality, improved mood and stress-relief, improved social health, and increased protective factors for substance abuse, including increased bonding to the community.

Increasing physical activity and social-cohesion through modifying the built-environment is a CDC and World Health Organization (WHO) goal of increasing priority. The desired result is to reduce the burden of disease across the globe. As rates of obesity and chronic disease rise, it becomes more apparent that traditional methods of

prevention and treatment are not enough to treat the pandemic. Fundamental causes that create vulnerability and increase disease prevalence, morbidity, and mortality are rooted in everyday life, and reducing their impact lies outside of the health sector (Frohlich & Potvin, 2008).

Minimizing Health Risks Associated with a Park on Barrett Property

Hood River County is covered by orchards; therefore, the risk of exposure to pesticides in general is large. Agricultural laboratories in Oregon have found that harmful pesticide residues are most often detected in soil from now-banned pesticides that were used before 1947, and include lead, arsenic, cadmium, and mercury among inorganics, and synthetic organic compounds laced with chlorine, such as DDT, dieldrin, toxaphene among organics (State of Oregon Department of Environmental Quality; Clarren, 2010). On the Barrett Property, pears and cherries were farmed in the 40's and 50's and pears and apples were farmed more recently (Owner, 2011; Stirn, 2010). This section will review the need for soil testing, the health effects of potential pesticide residues, and ways to minimize risk of exposure on the Barrett Property before a park project is implemented.

On former agricultural land, the risk of exposure to people could be through being active on a playing field, growing food on the land, or by children playing in the dirt. The pesticides and associated metals may be present in soil, drainage-ditch sediments, or groundwater at concentrations above acceptable risk levels defined in Oregon Revised Statute (ORS) 465.315 (Oregon Department of Environment Quality, 2006).

If environmental conditions are not properly evaluated and addressed during site development of former agricultural land, such as the Barrett Property, children and adults could be exposed to hazardous substances that may cause cancer or create other adverse health effects. In addition, Oregon's environmental cleanup law places responsibility on current and past owners of property for contamination that may exist, as well as for site investigation and cleanup costs. For these reasons, The Department of Environmental Quality, or DEQ, recommends environmental investigations of agricultural lands that may have been contaminated by hazardous substances, before these lands are developed (State of Oregon Department of Environmental Quality). DEQ suggests that cleanup rules might be necessary to protect public health, safety, welfare, and the environment from the deposition, accumulation, or migration of pesticides on agricultural land that is proposed to be converted to residential, school, commercial, or industrial uses.

Health Risks

The chemical residues that pose the greatest health risks are lead, arsenic, and synthetic organic compounds such as organophosphates and organochlorines. In most cases, recreational exposure to pesticide residues in soil do not develop into immediate health effects (Clarren, 2010). Existing research suggests that the known health risks of living on former agricultural lands are relatively low, especially where the soil has been

capped with a grassy lawn (Clarren, 2010). However, regular direct contact with pesticide residues over time may develop into cancer or other health problems decades later, according to the Environmental Protection Agency.

Long term exposure to lead arsenic may elevate the level of lead in the blood, which is associated with learning and behavioral problems. The potential for lead poisoning is one of the most important risk factors to address regarding potential pesticide residues in park soil (Clarren, 2010). It is important to keep in mind that children are at greatest risk for lead poisoning, so addressing areas where children might play will be important. The major effects of lead on children are brain-damage; slow growth and development; behavioral problems; and kidney and liver damage (Angima & Sullivan, 2008; Oregon Department of Human Services, 2009). The effects are long-term; therefore parents may not see any symptoms to suggest lead poisoning. In adults, lead can harm multiple bodily systems including the heart; kidneys; and reproductive, nervous, and hematological, or blood, systems.

People exposed to arsenic through drinking water developed bladder, lung, liver, prostate, and kidney cancers. Simply touching inorganic arsenic, however, does little more than irritate the skin, according to the Agency for Toxic Substances and Disease Registry (Clarren, 2010).

Long-term, chronic exposure to various organochlorine pesticides is associated with damage to the central nervous system, liver, kidney and thyroid. Organochlorines are suspected endocrine disruptors and cause a variety of other ailments. Endocrine disruptors mimic or block hormones that regulate metabolism, neurological and sexual development. The EPA classifies organochlorines as probable carcinogens (Clarren, 2010), which are cancer-causing agents.

Pathways to Exposure

Bare soil areas carry the highest risk of lead and other chemical exposure. Lead cannot be absorbed through the skin, however if children play in dust or dirt contaminated with lead they can breathe lead contaminated dust or swallow it if they put their fingers or toys in their mouths. They can also track lead-laden dust or dirt into homes on clothing, shoes, and toys. Pets often dig in the soil and can carry contaminated dust into homes or onto the hands of people playing with them.

Children who are food insecure may have an even greater risk of lead absorption because children with empty stomachs absorb more lead than children with full stomachs. Since calcium and iron compete with lead absorption in the body, children with nutrient-rich diets who get plenty of iron and calcium will absorb lead less, according to the U.S. Environmental Protection Agency.

In general, crops that grow edible fruits, such as corn, beans, squash, tomatoes, strawberries, and apples do not absorb significant quantities of lead. Lead is absorbed through the roots of crops and concentrates in the leaves and outer parts of the roots. The peelings of root crops (e.g., carrots, horseradish), leafy vegetables, or unwashed produce are of concern (Clarren, 2010; Ameroso & Mazza, 2010) for lead contamination since most rinsing techniques are insufficient for these crops.

Different levels of soil testing are recommended for different types of land use. To understand how a site was farmed, it is important to consider crop size, crop

rotation, and shifts in crops planted due to changes in economic value. Areas where pesticides were stored, mixed or disposed of, and where pesticide application equipment was cleaned may have higher concentrations of residual pesticides and may also be at risk for well or groundwater contamination (Oregon Department of Environment Quality, 2006). The former owner who owned the land in the 40's and 50's said pesticides were not mixed on the land (Owner, 2011). However, further investigation and soil testing would confirm pesticide residue levels throughout the land. For more information on pesticide residues, see Appendix B.

Minimizing Exposure

Without testing the soil, there is no way to know which chemical residues might be present in the soil. If lead, arsenic, or organic synthetics are detected in the soil after soil sampling, there are a variety of methods to protect people, especially children, from exposure. These methods could include covering the soil surface with a perennial groundcover, dense turfgrass, heavy organic mulch (Clarren, 2010), bark chips, paving, or other surface barriers. Planting flowers, fruits, vegetables, and ornamentals that are perennials and do not require frequent digging or tillage are suggested. Bare soil in vegetable gardens can be minimized by planting transplants and then mulching immediately (Clarren, 2010). Placing gardens that require frequent cultivation (e.g., vegetables and annual flowers) as far as possible from busy streets, older buildings, and soil with the highest density of chemical residues would minimize the risk of toxin exposure (Sullivan, 2008) through food. For more information on soil testing and minimizing potential exposure to pesticide residues, refer to Appendix B.

Recommendations for Barrett Property Maximum Positive Health Impact

The Barrett Property Health Impact Assessment Committee would like to make the following ten recommendations to maximize the health impact of the Barrett Property on the Hood River County community:

1. Grade and develop the Barrett Property to prepare it for park development within a reasonable timeframe.
2. Test the soil to determine potential chemical residues present on the land from previous pesticide use. Chemical residues that are important to monitor due to their potential for the greatest harm to human health include lead, arsenic, and synthetic organics. If contamination is found, use this information to work with the Department of Environmental Quality to guide park feature design to minimize potential human exposure.
3. Monitor the development of the land for unintended consequences relative to health. Some unintended consequences relative to health for park users and park neighbors would be exposure to pesticide chemical residues, increased noise, and increased traffic. Multiple, small parking lots throughout the property are recommended.

4. Monitor the development of land for unintended consequences relative to cost and health. To aid in the financial sustainability of the project and push the project forward, use a phased approach to development. At the same time, use reasonable precaution in protecting park users from exposure to potential chemical residues from undeveloped land. This could be done by posting warning signs to keep people off of undeveloped land.
5. Meet the identified health needs of the community by developing the land into a park with a variety of features to promote life-long wellness among a range of age groups, from children to elderly populations. Suggestions include, open play fields near picnic areas for people to gather, accessible walking trails, and community gardens. Use these park features to promote an increase in physical activity and enhance nutrition and food insecurity among vulnerable populations.
6. When designing the layout of the park, take into consideration the desired use of the land by the entire community, particularly vulnerable populations, to develop a sense of ownership among those populations and increase their potential use. At the same time, adhere to the allowable uses as permitted by planning guidelines and grant requirements.
7. Once developed, promote availability and accessibility of the park to vulnerable populations who are least fit, who are at-risk for becoming least fit, who are vulnerable to healthy inequities, and who are at-risk populations for chronic disease, poor nutrition, and food insecurity. Such populations include those of low socio-economic status, the Latino community, the elderly population, single parents, those with chronic disease or who are at-risk for chronic disease, and those who are obese or who are at risk for obesity.
8. Gain and maintain partnerships with community groups and organizations to attract wellness programming, organized activities and events to the park. In this way, promote social capital and cohesion by drawing a broad section of isolated residents in the community to the area.
9. Monitor the potential acquisition of the surrounding trail structure to connect it to Indian Creek Trail and to connect a four-mile trail to downtown Hood River. Eventually this could connect a proposed 14-mile loop that connects schools with downtown Hood River.
10. Educate decision-makers such as the Hood River Valley Parks and Recreation District Board, the Hood River County Planning Commission, the Hood River County Board of County Commissioners, and state policy makers about the Barrett Property Development Health Impact Assessment.

Monitoring the Decision's Outcome and Implementation on Health Impacts

The Health Impact Assessment Committee will determine whether the Health Impact Assessment was successful and had impact on the development of the Barrett Property. Success will be determined by whether the Park District tested the soil and developed the land according to the preceding recommendations to maximize positive health impacts and minimize negative health impacts on the community. Once the HIA is accepted, the committee will determine the best method of communicating the results to decision-makers and the community.

Appendices

Appendix A

Economic Advantages to Parks and Healthy People

A healthy community has positive impact the economy. Individuals and businesses are attracted to healthier communities and healthy employees have less number of work days missed due to less sickness. In general, green space in a community improves productivity of office workers, improves job and life satisfaction of residents, it attracts consumers and tourists to shopping districts, and it aids in community cohesion and identity (Maller et al., 2008). Community gardens reduce food costs for those of low socio-economic status.

Another way to view park development of the Barrett Property economically is to consider it a brownfield. A brownfield is a property where known or suspected environmental contamination is a barrier to redevelopment (Business Oregon, 2009). Preceding sections of this assessment touch upon the potential health hazards due to the previous use of pesticides on the land. According to Business Oregon, the benefits of redeveloping brownfields include: promoting economic development, enabling efficient land use, minimizing the construction of new service infrastructure, facilitating the resolution of environmental justice issues, and protecting environmental and human health (Business Oregon, 2009). Oregon has a brownfield redevelopment program which ranges in activity from site assessment to cleanup for brownfields (Business Oregon, 2009).

Appendix B

Vulnerable Populations

A vulnerable population is a subgroup of society who has a greater probability for health risks. Due to their position in society, this group is exposed to unhealthy conditions at a higher rate than the rest of the population (Frohlich & Potvin, 2008). Individuals who represent lower socioeconomic status, despite race, suffer from increased morbidity and mortality (Murray et al., 2006). The degree of income inequality between the wealthy and poor is directly associated with mortality rates.

One hypothesis for the occurrence of this effect is that societies that permit large disparities in income also tend to under-invest in human capital, health care, and other health-promoting factors. There is data that shows that communities with a growing gap between the rich and poor affect the social organization of communities. The resulting damage has negative public health implications (Kawachi, Kennedy, Lochner & Prothrow-Stith, 1997).

Appendix C

Resources on Soil Testing, Pesticide Residues, and Minimizing Exposure

The following resources provide information on pesticide residues, soil testing, and minimizing potential exposure to harmful chemicals.

Oregon State University Extension Service. (2002). *Soil Sampling for Home Gardens and Small Acreages*.

<http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/18696/ec628.pdf>

D. Stone & K. Anderson. (2009). *Yesterday's Orchard ... Today's Home: Legacy Pesticides on Former Orchard Property*

[http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/19238/ec1513-e .pdf](http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/19238/ec1513-e.pdf)

S.D. Angima & D.M. Sullivan. (2008). *Evaluating and Reducing Lead Hazard in Gardens and Landscapes*

<http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/19844/ec1616-e.pdf>

Appendix D

Parks and Recreation Use and Existing Parks in Hood River County

The Hood River Valley Parks and Recreation District serves various recreational facilities. Included in this appendix is a facilities use summary along with an overview of the existing neighborhood parks; community parks; trails, greenways, linear parks, open space, and wilderness; special use parks and facilities, public school-based facilities, and non-publicly owned facilities served by the Park District (Hood River Valley Parks and Recreation District, 2010).

A 2003 Hood River Valley Parks and Recreation District public opinion poll of more than 330 community members of various ages found that the top five most needed facilities or activities, in order, were: biking and hiking trails, wildlife access; a recreation center, community center, or indoor sports center; water access to whitewater and the Columbia River; ball fields and sports complexes; and community parks, including dog parks, new parks, and updated equipment (Hood River Valley Parks and Recreation District, 2010).

The types of pathways that were most needed are unpaved trails, on-street commuter bike lanes and off-street paved trails. Natural trail areas, trails that extend long distances, and trails that link schools with parks were also surveyed to be the most needed (Hood River Valley Parks and Recreation District, 2010).

The top five Park District facilities they visited, in order, were: the Columbia River waterfront sites, school playgrounds and sports fields, city and county parks, the aquatic center, and the Indian Creek Trail (Hood River Valley Parks and Recreation District, 2010).

In the same survey, the use of the Park District facilities was gathered. The top reasons stated for people not using parks were because they are too busy or do not

have time, they do not know the park locations, they are not interested in using parks, or the parks are not enjoyable or interesting, respectively. Other reasons that did not score as high are that the parks are not conveniently located, they don't have adequate facilities, they are too crowded, they are unsafe, and other miscellaneous reasons (Hood River Valley Parks and Recreation District, 2010). Poverty, lack of childcare, transportation, and single parenting are other potential barriers to park use.

Sixty three percent of people surveyed had participated in a recreation program sponsored by the Park District in the previous 12 months. The majority (43 percent) of respondents had taken a program through the school district or community education, 31 percent had been through Hood River Valley Parks and Recreation, 20 percent had been through a private agency, and six percent through another program.

The main reasons people surveyed had not participated in a reaction program was because they were too busy or had no time, they were not aware of the programs, and the activities did not spark interest. Other reasons that did not score as high were that they could not afford it, it was not at a convenient time, they participated in activities at a private club, they need childcare in order to participate, the facility was inadequate, the instructors or programs were inadequate, and other reasons. Most had learned about the recreation programs through friends or by word of mouth (Hood River Valley Parks and Recreation District, 2010).

The poll was distributed through the local newspaper, through presentations to interested groups, at open public events, and was made available at the Aquatic Center. A limitation to the data collected is that those surveyed may represent a limited subset of the population who attend these places and events, and read the newspaper.

Neighborhood Parks

A neighborhood park is the most basic unit of the park system and serves as the recreational and social focus of the neighborhood. The focus of a neighborhood park is on informal active and passive recreation (Mertes & Hall, 1996). It must be within safe and easy walking distance of area residents and does not require the crossing of major streets or other barriers. It usually does not include restrooms or off street parking (Hood River Valley Parks and Recreation District, 2010). The neighborhood parks in the Park District are presented in the subsequent Table 1.

Table 1. Neighborhood Parks

Park	Location	Ownership / Maintenance	Size/Length	Amenities
Wilson Park	May St. and 2 nd St. HR	City of HR	1.05 acres	Play structures
Ruthton Park	I-84, West of HR	HR County	1.5 acres	Picnic tables, river view
Hazelview Park	1711 Heritage Loop	HRVPRD	0.35 acres	Picnic tables, grassy area
Bowe Addition	Belmont Rd., HR	Residents	0.40 acres	Play structure, grassy area
Adams View	Montello HR	Residents	0.25 acres	Swings, ½ court basketball area and picnic area.
Waucoma Park	State and 12 th	City of HR	0.87 acres	Swings, picnic tables, small creek.
Mann Park	Eugene and 22 nd	City of HR	0.48 acres	Playground equipment (old)
Culbertson Park	S. Pacific and 5 th	HRVPRD	0.6 acres	Play structure, one half BB court, picnic tables and benches, 2 sets of swings.
Memorial Overlook and Memorial Rose Garden	2 nd and Sherman HR	City of HR	0.40 acres	Fountain, benches, gardens, view, access to downtown and 2 nd St steps.
Georgiana Smith Park	Oak and 5 th HR	HR County	0.50 acres	Benches, view, access to downtown.
Jaymar Park (adjacent to Rotary Park (Skate Park))	Wasco and 20 th HR	City owns, HRVPRD maintains	9.7 acres (includes Morrison park)	Picnic tables, grassy area, trees, adjacent to Skate Park

Community Parks

Community parks serve a broader purpose than a smaller neighborhood park. Their focus is primarily to meet community-based recreational needs, as well as preserving unique landscapes and open spaces (Mertes & Hall, 1996). Community parks also act as neighborhood parks, providing facilities that meet smaller group needs as well. In some cases, other facilities act as community parks and are listed in Table 2 below. As an example, Parkdale Elementary and Westside Elementary School grounds, with multiple playing fields, playgrounds, picnic tables etc. provide the level of service of a community park (Hood River Valley Parks and Recreation District, 2010). The community parks in the Park District are presented in the subsequent Table 2.

Table 2. Community Parks

Park	Location	Ownership / Maintenance	Size	Amenities
Jackson Park	13 th & May St. Hood River	City of HR	6.77 acres	Centrally located, heavily used community facility. Nice vegetation, trees. Stage and large grass area hosts summertime music in the park programs. Playground equipment (structure, three swings), picnic tables (8), and concrete pads for community BBQ, etc. Restroom (M/F). Lighted baseball field w/bleachers, scoreboard, and concessions. Four lighted tennis courts. Parking. Disability access to stage and BBQ area.
Children's Park	9 th & Eugene St. HR	City of HR	1.24 acres	Large wooden play structure with slides, and swings for children/toddlers (children's park). Benches, picnic tables, covered/lit basketball court and grass play area. ADA restroom (m/f) and parking.
Marina Park and Marina Green	Hood River Marina	Port of HR	9.5 acres	Beach, Hood River and Columbia River access, picnic tables, picnic shelters, paved walking path, Restroom, Museum, Marina/docks. Large Grass area/ playfield
Tollbridge Park	Parkdale	HR County	84 acres	RV sites, camping, picnic tables, picnic shelters, playground, Hood River access, restrooms, showers
Oak Grove Park	Co. Club Rd. & Portland Dr. HR	HR County	2.5 acres	Picnic tables, BBQ pit, tennis courts, outdated play structures, swings, climbing tires, port-a-potty
Panorama Point	East Side Rd. HR	HR County	11.5 acres	Picnic, parking lot, view, restrooms

<i>Park</i>	<i>Location</i>	<i>Ownership / Maintenance</i>	<i>Size</i>	<i>Amenities</i>
Parkdale Hutson Museum	Parkdale	HR County	3.5 acres	Grassy area, picnic tables and shelter, museum
Tucker Park	Hwy 281 past Dee	HR County	35.5 acres	13 campsites, playground, picnic Shelters, fishing, shower house, riverside location

Trails, Greenways, Linear Parks, Open Space and Wilderness

This category includes community walking trails and paths, jogging trails, and bicycle trails. A park trail focuses on recreational value, transportation, and harmony with the natural environment. It is also located within a greenway or connector of park systems, a park, or natural resource area (Hood River Valley Parks and Recreation District, 2010). An open space is set aside for “preservation of significant natural resources, remnant landscapes, open space, and visual aesthetics/buffering.” The Park District has an abundance of such areas. A number of these locations may be ideal sites for new neighborhood or community park developments (Hood River Valley Parks and Recreation District, 2010). The Trails, Greenways, Linear Parks, Open Spaces and Wilderness areas in the Park District are presented in the subsequent Table 3.

Table 3. Trails, Greenways, Linear Parks, Open Space and Wilderness

Open Space	Location	Ownership / Maintenance	Size/Length	Amenities
Indian Creek Trail	Third-Hazel St. to HRVHS	HRVPRD	3.3 miles (17,424 ft.) or 23.2 acres	Single track trail, primarily along Indian Creek (middle portion of trail yet to be completed)
2 nd St. Steps Greenway	Corner of 2nd St. and State to corner of 2 nd St. and Montello	City of HR	.22 acres	Adjacent to Overlook Memorial and Memorial Rose Garden at North end. Excellent views. Areas of adjacent Oak uplands habitat.
Columbia River Water-front	HR Inn to footbridge	Port of HR	2910 ft. path Marina – 2.9 acres depending on Water level	Asphalt path, views, benches, access to Marina Green park and Marina community park; along Columbia River
Hood River, Flume Rd. to Copper Dam	Along Hood River Powerdale Park south to Copper Dam	Pacificorp	468 acres	Service road along flume. Access to Hood River. natural state park area, parking, Port-a-potties
Surveyor’s Ridge	Rd. 44 off of Hwy. 35	USFS	6 miles	Mixed usage trail system.
Mitchell Point	I-84, West of HR 3 parcels coming together at MP	State of Oregon	792 acres	Nature trails, views, parking
Historic Hwy.	Various sections between Mosier and Bonneville are accessed along Columbia river in HR county.	State of Oregon	Various lengths	<ul style="list-style-type: none"> • Cascade Locks to Bonneville Dam - 2.5 miles • Viento to Starvation Creek - 1 mile • Mitchell Point – short segment of Hwy • Hood River to Mosier - 5 miles

Open Space	Location	Ownership / Maintenance	Size/Length	Amenities
Routson Park	Hwy 35, South of Parkdale.	County of HR	168 acres	Camping, drinking water, flush toilets, Hood River Access
Dimmick Park	Parkdale	County of HR Not maintained	21.5 acres	River area. Amenities were destroyed during 1996 flood and not restored to date.
Kingsley Park	Kingsley Road, Binns Hill Road	County of HR	320 acres	20 sites, pit toilets, boat ramp
Morrison Park	20 th and Wasco HR	City of HR Not maintained	13.54 acres	Natural state. Woods and open space. Owned by City of Hood River.
Elliot Park	8 th , South side of Indian Creek	City of HR Not maintained	2 acres	Natural state. Woods and open space. Owned by City of Hood River.
Wells Island	Columbia River, west of HR waterfront.	City of HR /USFS	53.25 acres	Nature preserve, National Forest (NSA) natural state.
Viento SP	I-84, West of HR	State of Oregon	248 acres	Camp., picnic, windsurfing, fishing, restrooms
Starvation Creek SP	I-84, West of HR	State of Oregon	153 acres	Picnic, hiking, restrooms
Wyeth (USFS) Campground	I-84 to Exit 51	USFS	8 acres	13 family campsites, 6 group sites, restrooms
Cooper Spur/ Cloud Cap	30 miles South of HR	USFS	11.9 mile trail	3 campsites. Access to Mt Hood Timberline Trail, NFS cabins, Elliot Glacier, views
Nottingham Campground (USFS)	7 miles so. Mt. Hood, off Hwy 35	USFS	10 acres	20 campsites, along river
Sherwood Campground (USFS)	8 miles so. Mt. Hood, off Hwy 35	USFS	3.5 acres	Picnic, camp, hike, handicap facility 14 campsites, 4 picnic sites, along river
Kinnikinnick Campground (Laurance Lake)	10 miles so. Parkdale	USFS	5 acres (104 acres)	Camp, fishing, boating, no facilities 12 campsites
Rainy Lake Campground	16 miles NW Parkdale	USFS	10 acres	Camp, fishing, no facilities
Lost Lake	14 miles SW of Dee	USFS	290 acres	Hiking, picnic area, camping, fishing, trail access, views, boating (non-motorized)
Columbia Wilderness Area	North West HR county	USFS	39,000 acres	Wilderness area
Mount Hood Wilderness	North side of Mt Hood.	USFS	24,810 acres	Wilderness area
Badger Creek Wilderness	South-East corner of HR county.	USFS	24,000 acres	Wilderness area
Columbia Gorge National Scenic Area	Columbia River corridor	Various	292,000 acres	National Scenic Area. Trails, river access, etc.

Public School-Based Facilities

Public school-based recreational facilities provide a set of key recreational assets that can also fit under the definitions of both community and neighborhood parks. The Hood River County School District's decision to allow improvements to be made on school district property by the Park District significantly contributed to the Park District's 1997 bond-funded development that dramatically improved and expanded sports facilities that can be used by the public.

Additionally, the school district serves as the county's primary public education, sports and recreation program provider (except for aquatics programs), offering a wide variety of courses and programs for residents of all ages, from preschool through seniors. Programs offered by the school district include arts, crafts, hobbies, music, dance, education, health, recreation, special interest activities, and a wide variety of sports. The numbers and types of programs expand or are reduced based on interest levels and the availability of funding. All public school based facilities are owned and maintained by the Hood River County School District. In Hood River County, the public school-based facilities are presented in the subsequent Table 4.

Table 4. Public School Based Recreational Facilities

School	Location	Size	Amenities
Hood River Middle School	May St. HR	5.5 acres	Track and football field (1) Outdoor basketball courts (1) Gymnasium (2), Rock climbing wall.
May Street Elementary School	May St. & Park HR	2.5 acres	Playground equipment (slides, swings, etc.) Four-square courts Gymnasium (1) Small baseball fields (2) Tennis courts (2) New tennis practice courts added in 2001, covered in 03-04 by the school. Park District Bond \$ Field refurbishing completed with Bond funds in 1998.
Westside Elementary School	Fairview & Belmont HR	15.9 acres	Playground equipment (slides, swings, etc.) Soccer fields (3 full size) Outdoor basketball court (covered) Four-square courts Tether ball Gymnasium (2) Softball fields (2)

School	Location	Size	Amenities
Frankton School	HR	0.4 acre	Playground equipment (slides, swings, tires, climbing apparatus, etc.) Covered shelter
Wy'east School	Odell	20 acres	3 Soccer fields Baseball fields Football field with track 2 gymnasiums
Parkdale Elementary	Parkdale	5 acres	Playground equipment, swings Small walking track Backstop Gymnasium Soccer field
Mid-Valley Elementary	Odell	7.75 acres	Playground equipment Baseball field Covered play area with basketball hoops
Pine Grove Elementary	Eastside Road	2.5 acres	Playground equipment-swings, slides, merry-go-round 2 tether balls Gymnasium
Hood River High School	Indian Creek Road	35 acres	Track, Football field 2 baseball fields Batting cage Practice soccer field Walking trail Gymnasium

Special Use Parks and Facilities

A special use park covers a broad range of parks and recreational facilities oriented toward single-purpose use (Mertes & Hall, 1996). The special use parks and facilities in Hood River County are presented in the subsequent Table 5.

Table 5. Special Use Parks

Park	Location	Ownership / Maintenance	Size/Length	Amenities
Aquatics Center	1601 May St., HR	HRVPRD	.94 acres	25 yard Recreation pool, therapy pool, wading pool, slide, rope swing, and locker rooms.
Rotary Park "Skate Park" (adjacent to of Jaymar Park)	Cascade Ave., HR	City owned HRVPRD maintained	2.71 acres	Skate Park, asphalt trail/road, picnic tables, grass play area, woods and creek.
Event Site and adjacent windsurfing and kiting areas on Columbia River.	Waterfront at 2 nd St. HR	Port of HR	4.2 acres	Windsurfing and kiting areas with parking lot, rigging yard, beach launch. Restrooms.

Non-Publicly Owned Facilities

Non-publicly owned facilities are private parks or recreational facilities which still contribute to the park and recreation system (Mertes & Hall, 1996). Examples of these in Hood River County are listed below.

Sport Fields and Gymnasiums

The baseball/softball, soccer, and other sports fields located on parks and public school properties are supplemented by facilities at three churches or church schools in Hood River, including St. Mary's Catholic Church (three youth baseball or softball fields), and Horizon Christian School (soccer field).

The Big Gym is a privately owned gym that provides major weightlifting equipment. The Hood River Sports Club has aerobic exercise equipment and the Hood River Elks Club has a small gym available for members. SNAP Fitness, a corporate gym, has weightlifting equipment and aerobic exercise equipment. The Adventist Church and the Hood River Bible School also have gyms available for their members.

Golf

Indian Creek Golf Course is a privately-owned 18-hole golf course which straddles the southern urban growth boundary at the intersection of Indian Creek Road and Brookside Drive. The Hood River Golf and Country Club is an 18-hole golf course

located outside the urban growth boundary on Country Club Road. Both courses are open to the public.

Swimming Pools

In addition to the public Hood River Valley Aquatics Center, the Hood River Sports Club and the Hood River Elks Club both maintain swimming facilities for members.

Recreation/Fitness Centers

The Hood River Sports Club is a full service recreation club that includes tennis courts, racquetball/handball courts, indoor basketball, a climbing wall, aerobic exercise classes, exercise equipment, a weight room, a pool and spa, sauna, and other facilities for members. The Big Gym and SNAP Fitness include weight lifting and exercise equipment, and the Hood River Elks Club has racquetball courts.

Outdoor Recreation

The proximity of Hood River to Mt. Hood and the Columbia River and the popularity of Hood River as a center for windsurfing and water sports has created numerous businesses which offer lessons, equipment, and related support services for skiing, snowboarding, windsurfing, road biking, mountain biking, kayaking, rafting, and other outdoor sports activities.

Other Facilities

The Hood River Valley includes many other privately-owned sports and recreation facilities offering bowling, billiards, karate, gymnastics, dance, and other activities. Hood River also is home to several yoga studios, which offer classes to the public for a fee.

Promoting recreation opportunities in the Hood River Valley

ROAD SIDE SPORTS

- 1. Sidewalk bike lanes
- 2. Sidewalk bike lanes with green paint
- 3. Sidewalk bike lanes with green paint and bollards
- 4. Sidewalk bike lanes with green paint and bollards and bollards

HOOD RIVER TRAILS

- 1. Sidewalk bike lanes
- 2. Sidewalk bike lanes with green paint
- 3. Sidewalk bike lanes with green paint and bollards
- 4. Sidewalk bike lanes with green paint and bollards and bollards

WALKING TRAILS

- 1. Sidewalk bike lanes
- 2. Sidewalk bike lanes with green paint
- 3. Sidewalk bike lanes with green paint and bollards
- 4. Sidewalk bike lanes with green paint and bollards and bollards

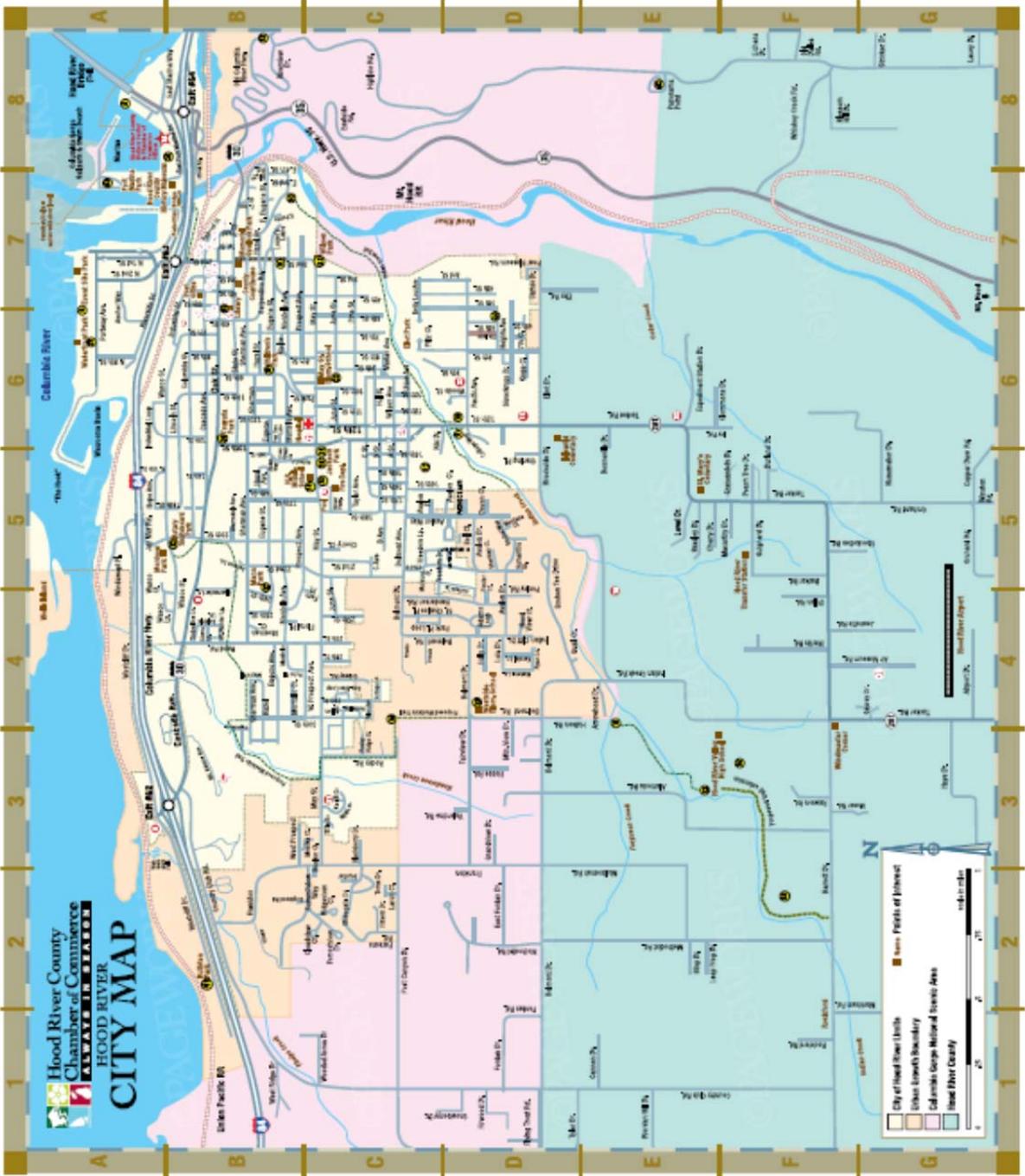
BIKE TRAILS

- 1. Sidewalk bike lanes
- 2. Sidewalk bike lanes with green paint
- 3. Sidewalk bike lanes with green paint and bollards
- 4. Sidewalk bike lanes with green paint and bollards and bollards

HOOD RIVER VALLEY PARKS & RECREATION DISTRICT

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Figure 3. Map of City of Hood River trails, parks, ball fields, and sno-parks.



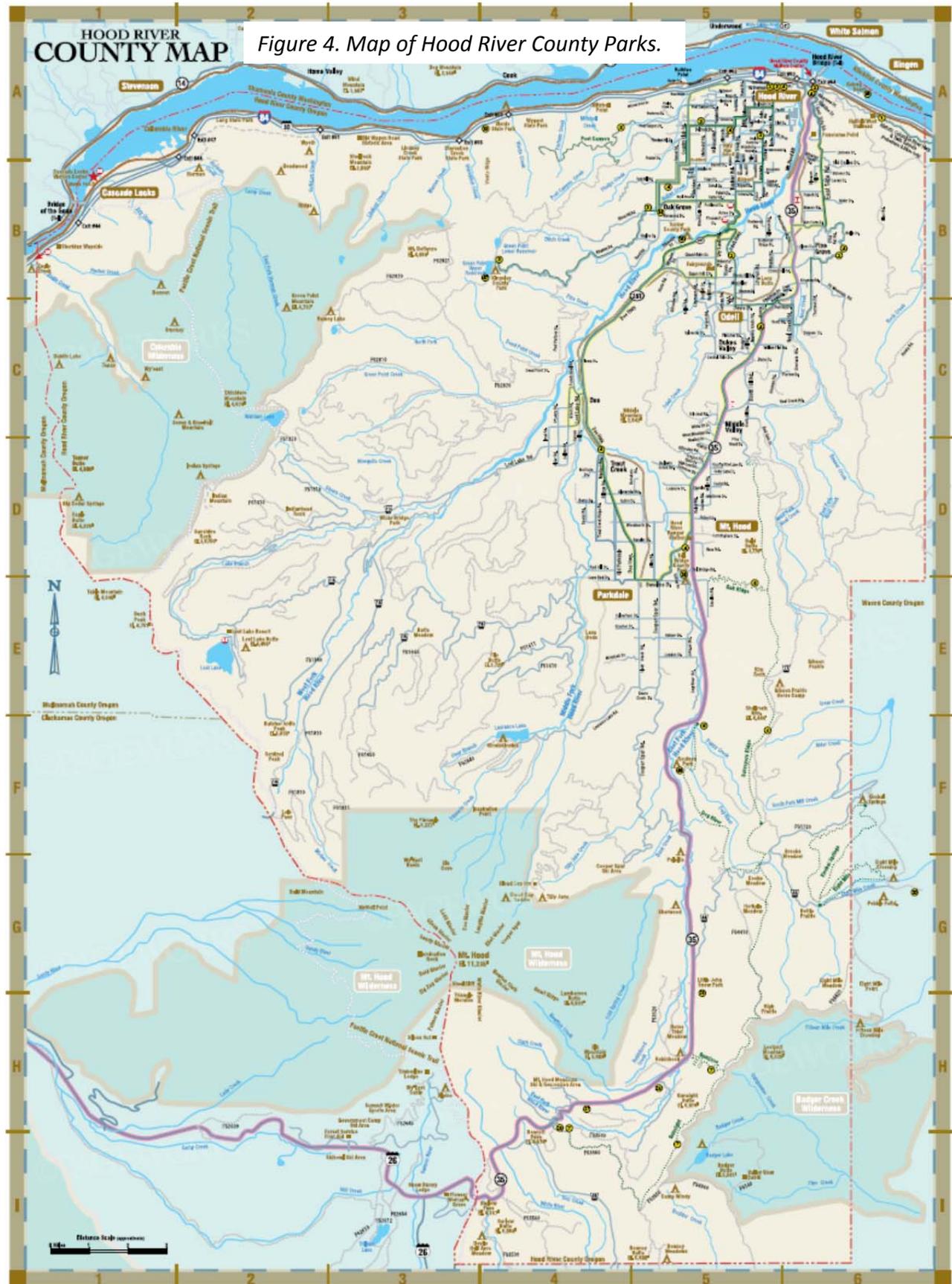


Figure 4. Map of Hood River County Parks.

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