City of Sisters Urban Area Comprehensive Plan

Sisters, Oregon
Deschutes County

Original Adoption: July 28, 2005: Ordinance 355
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Foreword

The Sisters Urban Area Comprehensive Plan (Plan) consists of seven parts which are designed for easy reference, clarity and convenience to the general public. The seven parts are:

Part I	Introduction
Part II	Citizen Involvement
Part III	General Goals and Objectives
Part IV	Background
Part V	Comprehensive Plan Goals Findings and Policies
Part VI	Implementation Programs and Policies
Part VII	Appendices

Parts I and II of the Plan includes a statement of public purpose, planning background information and citizen involvement program.

Part III includes a statement of general goals and objectives as they apply to the Sisters Urban Area consistent with past goal setting efforts, the most current goals for the City, and statewide Planning Goals.

Part IV includes an inventory of the historical, environmental, and urban assets and setting of Sisters.

Part V includes the goals, background, findings, policies, and tasks of the Plan.

Part VI describes implementation programs and policies for carrying out and enforcing the Plan.

Part VII includes appendices.

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Part I Introduction

The Sisters Urban Area Comprehensive Plan includes the City of Sisters and an area surrounding the city which is expected to become urbanized by the year 2025. It is the official planning document for the Sisters Urban Growth Area comprised of the existing City Limits and proposed Unincorporated Urban Growth Area within the Urban Growth Boundary. Background information for the "planning area" which consists of approximately six square miles surrounding the City of Sisters is also included.

Statement of Purpose

The basic purpose of the Comprehensive Plan (Plan) is to guide future development of the area within a framework of goals and policies which are consistent with the physical characteristics, attitudes, and resources of the Sisters community and to organize and coordinate complex interrelationships between people, land, resources and facilities in a manner which will protect the health, safety, welfare and convenience of its citizens.

The Plan provides a basis for coordinated action by enabling various public and private interests to undertake specific projects with a consistent understanding of community goals and objectives. The plan functions as a working frame of reference for government officials and administrators by establishing community policies and by specifying methods and standards for implementation of these policies. Public facilities, such as schools, parks, streets, civic areas, libraries, and fire stations, can be planned, and a program for land acquisition and construction can be prepared in advance of need so that the services will be available when and where they are needed.

These same community policies serve individual property owners and private interest groups as a means of evaluating their individual decisions in light of community objectives. They are able to determine how their individual interests can best be served in a manner which is consistent with the Plan. They are assured by the Plan that once they commit their investment to the land, there will be a reasonable continuity of land policies which will protect their interest. The Plan also provides a guide to the various public and private utilities charged with the responsibility of providing services to the community. Future service demands can be anticipated and facilities planned so that development can take place in the most economical and timely manner.

Individuals and organizations have a role in the planning process. The community planning process is the continuing effort to coordinate short-range and long-range private and public actions towards the fulfillment of generally accepted overall community goals. The Comprehensive Plan provides the foundation for the planning process by establishing long-range goals and objectives and by providing, through its various elements, an integrated view of future public and private development patterns in the community. It is not the last word, nor is it the first. Rather, it is an important tool to help the community identify problems and to take steps necessary to solve them before the cost of desirable solutions is beyond the community's economic capabilities to achieve.

The planning process is in itself a means of constantly evaluating the Plan. It is essential that the Plan be adaptable but this must not be interpreted to permit piecemeal amendments that disregard the basic relationships established by the original effort.
Proposed changes must be carefully considered in terms of possible overall effects on the entire community. Accommodation of a proposed development which appears very desirable on the surface may, under a thorough investigation with reference to the Plan, prove costly to both the future public interests and to committed private investments.
Adherence to the policies developed in the Plan provides a means of protecting existing public and private investments and values.

The Comprehensive Plan is not a zoning plan. However, zoning is one of the important legislative tools required to implement the plan. Any changes in zoning which occur are subject to a public hearing and a specific decision by the governing body. The greatest single problem between the plan and zoning activity is timing. Some areas suggested in the Plan for different kinds of land uses can only be justified at some time in the future when sufficient population growth has occurred to warrant the development or when public facilities are available to support that development. All zone changes should be considered in relation to the Plan and this serves as one of the continuing means of evaluating the plan. If zone changes are contemplated which are contrary to the Plan, the community should first evaluate the policies and concepts in the Plan. This process insures that each petition for rezoning is considered in light of the best interests of the entire community.

The Plan recommends appropriate uses for various areas and attempts to provide a maximum range of choice in the urban area within the limits of community living. If there is to be a choice, various areas must be guarded against intrusion of other uses which will limit or destroy the privacy of homes or the proper economic functioning of areas of commerce or other special values.

The Plan must be implemented if it is to be of value to the community. It requires public awareness and involves extensive daily contact with public groups and individual citizens, the administration of appropriate codes and ordinances which influence development, capital improvement programming for the expenditure of local governmental funds, and the continuing refinement of the Plan in special circumstances such as the central business district, park and recreation, community appearance, etc.
The efforts applied in the continuing planning process extend the Plan from the present to the future accomplishment of its goals and tasks. The Comprehensive Plan provides basic guidelines with which the community can chart a course for change with some assurance that the result will be progress. The benefits of community living that we enjoy today are the result of what was done yesterday, and the benefits for future generations will result from what we do today.

Background Regarding the Local Planning Process and Citizen Involvement

Planning first began in 1966 following the repeal of county zoning, subdivision and building codes. These ordinances were repealed primarily because there was no Comprehensive Plan which would have set up public policies on land use matters and how to implement them. In 1966, Deschutes County along with the cities of Sisters, Redmond and Bend, undertook a massive effort to reinstate the planning program and develop a Comprehensive Plan. Since that time, planning has been a joint effort and the county's first Comprehensive Plan also included an urban area plan for the Sisters area. After the adoption of that plan in 1970, the city and county elected to update the Plan with more detail in 1973. During the final stages of updating the Plan, statewide planning legislation was enacted (ORS 197-SB 100) and the Oregon Land Conservation Development Commission was created. Statewide Planning Goals had not yet been adopted before completion of the Sisters Comprehensive Plan update and therefore making it necessary to update the plan again to comply with the statewide planning goals.

This process resulted in the adopted and acknowledged Sisters Urban Area Comprehensive Plan, completed July 1979, adopted by City Ordinance 118 in September of 1979. The Plan was acknowledged by the Oregon Land Conservation and Development Commission in February of 1982. Since then, it has been revised by City Ordinance 141 and 151. The Plan was the state-acknowledged planning tool for the City of Sisters until 2005. In 2005 updates will be adopted to reflect changes since 1982. The long process of updating the Plan is summarized below.

The Comprehensive Plan review process began in 1990 in response to zone change requests. In October 1990, the Sisters Urban Area Planning Committee was formed, and the update of the Sisters Comprehensive plan was undertaken. The Committee, with the assistance of the University of Oregon Planning Workshop, developed a list of five characteristics of the City of Sisters (City) community it wished to retain, and five characteristics it wished to improve. This list was, in large part, the basis for evaluation of the various Comprehensive Plan elements.

Characteristics to retain:
1. The benefits of a small town
2. Clean, controlled growth
3. Aesthetic qualities
4. Clean air and water
5. Western Frontier theme

Opportunities for improvement:
1. Public Sewer System
2. Traffic flow
3. Affordable housing with adequate off-street parking
4. Improved drinking water quality
5. Develop a city core area to accommodate visitors

Elements were assigned to various subcommittees comprised of concerned citizens and Planning Commissioners for review. After these subcommittees reviewed the existing Plan, updated elements were brought back to the larger committee for review, comment and revisions.

The draft Plan was approved by the Planning Commission and City Council, and was given to the County Planning Department for review. The County expressed some concerns about several points within the Draft pertaining to Urban Growth Boundary (UGB) land beyond the City limits under county control.

In 1998, an agreement was reached between the City and County regarding land in the UGB; the agreement allowed the City to control planning efforts within UGB land without County intervention. This agreement is the "Agreement Between the City of Sisters, Oregon And Deschutes County, Oregon, For The Joint Management of The Urban Growth Boundary And the Sisters Growth Area". Also, the City Council voted to amend the City limits to include virtually all of the UGB land. As of 2003, the City limits and UGB are the same. This Comprehensive Plan uses the terms City and UGB interchangeably, and they both refer to the same area. The City is responsible for administering the development within the UGB. Areas immediately outside the City are under the jurisdiction of Deschutes County. However, with the expansion of the UGB contemplated by this updated Plan, new areas will be added to the Sisters UGB that are not inside the City Limits. These lands are regulated by the Joint Management Agreement and Title 21 of the Deschutes County Code.

Again in 1999, the draft Plan update went through additional public meeting sessions including Planning Commission meetings and City Council meetings for discussion and input.

The process beginning in 2001 and culminating in this document involved additional public involvement consisting of an Advisory Committee meeting more than 12 times and an Open House. As part of the adoption process, public hearings were held by the Planning Commission and City Council.

The City adopted and then rescinded an earlier version of this Comprehensive Plan in the spring of 2004. The City had a legal challenge to the Plan based on its population forecast. Since then, the City adopted a revised population forecast in the summer of 2004 that was coordinated with Deschutes County and cities. This coordinated forecast is attached and made a part of the Comprehensive Plan as Appendix A.

The result of this process is the following Comprehensive Plan. This plan includes much of the background information from the Plan acknowledged in 1982. It also blends the results of the ongoing public input process between 1990 and 2005 to result in the following findings, policies, and tasks which guide development within the Sisters Urban Area.

Part II
Citizen Involvement

In order to understand the full perspective of citizen involvement, it is necessary to briefly recite the entire program on a statewide and local level, since both are involved in the Comprehensive Planning process for the urban area.

Statewide

Citizen involvement in land use planning has been mandatory statewide since 1973. Senate Bill 100 (ORS 197.160) requires each county governing body to submit a program for citizen involvement in preparing, adopting and revising Comprehensive Plans within the county. Each program must at least contain provisions for a citizen advisory committee broadly representative of geographic areas and of interests relating to land use.

Pursuant to Senate Bill 100, the Land Conservation and Development Commission (LCDC) developed a set of statewide planning goals. The number one goal is citizen involvement, and is intended to insure the opportunity for citizens to be involved in all phases of the planning process. Each jurisdiction must develop, publicize and adopt a program appropriate to the local level of planning. Goal one further requires the incorporation into the planning process of the following components in every citizen involvement program.

1. To provide for widespread citizen involvement.
2. To assure effective two way communication with citizens.
3. To provide the opportunity for citizens to be involved in all phases of the planning process.
4. To assure that technical information is available in an understandable form.
5. To assure that citizens will receive a response from policy makers.
6. To assure funding for the citizen involvement program.

Further, the law requires that Federal, State and local agencies and special districts coordinate their planning efforts with the governing body and make use of existing local citizen involvement programs.

Finally, Oregon law requires a mechanism to be used for an evaluation of the citizen involvement program to:

1. Assist the governing body in developing a citizen involvement program.
2. Assist in implementing the program.
3. Evaluate the success of the program and new approaches.

Local citizens need to be a part of the decisions made about how their unique area and resources are developed. An active program for citizen input in the Comprehensive Plan process is a democratic opportunity to develop an end product reflective of the local resources, activities and people. Oregon law insures that opportunity.

Local

Citizen involvement in planning activities at the local level is established through a variety of local ordinances, codes, and practices. For example, the Sisters Development Code includes many provisions for public notice through mailings to affected land owners and neighboring properties within 250 feet of subject properties, public postings, and published notices for City Planning Commission and City Council Hearings. Type II applications require a process of notice as indicated above. Typical Type II applications include minor or major partitions, site design reviews, modifications to approved plans, and variances. Notices typically provide a 14 day period for submitting written comments before decisions are made, state sufficient information regarding the type of application, applicable standards, contact information, and hearing locations, times, and dates. Appeals of decisions are also subject to notice requirements. Applications that are quasi-judicial and legislative in nature also have notice requirements that are more stringent because those applications have impacts upon multiple properties.

The City of Sisters City Charter requires a majority of city voters to approve annexations of land into the city. This is a direct form of citizen involvement in one of the most important aspects of long-term city growth policies. The City Charter also gives the City Mayor the authority to appoint citizens to advisory committees involved in a variety of planning activities. Advisory committees are very important and commonly used to obtain diverse perspectives on long-range facility plans, current and future policies, and other important projects.

A common practice of community involvement that is effective but not codified is direct communication with City Councilors, Planning Commissioners, Manager, and other staff. One beauty of living in the small town of Sisters is that these people live in the community, are accessible and responsive, and can quickly bring issues from the public into the planning and policy arena.

Part III
General Goals and Objectives

For planning proposals and programs to be meaningful to the Sisters Urban Area, they must be based on fundamental concepts well-founded in the community. To this end, numerous Citizens Advisory Committees have evaluated community resources, examined issues and opportunities and outlined goals and objectives upon which to base planning proposals for attaining the character and quality of community environment expressed as being desirable for the Sisters area. As the community evolves some goals are refined, some continuously sought, others reached, and new goals established. This Plan attempts to maintain ties to the past that are still relevant. The following paragraphs restate goals of past planning exercises as well as current planning goals to demonstrate continuity and progress, as well as new challenges facing Sisters.

The past and current community goals for Sisters are discussed below. There are three groups: goals from 1974, goals from 1990, and current goals from 2005. The goals from 1974 are included as they existed in the acknowledged Plan from 1982. These demonstrate what was important to the community in 1974 and are included here for illustrative and comparative purposes only. Goals from 1990 are included for the same reasons. Goals from the most current planning process completed in 2005 are the goals applicable to this Comprehensive Plan and subsequent policy making and implementation.

Goals from 1974

Initial definition of planning goals and objectives was adopted by the Citizens Advisory Group on April 10, 1974. The following includes those goals and the goals and objectives recommended by the Sisters Urban Area Advisory Committee for the updating of the Comprehensive Plan.

Position Orientation

1. To recognize Sisters as the gateway to the Cascade Mountains and Central Oregon Recreation Area.
2. To recognize and promote Sisters as the service center for commerce and public services in support of surrounding recreational, recreation residential and agricultural demands.

City Image and Visual Appearance

1. To recognize Sisters as a Recreational-Retirement Community.
2. To encourage the development of a central architectural and sign theme based on Western and/or Frontier building styles of the 1880's.
3. To improve, identify and emphasize the entrances to the City.
4. To encourage maintenance of property and its value.
5. To improve public street standards as a means of upgrading City image and visual appearance.
6. To encourage landscaping management practices.

Environmental

1. To maintain the clear and clean quality of air and water.
2. To maintain an adequate program of solid waste management.
3. To maintain and expand the service capabilities of the municipal water systems.
4. To encourage the development of adequate sewerage treatment systems.
5. To maintain the quality of space and openness inherent to Central Oregon.

Social and Housing

1. To improve and expand leisure time offerings of the community, particularly for the youth and elderly.
2. To provide a level of coordinated services which insures safe, healthful and convenient conditions for all segments of the population.
3. To encourage housing quality and diversity that is responsive to community demands.

Forest Lands

1. To conserve forest lands for forest uses.
2. To protect forest lands from incompatible uses and encourage landscape management practices along scenic routes.

Economic

1. To capitalize on recreation-tourist support functions.
2. To encourage improvement and up-grading of the central business district in support of local population demands and the recreation-tourist industry.
3. To encourage the provision of professional services now lacking in the community.
4. To encourage development of light industrial activities of a clean and non-offensive character.

Transportation

1. To develop an acceptable transportation solution to the increasing congestion introduced into the heart of the community via major east-west highways.
2. To provide an orderly street network which offers safe and convenient communications between the various areas of the community.
3. To determine future needs and requirements for airport facilities.

Energy Conservation

1. To conserve energy.
2. To encourage and develop energy conservation programs.

Coordination and Inter-Agency Cooperation

1. To jointly establish an Urban Growth Management Agreement with Deschutes County for the Sisters Urban Growth Boundary.
2. To establish an effective administrative procedure for coordination between the Sisters Planning Commission and Deschutes County Planning Commission for coordinating community expansion and resolving problems in the "Planning Area" of Sisters.
3. To initiate administrative programs between public agencies responsible for programs which serve the coordinated needs of the Planning Area.

Implementation

1. To maintain active citizens participation on a continuing basis for continued citizen in-put in the continuing process of planning and plan implementation.
2. To adopt procedural ordinances to carry out the planning process and to adopt zoning and related development codes necessary to implement the Comprehensive Plan.
3. To develop an initial long-range financial plan and capital improvements program.
4. To adopt a Subdivision Ordinance consistent with the subdivision standards of Deschutes County and the Sisters Zoning Ordinance.
5. To adopt standard specifications for Design and Construction of Public Improvements.

Goals from 1990

In October 1990, the Sisters Urban Area Planning Committee was formed, and the update of the Sisters Comprehensive plan was undertaken. The Committee, with the assistance of the University of Oregon Planning Workshop, developed a list of five characteristics of the City of Sisters (City) community it wished to retain, and five characteristics it wished to improve. This list was, in large part, the basis for evaluation of the various Comprehensive Plan elements.

Characteristics to retain:

1. The benefits of a small town
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Opportunities for improvement:

1. Public Sewer System
2. Traffic flow
3. Affordable housing with adequate off-street parking
4. Improved drinking water quality
5. Develop a city core area to accommodate visitors

Goals from 2005 (current Comprehensive Plan)

In 1999 the draft Plan update went through additional public meeting sessions including Planning Commission meetings and City Council meetings for discussion and input. The process beginning in 2001 and culminating in this document involved additional public involvement consisting of an Advisory Committee meeting more than 12 times and an Open House. Goals developed through this process are closely aligned with the State of Oregon Statewide Planning Goals. The intent was to mirror these goals, keep the community goals general in nature, but to develop specific implementing policies and tasks. This is reflected in the general nature of the goals below.

1. To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.
2. To establish a Land Use Planning process and policy framework as a basis for all decisions and actions related to the use of land and to assure an adequate factual base for such decisions and actions.
3. To preserve and maintain agricultural lands outside the City limits by promoting efficient use of urban lands inside the City limits.
4. To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.
5. To protect natural resources and conserve scenic and historic areas and open spaces.
6. To maintain and improve the quality of the air, water and land resources of the City.
7. To protect people and property from natural hazards.
8. To satisfy the recreational needs of the citizens of the City and visitors, and, where appropriate, to provide for the siting of necessary recreational facilities.

9. Maintain adequate park facilities providing a variety of recreational and cultural opportunities for residents and visitors of Sisters.
10. To provide adequate opportunities for a variety of economic activities vital to the health, welfare, and prosperity of the City's citizens.
11. To provide for the housing needs of citizens of the City and ensure that land development allows for different housing types and densities.
12. To plan and develop a timely, orderly and efficient arrangement of public facilities to support the City's development.
13. To provide and encourage a safe, convenient and economic transportation system.
14. To manage land uses in a manner to maximize the conservation of all forms of energy based upon sound economic principles.
15. To provide for an orderly and efficient transition from rural to urban land use.

The fifteen goals above combined with the factual basis described later in this Plan are the basis for the policies contained in this Plan. From these policies, tasks and implementing ordinances and programs will be developed in the future. Since the Plan is a living document, progress made on reaching these goals will be evaluated, goals themselves may be updated, and the goals of the community realized.

Part IV Background

Historical Background

Central Oregon's resources and environmental setting have been molded by the geological formation of the region. The endeavors of man, from the original Native American cultures through the exploration, early settlement and development by settlers, have significantly altered the regional resources and environment.

Sisters' existence is a result of the cultural evolution of man in Central Oregon. Current orientation toward the support of recreational and tourist activities, can draw upon the history of the locale and region as a resource in support of this interest.

Pre-Historical Era

Formation of the land base which is now Central Oregon was preceded by an extensive period during which sea water covered the area. Folding and up-heaving of underlying land eventually displaced the waters to form an inland plain. Marine fossils uncovered east of the Crooked River bear witness to this action and date the oldest formation in Oregon some 225 million years ago during the Age of Fishes.

Subsequently, volcanic action built up in various mountains and peaks and spilled lava throughout many deep valleys in the area. It was during this period which geologists have named Clarno, is recorded the first mammal life in Oregon. Columbia lavas then spread over the Pacific Northwest and covered much of inland Oregon leaving only older highland "islands". This action disrupted and blocked drainage of the area, resulting in formation of high pre-historic lakes. Animal life continued to develop and the Cascade Mountains began to emerge in the West.

Mountain-born glaciers now introduced an Age of Ice. The original Cascades were significantly altered due to the movement of this ice. Extensive ice coverage to the north shifted the weather pattern bringing storms southward with heavy rainfall. This rainfall indirectly formed large South-Central Oregon lakes due to natural impoundment of water.

Volcanic activity continued to shape the Central Oregon area up to recent times. Some 6,000 years ago, Mt. Mazama to the south, erupted violently forming Crater Lake and depositing a vast layer of ash and pumice over the northwest. Humans are identified to have been in this area through discovery of artifacts under Mazama ash in the upper Deschutes basin. Approximately, the same time that Mazama was developing, Mt.
Newberry in the Paulinas, formed near the southern edge of the Deschutes plateau.

Newberry erupted, consumed its summit and eventually formed Paulina and East Lakes within its caldera. Volcanic action continued in the form of small cinder cones at the base of the mountain. From these cinder cones and cracks in the parent mountain, lava spread over the surrounding area until approximately 1,000 years ago, signaling the end of Central Oregon topographical change through volcanic activity. Through radio-carbon dating, the earliest identified habitation by humans is established around 9,000 years ago in the Fort Rock basin.

Early Exploration

During December of 1825, Peter Skene Ogden and a party of Hudson Bay Company trappers embarked from the Columbia River, at the River of the Falls, the Deschutes of Central Oregon, to survey the little known region of inland Oregon. This was the first recorded exploration of the Central Oregon area. At the same time, Ogden left the Columbia, Finan McDonald was sent east across the Cascades to join up with Ogden along the River of the Falls. Upon joining up forces, the group crossed the Deschutes above Madras, moved across the Agency Plains, making their first camp on the Crooked River. From this point, the explorers continued eastward along the Crooked River into the John Day area. Ogden made a second trip south from the Columbia during 1826-27. He left his previous route at Dufur, went directly to White River and followed the western tributary to the Deschutes for a crossing at Sherars Falls. From here, the party continued into the Malheur-Harney region. On his return trip, Ogden discovered East and Paulina Lakes in Newberry Crater before turning south to California.

Nathaniel J. Wyeth became the first white man to visit the present site of Bend. During December of 1834, Wyeth and his party proceeded through a heavy winter storm into the upper Deschutes River country. Their travels along the river brought them into contact with Benham and Pringle Falls. On his return trip, Wyeth paused at the head of Whychus Creek (formerly Squaw Creek) before reaching the Columbia in February of 1835.

Eight years later, during 1843, John C. Fremont, an officer in the Topographic Engineers of the U.S. Army, guided by Kit Carson and Billy Chinook, a Warm Springs Indian made the next thrust into the Deschutes country. Departing The Dalles in November, they moved up the Deschutes to Tygh Valley, crossed the White River, proceeded through the Warm Springs country and reached the upper meadows of Tumalo Creek. Fremont's group then continued south into California.

The early pioneers associated with the first wagon train immigrants to cross Central Oregon did not initially settle in the Deschutes country. In 1845, the Blue Bucket Mine party from Missouri was the first wagon train to cross the interior country. Upon leaving Ft. Boise, the train left the Oregon Trail and headed across relatively unknown Central Oregon. Legend states that somewhere in Malheur country, gold nuggets were discovered when water was drawn from a stream in a blue bucket. East of the John Day River, the train lost direction, continued through the High Desert with all its adverse conditions, eventually reached the Crooked River near Prineville and completed their journey at The Dalles.

The second group of immigrants to cross Central Oregon was the Clark Massacre Party in the fall of 1851. At the Snake River, the group was attacked by Native Americans, killing several members of the party. West of the Snake, the train departed from the Oregon Trail, approximating the route taken by the Blue Bucket Mine group. Clark had been advised to guide on three mountains (The Sisters) and to watch for a low volcanic cone called Red Butte (Pilot Butte), directly in front of The Sisters. Here was located a good camping spot on the Deschutes River. The Clark party rested along the Deschutes for several days apparently at the location of Bend's Pioneer Park, prior to moving north and crossing the Barlow Pass to finally reach Cottage Grove.

The Elliott Cutoff Party followed in the fall of 1853, the largest of all wagon trains to cross Central Oregon. The group became lost when they mistook the Three Sisters for Diamond Peak, the mountain which was to guide them to a new Cascade crossing. This pass near Diamond Peak had previously been crossed by a road-viewing expedition from Lane County. To save time, the Elliott Party headed west into the Central Oregon high country. Due to extreme adverse conditions, the train broke off advance segments to try and find help for the group. One group crossed the mountains west of Bend between two of the Sisters. The main train finally found its way to what is now known as the Willamette Pass.

In 1855, Lt. Robert S. Williamson and Henry Larcom Abbot were assigned to the Pacific Survey to find the most suitable and economic route for a railroad from the Mississippi to the Pacific Ocean. Leaving their ship in San Francisco, the group moved northward and entered Oregon south of Klamath Falls and continued to the Upper Deschutes country.
Here Williamson scouted the eastern slopes of Trout Creek and returned near the Sisters site to link up with Abbot. After reaching Ft. Vancouver, Abbot reported that topographic barriers of the Deschutes country would be almost impassable. This early engineering reconnaissance was to be proven wrong.

Early Settlement
Due to conflicts with Native Americans, particularly Chief Paulina, the government strongly discouraged settlement east of the Cascades. This was expressed as an official order from August of 1856 to October 1859. Despite the lifting of the order, there was not a significant movement of settlers into Central Oregon, other than those in search of gold. Around 1863, the first settlers began to appear in the Deschutes country, primarily along the routes of travel from The Dalles to the Upper Deschutes.

Constant harassment by Chief Paulina and his followers throughout Central Oregon, prompted the Army to establish outposts and camps for the protection of miners and settlers. One of these was Camp Polk, just a short distance from Sisters.

Camp Polk
Camp Polk was established in 1865 adjacent to Whychus Creek, just three miles northeast of the City of Sisters. The military detachment which established the camp were men of Company A, 1st Oregon Volunteer Infantry, commanded by Captain Charles LaFollette.

Leaving Ft. Yamhill, this was the first military group to cross the Cascades via the new Santiam Road. Upon arriving at the site adjacent to Whychus Creek, Captain LaFollette named the Camp Polk after his home country. Here the men prepared a parade ground, trimmed a tall tree for a flag pole and built eight cabins. Before winter operations could be initiated against the Native Americans, word was received from the Chief of Army to muster out all volunteers. Subsequently, the Camp Polk detachment remained in winter quarters and in the spring of 1866 returned to their home thus ending the brief military history of Camp Polk.

During 1870, the Camp Polk site was homesteaded by Samual M.W. Hindman and his

family. In 1875, Hindman established a post office and a store and became the community's first postmaster. At this time, the area between the Cascades and the Deschutes River was virtually uninhabited, but destined to bustle with the future movement of cattle and sheep over the Santiam Pass.

City of Sisters

While Hindman was developing Camp Polk, the nearby Sisters site was being transformed from a ranch to a town. During the 1880's, large flocks of sheep were driven past the town site to summer pastures in the high Cascades. Sisters was the last settlement between Prineville and the mountains and consequently early entrepreneurs did a brisk business in the summer months. The name Sisters was bestowed upon the town by Jacob Quiberg, a farmer and stockman in the vicinity. This name was chosen because of the proximity to the three imposing Cascade peaks which overlook the town, The Three Sisters.

In 1888, the Camp Polk post office was moved to the village of Sisters and given the name of its adopted town. This post office was located on the homestead of John Smith, who had filed homestead rights in 1886 and received title in 1891. Smith was later to relocate the post office within the present city limits where Sisters Market now stands.

During 1898, John Smith sold his holdings to Alex Smith, no relation, and in 1900, Alex Smith sold one-half interest to his brother Robert. On July 10, 1901, the Smith brothers filed the original town plat which comprised six city blocks bounded by Cascade Street on the south, Adams on the north, Elm on the west, and Larch to the east. Mail was now being carried by stage from Shaniko, Prineville and Cline Falls as Redmond would not be established until 1906. This mail was taken to Cascadia where it was transferred to Pony Express for points west.

Sisters became a stopping place for travelers as it was the intersection of the Santiam and McKenzie roads. Business and growth increased with the movement of stock to the U.S. Forest Service mountain pasture allotments. At the turn of the century, cattle raising had become a vital industry around Sisters. This industry centered around the vast holdings of the Black Butte Land and Livestock Company, with one of its headquarters at Black Butte Ranch approximately eight miles northwest of Sisters. By 1908, the benefits of the sheep traffic bound for mountain pasture dwindled.

Lumber also contributed to the activity and growth of the community. Small mills were in operation as early as 1890 and a large mill was built within the town site in 1912. Since then, there have been many other mills in the area with the last one just north of the rodeo grounds ceasing operations in 1965.

Sisters' first school was built around 1885 and located near the Lundy Ranch, two miles to the north. The school was then a part of District No. 9, Crook County and accommodated thirty children. Around 1890, a second one-room school was constructed near the site of the present Sisters Motor Lodge.

Fire struck the city a disastrous blow in 1923, destroying an entire block of business houses between Elm and Fir, south of Cascade. Again in 1924, fire consumed buildings on both sides of Cascade from Fir to Spruce.

The first pipeline for distribution of water in the city was installed in 1916. During the 1930's, electricity became available from the Langman Electric Company, which was generated in a building next to the Hitchcock Mill. Central Electric Cooperative extended a line from Redmond in 1941, replacing the private system. Street lights were installed in June of 1951 along Cascade, the principle business street of the City.

A special election was held in 1946 and the people of Sisters voted 115 to 61 in favor of incorporating the town. Population of the City at this time was approximately 700.

Sisters continues to enjoy its location at the junction of the Santiam and McKenzie Highways, as service center for tourist traffic and the best recreational area within the adjacent U.S. National Forest lands of the Cascade Range. The Sisters annual rodeo provides a major community attraction of each year which has become known throughout the state and country. An annual outdoor quilt show rivals the rodeo in popularity.

Climate, recreational resources and major highway linkages bring continued activity to the community. Recent development of recreational oriented land developments, such as Indian Ford Ranch, Black Butte Ranch and Tollgate and Crossroads indicate continuing growth and change for the city and its surrounding area.

The later part of the 20th Century was marked by a series of boom and bust economic cycles, generally tied to the timber industry. With the loss of access to timber because of supply and environmental concerns, the region turned to tourism and attraction of retirees. This, combined with the construction of a municipal sewer system, has led to a period of unprecedented growth at the dawn of the 21 Century.

Environmental Setting

Sisters is located at the eastern base of the Cascade Mountain Range in the westerly portion of the Central Oregon Area consisting of Deschutes, Crook and Jefferson Counties. Its unique geographical setting clearly identifies it as the gateway to the Cascades by the general public. The City, the Urban Growth Boundary, and the Planning Area (six square miles surrounding the City of Sisters) are all within the boundaries of the Deschutes National Forest.

Bend, the Deschutes County seat, lies 21 miles to the southeast, Redmond, 20 miles to the east, and the Santiam Junction, 20 miles to the northwest.

Within the City of Sisters, U.S. Highway 20 and Oregon 242 converge as Cascade Street, with their respective beginnings at Newport and Florence on the Oregon coast. Both of these highways continue eastward, intersecting with U.S. Highway 97, a north-south, intrastate highway at Redmond and Bend. Continuing eastward, these highways intersect with Interstate Highway 80N, an east-west Transcontinental Highway and to the west, they provide important connections with Willamette Valley urban areas and markets, as they traverse Cascade Mountain public recreational and scenic areas.

The western portion of the Central Oregon Area can be characterized as the meeting of the Central Oregon agricultural area and the eastern gateway to the Cascade Mountain Santiam Recreational Area. It is primarily an agricultural area situated in and about national forest lands.

The area is in the process of change from what once primarily supported agricultural endeavors, to one which is more diversified through the introduction of manufacturing, land subdivision and exploitation of the scenic and recreational resources in the region. This change was originally noted with the development and expansion of the Bachelor Butte ski area, development at Sunriver, Indian Ford Ranch development immediately north of Sisters, Black Butte Ranch development approximately 8 miles to the northwest and recreational subdivision development taking place immediately to the west and in the Camp Sherman area. This process continued through the 1990s to the present with high rates of in-migration of new residents, the development of numerous destination resorts and golf courses in Deschutes County, diversification of employment opportunities and recreation industries.

The Central Oregon environment with its semi-arid, low rainfall and high percentage of days with sunshine provides a setting which is luring and ever increasing number of people to live and/or spend their leisure time in the region.

Terrain

The majority of the Sisters Urban Growth Area and Planning Area is relatively flat. The terrain slopes from the southwest corner of the Planning Area at approximately 1% to the northeast at the base of McKinney Butte, where it then rises some 160 feet to the summit of the butte. The City of Sisters has a U.S. Geological Survey bench mark elevation of 3,186 feet. Whychus Creek as it enters the Planning Area from the south becomes the most significant waterway in the area. It is joined by Indian Ford Creek at the southwestern base of McKinney Butte and continues eastward to its juncture with the Deschutes River in Lake Billy Chinook above Round Butte Dam. Whychus Creek is the source for irrigation waters delivered by the Three Creeks Irrigation District.

Vegetation

Native vegetation cover consists primarily of Ponderosa Pine interspersed with Juniper and contains ground cover consisting of Bitterbrush, Manzanita, Idaho Fescue and Forbes.

Animal Life
Local animal species consist primarily of mule deer, coyote and a few elk and black bear. Fur bearing animals identified by the U.S. Forest Service are beaver, marten, otter and mink. Quail and sage grouse are to be found locally and bald eagle nesting areas have been identified within U.S. Forest land. Local streams and surrounding lakes are known for their trout fishing.

Soils
Soils within the Planning Area consist principally of Sisters Loamy Sand and Wanoga Loamy Fine Sand. The Sisters soils are brown loamy sand in color and texture at the surface with yellowish-brown loamy sand subsoil and a yellowish-brown gravelly loamy sand sub-stratum. Soil depth is more than 60 inches with somewhat excessive natural drainage and rapid permeability of from 6 to 20 inches per hour. The Wanoga soils are grayish-brown loamy fine sand in color and texture with grayish-brown loamy fine sand subsoil and a hardpan sub-stratum. Soil depth is from 20-40 inches with good natural drainage and moderately rapid permeability of from 2 to 6 inches per hour.

Climate
Central Oregon climate may be characterized has having cold, moist winters and warm, dry summers. There are a high percentage of days with sunshine each year. In Bend and Redmond, some twenty miles southeast and east of Sisters respectively, there are approximately 130 clear days and 90 partly cloudy days. Many of the 145 cloudy days afford some sunshine through thin cloudiness.

Sisters' weather provides annual precipitation ranging from 15 to 30 inches with the majority falling in October through March. Annual snowfall averages around three feet. The mean annual air temperature ranges from 41 to 46 degrees Fahrenheit with lows of minus 20 and highs of over 100 Fahrenheit. Frost can occur year around in the Sisters area as well as most of Deschutes County. Winds are generally from the west to the southwest with an average velocity at 10-12 miles per hour.

Urban Setting

Urban Growth Boundary
The size of the City Limits and UGB at the time of this Plan's adoption is approximately 1,124 acres. This area is shown in Figure 1: City of Sisters: Urban Growth Boundary and Land Use Districts. Upon adoption of this Plan, an additional 53 acres will be included in the Sisters UGB, but not City Limits. See Chapter 14 and Figures 14-1 and 14-2 for a description of the UGB that is effective upon adoption and acknowledgement of this Plan.

The areas immediately beyond the Sisters UGB are predominantly zoned for forest (F1 and F2 zoning designations) and farm use (EFU zoning designations) by Deschutes County. Lands to the southwest and east of the UGB are used for pasture and grazing of cattle and elk, private and public forest lands to the northwest and south are no longer actively logged. Rural residential lands to the north and northeast (RR-10 zoning designations) are low density residential uses. The zoning of these areas is shown in Figure 2: County Zoning Designations in the Sisters Area.

Descriptions of the City's characteristics are discussed by topic in the Section V of the Plan, *Comprehensive Plan Goals, Findings, and Policies*. This includes discussions of the land use planning program, agricultural and farm land, open spaces, historical and natural resources, the City's transportation and public infrastructure, economic and housing characteristics, urbanization, and other topics. The goals contained in this Plan mirror the State of Oregon Statewide Planning Goals. The City's goals are presented along with background information, findings, policies, and tasks related to each goal.

Figure 1: City of Sisters: Urban Growth Boundary and Land Use Districts

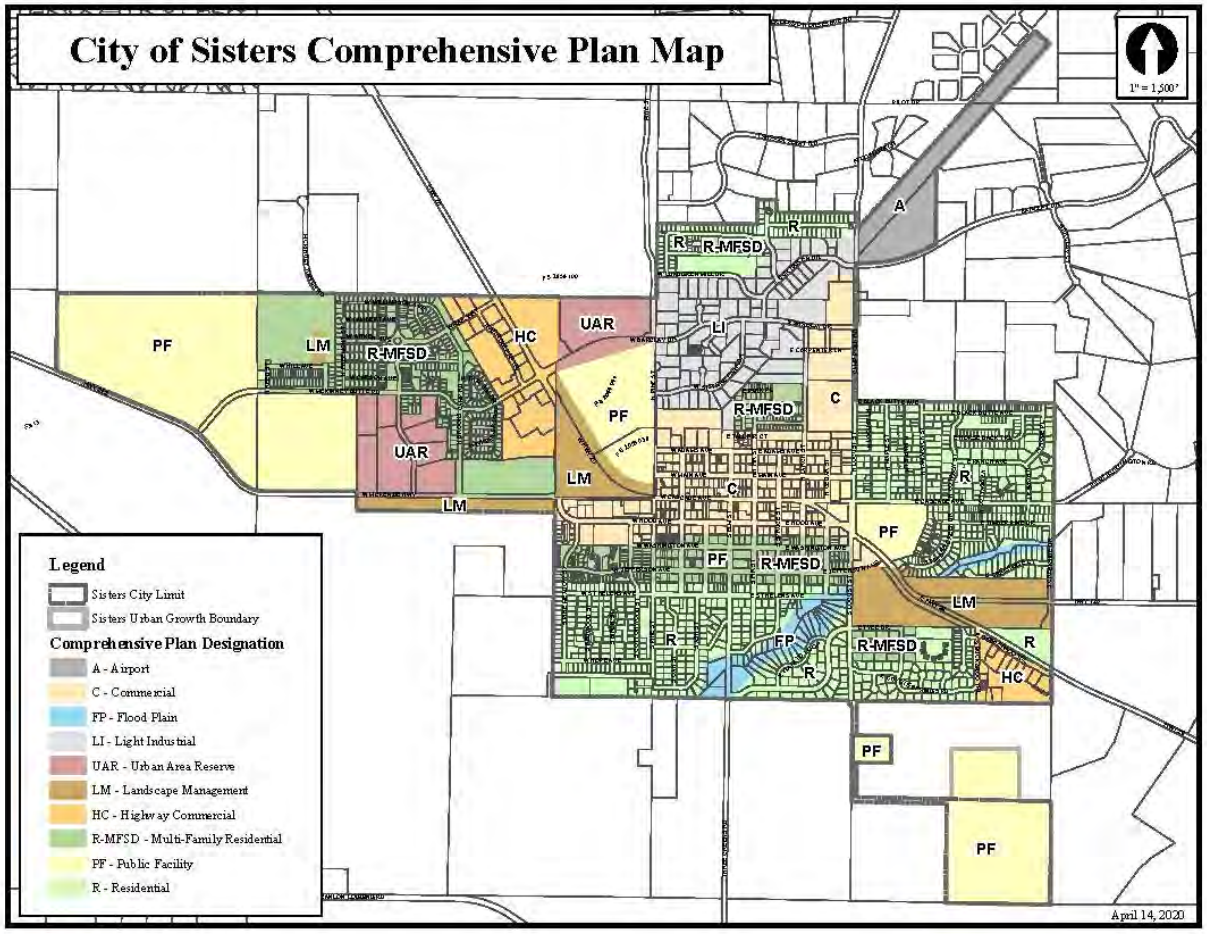
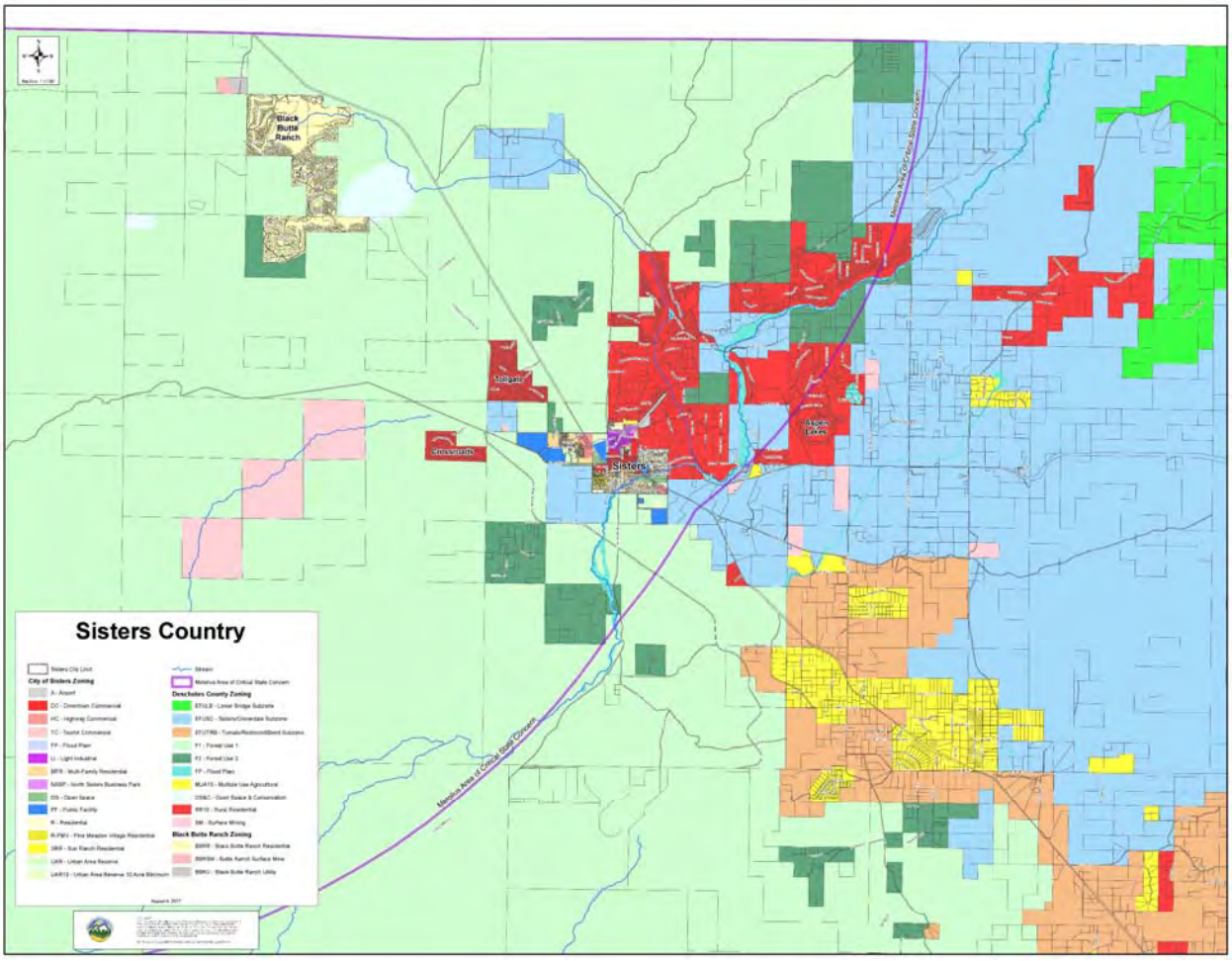


Figure 2: County Zoning Designations in the Sisters Area



Part V
Comprehensive Plan Goals, Findings, & Policies

GOAL 1: CITIZEN INVOLVEMENT

STATEWIDE PLANNING GOAL 1 CITIZEN INVOLVEMENT: *To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.*

BACKGROUND

The Importance of Citizen Involvement
Localities in Oregon are required to provide a variety of meaningful opportunities and options for active participation by residents, business owners, private organizations and partnering agencies in the preparation of—or amendments to—a community's comprehensive plan.

Citizen involvement is:
• Required by State law;
• A means to assure planning efforts are worthwhile and meaningful endeavors; and
• Key to informing local leaders who make critical decisions (e.g., long-range planning, infrastructure investments, etc.) affecting the community's livability and economic vitality.

Robust public input supports effective and efficient governance by revealing public opposition for initiatives that local leaders might otherwise assume are desired or unopposed. Not only must a community's leaders provide the public with a chance to view and respond to planning documents and studies, they ALSO must proactively seek citizen involvement. Likewise, long-range/comprehensive planning documents often are used to inform investments in infrastructure and to guide decisions like financing debt or undertaking major policy initiatives. Governmental activities could create economic implications or impact payrolls and taxes—tools sometimes used to achieve the goals and objectives of a community. Therefore, "citizen involvement" also must extend to community businesses and industries.
Channels and methods for involving residents often also can be effectively used to reach businesses and industries, as well as governmental, public utility, and transportation providers.

An Overview of Local Citizen Involvement and Vision Work
Local business-owners and residents living both inside and outside the City's urban growth boundary (city limits) share a strong sense of ownership of Sisters. The City and rural community—known collectively as "Sisters Country"—is home to native-born residents, long-time residents and relative newcomers. Historically, this diversity has engendered robust community interest and involvement in land-use decisions and proposed municipal investments. The most recent community visioning process has underscored the need and benefits of strong community outreach throughout Sisters Country.
The City formally adopted "Community Vision" action plans in 1999, 2007 and 2019. The 1999 and 2007 plans were relatively successful in informing important policy decisions. The most recent community-wide visioning campaign began in Winter 2017-2018. Over the course of a year, the 2019 Sisters Country Community Vision (SCCV) project received approximately 2,000

inputs from various sources to inform development of an Action Plan. This collaborative, multi-jurisdictional effort was spearheaded by The City of Sisters, Deschutes County, and the Central Oregon Intergovernmental Council (COIC) with support and assistance from several partners, including Economic Development for Central Oregon (EDCO), Oregon's Kitchen Table, local non-profits like Citizens4Community and Age Friendly Sisters Country and many area residents and business owners.

The 2019 SCCV Action Plan (available at https://sistersvision.org) provides a list of tasks to be undertaken by governmental agencies, taxing districts and private organizations to improve the connectivity, livability, prosperity and resilience of Sisters Country. A Vision Implementation Team (VIT) will help ensure execution of the Action Plan; and the plan requires broad citizen involvement over several years. To increase public participation and foster implementation of the community's Vision, the 2019 Sisters Country Community Vision and Action Plan is hereby adopted by reference into the Comprehensive Plan.

Expanding Outreach and Awareness Efforts

Development of the 2019 Vision and Action Plan involved several different channels and tools for citizen outreach. Methods included information kiosks, email blasts, small-format local meetings, community-wide forums, volunteer workshops, online surveys, and 80-plus direct interviews with local residents.

During this period surrounding the Visioning work, the City also made other notable efforts to boost citizen involvement and build more public awareness of City activities and proposed actions. Those accomplishments include modernizing the City website and expanding public access to electronic notices and public meeting agendas.

The City also subscribed to a code publisher to maintain its municipal and development codes by an efficient, independent server; and it partnered with the State to implement ACCELA—an online land use and building permit processing platform which facilitates access to key information and improves responsiveness to citizen requests.

City staff, the City Council and its appointed bodies continue to search for new opportunities to improve citizen involvement and gather public feedback. The City continually seeks to increase involvement by youth and encourages public participation and inclusion from diverse populations that do not ordinarily participate in the public discourse.

CITY OF SISTERS PUBLIC INVOLVEMENT GOAL: *The City endeavors to offer a wide variety of traditional and contemporary tools and opportunities that enable inclusion of a diverse population of residents, business owners, private organizations and partner agencies located inside and outside City limits to participate in all land use processes.*

OBJECTIVES AND POLICIES

OBJECTIVE 1.1: To maintain an effective Citizen Involvement Program and recognize an official body—a Committee for Citizen Involvement (CCI)—to be responsible for overseeing and regularly reviewing the effectiveness of the program in order to grow public awareness and participation.

POLICIES:

1.1.1 The Citizen Involvement Program will be directed by the City's Planning Commission, sitting as the Committee for Citizen Involvement. The Planning Commission shall seek multiple methods to support and cultivate additional, new and ever-expanding citizen involvement opportunities including working directly with private organizations to amplify opportunities for involvement.

1.1.2 The Planning Commission shall annually evaluate the City's public involvement tools and processes and report its findings in writing to the City Council along with recommendations as appropriate for improving the program.

1.1.3 The level of funding and human resources allocated to the Citizen Involvement Program should be an amount that will make citizen involvement and outreach an integral part of the planning process.

1.1.4 The Vision Implementation Team of the Sisters Country Community Vision shall regularly report progress of Action Plan implementation progress including documentation of its citizen outreach efforts.

OBJECTIVE 1.2: To recognize the need to use a variety of traditional and contemporary communication tools and channels in the Citizen Involvement Program—communication methods that will reach diverse audiences and drive greater awareness and participation in all phases of the planning process.

POLICIES:

1.2.1 Information about the City's planning activities and notices of upcoming meetings shall be maintained on the City's website and distributed via a variety of outlets and methods, including non-traditional methods that might be more successful at reaching underrepresented or less frequently involved members of the public (in accordance with Connected Strategy 4 of the 2019 SCCV Action Plan).

1.2.2 The Planning Commission and other City officials shall actively seek opportunities to personally present planning process or specific project information to community organizations, especially opportunities that will reach historically lesser-involved residents.

1.2.3 Citizen assistance in the preparation of each phase of the planning process shall be actively encouraged; and strategies to reach underrepresented or marginally-involved populations shall be implemented.

1.2.4 Planning Commission members and other City officials shall reach out to and encourage qualified individuals from historically lesser-involved populations to apply for vacancies on the City's advisory bodies, not only to foster vibrant and diverse perspectives within these bodies but also to encourage bridge-building to other voices in those populations.

OBJECTIVE 1.3: To present technical information that serves as the foundation of the plan in an understandable form.

POLICIES:

1.3.1 Information necessary to reach policy decisions shall be available in a simplified and understandable form at City Hall, on the City's website and via other resources as appropriate.

1.3.2 Upon written request, assistance in interpreting and using technical information shall be provided in a timely manner.

1.3.3 Recommendations resulting from the Citizen Involvement Program shall be retained and made available for public assessment.

1.3.4 Citizens who have participated in this program shall receive a response from policy-makers. The rationale used to reach land-use policy decisions shall be available in the form of a written record.

Goal 2: LAND USE PLANNING

2.1 GOAL "To establish a Land Use Planning process and policy framework as a basis for all decisions and actions related to the use of land and to assure an adequate factual base for such decisions and actions."

2.2 BACKGROUND

Statewide Planning Goal (Goal 2) is the foundation for all the City's adopted planning processes. The City's original Comprehensive Plan was adopted in 1974 and updated in 1979. The City completed Periodic Review in 1988 and was acknowledged by the Department of Land Conservation and Development (DLCD) in 1994. As per Oregon Senate Bill 543, the City is now exempt from Periodic Review as it contains a population of less than 2,500.

The Comprehensive Plan acknowledged by DLCD in 1994 is being updated in 2005 in a Post Acknowledgement Plan Amendment process. The process will result in this Plan and will contain information from the acknowledged 1994 Plan and updated background, findings, analysis, and policies. In 2007, the Comprehensive Plan was amended in specific to adopt the Sun Ranch Mixed Use Community, and a mixed use development pattern for the Three Sisters Business Park. This effort focused on adding a factual and policy basis to develop a mixed-use light industrial and business area that serves as a transition between residential and light industrial uses and updating the amount of acreage in the City used for light industrial and residential uses. Additionally, the findings supported the creation of a new mixed use land use district, the North Sisters Business Park Sub-district.

The amendments adopted in 2007 to support the Sun Ranch Mixed Community and the creation of the North Sisters Business Park Sub-district are incorporated in the Comprehensive Plan findings, policies, and maps in Chapters 9, 10, 11, and 14. The adopting ordinances and supporting materials for the Sun Ranch Mixed Use Community are attached to the Comprehensive Plan as technical appendices as Appendix E, and as Appendix F for the Three Sisters Business Park and North Sisters Business Park Sub- district.

In 2013, the Comprehensive Plan was amended to add an Airport designation for the annexation of the Sisters Eagle Airport property. On March 15, 2014, the Sisters Eagle Airport was annexed into the City of Sisters. The Comprehensive Plan land use designation was set as Airport Designation and it was zoned as Airport (A) District.

<u>Statewide Planning Process</u>

ORS Chapter 197 effectuates statewide policy with respect to the authorized governmental planning function, Comprehensive Plan preparation. These policies state that Comprehensive Plans (1) must be adopted by the governing body, (2) are expressions of public policy, i.e. policy statements, generalized maps, standards and guidelines, (3) shall be the basis for rules, regulations and ordinances which implement the plan, (4) shall be prepared to assure that all public actions are consistent and coordinated within the plan, and (5) shall be regularly reviewed and modified to meet changing needs and desires of the citizens the plan serves.

The Comprehensive Plan must be consistent with statewide planning goals approved by the Oregon Land Conservation and Development Commission (LCDC). The Development Code and other ordinances or regulation must be enacted to implement the Comprehensive Plan.

LCDC is charged with the responsibility of making sure that statewide planning goals are complied with in preparing, adopting, revising, and implementing existing and future Comprehensive Plans. LCDC is authorized to review plan provisions, ordinances and regulations if petitions by (1) City or County when land conservation and development action taken by a governmental unit is in conflict with statewide planning goals, (2) a county governing body, when a comprehensive plan or ordinance adopted by a governing body is in conflict with statewide planning goals, (3) a governing body when the action of the county governing body is considered outside the authority vested in the county body, and (4) any person or group of persons whose interests are substantially affected, a comprehensive plan provision or any ordinance alleged to be in violation of statewide planning goals.

Comprehensive Plan Review, Adoption, Amendments

After the Comprehensive Plan Citizens Advisory Committee has completed its work on the Plan update, the City Planning Commission is responsible for reviewing and making recommendations to the City Council.

Plan Amendments will be necessary as time passes and conditions change. The Plan is intended to be a guide for the future growth of the community. It should be subject to review and should be flexible, but not so flexible as to be meaningless as a statement of community policy. Changes in the plan should be made in light of considerations relating to all or part of the community rather that to who owns the property.

It is recommended that the Plan be reviewed by the Planning Commission every year to whatever degree is necessary to ensure that it is continuing to function as a guide for community growth. In addition, it should be possible for individuals to petition for changes or amendments to the Plan in a manner similar to that for zone changes. The Development Code allows changes to the Plan and describes the procedures for making such changes. Any changes should be consistent with the statewide and local goals, objectives, policies, and statements of intent of the plan or these guidelines should first be changed or amended to reflect the new policies. This should be true of both changes resulting from periodic Planning Commission review and from individual petitions.

Involvement

The City, Deschutes County, and State of Oregon have actively participated and offered input throughout the Comprehensive Plan Update process. Sufficient notice was provided to appropriate public agencies and interested parties to ensure that all interested parties were able to participate.

The City has specific procedures for notification, review, and appeal of land use applications and changes to the Comprehensive Plan and Development Code. All applications are Type I, II, III, or IV. These types have different levels of public participation associated with them, with more public involvement applying to applications with greater community impact. The process includes ministerial and administrative reviews by City staff with appeals heard by

the City's Planning Commission (Type I), quasi-judicial public hearings held by the City Planning Commission (Type II and III), legislative public hearings held before the Planning Commission with appeals to the City Council (Type IV), and other land use processes as part of the City's Development Code. Each of these processes for notification, review, and appeal are in compliance with Oregon State law.

Planning Staff

The City has a Planning Department staffed by a Planning Director, Associate Planner and Administrative Assistant. Long-range and current planning projects are completed by planning staff and consultants with oversight by the City Manager, Planning Commission, and City Council. These persons work together to create, implement, review, and modify the Plan with guidance from the City's citizens.

2.3 FINDINGS

1. Upon acknowledgement of this Comprehensive Plan by the Land Conservation and Development Commission, this Plan will meet the State's requirements regulating the factual content, policy direction, scope of local Comprehensive Plans.
2. Planning studies have been completed since the last Comprehensive Plan update in 1994 to facilitate acknowledgement. These activities will help the City accommodate anticipated growth and development and form the backbone of the City's land use and planning framework. These include completing the Parks/Recreation and Open Space, A 20-Year Master Plan (2000); the City of Sisters Wastewater Treatment Plant Plan (2000); adopting the City of Sisters Development Code (2001) and the City of Sisters Transportation System Plan (2001). The City completed a Residential Land Supply and Demand Analysis, 3-17-05 Update that determines land needs in the City for until year 2025. The City also completed a Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis in 2003 that determines needs for commercial and industrial land in the City until year 2025.

1. Since the update to the Comprehensive Plan in 2005, several additional plan studies have been adopted. In January, 2010 the City adopted an updated Transportation System Plan (TSP) that identifies specific transportation projects and programs needed to support the City's goals and policies and to serve planned growth through the TSP horizon year (2030). On June 27, 2018, the City adopted a refinement to the TSP which focused on transportation improvements to the following intersections: Highways 20 and 126, Highway 20 and Locust St and Locust St and Barclay Dr. The TSP Refinement also updated the City's Pedestrian and Bicycle plans. In January, 2011 the City adopted the Whychus Creek Restoration Management Plan in order to reduce impacts to water quality and aquatic habitat, emphasize the presence of listed species in the creek and identify the City's commitment to stormwater management and the protection of the creek. Also, in May 2016, the City adopted an update to the 2011 City of Sisters Parks Master Plan. In February 2016 and May 2017, the City updated its Wastewater and Water Capital Facilities Plans, respectively. These plans and studies are incorporated into the Comprehensive Plan by reference.

2.4 POLICIES

1. The City of Sisters shall develop land use codes and ordinances that are based on an adequate factual basis as well as applicable local, state, and federal regulations.

   Tasks –

   a. Codes and ordinances shall spell out responsibilities for administering and enforcing land use policies.

   b. The City of Sisters Development Code shall be used to facilitate the development process and to implement the land use goals outlined in this Plan.

2. The City shall review the policies in the Comprehensive Plan annually to take into account changing public policies and circumstances and to ensure that it is continuing to function as a guide for community growth.

   Tasks –

   a. The City shall ensure that other local; state and federal agencies having programs, land ownerships, or responsibilities within the planning area are included in the update process, as needed.

   b. The City Council shall convene annually to set Council Goals and to review and coordinate those Goals with the Comprehensive Plan Goals and Policies.

3. As economic and social conditions change, it may be appropriate for the City to create new zoning designations that will work to assist the City in meeting the goals and policies of the Comprehensive Plan, the requirements of state law, and state land use goals.

   Tasks -

   a. The City shall periodically review the Sisters Development Code to determine whether the districts set forth therein are adequate to address the goals, policies and objectives of the Comprehensive Plan and whether economic and social conditions warrant revision of the district codes, or creation of new districts. Any application for a code amendment shall address the policies and facts supporting the proposed code amendments.

   b. The City shall revise the Development Code to incorporate contemporary zoning requirements such as Form Based Codes, Planned Development Districts or Overlays and other contemporary development criteria that enable mixed use development themes appropriate for the City.

Goal 3: Agricultural Lands

3.1 GOAL

"To preserve and maintain agricultural lands outside the City limits by promoting efficient use of urban lands inside the City limits."

3.2 BACKGROUND

There are lands surrounding the City that are zoned for farm and forest uses. These agricultural lands contain pastures, horses, wildlife, livestock, farming equipment, and farm structures that embody the rural western character also expressed in the Sisters commercial core. These lands are important because they are the gateways to the City. However, these lands are not inside the City's Urban Growth Boundary, and are not under the City's jurisdiction. The land use designations of the lands surrounding the Sisters UGB are shown in Figure 2: County Zoning Designations in the Sisters Area.

3.3 FINDINGS

1. The rural lands surrounding the City are an important gateway to the City because they establish a rural, western atmosphere that benefits the City.
2. The rural lands surrounding the City have various rural zoning designations including Forest Use 1 and 2, Exclusive Farm Use, Sisters-Cloverdale Sub- District, and Rural Residential-10. All of these designations are established by Deschutes County, and these lands are not under the jurisdiction or control of the City. These zoning designations favor low-intensity, rural-style development that precludes intensive residential, industrial, and commercial uses.
3. As the City has expanded its boundaries (City Limits and UGB), lands once designated for agricultural and forest uses have been brought into the City Limits and rezoned for urban uses. As the City expands in the future, more rural lands may need to be included in the UGB. Properties are typically re-designated from a rural to an urban use once inside the City Limits, or maintained as urban reserves in holding zones within the Sisters UGB but outside the City Limits. When rural lands are proposed for inclusion in the Sisters Urban Growth Boundary, necessary Plan Amendments are made to the Deschutes County and City of Sisters Comprehensive Plan Maps. Once a property is brought into the City Limits the rural use designation is replaced by an urban designation through a zone change. For these reasons, there are no lands designated for agricultural use in the Sisters City Limits.
4. As part of this Plan, an expansion of the Sisters UGB is proposed and lands previously zoned for agriculture and rural uses will be included in the UGB in a holding zone UAR-10. This zoning designation allows for farm uses (among others) to continue until a time when the property owner successfully applies to the City for a zone change and the City's voters for annexation.

5. As the Sisters UGB expands and agricultural lands are added to the City UGB, the added lands may continue to be used for agricultural purposes until they are annexed and re-zoned for urban uses.
6. The efficient use of urban lands reduces the need to expand the Sisters UGB and protects rural lands adjoining the City.
7. The Conklin Guest House Bed and Breakfast; (T.15S. R.10E. Sec. 04 Tax Lot 1101), is 4.61 acres and its inclusion into the City was approved by voters. This site is currently zoned EFU (Sisters-Cloverdale EFU sub zone). This Comprehensive Plan proposes to include this property inside the Sisters UGB.

3.3 POLICY

1. As the City expands its City Limits, lands designated for agricultural, forest, or rural residential uses by Deschutes County shall be re-designated to an urban, City of Sisters zoning designation according to procedures and methodologies established by the State of Oregon, Deschutes County, and the City of Sisters.

Goal 4: FOREST LANDS

4.1 GOAL

"To conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture"

4.2 BACKGROUND

There are no lands zoned for growing and harvesting forest tree species within the City. When lands zoned for such uses are brought into the Sisters Urban Growth Boundary (UGB) from Deschutes County, the City will not allow any intensive commercial forestry use previously allowed on the property by Deschutes County. Because forest practices such as the growing and harvesting of forest trees contributes to the local and state economy, conversion of forest land to urban uses will be limited and conversions will comply with applicable State of Oregon policies.

4.3 FINDINGS

1. There are no lands zoned or intended for forest uses in the City of Sisters.
2. When forested lands are converted from rural to urban use, or from Deschutes County to City of Sisters jurisdiction, lands will not be used for the commercial growing or harvesting of timber. Large-scale forest management and harvesting practices are not appropriate within the City limits.
3. The efficient use of urban lands inside the UGB protects the economic, recreational, and ecological value of forested lands outside the UGB.

4.4 POLICIES

1. The City shall protect the economic, recreational, and ecological value of forested lands outside the UGB.

   Task –

   a. The City shall require efficient use of urban lands inside the Sister UGB**.**
2. When forest-zoned lands are included in the Sisters UGB, they shall be re-zoned to an appropriate zoning designation that prevents commercial forestry practices.

Goal 5: Open Space, Scenic and Historic Areas, Natural Resources

5.1 GOAL

"To protect natural resources and conserve scenic and historic areas and open spaces."

5.2 BACKGROUND

The City of Sisters is virtually surrounded by National Forest Service and agricultural land. The surrounding open spaces separate Sisters from neighboring communities and provide much of the unique character and identity found in the City. In addition, the rural and forest setting of the Sisters area is important to the quality of life and economic development of the community.

Goal 5 requires local government to adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. These resources promote a healthy environment and natural landscape that contributes to Oregon's and Sister's livability. The City's inventory of existing natural resources and the data is contained within this Chapter. The inventories could be updated in accordance with OAR 660-023 if the city finds that updated inventory information would be valuable. However, the City is not required to amend its inventories since cities with a population less than 10,000 are exempt from periodic review. Further direction on protecting these resources is provided in Oregon Administrative rule (OAR) 660-023.

In compliance with State Goal #5, Deschutes County has worked towards providing programs that serve to inventory, protect, and manage historic and cultural resources. In 1980, the Deschutes County Board of Commissioners established the Historical Landmarks Commission. This Commission serves as a review body and Planning Commission for issues concerning historic and cultural resources inside Deschutes County (including the City), reviews development applications for alterations to designated historic sites, and reviews the exterior treatments of buildings applying the Western Frontier Architectural Design Theme.

Also, in compliance with Goal #5, the City of Sisters and the Upper Deschutes Watershed Council (UDWC) partnered to develop the Whychus Creek Restoration and Management Plan, June 2009, in order to address concerns including the creek's natural dynamic system, development patterns that have put properties at risk and decades of "fixes" that have made the problems worse. The City has a long-term interest in the management of Whychus Creek to protect property from excessive stream bank erosion, provide recreational and aesthetic community benefits, enhance the natural resource values, and comply with the federal Endangered Species Act and other natural resource regulations. Therefore, the City is adopting the Whychus Creek Restoration and Management Plan as a Resource Element to the Comprehensive Plan.

The overall goal of the Whychus Creek Restoration and Management Plan, June 2009, is to identify opportunities for the enhancement and restoration of the developed reaches of Whychus Creek throughout the project area. The objects for the project are to develop restoration, management, and policy-level actions that protect properties while restoring the proper function of the creek system.

In May, 2016 the City adopted an update to the City of Sisters Parks Master Plan previously updated in August 2011. Sisters contains several designated open space or natural areas and the plan identifies additional priority areas for open space and natural area conservation.
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5.3 FINDINGS

1. Open space within the Urban Growth Boundary (UGB) consists of forested land, land used for low-intensity agricultural uses (irrigation, growing feed grasses, and grazing), flood plain and parks.
2. The protection and inclusion of natural areas and open space is critical to establishing and maintaining a balanced park system. The Sisters park system is comprised of two mini parks, one neighborhood park, two community parks, three special use parks, five trails, and several open space areas. Chapter 8 provides details of each park.
3. Land that is undeveloped and is expected to remain so within the UGB includes:
   a. Whychus Creek Flood Plain - 26 acres within the City limits.
   b. Open Space (OS) zoned property, 69 acres within City limits.
4. National Forest lands within the City Limits are currently zoned Public Facility (PF) and Urban Area Reserve (UAR). The approximately 77 gross acres of National Forest lands within the City limits are allocated as scenic views in the 1990 Deschutes National Forest Land and Resource Management Plan. Approximately 40 acres of this site are developed with the Sisters Ranger District complex and the Oregon Department of Transportation (ODOT) Highway Department Maintenance Station. Approximately 23 acres of U.S. National Forest lands are zoned Urban Area Reserve and are a holding zone for future urban uses.
5. Other forested lands adjacent to the Urban Growth Boundary may be suitable for urban development. At such time, the extension of urban facilities will be needed to facilitate orderly urban expansion.
6. The Sisters City Council approved the following sites on June 25, 1985, for inclusion on the Inventory of Historic Sites:
   - Leithauser Store, Commercial, 120 E. Cascade (“The Sisters Bakery”)
   - Aitken Drugstore, Commercial, 158 W. Cascade (“The Palace”)
   - Hotel Sisters, Commercial, 105 W. Cascade (“Sisters Saloon”)
   - Hardy Allen House, Commercial, 310 E. Main (“Nettie's”)
7. Within the City's UGB there are no museums or historical landmarks.

8. There is a heritage marker on the McKenzie Hwy 242 just west of downtown. Another heritage marker is located along Hwy 20 NW of town.
9. Approximately ten percent of houses in the City were constructed in the decade prior to 1950 and eight percent prior to 1940. This group of structures is most likely to contain candidates for future historical designation. In 2003, the City completed an inventory of all structures built prior to 1960 and therefore potentially eligible for historical landmark designation. The inventory is kept at City Hall, the Public Library, and Deschutes County Historic Landmarks Commission office. All owners of properties on this list have been notified.
10. In 1999, City voters approved maximum SDC fees in part for the creation and implementation of a Master Parks Plan for the City.
11. There are 26 gross acres of land in the 100-year flood plain determined by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps #41017C0040 and #41017C0105 C dated August 16, 1998. This area constitutes the total possible area for riparian resources in the UGB. Resources include the soils, plants, insects, and animals common to riparian areas in the Sisters area. The 100-year flood plain is designated Special Flood Hazard (SFHA) Overlay by the Sisters Development Code and uses requiring development of structures are not allowed in the SFHA Overlay. No cut, fill, construction, or disturbance to the landscape within the SFHA Overlay shall occur without permits from the Army Corps of Engineers, Department of State Lands and the City of Sisters. These measures protect the riparian and wetland areas inside the Sisters UGB.
12. The City does not have a riparian enhancement plan to protect Whychus Creek.
13. Whychus Creek and its associated riparian vegetation community contribute to the health, safety, and general welfare in the City of Sisters UGB area. The stability of the natural systems and the vitality of the community depend on the excellent water quality and habitat provided by Whychus Creek.
14. Natural drainage ways such as Whychus are significant natural resources that provide protection from flooding, treatment of stormwater, and help maintain stream morphology important for resident fish and macroinvertebrates.
15. Local fish and wildlife, some of which are endangered or threatened, depend on the excellent water quality and habitat function that is provided by Whychus Creek.
16. The ability for native soils to absorb and filter stormwater is essential to maintaining high quality ground and surface water resources. These functions must be preserved or their loss mitigated by future development.
17. Open space includes areas designated for protection or preservation through conservation
easements, acquisition, or dedication. The following open space lands are left primarily in their natural state and managed to provide limited passive recreation opportunities, as appropriate:

a. **Whychus Creek**
The City owns 11.21 acres of open space along Whychus Creek south of Highway 126. The open space is accessed by a pedestrian connection from Timber Creek Drive. The open space spans both sides of Whychus Creek, with only the north side currently accessible to the public.

b. **East Portal**
The 7.73 acre East Portal is located at the intersection of Highways 20 and 126. Owned by the U.S. Forest Service, the wooded, natural area includes public parking, restrooms, and a shelter with public art and interpretive information about the area and the City of Sisters.

c. **Other Open Space Areas**
Additional open space areas are located throughout Sisters, with the majority held in conservation easements or dedicated to the City as part of the subdivision process. The Pine Meadow subdivision contains 2.97 acres of public open, The Saddlestone contains 2.11 acres of open space located in the vicinity of Saddlestone Park, and the Sun Ranch subdivision contains 4.63 acres of open space located south of Sun Ranch Drive.

5.4 POLICIES

1. The City shall promote a harmonious relationship between residential, commercial, and industrial development.

   Tasks –

   a. The City shall balance quantities of land to ensure land is available for a variety of uses, classified in a manner consistent with the carrying capacity of the land.

   b. The City's Development Code shall contain provisions to include open space as a part of a Master Planned Development.

2. The City shall identify and protect historical sites within the UGB.

   Tasks –

   a. The Sisters City Council has entered into an agreement with the Deschutes County Landmarks Commission to periodically investigate and identify historic sites within the City Limits and study various means of interpreting local history.

   b. The Sisters City Council should review the policy relating to historical signs and plaques per City Council action of October 9, 1980 (ORD. 138)

   c. The City should encourage the placement of heritage markers on historical buildings for identification through the Development Code.

d. Residential renovations and/or historic building designations (National Register of Historic Places) should be promoted and encouraged by the City to help upgrade and preserve older housing stock

3. The City shall identify and protect natural, riparian, and scenic resources within the UGB.

Tasks –

a. The City shall develop a riparian protection program for Whychus Creek consistent with State Planning Goal 5.

b. The approximate 23 gross acres of Deschutes National Forest lands within the City Limits zoned UAR shall be held as urban reserve areas until such time as needed for urban expansion.

c. The Whychus Creek Flood Plain shall be managed according to Federal Emergency Management Agency (FEMA) regulations, as incorporated into the City of Sisters Development Code.

d. Open space and forested lands along the highways outside the UGB should be protected as scenic corridors with landscape management programs implemented by the County, State, and United States Forest Service.

e. All City Parks shall serve as public parks under the jurisdiction of the City of Sisters. In collaboration with SPRD, explore the feasibility of expanding district functions to include parks operations, maintenance, and development. When the City Limits expand, adequate park resources to serve the expansion shall be included.

f. Site-specific buffering, setback requirements, and best management practices (BMPs) may be required, as necessary, to enhance and protect stream-side properties as well as Whychus Creek riparian areas and channel migration zone.

g. Pursue development of a riparian protection overlay zone, a riparian setback ordinance, a stream protection overlay zone, or a habitat protection ordinance for the Whychus Creek riparian corridor (see *Whychus Creek Restoration and Management Plan* – June 2009 analysis of riparian/stream protection options in Section 4.5.1).

h. The parks system shall be managed and maintained to ensure its health, safety, and efficiency in accordance to the 2011 City of Sisters Parks Master Plan.

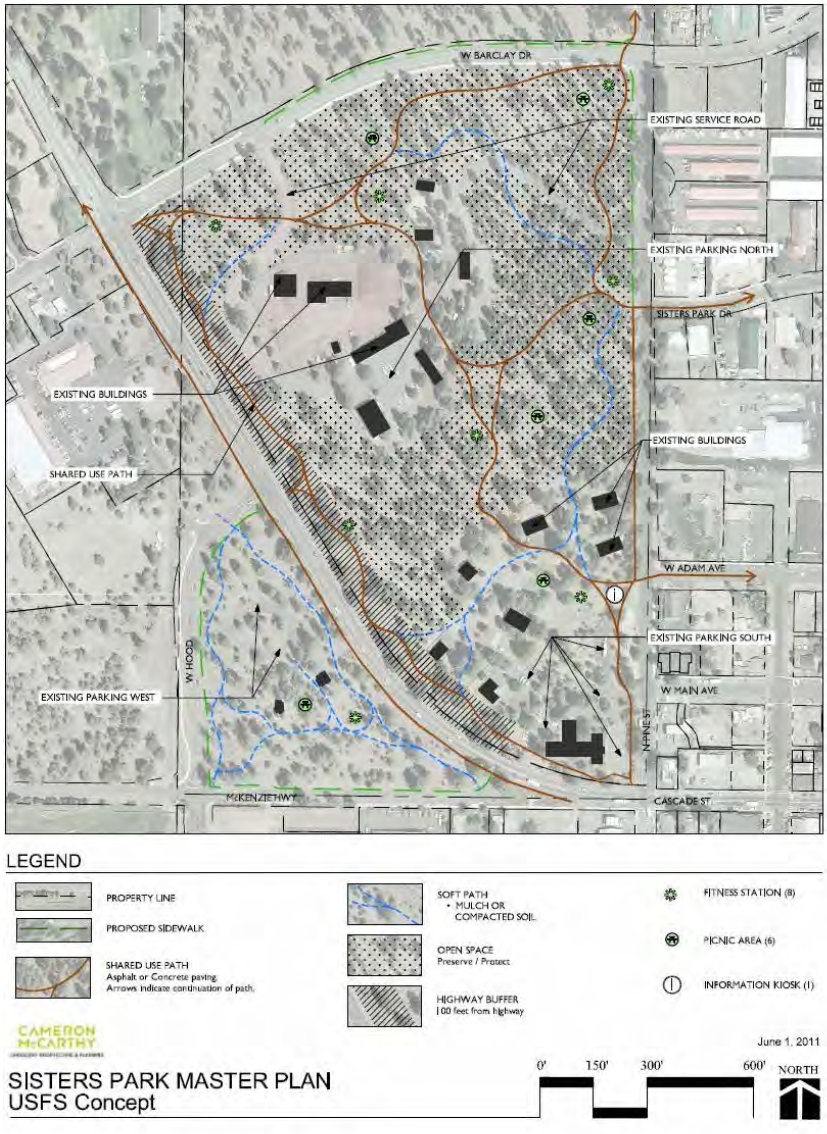
i. Improve the existing access to the Whychus Creek open space area from Timber Creek Drive.

j. Protect property identified in the 2011 City of Sisters Parks Master Plan to conserve open space along Whychus Creek in order to provide creek access, limited passive recreation opportunities and trail development.

k. Protect the East Portal Triangle property as open space and parkland.

l. The City shall implement the tasks within the adopted ESA Risk Mitigation Plan.

m. Retain 'Design Option D' by establishing a goal of acquiring and developing between 5 and 47 acres of the U.S. Forest Service property located between Pine Street and U.S. 20 for future community or regional park. This is in addition to retaining OTAK Design Options A, B and C as development goals for the same United States Forest Service property.



Park 'Design Option D' for US Forest Service Property

Goal 6: Air, Water, Land Resource Quality

6.1 GOAL

"To maintain and improve the quality of the air, water and land resources of the City."

6.2 BACKGROUND

Statewide Planning Goal #6 requires that air, water and noise be monitored and protected from pollution from existing and future land uses. Pollution cannot exceed state or federal standards, nor can it exceed the carrying capacity of local land, air and water resources. Goal #6 encompasses all aspects of pollution, including sewage, noise and process discharge and wastewater disposal. Further, the local economy and quality of life within the City depends on the balanced management and protection of our natural resources.

6.3 FINDINGS

1. Natural Resources within the Urban Growth Boundary (UGB) consist of air, water and land resources.

2. In the City of Sisters, air quality is generally good; however, air pollution sources in the Sisters area include wood stoves, auto emissions, tree pollen, irrigation ditch line burning and logging/slash burning. Reference source, "1993 Oregon Wood Heating Survey."

3. City-supplied water quality is excellent. Sources for City water are Pole Creek and two ground water wells.

4. Whychus Creek flows can be erratic and the 100-year flood plain identified by the Special Flood Hazard Area (SFHA) Overlay is necessary to prevent possible losses to life and property. The portion of Whychus Creek within the UGB has reduced flow, 1.86 cubic feet per second, during the time water is withdrawn for irrigation purposes. There are local efforts to increase creek flows.

5. Pinus Ponderosa (Ponderosa Pine) trees in forested areas add to the character and livability of the community and are abundant inside the City Limits and Urban Growth Boundary.

6. The City is concerned about air quality and unnecessary particulate emissions resulting from older (non-certified) wood-burning stoves.

7. According to DEQ/s 2004/2006 Water Quality Assessment, Whychus Creek is water quality limited for temperature. A Total Maximum Daily Load (TMDL) has been recommended for temperature in Whychus Creek which DEQ is beginning to develop.

8. Summer steelhead and bull trout have been listed as threatened species under the Endangered Species Act (ESA) by the National Marine Fisheries Service and U.S. Fish and Wildlife Service. Spawning, rearing and/or migration habitat for these species occurs in Whychus Creek within the City's boundaries.

9. Development activities permitted by the City of Sisters that result in harm to a threatened or endangered species, and fall outside the provisions for "incidental take" allowed by Section 4(d), a Section 7 consultation, or a Section 10 permit of the Endangered Species Act, could result in the City being held liable for a "take" under that Act.

10. Reduction of open space, removal of vegetation cover, and development that increases the amount of impervious surfaces in the City can contribute significantly to increased stormwater peak flows and decreased water quality.

11. Offsetting measures can reduce the negative effects of urban development on water quality and quantity. Example offsetting measures include reduction of stormwater runoff or maximization of infiltration, inclusion of landscaped buffer strips adjacent to new development, protection of the Whychus Creek floodplain and channel migration zone, preservation and improvement of streamside vegetation along Whychus Creek, and other development best management practices (BMPs).

12. There are several reasons to annex the Sisters Eagle Airport to the City that protect Goal 6 resources. One reason to annex the Airport is to provide an alternative means of transportation for visitors and residents to travel to Sisters. By providing an alternative to vehicular transportation, there may be a reduction in demand on resources and vehicle traffic thereby helping to maintain and improve air quality in Sisters. A full service community is more sustainable and does not require its citizens to make unnecessary or longer distance trips than necessary.

6.4 POLICIES

1. The City of shall ensure the protection and wise use of our natural resources.

   Tasks –

   a. The City shall ensure vegetation is and remains an integral part of Sisters.

      Subtasks –

      1. The City shall encourage the protection of mature trees throughout the community. Native landscaping should be encouraged in all new developments. Mature trees, particularly Pinus Ponderosa, (Ponderosa Pine) should be protected in new developments and mitigation measures for cut trees shall be established. A standard shall be developed and added to the City's Development Code in Chapter 3.2, Landscaping, Street Trees, Fences and Walls to reflect protection requirements.
      2. Efforts should be made to establish a tree-planting plan for the City.

3. The City should encourage water conservation through the use of native drought-tolerant plants in landscaping.

b. The City shall establish a noxious weed control program in coordination with Deschutes County.

2. The City shall review, update, or develop new ordinances, as required to ensure that our air, water and land resources are protected.

Tasks –

a. New developments shall be regulated to ensure all uses meet State Department of Environmental Quality standards for air, noise, and water quality protection.

b. That City owned and operated sewage systems shall be monitored to maintain good ground water quality.

c. Whychus Creek shall be protected through the Development Code.

d. The City shall cooperate with the restoration of in-stream water flow rights to Whychus Creek.

3. The City should review and appropriately update ordinances regarding replacing existing non-certified wood stoves and encourage non-polluting and efficient heat sources for homes.

4. All development within the City of Sisters city limits and Urban Growth Boundary (UGB) shall comply with applicable state and federal water quality requirements.

5. To protect and enhance water quality as required by state and federal requirements, the City will implement provisions in the *Central Oregon Stormwater Manual* (2007), possibly through an update of the City of Sisters Public Works Construction Standards.

Tasks –

a. Regulate site planning for new development and construction to better control drainage, and to reduce, retain and treat stormwater runoff prior to discharge to Whychus Creek.

b. Require new construction to develop an erosion control plan that is consistent with "Chapter 9 – Erosion and Sediment Control Design" in the *Central Oregon Stormwater Manual* (2007) and/or the Oregon Department of Environmental Quality's *Erosion and Sediment Control Manual* (DEQ, 2005).

c. Protect existing riparian vegetation along stream banks for bank stabilization and stream shading benefits.

d. Increase riparian area buffer widths to address Total Maximum Daily Load (TMDL) requirements and other state and federal requirements, and to protect private property.

e. Regulate the location of permitted uses that generate, store or use hazardous wastes or materials, and that may have higher than ordinary impacts on water quality.

f. Reduce and treat stormwater runoff generated by City streets that may discharge to Whychus Creek.

g. Increase public awareness of techniques and practices private individuals can employ to help correct water quality and quantity problems.

h. Increase public awareness of polluting substances that affect surface and groundwater resources, minimizing their use, and encouraging the appropriate disposal of these substances.

Goal 7: Natural Disasters and Hazards

7.1 GOAL

"To protect people and property from natural hazards."

7.2 BACKGROUND

Natural disasters and hazards that threaten the City include forest fires, floods in Whychus Creek, earthquakes, and volcanic activities. Other hazards include the spread of diseases from insects and animals and threats from other hazards shared by all cities.

Floods

The U.S. Army Corps of Engineers first completed a flood hazard inventory in August 1978 for the Squaw Creek channel that runs through the southern portion of the urban area. As a point of clarification, the Army Corps of Engineers studies and subsequent flood mapping studies refer to the name Squaw Creek. The name was changed to Whychus Creek in 2006. When City findings, policies, or tasks are written in this plan the term Whychus Creek will be used, but the flood studies conducted by the Army Corps of Engineers and other federal agencies reference Squaw Creek. Approximately 26 acres of land are within the 100-year flood plain along both sides of the Whychus Creek channel. The 500-year flood plain is along both sides of the Whychus Creek channel and includes a wider area than the 100-year flood plain.

Numerous flood hazard studies have been conducted for Whychus Creek, beginning in 1978 and followed by studies in 1986, 1988, 1998 and most recently in 2007. In August of 2007 the City adopted an updated Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) as required by the Department of Homeland Security's Federal Emergency Management Agency (FEMA). These documents were adopted so the City could remain in the National Flood Insurance Program (NFIP), allowing residents of the city to obtain flood insurance.

In addition to flood risks associated with meteorological sources, a unique flood risk threatens the City of Sisters. This risk is summarized as follows based on a 1987 study conducted by the U.S. Geological Survey, Laenen, Scott, Costa and Orzol, called "*Hydrologic Hazards Along Squaw Creek From A Hypothetical Failure Of The Glacial Moraine Impounding Carver Lake Near Sisters, Oregon*" Open-File Report 87-41, Portland, Oregon. The source of this risk is the potential failure of a glacial moraine which impounds Carver Lake in the Three Sisters Wilderness upstream of the City. The Carver Lake glacial moraine is a naturally occurring yet unstable dam made of cobbles and silt, having steep slopes, and no vegetation. Carver Lake is large and deep with a depth of approximately 101 feet containing approximately 740 acre-ft. of water. The source of the hazard is a catastrophic breach of the glacial moraine due to seismic activity, ice or rock fall into the lake, or other events causing a rapid failure of the moraine dam and release of water down the Whychus Creek drainage into the City. The flood levels in the City are estimated to be above 500-year flood levels, and would inundate areas as far as three city blocks from the creek.

A summary of the risk is on page 1 of the abstract of U.S.G.S. study is provided below:

> "A hydrologic hazard exists that could create a large-magnitude, but short-duration, flood in the Squaw Creek drainage and inundate areas in and around the community of Sisters, Oregon. Carver Lake, located at elevation 7,800 feet above sea level on the east slope of South Sister mountain, Oregon, could catastrophically empty. The probability of this lake-breakout flood is estimated to be approximately 1 to 5 percent for any given year. At the U.S. Geological Survey gage (14075000) on Squaw Creek between Carver Lake and Sisters, the magnitude of the breakout flood would be 10 times that of a 1-percent probability meteorological flood. In Sisters, the magnitude of the breakout flood would be about five times that of a 1-percent probability meteorological flood. Meteorological flood occurrences from precipitation and snowmelt are a separate and distinct statistical population from lake-breakout flood occurrences and are only used for comparison purposes."

According to Larry Chitwood, a local U.S. Forest Service Geologist, he believes there is a low likelihood the catastrophic event documented in the U.S.G.S. hydrologic hazards study occur with enough size and force to threaten the City. There is a good chance that this type of event will happen, but the size of the event is likely to be small as the flood level predictions in the U.S.G.S. study are based on a worst-case scenario.

The hydrological characteristics of Whychus Creek lead to a stream channel that is active and dynamic. In the City, this dynamic nature is often observed as steam bank erosion. For example, City staff receives complaints about the threats to structures from stream bank erosion. In the urban reach of Whychus Creek, the stream is actively transporting material from the mountains downstream versus depositing fine sediments. The stream changes direction as a result of many factors including large storm events, fallen trees, human influences, fires removing streamside vegetation, boulders falling into the stream channel, and combinations of these factors. Stream bank erosion is a naturally occurring process common to this type of stream. Stream bank erosion is caused by factors such as loose and easily eroded soils of the Sisters area, high velocity flows during storm events, ice flows, and a lack of stream bank vegetation. Human activities such as adding rip rap or boulders also may alter the course and impacts of the stream. Noticeable results in the City are undercut stream banks and surface subsidence, a loss of property, and threat to structures. Stream bank erosion will continue based on the characteristics of Whychus Creek.

Seismic Activity

Recent earthquakes in Oregon remind us of our proximity to fault lines and volcanic mountains. The recent "bulge" on South Sister also reminds that the Three Sisters volcanoes are still active. According to Larry Chitwood, U.S. Forest Service Geologist, the Three Sisters are in a region where some form of volcanic activity takes place approximately every 1,000 years. For example, Collier Cone and Belknap Crater were

formed approximately 1,500 years ago. The "bulge" on South Sister may be a precursor to a future event that will likely be similar to past volcanic events, that is fairly benign activities such as the formation of a cinder cone, small lava flow, or an ash and pumice eruption. The hazard from these events should be considered low, and would most likely be preceded by earthquakes or other indicators of volcanic activity.

A sizable volcanic event occurring in the Three Sisters is not expected in the scope of this Plan, but if one occurs, it will pose a direct threat to Sisters. The reason is that Squaw Creek and its tributaries drain the east flanks of North, Middle and South Sister and the north flanks of Broken Top. The headwater streams join above a narrow valley that opens in to a broad, gently sloping debris fan occupied, in part, by the City of Sisters.

> "The broad fan of Squaw Creek around Sisters is of particular concern with regard to potential lahar inundation (lahars are rapidly flowing mixtures of hot mud, ash and water) because Squaw Creek drains a large sector of the major volcanoes and the distance to Sisters is relatively short (about 30 kilometers or 20 miles). Typical flow velocities for lahars through terrain like that along Squaw Creek yield travel times to Sisters of as little as 30 minutes to one hour, depending on lahar size and point of origin." "*Volcano Hazards in the Three Sisters Region, Oregon*. Open File Report, 99-437. US Department of the Interior, US Geological Survey.

Although not anticipated to happen within the life of this Comprehensive Plan, these events are so catastrophic in nature that their discussion is warranted. Also, the best way to prevent loss of life with regard to these and other hazards is to establish a public emergency notification system. With such a system, residents could be evacuated safely, regardless of the source of the hazard or threat.

In addition to the flood hazards, the City is also susceptible to forest fires and wind hazards. As stated in the 1979 City of Sisters Comprehensive Plan, "Fire struck the city a disastrous blow in 1923, destroying an entire block of businesses and houses between Elm and Fir, south of Cascade. Again in 1924, fire consumed buildings on both sides of Cascade from Fir to Spruce." The Black Butte Ranch fire of 2002 and B and B Complex fires are other recent reminders that fire is a threat to forested urban areas such as the City.

The Sisters Eagle Airport provides a location and resource for firefighting operations in the region. In addition to firefighting, the Airport provides a site that will aid in protecting people and property from other natural disasters and hazards that threaten the city including: floods in Whychus Creek, earthquakes, and volcanic activities and the spread of diseases from insects. The Sisters Eagle Airport could be used for fire suppression, evacuation, or for aerial spraying to prevent the spread of diseases from insects.

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7.3 FINDINGS

1. Whychus Creek (formerly Squaw Creek) travels through the City from south to north for approximately 0.8 miles. The Department of Homeland Security's Federal Emergency Management Agency (FEMA) has issued Flood Insurance Rate Maps (FIRMS) based on a Flood Insurance Study (FIS) identifying areas subject to 100- year, 500-year, and possible flooding due to Carver Lake Moraine Dam Failure.
2. Whychus Creek (called Squaw Creek by FEMA), poses a flood risk to the City of Sisters as documented most recently by the Flood Insurance Study and Flood Insurance Rate Maps to be adopted by the Federal Emergency and Management Agency on September 28, 2007, and the study titled "*Hydrologic Hazards Along Squaw Creek From A Hypothetical Failure Of The Glacial Moraine Impounding Carver Lake Near Sisters, Oregon*" Open-File Report 87-41, Portland, Oregon 1987, U.S. Geological Survey, by Laenen, Scott, Costa and Orzol.
3. Risks to life and property associated with meteorological flood occurrences from precipitation and snowmelt, the potential failure of the Carver Lake moraine dam, a meandering and active stream channel, and unstable soils require the City to take measures for flood plain management exceeding the minimum standards established by the National Flood Insurance Program. The NFIP is an insurance program, not a comprehensive flood plain management program.
4. The City shall continue to participate in the National Flood Insurance Program so residents of the City may benefit from having flood insurance in the event of a flood.
5. Portions of the City are contiguous with National Forest lands and are at risk from forest fires.
6. Sisters/Camp Sherman Rural Fire Protection District provides fire-protection and emergency services to the City.
7. A branch office of the Deschutes County Sheriff's Office provides law enforcement services to the City.
8. Emergency evacuation service is provided to the area by Airlife located in Bend. There is currently a heliport pad available at the Sisters Eagle Air Airport.
9. Mutual aid arrangements are currently in force with all fire fighting agencies in Central Oregon.
10. There is no emergency power source available to City wells in the event of power loss. The City has two reservoirs that gravity feed the system with capacity for 10 days normal usage.
11. The City water lines are adequate for domestic water and fire protection with an upgrade completed in November 1994. All services are metered, encouraging conservation.
12. Of volcanic hazards, lahars pose the biggest sudden threat to people living in valleys that drain the Three Sisters, such as the City of Sisters. The best strategy for avoiding a lahar is to move to the highest possible ground. A safe height above river channels depends on many factors including size of the lahar, distance from the volcano, and

shape of the valley. For areas beyond the proximal hazard zone, all but the largest lahars will probably rise less than 30 meters (100 feet) above river level.

13. Increased amounts of stream sedimentation lead to a loss of instream storage of flood water, leading to widening of stream banks and more flooding.
14. Stormwater runoff mitigation techniques can significantly reduce Whychus Creek flooding frequency and peak flows associated with urban development in Sisters.
15. To maintain species habitat and to protect stream-side properties in Sisters, the natural hydrology of Whychus Creek should be maintained so that annual flow patterns remain the same after development as before development.
16. The natural meandering stream channel of Whychus Creek and its associated riparian areas provide essential flood storage capacity.
17. Riparian areas associated with Whychus Creek contain natural assets such as significant vegetation and wildlife habitat, and are valuable for water quality, open space and recreation purposes.

7.4 POLICIES

1. The City shall regulate development in the 100-year floodplain and flood prone areas to protect life and property; to allow for transport of flood waters; to protect and enhance water quality; and to protect the economic, environmental, and open space qualities of the land and Whychus Creek.

   Tasks –

   a. The City's Development Codes shall meet the minimum standards of the National Flood Insurance Program and incorporate the most recently Federal Emergency Management Agency -adopted Flood Insurance Rate Maps and Flood Insurance Rate Study.

   b. A Special Flood Hazard Area Overlay (SFHA) shall be established to include areas designated as "Flood Hazard Areas" by the most recent Flood Insurance Study for the incorporated area of the City of Sisters.

   c. No new structures shall be allowed in the 100-year flood plain identified by the most recently adopted Federal Emergency Management Agency Flood Insurance Study, FIRM map, amendments to the FIRM map, or more accurate site specific information. The Development Code shall establish standards requiring accurate documentation of the location of the 100-year flood plain prior to development and clearing. Absent more accurate information, the most recently adopted Flood Insurance Rate Maps shall be used to determine the location of the 100-year flood plain. The Development Code shall also provide for some economic use for existing parcels nearly entirely within the 100-year flood plain in a manner otherwise consistent with the Plan's policies.

   d. The Development Code shall include development standards including but not limited to increased setbacks from Whychus Creek to reduce risks of erosion to structures.

e. Fill in the 100-year flood plain reduces the carrying capacity of the flood plain and shall be limited whenever possible. The Development Code shall include standards for filling in the 100-year flood plain.

f. All uses which could have any effect upon hazards set forth in this document shall be conditional uses and subject to rigorous review to ensure that use of the flood plain is only a last resort to allow necessary facilities and some beneficial use of the pre-existing lots of record.

g. No new parcels shall be created which would allow the construction of new dwelling units in the flood plain.

2. An emergency response program shall be developed to respond to natural or man caused disasters.

   Tasks -

   a. The City shall work with appropriate agencies, including the Sisters– Camp Sherman Rural Fire Protection District to develop emergency management plans.

   b. The City shall develop a strategy to educate the public about volcanic hazards, and develop an evacuation plan that includes responding to volcanic hazards.

   c. The City shall explore the provision of a redundant emergency power source for the operation of City wells in the event a power outage occurs.

3. The city shall promote development of an ordinance requiring fire resistant building materials and landscaping for all new construction.

4. The City should cooperate with any countywide efforts to reduce the spread of West Nile Virus by mosquitoes.

5. During preliminary subdivision review, the planning staff, in coordination with the Sisters – Camp Sherman Rural Fire Protection District, shall indicate whether the developers' plan has adequately provided for fire protection.

6. The City shall require certain land-disturbing activities associated with site clearing, grading, construction and other improvement to employ erosion control practices to prevent increased stream sedimentation.

7. To the extent possible, the Whychus Creek floodplain shall be kept in a natural state to reduce flooding, protect and enhance water quality, and to protect and enhance native plant species.

8. Standards for new development shall require stormwater runoff to be infiltrated or detained onsite to the maximum extent practicable, or stored and treated in a regional facility to preserve the natural hydrograph and water quality of Whychus Creek.

Chapter 8 Recreation Needs

8.1 GOALS

"To satisfy the recreational needs of the citizens of the City and visitors, and, where appropriate, to provide for the siting of necessary recreational facilities."

"Maintain adequate park facilities providing a variety of recreational and cultural opportunities for residents and visitors of Sisters."

8.2 BACKGROUND

The continued availability of parks and recreational facilities within and in the surrounding areas of the City of Sisters enhances the quality of life for residents. Within a 20 mile radius, the Deschutes National Forest provides numerous recreational options ranging from recreational sites and points of interest, to major tourist attractions such as Mt. Bachelor and HooDoo winter ski areas and Suttle Lake operated in conjunction with private enterprises.

8.3 FINDINGS

In October 2000, the City completed and adopted a Parks Master Plan for a 20-year planning period. The "Parks Recreation and Open Space: A 20-Year Master Plan, City of Sisters, Oregon, October 2000" (Parks Master Plan) identified existing parks facilities within the City; completed a community survey to determine public opinion on the City's recreational needs; developed a list of current and projected needs based on the requirements of the National Recreation and Parks Association (NRPA) and developed a formula for the City to assess and levy System Development Charges (SDC) for future development within the City.

In 2011, the City adopted the City of Sisters Parks Master Plan to guide development of the municipal parks system for the period between 2011 and 2030. This Plan is an update to the 2000 Sisters Oregon Parks Master Plan. In May 2016, the City adopted an update to the 2011 Plan which included updates to the Parks Capital Facilities Master Plan and a revised fee for Parks System Development Charges (SDC). The Park SDCs were raised from $613 per residential unit to $1,193 per residential unit and for each new lodging unit. The May 2016 update to the City Parks Master Plan is hereby incorporated in the Comprehensive Plan by reference. A parks master plan is a long-term vision and action plan for a community's parks system. The following is the vision for the Sisters' parks system:

> ***The City of Sisters will create a distinctive and well-connected parks system with a diversity of social, cultural, educational, and recreational opportunities that meet the needs of our community and visitors and promote the arts and healthy lifestyles.***

The updated 2016 City of Sisters Parks Master Plan identifies strategies and recommendations for operation and maintenance of parks, land acquisition, development, and funding. More specifically the Plan:

- Provides an inventory of existing parks and an analysis of park classifications and standards, including a recommended level or service target;
- Identifies current and future park needs using input from the community as well as technical data;
- Establishes a vision, goals, and objectives for the park system;
- Includes a capital improvement plan (CIP) that enables the City to achieve its goals;
- Creates a strategy for short and long-term land acquisition; and
- Identifies potential funding techniques and sources to implement the CIP.

As identified in the updated 2016 City of Sisters Parks Master Plan, different types of parks serve different functions and needs in the community. The existing parks system provides a range of park types and recreation opportunities. The City of Sisters currently owns and maintains two mini parks, one neighborhood park, two community parks, four special purpose parks, four trails, and several open space areas. Following is a summary of the park classifications. Details of existing park facility descriptions can be found in Chapter 3 and Appendix A of the updated City Parks Master Plan.

Mini Parks	
Buck Run Park	0.02
Harold & Dorothy Barclay Park	0.44
Neighborhood Parks	
Cliff Clemens Park	2.28
Community Parks	
Village Green	1.32
Creekside Park	2.65
Special Use Parks	
Three Sisters Overnight Park	6.72
Veterans Memorial Park	0.25
Wild Stallion Park	0.02
TOTAL DEVELOPED PARKLAND	**13.70**
Undeveloped Parkland	
Three Sisters Park Expansion	4.68
Undeveloped City ROW	1.89
Fir Street Site	0.31
TOTAL UNDEVELOPED PARKLAND	**6.88**

There are also significant recreational resources in the greater Sisters Country that the City either partners with other area Agencies to maintain or those facilities are maintained by private home owners associations but are available for public use.

Open Space	
Whychus Creek Open Space	11.21
East Portal Open Space	7.73
Other Parcels	9.71
TOTAL OPEN SPACE	**28.65**

Trails	
Whychus Creek Trail	1.00
Tollgate / High School Trail	0.76
Peterson Ridge/Sisters Mountain Bike Trail	25.00
Five Pine / Peterson Ridge Trail Connector	0.50
Sisters Tie Trail	6.50
TOTAL TRAILS	**33.76**

Source: City of Sisters, Cameron McCarthy

The updated 2016 City of Sisters Parks Master Plan continues to reference the Sisters Parks Public Involvement Report and provides an updated City Parks Capital Improvements Plan (CIP). This updated Parks CIP provided support in making the decision to revise the Park SDC fees as previously noted. The Public Involvement Report includes an analysis and assessment of community needs based on local demographic, economic and recreation trends, as well as community input and public participation. The goal for the public participation process was to gather the views of a diversity of community members concerning the parks system. Involvement reached a wide array of community members and stakeholders through seven different methods: an online survey, Hispanic survey, user intercept survey, community workshops, senior focus group, youth focus group, and stakeholder interviews. The CIP identifies specific improvements for each of Sisters' eight parks with estimated project costs and target completion dates.

In January, 2010, the City adopted an updated Transportation System Plan (TSP) which identifies recreational opportunities in the form of pedestrian and bicycle facility improvements including sidewalks, shared used paths, bike lanes and bicycle boulevards/shared streets. Additional partners in the development of park and recreation facilities within the City are the Sisters School District and the Sisters Park and Recreation District (SPRD).

8.4 POLICIES

The following eight policies shape the planning framework for Sisters to address population growth, demographic changes, recreation trends, and the overall desires of Sisters residents. These serve as the link between the park and recreation needs of the community and the recommendations identified in the updated 2016 City of Sisters Parks Master Plan for parks system improvements. Recommendations identified in the updated 2016 City of Sisters Parks Master Plan are the result of a thorough analysis of Sisters' current and future parks, trails, and recreation needs established through the broad community input process. The recommendations establish a strategy for improving park service for underserved areas, maintaining and enhancing existing parks, promoting connectivity and conservation, and improving level of service.

1. Create a unique park system with a strong identity.

   Tasks –
   a. Incorporate elements in the development of facilities that create a unique brand for the Sisters' parks system.
   b. Develop Sisters' parks as destination points for locals and visitors.
   c. Develop a wayfinding system to help users locate facilities.

2. Strengthen relationships between the City of Sisters and its partners.

   Tasks -
   a. Develop partnerships with community and private entities (e.g., community alliances, organizations, groups) that have an interest in providing recreation opportunities.
   b. Define roles of partners and partnerships to enhance and compliment City recreation services and the parks system.
   c. Develop strategies to address system and service gaps.

3. Foster a safe and accessible park and recreation environment.

   Tasks -
   a. Update existing facilities to improve accessibility and, as appropriate, ensure new facilities are accessible.
   b. Upgrade existing equipment to ensure safety and utility and ensure new facilities are of the highest safety and utility.
   c. Ensure that parks are appropriately lit for their location and use while in accordance with the City's Dark Sky Ordinance.
   d. Coordinate with public safety agencies to discourage illegal activity in parks.

4. Establish stable and diverse mechanisms for funding existing and future recreation and parks facilities.

   Tasks –
   a. Develop and expand funding sources for operations, parks maintenance, and parkland acquisition.

b. Develop contingency plans for potential future funding shortfalls utilizing existing plans, policies, and procedures.
c. Review new and current funding mechanisms periodically to assess their effectiveness in meeting the goals and objectives of the Parks Master Plan.
d. Research and prepare grant proposals to fund projects.

5. Manage and maintain the parks system to ensure its health, safety, and efficiency.

Tasks -

a. Develop strategies to foster community ownership of the parks system.
b. Foster community partnerships that increase and enhance volunteerism.
c. Involve youth in stewardship of the parks system.
d. Provide educational opportunities regarding appropriate care for Sisters' parks, trails, open space, and natural areas.
e. Continue providing high quality maintenance services.

6. Promote social and physical connections to facilities and an equitable distribution of facilities within the community.

Tasks -

a. Acquire land that can provide park space in underserved areas.
b. Construct pedestrian and bicycle paths and trails to promote connectivity between parks.
c. Improve access to Whychus Creek.
d. Provide spaces and opportunities for interactions among all populations.

7. Develop and maintain attractive and enjoyable spaces for a diversity of activities and events as identified in the updated 2016 City of Sisters Parks Master Plan.

Tasks -

a. Use identified community needs and current recreation trends to plan new park development and future park enhancement projects.
b. Provide amenities and/or facilities to enhance recreation, events, and activities.
c. Enhance landscaping and natural resources within parks to create attractive comfortable spaces.

8. Establish a coordinated process for parks planning that involves residents, community groups, visitors, stakeholders, Parks Advisory Committeee, and City staff.

Tasks -

a. Create a strategy for implementing and updating the 2016 City of Sisters Parks Master Plan to include robust public participation.
b. Update the Parks Master Plan every five to ten years to ensure that it continues to reflect the needs and desires of the community.
c. Continue to engage stakeholder groups, community members, visitors and other local partners in the parks planning process.

d. Establish a permanent Parks Advisory Committee to advise the City Council on behalf of the parks system.

9. The City shall actively support and coordinate with the Sisters Community Trails Committee to establish a network of multi-use trails within and beyond the City limits.
10. The City shall maintain a program of System Development Charges (SDC) to develop park facilities.
11. The City should explore programs to obtain land in the flood plain for the public's recreational use.

Goal 9: Economic Development

9.1 GOAL

"To provide adequate opportunities for a variety of economic activities vital to the health, welfare, and prosperity of the City's citizens."

9.2 BACKGROUND

Historic Employment and Recent Trends

Sisters originated as an overnight stop for travelers of early-day wagon roads and for sheepherders in the area. From the 1920's through the early 1950's, the town was also a center for local logging and sawmills.

After the sawmills closed, the town's population decreased until recreational developers came to the area in the late 1960's and started subdividing lands for recreational homes. The area was discovered by a new generation of Oregonians and visitors, and tourism became the new economic base. Tourism has continued to be the main attraction for Sisters, but in recent years there have also been light industrial businesses that have located in town. The City of Sisters is becoming a service center for the growing year- round population.

Local Businesses and Employment by Sector

The City of Sisters issues business licenses for all businesses located in Sisters and firms or individuals doing business in the City. These licenses include brief descriptions of the types of business activities taking place. Table 9.1 below, describes recent business licenses by type and number, not including transient business licenses.

Table 9.1: Business Licenses Issued in City of Sisters, 1999-2003

Years	Number of Business Licenses Issued	Most Frequent General Business Types
1999-2000	290	Retail, Real Estate and Construction Related Businesses, Restaurant
2000-2001	299	
2001-2002	364	
2002-2003	360	

Source: City of Sisters Business Licenses, 1999-2003

As shown, the number of business licenses issued in the City since 1999 has been steadily growing. Year 2002-2003 is the current year and additional licenses are expected to be issued, slightly exceeding 364 business licenses. The column titled "Most Frequent General Business Types" refers to the type of employers, not employees, and is intended to demonstrate the most common types of businesses in Sisters. The spike in the Number of Business Licenses Issued between year 2000-2001 and 2001-2002 is likely due to a surge of construction activities during that time associated with completion of the sewer and adoption of a new Development Code.

Another indicator of local employment is the number of employees in Sisters and the top employers. The *Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis*, February 2, 2003 (see Appendix B) describes existing and anticipated employment by sector in Sisters. This report is incorporated herein by reference and is adopted with the adoption of this Plan. Table 9.2 describes the differences between employment by sector in Deschutes County and Sisters. The data for the column "2002 Estimated Employment by Sector in Sisters" was obtained by analyzing business licenses and interviews with local businesses. Business licenses describe the type of business and number of employees. This information was then used to determine the businesses sector, resulting in the number of employees by sector for business located in Sisters for the year 2002.

Table 9.2: Sector Comparisons between Deschutes County and the City of Sisters

Industry	Deschutes County (1)	City of Sisters (2)	2002 Estimated Employment by Sector in Sisters (3)
Total Non-Farm Payroll Employment	**100%**	**100%**	**1,633**
Goods Producing (4)	19%	19%	307
Services Producing (4)	81%	81%	1,326
Manufacturing, Total	**11%**	**12%**	**198**
Non-Manufacturing Total	**89%**	**88%**	**1,435**
Construction & Mining	8%	7%	109
Transportation, Communications, Utilities	4%	1%	15
Wholesale and Retail Trade	27%	40%	656
Finance Insurance Real Estate	6%	7%	119
Services	30%	18%	298
Government	14%	15%	238
(subset) Federal	2%	4%	65
(subset) State	1%	1%	22
(subset) Local	11%	9%	151

(1) Source: Oregon Employment Department, Workforce Analysis, November 2002
(2) Source: Based on 2002 Estimated Employment by Sector in Sisters
(3) Source: City of Sisters analysis of number of employees by business type from business licenses in 2002-2003
(4) Goods producing and durable and non-durable goods include all manufacturing sector plus construction and mining portion of the non-manufacturing sector. Service producing represents all non-manufacturing minus construction and mining sectors.

Table 9.2 illustrates the similarities between the sector distribution in Deschutes County and the City of Sisters. The most notable differences between Sisters and Deschutes County is that Sisters has fewer businesses in the Service, Construction and Mining, and Transportation, Communications, Utilities sectors, and more dependence upon the

Wholesale and Retail Trade sector. Wholesale and Retail Trade is the sector that employs the most people in Sisters.

Table 9.3 shows the results of a review of 2002 City of Sisters' business licenses and interviews with local businesses.

Table 9.3: Five Largest Employers in Sisters in 2002-2003 (by number of employees)

Employer	Number of Employees
Sisters School District	140
Multnomah Publishers, Inc.	131
U.S. Forest Service	65
Gallery Restaurant	45
Ray's Food Place	45

Source: City of Sisters Business Licenses, 2003-2003

Anticipated Population and Employment Growth

Since the early 1990's Central Oregon and the areas around Sisters have experienced rapid population growth. The majority of growth in the Sisters planning area has occurred in rural residential subdivisions beyond the city limits and the Urban Growth Boundary (UGB). Historically, the lack of a municipal sewer system, small lot sizes unable to support on-site sewage systems and lack of mountain view properties discouraged development within the City.

As described in the *Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis* (LNA), February 2, 2003 (see Appendix B), the rate of population growth in the City of Sisters is expected to outpace Bend, Redmond, and the rural areas in Deschutes County. The primary factor driving this growth is the completion of a municipal sewer system (as described in Goal 11). Development of this sewerage system will continue to provide opportunities for population and economic growth in the City.
As the City's population increases, economic growth is also expected.

The LNA used a gravity model to predict economic growth. Such models assume that a city will attract employment relative to a given region based on its relative size. The analysis predicted the City will grow by an additional 1,083 non-farm jobs over the period from 2000 to 2025 in addition to the current 1,636 employees in 2000. This indicates that the City will create and provide for nearly double the number of current jobs in the City.

Assuming the same distribution of jobs between sectors in 2002, of 1,083 new jobs, 880 jobs are expected to be in Service Producing and 203 in Goods Producing sectors.
Within the Service Producing category, 40% of the jobs or approximately 435 new jobs are anticipated to be in the Wholesale and Retail Trade sector. After Wholesale and Retail Trade, the Services, Government, and Construction and Mining Sectors are expected to be significant contributors to new job growth.

If the City is successful in diversifying its economic base as discussed later in the Findings portion of this chapter, then the distribution of jobs within non-manufacturing will be more evenly distributed than in 2002. In particular, the percentage of employees in the Wholesale and Retail Trade sector may decrease, and increases are sought in the Construction and Mining, Finance Insurance Real Estate, and Services sectors. The City is also undertaking efforts to maintain and increase employment in the sectors identified in the "*Sisters Strategic Action Plan for Economic Development*", in particular, light industrial employment opportunities.

In September 2010, the Leland Consulting Group prepared a memorandum identifying potential development that could occur on the 67+ (net) acre Forest Service property – this occurred in conjunction with the development of three 'Design Options', referred to as Design Options A, B and C (discussed at length in Chapter 14). Note: also added is "Design Option D", the Park option, which would use between 5 and 47 acres of the same Forest Service land as a public park.

The Leland memorandum summarized key market and demographic information to produce a Development Option Summary, which highlighted the feasibility of developing the land with varieties of mixed-use development, such as retail / commercial (12 to 15 acres), light industrial (18 to 22 acres), and some housing (10 to 14 acres).

Lands for New Employment

Through the Development Code, the City established zoning or land use districts that will accommodate a range of businesses. As discussed in detail below, the pertinent zoning districts for economic development in Sisters include the Commercial and Highway Commercial Sub-Districts, Airport District and Light Industrial District. Additional zoning districts may be adopted during the planning period to fulfill the goals and policies of the Comprehensive Plan.

Commercial Lands

The Commercial District (C District) is located along Hood, Cascade, and Main Avenues. In addition, Adams Avenue, and land to the immediate west of North Locust Street and south of Barclay Drive is zoned Commercial. The Commercial District establishes locations for the continuation and development of a center for commerce and provides for the shopping, consumer and service requirements for area residents and visitors. Retail and commercial service areas for Sisters residents and visitors are primarily concentrated within Sisters along Cascade/Highway 20, Main and Hood Streets. The community believes that enhancing the pedestrian environment in this District will establish long-term economic vitality for the downtown core. To achieve this end, public works, parks, trails, urban renewal, and roadway projects have all been planned for this area to enhance the pedestrian environment.

The Highway-Commercial Districts (HC Districts) are located at the entrances to Sisters along U.S. Highway 20 and U.S. Highway 20/ Oregon Highway 126. This District is intended to provide areas for commercial uses and services primarily oriented to automobile traffic.

An 1880's Western Architectural Design Theme applies to the Downtown Commercial District (DC District) and Highway Commercial District (HC District). This design theme creates an appealing and distinctive appearance that separates the commercial areas of Sisters from all other commercial areas in Deschutes County.

Land developed as the Conklin Guest House on Camp Polk Road has been annexed into the City Limits. The guest house property is developed as a bed and breakfast Inn. It is used as a site for local events and provides lodging for visitors to Sisters. The Inn is a landmark building at the north entrance to the City on Camp Polk Road. The Inn is located close to the Sisters Eagle Airport and adjacent to the City's light industrial zoning district. In this location, the Inn can provide lodging, restaurant and event services to serve businesses that locate in the light industrial zone, while continuing to serve tourists.

The Conklin Guest House property was included in the City's UGB for tourist commercial uses with the adoption of the 2005 Sisters Urban Area Comprehensive Plan. Initially the property was zoned Urban Area Reserve. Later in 2005, the property was annexed to the City and a commercial zoning district with special use limitations was applied to the property. In 2007, the City adopted the Sun Ranch Tourist Commercial zoning district for the property. It also added 0.8 acres of land that include the Conklin Guest House barn to the district.

The 1880's Western Architectural Design Theme provisions of the Comprehensive Plan and City's zoning ordinance shall not be applied to the Sun Ranch Tourist Commercial zoning district. The design of the Sun Ranch Tourist Commercial zoning district shall be allowed greater flexibility to match the design of the historic Conklin Guest House and existing barn to provide a first-quality lodging experience for guests. As the Sun Ranch Tourist Commercial district is located outside the downtown and highway areas of the community, this variation will not detract from the unique downtown experience offered by the City of Sisters. A 1900s Rural Farm/Ranch House design theme is required for buildings within the Sun Ranch Tourist Commercial district. This theme is consistent with the history of the property and is compatible with and provides a good transition from the 1880s Western Design Theme.

Airport Lands

At 3168', Sisters Eagle Airport is located one mile north of downtown Sisters and is located next to the North Sisters Business Park. It is categorized by the Oregon Department of Aviation as Category IV (local general aviation airport). Although Sisters Eagle Airport is privately owned, the airport is open to public use. It is also used for wildfire aircraft support. The privately owned airfield has a heliport and a runway that is 60' wide by 3,560' long.

In 2013, the City of Sisters amended the Comprehensive Plan to add an Airport land use designation and also amended the Development Code to add an Airport District. The Sisters Eagle Airport property was annexed into the City of Sisters on March 15, 2014, and designated as Airport in the Comprehensive Plan and rezoned to Airport (A) District. The property owners plan to build an expanded terminal and an array of facilities for

pilots. In addition, the Sisters Eagle Airport is a center for local businesses, and several successful traded-sector companies, including ENERGYneering, have their headquarters at the airport.

Light-Industrial Lands

The Light Industrial District (LI) is located in the northern portion of the UGB, west of Locust Street and east of Pine Street, and north of Adams Street. The District provides for business parks and a mix of industrial and commercial uses. The LI District presents industrial opportunities for non-offensive industrial activities that do not cause noise, light, water, or air pollution.

There are currently four industrial subdivisions in the City; the Sisters Industrial Park containing 28 lots, the Mountain View Industrial Park containing 17 lots, the Sun Ranch, Phase I containing 20 lots and the Three Sisters Business Park containing 8 lots. The four industrial subdivisions encompass approximately 45 acres and two expansion areas. All of these subdivisions are designated Light Industrial by this Comprehensive Plan.

The North Sisters Business Park Sub-district, adopted in 2007, is an innovative mixed- use zoning district that provides additional opportunities for employment. The North Sisters Business Park Sub-district provides for ground floor light industrial uses with the flexibility to build second story loft apartments above industrial operations, and can be applied under the Light Industrial Comprehensive Plan designation. The second story loft units may be utilized as employee or workforce housing or provide additional rental revenues to support the underlying industrial operations.

1880's Design Theme for Commercial Areas

The concept of a central architectural and sign theme based on Western and/or Frontier building styles of the 1880's has been initiated in the Commercial Districts of the City. This is presently expressed through several store fronts remodeled in this style and many new commercial developments in the downtown area.

The result of this interest and endeavor has been adoption of a community development objective to "encourage the development of a central architectural and sign theme based on Western and/or Frontier building styles of the 1880's." This particular goal originally was formed in the 1979 Plan and continues today to improve the City's image, visual appearance, a tourist oriented economy. It has also been prompted by the desire to establish city identity, interest and attraction of visitors and tourists in support of a significant community economic activity.

A legislative mandate for this architectural design and construction is in the City's Development Code. Additional encouragement and results may also be fostered through the local Chamber of Commerce by the business community and a continuing program of business community education and support.

The following information and illustrations in Appendix D of this Plan concern the architectural styles, materials, methods of construction, color and miscellaneous features of the 1880's. It is not intended as a precise interpretation of the architectural design and building philosophy in its purest form, but as a methodology of approaching an overall period expression of architectural style.

Principal features of the period's architectural style revolve around the renaissance or rebirth of the elements of classical architectural orders, expressed in period building materials and methods of construction, with the presentation of an impressive rectangular false store front. In relation to Western and/or Frontier towns, with their explosive boom and usual economic "bust", this was principally carried out in light wood frame and bearing wall masonry (brick) construction. Light wood frame construction predominates construction in the majority of Western towns in this category; however there are substantial exceptions as exemplified by Jacksonville, Oregon, Virginia City, Nevada and Granite City, Montana.

The following sections are keyed to subsequent illustrations to exemplify methodology of use of materials and construction techniques.

Materials
Structure: Light wood framing, post and beam and masonry bearing walls are typical structural systems. Light wood framing may be achieved through current construction practices utilizing Ballon Framing and/or Western or Platform Framing with light wood framing details, up to two and three stories in height. Here attention will have to be given to building code requirements for fire resistive construction and building separation. Masonry bearing wall construction, particularly I brick, provides an alternative with inherent fire protective benefits.

Roof: Roof systems may be supported by a standard rafter system or pre-fabricated light wood trusses. Typical roof coverings may be realized with shingles or shakes at a minimum slope of four inches in one foot. Alternative coverings are metal with standing or batten/ribbed seams or asphaltic shingles.

Exterior Finishes: Typical materials are varieties of horizontal wood drop siding, vertical board and batten (rough sawn or surfaced four sides) and cedar shingles, with the later particularly applicable to ornamental patterns on residential structures and brick masonry. Modern composite materials such as T1-11, vial siding, and the like are not appropriate exterior finishes.

Windows: Wood sash windows are typical, to include double hung, casement, horizontal sliding and fixed sash. Availability of currently manufactured stock in styles keeping with the period is limited as to capturing the period window style. This is particularly true for large expanses of glass in commercial store fronts and will undoubtedly require special fabrication.

Doors: Combination glass and wood panel doors are typical and are available in certain standard types in single and divided glass lights. To approach the variety of period door styles will require modification of standard door types, particularly in arrangement of glass lights or necessitate special manufacture.

Ornamentation and Trim: The principal features of period ornamentation are concerned with the revival of elements of classical architectural orders. This primarily concerns the entablature or the upper section of wall or story that is usually supported on columns or pilasters and consists of the architrave, the lowest division of the entablature resting immediately on the capital or top of the column and the molding around a door or other rectangular wall opening; frieze or the part of the entablature between the architrave and cornice (top), the richly ornamented band; and the cornice or the molding and projecting horizontal member that crowns the architectural composition. In addition, this revival was manifest in the use of wood columns supporting the porch or covered entrance along the front of a building, reminiscent of the classical portico or colonnaded building entrance. This architectural embellishment also embraced the use of balustrade or "fence" between columns and at the periphery of second story porches.

Exterior Surface Finishes: Depending upon the intended longevity of a particular structure and the quality of exterior finish materials, period structures present variety within the basic construction practices of the era.

Rough sawn or milled board and batten surfaces were unfinished to oiled and/or stained to protect the surface materials. This is practical with the use of Cedar or Redwood which both contain natural oils that protect the wood. As a practical matter for extended protection of any board and batten surface, the use of a sealer or oil base or solid color stain is warranted. The same is true of vertical surfaces finished with Cedar shingles.

Horizontal wood drop siding was normally finished with paint; however in many instances, no finish applied. Here a sealer or stain would be appropriate, in lieu of a painted surface.

In consideration of providing boardwalks in lieu of concrete sidewalks, only pressure treated wood members should be used.

Color: Rough sawn or milled board and batten, particularly Cedar and Redwood, may be retained in a natural finish which ultimately weathers to silver-gray in color.

During the period, there was a lack of high gloss finishes; therefore color applications were generally flat in nature. To duplicate this character, flat or low gloss products currently on the market should be utilized.

Applied surface colors were predominantly flat white for most buildings, particularly the exposed surfaces of porches or covered walkways and ornamentation attached to brick masonry buildings. Large area surface colors other than white were primarily flat earthy ochres, yellows, browns and reds. These colors are generally contrasted with white trim

at the cornice, vertical corner trim of the building, windows and doors, porch and balustrade.

Modern interpretation of color application has tended toward a broader color selection in keeping with the white-dark contrast, by adding deep blues, blue-greens and red-oranges.

Color availability and selection for stains is readily obtained from product manufacturers. One example of such product used extensively in the Northwest is Olympic stain, particularly the solid color stains. These stains offer a fairly broad range of color selection and provide a flat, deep colored finish in keeping with the period.

Latex based paints also produce a flat finish color and low-gloss oil base enamels offer additional applications for colored finishes. Color selection samples are readily available from local paint suppliers.

The City Council has adopted an approved color pallet recommended by the Deschutes Landmarks Commission to represent typical 1880's colors. This makes color selection and matching easy for applicants.

Methods of Construction

General: Adherence to presently accepted methods of construction and compliance with applicable building codes and development ordinances is recommended as the minimum standards. Fire and life safety are of particular concern.

As the majority of new construction and existing building renovation is adjacent to public walkways, attention to good construction safety practices is necessary. This is particularly true in the more congested commercial areas.

Standard False Front Commercial Structure: The following graphic illustrations keyed to this sub-section illustrate standard approaches to the construction of this element.

Miscellaneous

See the graphic illustrations in Appendix D for various details for:

- Construction Details
- Ornamentation
- Fences
- Gates

Signs: Signing was generally handled by painting the sign directly on the façade of the building, either directly on the finish material or on a sign board which was subsequently affixed to the building. Ornamentation is achieved at the edge of the sign board by its particular shape and the application of edge molding or individually cut raised letters utilized for relief and contrast.

Other signing methods include projecting double faced boards affixed high on the façade of the building and structurally supported by wires.

Free hanging sign boards attached under covered porches were also utilized.

Lettering was generally ornamental and/or shaded and pained in contrasting colors on flat white surfaces. Examples of lettering are provided in the following graphic illustrations keyed to this sub-section. Individual cut-out letters applied to the sign surface and routed lettering provides additional acceptable techniques for signing.

The City's sign code in the Development Code requires adherence to these standards and regulate all signs in the City Limits.

9.3 FINDINGS

Anticipated Demand for Economic Lands and Inventory of Economic Lands

In the greater Sisters area, most of the industrial and commercial activity takes place within the City limits. Land is needed for these activities and an adequate supply of economic lands is needed for expansion of the City's economic base. The *Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis* (LNA) was completed to compare the supply and demand of industrial and commercial land until the year 2025 (See Appendix B).

Commercial Land
The LNA identified that there are approximately 37 net buildable acres of vacant C and C-HC designated lands inside the Sisters UGB. The term "net" refers to the amount of land after subtracting approximately 20% for roads and other infrastructure. Adding approximately 12 net buildable acres of re-developable and 40 net buildable acres of developable acreage of partially developed lands, a total of 89 net buildable acres of buildable C and C-HC lands are inside the Sisters UGB. Since the projected future demand is 28 net buildable acres, there is a surplus of commercial land of approximately 61 acres. Even without considering the re-development of partially developed lands, there is sufficient vacant and re-developable land in the existing UGB to accommodate demand for commercial lands within the next 20 years.

As part of the LNA needs, the City has determined that it needs to include five acres of tourist commercial land in the UGB. This property is needed by the City to better serve the needs of tourists and local business in the City's light industrial district adjacent to the airport. The Conklin Guest House was included in the UGB in 2005 to encourage the retention and expansion of this important business as a part of the Sisters Community to meet the needs of nearby existing and future businesses. The Sun Ranch Tourist Commercial zoning district has been written and applied to this property. The new zoning district assures conformance with the goals, policies, and findings of the Comprehensive Plan by limiting uses to lodging, restaurants, and other uses that serve the Industrial Park businesses and tourists alike.

Airport Land

Annexing the Sisters Eagle Airport into City limits and rezoning it to Airport (A) District allows the continued vitality of the Airport as a permitted use. As a permitted use, the Airport and associated businesses will be able to develop and provide living wage jobs to members of the community. In addition to on-site development, the Airport provides access for businesses within the community who may benefit from air service.

Industrial Land

There are approximately 44 net buildable acres of vacant LI designated lands inside the Sisters UGB. Adding 3 net buildable acres of re-developable and 17 acres of developable acreage of partially developed lands, a total of 64 acres of buildable light industrial (LI) lands are available inside the Sisters UGB. The 2005 Sisters Urban Area Comprehensive Plan added approximately 3.07 net buildable acres of industrial land to the UGB (Carpenter property). This land was not included in Table 9.4 in the 2005 Comprehensive Plan Update. In 2007, the City removed 4.9548 net buildable acres of land (approximately 11.684 gross acres) located in the Sun Ranch Mixed Use Community from the industrial land supply of the City. Also in 2007, the City re-zoned a net buildable acre (12.58 gross acres) parcel from Light Industrial to Residential and Multi-Family Sub-district for residential purposes. Therefore, the City's existing vacant land and surplus of light industrial land has decreased by a total of 9.5 net buildable acres. The LNA projects a demand for 34 net buildable acres of industrial land inside the Sisters UGB until the year 2025. A surplus of approximately 24.5 acres of net buildable industrial land is predicted based on anticipated supply and demand of undeveloped industrial lands until the year 2025. There is a sufficient supply of vacant acreage alone to satisfy anticipated demand, without considering re-developable and partially developed lots. Table 9.4 illustrates that with re-developable and existing vacant land, there is still a surplus of 20.5 net buildable acres of industrial land with the two rezones from 2007.

Table 9.4: Summary of Commercial and Industrial Future Land Needs until Year 2025 (net acres)

Land Designation	Existing Vacant Land	Re-developable and Partially Developed	Total Available Land	Projected Land Demand	Surplus
Commercial	37	52	89	28	61
Industrial	34.59	20	54.59	34	20.59

Source: Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis, February 2, 2002, as amended by files CP06-01/02 and Z06-01, and files C06-04 and Z06-02.

In addition, there is a 17.54 acre parcel of land zoned UAR intended for future urban use. That is in addition to the acreages indicated in Table 9.4. Lastly, there is a 4.34 acre tract of land north of Barclay Drive and west of the Conklin Guest House intended for development with adjacent light industrial zoned land. This property was annexed into the City Limits in 2007.

Public Infrastructure and Economic Development

As addressed in Goal 11, Public Facilities, the City developed a public sewerage system within the City, which was completed in 2001. The construction of this system ~~will~~ enabled the City to meet the demands for new commercial and industrial development. Adoption of System Development Charges for water and sewer systems provides a mechanism to ensure that systems can be expanded to accommodate increased demands over time.

Goal 3 of the City's Transportation System Plan (adopted January, 2010) calls for promoting the development of the City, Region, and State economies through the efficient movement of people, goods, and services and through the distribution of information. This goal is supported by a policy that states "Ensure a safe and efficient freight system that facilitates the movement of goods to, from, and through the City, Region, and State while minimizing conflicts with other travel modes." Efficient truck movement through Sisters plays a vital role in maintaining and developing Central Oregon's economic base as Highway 20 is a key freight corridor for the region. As identified within the City's TSP, high levels of truck traffic likely affect highway performance. Therefore, as part of the TSP update, Barclay Drive and Camp Polk Road/Locust Street from Highway 20 to Barclay Drive are upgraded from collectors to arterials. These arterials are also identified in the TSP as proposed truck routes with the completion of the Alternate Route. The Alternate Route will provide relief to Highway 20 and consists of 3-lane arterial streets on Barclay Drive and Locust Street, adequate traffic control devices (either traffic signals or multilane roundabouts), at either end of the route where it intersects with the state highway, a roundabout at the Barclay Drive/Locust Street intersection, and, possibly, intelligent transportation system (ITS) technology that detects congestion on the highway and directs traffic onto the alternate route. These improvements will provide for the economical movement of raw materials, finished products and services while enhancing public safety and the pedestrian-friendly quality of the City's downtown core.

The airport, Sisters Eagle Airfield, does have an impact on the development of industrial uses, as the Runway Protection Zone overlays a portion of a few lots in the industrial area. The Runway Protection Zone precludes uses including structures and water features. However, the airfield also creates opportunities by enabling corporate aircraft to use the facility as well as encouraging aviation-related businesses. An Airport Overlay District has been adopted in conformance with the Land Conservation and Development Commission Transportation Planning Rule. The Sisters Eagle Airport was annexed into the City of Sisters on March 15, 2014.

Enterprise Zone.

The City of Sisters has partnered with the City of Redmond and Deschutes County to expand the 'Greater Redmond Enterprise Zone' to include portions of the City of Sisters. The City is currently looking to amend the zone boundary to include the Sisters Eagle Airfield within this zone, which is expected to occur following annexation of the land. The Enterprise Zone offers benefits to qualifying business, and is administered by Economic Development of Central Oregon (Bend office).

Downtown Sisters Urban Renewal Plan

The City recognizes that tourism will continue to be important to the economic development of the City of Sisters. *The Downtown Sisters Urban Renewal Plan*, adopted in July of 2003 (Urban Renewal Plan), is intended to promote the development of downtown as the commercial and cultural center of the Sisters community. The Urban Renewal Plan is incorporated herein, by reference by this Plan.

The Urban Renewal Plan's goals are stated below.

1. Strengthen Downtown Sisters' Role as the Heart of the Community
2. Improve Vehicular and Pedestrian Circulation Through and Within the Downtown to Accommodate Through Traffic and Downtown Patrons
3. Promote a Mix of Commercial and Residential Uses Oriented to Pedestrians
4. Enhance the Pedestrian Environment On Streets and In Public Parks, a Town Square and Public Gathering Places
5. Promote High-Quality Design and Development Compatible with the Sisters Western Frontier Architectural Theme
6. Encourage Intensive Development of Downtown Properties
7. Promote Employment Uses to Generate Year-Round Jobs

These goals are met by forming an Urban Renewal District overseen by the Sisters Development Commission. Within the boundaries of the Urban Renewal District, tax increment financing, grants, loans, developer contributions, and donations will generate funds to use for improvement projects. The Sisters Development Commission, which is the urban renewal agency of the City, will implement the Urban Renewal Plan. The implementation will involve public improvements; assistance to property owners/lessees for rehabilitation, redevelopment or development; and the creation of civic and community facilities. Overall, the improvements are intended to enhance the vitality of the downtown area by improving streetscapes, reinforcing the existing design theme, and creating community amenities.

Business Recruitment and Outreach Activities

The Sisters Area Chamber of Commerce is a non-profit corporation founded in 1974 to "unify and coordinate the efforts of businesses and residents in promoting the civic, industrial, commercial, agricultural, environmental and general welfare of the City of Sisters, Oregon and its economic area."

The Sisters Chamber promotes economic development in the City as well as the outlying area. The Chamber assists visitors, answers inquiries, and promotes business relocations to the Sisters area. It also sponsors community events throughout the year that encourage people to visit and support local businesses.

The Sisters Chamber of Commerce with the assistance of the Community Action Team of Sisters (CATS) sponsored the *Sisters Strategic Action Plan for Economic Development*, 2002. This plan identifies overall goals for local businesses and the community as well as specific sector strategies for retail, agribusiness, light industrial/manufacturing, entrepreneurial/professional services, and tourism. Overall, these strategies focus on maintaining and promoting the uniqueness of Sisters' natural, clean, and friendly environment as the City's economic base diversifies and grows. The plan seeks to reinforce the existing strengths of the local economy (tourism/retail, traditional agricultural economy, light industrial) by improving the City's infrastructure (pedestrian environment, roadway function) and promoting and collaborating business- related activities.

The *Sisters Strategic Action Plan for Economic Development* also focuses economic development efforts on targeted industries:

- Light Industry/Manufacturing
- Entrepreneurial/Small Office Home Office/Professional Services
- Tourism
- Retail
- Culture and the Arts
- Real Estate Development
- Agribusiness

Efforts to recruit and relocate businesses will be concentrated on these industries. To this end, a business relocation brochure was created by the Sisters Chambers and CATS. This effort involved many businesses, City Council members, and City staff. The purpose of this document is to encourage targeted industries to relocate to Sisters. These industries are expected to provide the types of economic opportunities appropriate for, and a benefit to, the local economy, while also being compatible with the environment and character of the City. This relocation guide describes the Sisters area, lifestyle, location and climate, community, a calendar of events, the school district, housing, local businesses, and other local resources.

The City of Sisters should focus on attracting the types of industries that will choose to locate in the City. Traditional industrial uses may not find the City attractive for their needs due to the relative isolation. Focusing on ideas such as creating and attracting better jobs and boosting incomes is a better approach than focusing on attracting more jobs. Providing a better place for business versus a cheaper place for business is also pertinent.

Companies the City hopes will be attracted to the area will tend to be smaller companies with educated workers and relatively high pay scales. The demographics of the Sisters area (affluent, well educated) will also draw companies to the area. Innovative regulations geared towards attracting the desired industries, mixed use zoning, etc. will provide a competitive advantage to help attract businesses that will contribute to Sisters' long term economic health.

Although the City hopes to attract smaller companies and industry to the area, the City acknowledges that rising land values, increasing rents, and the shortage of affordable workforce housing will continue to impact the City's ability to recruit and attract new businesses to Sisters. In recognition of these factors, as further outlined in the findings in *Chapter 10, Housing*, the North Sisters Business Park Sub-district allows the development of second story residential units above industrial operations. The additional flexibility created by this zoning district provides numerous advantages to industrial operators and will assist the City in its efforts to recruit and attract new business opportunities. The second story residential units can be utilized by industrial land owners who want/need to reside above operating industrial facilities. The units can also be utilized to provide employee housing, either as a compensation incentive or as an additional source of revenue for the industrial operator. If the units are not utilized by the industrial operator, they can serve as low-cost rental units that provide additional rental income to help offset the cost of industrial operations. By allowing limited housing with industrial uses, these low cost housing units will provide the type of workforce housing that is needed to support existing commercial and industrial operations within the City limits.

Two light-industrial subdivisions in the northern portion of the city (Sun Ranch and Three Sisters Business Parks) are unique and must be developed sensibly to achieve economic prosperity while respecting their surrounding uses. These two subdivisions are appropriate for live-work mixed use development for a number of reasons. First, both subdivisions are vacant so new policies guiding development will create a consistent and well functioning built environment. To the east of both parcels is the Sisters Eagle Airport, providing convenient small engine aircraft service. Adjacent to the north of both parcels are existing low-density rural residential uses, creating potential conflicts with intensive industrial development. To the south of both parcels lie existing light-industrial subdivisions which are ripe for more intensive development and redevelopment. The Sun Ranch Business Park is unique as it borders a commercial area to the southeast and is a gateway to downtown Sisters from the rural areas to the north. Three Sisters Business park is also unique as it is adjacent to UAR-zoned lands to the west that may be subject to future redevelopment.

The Sun Ranch and Three Sisters industrial parks are in transition areas between typically conflicting uses (residential and light industrial). The transition is also from increasingly rural areas to the north and more intensive development to the south. The development of these parcels should reflect the unique role these business parks play in adding value to the community while also protecting existing property values in the surrounding areas.

The unique location and site characteristics of the Sun Ranch and Three Sisters business parks require the city to create specific policies and development codes for these properties accomplishing the following goals:

1. Decrease opportunities for highly intensive polluting and hazardous industrial uses to protect the natural beauty of the Sisters area, city, and neighboring residents

2. Encourage economic growth in the city by making the primary uses in the business parks a combination of light manufacturing and professional services
3. Allow secondary and accessory uses such as retail and dwelling units to foster a more lively and unique development and provide an incentive for new businesses to locate in Sisters
4. Create design standards that favor the economic uses while creating attractive, healthy, and stable living environments
5. Protect the long-term economic uses of the land and prevent a reversion to intensive residential uses

9.4 POLICIES

1. The City shall guide growth in a manner that will result in a balance between economic and environmental interests.

   Tasks -

   a. The City shall maintain and enhance the appearance and function of the Commercial Districts by providing a safe and aesthetically pleasing pedestrian environment, mixed use development, and requiring adherence to the Sisters Western Frontier Architectural Design for all types of development and signage. The Sisters Western Frontier Architectural Design Theme does not apply to the Sun Ranch Tourist Commercial District. In its place a more historically accurate 1900s Rural Farm/Ranch House design standard applies. The City shall establish standards for this design theme in the Development Code.

   b. Auto Oriented developments such as restaurants with drive-up windows are not appropriate in the downtown area or Commercial District. Auto oriented uses shall only be permitted in the Highway Commercial District, Light Industrial District, and North Sisters Business Park District, and shall be limited and managed based on their impacts.

   c. The City shall assure development contiguous to commercial and residential zones is designed and built in a manner that is consistent and integrates with the character and quality of those zones.

   d. The City's Development Code should continue to allow mixed-use development within the Commercial Districts, and in transitional light-industrial areas such as the Sun Ranch and Three Sisters Business Parks (as previously noted in the findings), and small commercial uses and home occupation mixed with residential uses.

   e. Commercial and Industrial uses shall minimize their impacts on residential areas by being subject to additional development standards, i.e. buffers, setbacks, landscaping, sign regulation and building height restrictions.

   f. The City has adopted the Sun Ranch Tourist Commercial District to apply to the Conklin Guest House property. This property is intended to provide

commercial uses that will serve the needs of the nearby light industrial uses and visitors to the area. Drive through facilities are not appropriate for this zoning district.

g. Development standards shall be added to the City's Development Code for unique light-industrial parks in transition areas. Standards shall be developed to accomplish the goals outlined in the Business Recruitment and Outreach Activities findings of this chapter.

2. The City shall support the tourist industry and special events that have a positive year-round economic impact on the community.
3. The City shall continue to partner with the Community Action Team of Sisters, the Chamber of Commerce, Economic Development for Central Oregon, and other economic development agencies, to improve local and regional economic development efforts, attract businesses, and enhance and diversify the City's economic base. The City will participate with these agencies in periodic updating of the *Sisters Strategic Action Plan for Economic Development*.
4. The City should support efforts to attract businesses providing family-wage employment opportunities.
5. The City should work with area educational institutions to maintain high standards of educational opportunity.
6. The City shall ensure an adequate supply of land for the needs of commercial, mixed- use and light industrial purposes.

GOAL 10: HOUSING

STATEWIDE PLANNING GOAL 10 - HOUSING: *To provide for the housing needs of citizens of the state***.**

BACKGROUND DATA

Urban Growth Boundary (UGB) and Residential Inventory Summary
As of June 2019, City of Sisters contains approximately 400 total (gross) acres of lands zoned for residential use inside the UGB and approximately 91 (gross) acres of that residential lands remain vacant and suitable for development. A recently approved master plan and subdivision for McKenzie Meadow Village entitled approximately 24 gross acres of Multifamily Residential - zoned land for development of nearly 200 residential units. Other subdivisions are being developed at a steady pace and are anticipated to be built out within the 20-year planning period.

The recently completed 2019 Housing Needs Analysis (HNA) provides detailed information regarding the City's housing stock including ownership tenure and typology as well as detailed demographic information. A Housing Strategies Report (HSR) was completed at the same time and included an audit of existing housing-related polices and recommendations for the City to consider in order to improve its housing stock. The 2019 HNA and HSR are incorporated into the Comprehensive Plan by reference.

The 2019 HNA's major findings are:

- Sisters has experienced strong growth, with the population growing roughly 185% since 2000, an increase of nearly 1,800 people. Deschutes County and the state experienced population growth of 59% and 21% respectively.
- As of June 25, 2019, the City added over 350 new dwelling units since 2010 within the UGB. At the same time, the City has added an estimated 282 households, meaning the production of new housing outpaced the growth in resident households. Second homes and other vacation properties make up for much of this difference and contribute to an overall estimated vacancy rate of 22%
- Portland State University Population Research Center estimates a future growth rate of 2.6% per year, which means continued strong growth. This would add nearly 2,000 people and over 800 households over 20 years. The HNA estimates that 1,050 units at all income levels will be needed, with significant percentages needed for lower income households. There will also be a continued demand for houses at the median and upper-income ranges.
- There are projected future demands for a wide range of housing going forward to serve these households, with an estimated 60% being for owner households (including second homes), and 40% for renter households.

Future Needs for Residential Land and Housing Types
The 2019 HNA provides a reconciliation of land supply and needs over a 20-year period and estimates that the City will need 1,057 dwelling units to accommodate the increased population. The 2019 HNA further determines that the City's existing vacant land can accommodate 835 dwelling units, leaving a deficit of 222 units on an equivalent 67 gross acres. Since the publication of the 2019 HNA, as of October 1, 2019 over 50 additional residential units have

been authorized by the City and by the time this revised chapter is adopted relatively significant numbers of additional units will be authorized and under construction.
The 2019 HNA and stakeholders with a vested interest in improving the City's housing stock have indicated the following generalized needs:

- *Wider variety of workforce housing types suitable for traded sector, service, retail and public agency employees*
- *Subsidized and/or programmed affordable housing managed by community partners such as Habitat for Humanity and Housing Works*
- *Housing types suitable for aging populations*
- *Group quarters such as assisted living facilities for lower income residents*
- *Strictly managed and appropriately sited seasonal emergency shelters*
- *2019 Regional Housing Needs Analysis led by Central Oregon Intergovernmental Council and the 2019 State Housing Plan echoes many of the same needs stated in the City's 2019 HNA*

Findings from 2019 Housing Strategies Report (HSR) and community input
The 2019 HSR accompanied the 2019 HNA and included the following recommendations for the City to take to improve its housing stock supply:

- Update the City's Comprehensive Plan's Policies related to housing to include contemporary narratives and data related to existing housing conditions and projections of needs for the future.
  - Findings indicate a deficiency in the supply of land needed to meet housing needs over the next 20 years. Potential strategies to address that gap include the following:
  - Adopt supporting policies and subsequent Development Code text amendments to enhance efficiency measures inside the UGB such as increasing the range or densities of allowed housing types, reducing barriers to the development of housing, or establishing or increasing minimum densities.
  - Rezoning land from one designation to another.
  - Amending the City's UGB. However, prior to or coincident with amending the UGB, the other types of strategies noted above must be considered in concert with the protection of the existing character of neighborhoods.
- Other strategies described in the HSR include additional approaches that the City can undertake to provide opportunities for, support, or encourage the development of specific types and price ranges of needed housing. These types of strategies include but are not limited to:
  - Development Code – related incentives or requirements for specific types of development such as density and height bonuses and inclusionary zoning.
  - Fee reductions, including system development charge deferrals or exemptions, tax abatements or exemptions, or other reductions.
  - Funding measures that support low and moderate-income housing programs or incentives.
  - Partnerships with other agencies or organizations to develop or maintain housing affordable to people with low and moderate incomes.

CITY OF SISTERS HOUSING GOAL:
The City endeavors to enable construction of a wide range of quality housing for all ages and income levels. Housing will be compatible on a neighborhood scale and meet the demands of current and future residents, as well as the region's private and public sector employers.

OBJECTIVES AND POLICIES

OBJECTIVE 10.1: To accommodate for additional residential growth within the existing UGB as appropriate and necessary.

POLICIES:

10.1.1 Ensure adequate acreage of vacant land is zoned to meet residential land needs as defined in the 2019 HNA and other supporting data when made available.

10.1.2 Maintain reasonable, specific and enforceable design standards for single-family housing, manufactured homes, and multifamily housing.

10.1.3 Provide sufficient opportunities through Development Code requirements within the UGB for efficient development of residential land in harmony with existing neighborhoods.

10.1.4 Amend Development Code regulations to support streamlining the ability of housing developers to modify approved land use entitlements in response to changing market conditions and other circumstances.

10.1.5 Monitor residential land development to ensure that there is sufficient residential land to accommodate the long-term forecast for population growth and keep City leadership and community stakeholders informed of changing conditions.

10.1.6 Update the 2010 City Housing Plan upon completion of amending the Comprehensive Plan for Goal 10 Housing.

OBJECTIVE 10.2: To provide various opportunities for needed permanent housing types including: attached and detached single-family housing, and various types of multifamily and manufactured housing for both owner and renter occupancies, and government assisted housing.

POLICIES:

10.2.1 Provide flexibility through Development Code requirements of innovative housing types to meet medium and high-density housing as described in the HNA.

10.2.2 Accommodate the housing needs of aging populations and assisted living facilities in locations within walking distance of business and commercial areas and other services.

10.2.3 Support construction of smaller dwelling units that incorporate alternative building materials and methods that follow approved State Building Code requirements.

10.2.4 Evaluate Development Code requirements covering residential/commercial mixed-use requirements in the Downtown and Highway Commercial Districts regularly, to keep pace with emerging market trends.

OBJECTIVE 10.3: Evaluate Development Code requirements supportive of low and moderate-income housing, transitional housing and emergency shelters through Development Code requirements, land use policies and other incentive programs.

POLICIES:

10.3.1 Coordinate with Habitat for Humanity, Housing Works, and other providers of affordable housing to identify sites, projects and partners to develop housing units for low- and moderate-income households; evaluate and amend Development code requirements as appropriate.

10.3.2 Evaluate policy and program options to enhance funding streams that would offer subsidies to offset development costs of affordable housing projects.

10.3.3 Monitor and evaluate efficacy of the existing Affordable Housing Grant Program and support changes to the program as conditions warrant.

10.3.4 Coordinate with emergency shelter providers, public safety providers and the County Health Department to adopt appropriate policies that are supportive of emergency shelters and transitional housing and are sensitive to the concerns of the surrounding community.

OBJECTIVE 10.4: Amend Development Code requirements for residentially-designated parcels brought into the UGB, to have clear and reasonable standards to ensure adequacy of public facilities and a mix of market rate and affordable housing units.

POLICIES:

10.4.1 Ensure Development Code requirements contain clear and objective standards to require that when land is brought into the UGB, a concept plan is provided to illustrate housing unit typology and distribution for the subject area, prior to annexation.

10.4.2 Coordinate capital improvements planning with concept and master planning of parcels brought into the UGB to ensure that land is ready for efficient residential development.

10.4.3 Require that lands intended for residential development that are annexed into the city limits, will have a residential - designated zone applied concurrent with annexation.

10.4.4 Ensure Development Code requirements contain clear and objective standards for development of Affordable Housing when land is annexed into the City or when land is rezoned from a non-residential district to a residential district.

10.4.5 Ensure that the Development Code requires that newly annexed residential areas will be evaluated through a regulating master plan ensuring provision of adequate public facilities and take into design consideration, the uses of lands located outside the UGB.

Goal 11: Public Facilities and Services

11.1 GOAL

"To plan and develop a timely, orderly and efficient arrangement of public facilities to support the City's development."

11.2 BACKGROUND

Public facilities and services accommodate or provide various government services to the people of the community. These include, but are not limited to schools, parks, fire stations and other public facilities such as shop areas, solid waste disposal sites, sewer and water systems. Adequate public facilities are essential for orderly growth and community life, economic development, enhancing the health, safety, educational and recreational aspects of urban living.

City Government

The City of Sisters is organized under the Mayor - Council / City Manager form of municipal government. The Mayor and four members of the Council conduct the business of the City at a regularly scheduled meeting held on the second and fourth Thursdays of each month. A seven member Planning Commission appointed under the provisions of ORS 227. 020, is responsible to the Council for matters pertaining to city planning and development. Two members of the Commission are permitted to be from outside the City limits. The Commission and City Council are responsible for the implementation of the Sisters Comprehensive Plan, Development Code, and facility master plans.

The City Hall staff provide for the majority of City governmental functions which include the City Administration, Recorder, Public Works, Planning, Utility Billing, and Finance.

Fire Protection

The City of Sisters belongs to the Sisters-Camp Sherman Rural Fire Protection District. The District encompasses approximately 534 square miles of rural territory. Mutual aid arrangements are currently in force with 17 fire departments, U.S. Department of Agriculture and Oregon Department of Forestry. A five-member Board governs the District. The Sisters-Camp Sherman RFPD implements the International Fire Code as of 2003 and will implement changes to this code as amendments are adopted by the Oregon State Fire Marshal.

Law Enforcement

The City of Sisters contracts for police services with the Deschutes County Sheriff Department. Facilities are available within the City for booking and evidence storage. All detention is at the Deschutes County Jail in Bend. The Deschutes County Sheriff's

Department is also responsible for law enforcement functions for the area surrounding the City of Sisters.

Library

The City of Sisters library services are provided by the Deschutes Public Library System. The Sisters Branch Library built in 1989 is a 2,655 square foot building owned by the City of Sisters and located at 164 E. Main Street.

Schools

School District No. 6 serves the City of Sisters and an area approximately 10 miles beyond the city limits. The District serves a Kindergarten through grade 12 grade span. The School District boundaries reach north beyond Indian Ford Ranch to the Jefferson County line; easterly approximately 8 miles along the Bend and Redmond Highways, south along Three Creek Road and west to Black Butte Ranch and along the McKenzie Highway including the Crossroads, Tollgate, and Indian Ford subdivisions. The Sisters School District also serves students living in Camp Sherman and Suttle Lake area in Jefferson County grades 7 through 12.

The Sisters School District holds valuable land assets that enable long-range facility planning for the duration of the planning period. The lands owned by the School District are sufficient to allow future school building sites, community use facilities, and space for light industry.

Parks

The 2011 City of Sisters Parks Master Plan was updated in 2016 and is intended to guide development of the municipal parks system for the period between 2016 and 2030 . The updated 2016 City of Sisters Parks Master Plan is incorporated herein by reference as an element of the Comprehensive Plan. A parks master plan is a long-term vision and action plan for a community's parks system. Currently, Sisters provides 11 parks facilities – 8 developed and 3 undeveloped. The updated 2016 City of Sisters Parks Master Plan identifies strategies and recommendations for operation and maintenance of parks, land acquisition, development, and funding. Through the updated 2016 City of Sisters Parks Master Plan, the City of Sisters will continue to improve its parks and recreation facilities to meet the needs of current and future residents.

Central Oregon Community College

The Central Oregon Community College (COCC) has a General Community Satellite Education Program in Sisters for post-secondary education. The main COCC campus is located in Bend. The local COCC program shares space in a building owned by the Sisters Organization for Activities and Recreation.

Solid Waste

The City of Sisters' solid waste/recycling collection program is operated under a franchise agreement with High Country Disposal and the City maintains a recycling center inside the City limits. The county-operated northwest waste collection and transfer station is located on Fryrear Road approximately 8 miles from Sisters.

Wastewater System

The City adopted Wastewater System Master Plan dated March, 2000 which provides the planning and analysis for the development of the Wastewater Holding and Effluent Disposal System. This Wastewater System Master Plan is incorporated herein by reference as an element of the Comprehensive Plan. The System has been operational since 2001. The system includes lines and connections to nearly each structure in the City, pumping stations, two storage and initial intake reservoirs with 7 million gallons of storage capacity each, and one large 70 million gallon storage pond. Treated effluent is applied to the forest on a City-owned site that is currently 120 acres. The continued development of the system is phased, to allow for future construction which is affordable for the residents of the City of Sisters funded primarily by System Development Charges.

Transportation

The City completed and adopted the original Transportation System Plan (TSP) in June, 2001, then updated the Plan in January, 2010. The City recently adopted a refinement to the 2010 TSP on June 27, 2018. The TSP plan is incorporated herein by reference as an element of the Comprehensive Plan. The TSP provides an overview of the current transportation system, a review of the City's expected pedestrian, bicyclist and vehicular needs and improvements and recommendations as to how to implement the proposed transportation system modifications. The TSP is described in more detail in the section Goal 12 of this Plan.

Water Supply

The City completed and adopted a Water System Master Plan completed in April, 2017. The City provides municipal water service, utilizing Pole Creek as a source from which the City has been allocated a water right of 0.2 cubic feet per second (CFS) in addition to two City wells. The City installed Well #3 on the north end of town within the Sun Ranch Mixed Use Community. The City maintains a 1.6 million gallon sealed concrete reservoir that supplies the City water distribution system through a 12 inch diameter transmission main. The water is chlorinated and all water services are metered.

System Development Charges

System Development Charges (SDCs) compensate the City for increased use of public infrastructure and are required in the City of Sisters. SDCs are in place for wastewater, water, parks, and transportation, and require new development to pay in proportion to the impact of the new development. SDCs are a valuable mechanism that will help the City expand infrastructure as demands increase. On June 2018, the City adopted a revision to its water and sewer SDC fee methodology which changed the calculation basis from fixture counts to meter size.

Development Standards for Water, Wastewater, and Transportation

The City of Sisters, Public Works Standards, December 2013 and its subsequent updates are City Ordinances that regulated the construction, installation, etc. of public facilities, including water, wastewater, stormwater, roads, curbs, sidewalks, and utilities.

Health Care

City residents depend on local clinic offices to provide health services. Regional hospitals are the Central Oregon Community Hospital in Redmond and St. Charles Medical Center in Bend.

Other Public Services

The City adheres to the State Uniform Building Code, which provides for minimum building construction standards within the community. Many cities and counties in Oregon are replacing the UBC with International Building Codes. In July 2016, Deschutes County Building Safety Division assumed responsibility for administering the City's Building Code Administration program.

Additional government services include the Oregon Department of Forestry office, Deschutes National Forest Service Compound and the Sisters U.S. Post Office. The U.S. Post Office is located at 160 S. Fir Street, Sisters. The Oregon Department of Forestry maintains a sub-unit office of the Central Oregon District and warehouse facility located at the northwest corner of Washington and Elm Streets.

The Deschutes National Forest compound area is located at the junction of U.S. Highway 20 and Pine Street. This area includes the Sisters District Ranger Administrative Office, seven single-family dwelling units, office space, warehousing, maintenance facilities and two bunk houses and the Oregon State Highway Division maintenance facilities.

Capital Improvement Plans and Projects

Transportation

The City of Sisters updated Transportation Systems Plan (TSP), January, 2010 and refined in June 2018; adopted by the City Council, controls the development of transportation infrastructure in the City. This Comprehensive Plan adopts the findings and recommendations of the TSP. The full text of the TSP is available from the Community Development Department.

Water and Wastewater

The City of Sisters Water System and Wastewater System Master Plans, March, 2000 adopted by the City Council, control the development of water and wastewater infrastructure in the City. This Comprehensive Plan adopts the findings and recommendations of the City of Sisters Wastewater System Master Plan and Water System Master Plan, March 2000. The full text of these reports is available from the City Planning Department.

Stormwater

The City does not have a stormwater master plan. The stormwater system built prior to 2001 consists mostly of underground injection control facilities (drywells), many of which are still in service. The City's drywells are managed under a Water Pollution Control Facilities (WPCF) permit issued by Oregon DEQ in August 2016, authorizing their continued use. Since 2001, new construction within the City has primarily consisted of roadside swales, which are constructed to meet DEQ stormwater guidelines. All new construction is required to comply with all DEQ regulations for stormwater containment. Future construction is anticipated to generally consist of roadside swales and detention ponds as new development occurs.

11.3 FINDINGS

1. The current City Hall building contains only one meeting and one conference room which is not adequate to meet the needs of all the City departments. The City recently obtained a parcel of land at the corner of Locust Street and Main Avenue to construct a new City Hall.
2. In 2001, the City constructed a public sewer system capable of serving all existing properties with expansion capabilities.
3. In 1994, the City completed a $2.1 million water improvement project on the current system which included upgrading most of the 4" size lines in the core area, looping some of the dead end lines and building a 1.6 million gallon storage reservoir in the approximate same location of the existing open reservoir. The system is metered for all water accounts.
4. The City Maintenance Center and Recycling Station located at the corner of Ash Street and Washington Avenue is inadequate for servicing and storing equipment and materials to be recycled. In addition, the center and station are currently non-conforming uses and should be relocated.
5. The Deschutes County Sheriff's Department currently provides police protection services to the City.
6. Sisters School District provides education for kindergarten through twelfth grade. School buildings and field areas provide for diverse community activities.
7. The City maintains a water right on Pole Creek of .2 cubic feet per second. Water from this source is not currently used for municipal purposes. A 2.3 million gallon storage pond is kept empty and available for emergency water storage.
8. The City will need additional wells for municipal and emergency purposes.
9. There is some home delivery mail service provided in Sisters. There is frequently traffic congestion at the Post Office Building.
10. Residential subdivisions on surrounding County lands place demands on City taxpayer-supported facilities and services.
11. The City now has a public restroom facilities for pedestrians and tourists in the downtown district located in the Harold and Dorothy Barclay Park at the intersection of Ash Street and Cascade Avenue, and at the Village Green Park.

12. The Sisters School District constructed a new high school designed for 700 students in 2001-2002. The former 600-student High School is now the Middle School. The two parcels abut, totaling 138.3 acres. There is adequate space for future expansion of both facilities and an elementary school.
13. The Sisters – Camp Sherman Fire District shall have four acres located near the City's sewage treatment plant for purposes of constructing and operating a fire training facility for the greater Sisters region.
14. Untreated stormwater discharge, and the loss of natural storage capacity due to increases in impervious surfaces and channelization of Whychus Creek, contribute to impaired water quality in the creek.
15. Improperly treated and/or stored stormwater can compromise the recovery of Endangered Species Act (ESA) listed bull trout and summer steelhead in Whychus Creek, and can lead to an illegal "take" of these protected species.
16. Effective stormwater treatment requires implementation of a range of programs including appropriate alterations to development patterns, on-site stormwater retention and treatment, and efforts to decrease impervious surfaces associated with new growth in Sisters.

11.4 POLICIES

1. The City shall be proactive in planning, financing, obtaining lands, facilities, equipment, and other system elements to ensure the safe and efficient operation of public services.

   Tasks-

   a. The City shall continue to update its water supply system to meet new State and Federal health requirements, and domestic and emergency needs.

   b. The City shall continue its policy of assessing fair and equitable charges in System Development Charges to finance the impacts of growth on public facilities.

   c. The City shall develop policies to adequately fund or require public facilities improvement and budget plans as well as ongoing maintenance for all public infrastructures (water, sewer, roads, etc.).

   d. The City of Sister Public Works Standards shall be periodically updated and improved for specificity, accuracy, consistency, and code compliance.

   e. Public Works Standards shall include standards for maintaining and paying for landscaping in the public right-of-way and multi-use paths.

   f. The City should maintain City garbage service and develop alternative disposal options to best serve the City residents in the future.

   g. The City shall develop adequate City Office facilities.

h. Water Management and Conservation Plans shall be required by significant new developments impacting the City's water supply system.

i. Police protection services should be maintained at levels consistent with the needs of the community.

j. The City shall assist the Sisters – Camp Sherman Fire District in the annexation and ultimately the provision of city utilities to the 4 acre property known as the Sisters – Camp Sherman Fire District's fire training facility.

2. The City shall ensure that all properties within the Urban Growth Boundary are able to be provided with water, sewer, electrical and phone utilities.

Tasks-

a. Applications for annexations shall demonstrate that the full development of the annexed property will not reduce levels of service or adversely impact the long-term operation of public infrastructure (water, sewer, roadways).

b. Public facilities and all utilities (phone, cable, and power) shall be located underground and required "to and through" when a property is developed or redeveloped, in order to ensure that neighboring properties can be served in the future.

3. The City shall provide adequate public restrooms in the downtown commercial core and parks.

4. The City should help civic groups establish a Community Center.

5. The City shall work with agencies and interest groups including the Sisters School District, County, COCC, CATS, and SPRD to meet the educational and recreational needs for the community.

6. The City shall increase its efforts to protect and enhance water quality, including preserving natural drainage and hydrology features, and increase opportunities for on-site infiltration, detention, and treatment of stormwater through implementation of the *Central Oregon Stormwater Manual* (2007) in the development process.

7. The City shall take steps to minimize impacts to Whychus Creek water quality through the use of appropriate strategies as identified in the *Central Oregon Stormwater Manual* (2007).

Goal 12: Transportation

12.1 Transportation Goal

"To provide and encourage a safe, convenient and economic transportation system."

12.2 BACKGROUND

Historically, the City has relied heavily upon agriculture and its proximity to transportation routes for its economic livelihood. The City now has a more diversified economy that relies less upon agriculture and more upon commercial, light industrial and tourism sectors of the economy. The highways running through Sisters still supply pass through traffic vital to the local tourist economy, but also are the backbone of the local transportation network. This Comprehensive Plan chapter examines how the transportation system will function to accommodate a wide range of uses in the future.

The City of Sisters completed and Sisters City Council adopted the original Transportation System Plan (TSP) in June, 2001, then updated the Plan in January, 2010 and in June, 2018 through a TSP refinement. The TSP is a long-range transportation planning tool that analyzes existing conditions, anticipates future needs, and suggests specific improvements to address system deficiencies. The TSP constitutes the transportation element of the City's Comprehensive Plan and is incorporated herein by reference. This part of the Plan references information from the TSP and adds additional transportation policies. The full text of the TSP is available at the City of Sisters Community Development Department.

Transportation Network

The following section describes the City's streets which includes the Barclay-Locust Alternate Route. This is based on information in the TSP. The historic street design is formed as an interlocking grid and future streets need to extend and support the grid design.

Alternate Route

An alternatives analysis was performed as part of the 2010 TSP update for Highway 20 and included detailed transportation analysis, community feedback, and Project Advisory Committee (PAC) review and decision making. Eleven possible alternatives were initially identified and included highway widening, alternate routes, couplets, and bypasses. These alternatives underwent a screening process, during which it was determined that both the Hood-Main Couplet and the Barclay-Locust Alternate Route alternatives would meet the forecasted long-term transportation needs of Highway 20 through the 2030 TPS horizon year. The PAC reviewed the alternatives analysis findings and unanimously selected the Barclay-Locust Alternate Route as the locally preferred alternative. This selection was made for four main reasons:

- Cascade Avenue will continue to operate as the principal roadway during the majority of the year, and the Alternate Route would act as a relief valve during peak congestion periods.
- The Barclay-Locust Alternate Route alternative will have better flexibility in construction phasing and staging than the Hood-Main Couplet.
- The Hood-Main Couplet would have greater circulation impacts, especially in the vicinity of the elementary school.
- The Hood-Main Couplet would increase the number of roadways acting as barriers from one to two.

During a community open house held on October 29, 2008, the PAC presented their decision to select the Barclay-Locust Alternate Route as the preferred alternative, and the majority of the attendees completing comment forms indicated that they agreed with the Project Advisory Committee's recommendation for the Alternate Route concept over a couplet design for the state highway. The Motor Vehicle Plan of the TSP is based on implementation of the Highway 20 Alternate Route as the preferred Highway 20 solution.
In 2017, the City of Sisters initiated a refinement of the 2010 TSP. The purpose of this update was to refine:

- The plan for improvements on Barclay Drive and Locust Street along the Alternate Route;
- The planned intersection improvements at the following intersections:
  - Barclay Drive/Locust Street
  - US 20/Locust Street
  - US 20/OR 126
- The local circulation and access along US 20 and OR 126 east of Locust Street to City limits; and
- Update and refine the pedestrian and bicycle plans.

To evaluate these objectives, the City engaged with a Project Advisory Committee (PAC) to review and comment on improvement alternatives. The results of this refinement were incorporated into the TSP.

Additionally, in 2017, the City completed construction of the Barclay Drive and US Highway 20 roundabout, a key intersection improvement needed to implement to the Alternate Route.

Arterials

Arterial streets serve to interconnect the City. These streets link major commercial, residential, industrial and institutional areas. Access control is the key feature of an arterial route. Arterial streets are typically spaced about one mile apart to assure accessibility and reduce the incidence of traffic using collectors or local streets for through traffic in lieu of a well placed arterial street. The maximum interval for arterial spacing within the City shall be 3,000 feet where feasible. Arterials are typically multiple miles in length.

The City of Sisters has three principal routes into and out of the city. These include the McKenzie Highway (OR 242 and OR 126); McKenzie-Bend Highway (US 20) and the Santiam Highway (US 20/OR 126). These are classified as arterials for the local street system and are the primary connections to Bend and Redmond to the east and the Willamette Valley to the west.

The 1999 Oregon Highway Plan (OHP) classifies the state highway system into five categories: Interstate, Statewide, Regional, and District Highways and Local Interest Roads. Additional design considerations are required for state highways. These state highway design considerations are defined in the OHP and in the Highway Design Manual (HDM). Any deviation from these standards requires ODOT approval of a design exception.

Table 12.1: State Highways in the Sisters Urban Growth Boundary

State Highway	Highway Route Number	Freight Route	Expressway	Classification
McKenzie-Bend HWY 17 (east of Sisters)	US 20	✓	✓	Statewide
McKenzie HWY 15 (east of Sisters)	OR 126	✓	✓	Statewide
McKenzie HWY 15 (through town - MP 92.28 - 93.07)	US 20/OR 126	✓		Statewide
McKenzie HWY 15 (west of Sisters)	OR 242			District
Santiam HWY 16 (County line to Barclay [MP 99.95])	US 20/OR 126	✓	✓	Statewide
Santiam HWY 16 (Barclay to Jct w/McKenzie [MP 100.12])	US 20/OR 126	✓		Statewide

Source: Oregon Department of Transportation

The 2010 Transportation System Plan upgraded Barclay Drive and Camp Polk Road/Locust Street from Highway 20 to Barclay Drive to arterials. These particular roads will function as an alternate route that will alleviate traffic in downtown Sisters during peak periods of congestion

Collectors

Collector streets provide both access and circulation within and between residential and commercial/industrial areas. Collectors differ from arterials in that they provide more of a citywide circulation function, do not require as extensive control of access (compared to arterials) and penetrate residential neighborhoods, distributing trips from the neighborhood and local street system. The maximum interval for collector roadways shall be 1,500 feet where feasible. Collectors are typically greater than 0.5 to 1.0 miles in length. The adopted Transportation System Plan upgraded East Cascade Avenue from Cascade Avenue to Rope Street, Jefferson Avenue from Pine Street to west City limits, Larch Street from Jefferson Avenue to Barclay Drive, McKinney Butte Road and Rail Way, to collector streets.

Neighborhood Routes

Neighborhood routes are usually long relative to local streets and provide connectivity to collectors or arterials. Because neighborhood routes have greater connectivity, they generally have more traffic than local streets and are used by residents in the area to get into and out of the neighborhood, but do not serve citywide/large area circulation. They are typically about a quarter to a half-mile in total length. Traffic from cul-de-sacs and other local streets may drain onto neighborhood routes to gain access to collectors or arterials. Because traffic needs are greater than a local street, certain measures should be considered to retain the neighborhood character and livability of these routes. Neighborhood traffic management measures are often appropriate (including devices such as speed humps, traffic circles and other devices). However, it should not be construed that neighborhood routes automatically get speed humps or any other measures. While these routes have special needs, neighborhood traffic management is only one means of retaining neighborhood character and vitality. The adopted Transportation System Plan upgraded Adams Avenue from Pine Street to Cedar Street, Black Butte Avenue from Larch Street to east City limits, Brooks Camp Road, Cedar Street from Main Avenue to Adams Avenue, Cowboy Street from Black Butte Avenue to East Cascade Avenue, Lundgren Mill, Pine Street from Jefferson Avenue to south City limits, Pine Meadow Street, Rope Street from East Cascade Avenue to Timber Pine Drive, Sisters Park Drive, St. Helens Avenue from Locust Street to Pine Street, Sun Ranch Drive, Timber Creek Drive, Timber Pine Drive from Rope Street to Highway 126, Trinity Way and Washington Street from Locust Street to Pine Street to neighborhood routes. The TSP also downgraded Locust Street from Jefferson Avenue to south City limits from a collector to a neighborhood route.

Local

Local streets have the sole function of providing immediate access to adjacent land. Service to through traffic movements on local streets is deliberately discouraged by design. All other city streets in the City of Sisters that are not designated as arterial streets, collector streets, or neighborhood routes are considered to be local streets.
The adopted Transportation System Plan downgraded Tyee Drive from Elm Street to Locust Street from a collector to a local street.

Street Conditions

The Transportation System Plan, 2010 identified pavement conditions as either good, fair, poor and gravel. The poor segments were identified as streets in need of pavement improvements and include the following arterial and collector streets:

- Cascade Avenue (US 20/OR 126) – Pine Street to Larch Street
- McKenzie Highway (US 20/OR 126) – Larch Street to Locust Street
- South Elm Street - West Black Crater Avenue to Washington Avenue

Bikeways

Several types of bicycle facilities exist in Sisters, including shared roadways, shoulder bikeways, bike lanes, and shared-use paths (also known as trails or multi-use paths). Sisters has shoulder bikeways on Highway 126 and Highway 20 east of Locust Street.

State highways and arterial streets comprise the majority of the bike lane network in Sisters. A map of the City's existing bicycle facilities is included in the City's TSP.

The Community Action Team of Sisters (CATS) sponsored the Sisters Community Trails Committee. This committee completed an update to the 2003 Trails Plan in January 2011 with the assistance of local donors, public sponsors, and community input. The Trails Plan lays out a framework for creating a community-wide non-motorized trail system. This trail system links rural subdivisions and rural trails/roadway systems to points of interest within the City of Sisters. The City plays a critical role in meeting the goals of the Sisters Community Trails project by constructing trail, bike lane, multi-use pathway, and sidewalk projects in the adopted TSP, coordinating with the trails committee to obtain funding, and other providing assistance as needed. The City finds that developing the proposed trail system in the Trails Plan, in addition to developing other new trails in and around the City, will help the City meet transportation, recreation, land use, and public facility goals and action items.

The Bicycle Master Plan and Action Plan in the TSP identifies a network of bike lanes, shoulder bikeways, shared use paths and bike boulevards. Recommended projects include filling in system gaps and developing a more complete network appropriate for bicyclists of all ages and abilities. The project system includes an expanded bike lane network on streets where bicyclists would benefit from delineated separation from motorist, while shared-use paths are recommended in wide right-of-ways along several cross-town routes. The recommended network also includes a Bicycle Boulevard on Washington Ave and several alternative east/west bike routes designated with bicycle lanes and shared-use paths, taking advantage of Sisters' extensive network of lower-volume streets. A map of the City's bicycle system improvements is included in the City's TSP. As can be seen in the updated 2018 TSP refinement, a number of the bicycle projects listed in the 2010 TSP have been completed.

Bicycle Boulevards

Several areas in Sisters benefit from a generally well-connected system of lower-volume streets that – with the addition of moderate treatments – could become good bicycling routes for riders of all ages and skills. These streets (commonly referred to as "Bicycle Boulevards") accommodate bicyclists and motorists in the same travel lanes, usually with no bicycle lane delineation. Traffic controls along a Bicycle Boulevard assign priority to through cyclist movement while encouraging through vehicle traffic to use alternate parallel routes. Traffic calming and other treatments along the corridor reduce vehicle speeds so that motorists and bicyclists generally travel at the same speed, creating a safer and more comfortable environment for all users. On-street parking does help slow traffic but should be parallel or back-in diagonal to minimize motor vehicle/bicycle conflicts.
Boulevards also incorporate treatments to facilitate safe and convenient crossings where bicyclists must traverse major streets. Bicycle Boulevards work best in well-connected street grids, where riders can follow reasonably direct and logical routes with few "twists and turns." Boulevards also work best when higher-order parallel streets exist to serve through vehicle traffic. The recommended Bicycle Boulevards are for Washington Avenue and Adams Avenue. While a number of streets contain Bicycle Boulevard features such as parallel parking, bicycle route signage, bicycle lanes, and other traffic calming treatments, Washington Avenue has been specifically identified in the TSP as a priority Bicycle

Boulevard street with specific cross-sections to enhance the this street as a bicycle priority route.

Sidewalks

A fairly complete sidewalk system exists in the downtown core, which includes the areas bounded by Hood Avenue, Main Avenue, Larch Street and Pine Street. In some residential neighborhoods and along collectors outside of the downtown area, narrow asphalt paths take place of sidewalks. Roadway shoulders are utilized for two-way pedestrian travel in Sisters where sidewalks do not exist. Some major streets where shoulders are the only pedestrian and bicycle facilities include the following:

- Portions of Highway 20 within the city limits
- Highway 126
- Portions of Barclay Drive

Although roadway shoulders may appropriately accommodate pedestrians in rural and lower volume residential areas, the gradual outward expansion of Sisters urban development has resulted in higher traffic volumes on these roads, necessitating the provision of additional pedestrian facilities to separate pedestrians and motorists.

Existing pedestrian issues include high traffic volumes, along Cascade Avenue (US 20/OR 126). Other concerns include discontinuous streets, insufficient shared use paths, fragmented sidewalks, lack of facilities in key locations, ditches, poor street lighting, inadequate curb ramps, auto bumper intrusion onto sidewalks and high vehicle speeds on Locust Street near the elementary school.

The Pedestrian Master Plan in the TSP identifies a recommended pedestrian network that builds upon Sisters' existing system of sidewalks, shared use paths, and other pedestrian infrastructure. Recommendations include filling gaps in the sidewalk system, developing an interconnected shared-use path network, and targeting specific intersections for pedestrian crossing enhancements. A map of the City's pedestrian system improvements is included in the City's TSP.

Urban Renewal Plan

An Urban Renewal District (URD) is a tax-funded district within the city. The URD is funded with the incremental increases in property taxes that result from the construction of applicable improvements, some of which may be transportation related. As desired, the funds raised by a URD can be used for, but are not limited to, transportation projects.

The City of Sisters created an URD for its downtown core in 2003. The primary purpose in creating the URD was to make Sisters' downtown area more pedestrian and bicycle friendly (goals established in the City's 2001 TSP). Four of the URD goals address the downtown transportation network:

- Strengthen downtown Sisters' role as the heart of the community
- Improve vehicular and pedestrian circulation through and within the downtown to accommodate both through traffic and downtown patrons
- Promote a mix of commercial and residential uses oriented to pedestrians

Enhance the pedestrian environment on streets and in public parks, a town square, and other public gathering places.

The Downtown Sisters Urban Renewal Plan will promote the development of downtown as the commercial and cultural center of the Sisters community. The Urban Renewal Plan will provide for improvements to streets, sidewalks, pedestrian ways, public gathering places, parks and public parking. It will also assist property owners in the rehabilitation, development or redevelopment of their properties.

Other Transportation Modes

Public Transportation

Cascade East Transit (CET) has established fixed transit routes between Sisters and Bend and Sisters and Redmond. Additionally, CET provides dial-a-ride service to all residents of the Sisters area on a demand-responsive basis. This service is provided to many communities in Central Oregon. In Sisters, the service consists of door-to-door transport to medical appointments.

Airport

The Sisters Eagle Airport is located at the intersection of Camp Polk Road and Barclay Drive. The privately owned airfield has a heliport and a runway that is 60' wide by 3,560' long. The paved runway supports locally based aircraft and primarily accommodates recreation-oriented traffic. Limited service is provided to users at their own risk. There are certain operational limitations that are associated with runway orientation, prevailing northern winds and high elevation terrain some 200 feet east of Runway 2. In the future the runway may include lights to improve safety. This airport is the center for AirLife, search and rescue, smoke-jumper training, and other airport related activities.

A municipal commercial airfield is located in Redmond, 20 miles to the east of Sisters via Highway 126, serves as the main aviation hub for Central Oregon. The airport has two paved, lighted, 7,000-foot runways that accommodate most sizes of commercial aircraft. In addition, general aviation support facilities are available through the fixed operator that supports charter flights, flight training and aircraft maintenance and service.

Rail Service

There are no rail lines or services in the Sisters area.

Water Transportation/Pipeline Service

There are no water or pipeline transportations modes in Sisters.

12.3 FINDINGS

1. The City of Sisters TSP is an element of the City of Sisters Comprehensive Plan and is incorporated herein by reference. As such, it identifies the general location of transportation improvements and allows the following actions without land use review:

    a. Changes in the specific alignment of proposed public road and highway projects are permitted without plan amendment if the new alignment falls within a transportation corridor identified in the TSP.

    b. Operation, maintenance, repair, and preservation of existing transportation facilities without land use review, except where specifically regulated.

    c. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, for improvements designated in the TSP, the classification of the roadway and approved road standards.

2. The City has developed and adopted a Transportation System Plan (TSP) in January 2010 (updated through a refinement in June, 2018, in conformance with the Oregon Transportation Planning Rule.

    This Sisters Transportation System Plan (TSP) identifies specific transportation projects and programs needed to support the City's goals and policies and to serve planned growth through the TSP horizon year (2030). This TSP builds on the previous plan that was developed for the City in 2001 and addresses changes in local and regional growth patterns and new transportation planning policies adopted by the state. In addition, it provides refined analysis used to determine a preferred alternative that addresses congestion on Highway 20 through the downtown commercial district. This plan is aimed at fulfilling Transportation Planning Rule (TPR) requirements for comprehensive transportation planning in the cities of Oregon, and presents the investments and priorities for the pedestrian, bicycle, and motor vehicle systems along with new transportation programs to correct existing shortfalls and enhance critical services.

3. Highway 20 facilities provide inadequate mobility during peak travel days. Heavy congestion on this primary route through Sisters impacts local circulation and access for all travel modes in the downtown area. Recurring congestion and vehicle queues adversely impact local circulation at major cross streets including Locust Avenue, Elm Street and Pine Street. As volumes grow from regional and local development, the frequency and severity of these heavy congestion events on Highway 20 will increase.

4. The community desires increased sidewalk connectivity throughout downtown along with enhanced pedestrian crossings to provide a safe, convenient, and desirable walking environment. Limited right-of-way of 60-feet, established before 1915, restricts certain ODOT improvements including required sidewalk and shoulder widths. Exceptions to these ODOT standards were approved by ODOT.

5. The TSP identifies the following strategies for the City's pedestrian system:
   - Continue to support policies that promote walking. Specific recommendations include:
     - Update and clarify pedestrian facility construction standards and incorporate them into the City's Public Works Standards and Development Code.
     - Retrofit existing pedestrian facilities to current standards to promote safety, connectivity, and consistency, as adjacent development occurs, as funds become available, or as roads are replaced or reconstructed.
     - Require that all walkways be constructed in a manner that addresses environmental conditions, such as natural, cultural, and historical features.
     - Require pedestrian connections within and between adjacent developments to provide convenience and safety for pedestrians.
   - Develop and fund a Spot Improvement Program to respond quickly to location-specific pedestrian infrastructure improvement needs.
   - Develop an Americans with Disabilities Act (ADA) Transition Plan to identify strategies and priorities for upgrading the City's current transportation infrastructure to accommodate persons with disabilities.
   - Establish a routine maintenance schedule for pedestrian facilities (e.g., repairing damaged sidewalks).
   - Implement recommendations made by the Safe Routes to School Plan. Coordinate with the Sisters School District to establish and strengthen Safe Routes to School (SR2S) Programs at the Elementary School, Middle School, and High School and ensure long-term, successful programs at each school. Prioritize facility improvements throughout the city on SR2S travel corridors.
   - Develop education programs to increase the awareness of pedestrian needs and rights.
   - Develop encouragement programs to promote walking as a convenient, healthy, safe, and viable transportation mode.
   - Develop enforcement programs to ensure that pedestrians, bicyclists, and motorists obey traffic laws.
   - Identify and apply for available state and federal grant funding for system improvements identified in this Pedestrian Master Plan.
   - Continue to seek funding for Washington Avenue multi-modal corridor improvements through grants or other funding mechanisms.
   - Provide safe, comfortable, and convenient alternatives to Highway 20 for

bicyclists and pedestrians of all ages and abilities by emphasizing alternate parallel facilities.

6. The TSP identifies the following strategies for the City's bicycle system:
   - Continue to support policies that promote bicycling. Specific suggestions include:
     - Establish bicycle facility construction standards and incorporate them into the City's Public Works Standards and Development Code
     - Retrofit existing bicycle facilities to current standards to promote safety, connectivity, and consistency, as adjacent development occurs, as funds become available, or as roads are replaced or reconstructed.
     - Require that all bikeways be constructed in a manner that addresses environmental conditions, such as natural, cultural, and historical features
     - Require continuous bicycle connections and corridors within and between developments to provide convenience and safety for bicyclists.
   - Develop and fund a Spot Improvement Program to respond quickly to location-specific bicycle infrastructure improvement needs.
   - Establish a bicycle network signing program to determine sign placement locations and sign content (e.g., locations, distance, and travel time). The City should consider using custom signage to complement Sisters' Western-themed downtown and existing street signs.
   - Establish a routine maintenance schedule for bicycle facilities (e.g., repairing/restriping damaged bike lanes).
   - Implement recommendations made by the Safe Routes to School Plan. Coordinate with the Sisters School District to establish and strengthen Safe Routes to School (SR2S) Programs at the Elementary School, Middle School, and High School and to ensure long term, successful programs at each school. Prioritize facility improvements throughout the city on SR2S travel corridors. Develop education programs to increase the awareness of bicyclist needs and rights.
   - Develop encouragement programs to promote bicycling as a convenient, healthy, safe, and viable transportation mode.
   - Develop enforcement programs to ensure that pedestrians, bicyclists, and motorists obey traffic laws.
   - Identify and apply for state and federal grant funding opportunities to fund the system improvements identified in the Bicycle Master Plan.
   - Continue to seek funding for Washington Avenue multi modal corridor improvements through grants or other funding mechanisms.
   - Create safe, comfortable, and convenient facilities parallel to Highway 20 for pedestrians and bicyclists of all ages and abilities.

7. The transportation improvements will be more sustainable and the associated financial investments will yield greater returns by following a variety of management and capital improvement strategies identified in the TSP, including:
   - Obtain design exceptions from ODOT for HYW 20 in the downtown core.
   - Perform Transportation System Management (TSM) – Improve management of the existing transportation system through one or more measures, including:
     - Neighborhood Traffic Management
     - Functional Classification

    - Cross-section standard
    - Access Management
    - Local Street Connectivity

- Perform Transportation Demand Management (TDM) – Encourage other transportation modes during the peak travel demand period besides single occupant vehicles.
- Develop a Motor Vehicle Improvement Plan that provides the necessary capacity and circulation improvements.
- Designate Truck Routes through Sisters.

8. Without capacity or circulation improvements, traffic operations in 2030 would fail throughout the year and excessive queuing and delay would become common along Highway 20. One of the key focuses of the motor vehicle improvement plan for this TSP update was the development of a preferred Highway 20 alternative to meet the long-term transportation needs of Highway 20 through the year 2030. The Transportation System Plan Project Advisory Committee (PAC) unanimously selected the Barclay-Locust Alternate Route as the locally preferred alternative. This selection was made for four main reasons:
    - Cascade Avenue would continue to operate as the principal roadway during the majority of the year, and the Alternate Route would act as a relief valve during peak congestion periods.
    - The Barclay-Locust Alternate Route alternative would have better flexibility in construction phasing and staging than the Hood-Main Couplet.
    - The Hood-Main Couplet would have greater circulation impacts, especially in the vicinity of the elementary school.
    - The Hood-Main Couplet would increase the number of roadways acting as barriers from one to two.
9. Section 660-12-045 (1) of the Transportation Planning Rule (TPR) requires that cities and counties amend their land use regulations to conform with the jurisdiction's adopted TSP. This section of the TPR is indented to clarify the approval process for transportation-related projects. The approval process for different types of projects should be clear.

10. Section 660-12-045 (2) (d) of the TPR requires that jurisdictions develop a process for the coordinated review of land use decisions affecting transportation facilities.

11. Section 660-12-045(2) of the TPR requires that jurisdictions protect future operation of transportation corridors. In addition, the proposed function of a future roadway and other transportation facilities such as airports must be protected from incompatible land uses.

12. Highways, roads, streets in Sisters can have negative impacts on water quality by increasing both the quantity and velocity of runoff, and by collecting oil and other pollutants that are flushed into Whychus Creek when it rains.

13. Narrower local streets, standards that limit the amount of parking, and pervious paving surfaces (where practical) can reduce the amount of impervious surfaces in the City.

14. As part of the 2011 City of Sisters Parks Master Plan planning process, the community identified support for additional trails and pathways throughout the planning area. The community growth trends, recreation analysis, stakeholder interviews and community workshops contributed to identifying a need for improved connectivity. The 2011 City of Sisters Parks Master Plan relies upon and supports the trails, bike paths, and pathways identified in previous planning efforts, including the 2011 Sisters Trails Plan and the 2010 Sisters TSP. No additional trail or path projects are proposed by the 2011 City of Sisters Parks Master Plan outside of those identified in the open space or park development projects.

12.4 POLICIES

1. The City shall implement the adopted City of Sisters Transportation System Plan, January 2010. and as provided in the TSP refinement adopted in June, 2018
2. The City will be proactive in obtaining all elements of a well functioning multi-modal transportation system through all legal means.

   Tasks -

   a. The City shall plan for the development and maintenance of additional parking spaces and/or facilities.

   b. Right-of-way for planned transportation facilities, access ways, paths, or trails shall be preserved through all practical means, including exaction, voluntary dedication, conditions of approval, setbacks, or other appropriate means.

   c. The City of Sisters shall include a clear and objective process for the approval of transportation projects in the City's Development Code.

   d. New development shall integrate with the existing street and grid system to facilitate local traffic flows, access to developments, and safe access to state highways.

   e. All public streets shall be constructed to City Public Works Construction standards.
3. The City shall cooperate with neighboring Cities and with Deschutes County in the development of an inter-city transportation plan.
4. The City shall participate in the Central Oregon Commute Options Program by assisting in implementing measures outlined in their programming.
5. The City should develop and utilize telecommuting strategies to facilitate the movement of information and data rather than people.
6. The City of Sisters Tax Increment Financing District (Urban Renewal District) provides funding for the development of improvements along and adjacent to the commercial core.

7. Residential street lighting shall be designed consistent with the 1880s Western Design Theme, Dark Skies ordinance, and Development Code.
8. Street signs of a type approved by the City shall be provided by the developer for each new residential development.
9. The City shall work with ODOT to lower speed limits along highways within the entire Urban Growth Boundary.
10. The City shall work with ODOT to obtain design exceptions to the sidewalk and shoulder widths for Highway 20 in the downtown core.
11. The City should obtain a Special Transportation Area (STA) for Highway 20 through downtown Sisters Cascade Avenue from Larch Street to the intersection past Pine Street (the right-in/right-out at Old Highway 242).

    Tasks –
    a. Complete an STA Management Plan for Highway 20.
    b. Obtain Oregon Transportation Commission (OTC) approval of the STA designation.

12. Sisters Transportation System Plan shall be consistent with other City goals and policies, including the goal of protecting and enhancing water quality.
13. The Transportation System Plan shall promote walking and bicycling within the City to reduce the impacts of transportation on water quality.

    Tasks -
    a. Construct pedestrian and bicycle paths and trails to promote connectivity.

Goal 13: Energy

13.1 GOAL

"To manage land uses in a manner to maximize the conservation of all forms of energy based upon sound economic principles."

13.2 BACKGROUND

The Central Oregon area has historically had relatively low energy costs. This has generally led to land use, construction and transportation practices that do not promote energy conservation.

The City of Sisters receives electrical power from Central Electric Co-Operative (CEC). Central Electric's service area includes seven counties in central and eastern Oregon: Deschutes, Crook, Jefferson, Grant, Linn, Wasco and Lake. CEC is a non-profit, consumer-owned corporation.

CEC has many helpful energy saving tips on its web site www.centralelectriccoop.com., or advice is available from their office in Redmond. Energy saving tips include subscribing to a free monthly Energy Newsletter, providing energy tips for the home and business, facilitating the use of "green" power, illustrating ways to improve energy efficiency of lighting, water heating, cooling, and by performing energy auditing services.

With few industrial power users in Sisters, residences and business are significant energy users in the City. Anticipated significant increases in population growth make mandated energy efficiency standards for new construction an important link in improving the energy efficiency of the buildings in the City. New construction will be subject to standards in the International Building Code and International Residential Code for One- and Two-Family Dwellings, International Code Council, 2000. These standards include considerations for enhancing the energy efficiency of new construction.

Area weather patterns make solar energy a viable alternate energy source for space and water heating.

13.3 FINDINGS

1. Currently, the City is using the Uniform Building Code. As the International Building Code is adopted and updated by the State of Oregon, the City of Sisters will adopt the International Building Code to replace the Uniform Building Code.

2. Many buildings in the City are substandard and were built before energy efficiency was required by building codes. Owners of these buildings are encouraged to participate in energy audits and adopt improved energy efficiency practices.

3. The local electric power provider, Central Electric Cooperative, recognizes conservation measures as an economical way to meet future energy demand.

4. The only known natural sources of energy within the Sisters Urban Area are wind, solar, and wood. However, current development costs discourage development of commercial scale solar and wind power.

13.4 POLICIES

1. All new development shall occur in a manner that encourages energy efficiency.

   Tasks –

   a. All new development shall provide solar access, in accordance with the standards described in the Development Code, as conditions allow.

   b. All new development shall conform to adopted building and development codes.

   c. The City shall adopt and enforce either the Uniform Building Code or the International Building Code and International Residential Code for One- and Two-Family Dwellings.

   d. Infrastructure in new developments, such as bike lanes, paths, and trails shall be laid out to provide convenient access to places of education, recreation, and shopping in an effort to promote energy efficiency. Routes should be constructed according to the City TSP, Sisters Area Trails Plan, or other applicable plans.

2. When needed, the City shall participate in planning energy delivery transmission routes in cooperation with the energy provider.

   Task –

   a. Areas should be set aside for substations or transformers near load centers in cooperation with property developers and the utility provider.

3. The City in coordination with the County and local energy providers should develop a program for public awareness and education of the reasons and need for energy conservation.

4. The City should continue to encourage use of the recycling program through public education and ease of use of facilities.

5. The City should practice energy conservation in all its programs and operations.

Goal 14: Urbanization

14.1 GOALS

"To provide for an orderly and efficient transition from rural to urban land use."

14.2 BACKGROUND

Definitions

Urban Lands: Lands inside the City of Sisters Urban Growth Boundary (UGB) for which sewer and water services are available and capable of supporting planned levels of development, including associated open space and unbuildable land.

Urbanizable Lands: Land inside the City of Sisters UGB that is designated for urban development for which sewer and water services capable of supporting planned development are not available.

Urban Services: Key facilities to support urban types and levels of development and to include at least the following: City water and sewer services, storm drainage facilities, and transportation infrastructure.

The City of Sisters' City Limits coincide with the City's adopted Urban Growth Boundary (UGB). The current (2007) city limits contains approximately 1176 gross acres. Table 14.1 below shows the approximate gross acres of lands in the Sisters UGB by land use district. The data is approximate, includes public roadways, and is based on engineering estimates and public records available to the City.

Table 14.1: Gross Acreage of Areas in Urban Growth Boundary by Land Use District

Land Use District	**Approx. Gross Acre**
Public Facility District (PF District)	
School District Properties	144.30
Forest Service Property	42.58
Middle and Elementary School Properties	19.00
Wastewater Treatment Facility and Fire Training Facility	62.80
PF District Total	**268.68**
Open Space District (OS District)	
Forest Service Property	7.56
City and State Parks including the unplatted McKenzie Meadow Park	44.80
OS District Total	**52.36**
Flood Plain District (FP District) Total (not including area in City and State Parks the OS District)	**24.00**
Commercial Districts (C District)	

Downtown Commercial District (DC) & Tourist Commercial	134.41
Highway Commercial District (HC)	66.00
C and HC Districts Total	**200.41**
Light Industrial District (LI District) Total	**101.08**
Residential (R District)	
Residential District (R District)	288.00
Residential Multi-Family District (R-MFD District)	188.90
R Districts Total	**476.90**
Urban Area Reserve District (UAR District)	
UAR (Residential 2.5-acre Minimum)	30.00
UAR (Business Park 5-acre Minimum owned by the U.S. Forest Service)	17.54
Fire Training Facility	4.00
UAR Districts Total	**51.54**
Airport District Total	**34.3**
Total Area in Urban Growth Boundary	**1,210.54**

Source: City of Sisters GIS based on Deschutes County GIS tax lots, and as amended by files CP06-01/02, Z06-01 and CP 08-02. Recalculated on 6/28/11 following the survey of the Forest Service property in 2008, and the annexation of the McKenzie Meadow Village and Fire Training Properties in 2010 - 2011.

The Conklin Guest House property was included in the UGB in 2005 with a commercial zoning designation. In 2007, the Sun Ranch Tourist Commercial zoning district was adopted and applied to the property and an additional area of 0.8 acres was added to the district. The Sun Ranch Tourist Commercial District allows uses that serve tourists and the Light Industrial areas to the west.

14.3 FINDINGS

Population Forecast

The population used in the 2005 Comprehensive Plan update was for year 2004, which was estimated at 1,490 persons (Portland State University, PRC July 1, 2004 estimates). Year 2010 census numbers showed a total population of 2038 persons. These statistics are for the Sisters City limits and Urban Growth Boundary, which are coincident. The City of Sisters (hereafter referred to as Sisters or City) population is forecast to remain small compared to the other jurisdictions, but will experience consistent growth over the long-term. Sisters uses the population forecast numbers for long-range planning purposes, including the residential buildable lands supply and demand analysis. Refer to Appendix A for City of Sisters 2004 coordinated population forecast.

Summary of Population Forecast

Table 14.2 is a summary of the City's 20-year population forecast. The expected population growth rate between 2000 and 2005 is 12.54% per year. This rate is expected to decrease during the 20-year planning period to above 3 percent per year. The year 2025 population is expected to be 3,747 people.

14.2 Population Forecast Summary

Year	City of Sisters Population [2]	5-year Average Annual Growth Rate (previous to current year)
2000	975 [1]	NA
2005	1,768	12.64%
2010	2,306	5.46%
2015	2,694	3.16%
2020	3,166	3.28%
2025	3,747	3.43%

[1] Source: PRC July 1, Official Population Estimate for City of Sisters.
[2] Source: Population Estimates by City of Sisters.

The City of Sisters' methodology for determining population is based on the current estimates of the City's population (from PRC) plus estimates of population growth based on the number of new residential building permits that will be issued in the city between 2004 and 2025. The housing unit method approximates population for the city based on the number of occupied housing units in the city multiplied by the city's average household size. Based on the number of building permits issued each year, and the number of people per household (considering vacancy rate and local demographics) it is possible to forecast how many people will be "added" to the City in the future. For years beyond 2004, the number of building permits for residential units was estimated based on past and recent building trends, then population was estimated from the growth in housing represented by residential building permit issuance.

This technique is one of the most feasible, accurate, and cost-effective among the major methods of population estimation available for small geographies such as Sisters. Using the number of building permits coupled with other demographic information to estimate population is commonly used to estimate populations for small geographic areas.
Different versions of the housing unit model are used by the US Census Bureau to estimate sub-County populations and by a wide variety of cities, counties, states and special districts. The official yearly estimates of the City's population determined by Portland State University's Center for Population Research and Census are based on a housing unit method.

14.3 Housing Units and Building Permit Issuance, 1990-2000

Period	Number of Total Housing Units In City of Sisters	Average Annual Growth Rate of Building Permit Issuance
1990-2000 [1]	354 to 482 housing units	3.13%

[1] Source: 1990 and 2000 U.S. Census, Summary File 1 (SF-1) 100-Percent Data

Between 1990 and 2000, the number of housing units increased 3.13 percent/year as shown in Table 14.3. Note in Table 14.4, using the exact same source of data (U.S. Census data), the rate of population growth was 3.51 percent per year. These two rates of average annual growth are very similar. This information demonstrates why it is appropriate to use the number of new dwelling units to predict population, in combination with other important data.

14.4 Population Growth, 1990-2000

Period	Population by Year, City of Sisters	Average Annual Growth Rates of Population
1990-2000 [1]	679 to 959 people	3.51%

[1] Source: 1990 and 2000 U.S. Census, Summary File 1 (SF-1) 100-Percent Data

The factual information presented in tables 14.3 and 14.4 supports the City's assumption that using residential building permits to approximate the growth of housing units and to predict population is appropriate when used with other information such as the number of people per dwelling unit. The rates of growth of the City's housing units and population mirror each other over a decade between 1990 and 2000 as well as during a short period such as 2001-2003. Increases in housing unit construction are mirrored by the increases in the official population estimates by PRC. Multiple sources of public data verify these conclusions.

Table 14.5 below, shows how many building permits for residential units after subtracting demolitions were issued by year in the City between 1990 and 2003. This demonstrates the slow rate of building in the early 1990's, the acceleration in anticipation of construction of the municipal sewer in 1996, the dramatic and sustained increases in issuance of building permits as the sewer became operational, and the continued rate of building permit issuance since the sewer's completion.

Table 14.5 Housing Unit Growth Rates, 1990-2003

Period	Number of Total Housing Units	Average Annual Growth Rate of Housing Construction
1990-2000 [1]	354 to 482 housing units	3.13%
2001-2003 [2]	482 to 725 housing units	14.57%

[1] Source: 1990 and 2000 U.S. Censuses, Summary File 1 (SF-1) 100-Percent Data

[2] Source: City of Sisters Building Permits for Residential Units, after subtracting demolitions.

In years 1990 through 2000, no municipal sewer was available and residential development was limited to single-family development on large (1/2 acre) lots. The relatively low average annual population growth rate of 3.68 percent per year between 1990 and 2000 reflects this when compared to the rate of population growth after the municipal sewer installation in 2001. In years 2001 to 2003 the average annual rate of population growth in the City was 13.62 percent per year, nearly four times the rate during the 1990s. In addition, the City's development codes were dramatically updated in 2001, facilitating infill development and smaller lot sizes. Thus, the conditions (new sewer and code) present in 2004 and beyond are significantly different than in the 1990's.

The population forecast assumes that the high rate of growth seen after the installation of the municipal sewer will slowly decrease and long-term growth for the remainder of the planning period will be at rates slightly higher than population and housing growth rates during the 1990s. The yearly population forecast, which is part of the Deschutes County Coordinated Population Forecast 2000-2025, is presented in Table 14.6. For a detailed discussion of the population forecast and methodology, please refer to Appendix 1.

Table 14.6: Population Forecast for City of Sisters, 2003-2025

Forecast Year	Forecasted Rate of Building Permit Growth [1]		Forecasted Residential Housing Units [2]	Forecasted New Residential Building Permits Issued/Yr. [3]	Persons per Dwelling Unit [4]	Population Forecast [5]
2003	NA		725	104	NA	1,430
2004	11.10%		805	80	1.99	1,590
2005	11.10%		895	89	1.99	1,768
2006	8.90%	Declining	975	80	1.99	1,927
2007	5.40%	Influence of	1,027	53	1.99	2,031
2008	4.30%	New Sewer	1,071	44	1.99	2,119
2009	4.30%		1,117	46	1.99	2,211
2010	4.30%		1,165	48	1.99	2,306
2011	3.13%		1,202	36	1.99	2,379
2012	3.13%		1,240	38	2.00	2,454
2013	3.13%		1,278	39	2.00	2,532
2014	3.13%		1,318	40	2.00	2,612
2015	3.13%	Rate of	1,360	41	2.00	2,694
2016	3.13%	Building	1,402	43	2.00	2,780
2017	3.13%	Permit	1,446	44	2.10	2,872
2018	3.13%	Growtn	1,491	45	2.10	2,967
2019	3.13%	same rate as 1990	1,538	47	2.10	3,065
2020	3.13%	through	1,586	48	2.10	3,166
2021	3.13%	2000	1,636	50	2.20	3,275
2022	3.13%		1,687	51	2.20	3,388
2023	3.13%		1,740	53	2.20	3,504
2024	3.13%		1,794	54	2.20	3,624
2025	3.13%		1,850	56	2.20	3,747

[1] Source: Rates between 2004 through 2010 based on weighted average of growth rates beforeand after the construction of the municipal sewer. Rates of Building Permit Growth between 2011 and 2025 based on rate of housing unit growth between 1990-2000 as determined by the U.S. Census.

[2] Source: "Forecasted Residential Housing Units" based on "Forecasted Rate of Building Permit Growth" applied to base of 725 Residential Housing Units in 2003, and grown by the applicable rate per year.

[3] Source: Current year minus previous years "Forecasted Residential Housing Units", for example in 2004, 805 Forecasted Residential Units in 2004 minus 725 Forecasted Housing Units in 2003 equals 80.

[4] Source: Persons per Dwelling Unit of 1.99 is from the 2000 U. S. Census, SF-1. This statistic accounts for vacancy rates and second homes. The statistic increases over time as estimated here by the City of Sisters Planning Department based on the assumption that the City will approach the State of Oregon statisticof 2.4 Persons Per Dwelling Unit as determined by the 2000 U.S. Census, SF-1. In other words, the City of Sisters willbecome more like the state in terms of persons per household in the future.

[5] Source: Calculated by adding the total of (Total Res. Permits/Yr. in Sisters UGB x Persons Per Dwelling Unit) to previous year's Population Forecast.

Infrastructure

The City has community facilities plans for water, wastewater, parks and transportation. A voter mandated Charter amendment that Systems Development Charges be paid as development permits are issued ensures there will be adequate capacity in those systems to accommodate growth. As more building permits are issued, the amount of SDCs collected increases directly. If additional land is needed to accommodate anticipated housing, industrial, or commercial growth, the City will comply with State of Oregon requirements to provide the necessary land base. Water, sewer, and transportation facility plans will be updated to reflect anticipated population growth, necessary infrastructure will be planned, and SDCs updated and required to fund needed improvements.

The Sisters School District has three schools, all of which are rated as excellent. Sisters High School has one of the highest average SAT scores for graduating seniors, which attracts families to the district. Sisters schools offer full educational experiences including arts and music. The District uses a place-based environmental education model called 'IEE', which teaches and promotes education by locale, and good stewardship of natural resources. The School District has recently created many public and private partnerships which help us to maintain adequate funding in challenging budgetary times

Sisters school capacities and current enrollments are as follows**;

School:	Capacity:	Current Enrollment*:	Percent:
Sisters Elementary School	525	310	59%
Sisters Middle School	459	390	85%
Sisters High School	750	504	67%

*school year 2011-2012…

**source: Jim Golden, Sisters School District Superintendent, via email on 12-16-2011.

Future Land Needs

Public Facility and Landscape Management Districts (PF and LM Districts)

Additional lands for Public Facilities are not anticipated within the planning period with the possible exception of land needed for a public works shop and additional surface dispersal of treated effluent and the training facility for the Sisters / Camp Sherman Fire District.

The Sisters School District completed its new school campus including a new high school, fields, and recreation facilities for the Sisters Organization for Athletics and Recreation on the 98-acre parcel. The site is not fully utilized and could accommodate additional development.

The United States Forest Service (USFS) Properties.

The USFS owns several properties in Sisters, including a 42.58 acre property designated and zoned Public Facilities, which is commonly referred to as the 'South Barclay Parcel'; a 7.56 acre property designated and zoned Open Space that is commonly referred to as the 'East Portal Triangle', and a 17.54 acre parcel that is designated and zoned Urban Area Reserve and is commonly referred to as the 'North Barclay' property. The properties are generally located along the east side of Highway 20 west of Pine Street.

It is anticipated that the USFS will seek to sell most of these three parcels in order to fund a new headquarters building in Sisters. In 2008, the USFS attempted to sell the land but received no bids. Feedback received by the USFS and the City was that there were too many uncertainties associated with future zone changes and the likely application of the Transportation Planning Rule (TPR). This, in combination with a suddenly volatile economy, appeared to be the reason that the property did not sell in 2008.

In 2010, the City, ODOT, DLCD and the USFS coordinated efforts, and through a $74,900 Transportation and Growth Management grant, agreed to produce two design options (Options A and B) that would establish density thresholds and land use types without triggering the TPR. A third design option (Option C) was also developed at the request of the City of Sisters. A fourth option, Option D which is referred to herein as the 'Park Option', was developed

by the Technical Advisory Committee who provided input on the Park Master Plan update. ODOT Region 4 reviewed the methodology used for each of these design options, and found the methodology and street placements to be acceptable. These options, and their associated development densities, are as follows;

Option A

Retail / Commercial:	7 ac. (gross)	80,000 s.f. (maximum)
Highway Commercial:	5 ac. (gross)	60,000 s.f. (maximum)
Residential:	10 ac. (gross)	70 dwelling units (max.)
Light Industrial:	20 ac. (gross)	
Park:	6.3 ac. (gross; the 'East Portal Triangle')	
Add'l Park:	min. 5 ac. (gross; can be required open space)	

USFS Property – Design Option A

Design Option B

Retail / Commercial:	7 ac. (gross)	80,000 s.f. (maximum) Resort
Commercial:	10 ac. (gross)	up to 12,000 s.f. + 20 vacation units
Residential:	10 ac. (gross)	up to 160 dwelling units (max.)
Light Industrial:	15 ac. (gross)	
Park:	6.3 ac. (gross; the 'East Portal Triangle')	
Add'l Park:	min. 5 ac. (gross; can be required open space)	

USFS Property – Design Option B

Design Option C

Retail / Commercial:	6 ac. (gross) 50,000 s.f. (maximum)
Resort Commercial:	9 ac. (gross) up to 60,000 s.f. + 25 vacation units
Residential:	10 ac. (gross) up to 85 dwelling units (max.)
Light Industrial:	12 ac. (gross)
Park:	6.3 ac. (gross; the 'East Portal Triangle')
Add'l Park:	min. 5 ac. (gross; can be required open space)

USFS Property: Design Option C

The location of these parcels, and in particular the South Barclay Parcel is strategic to the city's downtown as a gateway into Sisters from the west side. The City anticipates that some or most of the land will be developed for urban uses related to its downtown planning theme under mixed use principals. There is a possibility that some or most of this land could be purchased through public and/or private funding for use as a park; this possibility is addressed further in Goal 5 of this document.

In the event that this land is purchased with the intent of developing the land with either commercial, residential or light industrial uses, then it is the policy of the City of Sisters that any comprehensive plan and/or zoning amendment that affects the future development of the properties must meet specific criteria in order for the City to be able to support a potential plan amendment for the property. These criteria are as follows:

1. The amendment shall be based on a 20-year land need analysis for both employment and housing needs, including for affordable housing. The analysis shall include an updated buildable lands inventory for employment and housing needs as part of the 20-year land need analysis. The analysis shall be consistent with statewide planning Goal 9 (Economic Development) and Goal 10 (Housing).

2. The amendment shall demonstrate consistency and integration with the city's 2008-09 update of its Transportation System Plan, as well as the state's Transportation Planning Rule as found in OAR 660-012.

3. The amendment shall demonstrate that it has maximized urban efficiency consistent with city and state planning requirements, quality in urban design, and complies with the city's Western Theme design standards.

4. The amendment shall include a development plan for the South Barclay Parcel which integrates proposed land uses, transportation and building layout and design in a manner that meets the overall community needs. The development plan shall provide detailed commitments to design context, energy efficiency and public and private financing of public improvements.

5. The amendment shall demonstrate consistency and integration with the 2011 City of Sisters Parks Master Plan which recommends between 5 and 47 acres to be dedicated for a future community or regional park.

The 2011 City of Sisters Parks Master Plan identifies service area needs within the City. To serve the needs of a diverse population, it is important that a parks system contain parks of different types and sizes distributed throughout the community. It is also important that residents have convenient access to a developed public park within their neighborhood (defined as a ¼ mile or less walking distance). Map 3-2 of the 2011 City of Sisters Parks Master Plan illustrates park service areas. Service areas of 1-mile for community parks, ½ mile for neighborhood parks, and ¼ mile for mini parks are used as a measurement to analyze how well Sisters residents are served by their parks system. Although a number of parks exist throughout Sisters, the service area analysis in the 2011

Parks Master Plan indicates that sections of the City are currently underserved or not served at all by developed parks. The 2011 City of Sisters Parks Master Plan identifies that the central core of Sisters is well serviced by parks, with Barclay Park, Creekside Park, and Cliff Clemens Park all contributing in this area. The north-central portion of Sisters (north of Black Butte Avenue) is entirely serviced by Cliff Clemens Park and the south-central portion of Sisters (south of St. Helens Avenue) is entirely serviced by Creekside Park. Although these parks are geographically located in appropriate locations to serve these areas, both parks currently contain minimal amenities and do not provide the full range of features typically found in a neighborhood park. Outside of the central core, three general areas of Sisters are underserved by park facilities:

- Northeast – east of Cowboy Street and north of Whychus Creek;
- South – south of St. Helens Avenue and north of the southern City limits; and
- West – west of Pine Street and east of Sisters High School.

The service area analysis also indicates that the southwest portion of Sisters, south of Highway 242 and west of Pine Street, is underserved. However, this area benefits from private facilities in the Pine Meadow subdivision. The underserved areas described above consist predominately of single-family residential properties or undeveloped properties zoned for residential use. The service area analysis supports land acquisition and parkland development in the northeast, south, and west portions of Sisters, with the stated goal of establishing park facilities that serve residents and residential areas within ¼ mile. By promoting parks that are within walking distance, and within underserved areas, the City of Sisters can better serve its residents.

In addition, Sisters does not have an adopted Level of Service (LOS) standard. The basic function of the LOS is to ensure quality of service delivery and equity. It is a needs- driven, facility based, and land measured formula; expressed as the ratio of developed parkland per 1,000 residents. The City's current LOS is 3.47 acres of parkland per 1,000 residents. This is based on the estimated 2010 population of 1,935 residents. Compared to other communities of similar size, Sisters' LOS is slightly lower than average. As Sister's population increases, it will be necessary to develop additional parkland in order to maintain or increase the current LOS. In order to better serve the residents of Sisters, the 2011 Parks Master Plan recommends adopting a LOS standard of 5.0 acres per 1,000 residents.

The City of Sisters anticipates needing new land for wastewater treatment facilities above their current holdings. The City currently owns 160 acres designated for use as a wastewater treatment facility. The City will require additional land, possibly as much as 80 acres adjacent to the current site, for future treatment capacity. As additional land for facilities is required, land will be annexed into the City and UGB consistent with State and local UGB expansion policies, requirements, and laws.

A UGB expansion of 13.8 acres of Public Facility land for the wastewater treatment facility occurred in 2005 during the Comprehensive Plan update. This expansion is for the area adjacent to the shop at the wastewater treatment facility and may be used for equipment storage and a public works headquarters. This expansion is discussed in greater detail in the UGB Findings Document, incorporated herein by reference and available from the

Planning Department.

A UGB expansion of 4 acres of future Public Facility land for the Sisters – Camp Sherman Fire District occurred in 2009. This expansion affected land located immediately east of S. Locust Street leading to the city's sewage percolation ponds. This expansion is discussed in greater detail in the UGB Findings Document (2008), incorporated herein by reference and available from the Planning Department.

Flood Plain Lands (FP District)
The FP District and 100-year flood plain are not expected to change in the planning period. If improved maps of the 100-year flood plain are made available by FEMA or local survey efforts, the City will make the appropriate changes in the boundaries of this district.

Residential Lands (R and R-MFD Districts)
As found in the 2010 Sisters Housing Plan, given anticipated population growth, the existing supply of residential land by district, number of platted and planned units in subdivisions, and current density ranges, a surplus of 'R' zoned residential land to meet the 20-year demand is predicted in the planning period. This surplus was evidenced after supplies of vacant residential land were developed, as existing platted subdivisions were developed, and as infill occurred, which increased the average density in the 'R' District to nearly 9 units per acre between 2005 and 2009. As a consequence, there is not a demand for additional 'R' zoned land through the planning period. However, there are insufficient R-MFD lands to meet anticipated needs during the planning period, as described in Chapter 10 of the Comprehensive Plan. As a consequence of Sisters' tourist and service-based economy, and economic forecasts which indicate slow job growth into the future, there is a need for additional multi-family units, units targeted specifically at workforce and lower-income populations. Additionally, there is a need for housing for special needs and elderly populations, due to Sisters' higher-than-average median age. In 2005, the City included a UGB expansion of 30 acres and designated it as 'R' land, in order meet the demand for 'R' zoned land that was anticipated at the time. In 2010, the City reevaluated this demand, and found this land was better-suited as R-MFD, in order to meet the demand for multi-family, low-income and workforce housing, and housing targeted specifically at senior populations.

Commercial and Light Industrial Lands (DC, HC, LI Districts)
Given anticipated population growth, the existing supply of economic lands by district and anticipated employment by sector there are approximately 37 net buildable acres of vacant DC and HC designated lands inside the Sisters UGB. Adding approximately 12 net buildable acres of re-developable and 40 net buildable acres of developable acreage of partially developed lands, a total of 89 net buildable acres of buildable DC and HC lands are inside the Sisters UGB. Since the projected future demand is 28 net buildable acres, there is a surplus of commercial land of approximately 61 acres. Even without considering the re-development of partially developed lands, there is sufficient vacant and re-developable land in the existing UGB to accommodate demand for commercial lands within the next 20 years. For more information see Appendix B, *Technical Report, City of Sisters Commercial and Industrial Land Needs Analysis*.

"There are approximately 35.68 net buildable acres of vacant LI designated lands inside the Sisters UGB. Adding 3 net buildable acres of re-developable and 17 acres of developable acreage of partially developed lands, a total of 55.68 acres of buildable light industrial (LI) lands are available inside the Sisters UGB. There is a projected demand for 34 net buildable acres of industrial land inside the Sisters UGB by the year 2025. A surplus of 21.68 acres of net buildable industrial land is predicted based on anticipated supply and demand of industrial lands until the year 2025. There is a sufficient supply of vacant acreage alone to satisfy anticipated demand, without considering re-developable and partially developed lots. For more information see Appendix B."

Airport (A District)

In 2012, the citizens of the Sisters voted to annex the Sisters Eagle Airport, 34.3 acres, by popular vote during the November 2012 general election, by approximately 85%.
The Sisters Eagle Airport was then annexed into the City of Sisters on March 15, 2014.

Annexing the Sisters Eagle Airport and rezoning it to Airport District (A) provides an orderly and efficient transition from rural to urban land use. Annexing the Sisters Eagle Airport is an efficient accommodation of land needs because it will allow the community to use an existing resource that has been developed historically adjacent to the City and is approved by the Oregon Department of Aviation (ODA).

There are no other available locations to develop an airport within the UGB. It is more efficient to use an already developed airport rather than develop a redundant airport to meet the community's needs.

Urban Area Reserve (UAR District)

The City has adopted and mapped the Urban Area Reserve (UAR) Sub-District which contains a minimum lot size of 2.5 acres to preserve land for future development at urban densities. There are a total of 51.54 acres of UAR inside the current UGB. Of this, 30 acres are intended as a holding zone for future residential development re-zoning to residential uses. As part of the UGB Site Evaluation process, the UAR properties were examined for use as residential properties since the UAR is a holding zone for residential uses. City staff estimates that 8.8 gross acres of R-MFSD can be obtained from the re-zoning and re- development of these properties. 30 acres of UAR-zoned land was removed from the inventory in 2010 when McKenzie Meadow Village annexed into the city limits and was subsequently re-zoned from UAR 10 to R-MFD, PF and OS.

The Needs Assessment and Site Selection findings are found separately from this Comprehensive Plan in the 2008 burden of proof statement incorporated herein by reference, and available from the Planning Department.

23 acres of UAR inside the City Limits/UGB are owned by the U.S. Forest Service and are intended as a holding zone for the future development of a business park. While this parcel is zoned UAR, a holding zone for residential development, it is intended as a holding zone for light industrial/business park uses. If this parcel is rezoned it would be for light industrial/business park uses or for a relocated Forest Service Ranger Station.

The remaining 13.8 acres of UAR land are owned by the City (described earlier herein) as possible future use for equipment storage and a Public Works warehouse / maintenance building.

Urban Growth Management

Any proposal to annex new areas to the City must demonstrate that sufficient public facilities (including water, sewerage and transportation) are available or will be installed in conjunction with any land development. In Sisters, the annexation must also be approved by a majority of voters in an election. New policies included in the section below also guide urban growth consistent with State of Oregon laws.

State of Oregon laws require sufficient supplies of buildable lands inside the UGB to accommodate anticipated demand, provide choices in the marketplace, and livability. Some factors influencing the need for land include population growth, required development densities, economic development goals, land needs of public institutions, and market forces. Some specific ways to accommodate the 20-year need for residential land include expanding the UGB, re-zoning UAR lands to urban zoning designations, increasing residential densities, and converting non-residential lands to residential use.

UGB Expansion

The City of Sisters completed a modest Urban Growth Boundary expansion during the 2005 Comprehensive Plan update process to implement its amended Sisters Urban Area Comprehensive Plan policies and tasks. This expansion and its compliance with applicable state and local requirements is presented in greater detail in a UGB Expansion Findings document, incorporated herein by reference. The Urban Growth Boundary (UGB) expansion occurred for number of purposes, including:

1. accommodating anticipated 20-year demand for residential uses such as single-family housing
2. adding additional land for Public Facility uses, specifically a new City Public Works Department headquarters building (office, maintenance, and storage facility) adjacent to the existing City of Sisters wastewater treatment facility,
3. bringing a small existing developed urban use on an Exclusive Farm Use parcel adjacent and outside the City of Sisters (City) UGB inside the UGB,
4. bringing a small Exclusive Farm Use parcel entirely surrounded by the City UGB into the UGB.

The 2005 Plan update brought a total of approximately 53 acres of land into the City of Sisters Urban Growth Boundary (UGB). 8.9 acres is intended for commercial and light industrial uses – reflecting an existing commercial use and a parcel surrounded by the city. The 2005 Plan update also brought approximately 13.8 acres of land into the City of Sisters UGB and rezoning the property from F1 to Public Facility as a site for a new Public Works Department headquarters adjacent to the existing wastewater treatment facility.

The need for additional residential land use is not until 2010-2020. Since the need is later in the 20-year planning period the land is proposed to be added to the UGB as Urban Area Reserve-10 acre minimum, outside the City Limits. As land is needed it would be annexed by the land owners, rezoned, and then developed for the urban use. Until then, uses would be limited outside the City Limits and would be subject to the development standards of Title 21 of the Deschutes County Code. When rezoned inside the City Limits, the site would be designated as Residential, or other zoning district based on documented need at the time of rezoning and redesignation.

In 2011, a four-acre portion of land was brought into the UGB and subsequently into the City limits for purposes of providing a training facility for the Sisters – Camp Sherman Fire District. The Needs Analysis and all accompanying Site Alternative Study documentation are found in a separate burden of proof document referenced herein and available at the Planning Department.

Determining Need and Comprehensive Plan Designation

Residential Uses (lands zoned UAR-10 with Plan designation Residential

The Residential Buildable Land Supply and Demand Analysis (see Appendix C) predicted the amount of residential land needed until year 2025 based on anticipated population growth, historic and anticipated building trends, housing needs by income group, existing zoning, and the current supply of buildable residential land. This report estimated a need for additional land to be added to the Sisters UGB to meet anticipated demand. Specifically, 25 gross acres of land zoned for residential (predominately single- family) development (Residential-R District) were needed to accommodate 20-year demand. To meet the need for residential land, a single parcel of 30 acres (McKenzie Meadows parcel) was included in the UGB as a result of the Comprehensive Plan, and has since annexed into the city limits. Because the density in the single-family 'R' District increased so substantially between the period of 2005 and 2010, when the Mckenzie Meadows parcel was annexed to the City, there was no longer a demand for 'R' zoned land, but a demand for multifamily, workforce and low-income housing, and housing targeted at the senior population. Eventual urban development of this parcel will be in the form of a Master Plan, so any area subject to restrictions can be used to fulfill open space and access requirements.

Public Facility Uses (Land zoned Public Facility (PF) with PF Plan designation)

The City's old Public Works Department facility had been located at 175 W. Washington Avenue, and has since ~~has~~ been sold to the Sisters Camp Sherman Rural Fire Department. A new facility for the Public Works headquarters has been constructed adjacent to the sewage treatment plant percolation ponds. Uses at the new headquarters include a centralized office and repair shop, storage for garbage trucks, tractors, back hoes, street sweepers, solid waste

dumpsters, and rooms and structures holding equipment and supplies such as sand, gravel, pilings, pipes, and other associated uses.

The Sisters – Camp Sherman Fire District entered into an Agreement with the City of Sisters. The purpose of this Agreement is for the Fire District to allow the City to use a property owned by the Fire District for a new recycle center, which has subsequently been constructed. The City then became obligated to provide 4 acres of land for a Fire Training Facility, which occurred in year 2010. This Comprehensive Plan amendment followed.

The site has been fully evaluated for soil suitability, and comparable sites have been evaluated as is required by Oregon Administrative Rules. The Deschutes County Hearings Officer had made a formal recommendation to approve the 4 acre UGB expansion request, and the Board of County Commissioners voted unanimously to allow Sisters to amend its UGB by vote that occurred in April 2009. The support documentation referenced herein is found at the Planning Department, City Hall, 520 E. Cascade Avenue, Sisters.

Commercial and Industrial Uses (Lands zoned UAR –10 with Plan designations Commercial and Light Industrial)
In 2000, City voters approved the annexation of a 4.6-acre parcel of Exclusive Farm Use land adjacent to the northern portion of the Sisters UGB. The site is developed as the Conklin Guest House and has a bed and breakfast, small water feature, a barn, landscaping, and other improvements. This parcel is irrevocably converted to urban uses and so no loss of farm land would occur.

The proposal is to include the parcel in the UGB with a zoning designation of Urban Area Reserve UAR-10 (10-acre minimum, hereafter referred to as UAR-10) and a Plan designation of Commercial. This would preserve the use at current levels until a time when it applies for a zone change and annexation. Adding the site to the UGB would also enable the owner to intensify the development consistent with the Airport Height, Commercial District, and other land use guidelines in place in the Sisters Development Code. This parcel of land is also surrounded by the Sisters UGB to the north, west, and south, creating a gap in the urban area that will result in less efficient extension of utilities to the parcels inside the current UGB to the north.

With the Conklin Guest House parcel included in the UGB, the parcel adjacent to the west would be an Exclusive Farm Use Parcel that would be entirely surrounded by Urban Lands. This parcel has no water rights, is only 4.3 acres, and is currently a vacant dry parcel.

The proposal is to include the parcel in the Sisters UGB zoned UAR-10 with a Plan designation of Light Industrial. This preserves the use at current levels or would allow the development of a single-family house, or other low intensity developments until the site successfully annexes and rezones consistent with City Development Codes. After rezoned, the use could be intensified consistent with the Airport Height, and Light Industrial guidelines in place in the Sisters Development Code.

Overview of Site Selection Process

After the need for additional land was determined and new Plan policies developed, the 2005 and 2009 UGB expansion was determined through a methodology implementing State of Oregon statute and rule as well as the City's Plan policies. As mentioned previously, the site selection process for the 4 acre expansion occurred through a separate set of documents which are available at the Sisters Planning Department, and are referenced as file no. CP 08-2 / ZC 08-1.

A site evaluation strategy was developed to determine the best sites to be included in the UGB to meet the need for additional residential land. Generally, all properties surrounding the current coincident UGB and city limits that were determined to have significant developable lands were rated according to 17 criteria that implemented State of Oregon statutes and rules and local policies. All parcels were evaluated as either Good (3 points), Fair (2 points), or Poor (1 point) in each criterion and the total points were added to a total score and weighted total score. The best parcels (ones with the highest point totals) were considered to meet anticipated needs. Refer to the UGB Site Evaluation Matrix and Maps (Appendix 5) of the Findings for UGB Expansion document for the resulting evaluation matrix.

This matrix is referred to many times in the Findings document. The methodology resulting in parcels selected for inclusion in the UGB is as follows:

1. Parcels adjacent to the UGB determined to have developable lands were identified and are shown in the Productivity Spreadsheet
2. Only developable parcels that were not in public ownership were selected to be evaluated further
3. Criteria were developed to implement the "seven factors" of Goal 14 as well as Plan policies and ORS 197.298 prioritization criteria
4. Parcels were evaluated based on the criteria and each received as score according to the parcels characteristics
5. Scores were 3 points for a "Good" evaluation, 2 points for a "Fair" evaluation, and 1 point for a "Poor" evaluation
6. Scores were added together to arrive at the overall score for the parcel (see Appendix 2 column named "Overall Score" in the UGB Expansion Findings document)
7. Scores for criteria under the column headings "ORS 197.298 Priority of Lands for UGB" and "Factor 3" were doubled and added to the rest of the criteria to arrive at the "Overall Weighted Score" column. The purpose of this was to evaluate how a parcel's score might change compared to the non-weighted "Overall Score". This demonstrates possible differences in the overall scores when placing more importance on two factors.
8. "Overall Rank" and "Weighted Rank" were calculated based on the parcels scores on "Overall Score" and "Overall Weighted Scores", respectively. This shows the ordinal rank of parcel according to these scores and a snapshot of a best to worst evaluation for all parcels evaluated.
9. A parcel had to score "Fair" on average in both the "Overall Rank" and "Weighted Rank" to be considered further. Those parcels that scored "Fair" on average in both categories were scored with a "Yes" in this column.
10. The top ranked sites in the "Overall Rank" and "Weighted Rank" category were considered for addition to the Sisters UGB.

The 30 acre parcel that was considered to best meet the needs of the City and ranked highly in the UGB Site Evaluation Matrix is the McKenzie Meadows parcel. The City decided that it best met the need because it is virtually surrounded by urban uses where the other highly ranked parcels weren't. In addition, it was sited closer to the majority of schools in the City. Lastly, it has more potential to be developed for needed residential uses within the planning period.

Location and Designation of New Lands Brought Into UGB

The locations of the properties selected for inclusion in the Sisters UGB are shown in figures 14 -1, 14-2, 14-3, and 14-4. Each figure shows different information. *Figure 14- 1: City of Sisters Proposed Additions to the UGB*, shows parcels that were added to the City's UGB in 2005. Figure 14-2: City of Sisters Zoning Map, shows the zoning of lands within the UGB following adoption of the 2005 Comprehensive Plan update.

Figure 14-3: City of Sisters: Comprehensive Plan Map shows the Comprehensive Plan designation for lands within the UGB, including the 4 acre portion of land to be used by the Sisters – Camp Sherman Fire District which is under consideration at this time.

Figure 14-4 is the survey map of the 4 acre portion of land mentioned herein. Land uses shall be consistent with the Comprehensive Plan map. As parcels are added to the City limits, the Urban Area Reserve designation would be changed to match the Comprehensive Plan Map.

Figure 14-1: Proposed Additions to UGB (per ORD 355; Adopted July 28, 2005)

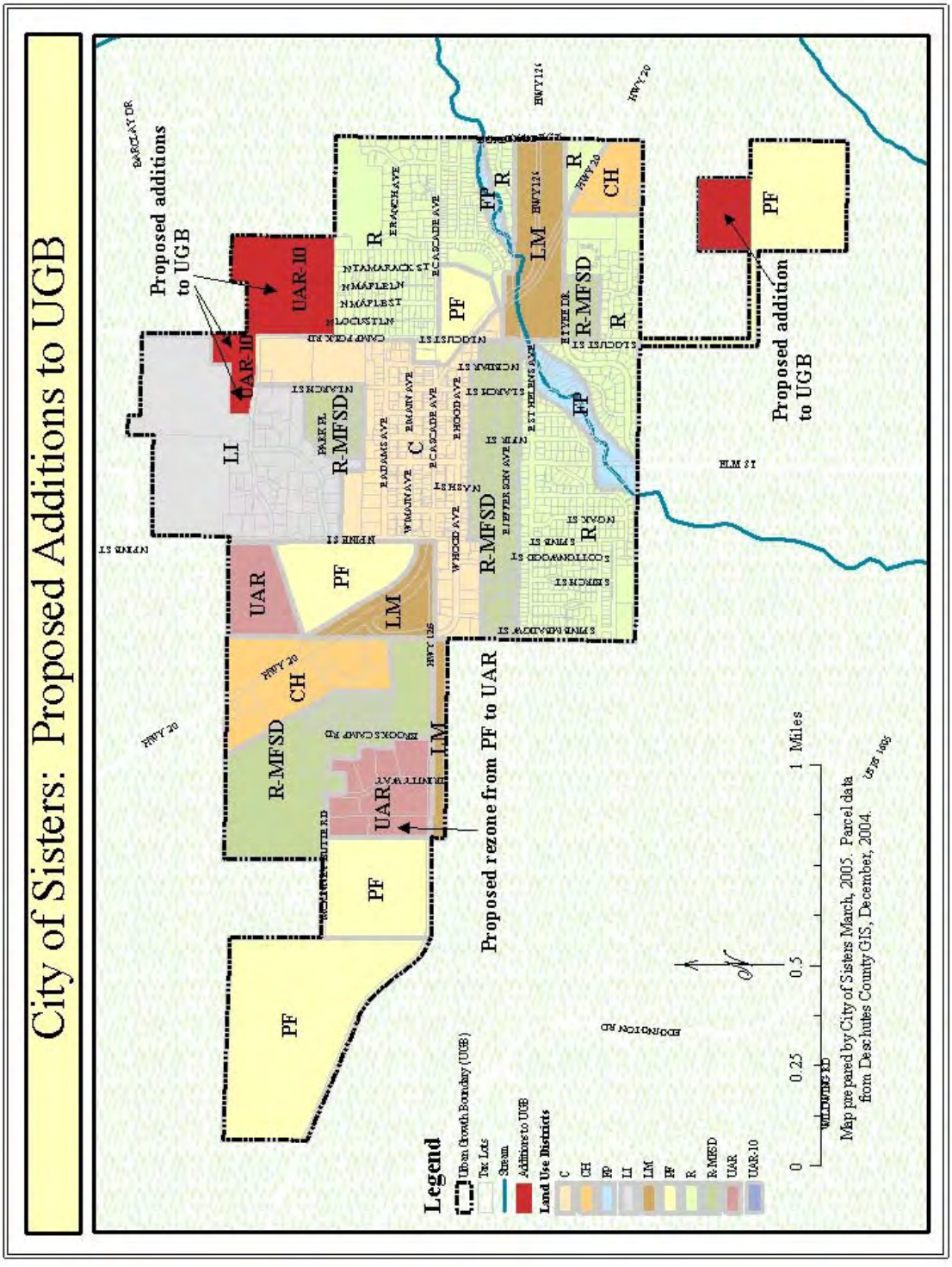


Figure 14-2: City of Sisters: Zoning Map (per ORD 355; Adopted July 28, 2005)

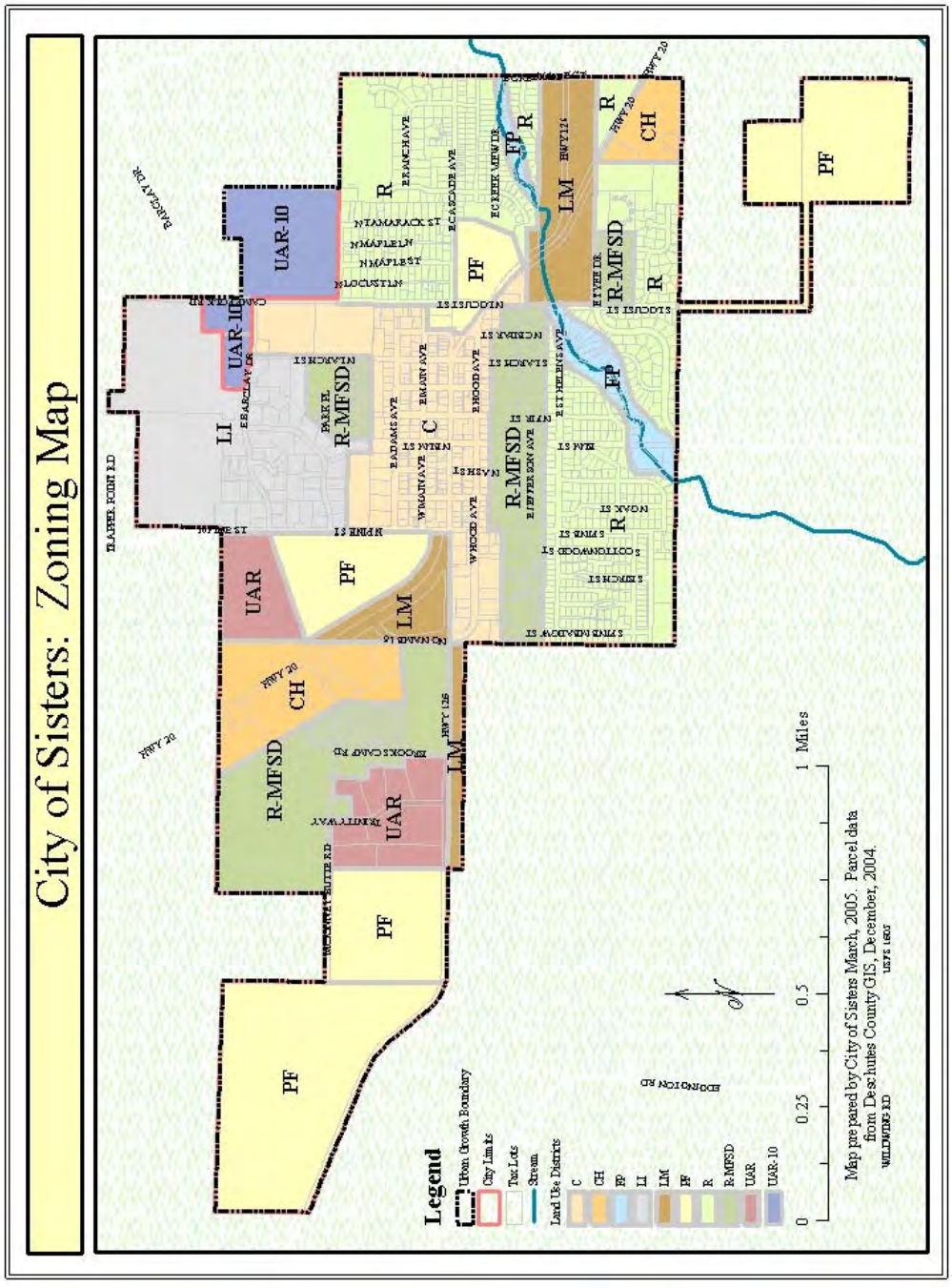


Figure 14-3: City of Sisters Comprehensive Plan Map (per ORD 355; Adopted July 28, 2005)

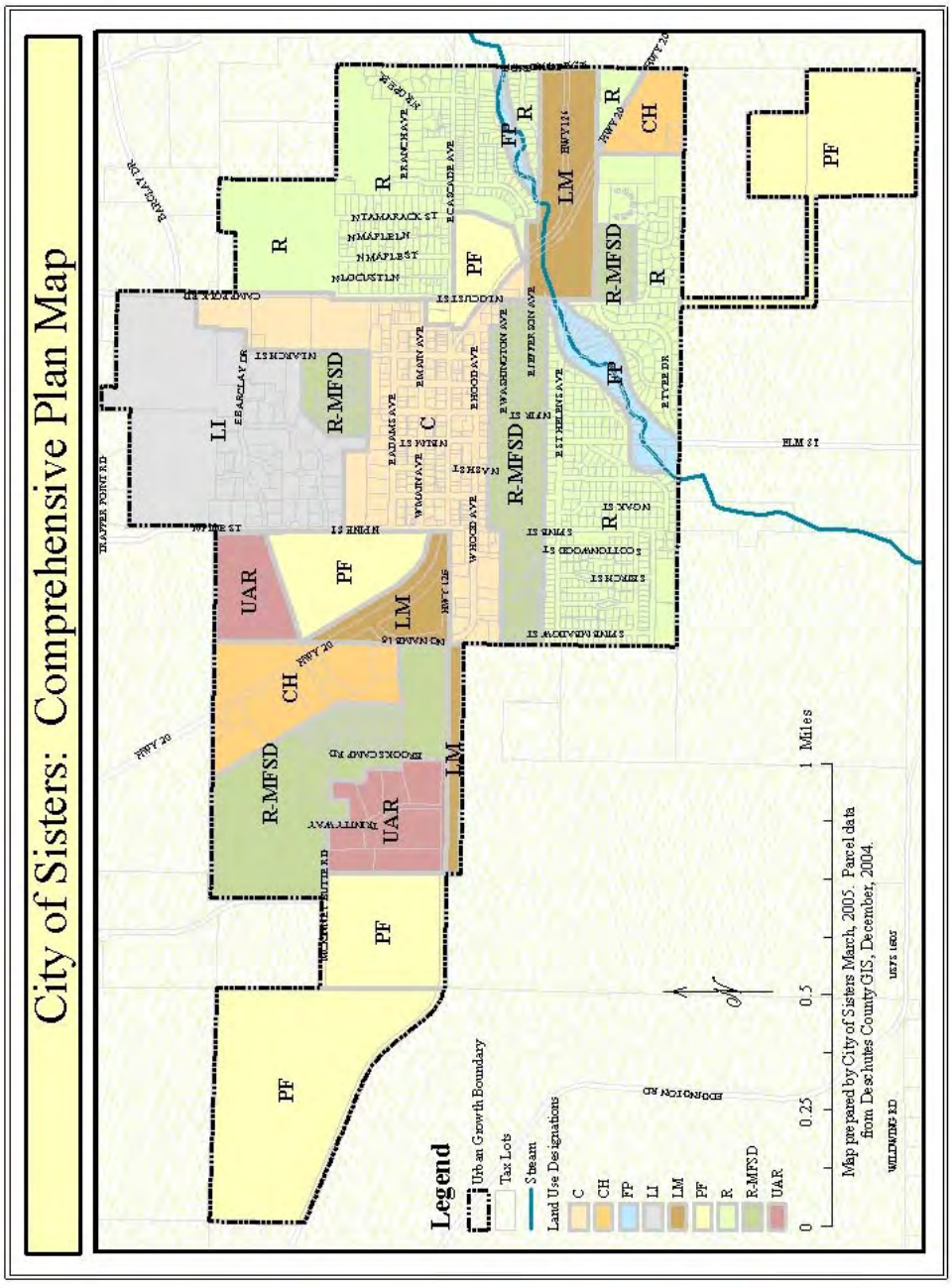
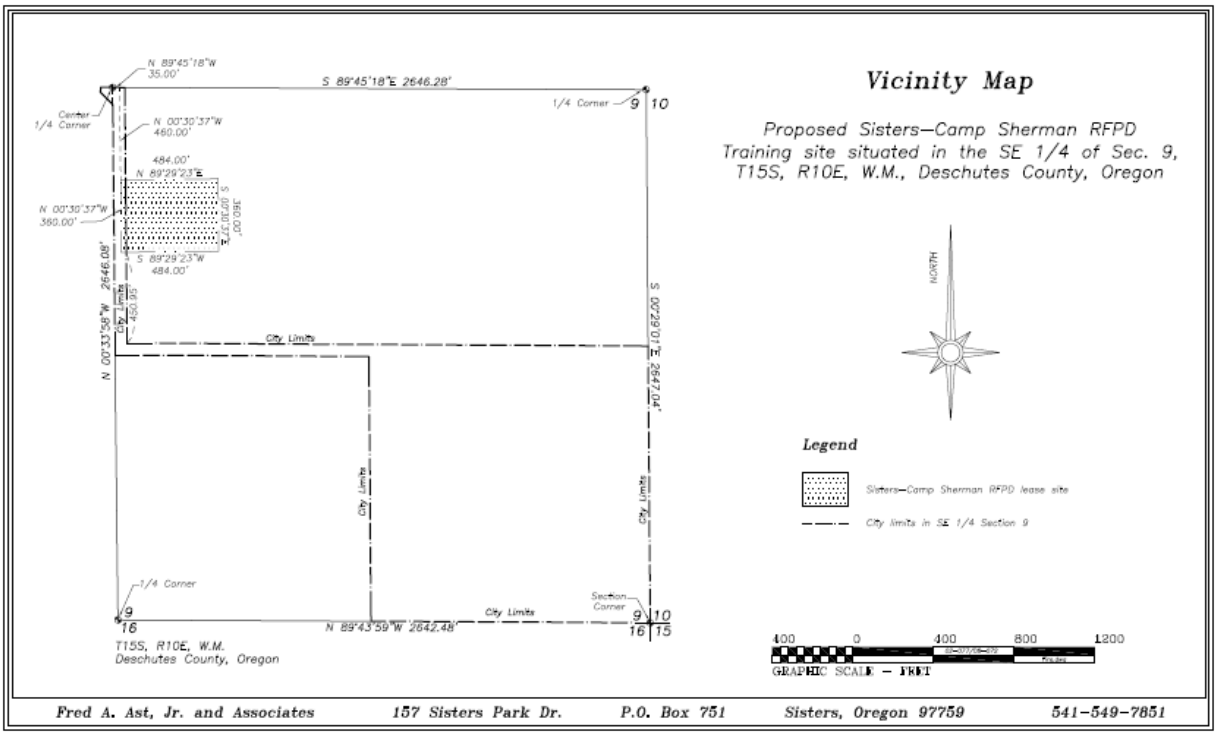


Figure 14-4: Survey Map of the Sisters – Camp Sherman Fire Training Facility land



Compliance with Goal 14

Statewide Planning Goal 14 provides for "orderly and efficient transition from rural to urban uses". The goal requires cities and counties to cooperatively establish urban growth boundaries and outlines the procedure for amending the boundaries. If an applicant wishes to establish an urban use on rural land, it must either take an exception to Goal 14 or amend the UGB consistent with Goal 14. This UGB expansion is consistent with Goal 14 as discussed in the UGB Expansion Findings document.

Exceptions to State Goals

The proposed 4 acre UGB expansion will not require taking exceptions to any of the statewide planning goals. Compliance is demonstrated in the UGB Expansion Findings document.

14.4 POLICIES

1. The City shall promote development within the UGB to minimize the cost of providing public services and infrastructure and to protect resource land outside the UGB.
2. The City shall support adequate public safety services.

   Task -

   a. The City shall assist public Fire safety providers in supplying land for fire training.
3. The Urban Growth Boundary is the official area for which to plan all land uses, public facilities, and annexations.
4. The City shall provide for an orderly and efficient conversion of urbanizable land to urban land, the City will manage the UGB to maintain the potential for planned urban development on urbanizable lands.
5. The establishment and change of the Urban Growth Boundary shall be based upon considerations of the following factors:

   a. Demonstrated need to accommodate long-range urban population growth requirements consistent with LCDC goals;

   b. Orderly and economic provision for public facilities and services;

   c. Maximum efficiency of land uses within and on the fringe of the existing urban area;

   d. Environmental, energy, economic and social consequences;

   e. Retention of agricultural land as defined, with Class I being the highest priority for retention and Class VI the lowest priority; and,

   f. Compatibility of the proposed urban uses with nearby agricultural activities.

   Tasks –

   a. The 160 acres of land currently used as a wastewater treatment facility shall be protected from development in order to ensure adequate land supply for the sewer treatment system.

   b. The UGB shall be expanded by approximately 4 acres to add Public Facility land ~~to~~ near the existing wastewater treatment facility site for a future Fire Training facility.

   c. The UGB shall be expanded by approximately 34.3 acres to add Airport land to accommodate the Sisters Eagle Airport.
6. The following policies apply to the conversion of urbanizable land to urban land:

   a. Orderly economic provision for public facilities and services;
   Availability of sufficient land for the various uses to insure choices in the market place;

   b. Statewide planning goals and LCDC administrative rules; and

c. Encouragement of development within the urban areas before conversion of urbanizable areas.

Tasks-

a. Lands inside the UGB but outside the City Limits intended for public facility use shall be rezoned to PF Public Facilities consistent with the Comprehensive Plan at the time of annexation.

7. Providing City services is an integral part of the City's growth management strategy. Extension of City services are guided by the following:

   a. The City shall require annexation prior to extending water or sanitary sewer services to any property within the unincorporated portion of the UGB.

   b. The City shall not authorize urban levels of development without the provision of the all necessary urban service (see definition) to support planned levels of development. The City will require provision of urban services as lands are converted to urban lands.

   c. Rural levels of development (authorized in the Urban Area Reserves), sited without services on urbanizable land, shall be sited in such a way as to not interfere with urban levels of development and services when conversion from urbanizable land to urban land occurs.

   d. The City and Deschutes County shall require property owners and/or developers to pay their fair and proportionate share of the costs to extend community services to their properties and to pay for or build necessary on- and off-site public improvements.

8. Implement a system-wide level of service (LOS) standard of 5.0 acres of developed parkland per 1,000 residents.

Part VI
Implementation Policies and Programs

The Comprehensive Plan for the Sisters Urban Area has value only to the extent that it is supported by the community and its citizens, as a policy statement for the general guidance of future development actions which work toward attainment of community goals and objectives. Realization of community goals and objectives through the Comprehensive Plan is dependent on adoption of the general proposals of the Plan, its specific policies and the tools for implementation.

It is recommended that the Plan be reviewed by the Planning Commission every year to whatever degree is necessary to insure that it is continuing to function as a guide for community growth. In addition, it should be possible for individuals to petition for changes or amendments to the plan in a manner similar to that for zone changes. There must be a public hearing before the Planning Commission and the Governing Body prior to making any changes. Any changes should be consistent with the goals, objectives, policies and statements of intent of the plan or these guidelines should first be changed or amended to reflect the new policies. This should be true of both changes resulting from periodic Planning Commission review and from individual petitions.

Interpretation of the Comprehensive Plan

Administration and interpretation of the Comprehensive Plan is a continuing process and for this purpose the material contained in this report and supplemental maps identical to the one published herein, constitute the Comprehensive Plan. Full understanding and interpretation of proposals contained on the maps may be accomplished only through proper reference to the descriptive analysis, policies and proposals contained in this report.

Proper administration of the Plan demands flexibility, variation and adjustment, however, such changes in policy or proposals must come from careful independent study of broadly based issues and not be dictated by "issues of the moment", such as controversial zoning requests, momentary fiscal problems or the inadequacy of public facilities.
Necessary changes which may be required through the years should normally be accomplished during the annual review process

Implementation Policies, Ordinances and Programs

The following implementation measures are essential to the functional success of the Comprehensive Plan.

Development Code

The City adopted a new Development Code in 2001 that facilitates a wide variety of land developments and housing types. The Development Code may need to be modified to bring it into conformance with provisions of the Comprehensive Plan and provide the City with a more effective implementation tool. The Development Code is a separate document supplemental to this Plan.

A revised Official Zoning Map has been prepared as a separate document in conformance with the land use policies set forth in this Plan. Upon adoption of the Comprehensive Plan, the Revised Official Zoning Map may be adopted as further described by the Development Code.

In accordance with Goal 2 of the Statewide Land Use Goals, the City develops and follows orderly procedures to establish the land use planning process and policy framework. This framework results in objective standards to evaluate proposed land uses in the City.

Capital Improvements Programming

Capital Improvement programming is an important process in the implementation of the Plan. It consists of three basic elements – listing of necessary public improvements, determination of priorities, and a financial analysis. A listing of all Capital Improvements that will be needed in the foreseeable future is first established. Based on evaluation of the projects and their relative urgency, a priority is assigned to each project based on the apparent need. A financial analysis is prepared to determine existing and anticipated future sources of revenue which can be applied to the Capital Improvement programs. From these projections, it is possible to estimate the amount of revenue available annually for capital expenditures and to allocate these funds to appropriate projects.

Capital Improvement programs are usually prepared on an overall basis for 20 years in five-year increments, and they are revised annually as funds are expended and priorities change. Developing a realistic Capital Improvement program and applying it to the city and county budgeting processes can be one of the most significant and beneficial steps which the community can take to guide its growth in an orderly manner. There are many federal and state programs which can be applied to the communities Capital Improvement requirements. These programs cover a wide variety of problems and these sources of assistance should be fully explored and used as necessary to implement the plan.

Intergovernmental Program Coordination

Responsibility for the provision of necessary public programs and support facilities to maintain the desired level of public services for the City of Sisters is vested in all levels of government. These include the City of Sisters with its existing and projected range of program services; Deschutes County, particularly in roads, health and sanitation and building; School District No. 6, U.S. Forest Service for public use of forest lands; Oregon State Department of Transportation, for highways and airport facilities; State of Oregon Department of Environmental Quality; State of Oregon Department of Commerce in the housing program area; and elements of the Federal Government for surplus federal properties and financial grant and aid programs. This results in a broad range of program concern and intensity, project priority, authorization and funding and implementation timing.

Authority and responsibility vested in city legislative powers does not include the ability to compel other levels of government to comply with and/or coordinate their program

activities with those of the City. Consequently, it is imperative that the City establish lines of communication with related governmental agencies whereby positive influence may be exercised toward coordination of programs and facilities which are the responsibility of more than one level of government or a specific project is inter-related to other governmental programs and facilities. This action may consist of (1) identifying the responsible segment of involved governmental agencies with which to establish effective lines of communication and coordination, (2) define agency responsibilities as to roles and commitment in the implementation of specific programs and/or projects, (3) coordinate the priority, timing and funding of involved levels of government in realizing a well integrated program or facility and (4) referral of program and project proposals to related governmental agencies prior to execution.

PART VII
APPENDICES

Appendix A: Deschutes County Coordinated Population Forecast

Appendix A: Coordinated Population Forecast

EXHIBIT E
August 2004 Draft

DESCHUTES COUNTY
COORDINATED POPULATION FORECAST
2000 – 2025

Findings In Support of Forecast

August 25, 2004
Board of County Commissioners Public Hearing Draft

A COOPERATIVE PROJECT OF:

Deschutes County
City of Bend
City of Redmond
City of Sisters
Oregon Department of Land Conservation and Development

7/24/18/3:31 PM

EXHIBIT E
August 2004 Draft

EXECUTIVE SUMMARY

This report presents the results and findings in support of a coordinated population forecast for Deschutes County and the cities of Bend, Redmond, and Sisters from the year 2000 to the year 2025. The following table presents the forecast for each jurisdiction and the entire County as of July 1 for each five-year period:

Deschutes County 2000-2025 Coordinated Population Forecast					
Year	**Bend UGB**	**Redmond UGB**	**Sisters UGB**	**Non Urban County**	**Total County**
2000	52,800	15,505	975	47,320	116,600
2005	69,004	19,249	1,768	53,032	143,053
2010	81,242	23,897	2,306	59,127	166,572
2015	91,158	29,667	2,694	65,924	189,443
2020	100,646	36,831	3,166	73,502	214,145
2025	109,389	45,724	3,747	81,951	240,811

The forecast report provides background information on sources of population data and methods for forecasting population. It presents a summary of population data that describes changes in the population of the County and the three cities from 1980 to 2002. The report also compares the above forecast with a draft population forecast for Deschutes County prepared by the State of Oregon Office of Economic Analysis in January of 2003.

Deschutes County and each city decided to update the coordinated population forecast because the results of the 2000 Census and subsequent population estimates from Portland State University and the Census Bureau showed the County's population growing faster than anticipated under a 1998 coordinated population forecast. Each jurisdiction prepared its own population forecast. The sum of the four forecasts is the coordinated population forecast for the entire County.

The city of Bend used historic growth rates (1980 to 1998) and annualized population growth rates developed by the State of Oregon Office of Economic Analysis to develop its forecast. Bend estimates a population of 109,389 residing in the city's urban growth boundary (UGB) by the year 2025.

The city of Redmond forecasted population growth using an average annual increase of population based on past population growth trends. Redmond forecasts a population of 45,724 people in its UGB by the year 2025.

The city of Sisters forecasted population within its urban growth boundary using a combination of OEA growth rates and projected building permit activity. Sisters estimates that a population of 3,747 people will reside in its UGB by the year 2025.

The County considered three alternative forecasts for the unincorporated area. The selected forecast is based upon the historic 2.2 percent average annual growth rate to forecast population growth from 2003 through 2025. By the year 2025, the County estimates 81,951 people could reside in the unincorporated areas of Deschutes County.

EXHIBIT E
August 2004 DRAFT

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C. April 14, 2004 City of Sisters Population Forecast

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Sisters Planning Department
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Oregon Department of Land Conservation and Development
Mark Radabaugh, Regional Representative – Central & Eastern Oregon
Jon Jinings, Regional Representative – Central & Eastern Oregon

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August 2004 DRAFT

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HISTORY

The 1995 Oregon Legislature recognized a need for local consistency in population forecasting and for a coordinated statewide total by adding a statute requiring counties to:

> *...establish and maintain a population forecast for the entire area within its boundary for use in maintaining and updating comprehensive plans, and shall coordinate the forecast with the local governments within its boundary. [ORS 195.036]*[1]

The state Office of Economic Analysis (OEA), a division of the Department of Administrative Services, was designated as the main forecasting unit for the state of Oregon. In addition to preparing population and employment forecasts that could be used consistently by state agencies, the OEA was given the task to forecast population and employment changes for the state and each County. Oregon state planning law (ORS 197.295 – 197.296) requires cities to plan for needed housing to accommodate population growth in urban growth boundaries. ORS 197.712 also requires cities to ensure that sufficient land is available in urban growth boundaries for commercial development and economic growth.

The goal of this project is to develop a coordinated population forecast from the year 2000 to the year 2025. The city and County staff working on this project used draft forecasts (2002 and 2003) from OEA as benchmarks for evaluating the proposed forecast. There is no requirement in state law or administrative rule that the OEA forecast must be adopted and used by the County and cities. As an alternative to the OEA forecast, the jurisdictions (County and cities) can develop, justify, and come to a consensus on a population forecast to the Department of Land Conservation and Development. An adequate factual base must support such a forecast.

In January 1997, the OEA produced the first statewide coordinated population and employment forecast for all the counties through the year 2040. Later that year representatives from Deschutes County, Bend, Redmond, and Sisters – in cooperation with OEA – agreed upon a coordinated County population forecast through the year 2020.[2] Table 1 shows the 1997 OEA forecast for the total County population through 2025.

Table 1
1997 OEA Forecast for Deschutes County

2000	2005	2010	2015	2020	2025
112,846	132,829	151,230	167,231	181,448	190,697

In 1998, the County planning staff coordinated with planning staff from the three cities and the staff of the OEA to develop a coordinated population forecast from 1995 to 2020. Table 2 presents the first County coordinated population forecast adopted by the Board of Commissioners in 1998. This same table appears in the County Comprehensive Plan as Table A of Chapter 23.16, Existing Conditions, of the plan.

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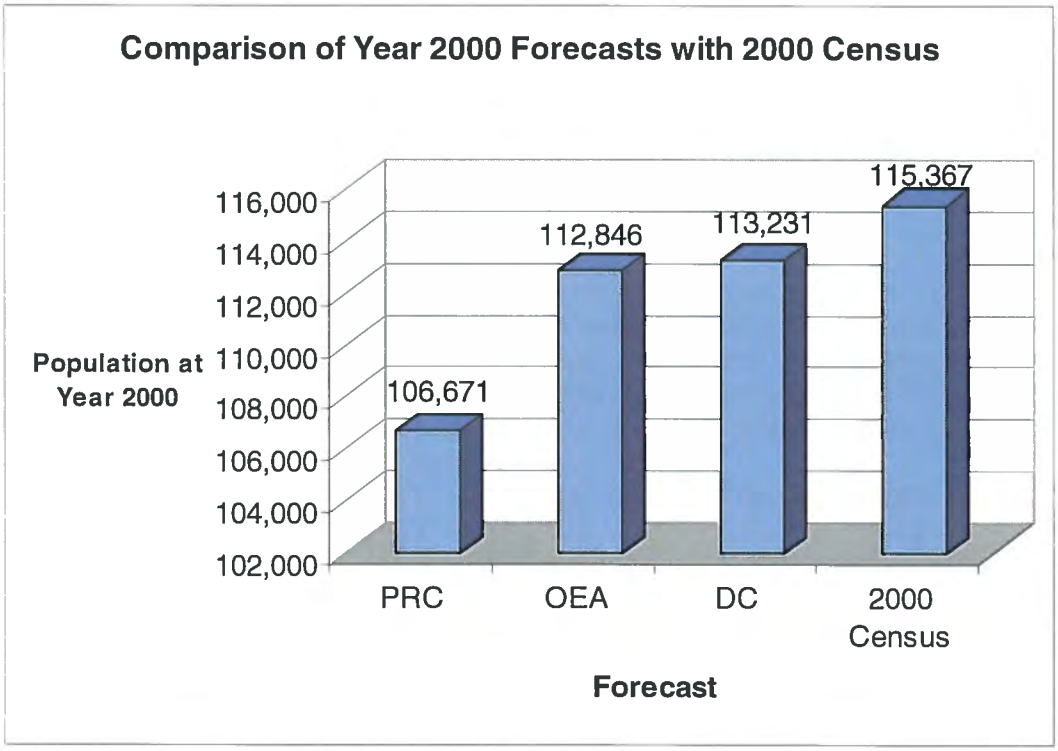
[1] 1995 House Bill 2709

[2] These 1997 coordinated population numbers were adopted by the County through Ordinance 98-084 and incorporated into the County Comprehensive Plan. The City of Bend included the coordinated population numbers in its 1998 update to the Bend Area General Plan. Redmond adopted the forecast numbers into the 2001 update of the Redmond Comprehensive Plan.

Table 2 1998 Deschutes County Coordinated Population Forecast					
1990	2000	2005	2010	2015	2020
74,958	113,231	132,329	151,431	167,911	182,353

The rate of population growth in Deschutes County during the late 1990s and early 2000s was one of the highest in the state. In 1993, the Population Research Center (PRC) at Portland State University forecasted a population of 106,671 for the Deschutes County in 2000. By late 2000 the local planning staffs were aware that the actual population numbers for the County were exceeding the 1993 PRC forecast, the 1997 OEA forecast, and the County forecast prepared just two years earlier. The results of the 2000 Census, released in March of 2001, showed Deschutes County had a population of 115,367 people on April 1, 2000[3]. This census exceeded the OEA forecast for 2000 of 112,846 by 2,521 people or 2.2 percent. The PRC developed a July 1, 2000 population estimate of 116,600 for Deschutes County in the fall of 2000. In the fall of 2001, the PRC developed a July 1, 2001 population estimate of 122,050 for Deschutes County. *It was evident after the release of the 2000 Census data and the subsequent estimates of population for the County that population growth was occurring faster than contemplated under the previous forecasts of the PRC, OEA, and the County.* The following graph compares the previous forecasts with the results of the 2000 Census for Deschutes County.

Figure 1



Sources:
PRC – Population Research Center, Portland State University (1993)
OEA – Office of Economic Analysis, State of Oregon (1997)
DC – Deschutes County (1998)

[3] Table DP-1. Profile of General Demographic Characteristics: 2000. For Deschutes County, Oregon. Bureau of the Census. www.census.gov.

2000 Census – Results of 2000 Census for Oregon, Census Bureau (2001)

One of the goals of developing a population forecast is to see how past trends in the change of a population will translate into future changes. The population of the County grew dramatically since 1980, and due mostly to positive net migration. The population of a given area grows if it experiences more live births that deaths (natural increase)[4] and more people moving in that moving out (positive net migration)[5] of an area. The following data from the PRC shows the components of population change for the County since 1980:

Table 3
Deschutes County Population Growth: 1980-2003[6]

Time Period	Change	Natural Increase	Net Migration
1980 to 1989	8,458	4,465	3,993
	Percent	+53%	+47%
1990 to 1999	31,742	4,341	27,401
	Percent	+14%	+86%
2000 to 2003	13,901	1,600	12,301
	Percent	+12%	+88%
Total 1980-2003	54,501	10,406	43,695
	Percent	+19%	+81%

From 1980 to 1989, 53 percent of the change in the County's population was due to natural increase: the population grew as a result of the number of live births exceeding the number of deaths. Positive net migration contributed forty-seven (47) percent of the new population of the County during this same period. This trend changes in the 1990s as the population of the County has grown more by net migration. From 1990 to 1999, eighty-six (86%) percent of the increase in the County's entire population occurred due to positive net migration.

The County experienced a substantial increase in its population during the 1990s. According to data from the PRC, Deschutes County had the highest percent change in population of all the Oregon counties – almost 54 percent – between the 1990 Census and 2000 Census. In real numbers, the County had the fifth largest population increase, trailing only the three Portland metropolitan counties and Marion County.

This increase in population was fueled by population growth in all three cities and the unincorporated portions of the County. The following graph shows the population growth of the population of each jurisdiction starting from 1960:

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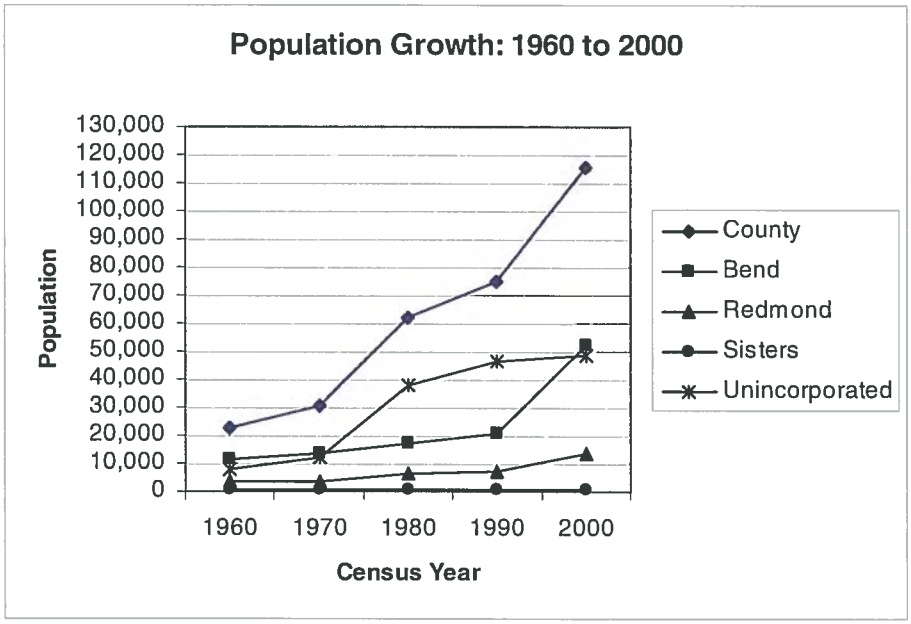
[4] Natural Increase: The surplus of births over deaths in a population in a given time period. See Haupt, Arthur, Population Reference Bureau's Population Handbook (4th ed.) (1998) www.prb.org.
[5] Net migration: the net effect of immigration and emigration on an area's population in a given time period, expressed as an increase or decrease. See Haupt (1998).
[6] Oregon Population Reports (1989), (1999), and (2003). Population Research Center, Portland State University

Figure 2



Source: Oregon Blue Books for 1995-1996 and 2003-2004. Reported Results Decennial Census.

POPULATION DATA SOURCES AND FORECASTING METHODS

Several agencies or departments of the federal government and the State of Oregon collect and publish demographic and population data. This section discusses the sources of demographic and population data used to prepare the respective city and County population forecasts. This discussion includes a presentation of two methods of forecasting population that were used in developing the coordinated forecast.

Data Sources

The Bureau of the Census (Census Bureau) enumerates the population of each state, city, and County on April 1 of each year ending in zero[7]. The most recent Census was taken on April 1, 2000. The Census Bureau also prepares and releases estimates of the population of counties and cities in the United States as of July 1 of a given year[8]. Table 5 shows the Census results for 1980, 1990, and 2000 and the July 1 estimates for the years 2000, 2001, and 2002.

The Population Research Center (PRC) of the School of Urban and Public Affairs at Portland State University has been charged with estimating the annual population of the State of Oregon and each County and incorporated city as of July 1[9]. Table 5 also shows the PRC estimates for the County and each city from 1980 to 2002. The PRC releases preliminary estimates on November 15 of the estimate year. Local governments have until December 15 to

[7] See Census Bureau History at http://www.census.gov/acsd/www/history.html.
[8] See Census Bureau County population estimates at http://eire.census.gov/popest/data/counties.php.
[9] See ORS 190.510-190.540 and OAR 577-050.

review and comment on the preliminary estimates. Once complete, the estimates are then forwarded to the Secretary of State's office for certification.

The State of Oregon Office of Economic Analysis (OEA) collects and analyses state and County-level demographic and economic data[10]. The OEA is the official forecasting arm of the state and has prepared both population and employment forecasts for the state and all 36 counties. The County worked with OEA in 1997 and 1998 to develop the initial coordinated population forecast for the County. OEA provided the County and the cities with a draft forecast of the population of the state and all 36 counties beginning in 2000 to the year 2040. The OEA was originally scheduled to generate new population and employment numbers in March of 2002, but did not release draft forecast numbers for the counties until February 2003.[11]

Table 4
County and City Population by Year and Source

Jurisdiction	Source	1980	1990	2000	2001	2002	2003
Deschutes County	PRC	62,500	75,600	116,600	122,050	126,500	130,500
	Census	62,142	74,958	115,367			
	Cen Est		76,053	116,597	120,702	125,258	129,492
	OEA 97			112,846			
Bend	PRC	17,300		52,800	55,080	57,750	62,900
	Census	17,263	20,447	52,029			
	Cen Est			52,618	54,610	57,010	
Redmond	PRC	6,480		13,770	14,960	16,110	17,450
	Census	6,452	7,165	13,481			
	Cen Est			14,086	14,912	16,023	
Sisters	PRC	695		975	960	1,080	1,430
	Census	696	708	959			
	Cen Est			971	1,011	1,099	
Unincorporated	PRC	38,025		49,055	51,050	51,560	48,720
	Census	37,731	46,638	48,898			
	Cen Est			48,922	50,169	51,126	

Sources:

Census = Represents April 1 census count for the County (www.census.gov)

Cen Est = Represents July 1 population estimate (www.census.gov)

PRC = July 1 certified estimates of Population Research Center, Portland State University (www.upa.pdx.edu/CPRC)

OEA 97 = 1997 County population forecast, Oregon Office of Economic Analysis (www.oea.das.state.or.us)

[10] Office of Economic Analysis – www.oea.das.state.or.us.

[11] The County coordinating group released its forecast for public hearings in November 2002, before the release of the OEA draft forecast in February 2003. A comparison of the two population forecasts is discussed in this report.

Forecasting Methods

This forecast is based on state and local forecasts using two established methods of forecasting population. The References section of this report includes citations to texts that describe in more detail these methods and how they can be used to forecast population.

Cohort-Component Model – *natural increase + migration patterns = total.* This is the method that the Oregon Office of Economic Analysis used in its statewide 2003 draft forecast[12]. This method looks at the age/sex groupings of the existing population and future aging patterns to estimate birth and death rates in order to calculate the "natural change" in population. The natural change component is especially useful for areas with a stable population (like many Eastern Oregon cities and counties) or a city with a large retirement population (like Florence, Oregon for example). However, this component by itself is less accurate when a large share of the forecast increase is due to people moving into the areas. For example, if an area has a high percentage of growth due to in-migration the in-migration numbers can "swamp" the natural increase numbers and make them less important.

Because migration can be a significant part of the growth calculation this method usually considers both the natural increase and migration patterns to generate the total population change. However, as the OEA states in its draft 2003 long-term forecast, "*Migration is the most complex and most volatile component of population change.*"[13] The migration component cannot be easily predicted because the reasons people choose to move from one area to another are based on a variety of individual and family decisions including personal choice, economics, quality of life changes, quality of education, safety, political climate and others factors.

Linear or Trending Model – *growth rates and patterns are the basis for future growth.* In this method various trends in population changes are evaluated as a basis for future growth. Trend data could include annual population changes by percent or number, school enrollment, housing starts, and utility service connections. A longer trend period is better because it can reflect the impact of changes in demographics, economic conditions and other factors in the population growth or decline. The trend data does not automatically lead to a continuation of past trends and can be adjusted with other data that reflect expected changes over time. All three cities and the County used a linear or trending model to forecast their respective populations from 2000 to 2025.

This is a simple forecasting method. A benefit of using this method is that many of the factors that affect the pattern of growth are already imbedded in the trend data. In other words, since this method uses the real numbers for historic change it already includes the aggregate result of various growth components such as natural increase from births and deaths, net migration, employment levels, and local and national economic conditions. For example, an average annual growth rate of 1 percent can reflect a rate of change from one time period to the next and reflect population growth due to natural increase and net migration.

This forecast method can be used with assumptions regarding physical and/or political constraints that will control the amount of growth. Physical constraints can include, for example, a limited supply of land for future homes or infrastructure capacity issues. Political constraints

[12] Page 2 of "Long Term Population Forecast for Oregon and its Counties, 2000-2040 (Draft), Office of Economic Analysis, January 2003

[13] "Long-Term Population Forecast for Oregon and Its Counties, 2000-2040 (Draft)", Office of Economic Analysis, January 2003, first page.

can include state planning laws, local policies, zoning limitations or other conditions that constrain or control the level of growth. The physical or political constraints (or a combination of both) can be used to form or adjust the basis for calculating the potential population changes. Examples of political stimuli include efforts such as local or state governments' tax incentives to support job creation, active employer recruitment, low impact fees, choosing to locate offices or facilities in an area, and tourism campaigns.

In addition, trending of population over time can also be based upon the amount of land or homes available for future growth. This information can be calculated and used to generate dwelling units available for growth over a period of time. The dwelling unit numbers can then be converted to a population number based on estimated persons per household, per housing unit, vacancy rates, and other factors. Physical conditions can also be incorporated into the assumptions that affect trend or linear forecasts. Examples of such conditions include surplus of land for development and new or expanded public facilities.

Forecasting for Small Areas

The City of Redmond hired ECONorthwest, an economic and planning consulting firm, to evaluate the city's proposed population forecast. This assessment supported the use of linear or trending models for forecasting population. ECONorthwest provided the following background on the risks associated with forecasting population for small areas[14]:

> *""Projections for population in most cities and counties are not based on deterministic models of growth; they are simple projections of past growth rates into the future. They have no quantitative connection to the underlying factors that explain why and how much growth will occur.*
>
> *Even if planners had a sophisticated model that links all these important variables together (which they do not), they would still face the problem of having to forecast the future of the variables that they are using to forecast growth (in, say, population or employment). In the final analysis, all forecasting requires making assumptions about the future.*
>
> *Comparisons of past population projections to subsequent population counts have revealed that even much more sophisticated methods than the ones used in the study "are often inaccurate even for relatively large populations and for short periods of time."[15] The smaller the area and the longer the period of time covered, the worse the results for any statistical method.*
>
> *Small areas start from a small base. A new subdivision of 200 homes inside the Portland Urban Growth Boundary has an effect on total population of 0.02%. That same subdivision in Redmond would increase the community's housing stock by more than 3.5%—and population by a similar percentage.*
>
> *Especially for small cities in areas that can have high growth potential (e.g., because they are near to concentrations of demand in neighboring metropolitan areas, or because they have high amenity value for recreation or retirement), there is ample evidence of very high growth rates in short-term; there are also cases (fewer) of high growth rates sustained over 10 to 30 years.*
>
> *Public policy makes a difference. Cities can affect the rate of growth through infrastructure, land supply, incentives and other policies. Such policies generally do not have an impact on growth rates in a region, but may cause shifts of population and employment among cities."*

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[14] March 15, 2004 memorandum to Chuck McGraw, City of Redmond, from Bob Parker and Terry Moore, ECONorthwest
[15] Murdock, Steve H., *et. al.* 1991. "Evaluating Small-Area Population Projections." *Journal of the American Planning Association*, Vol. 57, No. 4, page 432.

2000 – 2025 COORDINATED POPULATION FORECAST

ORS 195.036 requires the coordinating body (the County) to accomplish two things with respect to population forecasts. The County is required to establish and maintain a population forecast for the entire area within its boundary for use in maintaining and updating comprehensive plans. The County is also required to coordinate the forecast with the local governments within its boundary. The statute does not require cities and counties to use specific methods of forecasting population[16]. There is also no statutory requirement that the cities use the same method as the County or vice versa. In addition, the statute does not require or give deference to the population forecast prepared by an agency of the state (e.g. OEA) or the federal government. Each city has prepared its own population forecast and the County has relied on each jurisdiction to use accepted methods of forecasting population. The County also assumes each forecast is supportable on its own.

The process for developing a new coordinated population forecast involved city and County planning and legal staff meeting and evaluating progress on jurisdictional forecasts over several months. In the fall of 2001, the County Community Development Department (CDD) received a grant from the Department of Land Conservation and Development (DLCD) to coordinate a local population forecast in anticipation of the March 2002 OEA draft population forecasts for the state and the counties. This effort undertaken by the County involved ten meetings over 24 months among staff of all four jurisdictions in the County and the two DLCD regional field representatives. The County and city planning staff agreed that a new forecast was needed and set 2025 year as the ending date for this coordinated forecast.[17] Issues discussed during the coordination meetings included:

- Data sources including County GIS records
- Comparison of OEA forecast numbers to actual population numbers
- Historic growth rates (e.g. 10-year; 20-year) for each jurisdiction
- Growth of urban areas relative to non-urban areas of the County
- Demographic patterns
- Limitations and incentives affecting growth
- Various methods to forecast population change
- Documenting assumptions and establishing a factual base

The sum total of the four (cities and County) forecasts were also compared against a 2002 draft forecast of Deschutes County from OEA. The cities and County staff developed a consensus draft in September of 2002 that became the subject of public hearings before the Deschutes County Planning Commission in December of 2002.

The Board of County Commissioners held its first public hearing on the forecast in January 2003. Subsequent hearings were also held in February and in March 2003 to compare the forecast with a second draft forecast of the County's population from OEA (January 2003) and to address issues raised at the three public hearings. The March 26, 2003 decision of the Board adopting the 2003 coordinated forecast was appealed to the Land Use Board of Appeals in April 2003. After receipt of the petitioner's brief in July 2003, and review of the issues raised in the appeal, the Board of Commissioners repealed the forecast and directed County planning

[16] The Oregon Administrative Rules (OAR) governing land use planning also do not require cities and counties to use a specific method of forecasting or a forecast produced by a state or federal agency.

[17] Redmond is currently conducting an urban reserve study and will independently forecast its population growth out an additional 25 years to 2050.

and legal staff to coordinate with the cities to re-examine the assumptions behind the forecast, improve the documentation of the methods and data sources, and prepare a new forecast. The city and County staffs reconvened and met frequently during 2003 and 2004 to address the issues raised in the brief and prepare a defensible forecast.

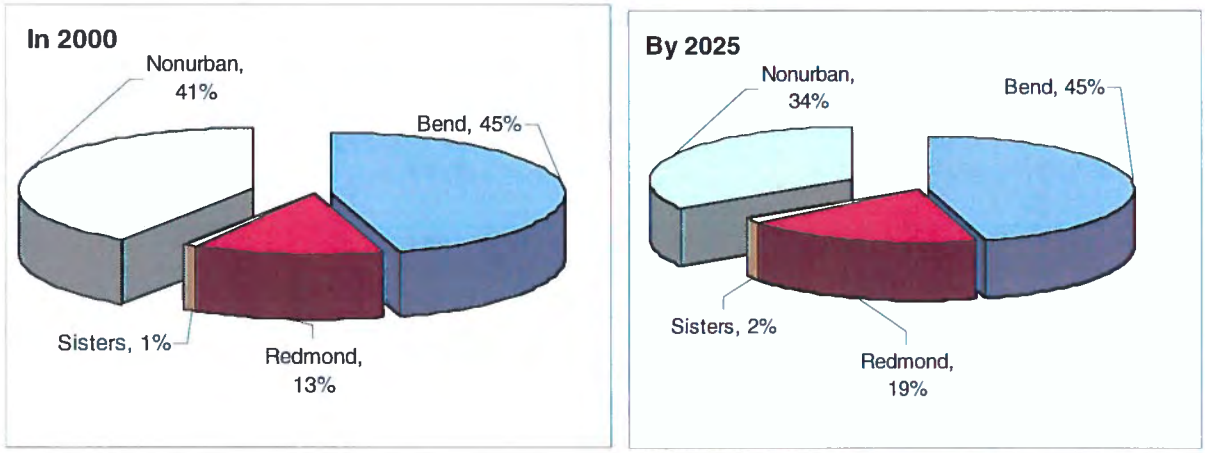
The following table is the 2000 – 2005 coordinated population forecast in five-year increments.

Table 5
Deschutes County 2000- 2025 Coordinated Population Forecast

Year	Bend UGB		Redmond UGB		Sisters UGB		Non-Urban County		Total County
	July 1st Forecast	Five Yr. Change	July 1st Forecast	Five Yr. Change	July 1st Forecast	Five Yr. Change	July 1st Forecast	Five Yr. Change	
2000	52,800		15,505		975		47,320		116,600
2005	69,004	30.69%	19,249	24.15%	1,768	81.33%	53,032	12.07%	143,053
2010	81,242	17.74%	23,897	24.15%	2,306	30.43%	59,127	11.49%	166,572
2015	91,158	12.21%	29,667	24.15%	2,694	16.83%	65,924	11.50%	189,443
2020	100,646	10.41%	36,831	24.15%	3,166	17.52%	73,502	11.50%	214,145
2025	109,389	8.69%	45,724	24.15%	3,747	18.35%	81,951	11.49%	240,811

The following figures show how each jurisdiction's share of the total County population changes over time.

Figure 3
Comparison of Each Jurisdiction's Share of the County Population in 2000 and 2025



Comparison with OEA Draft Forecast

In January 2003 the Office of Economic Analysis released a draft population forecast for the State of Oregon and for each of the 36 counties. The OEA released a final forecast in April of 2004. The OEA 2004 population forecast for Deschutes County is lower than the forecast developed through the local coordinated effort. The following table compares the two forecasts for Deschutes County.

Table 6 Comparison of Local and State Forecasts				
Year	**Coordinated Forecast**	**Oregon OEA 2003 Forecast**	**Difference**	**Percent Difference**
2000	116,600	116,600	N/A	N/A
2005	143,053	139,994	3,059	2%
2010	166,572	155,792	10,780	7%
2015	189,443	178,418	11,025	6%
2020	214,145	197,150	16,995	9%
2025	240,811	214,479	26,332	12%
Sources: Table 6 of this report and February 2003 Population Forecast, OEA				

The main difference in the two forecasts is the level of growth during the first five to ten years of the forecast. The OEA expects the rate of growth in Deschutes County in the next few years to be significantly less than the growth rates experienced in the 1990s, while the local forecast expects continued strong growth rates in the near term (2005 to 2010). Since the level of "natural increase" (births over deaths) is a small part of the total population increase the driving component of growth in either forecast is the amount of in-migration that will occur. The following table compares the draft OEA forecast for 2000 to 2005 with the annual population estimates of the County from the PRC.

Table 7 Comparison of OEA Forecast with Population Estimates for 2000 to 2005			
OEA April 2004 Final Forecast for Deschutes County			
Year	**Population**	**Change**	**AAGR**
2000	116,600		
2005	139,994	23,394	3.66%
PRC – July 1, 2000 and July 1, 2003 Certified Estimates			
Year	**Population**	**Change**	**AAGR**
2000	116,600		
2003	130,500	13,900	3.80%
Census Bureau Estimates – July 1, 2000 to July 1, 2003			
Year	**Population**	**Change**	**AAGR**
2000	116,594		
2003	129,492	+12,898	+3.6%

According to the annual estimates of the PRC, the County's population has grown an average of 3.80%, or approximately 4,633 persons, per year since July 1, 2000. The OEA 2003 draft forecast shows the County's population growing at an average annual rate of 2.84% during the first five years of the forecast. The OEA 2004 final forecast shows the County's population growing by an annual rate of 3.66%, which is now consistent with the recent PRC estimates. This data is supported by the Census Bureau estimates that show the County's population growing by an average of 3.6 percent per year. The following table shows the annualized growth rates of OEA's 2004 final population forecast for the County for the 2000 to 2025 period:

Table 8 OEA Population Growth Rates (Annualized) for Deschutes County				
2000 to 2005	2005 to 2010	2010 to 2015	2015 to 2025	2020 to 2025
3.66%	2.52%	2.33%	2.00%	1.68%
Source: Forecast of Oregon's County Populations and Components of Change, 2000-2040 Oregon Office of Economic Analysis – www.oea.das.state.or.os/demongraphic.				

The OEA forecast predicts that the level of positive net migration that currently makes up almost ninety (90%) percent of the growth will continue and represent 94%of the growth by 2025.[18] As noted earlier in this report, the rate of migration is the volatile part of the forecast and subject to different interpretations and estimates.

The County's forecast is reasonable despite forecasting greater population growth over the 2000 to 2025 period than the OEA forecast. The population growth forecasted by the local coordinated forecast is not unprecedented. The following table compares the change of population and the percent change from each forecast from 2000 to 2025:

Table 9 Comparison of Forecast County Population Growth 2000 to 2025 with County Population Growth Between 1980 and 2003		
	Change	**Percent Change**
County 2004 Draft Forecast 2000 to 2025	+124,211	+107%
OEA 2004 Final Forecast 2000 to 2025	+97,879	+84%
County population change 1980 to 2003	+68,358	+109%
Sources: OEA April 2004 Forecast – www.oea.das.state.or.us/demographic.		

This data shows that the forecasted increase in population from 2000 to 2025 is similar to the population growth of the County over the last 23-year period.

The OEA forecast is strongly influenced by the recent recession and the sluggish national and statewide economy. Although, in general, the state economy has slowed, local economic data seem to show that the County's local housing and employment markets have not been affected in the same way. The number of building permits for new single family dwellings has increased fourteen (14%) percent over the last year[19]. In addition, data from the Oregon Employment Department (OED) suggests regional and County employment projections are positive. The OED projects a 15.2% increase in total nonfarm payroll employment from 2002 to 2012 for Region 10[20]. This region includes Crook, Deschutes, and Jefferson counties, with approximately eighty (80%) percent of this region's workforce located in Deschutes County[21].

In addition, the OED reports that between November 2000 and the end of 2003, the job market in Central Oregon, including Deschutes County, was essentially flat[22]. OED includes Crook, Deschutes, and Jefferson counties in Region 10 for data collection and dissemination purposes[23]. According to OED, the data on nonfarm employment in Region 10 has fluctuated between 62,000 to 68,000 since November of 2000. At the same time, the PRC data shows that the population of Region 10 has grown by 11 percent during this same period. The following table shows the growth in population in Region 10 between April 2000 and July 2003.

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[18] See Forecast Tables for State and counties at http://www.oea.das.state.or.us/DAS/OEA/demographic.shtml
[19] Deschutes County CDD Monthly Statistics for February 2004
[20] Employment Projections by Industry 2002-2012 (July 2003), Oregon Employment Department (www.WorkingInOregon.org).
[21] Central Oregon Labor Trends (October 2003), Oregon Employment Department (www.Qualityinfo.org).
[22] Recent Trends: Region 10 (October 7, 2003) Oregon Employment Department.
http://www.qualityinfo.org/olmisj/ArticleReader?print=1&itemid=00002496.
[23] See http://www.qualityinfo.org/olmisj/Regions?area=000010.

During this period the population of Deschutes County grew 13 percent while the population of the State grew by four percent.

Table 10
Population Growth of OED Region 10 From April 2000 to July 2003

	4/1/00 population	7/1/03 population	Change	%Change
Crook	19,184	20,300	1,116	6%
Prineville	7,358	8,500	1,142	16%
Deschutes	115,367	130,500	15,133	13%
Bend	52,029	62,900	10,871	21%
Redmond	13,481	17,450	3,969	29%
Sisters	959	1,430	471	49%
Jefferson	19,009	19,900	891	5%
Culver	802	840	38	5%
Madras	5,078	5,370	292	6%
Metolius	729	780	51	7%
Total	153,560	170,700	17,140	11%
State of Oregon	3,421,399	3,541,500	120,101	4%

Source: Certified Estimates for Oregon, Its Counties and Cities, July 1, 2003. PRC http://www.upa.pdx.edu/CPRC/publications/annualorpopulation.html.

Table 11
Comparison of Population and Total Nonfarm Employment Change for Deschutes County: 2000 to 20003

	April 2000	July 2003	Change	Percent Change
Population	115,367	130,500	15,133	13.1%
Nonfarm employment	50,900	54,060	3,160	6.2%

Sources: PRC and OED "Local Labor Trends" newsletters for May 18, 2000 and August 14, 2003

This data shows that population growth has exceeded growth in nonfarm employment during the last three years and that the economy of the state has not had the predicted influence on population growth factored in the OEA forecast.

JURISDICTION FORECAST FINDINGS

Deschutes County contains four jurisdictions: The cities of Bend, Redmond and Sisters and Deschutes County. Each city prepared a population forecast for the area within their respective urban growth boundary. The County prepared a forecast for the unincorporated area outside of the Urban Growth Boundaries. Each section begins by presenting the jurisdiction's forecast for the 2000-2025 period. The forecast is followed by a discussion of the methods used for the forecast. Each section concludes with factual data supporting the jurisdiction's forecast. The jurisdictions coordinated their forecasts and the aggregated forecast is the County wide forecast shown in Table 5.

Common Assumptions

The respective forecasts for all three cities share common assumptions about anticipated population growth and infrastructure. All three cites assume that during the forecast period (2000 to 2025) the city and/or other providers of infrastructure and public service will be able to serve growing populations. This assumptions covers infrastructure customarily provided by cities including roads, water and sewer service. In addition, the cities assume that each respective school district will be able to accept and teach new students that enroll in the districts. None of the cities are anticipating the capacities of infrastructure or public institutions such as schools acting as limitations on population growth during the forecast period.

For consistency in using the annual estimates of the PRC and the Census Bureau, the jurisdictions decided to use the July 1, 2000 PRC estimate for each city's urban growth boundary (UGB) and the unincorporated County as the starting point. In Bend and Sisters the UGB and the City Limits are the same. City of Redmond has not annexed out to the UGB. The PRC estimate for the City of Redmond was modified to include the population within the city's UGB, but outside the city limits. The starting points, as of July 1, 2000, for each jurisdiction are as follows: City of Bend, 52,800; City of Redmond, 15,505; City of Sisters, 975, and; unincorporated Deschutes County, 47,320.

Unincorporated Deschutes County Population Forecast

1. Forecast Table

Table 12 Population Forecast for Unincorporated Deschutes County	
Year	**Population**
2000	47,320
2005	53,032
2010	59,127
2015	65,924
2020	73,502
2025	81,951

2. Method

To forecast population from the year 2000, County planning staff examined the past rates of population increase or decrease for unincorporated Deschutes County from 1980 to 2002. These historic rates were used to develop growth rates for the period of 2003 to 2025. The following table presents population estimates released by the PRC and the Census Bureau for unincorporated Deschutes County for the years 1980 to 2002:

Table 13
Population Growth of Unincorporated Deschutes County, 1980 through 2002

Population Research Center Estimates [1]				Census Bureau Census Counts and Estimates [2]			
Year	**Population**	**Change**	**Percent Change**	**Year**	**Population**	**Change**	**Percent Change**
1980	38,025			1980	37,731		
1981	38,960	935	2.46%	1981			
1982	39,205	245	0.63%	1982			
1983	38,125	-1,080	-2.75%	1983			
1984	38,335	210	0.55%	1984			
1985	39,470	1,135	2.96%	1985			
1986	39,270	-200	-0.51%	1986			
1987	39,305	35	0.09%	1987			
1988	42,010	2,705	6.88%	1988			
1989	43,720	1,710	4.07%	1989			
1990	46,638	2,918	6.67%	1990	43,929		
1991	48,680	2,042	4.38%	1991	48,726	4,797	10.92%
1992	48,760	80	0.16%	1992	48,726	-	0.00%
1993	46,525	-2,235	-4.58%	1993	50,768	2,042	4.19%
1994	49,660	3,135	6.74%	1994	52,071	1,303	2.57%
1995	52,110	2,450	4.93%	1995	53,728	1,657	3.18%
1996	53,830	1,720	3.30%	1996	55,543	1,815	3.38%
1997	54,665	835	1.55%	1997	57,033	1,490	2.68%

Table 13
Population Growth of Unincorporated Deschutes County, 1980 through 2002

Population Research Center Estimates [1]				Census Bureau Census Counts and Estimates [2]			
1998	55,980	1,315	2.41%	1998	58,972	1,939	3.40%
1999	42,400	-13,580	-24.26%	1999	61,324	2,352	3.99%
2000	49,055	6,655	15.70%	2000	48,922	(12,402)	-20.22%
2001	51,050	1,995	4.07%	2001	50,169	1,247	2.55%
2002	51,560	510	1.00%	2002	51,126	957	1.91%

Source:
(1) Oregon Population Reports for 1989, 1999, and 2002, Population Research Center (PRC); Portland State University. Estimates as of July 1. 1990 figure is count reported in 1990 Census.
(2) SU-99-8, Population Estimates for Places in Oregon, Annual Time Series, July 1, 1990 to July 1, 1999. Population Estimates Program, Population Division, U.S. Census Bureau. 1980 count is count reported in 1980 Census. Estimates from 1990 through 1999 as of July 1.

The County used the estimates prepared by the Census Bureau to forecast future growth because the Bureau's estimates, unlike those prepared by the PRC, are estimates of the unincorporated County population. The PRC recently informed the County through a December 11, 2003 letter that the PRC prepares estimates for the city populations but does not prepare an estimate for the unincorporated areas of the County. The PRC uses a ratio-correlation method, to estimate the population of counties as a whole. Then PRC uses a housing unit method for estimating the city population. The population number for the unincorporated area is the residual calculated by subtracting the city estimates from the whole County estimate.

In contrast, the Census Bureau prepares sub-County area estimates, including those areas of counties that are unincorporated, or what the Census Bureau defines as "balance of County[24]." The Census Bureau develops sub-County estimates using the "Distributive Housing Unit Method". This method uses building permits, mobile home shipments, and estimates of housing unit loss to update housing unit change since the last census. Census counts of housing units are updated each year through the Bureau's Geographic Update System to Support Intercensal Estimates (GUSSIE).

To find the average annual growth rate (AAGR) of the population of the unincorporated County over the time period of 1980 through 2002, the County used both the reported Census counts and PRC estimates shown in Table 13. The average annual growth rate (annualized) from 1980 to 2002 was 1.4 percent per year[25]. This period of 22 years includes times of population decrease because of a recession (1980 to 1989) and a period of constant growth (e.g. 1994 to 1998). The County had originally used this rate of annual growth to project population in the October 30, 2003. The County realized that this growth rate might be skewed due the city of Bend's annexation of the population in the unincorporated areas of its UGB in 1999. Bend annexed approximately 13,000 people effective July 1, 1999. This annexed population was counted in previous estimates of the unincorporated County population. To correct the problem of this large decrease in population from skewing the calculation, the County eliminated the year 1999 from the calculation of the average annual growth rate. Instead, the average annual growth rates for the unincorporated County were calculated for the

[24] The Census Bureau describes its method for sub-County area estimates through this website: http://eire.census.gov/popest/topics/methodology/citymeth.php.
[25] The average annual growth rate (annualized) was calculated by dividing the end PRC population (51,126) by the beginning population (37,731), finding the "nth" root of this number, where n = 22 years, subtracting one, and then multiplying by 100 to convert to a percent.

periods of 1980 to 1998 and 2000 to 2002. From 1980 to 1998, the population of the unincorporated County grew at an average annual rate of 2.5%. From 2000 to 2002, the population of the unincorporated County grew at an average annual rate of 2.2%.

3. Factual Base

Table 14 shows three possible forecasts for the population of the unincorporated County from 2000 to 2025. The year 2000 starting population is based on the July 1, 2000 PRC estimate of population for the unincorporated County minus the portion of this population residing in the city of Redmond urban growth boundary[26]. For the years 2001 and 2002, the table shows the Census Bureau estimates of unincorporated Deschutes County for July 1 of these years. From 2003 to 2025, each forecast uses different growth rates to forecast population. The first forecast (2.2% Forecast) relies on a constant average annual growth rate of 2.2 percent. The second forecast (OEA Rates) uses the population growth rates (annualized) calculated by OEA for the entire County[27]. The third forecast (Bend method) uses a combination of past average annual growth rates and those developed by OEA (See description of Bend method).

Table 14
Unincorporated Deschutes County Population Forecasts from 2000 to 2025,
Using Three Methods

Year	2.2% Forecast	Annual Growth Rates	OEA Rates Forecast	Annual Growth Rates	Bend Method	Annual Growth Rates
2000	47,320		47,320		47,320	
2001	48,723	2.96%	48,723	2.96%	48,723	2.96%
2002	49,680	1.96%	49,680	1.96%	49,680	1.96%
2003	50,773	2.20%	51,498	3.66%	50,872	2.40%
2004	51,890	2.20%	53,383	3.66%	52,093	2.40%
2005	53,032	2.20%	55,337	3.66%	53,343	2.40%
2006	54,198	2.20%	56,731	2.52%	54,677	2.50%
2007	55,391	2.20%	58,161	2.52%	56,044	2.50%
2008	56,609	2.20%	59,627	2.52%	57,445	2.50%
2009	57,855	2.20%	61,129	2.52%	58,881	2.50%
2010	59,127	2.20%	62,670	2.52%	60,306	2.42%
2011	60,428	2.20%	64,130	2.33%	61,766	2.42%
2012	61,758	2.20%	65,624	2.33%	63,260	2.42%
2013	63,116	2.20%	67,153	2.33%	64,791	2.42%
2014	64,505	2.20%	68,718	2.33%	66,359	2.42%
2015	65,924	2.20%	70,319	2.33%	67,905	2.33%
2016	67,374	2.20%	71,725	2.00%	69,488	2.33%
2017	68,857	2.20%	73,160	2.00%	71,107	2.33%

[26] The Staff of CDD used the Department's GIS to estimate this number of people to be 1,446 people. The City of Redmond findings in support of its population forecast provides the detail behind this calculation.
[27] See Table 2 of "Long-Term Population Forecast for Oregon and its Counties, 2000-2040 " prepared by the Office of Economic Analysis, Department of Administrative Services, State of Oregon, April 2004.

Table 14
Unincorporated Deschutes County Population Forecasts from 2000 to 2025, Using Three Methods

2018	70,371	2.20%	74,623	2.00%	72,763	2.33%
2019	71,920	2.20%	76,116	2.00%	74,459	2.33%
2020	73,502	2.20%	77,638	2.00%	75,762	1.75%
2021	75,119	2.20%	78,942	1.68%	77,088	1.75%
2022	76,771	2.20%	80,268	1.68%	78,437	1.75%
2023	78,460	2.20%	81,617	1.68%	79,809	1.75%
2024	80,187	2.20%	82,988	1.68%	81,206	1.75%
2025	81,951	2.20%	84,382	1.68%	82,627	1.75%

The County finds using the 2.2% average annual growth rate forecast is more conservative than the forecasts using the OEA annualized growth rates or Bend's method. The 2.2% forecast uses an average annual growth rate that is lower, but within two-tenths of a percentage of the annual growth rate of 2.4% derived from the OEA forecast. OEA calculated the population growth rates (annualized) for every five year period in its forecast (See Table 9). The OEA's average annual growth rate for the entire County from 2000 (116,600) to 2025 (209,919) is 2.4%. The Bend method uses higher annual growth rates in the short term and transitions to using OEA's annual growth rates from 2010 to 2025.

The County finds that using the historic 2.2% AAGR for the forecast is reasonable because the time period calculating the historic rate is practically equivalent to the forecast period. This method uses the growth rate as a compounding rate throughout the entire forecast and the 2.2% AAGR is relatively close to the growth rates calculated by OEA for the forecast of the entire County. In addition, the regulatory and economic conditions that occurred in the past 23 years are likely reflective of those that could occur during the forecast period to 2025. The County assumes that the system of land use regulations of the past 23 years, which limit development in farm and forest zones and encourage development in cities, will remain in place for the planning horizon. Also the past 23 year period contained periods of rapid growth and recession. It is reasonable to expect that in the next 20 year period these economic conditions could also occur. The proposed unincorporated County forecast shows the unincorporated County growing at rates below those of the cities and of the County as a whole.

For the purpose of determining if the unincorporated County could accommodate expected non-urban population growth, the County estimated the development potential for the unincorporated County. The only purpose of estimating the development potential was to determine whether, under existing land use regulations, more of the forecast population growth would have to be accommodated within the city UGBs instead of in the unincorporated County. The estimate of a potential population was based on the current zoning and development standards in place and assumes that they will remain in effect. Changes in state law could increase or decrease the development potential for the unincorporated area.

Appendix A to this report describes the process and the results of the development potential estimate analysis. Based on the assumptions of this estimate, the unincorporated County includes the potential for 44,898 dwellings, including an estimate of potential dwellings in a new destination resort and in forest zones. The County calculated the number of

residential units in each zoning district, based on current minimum lot size standards and density limitations. The County translated this potential number of dwellings into population by multiplying the number of dwellings by 1.9 persons per housing unit, which was the number of persons per housing unit in unincorporated Deschutes County reported in the 2000 Census results (See Appendix A). This analysis yielded an estimated maximum population in the unincorporated areas of 85,306.

Based on the development potential estimate, the population in the unincorporated County will not reach "build out" in the forecast period if the unincorporated population grows as forecasted (2.2%/year) and the state planning and land use laws are not changed. The forecast population for the unincorporated County in 2025 is 81,951 and the development potential estimate shows a potential for 85,306. Therefore, in coordinating County population forecast with the cities, the County was able to use an annual growth rate (2.2%) for the unincorporated County because the development potential estimate showed that for the forecast period the County would likely be able to accommodate that overall growth.

The population of the unincorporated County has not grown as rapidly as the population of the urban areas and County planning staff does not anticipate this changing in the future for two reasons. First, the County cannot anticipate that land use regulations will be changed in such a way as to direct population growth to the unincorporated areas of the County. Second, there is no reason to anticipate demand for new housing outside the urban growth boundaries will fluctuate dramatically. Assuming a constant rate of population growth over the forecast horizon is also sufficient for planning in the unincorporated County. The County is not as concerned about short-term forecast numbers as the cities which are required to plan for housing, commercial and industrial land needs and the infrastructure to serve that development.

City of Bend UGB Forecast

1. Forecast Table

Table 15 Population Forecast for Bend UGB	
Year	**Population**
2000	52,800
2005	69,004
2010	81,242
2015	91,158
2020	100,646
2025	109,389

2. Method

The City of Bend Planning staff used both the Linear or Trending Model and Cohort-Component Model in developing different parts of the Bend UGB forecast. The growth rate for the first couple of years of the forecast is based on Bend's historic growth rates from 1991 to 2003.[28] The forecast period from 2004 to 2009 is based on the average growth rates for Bend since 1980, more than 20 years of data. These parts of the forecast follow the Linear or Trending Model. The forecast population levels for later years in the forecast, the period from 2010 to 2025, are based on the OEA forecast growth rates. The OEA forecast uses a Cohort-Component model. The data sources used in developing the Bend forecast are listed below. The following section titled **Factual Base** describes in more detail how each of these data sources were used in the forecast.

- Portland State University's *Population Research Center* [PRC] "certified estimate" of Bend's population;
- City population and annexation history [1970 – 2002];
- Mid-term [1991 – 2002] historic population change and growth rates for Bend;
- Long-term [1980 – 2002] historic population change and growth rates for Bend;
- The Oregon *Office of Economic Analysis* growth forecasts for Deschutes County (January 2003 draft report), and;
- Final *Office of Economic Analysis* population forecasts for Deschutes County for 2000 to 2040 (April, 2004).

Table 16 provides a summary of the different components of the Bend forecast by each year of the forecast. The starting point for the forecast is the July 1, 2000 "certified estimate" population number for Bend from the Portland State University *Population Research Center.*

Although population and growth rates are provided in Table 16 for each year up to the year 2025, city staff recognizes that it is more useful to review the forecast numbers over a longer period, such as five years, to look for trends rather than to focus on the difference in any one year. It is the population at the five-year mark (2005, 2010, etc.) highlighted in Table 16 that makes up Bend's component of the Deschutes County Coordinated Forecast.

[28] This growth rate excludes annexed population. See the **Factual Base** section for more information.

Table 16
Bend Population Forecast

Year	City Forecast	Annual Growth Rate	5-Year Change
2000	**52,800**		
2001	55,080	4.32%	
2002	57,750	4.85%	
2003	62,900	8.92%	
2004	65,881	4.74%	
2005	**69,004**	4.74%	*16,204*
2006	71,433	3.52%	
2007	73,948	3.52%	
2008	76,551	3.52%	
2009	79,245	3.52%	
2010	**81,242**	2.52%	*12,238*
2011	83,135	2.33%	
2012	85,072	2.33%	
2013	87,054	2.33%	
2014	89,083	2.33%	
2015	**91,158**	2.33%	*9,916*
2016	92,981	2.00%	
2017	94,841	2.00%	
2018	96,738	2.00%	
2019	98,673	2.00%	
2020	**100,646**	2.00%	*9,488*
2021	102,337	1.68%	
2022	104,056	1.68%	
2023	105,804	1.68%	
2024	107,582	1.68%	
2025	**109,389**	1.68%	*8,743*

Population Research Center certified population estimates and actual growth rates

Average annual growth rate for Bend from 1991-2002

Long term average annual growth rate for Bend from 1980 – 2002

Oregon *Office of Economic Analysis* average annual growth rates for Deschutes County.

3. Factual Base

As noted in Table 16, the population forecast for Bend is made up of four components. Although these components are from different sources, they each have a valid factual base and provide substantial evidence for the forecast. These four components, and Bend's historical population patterns, are described in the sections below.

Forecast years 2000 – 2003

The population numbers in Table 16 for the years 2000 through 2003 are the *Population Research Center* certified estimates for Bend. The *Population Research Center* at Portland State University, acting on behalf of the State Board of Higher Education, is mandated by Oregon law to prepare annual population estimates for each County and city in the State.[29] The corresponding annual growth percentage for these years are from the PRC certified estimates, so the first four years of the forecast period are actual population figures for Bend.[30]

[29] See ORS 190.510 to 190.610; OAR 577-050

[30] This information is available in several PRC papers. See for example Tables 4 and 7 of the PRC report *"Population Growth in Oregon: 2000 to 2003"* available on its Portland State University website www.upa.pdx.edu/CPRC.

Forecast years 2004 – 2009

The factual base for the short term forecast period from 2004 – 2009 are historic growth rates for Bend. The average annual growth rate for Bend during the 1990s and current decade was used to forecast the population for the years 2004 and 2005. To forecast the population for the period for 2006 – 2009, the city staff used a longer term average growth rate. These parts of the forecast are explained following Table 17.

The historic long-term change in Bend's population is provided below in Table 17. The information in Table 17 was compiled by City staff from various sources.[31] This table also shows the number of people annexed into the City during the 1990s, the period when Bend was actively annexing all the land within the urban growth boundary into the city limits. *The numbers in the "Annual Percent Change" column are calculated only on the "Net Natural and Migration Change" number.* Persons who were annexed to Bend are not included in the annual percentage change figure for each year.

Table 17
Bend Historical Population Data

Year	City of Bend Population	Persons Annexed	Net Natural and Migration Change	Annual Percent Change
70	13,710	0	390	2.84%
71	14,100	0	430	3.05%
72	14,530	0	1,030	7.09%
73	15,560	0	640	4.11%
74	16,200	0	(400)	-2.47%
75	15,800	0	200	1.27%
76	16,000	0	500	3.13%
77	16,500	0	(350)	-2.12%
78	16,150	0	600	3.72%
79	16,750	0	550	3.28%
80	17,300	0	125	0.72%
81	17,425	0	375	2.15%
82	17,800	0	40	0.22%
83	17,840	0	430	2.41%
84	18,270	0	180	0.99%
85	18,450	0	125	0.68%
86	18,575	0	125	0.67%
87	18,700	0	270	1.44%

[31] The population for years 1970, 1980, and 1990 are from the US Census Bureau; for the other years the number is the PSU *Population Research Center's* July 1st certified population number. The annexation count comes from Bend annexation records for 12-month periods from July 1st of the first year through June 30th of the next year. The net natural increase and migration numbers in column four is the certified population number minus persons annexed. The averages at the end of the table are the simple average of the growth rates for time period.

Table 17 Bend Historical Population Data				
Year	**City of Bend Population**	**Persons Annexed**	**Net Natural and Migration Change**	**Annual Percent Change**
88	18,970	0	755	3.98%
89	19,725	0	744	3.77%
90	20,469	351	1,685	8.23%
91	22,505	1,210	1,000	4.44%
92	24,715	1,755	1,085	4.39%
93	27,555	0	1,870	6.79%
94	29,425	24	1,181	4.01%
95	30,630	17	1,573	5.14%
96	32,220	53	1,467	4.55%
97	33,740	1	1,894	5.61%
98	35,635	13,649	1,366	3.83%
99	50,650	0	2,150	4.24%
00	52,800	0	2,280	4.32%
01	55,080	0	2,670	4.85%
02	57,750	0	5,150	8.92%
03	62,900	0		
Average Rate of Growth 1970-2003:				3.34%
Average Rate of Growth 1980-2003:				3.76%
Average Rate of Growth 1990-2003:				5.33%

Since 1990, a period of 13 years, Bend's average annual population growth rate has been more than five percent (5%). This pattern of consistent growth during the past decade and into the current decade provides a base of trend data on which to base Bend's growth for 2004 and 2005. However, a close look at the data shows growth rates at the beginning and end of the 13 year period that are significantly higher than the average.

Because the first year of this period [1990 – 1991] had an extra-ordinary growth rate of 8.23 percent, City staff decided to drop this year from the mid-range data set.[32] In addition, the PRC certified population estimate for 2003 results in an 8.92% increase over the previous year. The PRC figure for 2003 is based on building permits issued in the previous 12 months for a record 2,200 net new dwelling units – a dwelling unit number that is *about 1,000 more* than the average of the previous three years.[33] City staff felt that this annual growth rate should be similarly excluded from calculations used for the short term forecast.

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[32] Because the cycle for this "year" period is actually 15-months from the April 1st Census to July 1, 1991, and because the growth rate for this year is substantially higher than the other years, staff felt it was reasonable to delete this year from the mid-term data set and recalculate the annual average growth rate using the years 1991- 2002.

[33] The totals for 2000 – 2002 were 1008, 1396, and 1276 respectively. Anecdotal evidence suggests that in 2003 more permits than usual were "pulled" in December to avoid a Systems Development Charge (fee) increase, and that large apartment projects were started for investment reasons.

Staff then used the 11-year historic period of 1991 to 2002 as the basis for years 2004 – 2005 in the forecast, and calculated the annual average growth rate for 1991-2002 at 4.74 percent. This recalculated 4.74 percent annual growth rate was used to generate the forecast population for 2004 – 2005.

As a cross-test of this level of growth the staff also reviewed short term natural increase and net migration data for Deschutes County from the PRC[34]. There is no separate data source for Bend but it is reasonable for the cross-test to assume in the forecast that the *short term historic* patterns and rates of population change for Deschutes County as a whole can be applied to Bend as well because most of the County's population increase has occurred in the cities.

Although the statewide average rate of net migration (persons moving in vs. persons moving out) has declined during the past ten years, this is not the case for Deschutes County. During the period from April 1, 2000 to July 1, 2003 the statewide net migration rate was 55.7 percent of total population growth, but as noted in Table 3 earlier in this report, the net migration rate for Deschutes County was 88 percent of total growth during that period.[35]

Even more telling about this 2000 – 2003 level of in-migration increase in Deschutes County is the actual number of persons compared to the rest of the state. In this recent three-year period, the net migration number for Deschutes County (13,359) was *higher than any other County in the state*. In fact, during these three years, *20 percent of the total net migration number for the whole state [13,359 out of 66,845] is attributed to Deschutes County*.[36] To put it another way, one out of every five persons that are counted as net migrants to Oregon during 2000-03 have moved into Deschutes County. The PRC 2000 – 2003 data on percentage growth rates and in-migrant numbers are higher than would be expected under the OEA forecast for the years 2000 – 2005. These higher PRC numbers provides additional support for the use of a 4.74 percent growth rate for years 2004 and 2005 of the forecast.

For the period of 2006 to 2009 in the forecast, the Staff again used trend data, but from a longer period, that includes years of both economic boom and recession. As noted at the end of Table 17, the long-term (1980 – 2003) average annual growth rate for Bend is 3.76 percent. If the high growth rate for the year 2003 is removed, then the average annual growth rate drops to 3.52 percent. Staff feels that this adjusted growth rate of 3.52 percent represents a more accurate basis for long-term trend data for the 2006-09, taking into account periods of economic recession and economic boom.

OEA acknowledged that rates of in-migration can be highly volatile, therefore, difficult to predict.[37] For this reason, and in the absence of clear indicators that net migration rates will change significantly, staff finds it reasonable to apply historically documented growth rates to the 2003 – 2009 forecast years. Although the short term growth data for the County and City suggest that high growth rates (4.74%) should hold for the first years of the forecast, the staff took a more conservative approach using 3.52% for the next few years (2006 – 2009) consistent with the longer term historic growth rate.

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[34] Historic data on births, deaths, in-migration, and out-migration are recorded and compiled by state agencies at the County level. Although there are good data for Deschutes County as a whole, there are no separate historic counting of births, deaths, and migration levels for the cities in the County.

[35] Data are from PRC report *Population Growth in Oregon: 2000 to 2003*, table 3.

[36] Data are from PRC report *Population Growth in Oregon: 2000 to 2003*, table 3.

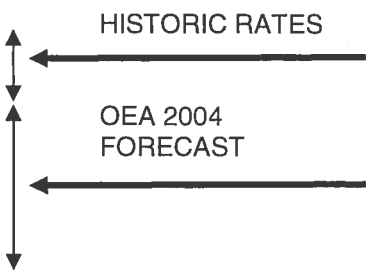
[37] OEA *Long-Term Population Forecast for Oregon and Its Counties, 2000 – 2040*, [draft, January 2003], first page.

Forecast years 2010 – 2025

The Oregon *Office of Economic Analysis* bases its population forecast on demographic data, and on assumptions about projected age-specific birth and age and sex-specific death rates for the existing population and in-migrants to the state and counties.[38] Table 18 shows the historic (1990-2005) and forecast (2000-2025) annual growth rates for Deschutes County as prepared by OEA.[39]

Table 18
Historical and OEA Forecast Growth Rates For Deschutes County

Time Period	Growth Rate
1990-05	4.55%
1995-00	3.99%
2000-05	3.66%
2005-10	2.52%
2010-15	2.33%
2015-20	2.00%
2020-25	1.68%



The longer the time line for a population forecast the more speculative the forecast numbers become toward the end of the forecast (end years) because the factors that influence the population growth, such as the age and rate of in-migrants and economic conditions, are harder to predict over longer periods. The OEA forecasts that the annual rate of growth for Deschutes County will decline significantly over time, although the reasons for the decline are not explained in the April 2004 final population forecast report.

While the Bend staff believes that the data supports higher growth rates for Bend during the first ten years (2000 – 2010) than are forecast by OEA for the County, the staff is less confident that the growth rates will be this high over the longer period. Because of this, the City accepts and has used the OEA County-wide "annualized" growth rates for the period from 2010 to 2025 in the Bend forecast.

[38] For more information see the first page of the OEA draft report titled *Long-Term Population Forecast for Oregon and Its Counties, 2000-2040,* (January 2003).
[39] OEA 2004 final report titled **Forecasts of Oregon's County Populations and Components of Change, 2000 – 2040**. The OEA 2003 draft report refers to these rates as "annualized".

REVISED BY ECONORTHWEST – 8/6/04

City of Redmond Forecast

During the past 12 years, Redmond has experienced exceptional population increases; growth in the Redmond City Limits and UGB averaged about 7.0 percent per year during this time, with the last couple of years averaging over 8 percent.[40]

1. Forecast Table

ECONorthwest developed the 2000-2025 population forecast for Redmond. Table 19 presents the 2000-2025 forecast for Redmond. The forecast reaches a 2025 population of 45,724.

Table 19.
Redmond UGB population forecast, 2000-2025

Year	Population	Annual Increase	Percent change
2000	**15,505**	--	
2001	16,190	685	4.42%
2002	16,906	716	4.42%
2003	17,654	747	4.42%
2004	18,434	780	4.42%
2005	**19,249**	**815**	**4.42%**
2006	20,100	851	4.42%
2007	20,988	889	4.42%
2008	21,916	928	4.42%
2009	22,885	969	4.42%
2010	**23,897**	**1,012**	**4.42%**
2011	24,953	1,056	4.42%
2012	26,056	1,103	4.42%
2013	27,208	1,152	4.42%
2014	28,411	1,203	4.42%
2015	**29,667**	**1,256**	**4.42%**
2016	30,979	1,312	4.42%
2017	32,348	1,370	4.42%
2018	33,778	1,430	4.42%
2019	35,272	1,493	4.42%
2020	**36,831**	**1,559**	**4.42%**
2021	38,459	1,628	4.42%
2022	40,159	1,700	4.42%
2023	41,935	1,775	4.42%
2024	43,788	1,854	4.42%
2025	**45,724**	**1,936**	**4.42%**
Total Increase	**30,219**		

[40] See Appendix B – "Review of Redmond Population Forecast" prepared by Bob Parker and Terry More, ECONorthwest (2004)

2. Method

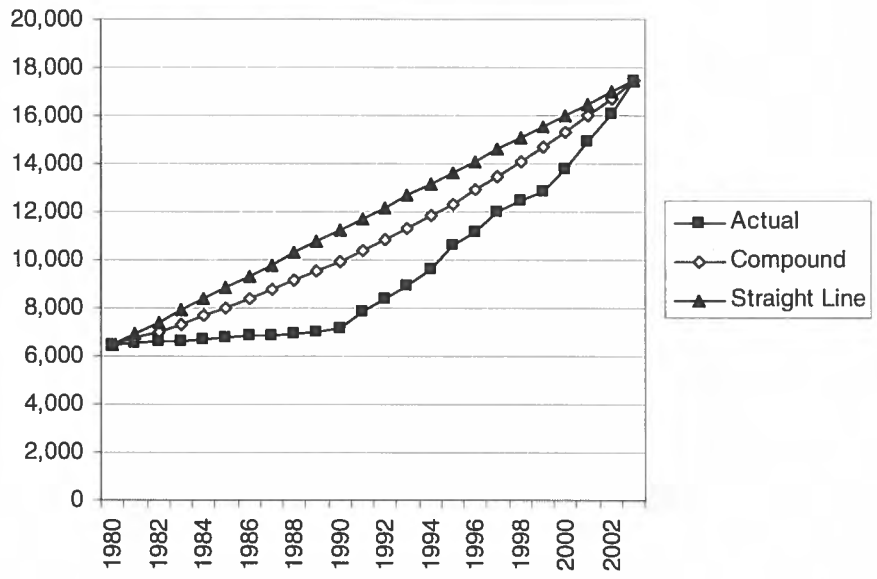
ECONorthwest evaluated several different methods for the forecast including a compounding method, a ratio method, a decreasing rate method (similar to the one used by Bend), and a straight-line method. We selected the compounding methodology because it is (1) most consistent with Redmond's historic population growth trends, (2) it is a relatively simple approach that builds from historical data and assumptions about future City growth policies, and (3) it assumes that the increment of population growth (e.g., the rate of growth or annual percent change) will be constant. The compounding methodology also assumes that the number of persons added will increase each year. The rate selected is the rate that Redmond observed between 1980 and 2003 (4.42% annually).

The City selected the compounding methodology because:

- It provides the best approximation of historical growth trends in Redmond;
- The City has not identified any constraints to population growth;
- It is a simple method that implicitly considers factors that have affected historical population growth; and
- It is an accepted method for extrapolating population growth trends.

In summary, the compounding approach provides a simple method for extrapolating historical trends to a future population figure. While it does ignore annual variations in population growth that have occurred in the past and will continue in the future, it is at least as justifiable—and perhaps more justifiable—than other assumptions about how population growth rates will vary in the future. Figure 4 graphically displays the differences between (1) actual population growth, (2) a compound growth trend, and (3) a straight-line growth trend based on the amount of growth in Redmond between 1980 and 2003. The graph shows that the compound methodology is a better (but not perfect) representation of the 23-year growth trend in Redmond.

Figure 4. Growth in Redmond, 1980-2003



The Redmond population forecast assumes an annual growth rate of 4.42%. This rate is the same rate the City observed between 1980 and 2003. This rate represents the long-term growth trend in Redmond and includes annual population growth rates that range from –0.2% to 10.3%. While the City could have selected another time period to base its growth rate on, growth rates in more recent time periods are much higher. While annexations are included in this growth rate, they have little affect on the rate: annexations accounted for about 2% of total population growth between 1980 and 2002 (3% between 1994 and 2002—the period for which the City has records). In short, the affect of annexations on the average annual growth rate is less than 0.1%.

The Redmond population forecast uses a year 2000 base population of 15,505 persons—for the Redmond UGB. The base population represents the City's best estimate of how many people lived within the Redmond UGB in 2000. Annexations are implicitly factored into the City's forecast because it uses population in the UGB as the base for the projections. In other words, annexations will add population to the city limits, but not to the UGB—because people in the urbanizable area have already been counted and factored into the base population. Moreover, City annexation records show that the City annexed 228 persons between 1993 and 2002 (the City did not keep annexation records prior to 1993).

Consistent with ORS 195.303, statewide planning Goal 14, and accepted planning principles, the Redmond population forecast is for the area within the Urban Growth Boundary (UGB).

3. Factual Base

Data Sources Used for Forecasting the Redmond Population to Year 2025

Data sources used in developing the population forecast for the Redmond UGB area included:

- U.S. Census and Portland State University Center for Population Research Annual Reports
- City population and annexation history [1994 – 2003]
- Mid-term [1990 – 2002] historic population change and growth rates for Redmond
- Long-term [1980 – 2002] historic population change and growth rates for Redmond
- The Oregon Office of Economic Analysis growth forecasts for Deschutes County (January 2003 Draft Report).
- Comparative Housing Costs and Trends (Central Oregon Regional Housing Authority Needs Assessment Update, 2002).

Each of these sources used in the forecast is described in more detail below.

The following sections provide factual evidence in support of the City's coordinated population forecast.

Regional Population Trends

Population growth in Oregon tends to follow economic cycles. Oregon's economy is generally more cyclical than the nation's, growing faster than the national economy during expansions and contracting more rapidly than the nation during recessions. This pattern is shown in Table 20, which presents data on population in the U.S., Oregon, and selected areas in Oregon over the 1970–2000 period. Table 20 shows Oregon grew more rapidly than the U.S. in the 1970s and 1990s (which were generally expansionary periods) but lagged behind the U.S. in the 1980s. Oregon's slow growth in the 1980s was primarily due to the nationwide recession early in the decade. Oregon's population growth regained momentum in 1987, growing at annual rates of 1.4%–2.9% between 1988 and 1996. The Willamette Valley received over 70% of the state's population growth during this period.

Population growth for Oregon and its regions slowed in 1997, to 1.1% statewide, the slowest rate since 1987. Net migration into Oregon, which is the largest component of population growth, dropped from 35,000 in 1996 to 18,000 in 1999. The reasons most often cited for this slowing of population growth are the recovery of the California economy, the combination of a high cost of living (especially housing) and low wages in Oregon, and a perceived decline in the quality of Oregon's schools.

Redmond, Bend, and Deschutes County have grown faster than other areas in Table 20 throughout the 1980–2000 period. Deschutes County was the fastest growing county in Oregon between 1990 and 2000, growing at an average annual rate of 4.25% and adding 24,333 persons. Bend grew at an average annual rate of nearly 10% during the 1990s, in part because it annexed many developed areas within its UGB, while Redmond grew at an average annual rate of 6.5%.

Deschutes County's share of Oregon's population has increased from 2.4% in 1980 to 3.4% in 2000. Redmond's share of Deschutes County's population has increased from 10.4% in 1980 to 11.4% in 2000. In summary, between 1980 and 2000, Deschutes County grew at a rate nearly 2.4 times faster than Oregon, while Redmond grew at a rate nearly four times as fast as Oregon.

Table 20.
Population in the U.S., Oregon, Willamette Valley, Deschutes County, Bend, and Redmond, 1980–2000

				Avg. Ann. Growth Rate		
Area	**1980**	**1990**	**2000**	**80-90**	**90-00**	**80-00**
U.S.	226,545,805	248,709,873	281,421,906	0.9%	1.2%	1.1%
Oregon	2,633,156	2,842,321	3,421,399	0.8%	1.9%	1.3%
Willamette Valley	1,788,577	1,962,816	2,380,606	0.9%	1.9%	1.4%
Deschutes County	62,142	74,958	115,367	1.9%	4.4%	3.1%
Bend	17,263	20,447	52,029	1.7%	9.8%	5.7%
Redmond	6,452	7,165	13,481	1.1%	6.5%	3.8%

Sources: U.S. Census and Center for Population Research and Census, Portland State University. Average annual growth rates calculated by ECONorthwest.

Notes: The Willamette Valley consists of Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington, and Marion Counties.

Between 1990 and 1999, almost 70% of Oregon's total population growth was from net migration (in-migration minus out-migration), with the remaining 30% from natural increase (births minus deaths). Migrants to Oregon tend to have many characteristics in common with existing residents, with some differences—recent in-migrants to Oregon are, on average, younger and more educated, and are more likely to hold professional or managerial jobs, compared to Oregon's existing population. The race and ethnicity of in-migrants generally mirrors Oregon's established pattern, with one exception: Hispanics make up more than 7% of in-migrants but only 3% of the state's population. The number-one reason cited by in-migrants for coming to Oregon was family or friends, followed by quality of life and employment.[41] Migration is a significant component of population growth in Deschutes County. Data in the County Report underscore this point: 81% of population growth in Deschutes County between 1980 and 2002 was from in-migration. In fact, the rate of in-migration increased in the 1990s, accounting for 86% of population growth. This figure increased to 89% for the 2000-2002 period.

The U.S. Census collects data on migration patterns. Specifically, it asks households where there residence was in 1995 (5 years prior to the Census count). Table 21 shows place of residence in 1995 for Deschutes County and Redmond. The data show that population in both geographic areas is transitory. Only 41% of individuals in Deschutes County lived in the same residence in 1995; the figure was only 31% in Redmond. About one-third of persons in both Deschutes County and Redmond lived in a different county in 1995; about 15% lived in a different state.

[41] State of Oregon, Employment Department. 1999. *1999 Oregon In-migration Study.*

Table 21
Place of residence in 1995, Deschutes County and Redmond, persons 5 years and over

	Deschutes County		Redmond	
Location	**Persons**	**Percent**	**Persons**	**Percent**
Population 5 years and over	108,293	100%	12,626	100%
Same house in 1995	43,935	41%	3,916	31%
Different house in 1995	64,358	59%	8,710	69%
Same county	28,743	27%	4,394	35%
Different county	34,501	32%	4,234	34%
Same state	16,865	16%	2,512	20%
Different state	17,636	16%	1,722	14%

Source: U.S. Census, SF-3

The data are conclusive: Central Oregon has experienced a tremendous amount of in-migration. A corollary finding based on Table 21 is that Deschutes County's population is mobile—a majority of people lived in a different housing in 2000 than they did in 1995. All the evidence suggests that in-migration will continue to contribute the majority of population growth in Deschutes County and Redmond.

Historically, quality of life factors have played a central role in attracting people to Deschutes County. The County has stunning scenery and ample outdoor recreation opportunities that are available in all seasons. Destination resorts such as Sunriver, Black Butte Ranch and Eagle Crest attract many tourists to the region. The Central Oregon OSU campus provides educational opportunities for individuals desiring to attend college.

Moreover, as the region has grown, Bend has added many urban amenities such as the Mountain View Mall and the Les Schwab Amphitheater. Growth has helped revitalized Bend's downtown. Redmond is home to a regional airport and the new Deschutes County Fairground. Many of the urban amenities are relatively new and contribute to the region's quality of life.

In summary, the combination of outdoor and urban amenities are likely to continue attracting people to Deschutes County. In fact, the presence of new urban amenities will probably attract some households that wouldn't have moved the region previously. The urban amenities, combined with the fact that cities in Deschutes County are still relatively small (Bend, the largest city had a 2003 population of 62,900) and have a small town feel provides a combination of factors that are extremely attractive to households. Advances in telecommunications make many households less bound to geography. In-migration will be the dominant cause of population growth in Deschutes County and its cities for years to come. That conclusion does not tell us how much growth these areas will get, but it does explain in part why forecasting is an uncertain business: birth and death rates are relatively stable over time and easy to predict; migration rates are much more variable.

Redmond Population Trends

The first step in developing the forecast for Redmond was to estimate the current UGB population. The forecast using a 15,505 population figure as a starting point for the 2000 to 2025 period which represents the population in the Redmond urban growth boundary on July 1,

2000. The 15,505 figure was derived by taking the 2000 census data (13,770) for the city limits and added the population within the unincorporated area (1,446) to get a total of 15,216 (13,770 + 1,446 = 15,216).

The 1,446 population within the unincorporated area was calculated by using the 2000 Census Block Group GIS data as provided by the US Census Bureau. All of the block group polygons that were within the Redmond city limits, then found the total population 13,481 (same as April 1, 2000 census) of all block groups within the city limits.

In order to find the population of the Redmond UGB, all block group polygons that fell inside the UGB were selected to determine the 1, 446 population.

Then the difference between the 2000 census count for Redmond 13,481 (on April 1, 2000) and the PRC population estimate of 13,770 (on July 1, 2000) was 289. These 289 people were added to the 15,216 to account for the population growth between the census taken on April 1 and PRC's estimate as of July 1 for a total estimate of 15,505 (15,216 + 289 = 15,505).

Table 22 shows population estimates from the Population Research Center at Portland State University for the Redmond city limit for the period between 1980 and 2003. The data show that Redmond grew relatively slowly during the 1980s (averaging about 1.0 percent annually). Starting in 1990, the annual growth rates increase dramatically. Between 1990 and 2000, population in the Redmond city limit grew by 6,635 persons—averaging a 6.8% increase annually. That trend continued between 2000 and 2003.

Table 22
Redmond City Limit Population Data -- 1980 to 2003

Year	City of Redmond Population	Annual Percent Change
1980	6,452	--------
1981	6,575	1.9%
1982	6,615	0.6%
1983	6,605	-0.2%
1984	6,675	1.1%
1985	6,740	1.0%
1986	6,830	1.3%
1987	6,850	0.3%
1988	6,950	1.5%
1989	7,000	0.7%
1990	7,135	1.9%
1991	7,870	10.3%
1992	8,365	6.3%
1993	8,955	7.1%
1994	9,650	7.8%
1995	10,585	9.7%
1996	11,175	5.6%
1997	11,990	7.3%
1998	12,435	3.7%
1999	12,810	3.0%
2000	13,770	7.5%
2001	14,960	8.6%
2002	16,110	7.7%
2003	17,450	8.3%

* Source: Oregon Population Reports for 1999 and 2003, PRC

Table 23 shows the impact of annexations on Redmond's population between 1980 and 2002. The City did not keep annexation records until 1993.

The annexation history shows that Redmond added 228 persons through annexations between 1994 and 2002. This equates to about 3% of total population growth during this period.

Table 23
Redmond City Limit Population Data – Annexations

Year	City of Redmond Population	# Persons Annexed	Net Natural and Migration Change	Annual Percent Change
1980	6,452	N/A*	--------	--------
1981	6,575	N/A*	123	1.9%
1982	6,615	N/A*	40	0.6%
1983	6,605	N/A*	-10	-0.2%
1984	6,675	N/A*	70	1.1%
1985	6,740	N/A*	65	1.0%
1986	6,830	N/A*	90	1.3%
1987	6,850	N/A*	20	0.3%
1988	6,950	N/A*	100	1.5%
1989	7,000	N/A*	10	0.7%
1990	7,135	N/A*	135	1.9%
1991	7,870	N/A*	735	10.3%
1992	8,365	N/A*	495	6.3%
1993	8,955	4	590	7.1%
1994	9,650	2	695	7.8%
1995	10,585	35	935	9.7%
1996	11,175	3	590	5.6%
1997	11,990	5	815	7.3%
1998	12,435	8	445	3.7%
1999	12,810	79	375	3.0%
2000	13,770	15	960	7.5%
2001	14,960	8	1190	8.6%
2002	16,110	69	1150	7.7%

Source: City of Redmond Annexation Records. Note: no population records related to annexations within Redmond were kept until 1993.

Redmond calculated a growth trend (net natural and migration change, column 4 above) using data from PRC's annual population reports from April 1, 1980 to July 1, 2002. The total increase in population from 1980 to 2002 was 250%. The average annual growth rate (AAGR) for the period 1980 to 1990 was 0.9%. The AAGR for the period 1990 to 2000 was 6.4%, and the average rate of growth from 1992 to 2002 was 7.4%.

Table 24 shows growth rates in Redmond for several time periods. These historical growth rates provide context for developing a range of population projections. ECO calculated the rates using the compounding method. The data underscore several key points:

- The start date has a big impact on the growth rate. This is because population growth spiked in 1990 and have sustained high rates since then.
- The average annual growth rate (AAGR) is between 4.42% (1980-2003) and 8.21% (2000-2003) depending on the time period. The period between 2000 and 2003 showed the highest annual growth rate.

Table 24.
Compound Growth Rates by Time Period, City of Redmond

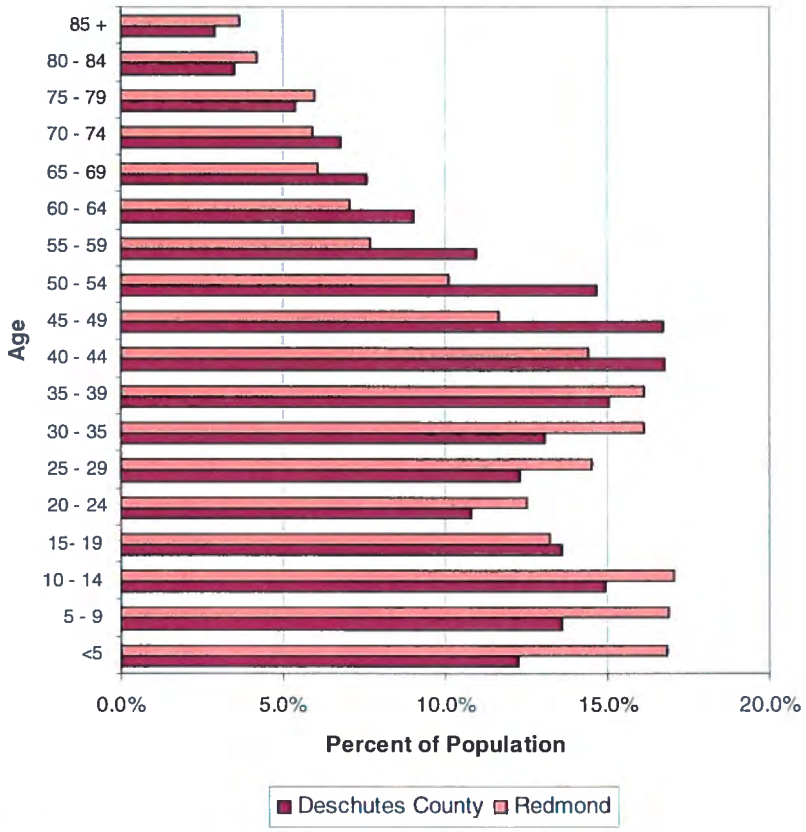
Period	Number of Years	AAGR (Compound growth rate)	Population Increase	% Change (full period)
1980-03	23	4.42%	10,998	170%
1983-03	20	4.98%	10,845	164%
1990-03	13	7.12%	10,315	145%
1993-03	10	6.90%	10,845	95%
2000-03	3	8.21%	3,680	27%

Socioeconomic Trends

This section reviews historical socioeconomic trends in Redmond. Socioeconomic trends provide a broader context for growth in a city; factors such as age, income, migration and other trends show how communities have grown and shape future growth. To provide context, we compare Redmond with Bend, Deschutes County and Oregon. Characteristics such as age, household composition, and race are indicators of how population has grown in the past and provide insight into factors that may affect future growth. Where relevant, Redmond is compared to Deschutes County.

Figure 4 compares age in Deschutes County and Redmond for 2000. The data show that Redmond has a higher percentage of its population in all of the age classes under 39 except for 15-19 years. This suggests that Redmond is attracting younger households, many of whom have children. Redmond also has a slightly higher percentage of individuals aged 75 or older. Both of these trends are probably related to lower housing costs in Redmond compared to Bend.

Figure 5. Age distribution, Deschutes County and Redmond, 2000



Source: U.S. Census, SF-1

During the 1990s Redmond experienced changes in the age structure of its residents. Table 25 shows population by age for the City of Redmond for 1990 and 2000. The Census data show that Redmond grew by 6,537 persons between 1990 and 2000—a 94% increase. The age breakdown provides evidence of how Redmond grew. While Redmond experienced an increase in population for every age group, the fastest growing age groups were 5-17 years and 18-24 years. The under 5 and 45-64 years age groups also grew faster than the citywide average growth rate. The over 65 age group grew the slowest of any of the age groups shown in Table 3.

A comparison of population increase by age between Redmond and Deschutes County shows that:

- Redmond grew faster than Deschutes County. The population of Redmond increased 94% between 1990 and 2000 while Deschutes County experienced a 58% population increase.

- Redmond had a higher percentage of growth in younger age groups. Population in Redmond grew at faster rates for all age groups under 45 years. Deschutes County experienced higher growth rates in the 45-64 year and over 65 year age groups than Redmond.

The Census data suggest that Redmond is attracting younger individuals—including families with children. Consistent with that finding, Redmond has a slightly higher average household size (2.54 persons) than Deschutes County (2.5 persons). One hypothesis that potentially explains the age structure is that Redmond is getting more of the households that have the service jobs in Bend, and they are trading off lower housing costs against travel time and cost. While ECONorthwest did not have data to prove this conclusively, anecdotal evidence (e.g., discussions with City and County staff) also suggest this is the case.

Table 25.
Population by Age, City of Redmond, 1990 and 2000

	1990		2000		Change		
Age Group	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Share**
Under 5	559	8%	1,129	8%	570	102%	0%
5-17	1,276	18%	2,862	21%	1,586	124%	3%
18-24	514	7%	1,154	9%	640	125%	1%
25-44	2,196	32%	4,121	31%	1,925	88%	-1%
45-64	1,232	18%	2,463	18%	1,231	100%	1%
65 and over	1,167	17%	1,752	13%	585	50%	-4%
Total	6,944	100%	13,481	100%	6,537	94%	0%

Source: U.S. Census, 1990 and 2000

Table 26 shows the number of persons of Hispanic or Latino origin for Deschutes County, Bend and Redmond for 1990 and 2000. The Census data show that the number of Hispanics in Deschutes County increased by 182% between 1990 and 2000. At 5.5%, Redmond had the highest percentage of Hispanic population in 2000. In summary, similar to statewide trends, the Hispanic / Latino population of Deschutes County, Bend and Redmond are growing faster than the overall population. National demographic trends suggest this trend will continue in Deschutes County.

Table 26.

Persons of Hispanic or Latino origin, Deschutes County, Bend and Redmond, 1990 and 2000

	Deschutes County	Bend	Redmond
1990			
Total population	74,958	20,469	7,163
Hispanic or Latino	1,526	485	197
Percent Hispanic or Latino	2.0%	2.4%	2.8%
2000			
Total population	115,367	52,029	13,481
Hispanic or Latino	4,304	2,396	739
Percent Hispanic or Latino	3.7%	4.6%	5.5%
Change 1990-2000			
Persons	2,778	1,911	542
Percent Hispanic or Latino	182%	394%	275%

Source: U.S. Census, SF-1, 1990 and 2000

Housing Trends

Recent analysis of housing costs between Bend and Redmond shows that the average sale price for a 2200 square foot home. 3-4 bedrooms with 2.5 baths in Bend is $293,225, while the sale price for the equivalent home in Redmond is $204,606[42].

Table 27
Housing Unit and Household Estimates

	2000 Census	2003 Estimate	2008 Projection
Total population	13,481	16,652	22,087
Average household size	2.54	2.54	2.54
Owner-occupied	2.6	2.6	2.6
Renter-occupied	2.46	2.46	2.46
Total housing units	5,584		
Occupied (94.2%)	5,260	6,497	8,618
Vacant (5.8%)	324		
Owner occupied (60.6%)	3,185	3,937	5,223
Renter occupied (39.4%)	2,075	2,560	3,394

Source: Rees Consulting, Inc. (2003)

[42] Rees Consulting, Inc. (2003) Central Oregon Housing Needs Update. Prepared for Central Oregon Regional Housing Authority and The Central Oregon Partnership.

Figure 6 – Type of Structure

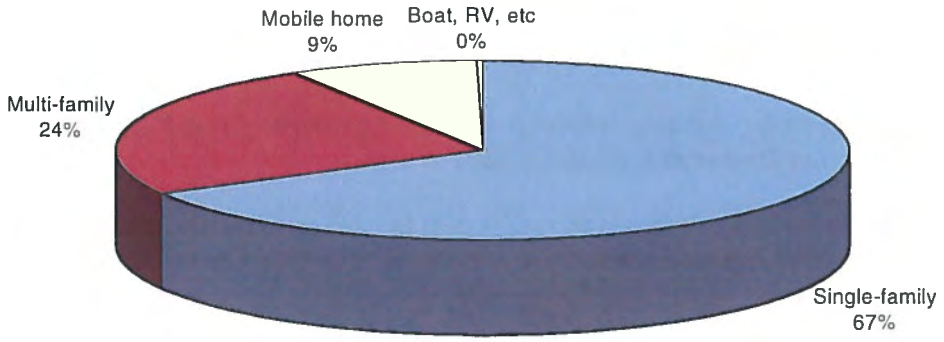


Table 28 Affordability and No. Households Cost Burdened by Housing Payment								
Household Income	**Less than $10,000**	**$10,000 - $19,999**	**$20,000 - $34,999**	**$35,000 - $49,999**	**$50,000 - $74,999**	**$75,000 - $99,999**	**$100,000 or more**	**Total**
# Owners	131	292	754	710	841	293	164	3185
# Renters	339	435	743	306	177	36	39	2075
Total	470	727	1497	1016	1018	329	203	5260
Cost Burdened								
# Owners	88	188	292	147	65	0	7	787
# Renters	252	362	284	30	0	0	0	928
Total – 2000	340	550	576	177	65	0	7	1715
Percent – 2000	72%	76%	38%	17%	6%	0%	3%	32.6%
Estimate – 2003	420	679	711	219	80	0	9	2118
Projection – 2008	557	901	944	290	106	0	11	2810

Low Income Households in 2003	**≤30% AMI**	**31 – 50% AMI**	**51 – 80% AMI**	**Total**
# Households	693	669	1342	2704
# Cost Burdened Households	505	506	547	1558

Source: Central Oregon Housing Needs Update (March, 2003) Rees Consulting, Inc.

Summary of Findings

The City of Redmond makes the following findings in support of its 2000-2025 population growth forecast.

Redmond has experienced rapid population growth since 1990

- The total percentage increase in population from 1980 to 2002 was 250%. The average annual growth rate (AAGR) for the period 1980 to 1990 was 0.9%. The AAGR for the period 1990 to 2000 was 6.4%, and the average rate of growth from 1992 to 2002 was 7.4%.
- Between 1980 and 2000, Deschutes County grew at a rate nearly 2.4 times faster than Oregon, while Redmond grew at a rate nearly four times as fast as Oregon.

- Population growth rates in Redmond increased in 1990 and have sustained high levels since then. However, long-term trends provide a more realistic base for future population forecasts due to factors that affect population growth: regional growth changes, demographic shifts, economic trends, and migration patterns.

In-migration has accounted for the majority of recent growth and will continue to drive population increases in Redmond through 2025

- Eighty-one percent of population growth in Deschutes County between 1980 and 2002 was from in-migration. In fact, the rate of in-migration increased in the 1990s, accounting for 86% of population growth. This figure increased to 89% for the 2000-2002 period.
- Only 41% of individuals in Deschutes County lived in the same residence in 1995; the figure was only 31% in Redmond. About one-third of persons in both Deschutes County and Redmond lived in a different county in 1995; about 15% lived in a different state.
- The combination of outdoor and urban amenities are likely to continue attracting people to Deschutes County. In fact, the presence of new urban amenities will probably attract some households that wouldn't have moved the region previously. The urban amenities, combined with the fact that cities in Deschutes County are still relatively small (Bend, the largest city had a 2003 population was 62,900) and have a small town feel provides a combination of factors that are extremely attractive to households. Advances in telecommunications make many households less bound to geography.

Redmond is attracting younger households, many of whom have children

- Redmond has a higher percentage of its population in all of the age classes under 39 except for 15-19 years. This suggests that. Redmond also has a slightly higher percentage of individuals aged 75 or older. Both of these trends are probably related to lower housing costs in Redmond compared to Bend.
- During the 1990s Redmond experienced changes in the age structure of its residents. While Redmond experienced an increase in population for every age group, the fastest growing age groups were 5-17 years and 18-24 years. The under 5 and 45-64 years age groups also grew faster than the citywide average growth rate. The over 65 age group grew the slowest of any of the age groups.
- Redmond has a slightly higher average household size (2.54 persons) than Deschutes County (2.5 persons). One potentially explanation of the age structure is that Redmond is getting more of the households that have the service jobs in Bend, and they are trading off lower housing costs against travel time and cost.

Redmond is becoming more diverse

- The number of Hispanics in Deschutes County increased by 182% between 1990 and 2000. At 5.5%, Redmond had the highest percentage of Hispanic population of any incorporated City in Deschutes County in 2000.

City of Sisters Forecast

The official July 1, 2003 population estimated for the City of Sisters is 1,430 (Portland State University, PRC July 1, 2003 estimates). In Sisters, the Sisters City limits and Urban Growth Boundary are coincident, so this estimate and further estimates refer to the City and UGB. The City of Sisters (hereafter referred to as Sisters or City) population is forecast to remain small compared to the other jurisdictions, but will experience consistent growth over the long-term. . The City's population forecasting methodology, assumptions made, factual basis, and yearly population forecasts to the year 2025 are presented below.

1. Forecast Table

The City of Sisters expects population growth as described in *Table 29: Population Forecast in Five-Year Increments.* Tables 29 and 30 are summary tables that provide a quick overview of the population forecasts for the Sisters UGB between 2000 and 2025. Additional information in the following pages fully explains the assumptions and factual basis for these forecasts. All relevant and referenced materials should be reviewed and understood in order to understand the forecasts to avoid unnecessary duplication of information.

Table 29
Population Forecast in Five-Year Increments

Year	City of Sisters Population [2]	5-year Average Annual Growth Rate (previous to current year)
2000	975 [1]	NA
2005	1,768	12.64%
2010	2,306	5.46%
2015	2,694	3.16%
2020	3,166	3.28%
2025	3,747	3.43%

[1] Source: PRC July 1, Official Population Estimate for City of Sisters.
[2] Source: Population Estimates by City of Sisters, see Table 30.

Table 30
Population and Building Permit Forecasts for the Sisters UGB: 2003-2025

Forecast Year	Forecasted Rate of Building Permit Growth [1]		Forecasted Residential Housing Units [2]	Forecasted New Residential Building Permits Issued/Yr. [3]	Persons per Dwelling Unit [4]	Population Forecast [5]
2003	NA		725	104	NA	1,430
2004	11.10%		805	80	1.99	1,590
2005	11.10%		895	89	1.99	1,768
2006	8.90%	Declining	975	80	1.99	1,927
2007	5.40%	Influence of	1,027	53	1.99	2,031
2008	4.30%	New Sewer	1,071	44	1.99	2,119
2009	4.30%		1,117	46	1.99	2,211
2010	4.30%		1,165	48	1.99	2,306
2011	3.13%		1,202	36	1.99	2,379
2012	3.13%		1,240	38	2.00	2,454
2013	3.13%		1,278	39	2.00	2,532
2014	3.13%		1,318	40	2.00	2,612
2015	3.13%	Rate of	1,360	41	2.00	2,694
2016	3.13%	Building	1,402	43	2.00	2,780
2017	3.13%	Permit	1,446	44	2.10	2,872
2018	3.13%	Growth	1,491	45	2.10	2,967
2019	3.13%	same rate as 1990	1,538	47	2.10	3,065
2020	3.13%	through	1,586	48	2.10	3,166
2021	3.13%	2000	1,636	50	2.20	3,275
2022	3.13%		1,687	51	2.20	3,388
2023	3.13%		1,740	53	2.20	3,504
2024	3.13%		1,794	54	2.20	3,624
2025	3.13%		1,850	56	2.20	3,747

[1] Source: Rates between 2004 through 2010 based on weighted average of growth rates before and after the construction of the municipal sewer, see Table 37. Rates of Building Permit Growth between 2011 and 2025 based on rate of housing unit growth between 1990-2000 as determined by the U.S. Census, see Table 34.

[2] Source: "Forecasted Residential Housing Units" based on "Forecasted Rate of Building Permit Growth" applied to base of 725 Residential Housing Units in 2003, and grown by the applicable rate per year.

[3] Source: Current year minus previous years "Forecasted Residential Housing Units", for example in 2004, 805 Forecasted Residential Units in 2004 minus 725 Forecasted Housing Units in 2003 equals 80.

[4] Source: Persons per Dwelling Unit of 1.99 is from the 2000 U. S. Census, SF-1. This statistic accounts for vacancy rates and second homes. The statistic increases over time as estimated here by the City of Sisters Planning Department based on the assumption that the City will approach the State of Oregon statistic of 2.4 Persons Per Dwelling Unit as determined by the 2000 U.S. Census, SF-1. In other words, the City of Sisters will become more like the state in terms of persons per household in the future.

[5] Source: Calculated by adding the total of (Total Res. Permits/Yr. in Sisters UGB x Persons Per Dwelling Unit) to previous year's Population Forecast.

2. Method

The City of Sisters uses a housing unit method based on housing unit trends to estimate future population growth in Sisters. The following discussion in the Methodology portion of this report explains the general process and methods used to determine future population. The factual basis and assumptions for the forecasts are provided in the Factual Basis portion of this report.

Overview of Methodology Used to Determine Population Forecasts

The City of Sisters' methodology for determining population is based on the current estimates of the City's population (from PRC) plus estimates of population growth based on the number of new residential building permits that will be issued in the city between 2004 and 2025. The housing unit method approximates population for the city based on the number of occupied housing units in the city multiplied by the city's average household size. Based on the number of building permits issued each year, and the number of people per household (considering vacancy rate and local demographics) it is possible to forecast how many people will be "added" to the City in the future.

This technique is one of the most feasible, accurate, and cost-effective among the major methods of population estimation available for small geographies such as Sisters. Using the number of building permits coupled with other demographic information to estimate population is commonly used to estimate populations for small geographic areas. Different versions of the housing unit model are used by the US Census Bureau to estimate sub-County populations and by a wide variety of cities, counties, states and special districts. The official yearly estimates of the City's population determined by Portland State University's Center for Population Research and Census are based on a housing unit method.

Overview of Factors Resulting in Forecast

As discussed in greater detail later in the Factual Basis portion of the report, the City of Sisters has recently experienced a surge of residential building activity and population growth. The City assumes this surge will decrease back to levels of building activity and population growth experienced between 1990 and 2000.

Assumptions

The act of forecasting requires that assumptions be made. There is no single right "answer" or "equation" that will result in an infallible population forecast. Therefore, assumptions are an integral part of making a forecast and are discussed explicitly. As much as possible and feasible, factual information is provided to substantiate assumptions that are made to demonstrate that the resulting forecast is reasonable. Where factual information is lacking, assumptions are still discussed. Important in all discussions of assumptions is not if all assumptions are exactly right, but if they are reasonable, since nearly all assumptions could be varied slightly to change the entire forecast.

3. Factual Base

The following discussion is a description of the reasoning, assumptions, factual information, and results of the population forecasting methodology.

Step 1: Determining Appropriate Sources of Data

Step 1(A): U.S. Census Data and Portland State University PRC Data

The City relies upon data from the 1990 and 2000 U.S. Censuses and Portland State University's PRC July 1 Official Population Estimates to estimate population in the City. For census years (1990, 2000, 2010, etc.) the City uses information to describe demographic and housing characteristics and trends. The U.S. Census data is 100-percent data count of persons in the City of Sisters.

Assumption: The City assumes that U.S. Census data and PRC Official Population Estimates are reliable and accurate sources of demographic and housing data. The City assumes

relevant data from these sources can be used to describe the characteristics of the City, as a basis for calculating rates of growth describing past and current trends, and for background information.

Step 1(B): City issued building permits for residential structures are an appropriate measure to estimate population. By predicting how many building permits will be issued in combination with information such as persons per dwelling unit, population can be predicted.

The growth of the City's population is estimated in part based on the growth of building permits. The City believes this is an accurate and reliable means of estimating population for the City. The building permit information presented in the following discussion refers to building permits for residential structures (single-family, duplexes, triplexes, town homes, multi-family, etc.) after subtracting demolitions. Demolition permits are required by the City when existing dwelling units are destroyed or removed. The City believes that nearly all demolitions receive demolition permits, but like all permit processes, some persons who remove a dwelling unit do not receive a permit. The City assumes a very small fraction of demolitions occur without permits and any differences between actual demolitions and permitted demolitions is negligible in examining rates of growth and using rates of growth for predictive purposes. The small difference in actual demolitions versus permitted demolitions is explained in more detail in Table 35.

Assumption:
Building Permits issued for residential structures in the future (coupled with information on persons per household) is an accurate method to estimate the future population of the City.

An alternative to the City's assumption is that building permits are not appropriate for this use, and that there is no connection between the construction of residential buildings and population. Facts presented below demonstrate the City's assumption is reasonable.

Factual Basis for Assumption

The information presented below demonstrates that rates of building permit issuance closely match population growth in Sisters. In Table 31 average annual rates of population growth for the periods between 1990 and 2000 and 2001-2003 are shown.

Table 31
City of Sisters Population Growth Rates, 1990-2000, 2000-2003

Year	City of Sisters Population	5-year Average Annual Growth Rate (1990-2000, 2000-2003) [3]
1990	679 [1]	NA
2000	975 [2]	3.68%
2003	1,430 [2]	13.62%

[1] Source: 1990 U.S. Census, Summary File 1 (SF-1) 100-Percent Data
[2] Source: PRC July 1, Official Population Estimate City of Sisters
[3] Source: Calculated based on Future Value = Present Value $(1+r)^t$

Population estimates in Table 31 show a rapid increase between 2001 and 2003 compared to the rate of growth over the previous decade. As further discussed in Appendix C, this is due to construction of a municipal wastewater treatment facility that was mostly completed by year 2001.

Over the period of time between 1990 and 2000, the number of housing units increased 3.13 percent/year according to Table 32. Note in Table 33, using the exact same source of data (U.S. Census data), the rate of population growth was 3.51 percent per year. These two rates of average annual growth are very similar. Differences may occur if there are shifts in the number of people per dwelling unit. As shown in Appendix C, in 1990 the City's rate of Persons Per Housing Unit was 1.90 and increased to 1.99 in year 2000 (U.S. Census, see Appendix C). The City predicts this increase is one reason why the rate of population in Table 33 grew faster than for dwelling units in Table 32. This information demonstrates why it is appropriate to use the number of new dwelling units to predict population, in combination with other important data.

Table 32
Rate of Housing Unit Growth in City of Sisters, 1990 and 2000

Period	Number of Total Housing Units In City of Sisters	Average Annual Growth Rate of Building Permit Issuance
1990-2000 [1]	354 to 482 housing units	3.13%

[1] Source: 1990 and 2000 U.S. Census, Summary File 1 (SF-1) 100-Percent Data

Table 33 shows that according to the U.S. Census the City's population grew at 3.51 percent per year between 1990 and 2000. This is slightly different than PRC's estimates of population during the same time period because the U.S. Census reflects April's population and PRC reflects July 1 population for the year. Tables 32 and 33 demonstrate that there is a 0.38 percent per year difference between population growth and growth of housing units in the City, further substantiating that rates of growth of housing units are comparable to population growth rates (all else being equal).

Table 33
Rate of Population Growth in City of Sisters, 1990-2000

Period	Population by Year, City of Sisters	Average Annual Growth Rates of Population
1990-2000 [1]	679 to 959 people	3.51%

[1] Source: 1990 and 2000 U.S. Census, Summary File 1 (SF-1) 100-Percent Data

Comparing Table 33 with Table 32 further demonstrates the appropriateness of using building permits to estimate population even in times of rapid changes with respect to building activity. Table 31 shows that according to PRC's Official July 1 Population Estimates for Sisters between 2001 and 2003; the population grew at a rate of 13.62 percent per year. Comparing this to the rate of housing unit growth explained in Tables 34 and 35, total housing units grew at a rate off 14.57 percent per year over the same time period (2001-2003). Although not exactly the same, nor as closely related as the rates shown between 1990 and 2000, the rates differ by only less than 1%. This may be explained by a change in the vacancy rate as a result of the rapid building activity.

Table 34
Comparative Housing Unit Growth Rates, 1990-2000 and 2001-2003

Period	Number of Total Housing Units	Average Annual Growth Rate of Housing Construction
1990-2000 [1]	354 to 482 housing units	3.13%
2001-2003 [2]	482 to 725 housing units	14.57%

[1] Source: 1990 and 2000 U.S. Censuses, Summary File 1 (SF-1) 100-Percent Data
[2] Source: City of Sisters Building Permits for Residential Units, after subtracting demolitions.

Table 35 below, shows exactly how many building permits for residential units after subtracting demolitions were issued by year in the City between 1990 and 2003. Using data from the 1990 U.S. Census to estimate the number of housing units in the City and adding each year's additional building permits provides a running total of the number of housing units in the City by year. This demonstrates the slow rate of building in the early 1990's, the acceleration in anticipation of construction of the municipal sewer in 1996, the dramatic and sustained increases in issuance of building permits as the sewer became operational, and the continued rate of building permit issuance since the sewer's completion.

Table 35 also provides two data points from the U.S. Census in 1990 and 2000 which help evaluate the accuracy of the City's records with respect to using residential building permits to predict housing units. Total housing units in 1990 and 2000 are from the U.S. Census, but years in between are calculated by adding the Building Permits for Residential Units (by year) to the previous year's Total Housing Units. In 2000, the U.S. Census estimated 482 housing units in the City. If each year's building permits are added up between 1991 and 2000 it equals 496 Total Housing Units. This is only a 16 building permit difference between the City's calculated number of Total Housing Units and the U.S. Census data. This difference is most likely due to demolitions that were not permitted but actually occurred. This indicates the City did not permit an average of 1.6 demolitions per year over a 10 year period. To account for this the City uses housing unit growth rates calculated based on the U.S. Census for estimation later in this report.

Table 35
Building Permits Issued by City, Growth Rates, and U.S. Census Data

Year	Building Permits for Residential Units [1]	Total Housing Units [2]	Average Annual Rate of Growth of Total Housing Units
1990	7	**354**	NA
1991	10	364	2.8%
1992	4	368	1.1%
1993	11	379	2.9%
1994	5	384	1.3%
1995	5	389	1.3%
1996	13	402	3.3%
1997	13	415	3.2%
1998	11	426	2.7%
1999	20	446	4.7%
2000	52	**482**	8.1%
2001	69	551	14.3%
2002	70	621	12.7%
2003	104	725	16.7%

[1] Source: City of Sisters Building Permits for Residential Units (with demolitions subtracted)

[2] Source: Housing unit counts in 1990 and 2000 from U.S. Census, remaining are past year's Total Housing Units plus the Building Permits for Residential Units of each year (ex. 354 Total Housing Units in 1990 + 10 Building Permits in 1991 = 364 Total Housing Units for 1991). Note: In 2000, a difference of 16 Total Housing Units between calculated 496 Total Housing Units and US Census of 482 Total Housing Units.

The factual information above supports the City's assumption that using residential building permits to approximate the growth of housing units and to predict population is appropriate when used with other information such as the number of people per dwelling unit. The rates of growth of the City's housing units and population mirror each other over a decade between 1990 and 2000 as well as during a short period such as 2001-2003. Increases in housing unit construction are mirrored by the increases in the official population estimates by PRC. Multiple sources of public data verify these conclusions.

Step 2: Determining Appropriate Rates of Growth for the Future

As shown in Tables 31 and 34, a rapid increase in the City's population occurred after the year 2000 and continues today. The City assumes this change was due to the construction of a municipal sewer system resulting in a surge of residential building activity, increased housing stock, and then population increases proportional to the new housing. The City is faced with predicting population growth in a local "boom" cycle within a larger County which has (and is expected) to experience sizable population increases.

Assumption: The historic rate of population growth between 1990 and 2000 is not appropriate as the sole predictor for future growth from 2004 to 2025.

Factual Basis for Assumption:

In years 1990 through 2000, no municipal sewer was available and residential development was limited to single-family development on large (1/2 acre) lots. The relatively low average annual population growth rate of 3.68 percent per year between 1990 and 2000 shown in Table 31 reflects this when compared to the rate of population growth after the municipal sewer installation in 2001. In years 2001 to 2003 the average annual rate of population growth in the City was 13.62 percent per year, nearly four times the rate during the 1990s. In addition, the City's development codes were dramatically updated in 2001, implementing the Department of Land Conservation and Development's "Model Development Code". This code facilitates development of infill and smaller lot sizes. Thus, the conditions (new sewer and code) present in 2004 and beyond are significantly different than in the 1990's and a predictive rate or methodology that considers new conditions is necessary to accurately predict future population growth.

Assumption: The extraordinary rate of population growth experienced between 2001 and 2003 is a result of new conditions such as a new municipal sewer and Development Code, and therefore should not be used as the sole predictor for future growth from 2004 to 2025.

Factual Basis for Assumption:

As shown in Table 31, in years 2001 to 2003 the average annual rate of population growth in the City was 13.62 percent per year, nearly four times the rate during the 1990s. Although building permit activity for year 2003 was the highest on record for the City, other sources of information suggest that 2003 may be the "crest" of the wave of building activity. For example, in Appendix C, there were five fewer partitions in 2003 as in 2002 (Appendix C, Table 3). Likewise, there was a decrease in lots created via subdivision, from 85 to 22 between 2002 and 2003 (Appendix C, Table 4). Building permits are also tracking to be slightly less in 2004 than 2003. Keep in mind that a handful of applications could result in a dramatic change upward in this trend. However, it appears that the immediate affect of the new sewer and development code may be slowing slightly.

Assumption: The high rate of building permit issuance and population growth between 2001 and 2003 will slowly decrease to a slower rate of growth approximated by population and building permit growth rates of the 1990s.

Factual Basis for Assumption:

The factual basis demonstrating why it is inappropriate to rely upon population growth rates between 1990 and 2000 or between 2001 and 2003 is incorporated herein. The methodology to predict the future then is based on the following discussion.

Step 2(A) Predicting the Decline of the Current Rapid Population Growth in Sisters

An examination of when and how much the development of the municipal sewer system influenced growth is presented in Table 36. This analysis assumes the extent of the influence of the new sewer on higher growth will decline at approximately the same rate in which it increased. The rise and decline is expressed in building permits for residential units after subtracting for demolitions.

The City assumes the public debate preceding the public vote on the sewer in 1998 exerted a minor influence upon development decisions resulting in additional building permit issuance in 1996 and 1997. This is demonstrated by the relatively small increases in building permit activity between 1996 and 1997 compared to the following years. The assumption is that

this is a small, or gradual effect took place since the number of building permits in 1996 and 1997 relative to the 2003 "peak" is only 10 percent. The municipal sewer was approved by voters in 1998 but not completed until 2001. In years 1998 through 2003 there is a steady increase in the number of building permits issued. In years 2001 and 2002, building permit issuance was 70 percent of the peak in each year.

Table 36 relates the number of building permits issued for residential units to the peak year of permit issuance in 2003 in order to predict how long the influence of the sewer may last in years to come (as predicted in Table 37). Implicit is the assumption that as the sewer influenced building prior to the peak of 2003, its influence will similarly decline in the coming years. This is an attempt to mathematically represent the timing of the influence of the sewer, and to quantify its affects relative to building permit issuance. From this information, the City assumes that the affect of the sewer started gradually in 1996 and peaked in 2003. In each year after 1996 the influence of the sewer system is expressed as the Percent of Annual Building Permits to Peak of 2003.

Table 36
Influence of New Sewer Upon Residential Building Permits

Year	Building Permits Issued for Residential Units [1]	Percent of Annual Building Permits to Peak of 2003 [2]	Permits to Peak of 2003 Rounded, Used to Estimate Future Decline [3]
1990	7	NA	Sewer System Not Influencing
1991	10	10%	Sewer System Not Influencing
1992	4	4%	Sewer System Not Influencing
1993	11	11%	Sewer System Not Influencing
1994	5	5%	Sewer System Not Influencing
1995	5	5%	Sewer System Not Influencing
1996	13	13%	10%
1997	13	13%	10%
1998	11	11%	10%
1999	20	19%	20%
2000	52	50%	50%
2001	69	66%	70%
2002	70	67%	70%
2003	104	100%	Peak of "Pent up Demand"

[1] Source: City of Sisters Building Permits for Residential Units (with demolitions subtracted)

[2] Source: Calculated based on the "Building Permits for Residential Units" for each year divided by the estimated peak of 104 building permits in year 2003.

[3] Source: City of Sisters Planning Department assumes that the planning and publicity regarding construction of the municipal sewer accellerated building of residential units prior to the sewer construction (beginning in 1996) and this "pent up demand" for residential structures peaked in 2003.

Table 37 uses the information in Table 36 further and results in weighted growth rates that are used to determine future building permit issuance based on the declining influence of the new sewer. Implicit is the assumption that the rate of increase of building permit issuance caused by the new sewer will be stronger in the upcoming years, decrease over the same period of time as the increase (7 years), and reduce in effect over the time period.

Since the City requires rates of growth of future building permit issuance to predict future population, Table 37 produces a growth rate (in last column) that is the result of weighting the faster growth rates experienced during 2001-2003 and the slower rates between 1990 and 2000. The growth rates that are weighted represent growth of housing units are from Table 34.

In the second column of Table 37, a 14.57 percent per year growth rate represents the actual "peak" growth rate of the period between 2001 and 2003. The third column represents the actual "pre-sewer" rate of growth of 3.13 percent per year experienced between 1990 and 2000. The last column contains yearly growth rates for building permit issuance calculated based on the weighted values in the previous two rows.

The weighted values in the column "2001-2003 Annual Average Growth Rate of Building Permits (14.57%) Weighted by Following %" come directly from Table 36. For example, in Table 36, in year 2002 building permit issuance was 70 percent of the peak of 2003. Following the assumption that the influence of the sewer will decline as it rose, then in year 2004, the most recent rate of building permit growth between 2001 and 2003 (14.57 percent) is weighted by 70 percent and the 1990-2000 rate of building permit growth (3.13) is weighted by 30 percent as shown in Table 37. The resulting weighted growth rate for the year 2004 is 11.1 percent. For 2005, the resulting weighted growth rate is the same because as shown in Table 36, two year preceding the peak building permit issuance of 2003, 70 percent of the building permit peak occurred. This calculation was performed for each year in Table 37 according to the "Permits to Peak Rounded, Used to Estimate Future Decline" in Table 36, preceding the peak year of 2003 until the effect of the sewer is anticipated to be gone, in year 2012.

Table 37
Weighted Growth Rates to Estimate Declining Influence of New Sewer System

Projection Year	2001-2003 Annual Average Growth Rate of Building Permits (14.57%) Weighted by Following % [1]	1990-2000 Annual Average Growth Rate of Growth of Building Permits (3.13%) Weighted by Following % [1]	Building Permit Growth Rate/Yr Used in Projection [2]
2004	70%	30%	11.1%
2005	70%	30%	11.1%
2006	50%	50%	8.9%
2007	20%	80%	5.4%
2008	10%	90%	4.3%
2009	10%	90%	4.3%
2010	10%	90%	4.3%
2012	10%	90%	4.3%

[1] Source: Growth rates for periods 1990-2000, 2001-2003 from Table 34.
[2] Source: Calculated based on formula ((Weighted % x (rate)) + (Weighted % x (rate))) = Building Permit Growth Rate/Yr Used in Projection).

The resulting weighted rates of building permit growth are shown in the last column of Table 37. These are used to predict the number of building permits that will be issued in the City reflecting the declining influence of the municipal sewer system and declining rate of growth.

Table 38 demonstrates the purpose of Tables 36 and 37 and results in predictions of new building permits issued in the City between 2004 and 2025. From the number of building permits for residential dwellings issued in this period in combination with the number of persons

per dwelling, yearly population estimates are constructed. The assumption is rapid growth of the 2001-2003 period will decline as shown to a rate of 3.13 percent per year. The rate of 3.13 percent per year growth of residential building permits is the same rate of building permit issuance between 1990 and 2003 (see Table 35). This is appropriate because it is over a 10 year period, is relatively recent, and was the rate of growth in housing units prior to the major affect of the new municipal sewer.

Table 38
Forecasted Rates of Building Permit Issuance, Housing Units, and New Residential Building Permits Issued/Yr. (not including rural transfer)

Forecast Year	Forecasted Rate of Building Permit Growth [1]		Forecasted Residential Housing Units [2]	Forecasted New Residential Building Permits Issued/Yr. [3]	Persons per Dwelling Unit [4]	Population Forecast [5]
2003	NA		725	104	NA	1,430
2004	11.10%		805	80	1.99	1,590
2005	11.10%		895	89	1.99	1,768
2006	8.90%	Declining	975	80	1.99	1,927
2007	5.40%	Influence of	1,027	53	1.99	2,031
2008	4.30%	New Sewer	1,071	44	1.99	2,119
2009	4.30%		1,117	46	1.99	2,211
2010	4.30%		1,165	48	1.99	2,306
2011	3.13%		1,202	36	1.99	2,379
2012	3.13%		1,240	38	2.00	2,454
2013	3.13%		1,278	39	2.00	2,532
2014	3.13%		1,318	40	2.00	2,612
2015	3.13%	Rate of	1,360	41	2.00	2,694
2016	3.13%	Building	1,402	43	2.00	2,780
2017	3.13%	Permit	1,446	44	2.10	2,872
2018	3.13%	Growth	1,491	45	2.10	2,967
2019	3.13%	same rate	1,538	47	2.10	3,065
2020	3.13%	as 1990	1,586	48	2.10	3,166
2021	3.13%	through	1,636	50	2.20	3,275
2022	3.13%	2000	1,687	51	2.20	3,388
2023	3.13%		1,740	53	2.20	3,504
2024	3.13%		1,794	54	2.20	3,624
2025	3.13%		1,850	56	2.20	3,747

[1] Source: Rates between 2004 through 2010 based on weighted average of growth rates before and after the construction of the municipal sewer, see Table 37. Rates of Building Permit Growth between 2011 and 2025 based on rate of housing unit growth between 1990-2000 as determined by the U.S. Census, see Table 34.

[2] Source: "Forecasted Residential Housing Units" based on "Forecasted Rate of Building Permit Growth" applied to base of 725 Residential Housing Units in 2003, and grown by the applicable rate per year.

[3] Source: Current year minus previous years "Forecasted Residential Housing Units", for example in 2004, 805 Forecasted Residential Units in 2004 minus 725 Forecasted Housing Units in 2003 equals 80.

[4] Source: Persons per Dwelling Unit of 1.99 is from the 2000 U. S. Census, SF-1. This statistic accounts for vacancy rates and second homes. The statistic increases over time as estimated here by the City of Sisters Planning Department based on the assumption that the City will approach the State of Oregon statistic of 2.4 Persons Per Dwelling Unit as determined by the 2000 U.S. Census, SF-1. In other words, the City of Sisters will become more like the state in terms of persons per household in the future.

[5] Source: Calculated by adding the total of (Total Res. Permits/Yr. in Sisters UGB x Persons Per Dwelling Unit) to previous year's Population Forecast.

Step 4: A Comprehensive Population Forecast for the Sisters UGB

The following population forecast presented in Table 38 assembles the data, methodologies, and assumptions in the preceding pages to result in a population forecast that demonstrate:

1. Historic rates of housing unit growth from 1990 to 2000 closely match population growth over the same period of time, and because of this, using the issuance of new building permits to predict population growth (along with persons per dwelling unit data) is accurate and appropriate;

2. New building permits issued by the City for residential structures after subtracting demolitions closely match U.S. Census Data for housing units;
3. Planning and construction of a new municipal sewer in the City starting in 1998 and finishing in 2001 resulted in a dramatic increase of building permit issuance, housing construction, and population growth that has continued since completion of the sewer;
4. Official PRC Population Estimates for the City's population closely match the issuance of new building permits by the City for residential units;
5. The City expects the high rate of building permit issuance for residential structures and rates of population growth to decline at approximately the same rate as they increases as a result of the municipal sewer construction;
6. The rate of building permit issuance will normalize in the next seven years to levels of housing unit growth observed in the City between 1990 and 2000;
7. From 2011 to 2025, the rate of housing unit growth will be the same as the rate of growth in the Sisters City Limits between years 1990 and 2000

It is important to reference the discussion of "persons per dwelling unit" in Appendix C as it relates to Table 38. Persons per dwelling unit accounts for second homes and vacancies because it takes the total number of people in an area and divides it by the total number of dwelling units. The City uses persons per dwelling unit to predict future populations in concert with building permits for residential dwelling units.

Also important is the very local nature of the statistic "persons per dwelling unit". Deschutes County, Bend, Redmond, and Sisters may all share a general proximity, but the specific housing characteristics of each community vary greatly. Therefore, it is appropriate for each jurisdiction to use its own estimates to reflect local norms. Between 1990 and 2000, the City of Sisters has seen a slow increase in the number of persons per dwelling unit, from 1.9 to 1.99 (see Appendix C, source U.S. Census). The City expects this trend to continue and for the City to become more like the surrounding communities and state. Generally, rates for persons per household are higher for a city, but since Sisters is a recreation oriented city with numerous second homes and vacation homes, a rate of 1.99 is not abnormal. However, the City assumes that this will normalize as the City grows, diversifies, and attracts increasing numbers of younger families and adults with more children.

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Appendix B: Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis

Appendix B: Technical Report, City of Sisters Commercial and Industrial Future Land Needs Analysis

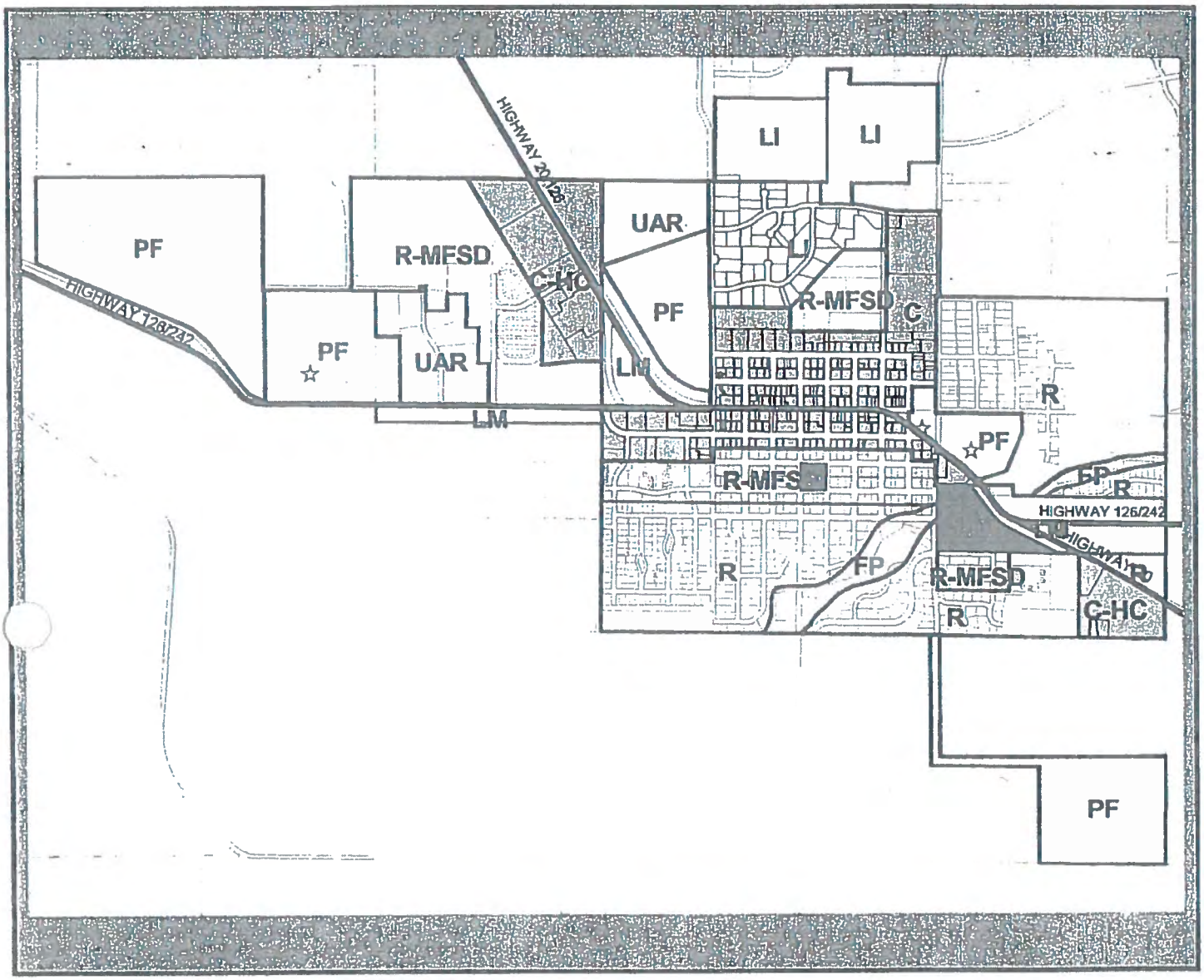
Technical Report
City of Sisters Commercial and Industrial Future Land Needs Analysis

February 2, 2003

Prepared for:
City of Sisters
Neil Thompson, Planning Director
150 North Fir Street
Sisters, OR 97759

Prepared by:
Brian Rankin, Planner

Figure 1:
Industrial and Commercial Lands



Zoning Designations
Light Industrial Land (LI)
Commercial Lands (C and C-CH)
City Parks
School
State Roads
Taxlots

N

1000 0 1000 2000 Feet

January 28, 2003

Notes:
Parcels colored blue and yellow were included in the supply of industrial and commercial lands.
These lands were determined to be vacant, developed, or re-developable based on subsequent analysis.

Prepared by:
City of Sisters
Planning Department

Table 2: Light Industrial Land Inventory Statistics

Industrial Zone: LI	Count	Gross Buildable Acres of Parcels	Pubic Infrastructure (25%)	Net Buildable Acres
Vacant LI	17	74.5	18.6	55.9
Vacant LI				**55.9**
Minus Runway Protection Zone				**12.0**
Subtotal Vacant LI				**43.9**
Developed LI	33	33.0	Existing	33.0
Subtotal Developed LI				**33.0**
Minus Developed Area (1)				**16.0**
Remaining Developable Acreage of Developed Lands				**17.0**
Re-developable LI	4	4.4	1.1	3.3
Subtotal Re-developable LI				**3.3**
Total Developable LI				**64.2**

(1) GIS analysis calculated 13 acres of built areas including buildings and parking areas. The 13 acres was increased by 25% to estimate existing built areas.
Note: Totals may not sum due to rounding.

There are 43.9 net buildable acres of vacant LI designated parcels inside the Sisters UGB. Adding 3.3 net buildable acres of re-developable and 17.0 acres of developable acreage of developed lands, a total of 64.2 acres of buildable light industrial (LI) lands are inside the Sisters UGB.

Though Deschutes County has made impressive strides in increasing job opportunities, population growth still poses a formidable challenge to lowering its overall unemployment rate... Based on recently compiled Oregon Employment Department data, the available labor pool in Deschutes County is highly educated. Of the 13,493 individuals that comprised the Oregon Employment Department's applicant pool in Deschutes County from July 1, 2000 to June 30, 2001, 86 percent had at least a high school education or higher. Of these, 32.2 percent had some post secondary education, with 12.8 percent having attended at least three years of college or more. This high level of education among Deschutes County's growing work force combined with a regional educational system that emphasizes partnering with businesses represents a powerful marketing tool. This situation is beneficial, both in terms of the expansion of existing businesses and recruitment of potential employers that offer wages commensurate to the quality of life Deschutes County and Region 10 as a whole have to offer (page 14).

Regional Industry Employment Trends (Jefferson, Crook, and Deschutes) 1990-2000

In contrast to the early 1980s, Central Oregon experienced healthy job growth throughout most of its industry sectors in the 1990s. In all but three sectors, growth was well above 50 percent. The highest growth rate occurred in the region's construction and mining sector (94.6%). This high growth rate was the result of the region's expanding population, which led to tremendous growth in both residential and commercial construction. Only one sector experienced a decline: the lumber and wood products sector. This sector experienced a contraction of 20 percent during the 1990s as limits to logging on public lands, weak markets, and competition from other states and foreign suppliers continued to take their toll on this traditional mainstay of the region's economy. Even given its decline over the last decade, lumber and wood products employment still accounts for about 54 percent of the region's manufacturing base and eight percent of its total non-farm payroll employment (page 19).

Manufacturing Sector

During the 1990s, Central Oregon's manufacturing sector underwent significant structural change. Most significant was a decline in lumber and wood products employment and the rise of employment in other manufacturing industries. From 1990 to 2000, Central Oregon witnessed the disappearance of more than 1,200 lumber and wood products jobs. Employment in lumber and wood products in ...Deschutes counties declined by about ...32 percent... Deschutes County more than replaced job losses in lumber and wood products with employment in other manufacturing sectors for a net growth rate of nine percent (+490 jobs)... Examining detailed 1999 data, a picture emerges of a manufacturing sector that has not exchanged the dominance of the lumber and wood products industry for that of another manufacturing sector. To the contrary, job growth in other manufacturing has been spread throughout various manufacturing industries in Deschutes County. This has resulted in Deschutes County beginning the 21st century with a manufacturing base that is more diverse, vibrant, and well positioned to mitigate any negative impact from downturns in any particular sector (page 21).

Table 2 provides a more recent snapshot of employment by industry in Deschutes County. Table 2 shows that 81.3% of payroll employment in Deschutes County is in non-manufacturing, and that 18.7% of payroll employment is in manufacturing. Compared to other counties in Central Oregon, the manufacturing sector in Deschutes County is more diversified.

Table 2: November 2002 Non-Farm Payroll Employment by Place of Work, Deschutes County

Industry	November, 2002	Percent of Total
Total Non-Farm Payroll Employment [1]	**53,720**	**100.0%**
Goods Producing [2]	10,040	18.7%
Service Producing [3]	43,680	81.3%
Manufacturing, Total	**5,770**	**10.7%**
Durable Goods	4,690	8.7%
Lumber and Wood Products	1,880	3.5%
Other Durable Goods	2,810	5.2%
Non-Durable Goods	1,080	2.0%
Food and Kindred Products	180	0.3%
Other Non-durable Goods	900	1.7%
Non-Manufacturing, Total	**47,950**	**89.3%**
Construction and Mining	4,270	7.9%
Transportation, Communication, Utilities	2,330	4.3%
Wholesale and Retail Trade	14,390	26.8%
Finance, Insurance, and Real Estate (FIRE)	3,270	6.1%
Services	15,860	29.5%
Government	7,830	14.6%
Federal	930	1.7%
State	730	1.4%
Local	6,170	11.5%

(1) Oregon Employment Department, Workforce Analysis, November 2002. Non-farm payroll data are based on 1987 Standard Industrial Classification Manual. The data are by place of employment. People working multiple jobs are counted more than once. Data excludes self-employed, volunteers, unpaid family workers, domestics, and persons involved in labor disputes.

(2) Goods producing, durable and non-durable goods includes all manufacturing sector plus the construction and mining portion of the non-manufacturing sector.

(3) Service producing represents all non-manufacturing minus construction and mining

2.0 Sector-level Employment Forecasts

The Oregon Employment Department provides region-wide employment forecasts by sector until the year 2010. These demonstrate anticipated growth levels overall, and by industry.

Table 4 presents the long-term employment forecast based on the 1.32%/year growth rate estimated between the years 2000-2010. With this rate of yearly non-farm payroll employment growth, Region 10 would expect to add 25,254 new non-farm jobs between 2000 and 2025. This assumes the non-farm payroll employment growth between years 2000-2010 will approximate the non-farm payroll employment growth between years 2010-2025.

Table 4: Long-Term Non-Farm Employment Projections

Region	2000 Employment [1]	2010 Employment [1]	AAGR 2000-2010 [1]	Estimated 2025 Employment [2]	Estimated Employment Growth 2000-2025
Region 10	65,210	74,310	1.32%	90,464	25,254

(1) Source: Employment Projections by Industry 2000 -2010, Oregon and Regional Summary Oregon Employment Department, August, 2001
(2) Source: Projection based on applying AAGR to 2010 employment

Table 5 illustrates the population growth in Region 10 (Crook, Deschutes, Jefferson counties), and the City of Sisters. While the City of Sisters represents a relatively small share of the total population in Region 10, its share of the population is expected to increase from 0.64% of the total in year 2000, to 1.66% of the total in year 2025. This is due to the City of Sisters population growing relatively faster than the population of Region 10.

Table 5: Long-Term Population Forecasts

Region	2000	2005	2010	2015	2020	2025
Region 10 Population [1]	148,778	172,959	195,821	216,653	235,951	250,714
Sisters UGB Population [2]	959	1,556	2,200	2,757	3,394	4,167
Sisters UGB Population as % Region 10 Pop.	0.64%	0.90%	1.12%	1.27%	1.44%	1.66%

(1) State of Oregon Office of Economic Analysis, DAS, January, 1997.
Note: Since 1997, OEA has revised and reduced its non-farm employment growth estimates.
(2) Long-term Coordinated Population Forecasts for Deschutes County, Draft Estimates, January, 2003

Table 6 predicts the level of employment growth in the City of Sisters until the year 2025. These estimates are based on assumptions. First, that Region 10 employment until 2025 will grow at a rate of 1.32%/year, as it is anticipated to do between years 2000-2010. Second, population growth for the region and City of Sisters will be as anticipated by the coordinated OEA population forecasts.

The methodology used here is a simple "gravity model". This model assumes that a city will attract employment relative to a given region based on its relative size. This uses population as an indicator or predictor for employment growth. This is appropriate for Sisters because other direct forecasts are unavailable and it accounts for the City's increasing share of the region's population growth.

Table 8 depicts the differences and similarities between the percentages of non-farm employment in different industries by area. Information for the City of Sisters is based on type of business as indicated on city issued business licenses. Data for public sector employment was obtained by interviews since business licenses are not maintained for these entities. Strikingly, the employment by industry for City of Sisters is very similar to Deschutes County, and is not closely aligned with the Region 10 profile.

Table 8: Industry Comparisons between Region 10, Deschutes County, City of Sisters

Industry	*Region 10 (1)*	*Deschutes County (2)*	*Sisters UGB (3)*	*2002 Estimated Employment by Industry in Sisters*
Total Non-Farm Payroll Employment	**100%**	**100.0%**	**100%**	**1,633**
Goods Producing (2)	1.8%	18.7%	18.8%	307
Service Producing (3)	98.2%	81.3%	81.2%	1,326
Manufacturing, Total	**1.65%**	**10.9%**	**12.12%**	**198**
Non-Manufacturing, Total	**98.35%**	**91.0%**	**87.88%**	**1,435**
Construction and Mining	0.1%	8.1%	6.7%	109
Transportation, Communications., Utilities	2.5%	4.4%	0.9%	15
Wholesale and Retail Trade	36.7%	27.3%	40.2%	656
FIRE	9.6%	6.2%	7.3%	119
Services	38.2%	30.1%	18.2%	298
Government	11.2%	14.9%	14.6%	238
Federal	-1.2%	1.8%	4.0%	65
State	1.3%	1.4%	1.3%	22
Local	11.1%	11.7%	9.2%	151

(1) Source: Employment Projections by Industry 2000 -2010, Oregon and Regional Summary Oregon Employment Department, August, 2001.

(2) Oregon Employment Department, Workforce Analysis, November 2002.

(3) Based on 2002 Estimated Employment by Industry in Sisters.

Note: Goods producing, durable and non-durable goods includes all manufacturing sector plus the construction and mining portion of the non-manufacturing sector. Service Producing represents all non-manufacturing minus construction and mining

Coverage ratios refer to the amount of area on a site that is taken up by a structure. For example, 20% is used for industrial and office land uses, while 25% is used for retail. The number of employees per acre is calculated by determining the amount of land used as building space and dividing this by the amount of floor area per job. Based on City of Sisters Business Licenses in 2002, the average employees/acre ratio for all jobs in the City is 40 employees/acre. This calculation assumed a coverage ratio of 20%.

Table 10: Land Use and Industry Type Employees per Acre

Land Use and Industry Type	*Floor Area Per Job (sq. ft.)*	*Coverage Ratio*	*Employees per Acre*
Industrial		**20%**	
Manufacturing	750		11.62
Construction and Mining	750		11.62
Transportation, Communication and Utilities	1,400		6.22
Wholesale Trade	1,100		7.92
Retail Trade	2,500		3.48
Financial, Insurance, and Real Estate	350		24.89
Services	350		24.89
Government	300		29.04
Office		**20%**	
Manufacturing	225		38.72
Construction and Mining	225		38.72
Transportation, Communication and Utilities	250		34.85
Wholesale Trade	225		38.72
Retail Trade	225		38.72
Financial, Insurance, and Real Estate	225		38.72
Services	250		34.85
Government	200		43.56
Retail		**25%**	
Transportation, Communication and Utilities	300		36.30
Retail Trade	500		21.78
Financial, Insurance, and Real Estate	300		36.30
Services	300		36.30

Source: Hobson Johnson and Associates and the Benkendorf Associates Corp., from Crook County Buildable Land Analysis and Future Land Needs Analysis, The Benkendorf Associates Corp.

5.0 Comparison of Land Demanded and Land Supply

There are 37.3 net buildable acres of vacant C and C-HC designated lands inside the Sisters UGB. Adding 11.9 net buildable acres of re-developable and 39.8 acres of developable acreage of developed lands, a total of 89 acres of buildable C and C-HC lands are inside the Sisters UGB. Since only 28.09 net buildable acres of office and retail land is demanded, there is a surplus of commercial land of approximately 61 acres. Even without considering the re-development of partially developed land, there is sufficient vacant and re-developable land to accommodate future demand for commercial lands.

There are 43.9 net buildable acres of vacant LI designated lands inside the Sisters UGB. Adding 3.3 net buildable acres of re-developable and 17.0 acres of developable acreage of developed lands, a total of 64.2 acres of buildable light industrial (LI) lands are available inside the Sisters UGB. An estimated 34.19 net buildable acres of industrial land is demanded inside the Sisters UGB until the year 2025. A surplus of 30 acres of net buildable industrial land is predicted based on anticipated supply and demand of industrial lands until year 2025. There is a sufficient supply of vacant acreage alone to satisfy anticipated demand, without considering re-developable and partially developed parcels.

Appendix C: Technical Report: Residential Land Supply and Demand Analysis, 3-17-05 Update

Appendix C: Technical Report: Residential Land Supply and Demand Analysis, 3-17-05 Update

City of Sisters
Residential Land Supply and Demand Analysis

3/17/2005 Update

March, 2005

City of Sisters
Brian Rankin, Planner
Sisters Planning Department
150 North Fir Street
Sisters, OR 97759

Executive Summary

At densities allowed by the City's current development codes, 25 gross acres of Residential (R District) land are needed in addition to existing supplies of residential lands to meet the need for housing until the year 2025. This takes into consideration the anticipated rapid population growth documented in the 2005 coordinated population forecast, the need for different housing types based on demographic characteristics of people living in the Sisters UGB, current supplies of lots in platted and planned subdivisions, and the amount of undeveloped residential land.

Introduction

This report estimates how much land will be used by anticipated residential development in the City of Sisters (hereafter, City or city) between 2004 and 2025. There are five main tasks involved in making this estimate:

- Task 1: Inventory the supply of buildable residential land
- Task 2: Determine the actual density and mix of housing
- Task 3: Conduct a Housing Needs Analysis
- Task 4: Housing density and mix analysis
- Task 5: Supply and demand analysis of buildable land in the UGB

This report uses historical demographic and building permit data, field studies, studies on local housing trends, and assumptions about future housing and demographic trends to predict if there is a surplus or shortage of land for residential uses in the City's Urban Growth Boundary (UGB). This report is also an update of previous studies, so the format and content of the older reports were used as the basis for this study, but critical information was updated to more accurately predict future land needs. Updated data includes new land supply information and population and housing unit estimates. As a result, the conclusions of this report differ from previous versions.

Task 1: Inventory the supply of buildable residential land

Overview: This portion of the analysis calculates how much vacant and re-developable residential land (R and RMFSD land use districts) is inside the Sisters UGB.

A Geographic Information Systems (GIS) was used to calculate the information needed in Task 1(A)-(D). The information used was the Deschutes County Real Estate Data Package in GIS shapefile format, as 10/24/04.

The methodology and assumptions used in this part of the analysis are presented below.

Step 1: Calculate the gross vacant acres by plan designation, including fully vacant and partially vacant parcels.

- All taxlots inside the City of Sisters UGB were included in the initial inventory
- The City of Sisters and Sisters UGB are identical areas
- The zoning of each parcel was determined by overlaying digital zoning maps with digital maps of taxlots
- Duplicate taxlots created by the overlay process were deleted
- Vacant/developed status was determined by analyzing the relationship between improvement values and assessment information
- Parcels with a zero improvement value, or that were assessed showing no structural improvements were assumed to be vacant

- Parcels with improvement values equal to or greater than 30% of the total value, or were assessed with a residential, commercial, or other type of structure were assumed to be developed
- Parcels with an improvement value equal to or less than 30% of the total value were considered re-developable, and not vacant or developed
- Created maps and field-checked to verify or edit the status of the parcel

Step 2: Calculate the gross buildable vacant acres by plan designation by subtracting unbuildable acres from total vacant acres.

- Only land designated R and R-MFSD became part of the inventory of residential land, other taxlots were eliminated from the inventory
- Lands owned by the City of Sisters, United States Forest Service, State of Oregon, street right-of-way, and common areas in built subdivisions were subtracted from the land inventory
- The size of each parcel in acres was calculated based on the GIS "AREA" field to result in gross vacant acres for each taxlot
- For each taxlot, the area inside the FEMA flood way and 100-year flood plain was calculated and subtracted from gross vacant acres to result in gross buildable acres. The FEMA 100-year flood plain was digitized by the Deschutes County GIS Department and is part of the Deschutes County GIS Data Package.
- No other significant topographic or natural hazards (high slopes, faults, etc.) limit development in the Sisters UGB
- Lands that are zoned R or R-MFSD, that are privately owned and are outside of the FEMA flood way and 100-year flood plain are included in the inventory of residential lands

Descriptions of these lands are shown in Tables 1 and 2 below

Step 3: Separate existing platted and planned subdivisions that will likely not be further partitioned or subdivided from land that is either un-subdivided, or not limited by covenants codes and restrictions (CCRs).

- *Table 3: Platted and Subdivided Property Inventory (approximate numbers)* shows lands determined by the Sisters Planning Department to not be capable of, or unlikely to encounter, further land divisions
- The numbers of parcels that are planned, developed, and vacant (including currently vacant and un-built future parcels) are described in Table 3.
- The number of developed and vacant lots and potential remaining units in platted subdivisions are shown in Table 3.

Step 4: For residential lands, calculate vacant gross developable acres by plan designation by subtracting flood plains from gross buildable vacant acres.

Table 1: *Vacant Residential Lands in the City of Sisters by Land Use Designation (in gross acres not including platted and planned subdivisions)*

Zone	Number of Tax Lots	Total Area (In Acres)	Area of FP (In Acres)	Vacant Gross Developable Acres
R	35	16.2	2.6	13.6
RMFSD	17	69.1	0.0	69.1

There are 13.6 acres of vacant gross developable acres of land designated Residential in the City of Sisters (hereafter, referred to as City or city). There are 69.1 acres of vacant gross developable acres of Residential Multi-Family Sub-District in the City.

Table 2: *Re-developable Residential Lands in the City of Sisters by Land Use Designation (in gross acres not including platted and planned subdivisions)*

Zone	Number of Tax Lots	Total Area (In Acres)	Area of FP (In Acres)	Re-developable Gross Acres
R	2	22.4	0.0	22.4
RMFSD	0	0.0	0.0	0.0

Re-developable parcels were determined based on a variety of methods. To be classified as re-developable, the parcel's improvement value was less than 30 percent of the total parcel value (land and improvements), and be greater than 4 acres in size. Other Deschutes County data sources were used to verify the presence of structures and improvements before classifying a parcel as re-developable. City building permit data was also used to update the county parcel databases. Field investigations also verified the re-developable status. Only two parcels met these criteria, both are zoned Residential, and total 22.4 gross acres.

Table 3*: Platted and Subdivided Property Inventory (approximate numbers)*

Name	Total Units	Developed Units	Remaining Single-family	Remaining Multi-family	Total Remaining Units
The Pines	79	46	33	NA	**33**
PMR	180	63	86	31	**117**
Buck Run	72	56	16	NA	**16**
Coyote Springs	47	15	32	NA	**32**
Timber Creek	154	46	108	NA	**108**
Creekside	22	16	6	NA	**6**
South View	6	1	5	NA	**5**
Aspenwood	26	2	24	NA	**24**
Sisters Park Place	40	31	9	NA	**9**
Total	626	276	319	31	**350**

Table 3 illustrates the number of developed and remaining lots, and thus units, that exist in platted and developing subdivisions throughout the city. As of December 2004, a total of 319 remaining single-family and 31 multi-family units are available for development in existing subdivisions. A total of 350 remaining units can be developed in the subdivisions listed in Table 3.

Task 2: Determine the actual density and mix of housing

Overview: This task explores the types and densities of housing that have recently been developed within the Sisters UGB. This information is used to predict how much vacant land will be used if development continues at historic densities, and to predict if needed housing types are likely to be developed based on recent types of development.

The methodology and assumptions used to complete this task are presented below.

Step 1: Determine the time period for which the data must be gathered.

- The last periodic review for the City of Sisters was in 1994. Building permit data was gathered from March of 2002, back to January 1, 1994. Data was in the form of hard copy lists of building permits by type, data, owner, address, and value. A total of 165 building permits issued between 1994 and March 2002 were considered in the analysis.

A total of 8 building permits for single-family dwellings were not included because of missing data.

Step 2: Identify the types of new housing construction to address.

- Housing types addressed include single-family dwellings (SFD), mobile homes (MOB), manufactured homes (MAN), condos with five units (COND5), duplexes (DUP), and other multifamily dwellings

Step 3: Collect data.

- Hard copy lists of building permits were studied to extract the permit types for the aforementioned housing types. Usually, addresses for the building permit were given versus the taxlot of the new development. Based on the address, the building permit type was associated with the taxlot in the GIS.

Step 4: Collect data pertaining to the type, zoning, density, and number of units of housing developed.

- The types, density, and number of housing units developed are shown in Table 4

Step 5: Calculate the actual mix of housing.

- The actual housing mix is shown in Table 4

Step 6: Calculate the average actual density of each housing type.

- The average actual density is by housing type is shown in Table 4

Step 7: Calculate the average actual net density of all housing types.

- The average actual net density of all housing types is shown in Table 4

***Table 4**: Housing Permits by Type in City of Sisters: 1994-2002*

Dwelling Type	Number of Dwelling Units	Total Net Acres	% Housing Type	Average Density (Dwelling Units/Net Buildable Acres)
SFD	115	22.6	70%	5.1
MAN	3	0.7	2%	4.4
MOB	2	0.6	1%	3.2
DUP	40	1.8	24%	21.7
COND5	5	0.4	3%	12.4
TOTAL	165	26.2	100%	6.3

***Figure 1**: Average Density by Dwelling Type Constructed in Sisters UGB: 1994-2002*

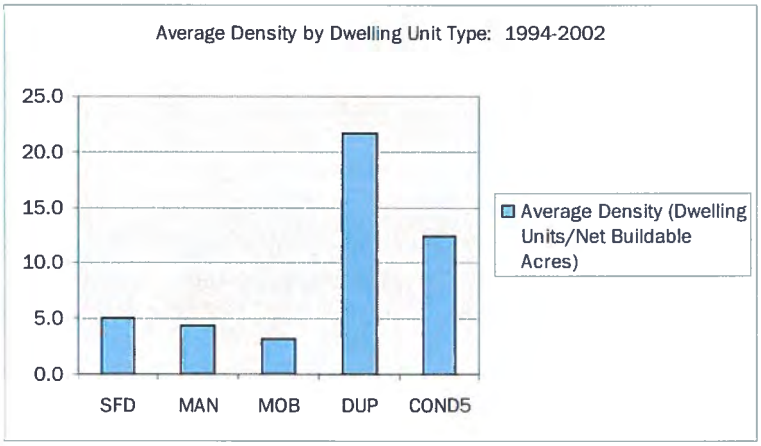


***Figure 2**: New Dwellings Constructed in Sisters UGB: 1994-2002*

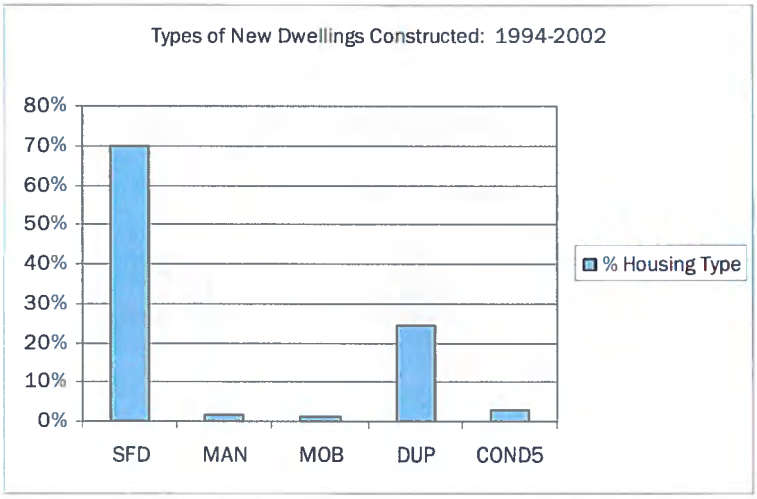
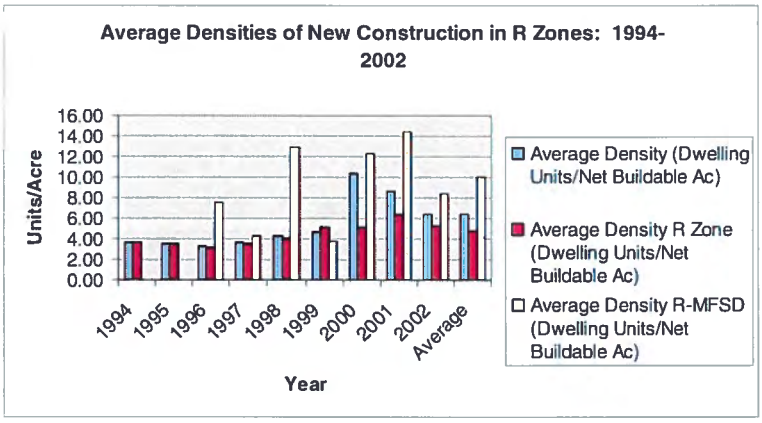


***Figure 3**: Average Densities of New Construction in R Zones by Year: 1994-2002*



Task 3: Conduct a Housing Needs Analysis

Overview: This task estimates the amount and types of housing needed in the Sisters UGB for the next 20 years based on anticipated population growth and demographic characteristics of the population.

Step 1: Project the number of new housing units needed in the next 20 years.

- Recent demographic trends related to the number of people/dwelling unit inside the City of Sisters tend to vary from state and national trends. National housing trends suggest that households are becoming smaller due to more households being formed by empty nesters, young singles, and couples than by the traditional family (Planning for Residential Growth, June 1997 by Oregon DLCD). However, this trend is not expressed in recent demographic statistics for the City of Sisters.

- For example, the average household size in the State of Oregon was 2.6 people/unit in 1980, 2.52 people/unit in 1990, and 2.4 people/unit in 2000 (U.S. Census). The 1990 ratio of people/unit in the City of Sisters was 1.91 (1990 U.S. Census). This ratio increased to 1.99 by the year 2000 (2000 U.S. Census). This data is shown in Tables 5 and 6.

- The 1990 and 2000 ratios of people/household are lower for the City of Sisters than the State of Oregon ratios for the same periods. This suggests that the City of Sisters is moving towards the State ratio of persons/household in spite of state and national trends favoring a decreasing household size.

***Table 5**: People per Dwelling Unit in City of Sisters: 1990 U.S. Census Data*

People per Dwelling Unit: 1990 US Census
City of Sisters

Year	City of Sisters Population	Housing Units in City of Sisters	People/Unit City of Sisters
1990	679	354	**1.91**

***Table 6**: People per Dwelling Unit in City of Sisters: 2000 U.S. Census Data*

People per Dwelling Unit: 2000 US Census
City of Sisters

Year	Persons	Total Housing Units	People/Unit
2000	959	482	**1.99**

- This analysis assumes that in the next 20 years the ratio of people/unit will rise in the City of Sisters as shown in *Appendix 1: Population and Building Permit Forecasts, Sisters UGB,* from 1.99 people/unit to 2.20 people per unit by 2025

- *Appendix 1: Population and Building Permit Forecasts, Sisters UGB* are same population estimates used in the 2005 Deschutes County Coordinated Population Forecasts. These estimates and rates are shown in Appendix 1 and Table 7.
- Appendix 1 demonstrates that a total of 1,125 housing units are expected to be constructed in the city between 2004 and 2025.

***Table 7**: Sisters UGB Coordinated Population Forecast: 2000-2025*

Year	City of Sisters Population [2]	5-year Average Annual Growth Rate (previous to current year)
2000	975 [1]	NA
2005	1,768	12.64%
2010	2,306	5.46%
2015	2,694	3.16%
2020	3,166	3.28%
2025	3,747	3.43%

[1] Source: PRC July 1, Official Population Estimate for City of Sisters.
[2] Source: Population Estimates by City of Sisters, see Appendix 1.

Step 2 and 3: Identify relevant national, state, and local demographic and economic trends and factors that may affect the 20-year projection of structure type and mix. Describe the demographic characteristics of the population and, if possible, household trends that relate to demand for different types of housing.

The Central Oregon Housing Needs Assessment completed in 2000 discusses local factors affecting the need for different structure types. Information from the survey is based on confidential surveys containing 52 questions on demographic and housing characteristics that were mailed to 14,000 households in Central Oregon (Crook, Deschutes, and Jefferson Counties). A total of 2,064 completed, valid surveys were returned via postage-paid envelopes. Excerpts from this report are included below in quotations. Some of the findings and data from this report are provided below.

Housing Characteristics of the Region

- "Based on the household survey, approximately 69% of the housing units in the three counties (Crook, Deschutes, Jefferson) are single-family homes. Mobile homes also make up a significant percentage of the total with 18% of the supply. Apartments comprise the next largest portion of housing units at 5%. Duplexes, triplexes and townhouses make up 4% of the total and a very small percentage, approximately 1%, are condominiums" (Central Oregon Housing Needs Assessment).
- This demonstrates that single-family dwellings are the most common and preferred housing type in Central Oregon, as well as the City of Sisters, as shown by building permit activity since 1994.
- "There is a wide range in average sales prices for residential properties in the region. The communities of Sunriver and Sisters have dramatically higher average sales prices than elsewhere in the region" (Central Oregon Housing Needs Assessment).

1999 Residential Sales Prices by Community

Community	Average Sales Price	Median Sales Price
Sunriver	$276,344	$245,000
Sisters	$260,013	$210,000
Bend	$171,070	$136,500
South Bend	$161,043	$115,900
Redmond	$116,859	$110,500
Jefferson County	$91,872	$88,000
Crook County	$91,214	$80,000
Lapine	$85,290	$76,000

Source: Multiple Listing Service of Central Oregon (Central Oregon Housing Needs Assessment)

- Sales prices of homes in the City of Sisters and outside the city limits tend to be higher than other urban areas in Deschutes County
- In the City of Sisters, according to the 2000 U.S. Census, the rental vacancy rate is 7.3% and homeowner vacancy rate is 2.1%. Approximately 11% of the housing units in Sisters are for seasonal, recreational, or occasional use.

Building Trends

- "Future Trends: The staff at the Central Oregon Homebuilders Association provided the names of 25 developers and homebuilders that are active in the region and that, in their estimate, are responsible for up to 75% of all new development. These developers were contacted in a survey conducted during April 2000; a total of 4,865 homes in 37 different developments have been captured in the survey data. Although the survey was not random, the results are accurate indicators of the direction of the residential real estate supply" (Central Oregon Housing Needs Assessment).
    1. "Type of Unit: Of the 4,865 planned units that were identified in the survey, the majority (92%) will be single-family homes. Approximately 2% of the new units will be condominiums and townhouses and 5% will be rental units in apartment projects" (Central Oregon Housing Needs Assessment).
    2. "Housing Costs Compared: As seen previously with the comparison of past sales to current listings (see below), the supply of real estate continues to shift to the more expensive price ranges. Among past sales, 26% were in the price range of $50,000 to $99,999. Based on the projected prices, only 7% of homes under development will be in this range. Another significant change can be anticipated to occur in the $150,000 to $199,999 range. Previously, past sales made up 13% of the total supply. In the future, homes in this price range will represent 19% of the total supply" (Central Oregon Housing Needs Assessment).
    3. "The most significant changes will occur in the highest range, those homes priced at $400,000 or above. While this category accounts for 5% of past sales, future sales are anticipated to make up 28% of the supply. It appears that developers in the region anticipate a significant increase in the number of buyers of high-end homes" (Central Oregon Housing Needs Assessment).

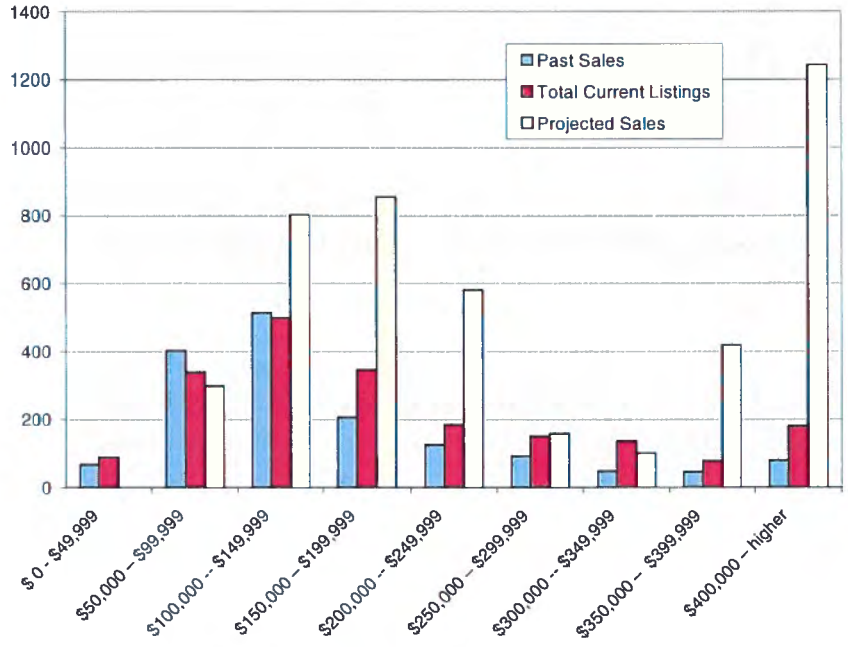
Comparison of Past, Current and Projected Home Prices

	Past Sales	Total Current Listings	Projected Sales
$ 0 - $49,999	4.2%	4.4%	0.0%
$50,000 – $99,999	25.5%	16.9%	6.7%
$100,000 -- $149,999	32.5%	24.9%	18.0%
$150,000 – $199,999	13.0%	17.3%	19.2%
$200,000 -- $249,999	7.9%	9.2%	13.0%
$250,000 – $299,999	5.8%	7.5%	3.5%
$300,000 -- $349,999	3.0%	6.8%	2.3%
$350,000 – $399,999	2.9%	3.9%	9.4%
$400,000 – higher	5.0%	9.0%	27.9%
Total	100.0%	100.0%	100.0%

Sources: Multiple Listing Service of Central Oregon and Developer Survey, April 2000 (Central Oregon Housing Needs Assessment)

The following graph clearly illustrates the trend toward more expensive housing.

Comparison of Past, Current and Projected Home Prices



Sources: Multiple Listing Service of Central Oregon and Developer Survey, April 2000 (Central Oregon Housing Needs Assessment)

- "Buyer Characteristics: Based on the survey responses, more than half of the buyers of new construction are new to the Central Oregon region. Approximately 24% of all buyers are coming from out of state and 31% are arriving from the Portland-Willamette Valley-west coast area. These percentages reflect the buyer profiles in developments totaling 4,309 homes and are limited to ownership housing" (Central Oregon Housing Needs Assessment).

Housing Preferences

- "Overall, the majority of Central Oregon's residents live in the community where they most want to live" (Central Oregon Housing Needs Assessment)
- "In the City of Sisters, approximately 63% of survey respondents are living in the community they want to live. In the Sisters School District approximately 89% of survey respondents live in the community they want to live" (Central Oregon Housing Needs Assessment).
- "The high cost of housing is by far the greatest barrier to residents living where they want to live" (Central Oregon Housing Needs Assessment).

Demographic and Housing Characteristics in Sisters Area

- Summary of household characteristics for the City of Sisters from Central Oregon Housing Needs Assessment:
  - "There are proportionately more adults living alone and fewer households with children than in the region as a whole. "
  - "The unincorporated portion of the Sisters School District contrasts sharply with the Town of Sisters. A far higher percentage of the households are homeowners, fewer live in mobile or manufactured homes, households are larger, and the percentage of adults living alone is smaller."
  - "The average household income in the Town of Sisters is substantially lower than the average for Deschutes County. "
  - "The average annual income for the unincorporated area is more than twice the average income in the town."
  - "In the Town of Sisters, over half of the households surveyed are classified as low-income households with annual incomes below 80% of the median family income for Deschutes County. In the unincorporated area, 21% have incomes below 80% of the median."
- Summary of housing characteristics for the City of Sisters from Central Oregon Housing Needs Assessment:
  - "Sisters has the highest proportion of renter households in the region – roughly half of the town's households rent."
  - "A relatively large percentage of residents reside in mobile homes."
- According to the US 2000 Census, the median mortgage is $908 and average rent is $619 in the City of Sisters

Summary of Housing Issues for the City of Sisters According to the Needs Assessment

- "A greater percentage of Sisters' residents feel that housing in their community is a major problem than any other area in the region, with the exception of the Warm Springs Reservation."
- "About 19% of the households surveyed in the Town of Sisters are not satisfied with their housing, which is nearly double the region's percentage. In contrast, nearly 94% of the households in the unincorporated area of the School District are satisfied with their housing. "
- "Residents of the Town of Sisters report a high percentage of homes in fair or poor condition and a higher percentage who are not satisfied relative to the region as a whole."
- "Approximately 32% of the Town's households live in housing that is not affordable given their incomes, which compares to 17% in the region. In the unincorporated area, just under 20% spend more than 30% of their income on their rent or mortgage payment, which is lower than in the Town but higher than in the region overall."

- "In the Town of Sisters, the vast majority of residents (92%) believe that there is too little affordable housing in the community, by far the highest percentage in the region. Most also believe that the size and price of new homes is too much. In the unincorporated area, the majority of residents (74%) also believe that there is too little affordable housing in the area but residents are divided on the overall amount of housing being built. The majority feels that the size and price of new homes is too much."

- *Summary of the Impacts of Planned Development from the Central Oregon Housing Needs Assessment*
  - "New development in the Town of Sisters has been limited in the recent past as the lack of a municipal sewage treatment plant has limited the number of building permits the Town can issue. The process to construct a new sewage treatment facility is under way with the plant scheduled to open in June of 2002. When additional capacity to accommodate growth is available, requests for building permits are likely to grow quite rapidly as it appears that the limited growth rate has not allowed the supply to keep pace with demand."
  - "Demand for housing will be fueled by increases in the housing supply. Jobs will be created as a direct and indirect result of the residential development planned to occur. Residential development directly creates not only construction jobs but also permanent jobs directly associated with maintenance and operation of the homes including interior designers, landscapers, security personnel, caretakers, and cleaning and cooking staff."
  - "The impacts of residential development multiply through the community, fueling job creation primarily in the services and retail sectors. The homes planned for development in Sisters appear to be primarily targeting buyers not now living in the area. The population could double in the next seven years if 550 additional units are constructed. The new part-year and year-round residents that would move to the community, will seek goods and services generating demand for additional jobs, many of which would be in the low-wage sectors."
  - "The demand for housing generated both directly and indirectly by the residential development planned for Sisters is difficult to quantify with information available at present; however, it is clear that workers filling these new positions will need units priced below what it appears the private market is likely to provide."

This analysis breaks income groups into four main categories shown in Table 8 below.

***Table 8**: Income Groupings*

Income Levels in the City of Sisters: 1990 and 2000 Census Data

Income Levels	1990 U.S. Census City of Sisters	2000 U.S. Census City of Sisters
Households		
low (less than or equal to $14,999)	42%	17%
lower middle ($15,000-$34,999)	41%	33%
upper middle ($35,000-$74,999)	15%	31%
high ($75,000 and greater)	2%	19%
Total	100%	100%

Source: 1990 and 2000 U. S. Census

- Table 8 demonstrates how rapidly demographic changes can occur within a small city. The percentage decrease of households in the low-income category between 1990 and 2000, from 42% to 17% of households is striking. The lower middle-income category also experienced a decline from 41% to 33% of households in the same period. These decreases were offset by increases in the two higher income groupings.
- Table 9 describes the estimated percentages of the City of Sisters households within the four income groupings. These estimates are based on 2000 U.S. Census data for the City of Sisters and Community Technical Advisory Committee input.

***Table 9**: Estimated Income Groupings in City of Sisters: 2002-2025*

Income Levels	2000	2002-2025
Households		
low (42.85% Median Household Income)	17%	17%
lower middle (Median Household Income)	33%	33%
upper middle (2.14 x Median Household Income)	31%	31%
high (greater than 2.14 x Median Household Income)	19%	19%
Total	100%	100%
City of Sisters Median Household Income $35,000 in 2000 (2000 U.S. Census)		

Step 4: Determine the types of housing that are likely to be affordable to the projected households based on household income.

- Households spending 30% of their monthly gross income on housing are nearing the upper limit for affording that housing. The monthly housing costs in Table 11 represent the upper limit that each income group can be expected to pay per month for housing. The housing types available to each income level are also described.

***Table 10**: Income Groups by Available Housing Types and Monthly Costs*

Income Levels	Housing Types Available to Income Levels	Monthly Cost
low (42.85% Median Household Income)	subsidized multi-family, apartments, mobile/manufactured in parks, attached single and multifamily	$0-$375
lower middle (Median Household Income)	mobile and manufactured homes on lots and parks, attached single and multi-family, single detached on smaller lots	$376-$875
upper middle (2.14 x Median Household Income)	All housing types, predominantly single-family detached	$876-$1,875
high (greater than 2.14 x Median Household Income)	All housing types, predominantly larger single-family detached	$1,876+
City of Sisters Median Household Income $35,000 in 2000 (2000 U.S. Census)		

Step 5: Estimate the number of additional needed units by structure type.

- Table 11 estimates the distribution of housing types demanded by income groups. The Citizens Technical Advisory Committee recommended that the current income

distribution of the population of Sisters as shown in Table 9, remain fixed for the planning period. Demand is highest for single-family type units including more affordable manufactured homes, small single-family units, and more expensive medium to large single-family dwellings. More affordable multi-family dwellings, attached single and multi-family, and condos are demanded by approximately 50% of the City's population that have household incomes less than and equal to Median Household Income.

***Table 11**: Estimated Housing Types Demanded by Income Group, Year 2002-2025*

Income Levels	Housing Types Available to Income Levels	Percent of Population Demanding Housing Type
low (42.85% Median Household Income)	subsidized multi-family, apartments, mobile/manufactured in parks, attached single and multifamily, subsidized housing	17%
lower middle (Median Household Income)	mobile and manufactured homes on lots and parks, attached single and multi-family, single detached on smaller lots	33%
upper middle (2.14 x Median Household Income)	all housing types, predominantly single-family detached	31%
high (greater than 2.14 x Median Household Income)	all housing types, predominantly larger single-family detached	19%
Total		100%

City of Sisters Median Household Income $35,000 in 2000 (2000 U.S. Census)

Task 4: Housing density and mix analysis.

Overview: Needed housing densities and mixes are compared with actual densities and mixes to determine if measures are needed to provide needed housing densities/mix.

- Table 12 shows how the actual development of housing types does not match the needed mix based on demographic characteristics of households in the City of Sisters
- The needed mix was calculated by adding the percentages of low and lower middle income groups needing multi-family, manufactured homes in parks and on lots, and attached single-family housing in 2002 (17% +33%)
- The needed mix significantly differs from the actual mix calculated for the 1994-2002 period

***Table 12**: Actual Versus Needed Housing Mixes*

	Actual and Needed Housing Mixes			
Housing Type	Actual 1994-2002	Actual 2002	Needed Mix*	Difference
Multi-family (1+ units attached), apartments, condos, duplexes, mobile/manufactured homes	30%	33%	50%	17%
Single Family Detached	70%	67%	50%	-17%

* Needed mix is based on the percentage of low and lower middle income households needing these housing types

- This table illustrates that there is a need for more development of multi-family, apartments, condos, duplexes, triplex, multiplex, attached single-family, small single family, and manufactured homes in parks and on single lots. These are more affordable housing options available to lower income households.
- Measures in the comprehensive plan and zoning ordinance will be required to encourage the development of more affordable housing types relative to single-family housing

- A number of measures exist in the new code to construct these needed housing types at affordable prices, including incentives such as density and height bonuses for Income and Rent Controlled Housing. In addition, the new code enables higher density residential development such as duplexes, triplexes, townhomes, multi-family apartments, condos, and manufactured home parks.
- Additional measures beyond the new model code may be needed to encourage the development of more affordable housing in the City of Sisters

Task 5: Supply and demand analysis of buildable land in the UGB

Overview: The supply of buildable residential land from Task 1 is compared with the demand for residential land calculated in Step 5.

Task 5 involves comparing the supply of buildable land and lots in platted and planned subdivisions with the demand for dwelling units/lots and buildable land.

Tables 1 and 2 (discussed previously in Task 1) demonstrate there are 36 gross acres of vacant and re-developable land designated R (Residential) and 69 gross acres of RMFSD (Residential Multi-Family Sub-District) in the City. Table 3 demonstrates there are 319 remaining single-family lots (for single-family units) and 31 allowed multi-family units in existing subdivisions. These totals are reflected below in Table 13.

Demand for dwelling units inside the Sisters UGB is driven largely by expected population growth and other demographic characteristics. Appendix 1 demonstrates estimated population and housing increases in the city and estimates that 1,125 housing units will be built in the city between 2004 and 2025.

As discussed previously in Task 4, the needed mix of housing requires that half of the units be affordable to households with incomes under the city's median income, and half of the units be affordable to those with incomes over the city's median income. This analysis predicts that to accomplish this, half the units will likely be the type and density typically constructed in the Residential Multi-Family Sub-District (to meet the housing needs of those under the median income level), and half will be the type and density typically constructed in the standard Residential District (to meet the needs of households above the median income level). This assumption is not a policy directive and many high income households will choose to live in multi-family districts and lower income households in the standard Residential areas, but this assumption is made to allocate demand for housing to a specific land use type.

The City's two residential districts facilitate distinctly different housing unit development. Generally, housing types such as subsidized and market rate multi-family, triplexes, duplexes, attached townhomes, condos, and small single-family are more likely to be built in the Residential Multi-Family Sub-District. Housing types such as multi-family can only be constructed in the RMSD land use district. Similarly, in the Residential District, there are prohibitions placed upon multi-family unit construction and restrictions on triplex, duplex, and attached townhome infill construction. Thus, given that half of the future demand for housing will be for families with incomes at and below the City's median income level, most of these units will most likely be built in the Residential Multi-Family Sub-District.

Table 13 demonstrates that of the total demand for housing (1,125 units) between 2004 and 2025, half of the total units (563 units) will need to be built in the Residential Multi-Family Sub-

District, and the other 563 units be constructed in the Residential District. This is demonstrated in Table 13 under the heading, "Population and Housing".

Table 13 also demonstrates the numbers of lots in existing subdivisions. After subtracting the totals under the heading "Lots in Subdivisions" from the totals under the heading "Housing Units", by land use district (Residential or Res. Multi-fam), the "Remaining Demand" column shows the number of units needed in addition to existing supplies of units. The remaining demand is for units (by land use district) between 2004 and 2025, after subtracting for the number of existing platted units in subdivisions.

To predict land need, assumptions regarding the future density of residential development must be made. Under the heading "Residential Land Need" in Table 13, the amount of gross acres consumed by anticipated development between years 2004 and 2025 is presented. This is calculated based on the number of units shown under the heading "Remaining Demand", divided by the anticipated density of future development. For units to be built in the Residential District, a gross density of 5 units/gross acre is used. The assumption is that future development in this land use district will be at 5 units/gross acre given the adopted density range for the Residential District is 3 to 8 units per gross acre. Likewise, given the adopted density range of 9 to 20 units per gross acre in the Residential Multi-Family Sub-District, this analysis assumes that future development in this land use district will be an average of 9 units/gross acre.

Table 13 demonstrates (under the heading "Land Need, Residential") how much land new residential development will use after considering lots in existing subdivisions. The amount of vacant and re-developable residential land by land use district is shown under the heading "Residential Land Supply". Under the heading "Land Need, Residential", figures represent the results of subtracting future demand for residential land from the existing supply of residential land. An additional 25 gross acres of Residential District land is needed to accommodate future demand and a surplus of 10 acres of Residential Multi-Family Sub-District land is predicted. Refer to Chapter 14 of the Comprehensive Plan and the Findings for a UGB Expansion for a discussion of the UGB expansion to meet this predicted need.

***Table 13**: Supply and Demand for Dwelling Units, Need for Additional Residential Land in City of Sisters to Year 2025.*

Population & Housing		*Unit and Land Supply (in gross acres)*				*Land Need*
2025 Population	**Housing Units (2004-2025)**	**Lots in subdivisions**	**Remaining Demand**	**Residential Land Need**	**Residential Land Supply**	**Residential**
3,747	1,125	350	See below	See below	See below	See below
Residential	563	319	244	61	36	25
Res. Multi-fam	563	31	532	59	69	10 (surplus)
Totals	1126*	350	776	120	105	15

Notes:
* Note: The total of 1,126 is different that the 1,125 based on the Deschutes County Coordinate Population Forecast due to rounding

Conclusion

The needed mix for housing differs significantly from the recent mix of housing constructed in the City of Sisters. This analysis estimates that half of the housing built in the Sisters UGB until the year 2025 should be a suitable type affordable to households earning at and under the median household income level of residents living in the City of Sisters. This typically includes housing types such as small single-family, multi-family apartments, attached single and multi-family,

manufactured home parks, and subsidized housing. Creative housing solutions conceived by the community to meet these and other community goals should be sought. Comprehensive Plan policies implemented through the development code will likely be required to meet this need.

At densities allowed by current development codes, a total of 25 gross buildable acres of Residential (R District) land are needed in addition to existing supplies of residential land. This takes into consideration the anticipated rapid population growth documented in the coordinated population forecasts, the need for different housing types based on demographic characteristics of people living in the Sisters UGB, current supplies of lots in platted and planned subdivisions, and undeveloped land.

Appendix 1: Population and Building Permit Forecasts, Sisters UGB

Forecast Year	Forecasted Rate of Building Permit Growth [1]	Forecasted Residential Housing Units [2]	Forecasted New Residential Building Permits Issued/Yr. [3]	Persons per Dwelling Unit [4]	Population Forecast [5]
2003	NA	725	104	NA	1,430
2004	11.10%	805	80	1.99	1,590
2005	11.10%	895	89	1.99	1,768
2006	8.90%	975	80	1.99	1,927
2007	5.40%	1,027	53	1.99	2,031
2008	4.30%	1,071	44	1.99	2,119
2009	4.30%	1,117	46	1.99	2,211
2010	4.30%	1,165	48	1.99	2,306
2011	3.13%	1,202	36	1.99	2,379
2012	3.13% .	1,240	38	2.00	2,454
2013	3.13%	1,278	39	2.00	2,532
2014	3.13%	1,318	40	2.00	2,612
2015	3.13%	1,360	41	2.00	2,694
2016	3.13%	1,402	43	2.00	2,780
2017	3.13%	1,446	44	2.10	2,872
2018	3.13%	1,491	45	2.10	2,967
2019	3.13%	1,538	47	2.10	3,065
2020	3.13%	1,586	48	2.10	3,166
2021	3.13%	1,636	50	2.20	3,275
2022	3.13%	1,687	51	2.20	3,388
2023	3.13%	1,740	53	2.20	3,504
2024	3.13%	1,794	54	2.20	3,624
2025	3.13%	1,850	56	2.20	3,747

[1] Source: Rates between 2004 through 2010 based on weighted average of growth rates before and after the construction of the municipal sewer, see Deschutes County Coordinate Population Forecast, 2004. Rates of Building Permit Growth between 2011 and 2025 based on rate of housing unit growth between 1990-2000 as determined by the U.S. Census.

[2] Source: "Forecasted Residential Housing Units" based on "Forecasted Rate of Building Permit Growth" applied to base of 725 Residential Housing Units in 2003, and grown by the applicable rate per year.

[3] Source: Current year minus previous years "Forecasted Residential Housing Units", for example in 2004, 805 Forecasted Residential Units in 2004 minus 725 Forecasted Housing Units in 2003 equals 80.

[4] Source: Persons per Dwelling Unit of 1.99 is from the 2000 U. S. Census, SF-1. This statistic accounts for vacancy rates and second homes. The statistic increases over time as estimated here by the City of Sisters Planning Department based on the assumption that the City will approach the State of Oregon statistic of 2.4 Persons Per Dwelling Unit as determined by the 2000 U.S. Census, SF-1. In other words, the City of Sisters will become more like the state in terms of persons per household in the future.

[5] Source: Calculated by adding the total of (Total Res. Permits/Yr. in Sisters UGB x Persons Per Dwelling Unit) to previous year's Population Forecast.

Appendix D: Examples of 1880's Architectural Design

Appendix D: Examples of 1880's Architectural Design

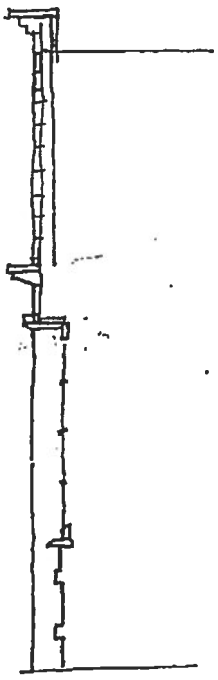
OLD MOLSON BANK
MOLSON, WASHINGTON (1908)

SECTION 2.20

JOE KOCHEVAR HOME
CRESTED BUTTE, MONTANA (1913)

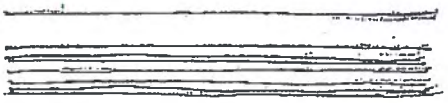
EXAMPLE OF HANDCRAFTED SHINGLE FACADE
SHINGLES SORTED BY SIZE, PACKED IN TIGHT BUNDLES
AND END DESIGN CUT WITH BAND SAW.

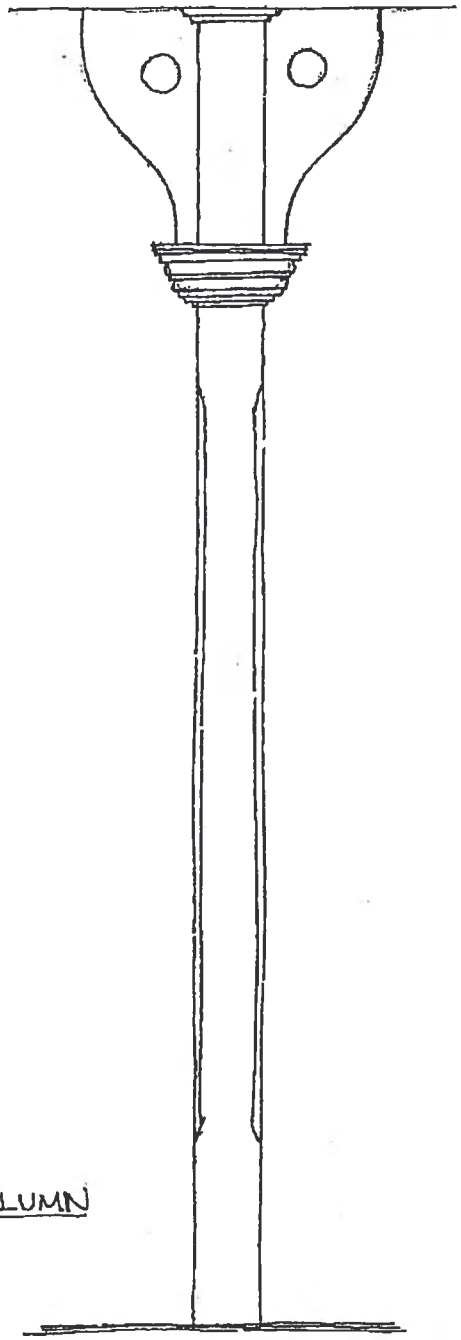
SEE 1.10 & SEE 1.30 & SEE 2.40



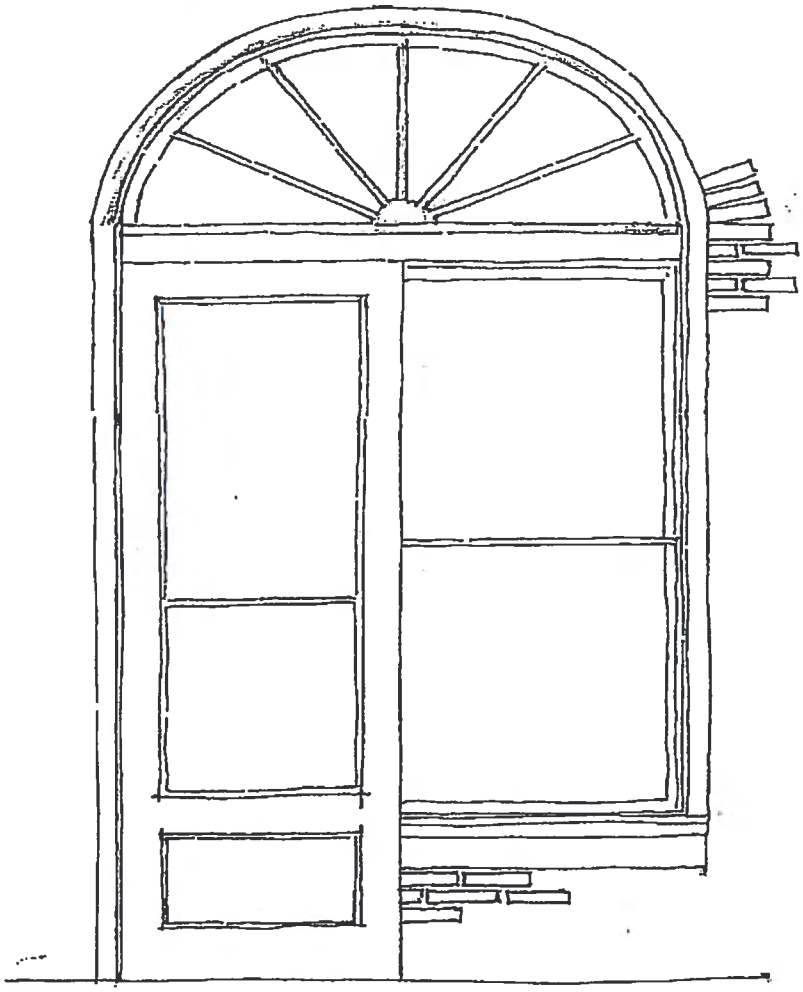
OVERLAND STAGE OFFICE
VIRGINIA CITY, NEV. (1858±)

SEC. 1.10





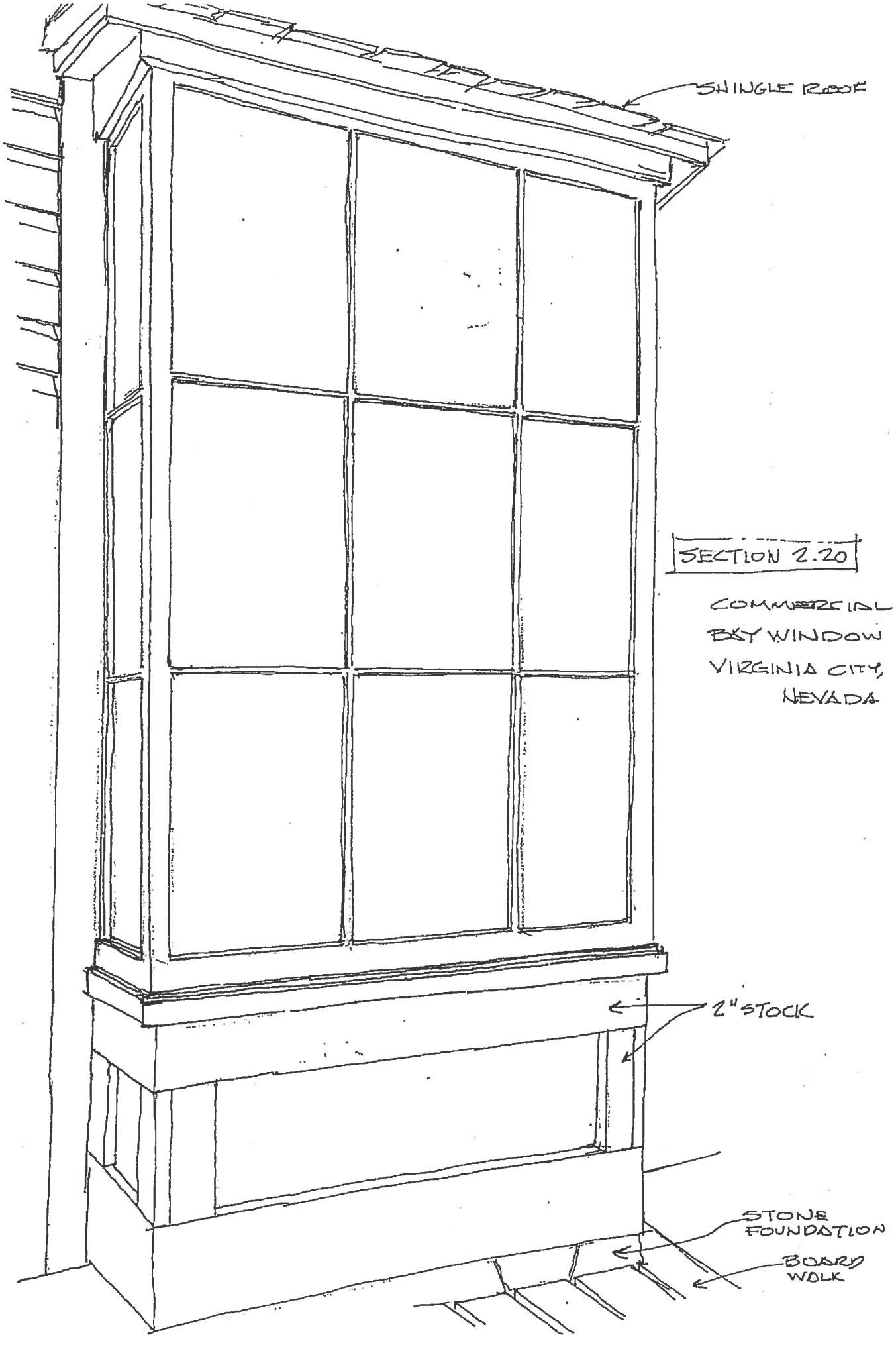
COLUMN



DOOR / WINDOW

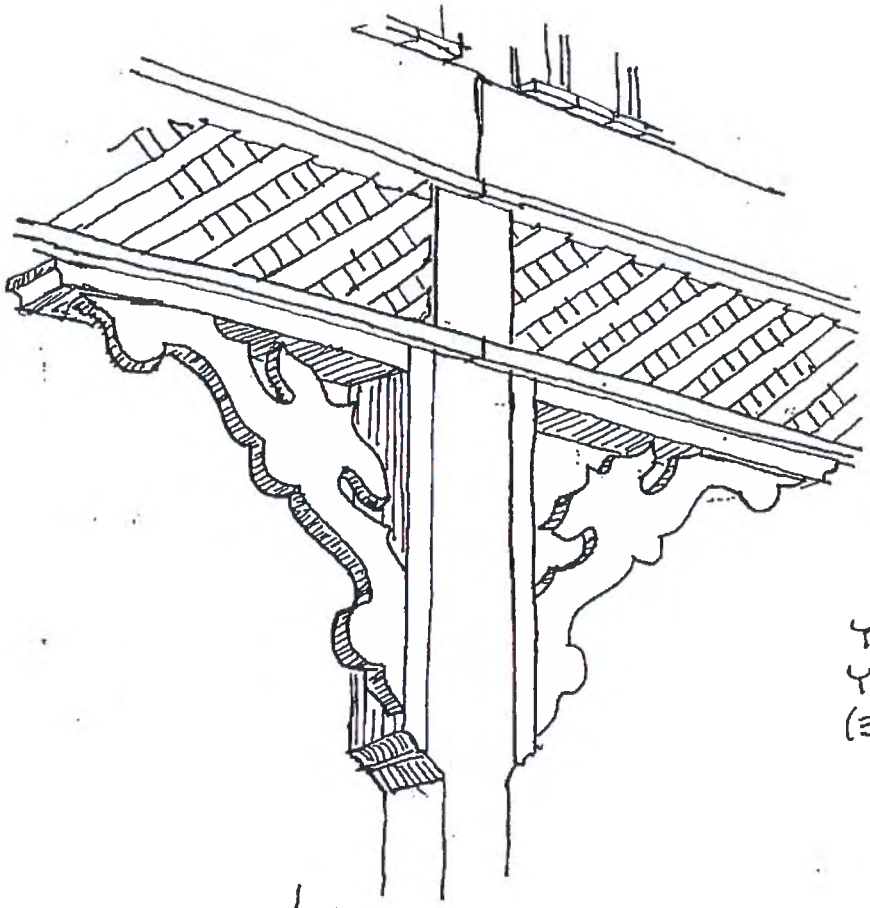
SHANIKO HOTEL
SHANIKO, OREGON (c. 1878)

SEC. 1.40 & 1.50



SECTION 2.20

COMMERCIAL BAY WINDOW
VIRGINIA CITY, NEVADA



SEE 1.60

DETAIL
YMER HOTEL
YMER, BRITISH COLUMBIA
(3-STORY WOOD-FRAME HOTEL)

COLUMN

BALUSTRADE SEE 1.60

1" DECKING

2" JOISTS

TRIM

LATH LATTICE

TRIM

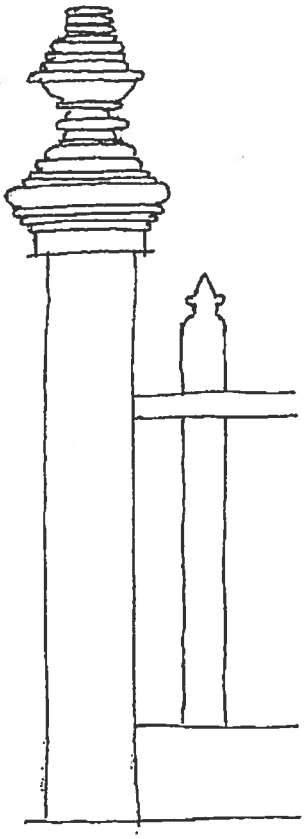
BLOCKING

ORNAMENT TOP TRIM

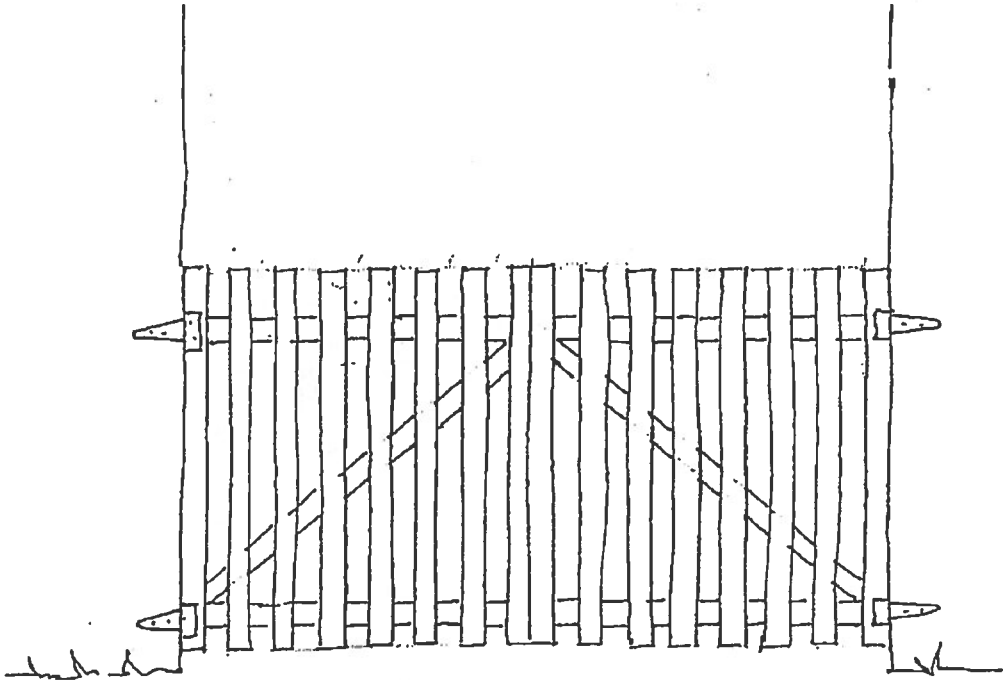
ORNAMENT

ORNAMENT VERTICAL TRIM

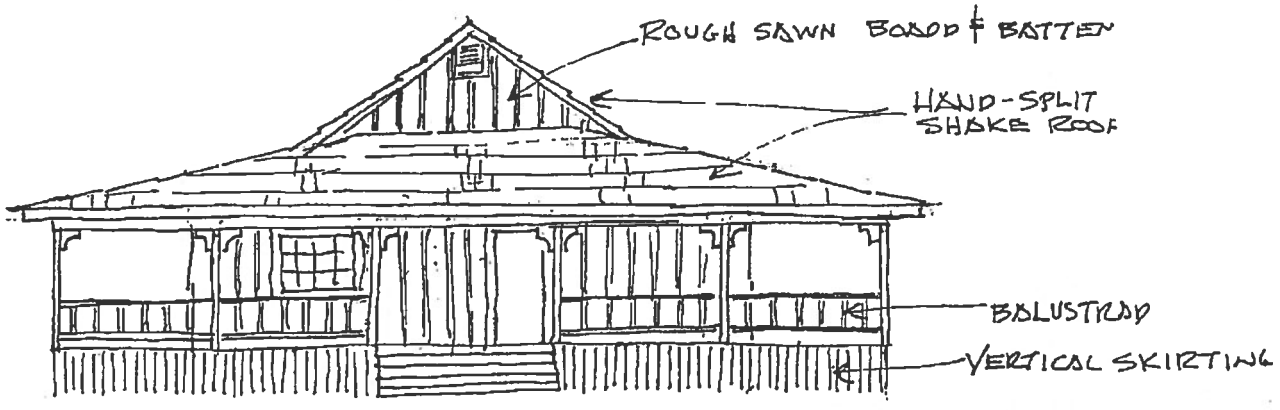
CONSTRUCTION DETAIL @ 2ND FLOOR



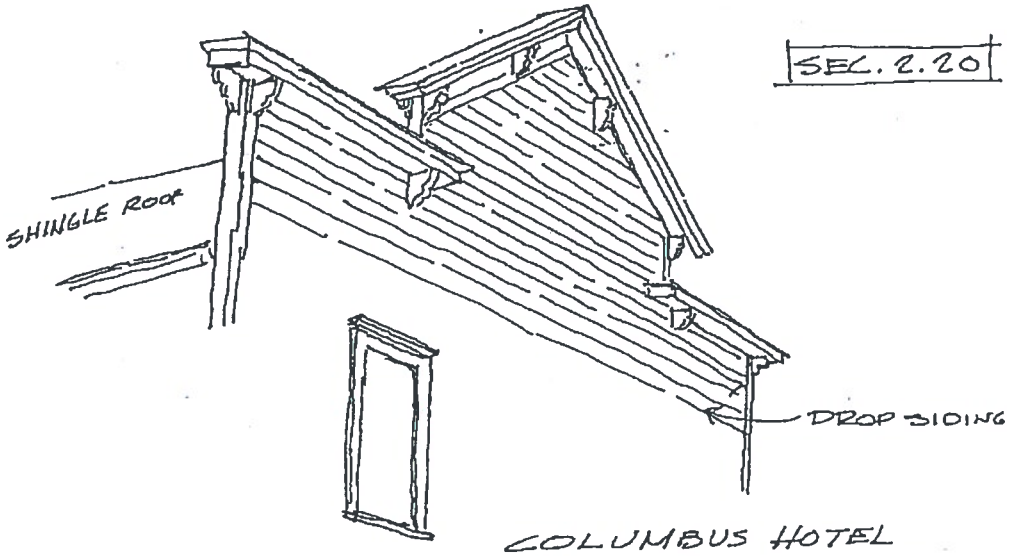
FENCE
COLUMBIA, CALIF (c. 1850)
SEC. 3.10



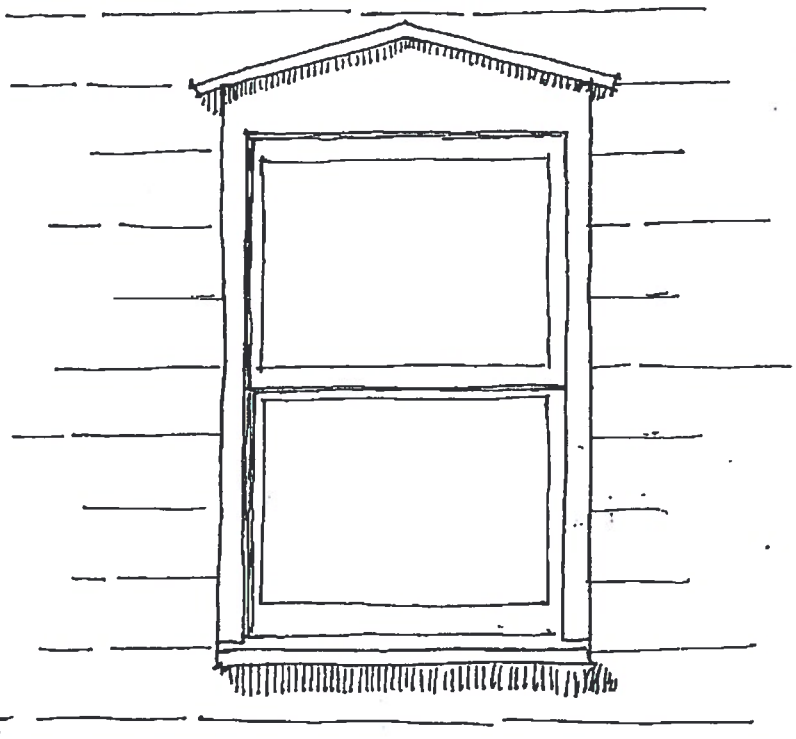
WOODEN GATE
HORNITOS, CALIF.
SEC. 3.20



RESIDENCE - SOUTHERN CALIFORNIA
SEC. 1.10

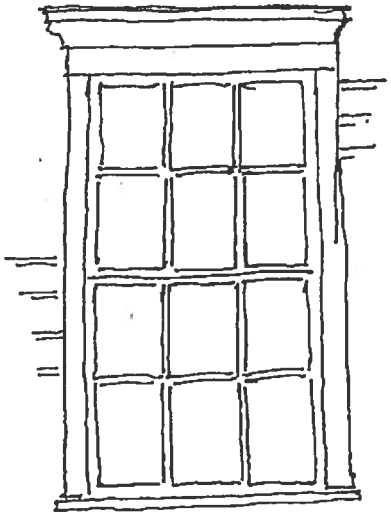


COLUMBUS HOTEL
WADSWORTH, NEVADA (c. 1868-78)



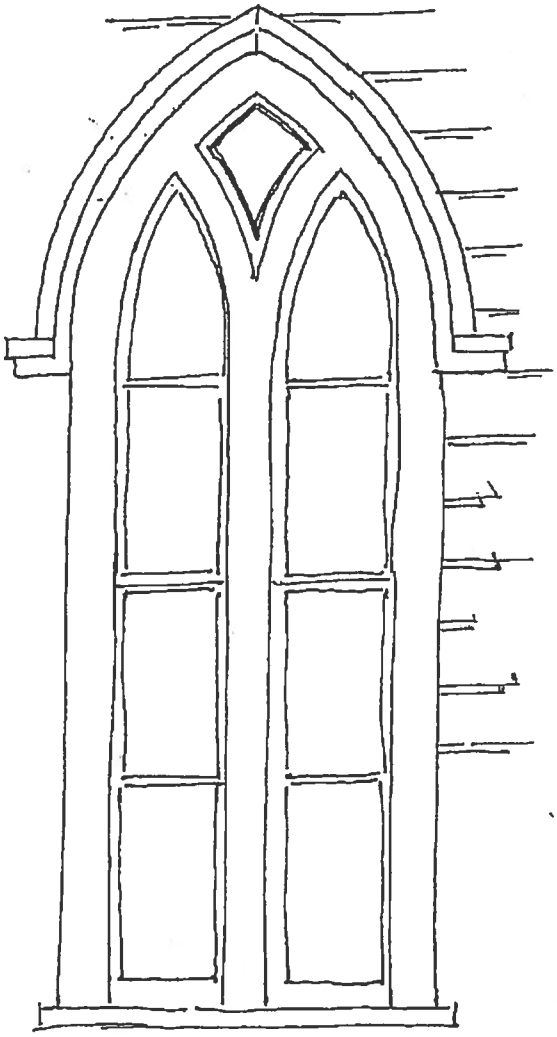
WINDOW - CRESTED BUTTE, MONTANA

SCHOOL
WINDOW DETAIL
SILVER CITY, NEV
(1892)

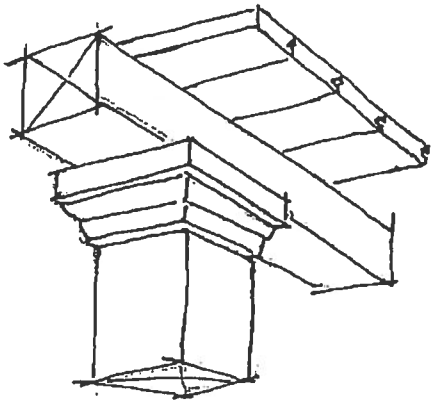


SEE. 1.40

STORE WINDOW
VIRGINIA, CITY, NEV.

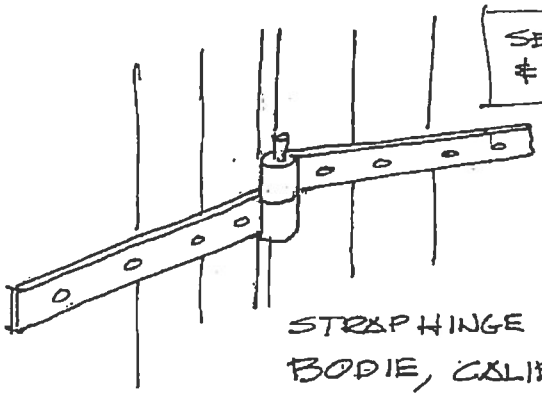


METHODIST CHURCH WINDOW
VIRGINIA CITY, NEV.



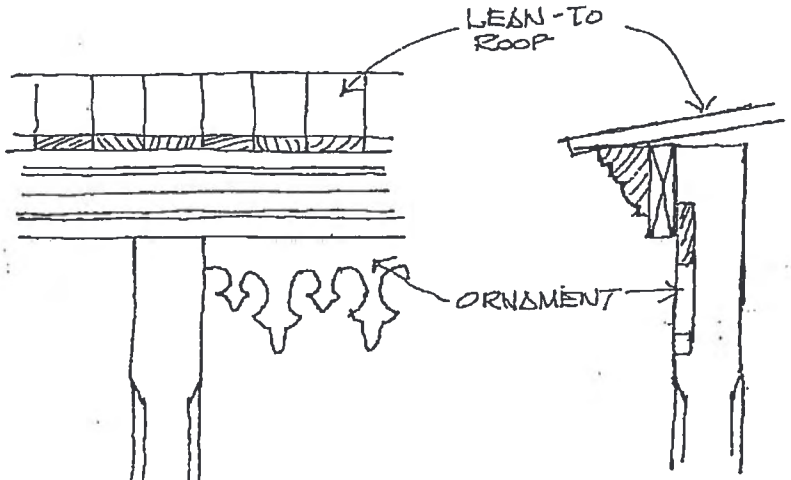
COLUMN DETAIL @
PORCH ROOF
BLOOMFIELD'S GENERAL STORE
NORTH BLOOMFIELD, CALIF. (c. 1851-84)

SEE. 1.10

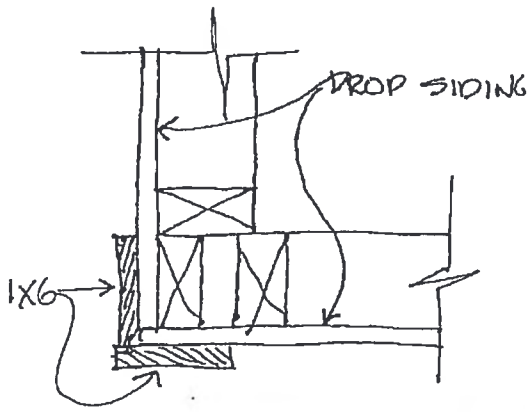


SEE. 1.50
& 3.20

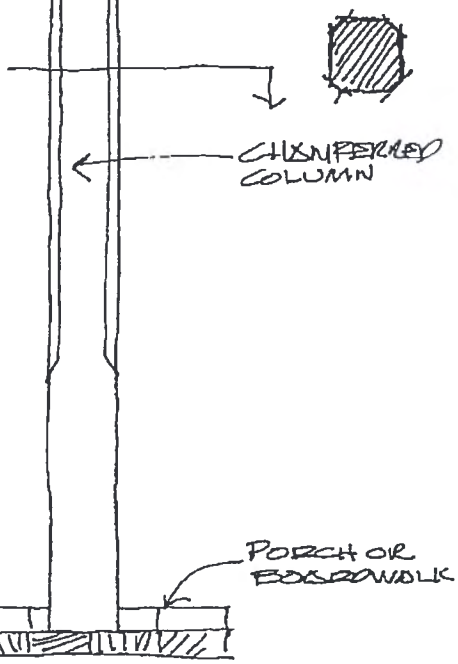
STRAP HINGE DETAIL
BODIE, CALIF.

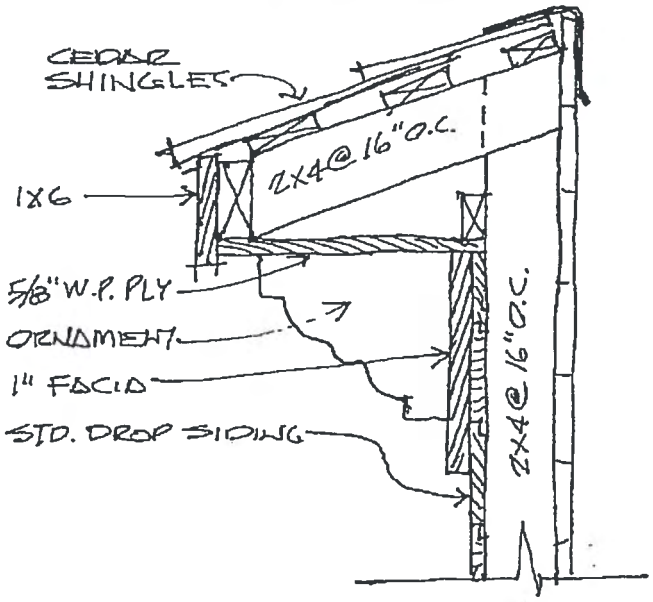


SEC. 2.30



CORNER DETAIL





TOP - FALSE FRONT

COLUMN W/ORNAMENTATION

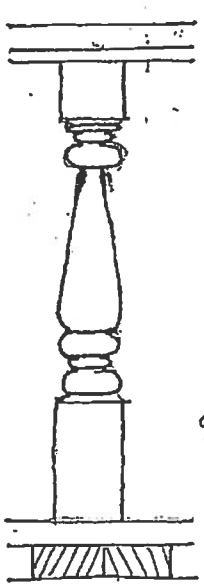
SEC. 1.10

COMMERCIAL BLDG. DTLS.

LEADORE, IDAHO

SEC. 2.20 & 2.30

TURNED POST
GOLD HILL BAR & HOTEL
GOLD HILL, NEVADA (1868-88)

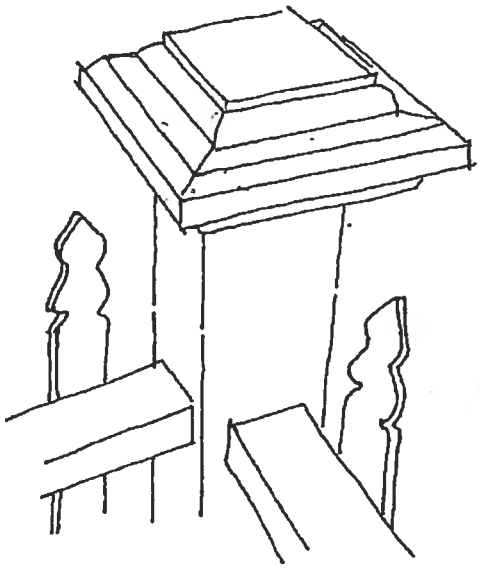


ORIGINAL BALUSTER

SEC. 1.10 & 2.40

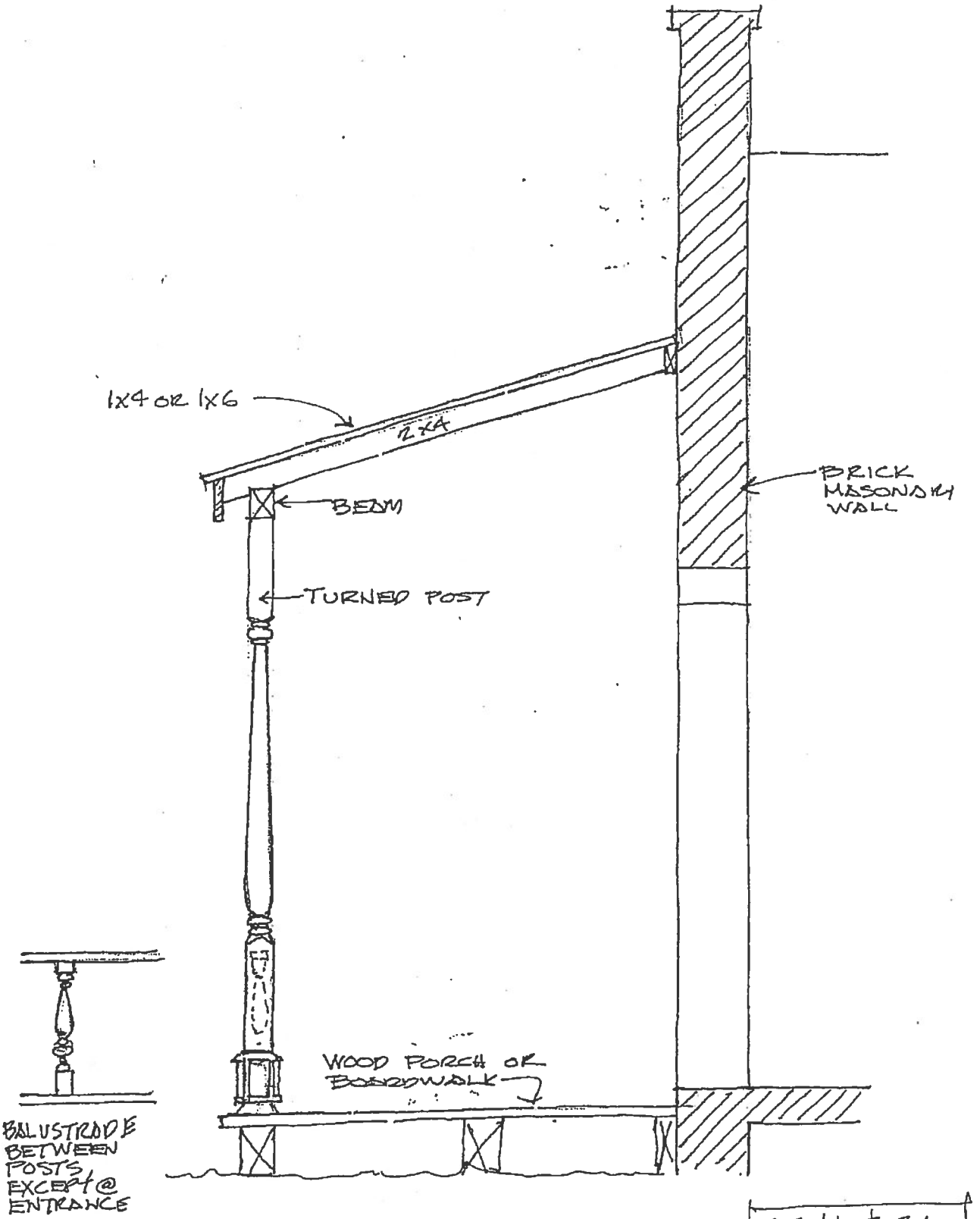
SEC. 2.20

HOTEL – FT. BENTON, MO. (1846+)



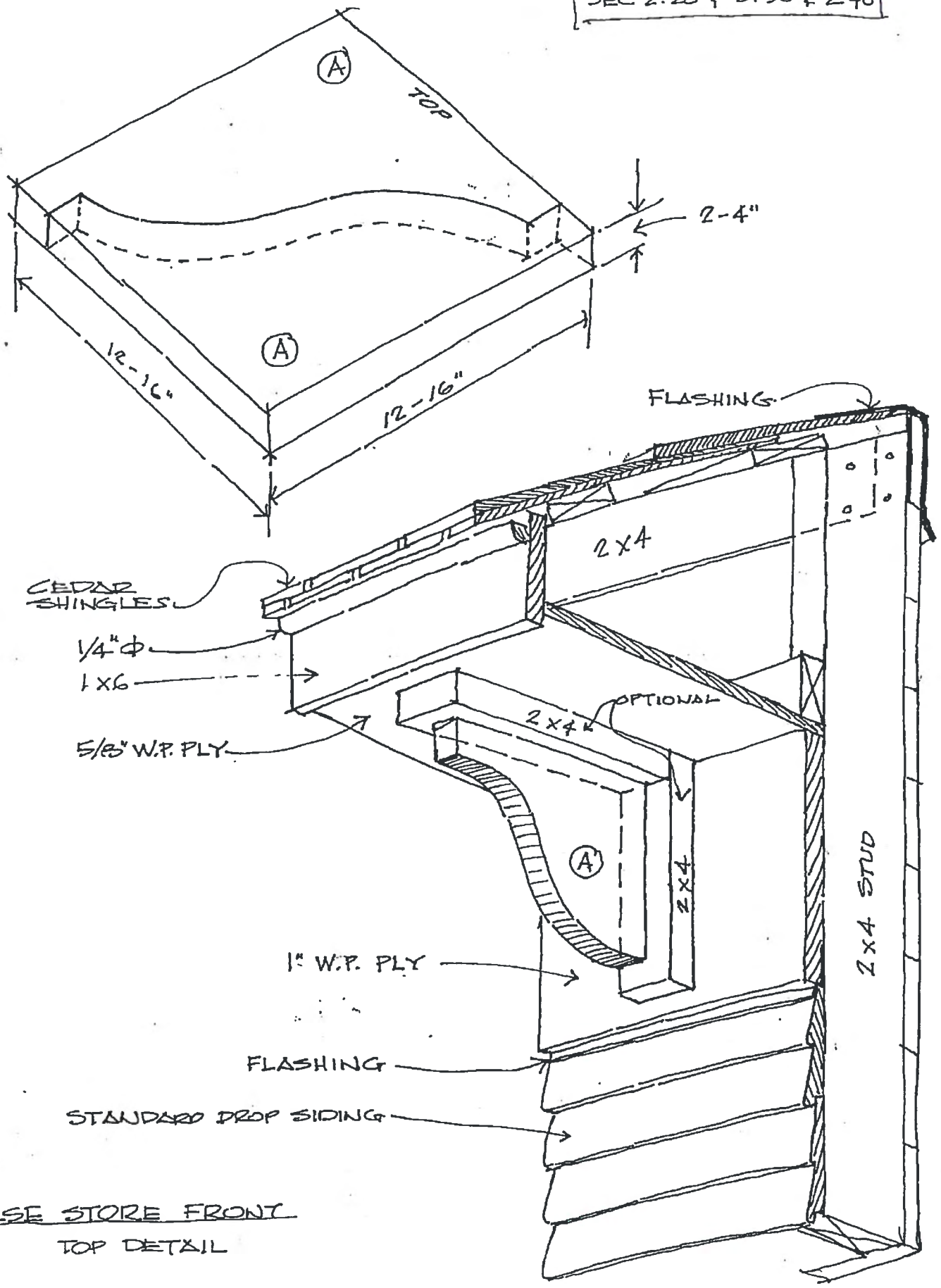
SEC 3.10

FENCE DETAIL
NORTHERN NEVADA



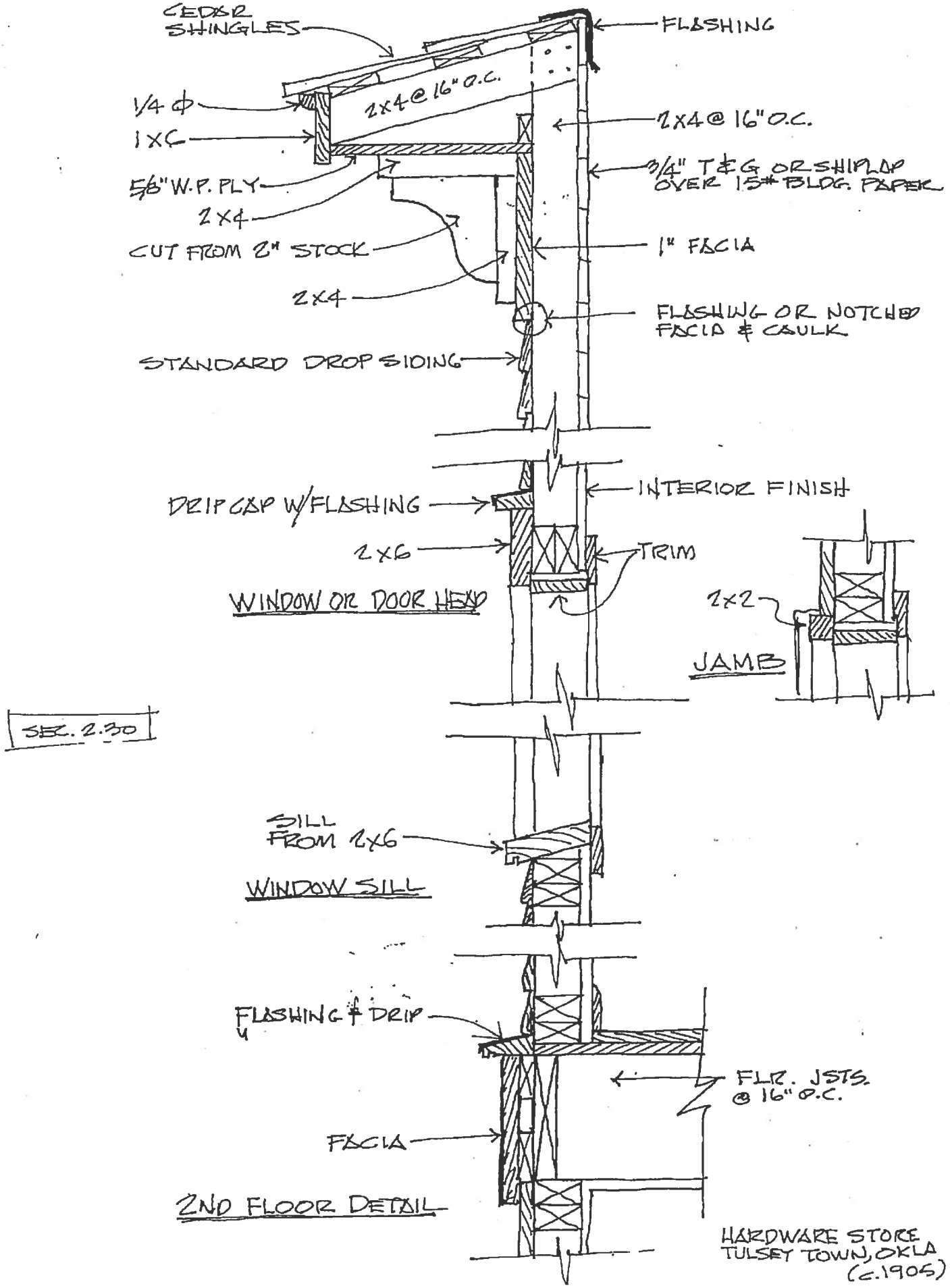
BANK OF CALIFORNIA
GOLD HILL, NEVADA (± 1862)

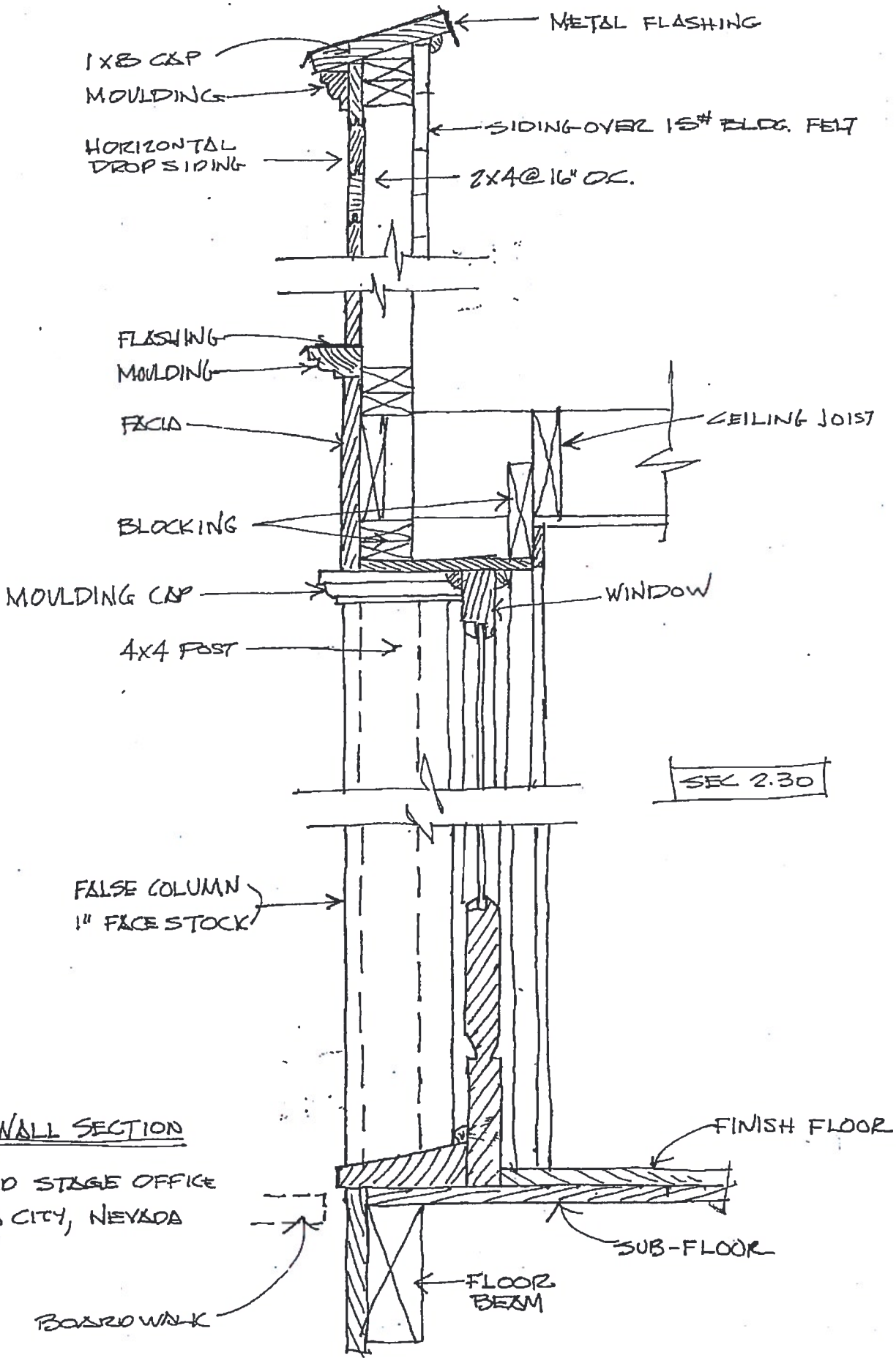
SEC 2.20 & 2.30 & 240



FALSE STORE FRONT

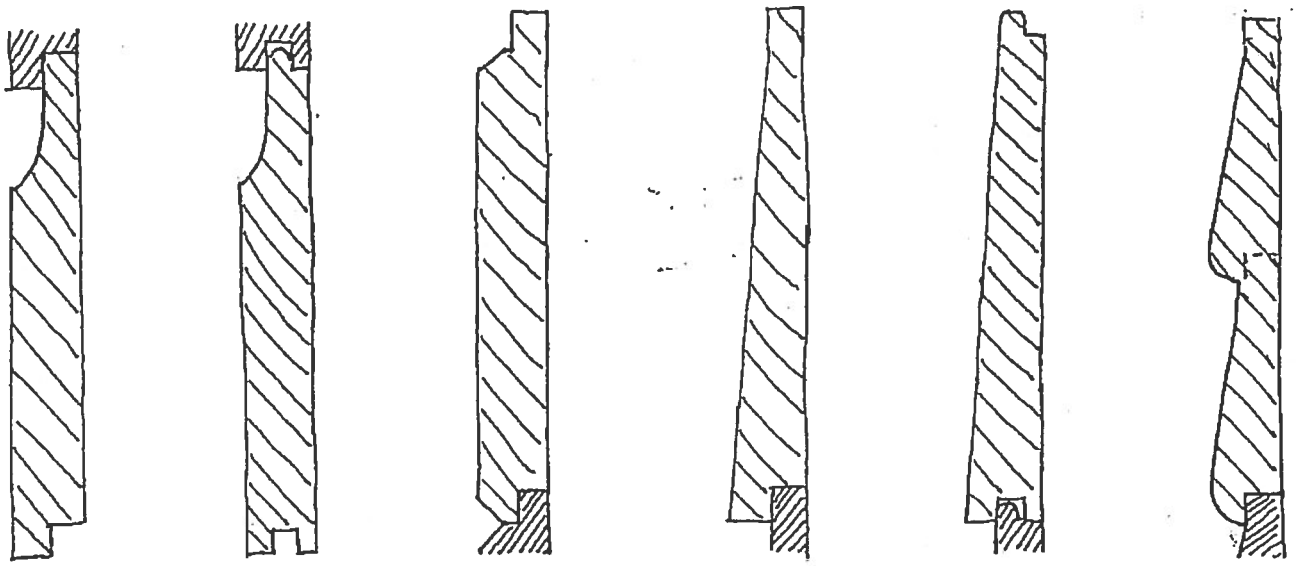
TOP DETAIL


CEDAR SHINGLES
FLASHING
1/4 ϕ
1 X C
2 X 4 @ 16" O.C.
2 X 4 @ 16" O.C.
5/8" W.P. PLY
2 X 4
3/4" T & G OR SHIPLAP OVER 15# BLDG. PAPER
CUT FROM 2" STOCK
1" FASCIA
2 X 4
FLASHING OR NOTCHED FASCIA & CAULK
STANDARD DROP SIDING
INTERIOR FINISH
DRIP CAP W/FLASHING
2 X 6
TRIM
WINDOW OR DOOR HEAD
2 X 2
JAMB
SEC. 2.30
SILL FROM 2 X 6
WINDOW SILL
FLASHING & DRIP
FLR. JSTS. @ 16" O.C.
FASCIA
2ND FLOOR DETAIL
HARDWARE STORE
TULSEY TOWN, OKLA
(c.1905)

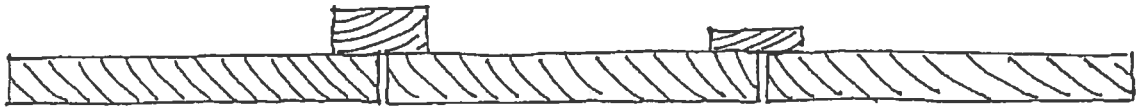


FRONT WALL SECTION

OVERLAND STAGE OFFICE
VIRGINIA CITY, NEVADA

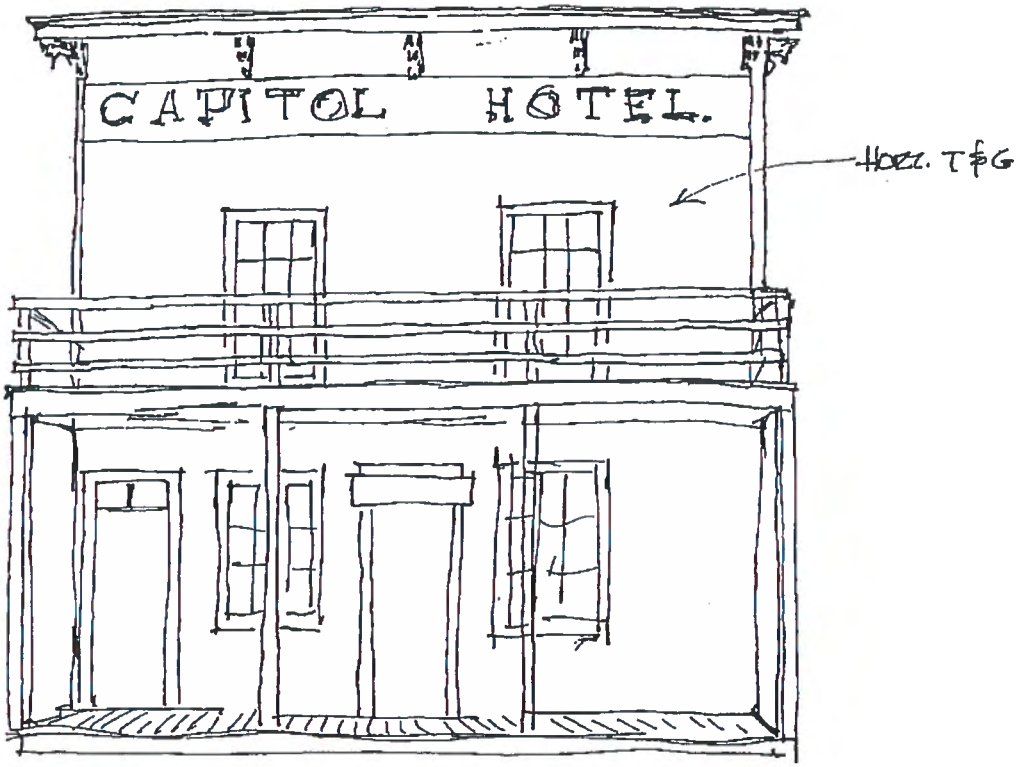


TYPICAL HORIZONTAL WOOD DROP SIDING



VERTICAL ROUGH SAWN BOARD & BATTEN SIDING

SEC. 1.30



CAPITOL HOTEL – BISMARK, DAKOTA (1876)

OFFICE BLDG. - OMAHA CITY, NEB. (1862)