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Land Use

Section 3.1 - Introduction

The Comprehensive Plan Land Use Element is the product of an extensive review of existing physical conditions and planning influences, which included the desired needs of citizens and elected officials. The culmination is a balance of that analysis of likely future needs against the desire to retain community character.

The Land Use Element identifies land uses for all areas within the City's incorporated limits and unincorporated Urban Growth Area (UGA). Although this is the City's Land Use Element, it is not intended for implementation by the City alone. Successful implementation of its policies will depend upon the supportive action of the County who is responsible for development within the unincorporated UGA.

The Land Use Element recognizes that the future of the urban and rural areas within the county are inseparable. Unless the city provides sufficient housing opportunities within existing urban areas affordable to households of all income levels, the pressures to build in agricultural areas will only increase. Consequently, the city must develop a livable urban community that meets the needs of the area's growing population, as well as provide infrastructure and services for industrial and

commercial development. However, unless both the city and county focus on the effective implementation of urban and rural policies, neither is likely to be fully successful.

Assumptions of the Comprehensive Plan

In order to prepare the Comprehensive Plan it was necessary to develop assumptions to be used as the future planning base. The following assumptions are used throughout each element of the Comprehensive Plan:

- ▶ The City's tax base and revenues will continue to increase.
- ▶ Population within the UGA will grow at a rate of 3.0 percent per year. The total increase of 29,191 will yield a 2032 population of 61,056 for the urban growth area.
- ▶ Within the next five years, City services could be extended to new and existing residential developments, as well as commercial and industrial developments, currently located outside the corporate limits, at the property owner's request and expense.
- ▶ Additional water rights will be available to adequately meet land use needs.

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Organization

The Land Use Element consists of the following sections:

- ▶ Section 3.2 presents land use goals and policies for the UGA and the applicable policies from the County Wide Planning Policies.
- ▶ Section 3.3 describes existing land use and zoning and discusses new land use distributions under the Comprehensive Plan.
- ▶ Section 3.4 presents information on population trends and the capacity of the land to accommodate the types and densities of growth projected within the UGA.
- ▶ Section 3.5 presents information on industrial and commercial land use trends.
- ▶ Section 3.6 addresses environmental issues associated with land use. The environmental analysis focuses on broad potential effects of the Comprehensive Plan.

Section 3.2 - Goals and Policies

County-Wide Planning Policies for Grant County

The Growth Management Act, Chapter RCW 36.70A.210 requires Grant County to adopt a “county-wide planning policy” containing written statements to be used solely for establishing a county-wide framework from which county and city comprehensive plans are developed and adopted pursuant to the Growth Management Act. This framework ensures that city and county comprehensive plans are consistent as required in 36.70A.100.

The County-wide policies which relate to land use are listed below:

POLICY 1: POLICY REGARDING URBAN GROWTH AREAS AND THE DESIGNATION OF URBAN GROWTH BOUNDARIES

- I. Designation of Urban Growth Areas/ Boundaries
 - A. An Urban Growth Area (UGA) shall be designated for each city and town in Grant County (RCW 36.70A.110).
 - 1. Urban growth shall be encouraged within designated UGA’s.
 - 4. A UGA may include territory that is outside of the city or town if such territory is characterized by urban growth or is adjacent to territory already characterized by urban growth.
 - B. UGA’s based upon the population forecast made for Grant County by the Washington State Office of Financial Management, shall include areas and density sufficient to permit the urban growth that is projected to occur in Grant County within the next 20 years. Each UGA shall permit urban densities and shall include green belt and open space areas (RCW 36.70A.110)(2).
 - C. Each city and town in Grant County shall provide to Grant County a UGA with urban

growth boundaries for its jurisdiction (RCW 36.70A.110)(2).

- 2. UGA’s which includes territory outside the corporate limits of a city or town, shall be established by examining criteria including, but not limited to, the following:
 - a. Existing commercial and residential developments bordering the corporate limits of the city or town.
 - b. Estimated population growth of the city or town.
 - c. The capacity of the city or town for expanding urban governmental services as defined in RCW 36.70A.030(16).
 - d. Availability of land suitable for development in the city or town or the area adjacent to the city or town.
- 6. UGA’s shall be reviewed every five (5) years and amended as necessary.
- D. Urban governmental services should be provided by cities and urban governmental services should not be provided in rural areas. Urban governmental services include those governmental services historically and typically delivered by cities and towns, and includes storm and sanitary sewer systems, domestic water systems, street cleaning services, fire and police protection services, public transit services, and other public utilities associated with urban areas and normally not associated with non-urban areas (RCW 36.70A.110)(3).
 - 1. Urban growth should first be located in areas already characterized by urban growth that have existing public facilities and service capabilities.
 - 2. Urban growth should secondarily occur in areas already characterized by urban growth that will be served by a combination of both existing public facilities and services that are provided by either public or private sources.
- E. Commercial and industrial development

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must be confined within a UGA if urban governmental services are required or cannot be supplied by said development.

POLICY 2 & A: POLICIES TO PROMOTE CONTIGUOUS ORDERLY DEVELOPMENT AND THE PROVISION OF URBAN GOVERNMENTAL SERVICES TO SUCH DEVELOPMENT.

II. Phasing of Urban Development

In order to achieve the intent of the State of Washington's growth management legislation, Grant County shall consult with each city and town within Grant County and each city or town shall propose the location of an Urban Growth Area (UGA). Grant County shall designate UGA's after holding the aforesaid consultations, which will be associated with each city and town in Grant County and further, shall designate a rural area surrounding the established UGA according to the following [RCW 36.70A.110(2)]:

- A. A short term urban growth boundary shall be established within the UGA within which urban growth will occur over the next ten years. Policies and actions will emphasize urban land uses and the provision of urban governmental services by cities and towns and the intended gradual phasing outward from the corporate limits of the city or town as opposed to converting undeveloped land into unplanned sprawling low density development [RCW 36.70A.020(1) and RCW 36.70A.020(2)].
- B. A long term urban growth boundary shall be established within the UGA within which urban growth will occur over the next eleven (11) to twenty (20) years as urban growth expands beyond the short term urban growth boundary. Policies and actions will emphasize planning for the longer term and will continue to emphasize urban land uses and the provision of urban governmental services by cities and towns and the intended gradual phasing outward from the

short term urban growth boundary as opposed to converting undeveloped land into unplanned sprawling low density development (RCW 36.70A.020(1) and RCW 36.70A.020(2)).

IV. Provision of Urban Governmental Services, Public Facilities, and Public Services:

Cities should be the primary providers of urban governmental services, public facilities, and public services in the UGA [RCW 36.70A.110(4)].

V. Policies on Development Standards:

All development within a UGA but outside the current corporate limits of a city or town shall conform with all city construction standards, performance standards, land use, and circulation patterns. Any development proposed within a UGA but outside the corporate limits of a city or town shall be jointly reviewed by the city and county to ensure compliance with the aforesaid and the intended development goals and requirements as stated in both the city and county comprehensive plans.

POLICY 2B: URBAN DENSITIES-DEFINITION OF LOT SIZES

- I. Urban densities typically make intensive use of land to such a degree as to be incompatible with the primary use of such lands for the production of agricultural products or mineral resources. When allowed to spread over wide areas, urban growth typically requires a high level of urban governmental services. (Based on RCW 36.70A.030(14).

Recognizing that a variety of urban densities will occur within each municipality and urban growth area, that each municipality's vision of its future is different, and that any one minimum density designation for urban growth within such areas would be overly restrictive and inappropriate for inclusion within a regional policy:

- A. It is appropriate that urban densities within the corporate boundaries of each city be defined by such jurisdiction in its comprehensive land use plan.
 - B. Urban densities within designated urban growth areas, but outside the corporate boundaries for adjacent cities, shall be designated jointly by the adjacent city and county in each jurisdiction's comprehensive land use plan.
 - E. The comprehensive plan of the county and of each city shall be coordinated with, and consistent with, the comprehensive plan of other counties or cities with which the county or city has in part common borders or related regional issues (based on RCW 36.70A.100)
 - C. Discourage urban encroachment on agricultural areas.
 - D. Encourage the determination of land use by the inherent capability of the land to sustain that use without creating problems that require a publicly funded solution.
- III. Establishment of Zones in UGA's:
- City, town and county governments shall:
- A. Encourage the establishment of zones in UGA's which allow a variety of land uses.
 - B. Establish zones in UGA's which discourage lineal or strip development.
 - C. Encourage land uses which require medium size lots or lower intensity usage which will serve as a buffer between rural areas and urban areas.
 - D. Encourage the development of vacant and unused lands within the corporate limits of each city or town.
 - E. Encourage the location of business and industry in clusters where appropriate in or near the towns and cities except where they would cause or allow a public nuisance.
 - F. Encourage city services be extended to areas adjacent to cities prior to serving outlying areas.

POLICY 6: POLICIES FOR JOINT COUNTY AND CITY PLANNING WITHIN URBAN GROWTH AREA

- I. Zoning, Subdivision Controls, Development and Land Use Compatibility:
The zoning and subdivision ordinances and performance standards adopted in the UGA's and the related policy planning measures should be used to implement the provisions of the Growth Management Act and the comprehensive plans of each city, town and county to ensure development and land use which are compatible with surrounding uses and which do not create traffic, safety or health hazards, or undue adverse economic impacts.
- II. Development of Lands in UGA's:
City, town, and county governments shall:
 - A. Encourage the development of lands in the UGA's rather than allow the inappropriate conversion of undeveloped rural lands into urban sprawling, low density development. [RCW 36.70A.020(1) and RCW 36.70A.020(2)].
 - B. Encourage the development of lands adjacent to the incorporated limits of a city or town prior to developing outlying areas in a UGA
- IV. Community Councils and Special Purpose Districts: Established community councils of unincorporated urbanized areas and all special purpose districts should be made aware of and encouraged to comment on developments proposed within or adjacent to the urbanized area in which they reside.
- V. Agreement Between Cities, Towns, Established Community Councils in Urbanized Areas and the County:
 - B. Agreements, which include joint development standards between cities, towns, established community councils in urbanized areas, and the county should be established. These agreements shall coordinate land use planning and decision making within UGA's.
- VI. Expansion of UGA's:
Cities, towns and the county shall:

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- A. Require that any expansion of a UGA be negotiated between the city or cities within the UGA and the county, with direct notice to affected landowners (pursuant to RCW 36.70A.140).
- B. Allow the inclusion of agricultural lands in a UGA after it has been determined that all other lands have been developed and that the agricultural lands to be added are marginal and do not possess prime and unique farmland soils as defined by the United States Soil Conservation Service, unless prime and unique farmlands are all that is available to that city or town.

POLICY 7: POLICY FOR COUNTY-WIDE ECONOMIC DEVELOPMENT AND EMPLOYMENT

- III. Encourage a diversity of industrial development.
 - C. Concentrate maximum efforts on the strengths of existing industrial park developments.
 - D. Support and maintain capital improvement projects for utilities and services to existing and proposed industrial park site development.
 - E. Target proposed industrial parks in, or as near to, existing or planned utility services as identifies by the joint urban growth boundary designations of the comprehensive plan.
 - G. That new development be encouraged which provides the most positive overall impact on the environment, quality of life and services within Grant County.
 - H. Encourage each community to develop their own Community Development Task Force/Response Team. This team would be a cross-section of local business, agencies and community leaders organized for the purpose of bringing together stronger planning and communication links concerning current and future community needs, schools, housing, sewer, water, and other infrastructure needs.

- IV. Direct commercial activity towards existing and proposed regional and local transportation access.
 - A. Encourage commercial, and industrial distribution centers at highway interchanges serving the urban areas.
 - B. Maximize the extent of existing industrial and commercially zoned property.
 - C. Encourage the development of commercial centers, where the need has been established, and/or where future planning consistent with the comprehensive plan has them established.

POLICY 15: POPULATION FORECAST DISTRIBUTION

- I. County-wide projected population shall be allocated among jurisdictions through the combined application use of the following factors applied to each jurisdiction:
 - A. Documented historical growth rates over the last decade, the last two (2) decades, and the last two (2) years.
 - B. Developing or current planning programs which a jurisdiction has, and which identify quantitative increases in business and industry development, and housing construction activity.
 - C. Intangibles.

Goals and Policies of Land Use Element - City of Moses Lake

The Land Use Element establishes an overall policy framework for land use. The Zoning Ordinance, zoning maps, and other development related regulations carry out or “implement” the intent and directives outlined in the element. The Land Use Element is intended to provide the necessary guidance and context in which land use decisions are made, including the creation, administration, and amendment of the zoning ordinance. RCW 36.70A.070 of the Growth Management Act requires

that all Comprehensive Plans required to plan under Growth Management "...shall consist of a map or maps, and descriptive text covering objectives, principles, and standards used to develop the comprehensive plan." The following goals and policies were adopted:

GENERAL LAND USE

GOAL 1: GROWTH SHALL OCCUR IN A MANNER THAT BALANCES THE PACE OF DEVELOPMENT WITH THE CITY'S ABILITY TO PROVIDE PUBLIC FACILITIES AND SERVICES WITHIN THE URBAN GROWTH AREA.

POLICIES

- 1.1 The City shall encourage cost effective development adjacent to urban areas where adequate public facilities and services exist or can be provided in a timely and efficient manner.
- 1.2 The City shall coordinate the planned extension and improvement of public utilities and services with public and private development consistent with the Capital Facilities Element.
- 1.3 All new construction within the UGA shall connect to public or private water and/or sewer systems except as noted in the Water and/or Sewer Utility policies in the Utilities Element.
- 1.4 Infill developments that are scaled and designed to fit their surroundings are encouraged on properties suited to urban development.
- 1.5 The City shall not issue any development permits which result in a reduction of the Level of Service (LOS) standard for the public facilities identified in the Capital Facilities Element, Utilities Element, and/or Transportation Element.
- 1.6 All development shall consider the natural setting of the City and shall be required to preserve its natural assets, including viewsheds, sensitive and critical areas.

- 1.7 Development regulations should provide for an appropriate level of flexibility while balancing community goals and the need for predictability in decision making.

GOAL 2: THE CITY SHALL CONTINUE AND STRENGTHEN THE PARTNERSHIPS THAT FOSTER COMMUNICATION AND COORDINATION AMONG RESIDENTS, THE BUSINESS COMMUNITY, AND OTHER GOVERNMENTAL ENTITIES IN THE MOSES LAKE AREA.

- 2.1 The City shall actively coordinate the information exchange and review process between city and county governments, regional agencies, and citizen groups for all applicable land use actions.
- 2.2 The City recognizes that Grant County is the jurisdictional agency on all land use actions within the unincorporated UGA. Community Development Department staff shall continue to provide comments for the record on significant land use actions.
- 2.3 Interlocal agreements with Grant County should be established for the development of land within the City's unincorporated UGA. These agreements should address potential land use, zoning, development standards, impact mitigation, as well as other relevant issues.

ANNEXATION

GOAL 3: THE CITY SHALL ANNEX ONLY THOSE PROPERTIES WHERE URBAN SERVICES ARE APPROPRIATE AND CAN BE REASONABLY PROVIDED.

POLICIES

- 3.1 In no case shall an annexation be allowed which may cause the LOS of any service to fall below the acceptable standard, unless mitigation which restores the LOS within six years of annexation will be provided.

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- 3.2 The City shall encourage annexation of contiguous areas within the unincorporated UGA that already receive city water and/or sewer.
- 3.3 The City should consider requests for annexation for properties within the UGA.
- 3.4 The proposed land uses and zoning shall comply with the comprehensive plan.
- 3.5 Individual annexation areas should be part of logical, orderly growth for the city and should avoid irregular boundaries. Islands of unincorporated areas and City peninsulas should be avoided. Peninsulas should be allowed only if needed to serve other areas. Lands closest to City boundaries should annex before areas further out.
- 3.6 Funding Public Facilities in Annexed Areas:
 - The property owners should fund the public facility improvements necessary to serve new development. The funding requirements shall be consistent with applicable City of Moses Lake policies and regulations.
 - If an area annexing to Moses Lake requires public facility improvements to correct health and safety related problems, the property owners within the annexed area should fund these improvements.
 - If an area annexing to Moses Lake has public facilities that do not meet City standards and the property owners or residents want to improve the facilities to meet City standards, the property owners should fund those improvements, or the proportion of those improvements, that do not have a citywide benefit. The property owners are not required to improve these facilities, but may choose to do so.
 - Public facility improvements within annexed areas that have a citywide benefit should be considered for funding through City revenues as part of the capital facilities and improvements planning processes.
- 3.7 Newly annexed territory should assume its equitable share of the City's bonded indebtedness.
- 3.8 Applicants for annexations are encouraged to apply jointly with other interested property owners to reduce costs for the applicants and

enable the City to process annexation applications more efficiently.

RESIDENTIAL LAND USES

GOAL 4: THE CITY SHALL ENCOURAGE A RANGE OF HOUSING OPPORTUNITIES THROUGH ITS RESIDENTIAL LAND USE DESIGNATIONS FOR ALL CITIZENS THROUGHOUT THE URBAN GROWTH AREA.

POLICIES

- 4.1 Densities should be set to encourage affordable housing stock that includes a range of housing types that meets the housing needs of all segments of the community.
- 4.2 The City shall protect and preserve the character and quality of existing residential neighborhoods by strengthening the code enforcement program to maintain a desirable neighborhood environment.
- 4.3 Residential neighborhoods should provide for appropriately-scaled schools, churches, home occupations, small-scale neighborhood commercial uses, parks, open spaces, day care facilities, and other appropriate uses.
- 4.4 The City shall assure that each neighborhood has safe and reasonable access to schools, shopping facilities, and recreational areas without mandatory dependency on the use of the automobile by providing pedestrian and bike paths and by allowing corner stores in suitable locations to serve everyday needs of the neighborhood.
- 4.5 Corner stores and other small-scale commercial uses provide a community gathering place, reduce the need to drive for everyday needs, increase residents' health by encouraging walking or biking, and help keep money within the local economy.

- 4.6 To decrease inefficient use of land, residential density should be increased in ways that will not negatively affect existing neighborhoods.

RESIDENTIAL REDEVELOPMENT AREAS

GOAL 5: TO STIMULATE DEVELOPMENT IN ECONOMICALLY DISADVANTAGED RESIDENTIAL AREAS THAT MAY BE STAGNANT OR IN NEED OF REDEVELOPMENT DUE TO INADEQUATE PUBLIC IMPROVEMENTS, PUBLIC FACILITIES, OPEN SPACES, UTILITIES OR OTHER IDENTIFIED FACTORS.

POLICIES

- 5.1 The City shall coordinate public and private actions which shall improve the quality of the environment, the economic, social or physical conditions in redevelopment areas, when private enterprise acting alone could not reasonably be expected to eliminate inadequacies to typical public improvements and services.
- 5.2 The City shall use all available federal, state, and county programs as well as private and non-profit options, for funding alternatives.
- 5.3 The City shall create flexible development regulations that encourage and foster revitalization of the areas while promoting the sound development and utilization of the area compatible with established land uses.
- 5.4 Properties within the Residential Redevelopment Area designation retain the underlying zoning, but are eligible for optional development techniques. All properties with wetlands or other critical areas on site are subject to the critical areas and wetlands regulations.

NONCONFORMING LAND USES

GOAL 6: ELIMINATE NONCONFORMING LAND USES THAT IMPEDE THE SUCCESS OF THE COMPREHENSIVE PLAN AND POSE A THREAT TO THE PUBLIC HEALTH OR SAFETY.

POLICIES

- 6.1 The City shall strive to make existing land uses compatible with the Comprehensive Plan.
- 6.2 The City shall only allow the expansion of nonconforming uses which do not detract from the intent of the Comprehensive Plan.
- 6.3 Whenever possible, nonconforming uses shall be encouraged to conform to existing development regulations. Termination should be considered the last resort.
- 6.4 Private property rights shall be recognized and balanced against the general welfare of the community, and the goals of the Comprehensive Plan.
- 6.5 If the termination of a nonconforming use is deemed appropriate, a reasonable amount of time prior to cessation of the use shall be determined for the property owner to amortize his/her financial investment.

COMMERCIAL LAND USES

GOAL 7: TO CREATE AN ATTRACTIVE AND WELL-DISTRIBUTED SYSTEM OF COMMERCIAL LOCATIONS TO SERVE COMMUNITY NEEDS.

POLICIES

- 7.1 Moses Lake's Central Business District shall be the major retail, office, entertainment and

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- arts center for the community.
- 7.2 Other commercial areas shall complement downtown and help to meet other community needs.
 - 7.3 Strips of commercial uses shall be avoided. Commercial areas of all types should be compact, allow for walking between businesses, and be located at an intersection of arterials or be bounded by arterials or other boundaries such as topography, that would discourage commercial development in long, narrow strips. Commercial uses should be designed so that impacts on adjacent uses will not pressure adjacent uses to convert to commercial uses.
 - 7.4 New commercial development should be encouraged to locate within existing commercial areas in order to enhance the area's economic viability.
 - 7.5 Maintain an adequate supply of suitable commercial sites to meet the anticipated demand for the planning period.
 - 7.6 Residential properties fronting onto arterial roadways may have the potential for transition to commercial uses. Property will only be considered for transition as part of an orderly outward expansion of similar uses, an existing zone, or to facilitate infill development.
 - 7.7 Neighborhood commercial uses may be allowed in all residential zones to enhance the livability of neighborhood districts, provided the use is intended to serve the immediate neighborhood retail needs, i.e. convenience grocery store, cleaners, pharmacy, etc. The conditional use permit process shall be utilized to identify potential negative impacts and determine appropriate conditions of approval if the impacts can be adequately mitigated.
 - 7.8 The City shall adopt programs to redevelop, upgrade, and enhance the visible commercial areas to include incentives for existing development to comply with current landscaping codes.
 - 7.9 Because they help add to the area's vitality, residential uses shall be allowed and encouraged in all commercial zones provided they do not conflict with ground level commercial floor areas.

GOAL 8: THE CENTRAL BUSINESS DISTRICT SHOULD BE DEVELOPED AS A UNIQUE COMMERCIAL DISTRICT.

POLICIES

- 8.1 The City will encourage and support the Moses Lake Business Association and/or interested parties to develop a downtown plan.
- 8.2 The City will develop an attractive Central Business District with public parking, landscaping, and pedestrian access, and continue to develop, and participate in, upgrade programs such as the downtown paver project.
- 8.3 All development and renovation within the Central Business District should adhere to the design guidelines currently in place identified in an adopted downtown plan.
- 8.4 Encourage office and retail developments that increase public enjoyment of the lake and other natural features.
- 8.5 The City shall promote Neppel Landing Park as an integral part of the CBD by further developing the site as a focal point, defining a park entrance, and creating connections to the CBD, McCosh Park, and other parks. The City shall consider the need for parking and the importance of safe pedestrian crossings on Broadway in the park design.
- 8.6 The City shall encourage a pedestrian-oriented character for the downtown area, to include, but not limited to, widened, improved pedestrian walkways, upgraded store fronts, pedestrian seating, and visual interest amenities.

NEIGHBORHOOD COMMERCIAL CENTERS

GOAL 9: THE CITY SHALL IMPLEMENT A NEIGHBORHOOD COMMERCIAL CENTER ZONE THAT IS GENERALLY FOCUSED AROUND KEY

INTERSECTIONS OF THE TRANSPORTATION SYSTEM THAT LINKS NEIGHBORHOODS AND PROVIDES A “PEOPLE PLACE” AS WELL AS A COMMERCIAL FOCUS FOR BUSINESS. A KEY CHARACTERISTIC IS ITS PEDESTRIAN ORIENTATION, WITH STREET-FRONT WINDOWS, ATTRACTIVE LANDSCAPING, SCREENING AND SIDEWALKS.

POLICIES

Pedestrian-oriented Neighborhood Commercial Centers, focused around major intersections in transportation corridors, can help provide the sense of a “people place” that the neighborhoods bordering the corridors need. A Neighborhood Commercial Center not only helps mitigate the corridors’ transportation impacts on residential areas, it can also provide a commercial focus for the businesses bordering the corridor.

Inherent to a successful pedestrian environment is the ability to walk continuously along the front of stores and see into the building interiors (e.g. shop display windows) instead of into parking lots. Thus standards regarding a site’s design-building setback, landscaping, fencing, signage, sidewalks, and automobile access and parking—are the important issues.

- 9.1 The following criteria shall guide the development of the neighborhood commercial center zoning district and subsequent development decisions:
- Through public and private project design and regulation, create a recognizable, compact, pedestrian Neighborhood Commercial Center.
 - Encourage new construction rather than the conversion of existing residential structures to commercial uses.
 - Combine parking placement and build-to-suit standards to achieve compactness and pedestrian orientation, creating a focal point emphasis in

- the neighborhood commercial center. Parking should be along the street front, behind, or beside buildings.
- Achieve pedestrian transition between buildings, streets, and adjacent properties.
 - Require developments to incorporate small-scale pedestrian amenities such as benches and canopies, in order to convey the impression of a residential center and community focal point.
 - Employ appropriate design elements to blend in with the character of the residential neighborhoods.
 - Include substantial areas of glass in the design of ground level retail and service structures and require building entrances to face the street.

INDUSTRIAL LAND USES

GOAL 10: ENCOURAGE THE DEVELOPMENT OF DIVERSIFIED INDUSTRIAL AND MANUFACTURING ACTIVITIES TO PROVIDE EMPLOYMENT IN THE AREA, STRENGTHENING THE ECONOMY AND THE TAX BASE.

POLICIES

- 10.1 The City shall not provide water and sewer services outside the UGA for industrial use.
- 10.2 The City shall continue to coordinate with the Grant County Economic Development Council, Port of Moses Lake, Public Utility District, and other regional agencies’ efforts to retain and attract industrial and manufacturing activities in the area.
- 10.3 Industrial and manufacturing recruitment efforts shall be supported by a range of procurable large, open, attractive light- and heavy-industrially zoned development sites located within the UGA.
- 10.4 Industrial lands should not attract land uses which are more appropriate in commercial areas.

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- 10.5 Industrial lands shall be located in areas that maximize available and planned infrastructure, including major transportation corridors.
- 10.6 The City shall protect the natural and built environment by reducing threats posed by hazards, nuisances, incompatible land uses, and environmental degradation, through mitigation, buffers, etc. Through the permit process, adequate safeguards and requirements shall be enforced as conditions of approval. Uses unable to mitigate significant negative impacts to the environment shall be prohibited.
- 10.7 Industrial uses should be discouraged from locations adjacent to natural waterways (creeks, lakes, etc.) to protect sites from industrial waste and preserve lakefront for public use and enjoyment.
- 10.8 Industrial land should be separated from incompatible uses. Transition zoning, buffers, and other techniques should be used to protect industrial designations and nearby uses from land use conflicts.
- 10.9 The City shall support private sector efforts in the development of industrial sewage treatment plants, and/or alternative wastewater treatment methods, which shall decrease groundwater degradation and allow for continued industrial growth.

variety of tools, including, but not limited to, conservation easements; mitigation; land and habitat restoration; development design criteria (e.g. clustering, density bonuses); encouragement of private land preservation efforts, acquisition of key parcels, and critical areas policies and regulations.

- 11.2 Lands which contain unique natural features or resources, exemplary ecosystems, critical areas, or exceptional scenic values, particularly those threatened by development, or lands where development may result in environmental damage, should be preserved as natural undeveloped open space.
- 11.3 Public access to critical areas should be based on the ability of the resource to support the use.
- 11.4 Lands which border on and would buffer resource lands or provide separation between urban and rural areas or incompatible land uses, or which may contribute to the continuity of an overall trail or open space system, or which may be preserved for passive recreation activities related to natural resources should be preserved.
- 11.5 City-owned shorelines shall be accessible to the public, subject to regulation protecting public safety, sensitive habitat areas and wildlife.
- 11.6 The City should consider acquisition of open space when any of the following conditions apply:
 - 1. The open space area is especially important;
 - 2. The area is needed to link together key parts of the open space system;
 - 3. Public access or recreational use is desirable;
 - 4. The value is aesthetic; or
 - 5. Other methods do not promise permanent protection.

PARKS/OPEN SPACE

GOAL 11: TO PRESERVE OPEN SPACES WHICH CONTRIBUTE TO COMMUNITY CHARACTER, PROTECT RESOURCES AND ENVIRONMENTALLY SENSITIVE AREAS, AND ENHANCE RECREATIONAL, EDUCATIONAL, AND AESTHETIC OPPORTUNITIES.

POLICIES

- 11.1 The City shall preserve open space using a

Note: Parks are discussed in the Capital Facility Element.

ENVIRONMENTALLY SENSITIVE AREAS

GOAL 12: PROTECT AND PRESERVE ENVIRONMENTALLY SENSITIVE AREAS BY REDUCING THE NEGATIVE IMPACTS OF DEVELOPMENT.

POLICIES

- 12.1 Environmentally sensitive areas should be conserved and protected from loss or degradation.
- 12.2 The City will coordinate with appropriate agencies to identify and regulate the use of wetlands, essential habitat areas, and other critical lands within the urban growth area as development occurs.
- 12.3 Significant areas of wetlands, and undeveloped shoreline, should be kept as open space.
- 12.4 Planned Unit Developments (PUDs), clustering, and density transfers should be encouraged for both commercial and residential development to help retain significant natural features and sensitive areas as open space.
- 12.5 The sensitive area regulations should provide some economic use of all property within Moses Lake, taking into account the entire property.
- 12.6 Environmentally sensitive areas must be managed and maintained if they are to continue to provide benefits to the public. The City shall serve as a stewardship model for publicly owned wetlands, critical areas, or conservation areas, and shall encourage private land donations to ensure the viability of sites.
- 12.7 Public and private partnerships should be encouraged to maintain systems, enhance features, and ensure the long-term viability of critical areas, wetlands, or conservation areas.

- 12.8 Delineated wetlands, critical areas, and conservation areas shall be designated as environmentally sensitive areas on the future land use map as identified concurrent with the Comprehensive Plan annual amendments. The environmentally sensitive area designation should only be applied to the affected area within a parcel, lot, or tax number. Any residual areas of parcel or lot shall retain the existing land use designation and underlying zoning unless findings indicate it is no longer appropriate.
- 12.9 The City should inform persons who own land designated within the Moses Lake Comprehensive Plan as environmentally sensitive areas of Grant County’s current use taxation program. Written notification shall be provided to the property owner at the time the property is designated on the future land use map as an environmentally sensitive area. The property owner shall be advised to contact the Grant County Assessor’s office to obtain further information on the benefits of this program.
- 12.10 The City shall pursue State and Federal financing, including grants and loans, available for the acquisition, development and maintenance of environmentally sensitive open space.

GROUND WATER AND AQUIFER RECHARGE AREAS

- 12.11 Moses Lake shall protect the quality of ground water used for public water supplies to insure adequate sources of potable water. The level of protection provided shall correspond with the potential for contaminating the municipal water supply aquifer. The overall goal should be nondegradation of ground water quality.
- 12.12 Wastewater, process water, and untreated stormwater should not be discharged to groundwater. Standards for the use of Underground Injection Facilities (including drywells, French drains, pipe drains, drain fields, bottomless catch basins, or other structures that provide subsurface fluid distribution by discharging fluids into the

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- ground) shall be per the most current version of the Stormwater Management Manual for Eastern Washington. All UIC wells shall be registered with the Washington State Department of Ecology.
- 12.13 Moses Lake should identify aquifer recharge areas and protect those areas from development to retain ground water infiltration points.
- 12.14 Moses Lake should adopt and implement an aggressive program to protect the municipal water supply aquifer.

WETLANDS

- 12.15 Because of the water quality, flood prevention, and habitat functions they provide, wetlands should be preserved. The size and environmental or habitat value of the wetlands shall determine the amount of development allowed.
- 12.16 Per State law, on a city-wide, long-term basis, Moses Lake shall achieve no net loss of wetlands environmental and/or habitat functions and values. Moses Lake should maintain wetlands acreage over the long term.
- 12.17 In undertaking public projects and deciding development applications, Moses Lake shall first seek to avoid wetlands impacts. Where impacts cannot be avoided, the impacts shall be minimized and any adverse impacts mitigated. On-site, in-kind mitigation generally is preferred. Other forms of mitigation may be allowed where consistent with these policies and Moses Lake's sensitive areas regulations.
- 12.18 Degraded wetlands should be enhanced and restored where possible.

SURFACE WATER

- 12.19 Moses Lake shall cooperate with Grant County and other local governments and state agencies in developing and implementing Watershed Action Plans and other types of basin plans for basins which include the City of Moses Lake.
- 12.20 Moses Lake should incorporate the applicable and reasonable recommendations of

Watershed Action Plans (basin plans) into its Comprehensive Plan, Development Regulations and capital facilities plans.

- 12.21 Moses Lake should support public education to protect and improve surface and ground water resources by:
- Increasing the public's awareness of potential impacts on water bodies and water quality.
 - Encouraging proper use of fertilizers and chemicals on landscaping and gardens.
 - Encouraging proper disposal of materials.
 - Educating businesses on surface and ground water protection best management practices in cooperation with other government agencies and other organizations.

FISH AND WILDLIFE HABITAT

- 12.22 Moses Lake shall work in conjunction with the appropriate agencies to protect critical wildlife habitats as defined by WAC 365-190-130.
- 12.23 Land use plans and developments should avoid impacts on critical wildlife habitats, and restore and enhance degraded or lower quality critical wildlife habitats.

CULTURAL RESOURCES

GOAL 13: ENCOURAGE THE IDENTIFICATION AND PROTECTION OF ARCHAEOLOGICAL AND SIGNIFICANT HISTORICAL SITES AND STRUCTURES.

POLICIES

- 13.1 Ensure that archaeological and significant historic sites and structures are identified within the UGA.
- 13.2 Ensure that archaeological and significant historic sites are not disturbed or destroyed through any action of the City, or through any action permitted by the City.
- 13.3 Encourage the conservation, preservation, and enhancement of the cultural heritage of the

City of Moses Lake.

COMMUNITY IMAGE AND DESIGN

GOAL 14: THE CITY WILL PLAN AND BUILD THE CITY'S GATEWAYS AND STREETS AS ATTRACTIVE PUBLIC PLACES.

POLICIES

- 14.1 Continue to implement the 2007 Destination Development, Inc. Community Branding, Development, and Marketing Plan that identifies the location and type of enhancements needed to improve the image of the City.
- 14.2 Major entrances into Moses Lake should be given symbolic markers and landscaping to create a gateway effect. Symbolic markers may include signs, monuments and plantings.

GOAL 15: THE CITY'S IDENTITY AND LIVABILITY WILL BE STRENGTHENED THROUGH THE THOUGHTFUL DESIGN AND ENHANCEMENT OF THE COMMUNITY'S CIVIC BUILDINGS, PUBLIC PLACES, AND LANDSCAPING.

POLICIES

- 15.1 Public buildings should serve as models of superior design quality and fulfill their role as community gathering areas and community

resources. Public art also should be encouraged in and around public buildings.

- 15.2 The area should continue to provide high quality and attractive parks and recreational areas through the City.
- 15.3 Parks, and schools, churches and other public and semi-public buildings, should be encouraged to locate on sites that give the community and neighborhoods landmarks and an identity.

GOAL 16: A HIGH QUALITY OF DESIGN FOR PRIVATE DEVELOPMENTS AND BUILDINGS WILL BE ENCOURAGED.

POLICIES

- 16.1 Promote excellence in site planning, architecture, and the design of landscaping, lighting, and signage in all commercial and residential developments.
- 16.2 Building and site design should encourage personal safety by making criminal access more difficult, using site planning techniques to give residents more control over the space adjacent to their homes, increasing opportunities for neighbors and those passing by to keep an eye on nearby activities, reducing "unclaimed" areas, i.e. spaces within a development that are not clearly public or private, and using design and construction approaches that reduce vandalism.
- 16.3 New developments should be designed to incorporate features to encourage alternative travel modes, such as transit, biking and walking.

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Section 3.3 - Land Use Distribution and Zoning

This section describes existing land use and zoning within the Corporate Limits and urban growth area (UGA), and evaluates the capacity of the land for future development, based on the amount and distribution of developed and vacant land.

Existing Conditions

The analysis of existing land use is based on 2013 Grant County Assessor records.

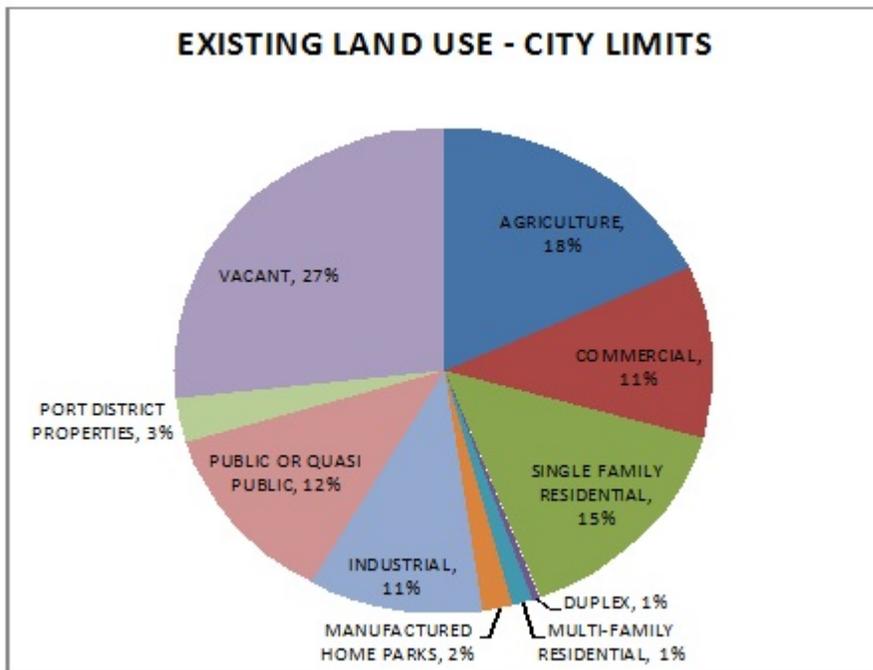
Land Use Distribution

In 1997 the City of Moses Lake covered approximately 8 square miles excluding ROW and lake area. In 2000 the City covered approximately 11 square miles, and the UGA encompassed over 32 square

miles. By 2014, the City has grown to 16 square miles, with the total UGA expanded to 34 square miles.

Industrial areas are primarily the Wheeler Corridor to the east and the area abutting Grant County International Airport to the north. Commercial areas generally follow the major streets, including SR-17/Pioneer Way, Stratford Road/Central Drive/SR-17, and East and West Broadway.

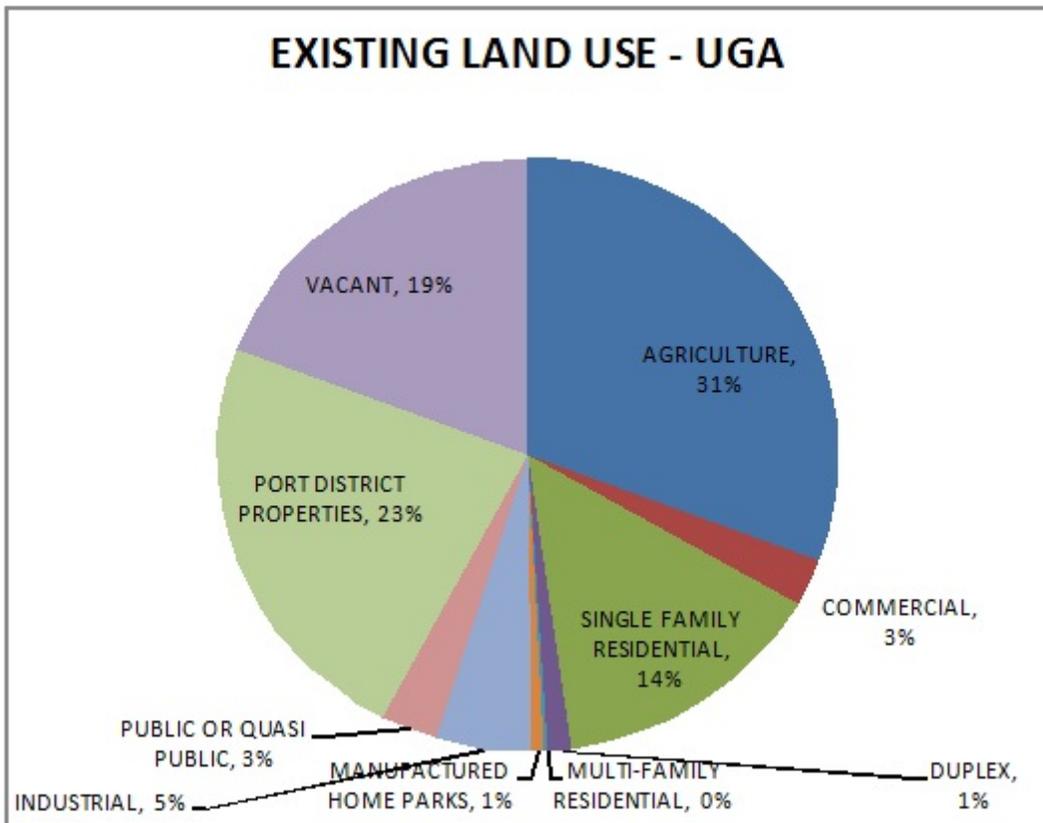
New residential development is predominantly located west and south of the Corporate limits. The Cascade Valley area, located to the west of the City limits, contains pockets of densely developed areas scattered among larger lots, typically 1-2 acres in size. A portion of the area is served by a water district while the majority of the property owners maintain private wells and septic systems. Some of Cascade Valley is within City limits, although not yet served by City water and sewer. South of the corporate limits is the Pelican Point area, a mid-to upper-income neighborhood developed with smaller lots and served by a community water system. South of I-90 the agriculture lands are transitioning to large lot residential development leaving pockets of undeveloped land. The Base Housing area, located northwest of the corporate limits, is a densely developed residential area that is predominantly built out. The Mae Valley area, west of the lake, has the greatest potential for additional residential development, as it has large tracts of vacant or agricultural land, some of them with associated water rights.



The existing land use distribution in the incorporated and unincorporated areas of the UGA is shown in the Land Use Map (figure LU - 1) and summarized in Table 1 and the associated charts.

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| Table 1 Existing Land Use Incorporated and Unincorporated UGA | | | | |
|---|-------------|-----------|--------------------|-----------|
| Use | City Limits | | Unincorporated UGA | |
| | Acres | % of area | Acres | % of area |
| Agriculture | 1840 | 18% | 4537 | 31% |
| Commercial | 1165 | 11% | 385 | 3% |
| Industrial | 1084 | 10% | 740 | 5% |
| Housing | 1840 | 18% | 2352 | 16% |
| Single Family | 1496 | 14% | 2048 | 14% |
| Duplex | 66 | 1% | 178 | 1% |
| Manufactured Home Park | 180 | 2% | 92 | 1% |
| Multi-Family | 98 | 1% | 34 | 0% |
| Port District | 306 | 3% | 3382 | 23% |
| Public | 1467 | 14% | 543 | 4% |
| Vacant | 2768 | 26% | 2933 | 20% |
| Total | 10,470 | 100.0% | 14,873 | 100.0% |



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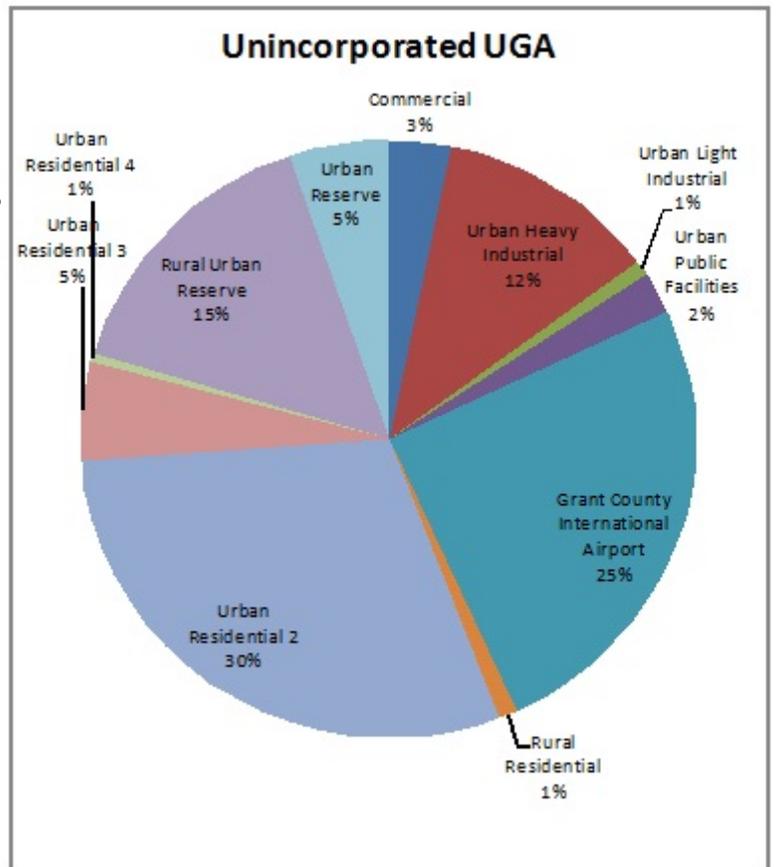
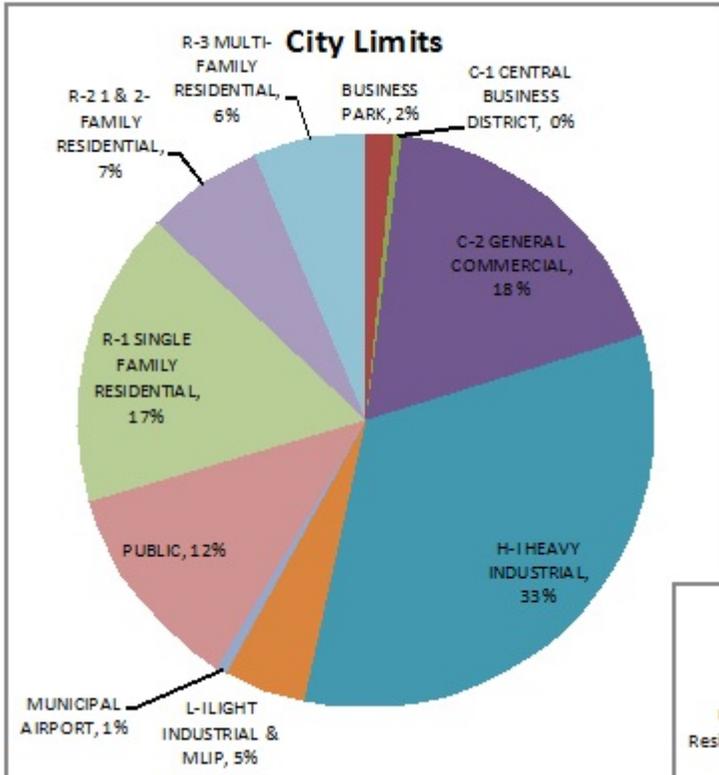
Existing Zoning

Zoning for the incorporated area is defined by the Moses Lake Municipal Code Chapter 18 entitled Zoning and shown in Figure LU-2. Zoning for

unincorporated Grant County is defined by the Grant County Zoning Ordinance and shown in Figure LU-3. Table 2 and the associated charts summarize zoning throughout the UGA.

| Table 2 Existing Zoning Incorporated UGA and Unincorporated UGA (in acres) | | | |
|---|--------|--------------------------|--------|
| Incorporated UGA | | Unincorporated UGA | |
| Zoning Category | Acres | Zoning Category | Acres |
| Agriculture | 0 | Agriculture | 0 |
| R-1 | 1677 | UR 2 | 5282 |
| R-2 | 662 | UR 3 | 946 |
| R-3 | 635 | UR 4 | 79 |
| C-1 | 39 | Rural Residential | 172 |
| C-2 | 1829 | Airport | 4464 |
| L-I & MLIP | 557 | COMM | 581 |
| H-I | 3355 | IL | 147 |
| Municipal Airport | 61 | IH | 2067 |
| Public | 1200 | PF | 402 |
| Business Park | 156 | Urban Reserve | 3618 |
| Total Incorporated Area | 10,171 | Total Unincorporated UGA | 17,758 |

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Land Use Within the Comprehensive Plan

The Comprehensive Plan is intended as a framework for future growth. The goals and policies provide tools for decision makers to rely on for development decisions, while the land use designations and future land use map depict the preferred long-range growth pattern and a commitment to a coordinated development approach.

Land Use Designation process: Land use classifications should depict areas where certain development changes are to be encouraged and other areas in which development is to be discouraged or prohibited. Typically, the land classifications include some combination of the following:

- a. Central Business District (CBD) and other major centers
- b. built up central city and older suburbs
- c. an urbanizing area
- d. holding zones or agricultural zones-perhaps indicating subareas of rather permanent commitments to agricultural uses with the remaining less critical lands sometimes intended in part as a long-term supply of land for future urbanization
- e. areas of critical environmental processes or cultural features which require special protection against the pressures of urbanization

(Chapin and Kaiser (1979) *Urban and Land Use Planning*, University of Illinois Press, Urbana and Chicago).

The classifications used in the Comprehensive Plan are essentially the same as the typical classification scheme, except that no agriculture zones or holding areas are proposed.

The land use designation process followed by the City for the 2001 Comprehensive Plan involved a review of the following conditions:

- 1) Current Zoning Districts
- 2) Existing Land Uses
- 3) Environmental Conditions

- 4) Functional Relationship to Surrounding Uses
- 5) Property ownership (for publicly-owned land)

Initially, the Zoning Map was used as a template for the Land Use Designation Map.

Existing land uses were evaluated within the zoning districts to determine if the character of development was consistent with the intent of the zone. If the predominant character of development was consistent with the intent of the zone, the boundaries were left unadjusted. If a particular land use was found to be encroaching into and dominating an area as a permanent use, then the land use designation boundaries were adjusted to reflect the preferred existing land use patterns.

Environmental conditions, such as delineated wetlands, conservation areas, and slopes, were identified and designated as sensitive areas. In the case of public facilities, the port district, and the parks/open space classification, land ownership was a primary land use designation factor.

Once the designation process was completed, the land use designations in acres were balanced against the projected demand for the applicable land use to insure an adequate and balanced land supply. Last, the designations were modified by the Planning Commission to reflect preferred growth patterns and densities.

The initial designations were further modified by additional reviews in subsequent years, based on property owner requests and evaluations of projected needs.

Future Land Use Designations

The future land use designations will provide lands within the corporate limits to accommodate a portion of the projected residential and commercial growth. Additional residential and industrial lands will be needed within the unincorporated UGA. The UGA primarily allows for expansion of industrial development in the northwest and easterly areas,

with residential development predominantly in the south and west perimeters. The existing residential areas included are currently being served by city water and sewer, or are experiencing growth such that suggests city services may be necessary in the future.

Land use designations were made which reasonably reflect the existing land uses and current zoning. In most cases it can be assumed that the existing land uses are consistent with the intent of the zoning and therefore consistent with the current zoning boundary. However, in areas where it was necessary to vary from existing zoning boundaries to conform with existing land use patterns, alleviate inappropriate zoning, or establish guidelines for new land use designations, criteria were established to direct the designation process. The criteria established are intended to guide the designations made for this comprehensive plan as well as future updates. The following categories define development patterns throughout the UGA and identify additional criteria used for designation purposes when the zoning was deviated from:

Low Density Residential (LDR) - Primarily single family, detached homes, accessory uses, public and semi-public uses. Residential density generally ranges from one to four dwelling units per acre. This designation should be implemented by the R-1 and R-4 zones.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the LDR designation:

1. Existing single family developments
2. If the area is undeveloped, it is proximate to a neighborhood of predominately single-family dwellings or is well suited to that use and is not suited to a more intense residential development.

Medium Density Residential (MDR) - Characterized by a mixture of single family detached homes, duplexes, and a variety of other housing types, accessory uses and public and semi-public uses.

Detached single family residences should predominate. Residential density generally ranges from four to eight dwelling units per acre. This designation should be implemented through the R-2 zone.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the MDR designation:

1. Existing mix of one or two family dwelling units.
2. If the area is undeveloped, it is proximate to a neighborhood of a mix of one and two family dwellings or is well suited to that use and is not suited to more intense residential development.

High Density Residential (HDR) - Apartments and densely-developed residential areas including planned residential developments with a density range generally from six to fifteen dwelling units per acre. A limited range of other uses may be permitted, such as some professional offices and some community services. Community services are defined as establishments primarily engaged in providing assistance, as opposed to products, to the community, i.e., day cares, athletic clubs, beauty salons, etc. This designation should be implemented through the R-3 zone.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the HDR designation:

1. Existing blend of high density multi-family residential development and one and two family dwelling units.
2. A predominantly residential area interspersed with commercial uses.
3. Residential land developed or vacant abutting a non-residential zone.
4. Residential area adjacent to an arterial interspersed with commercial uses.
5. The existing or planned public facilities are adequate to support residential development at this density.
6. If the area is undeveloped, the area should be

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- free of significant amounts of sensitive areas.
7. The area is convenient to employment or commercial areas or is adjacent to the downtown area.
 8. The area shall have adequate access to an arterial.
 9. The area is separated by topography or another appropriate boundary from incompatible uses. Buffering or a density transition may be used to separate this designation from lower density residential designations.

Residential Redevelopment Areas (RRA) -

Includes areas characterized by a range of residential uses with properties that may be economically disadvantaged due to one or more of the following factors: subdividing and sale of lots of irregular form and shape or inadequate size for standard development, or the existence of inadequate public improvements, public facilities, open spaces, and utilities that are not likely to be remedied by private enterprise or local government working independently.

The purpose is to stimulate development in stagnant areas or encourage redevelopment in areas densely populated, to improve the quality of the environment in the areas, cause the coordination of public and private actions to stimulate development, and improve the economic, social and physical conditions of the areas.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the Residential Redevelopment Areas designation:

1. Residential areas where one or more of the following conditions exist:
 - ▶ Subdivided lots of irregular form and shape or inadequate size for standard development;
 - ▶ Inadequate public improvements, public facilities, open spaces, and/or utilities.

Public Facilities - The public facility category contains public and institutional uses including

facilities operated by state, county, municipal, or other government agencies; public educational institutions; public libraries, hospitals, and a municipal airport. Public utilities, both privately and publicly owned, are included in this category.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the Public Facilities designation:

1. Existing public owned and/or operated facility.
2. Permanent facilities operated or owned by state, county, municipal, or other government agencies.
3. Future sites essential to the provision of privately and publicly owned utilities.

Commercial-Business District (CBD) -

Intensely developed commercial area that integrates retail, office, cultural and entertainment uses with a significant institutional service component such as finance and government offices. The city center area is intended to be the community focus. The area should attract people during the day and into the evening. Renovation efforts should include buildings and parks that symbolize the City's center. The park network will provide recreational opportunities for the entire City and places for people to gather and meet. Lake frontage should be enhanced and integrated into the downtown theme. Downtown development will be pedestrian-oriented and should be connected by bike trails and sidewalks to the remaining city. The downtown area is intended to accommodate growth in a compact form with a mix of uses that lessen trip lengths. This designation should be implemented by the C-1 zone.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the CBD designation:

1. Existing Central Business District area;
2. Areas of intensively developed commercial uses next to the Central Business District that have transitioned into permanent commercial uses consistent with the character of the CBD.

General Commercial (Retail and Services) - The general commercial category includes retail, wholesale, business and office land uses. Within this category are professional offices, hotels, motels, restaurants, recreational and entertainment uses; grocery stores, hardware supply, garden supply, repair and maintenance services. Other uses include residential uses not to conflict with commercial floor space, accessory uses, automobile-related uses, manufactured home sales, and uses that normally require outdoor storage and display of goods. This designation should be implemented through the C-2 zone.

Designation Criteria: Properties that generally meet the following criteria shall be considered for the General Commercial designation:

1. The area is within or adjacent to existing commercial area.
2. Residential areas that have transitioned from residential to permanent commercial uses fronting arterials or intersections;
3. The area is located along an arterial, easily accessible by an arterial, or within a commercial street network.
4. Areas adjacent to industrial areas with permanent commercial uses with little or no remaining vacant land appropriate for industrial uses.
5. The area should not result in the creation or extension of a commercial strip. The area should be compact, allow for walking between businesses where appropriate and be located at an intersection of arterials or be bounded by arterials or other logical boundaries. Commercial strip development, is typically a row of commercial uses one lot in depth and not associated with other commercial development.

Business and Office Centers (BOE) - The designation is intended to encourage high quality developments that combine offices, compatible light industrial and manufacturing uses, and other appropriate uses. A mix of compatible uses is encouraged to allow for internalization of trips and appropriate intensity of development. Sites and

structures are encouraged to be developed with quality architecture, landscaping, and site planning resulting in a campus-like atmosphere.

Permitted uses include offices, corporate campuses, public and semi-public uses, wholesaling and distribution. Light industrial and manufacturing uses may be conditionally allowed where the manufacturing use is located entirely within a building and will not generate noise, vibration or other negative impacts on adjacent uses. Retail commercial uses, restaurants, and similar uses are conditionally allowed as part of a master plan. Appropriate supporting uses should be allowed as part of an office complex, but professional offices and service uses that primarily serve the general public are prohibited.

Designation Criteria: Properties generally meeting the following criteria may be considered for the BOC designation:

1. Vacant land or partially developed with appropriate uses.
2. The area is located near an arterial or freeway. The arterial should include bicycle, pedestrian, and other amenities.
3. The area should be located adjacent to or on an existing transit line.
4. The area is located adjacent to, but outside of, existing or planned residential neighborhoods.
5. The area is separated by topography, a buffer or another appropriate boundary from incompatible uses.
6. The existing or planned public facilities are adequate to support the allowed uses.

Industrial - This category includes large tracts of land used for light and heavy manufacturing, fabricating, processing, warehousing, indoor and outdoor storage, and essential public facilities. Office uses are limited to accessory uses that support these primary uses. Limited supportive uses are allowed. It also includes natural resource-based industries that require land consumptive wastewater treatment methods, such as spray fields. In deciding

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which uses should be allowed, the protections provided by performance standards, permit conditions, and sensitive areas regulations should be considered. This designation may be implemented by the Light and Heavy Industrial zoning districts.

Due to the nature of the agricultural-based industries, connections to the main intra county access routes are as vital as interstate access and should be recognized as a factor to locational needs.

Designation Criteria: Properties that generally meet the following criteria shall be considered for the Industrial designation:

1. Existing uses are predominantly industrial in character.
2. The areas shall be located near corridors for the transportation of goods, such as highways, arterial streets and railways.
3. The existing or planned public facilities are adequate to support industrial uses.
4. The area is located outside an existing or planned residential neighborhood.
5. The area is separated by topography, buffers or another appropriate boundary from incompatible uses.
6. The area is developed for manufacturing uses or has large undeveloped parcels suitable for manufacturing uses.

Parks/Open Space - The Parks/Open Space category includes public and privately owned parklands or open spaces. This section may be implemented by the Public Zone.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the Parks/Open Space designation:

1. Existing public and privately owned parks
2. Future sites reserved for park development.

Sensitive Areas Open Space (SA) - The Environmentally sensitive area open space category includes lands that may have limited development potential

due to the significant environmentally sensitive areas on site, or land intended to remain in its natural state as long-term undeveloped open space. These lands typically include public and privately owned wetlands regulated by the wetlands ordinance, conservation areas, and areas with steep slopes regulated by the critical areas ordinance. Lands designated as conservancy or natural environment under the Shoreline Master Program may also be included in this category. A particular zoning district does not implement this designation. However, the Critical Areas Ordinances does protect these properties.

Designation Criteria: Properties generally meeting the following criteria shall be considered for the Environmentally Sensitive Areas designation:

1. Delineated and partially delineated public and privately owned wetlands;
2. Significant wetlands identified on the NWI maps;
3. Conservation areas (below 1050');
4. Important priority habitat and species sites as identified by the Washington State Department of Fish and Wildlife.
5. Sites designated as Natural or Conservancy under the Shoreline Master Program.

Port of Moses Lake - These properties are owned by the Grant County Port District #10 (Port of Moses Lake) and developed according to the Grant County Airport Master Plan. The Master Plan emphasizes the development of aviation related industries, or industries compatible with the airport operation. The Port of Moses Lake designation does not include the Municipal Airport that is owned by the City and designated as a public facility.

Designation Criteria: Only properties meeting the following criteria shall be considered for the Port of Moses Lake designation:

1. Properties owned by Grant County Port District #10;
2. Regulated by the Grant County Airport Master

Plan.

Overview of Future Land Use Plan

The Future Land Use Plan was established in 2001, at a time when development had occurred sporadically throughout the city and the unincorporated UGA, leaving pockets of vacant land that were costly to provide key urban services to. Historically the City has deferred the development costs to the developer, while the county has allowed development at densities low enough to support on-site water and septic systems. The low densities negated the need for the logical extension of water and sewer infrastructure, and/or annexation, and allowed significant development to occur immediately adjacent to the corporate limits at conditions below the city's community development standards. The combination of these actions, along with a national trend at the time of households choosing a rural lifestyle, the perception that it is cheaper to live in the county rather than the city, and the reduced initial development costs in the county, perpetuated the low density 1 - 2 acre tracts that surrounded the corporate limits.

At that time, the City of Moses Lake was confronted with balancing private property rights with the requirements of GMA to provide urban services. Existing patterns of development had to be recognized, private property rights had to be respected, and yet low density development could not be continued in order to feasibly extend water and sewer services into unincorporated areas without water and sewer services. The City and County worked jointly to resolve these issues. The City made services available upon request where feasible, while the County restricted development within UGAs to that which must obtain urban services, or will not preclude urban densities at a later time. The future land use plan attempted to balance these issues directly related to infill rather than proposing different land use scenarios.

Since 2001, the Future Land Use Plan (Figure LU-4) has been amended based on property owner requests where appropriate and further analysis or growth

patterns and compatibility as the area has developed. In 2012, LU-4 was compared to existing land uses and Grant County Land Use Designations within the UGA. Discrepancies were reviewed and changes made in those cases where the existing land use or Grant County designation was more logical than the designation shown on LU-4. An updated LU-4 was adopted as part of the 2012 amendment cycle.

The future land use plan identified designations based on existing patterns of development and land use regulations in place by both the City and the County. The result is a commercial emphasis in the area adjacent to the Central Business District between Broadway Extended and Wheeler Road. Industrial uses are along the Wheeler Corridor, Broadway Extended north of State Route 17, and near the Grant County International Airport. A range of residential densities is provided throughout the UGA with minimum and maximum densities recommended to implement the plan. Areas with high density ranges will eventually support public transit as a viable transportation alternative. The policies within the plan restrict commercial uses from locating in industrially designated areas and also protect neighborhoods from the continued proliferation of commercial districts encroaching into residential neighborhoods. Prior to 2001, policies allowed commercial development within industrial designated or zoned areas if performance standards were met.

In 2001, a significant residential growth area was thought to be the Cascade Valley area. The area was divided into low and medium residential designations. The majority of the low density development was expected to occur around the peripheral portions of the area with the bulk of medium density development occurring internally. Although Cascade Valley is not an island, it is surrounded by water on three sides with the majority of lake front lots already developed. A significant amount of land subdivision occurred in this area in the late 1990's, resulting in a considerable amount of residential construction and hundreds of vacant rights. The areas previously platted have been and

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will continue to develop as one acre lots. However, the large tracts of vacant land, mobile home parks, and multi-family development offered opportunity to create a different residential character outside of the existing neighborhoods and were designated medium density residential, thereby still requiring the extension of water and sewer services to support new development.

Although the area is within the city's service area, neither water nor sewer have been extended beyond the Cascade Valley Park at this time. However, services are available if costs are paid by the developer. In some cases the cost of extending infrastructure may be cost prohibitive due to location or scale of development proposed. As a result, alternative development options were adopted by the County within their updated Development Regulations which require development to connect to water and sewer when they become available, and develop in a way that would not preclude urban

densities at such a time as the services are available. These regulations have allowed development to continue, albeit low density, until such a time as services become available and higher densities can be supported.

In the time since the Comprehensive Plan was first adopted, it has become apparent that the logical location for additional residential growth is the Mae Valley area west of Moses Lake. This area is only sparsely developed, meaning further subdivision to urban densities is not precluded. City utilities have been extended along Westshore Drive, providing a backbone for further extensions. The land is suited to development, without many sensitive area concerns such as wetlands or steep slopes. Additionally, some of the land has water rights attached, an important consideration as the City has come close to exceeding its existing water rights allotment.

Table 3
Distribution of Future Land Uses Under the Comprehensive Plan

| Land Use Designation | City of Moses Lake | | | | | | Unincorporated UGA | | | | | |
|----------------------|--------------------|--------|-------------|-------------|-------------|-------------------|--------------------|--------|-------------|-------------|-------------|-------------------|
| | Developed | Vacant | Agriculture | Developable | Total Acres | Percent Developed | Developed | Vacant | Agriculture | Developable | Total Acres | Percent Developed |
| LDR | 1168 | 456 | 136 | 593 | 1760 | 66% | 1563 | 1343 | 2003 | 3346 | 4909 | 32% |
| MDR | 318 | 242 | 1 | 243 | 561 | 57% | 692 | 113 | 116 | 229 | 921 | 75% |
| HDR | 405 | 253 | 17 | 270 | 675 | 60% | 174 | 90 | 0 | 91 | 264 | 66% |
| RRA | 28 | 9 | 0 | 9 | 37 | 77% | - | - | - | - | - | - |
| Public | 808 | 0 | 0 | 0 | 808 | 100% | 370 | 52 | 0 | 52 | 423 | 88% |
| CBD | 37 | 1 | 0 | 1 | 39 | 96% | - | - | - | - | - | - |
| GC | 806 | 936 | 0 | 937 | 1742 | 46% | 155 | 151 | 295 | 447 | 602 | 26% |
| BOEC | 0 | 0 | 156 | 156 | 156 | 0% | 22 | 0 | 882 | 882 | 904 | 2% |
| Industrial | 1540 | 777 | 1439 | 2216 | 3756 | 41% | 853 | 428 | 923 | 1351 | 2205 | 39% |
| P/OS | 291 | 18 | 90 | 108 | 399 | 73% | 135 | 0 | 0 | 0 | 135 | 100% |
| SA | 32 | 31 | 0 | 31 | 63 | 51% | 14 | 0 | 0 | 0 | 0 | 97% |
| Port | 173 | 0 | 0 | 0 | 173 | 100% | 3384 | 672 | 290 | 963 | 4347 | 78% |
| Totals | 5606 | 2722 | 1840 | 4562 | 10,183 | 55% | 7364 | 2850 | 4510 | 7360 | 14,724 | 50% |

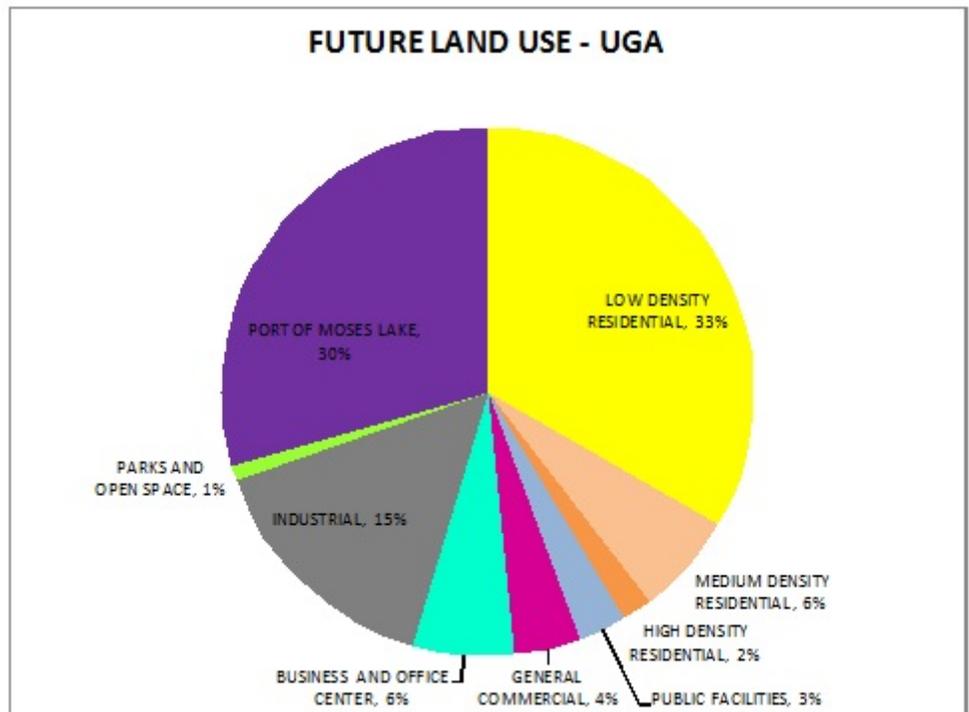
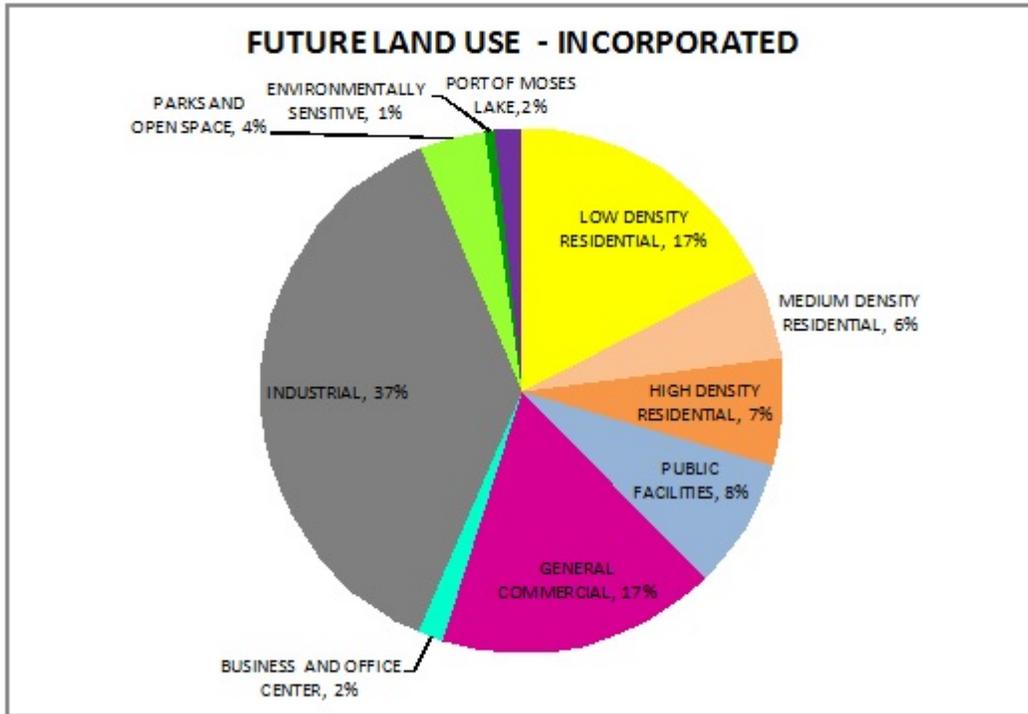
Future Land Use Patterns:

In 2001, Land Use Patterns under the Future Land Use Plan changed to designate commercially-developed land as commercial, as opposed to the previous industrial designation for much of the area within the corporate limits, and a medium density range of development (4-8 du's per acre) within much of the unincorporated UGA. Subsequent to

2001, large areas of industrial lands were added to the city limits, both in the Wheeler Corridor and near the Grant County International Airport. In 2012, the Future Land Use Map was amended to mostly conform to Grant County's land use designations for the UGA. In 2014, the main change was from Business and Office Centers to Commercial near the Port.

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Section 3.4 - Population

The land capacity analysis is based on the Land Use Inventory of vacant and developed land and a compilation by land use designation of developed and vacant land. The results were used to identify the capacity for additional population on vacant residential land.

Projected Population Changes

The County Wide Planning Policies require OFM County population projections to be allocated based on the average rate of growth from the last decade, the last two decades, and the last two years, as well as any programs which identify quantitative increases in business and industry development, housing construction activity or intangibles. In 2001, when the Comprehensive Plan was being drafted, the three required estimations produced the following yearly growth rates: 2.8%, 1.8%, and 2.2%. However, a 3.0% growth rate was agreed upon by the elected officials of the City of Moses Lake and the Grant County Board of Commissioners. The adjusted growth rate of 3.0% was assumed to balance the relatively high growth rates of the preceding period while anticipating the additional growth in the city's UGA as a result of Grant County implementing their Comprehensive Plan, which directs growth into the UGAs. The 3% growth rate has continued to reflect actual conditions, with the last decade growth being 3.6%, the last two decade growth being 4.1%, and the last two years growth being 1.5% due to the global economic slowdown since 2008. Outlook for industry in the surrounding Moses Lake area continues to be very positive.

| Year | City Limits ¹ | Unincorporated UGA ² | Planning Area Population Total |
|-------------------------------|--------------------------|---------------------------------|--------------------------------|
| 2010 | 20,366 | 11,499 | 31,865 |
| 2013 | 21,250 (OFM) | | |
| 2017 | 25,047 | 14,142 | 39,189 |
| 2022 | 29,037 | 16,394 | 45,431 |
| 2027 | 33,661 | 19,006 | 52,667 |
| 2032 | 39,023 | 22,033 | 61,056 |
| Population Increase 2010-2032 | 18,657 | 10,534 | 29,191 |

¹Source: Census 2010
²Source: Office of Financial Management, Census 2010 Redistricting Data, UGA Summary, Table 1: Population & Housing

Rational for Projected Population

The 3.0% population growth is consistent with the City's expectations of stable social and economic trends. Planned major industrial expansions, speculation of economic activities, in addition to the construction of a carbon fiber plant by SGL/BMW and a major expansion of REC Silicon, will continue to spur population growth. The 3% projection rate maintains a range of 22-26% of Grant County's total population. This range is slightly higher than the 19-24% range that has been documented since 1960; however, with the Growth Management Act, a higher percentage of the county's population should be located within UGAs. The 3% growth rate was also applied to the unincorporated UGA areas. At this rate, the population forecast for the City of Moses Lake is 39,023 through the year 2032. The unincorporated UGA population is projected at 22,033. Table 4 reflects the 3% growth rate and the overall increase in population through 2032 for the planning area.

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Capacity for Population

The assumed annual population growth of 3.0% would result in a population increase of 18,657 people for the incorporated area, and 10,534 people in the unincorporated UGA. The demand for residential units would increase by approximately 7,203 units in the corporate limits and an additional 3,547 units in the proposed UGA. Table 5 projects the total number of new housing units to be 10,750.

| Table 5 Population Based Residential Land Demand | | | |
|---|-----------------------|---------------------------|-----------------|
| | Additional Population | Population Per Household* | Potential Units |
| City Limits | 18,657 | 2.59 | 7,203 |
| Unincorporated UGA | 10,534 | 2.97 | 3,547 |
| Total | 29,191 | n/a | 10,750 |

*Source: 2010 Census

Table 6 presents an estimate of the additional capacity for residential development and population on vacant and agricultural land designated for residential development in the UGA. The capacity for new residential development was estimated assuming that such development will take place only in areas designated for residential use and that designated development densities will not be exceeded but developed to maximum capacity. Total vacant and agricultural land designated for residential use under the Comprehensive Plan totals approximately 4,789 acres. However, not all vacant land is considered developable and reductions must be made for various factors. The following reductions, or buildable land factors, were considered in estimating the buildable land:

- Land reserved for transportation right-of-way
- Land which is unlikely to develop due to physical constraints or critical areas on site
- Land necessary for the provision of public facilities such as parks and recreation sites
- Land considered unavailable for development

Based on previous detailed land use and capacity analysis prepared to support the preliminary UGA proposal, the Urban Land Use Analysis, in the Urban Lands Sub-element of the Grant County Comprehensive Plan, and UGA negotiations between county staff, city staff and elected officials, a 40% buildable land factor has been applied to the vacant and agricultural lands of the UGA.

Future Land Use Plan

The Corporate Limits provides 1,038 acres of residential land and the potential for 3,698 dwelling units. (See Table 6 for a description of vacant acres, potential units and additional population). The amount of buildable land was calculated at 40% of the gross vacant land in the corporate limits.

The Unincorporated UGA provides 3,751 acres of land for residential development (See Table 6).

Based on projected rates of population growth under the Comprehensive Plan, the demand for residential units will increase by 10,750. Vacant and agricultural residential land under the Comprehensive Plan is adequate for an additional 10,466 residential units. This is a shortage of 284 units. Looked at another way, the available vacant residential land can accommodate an additional population of 29,679, while the projected population increase is 29,191, leaving a slight surplus in capacity.

| Table 6 Urban Growth Area Residential Land Capacity By Land Use Designation | | | | | | | |
|--|-------------------|-------------------------------------|-------------------|---|---|-----------------------|---------------------------------------|
| Land Use Designation | Developable Acres | Preliminary & proposed plat acreage | = Available acres | Potential Units from Available Acres ² | Potential Units from preliminary & proposed plats | Total Potential Units | Additional Population ^{3, 4} |
| Low Density Residential | | | | | | | |
| Incorporated Area | 594 | -260 | 334 | 534 | 1019 | 1553 | 4,022 |
| Unincorporated Area | 3431 | | 3431 | 5490 | | 5490 | 16,305 |
| Medium Density Residential | | | | | | | |
| Incorporated Area | 231 | -10 | 221 | 707 | 88 | 795 | 2,059 |
| Unincorporated Area | 229 | | 229 | 732 | | 732 | 2,174 |
| High Density Residential | | | | | | | |
| Incorporated Area | 258 | -17 | 241 | 1446 | 87 | 1533 | 3,970 |
| Unincorporated Area | 91 | | 91 | 546 | | 546 | 1,622 |
| Incorporated Area Totals | 1083 | -242 | 796 | 2,687 | 1,011 | 3881 | 10,051 |
| Unincorporated Area Totals | <u>3751</u> | <u> </u> | <u>3751</u> | <u>6,768</u> | <u> </u> | <u>6768</u> | <u>20,101</u> |
| UGA Totals | 4789 | -242 | 4547 | 9,455 | 1,011 | 10,649 | 30,152 |

¹Vacant + Agriculture
²Potential Units =(Vacant Acres)(.40 Buildable Lands)(maximum density allowed in designation).
³Incorporated area population is calculated using the U.S. Census 2.59 PPH for the City of Moses Lake.
⁴Unincorporated area Population is calculated using the U.S. Census 2.97 PPH for Grant County.

Assumptions

- Land in agricultural use will be converted to residential use.
- Maximum densities will be achieved. This means 4 units per acre LDR, 8 units MRD, and 15 units HDR. Without water and sewer services, this density is impossible to achieve.
- Population per household will remain the same as in the 2010 Census. This may be an unreasonable assumption, as household size has been declining steadily nationwide.

Deficiencies

The Comprehensive Plan presents either a slight deficiency or a slight surplus in residential capacity, depending on whether more units are occupied at the lower City persons per household or the higher county average. However, until water and sewer are extended into the unincorporated areas, Grant County Health District standards will dictate the minimum lot size, which is likely to be 12,500 square feet to accommodate a septic system and ½ acre to accommodate a well and septic system. Until services are available, it is unlikely that a density of four or more units per acre will be achieved and more realistic to assume that two dwelling units per

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acre or less will be developed. So if portions of the UGA will be developed at less than the maximum assumed density, other portions will need to develop at a higher density in order to accommodate the entire expected population.

Higher densities will only be achieved if water and sewer services are available. The County and City

should jointly prepare a plan for the unincorporated areas that addresses future development, provides specific guidance on the establishment of future uses, defines future infrastructure improvements to accommodate proposed development, and ensures compatibility between the County's and City's Comprehensive Plans.

Section 3.5 - Commercial and Industrial Land Use

The commercial and industrial land capacity analysis is based on a review of developed and undeveloped commercial and industrial lands. Staff analyzed the functional relationship between historical population trends and commercial land needs to project the future commercial lands, while industrial land needs were based on past and current projects.

Economic Setting

Commercial and Industrial Land Trends

For a long time, the City has supported and encouraged commercial and industrial growth. Expanding medical services, retail and recreational opportunities, in conjunction with industrial growth, have facilitated a strong economic environment. Moses Lake's key location on Interstate 90 and State Route 17 has promoted not only industrial growth but tourism. The City has become the hub of Grant County because of its central location, accessibility by highway, rail, and air; and growing service industry. In addition, low cost electricity, a friendly regulatory environment, plenty of available land, and high speed fiber optic Internet access make Moses Lake ideal for commercial and industrial development.

Since the creation of the Columbia Basin Irrigation Project Districts in 1939, Grant County's agricultural industry has experienced steady growth (WA State Labor Market Economic History Report for Grant County, 1997). The County's strong agricultural base has spurred growth in associated industry, such as food processing, wholesale trade, and trucking. Agriculture, and agricultural-related industries, remain some of the largest employers in the region.

Although agriculture has been the largest employer in the region, manufacturing has now almost exceeded agriculture as the sector with the largest employee earnings in Grant County. While 25% of jobs in

Grant County are in agriculture, the Moses Lake area has noted diversification in the manufacturing industries. Ten of the 15 largest manufacturing employers in Grant County are located in the Moses Lake area. Employment growth has been rapid in the manufacturing sector and now includes aerial work platforms, carbon fiber, chemicals, nutritional supplements, metal fabrication and casting, automotive safety devices, computer-chip components, navigational equipment, etc.

According to the Grant County Economic Development Council, in 2010, Moses Lake was second on the list of Washington cities that had the highest dollar amount of new construction. Only Seattle had more.

In 2014, consumer advocacy site NerdWallet ranked Moses Lake third highest "city on the rise" among 53 cities in the state. Rankings were based on population, employment, and income growth from 2009 to 2012.

The 2012 US Census Bureau Zip Code Business Patterns indicates 919 business establishments, with 11,650 employees. The 2012 annual payroll was over \$444 million.

Corporate Limit and Surrounding Area Economic Indicators and Trends

Business license revenues reflect a minimum of between 1200 and 2000 businesses obtaining or renewing licenses each year.

Activities which have influenced economic development within the area include the Port of Moses Lake's classification as a Foreign Trade Zone, and the completion of a new \$4.2 million airport terminal in 1998. The Aquatic Center opened in 1994 and asserted Moses Lake as a recreational destination within the state. This facility was expanded and renamed the Surf 'n Slide Water Park in 2006, with the addition of a lazy river and a FloRider surfing simulator. Big Bend Community College completed a Fine Arts building and the Advanced Technologies Education Center (ATEC) housing the library and

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meeting space. The Moses Lake School District has built two new elementary schools and participated in the Columbia Basin Technical Skills Center, which will offer multiple career-track training programs for high school students. The City of Moses Lake built a new Civic Center, including the Museum and Art Center, Council Chambers, a 200-seat auditorium, and offices for the Administration and Finance Departments. SkillSource constructed a new office and training facility close to downtown.

Existing Commercial Land Use Conditions

Existing Commercial Land Use Distribution

The Central Business District (CBD) consists of 38 acres (less than 1% of total city acres) with 1 acre currently vacant. The district contains retail sales, public facilities, which include city hall, police department, chamber of commerce, museum, library, professional offices, banks, and various eating establishments.

The City's general commercial district contains 1584 acres and can be divided into four main areas: Kittleson Corner, Pioneer Way, W. Broadway and the Stratford Business District area.

The east freeway interchange area, locally known as Kittleson Corner, is growing with tourist-related services. Currently, the area includes eating establishments, hotels, and gas stations.

Pioneer Way has developed with professional offices, eateries, retail sales, car sales lots, medical clinics, hotels and the Grant County Mall.

W. Broadway is developed with land intensive uses that include several manufactured home dealers, auto repair shops, gas stations, building supply stores and mini storages.

The Stratford Business District area is continuing to develop as a retail shopping area. Major retailers in the area include Walmart, and two small malls.

Numerous restaurants and other retail activities exist. The district is complemented by a major ball field complex located east of the area.

Historical Commercial Land Use Trends

| Year | Zoned | Developed | % Vacant |
|------|-------|-----------|----------|
| 1964 | 201 | 110 | 45 |
| 1978 | 567 | 195 | 34 |
| 1997 | 908 | 556 | 41 |
| 2014 | 1829 | 1155 | 37 |

Source: The Economic Prospects of Moses Lake Area, 1964; Comprehensive City Master Plan 1960 and 1982; City of Moses Lake GIS (2014).

The amount of commercially developed lands has increased from 110 acres in 1964 to 1155 acres in 2014 (See Table 7). The commercial land vacancy rate ranged from 34% to 45%. The ratio of developed commercial acres to population has also increased over time (see Table 8).

Commercial Land Projections and Deficiencies

The continued increase in commercial land uses compared to population growth, both city and county wide, and an exceptionally high ratio of commercial acres to population, suggests that the commercial land needs are influenced by external factors beyond corporate limit population. As a result, projections for commercial land needs within the incorporated area were derived by using a regional population-based formula which relates commercial growth to county-wide population growth.

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Using population projections and the current amount of developed commercial acres, the future need for commercial land can be projected. As shown in Table 8B, approximately 2000 total acres of commercial land are expected to be needed in the next 20 years. Subtracting the existing 1156 acres that are developed with a commercial use shows a need for approximately 800 new developed commercial acres. Applying a market factor of 1.25 suggests that

adequate vacant commercial land for the next 20 years.

Recommendations

The Comprehensive Plan presents no deficiency for commercial land development. However, the City may want to consider offering incentives for redeveloping existing commercial sites rather than

| Table 8 City and County Commercial Land Use Ratios 1960 - 1997 | | | | | | | | | |
|--|-------------------------|-----------|----------------|------------------|---------------|------------------|---------------|------------------|---------------|
| Year | Incorporated Moses Lake | | | | | Total UGA | | Grant County | |
| | # Acres | % of City | % of Dev. Land | Acres/ 1000 POP. | POP. | Acres/ 1000 POP. | POP. | Acres/ 1000 POP. | POP. |
| 1960 | 87 | 2.3 | 4 | 7.55 | 11,528 | | | 1.87 | 46,477 |
| 1978 | 195 | 5.15 | 9.23 | 18.35 | 10,629 | | | 4.02 | 48,552 |
| 1997 | 641 | 12.63 | 20.22 | 48.11 | 13,330 | | | 9.39 | 68,300 |
| 2014 | 1155 | | | 54.4 | 21,250 (2013) | 36.3 | 31,865 (2010) | 12.6 | 91,800 (2013) |

| Table 8B Future Commercial Land Needs | | | |
|--|----------------|-------------------------------------|--------------------|
| | acres/1000 POP | Population | Total acres needed |
| City limits | 54.4 | 39,023 (2032) | 2123 |
| Total UGA | 36.3 | 61,056 (2032) | 2216 |
| Grant County | 12.6 | 141,847 (2030, OFM high projection) | 1787 |

| Table 8C Available Commercial Land (Vacant + Agriculture) (Acres) | | |
|--|-----|-------|
| City | UGA | Total |
| 806 | 360 | 1166 |

approximately 1000 acres of commercially-designated land would be needed. As shown in Table 8C, the available land in commercial designations is currently 1167 acres in the total UGA, so there is currently

converting agricultural or vacant land to new commercial uses.

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Assumptions

The commercial land projections were based on the following assumptions:

- City of Moses Lake's incorporated UGA and unincorporated UGA population will grow at an annual 3% rate
- The county-wide population will grow at an annual 2.1% rate.
- Commercial land needs within the corporate limits will continue to grow at the same rate as county-wide population.
- The City of Moses Lake is a regional service provider.
- Commercial land needs in the unincorporated UGA will continue to grow at a rate consistent with population growth.
- Land in agricultural use will be redeveloped.

Existing Industrial Land Conditions

Industrial lands uses are primarily located within two areas. The Wheeler Corridor, located in the eastern portion of the corporate limits and north of Interstate 90, is becoming a major manufacturing center. The Port of Moses Lake, located northwest of the City, was formerly a U.S. Air Force Base, and is developed with aviation-related industries, research and development facilities, and various manufacturing companies. Portions of this area have been annexed as new businesses need city utilities. In both cases water and sewer service is provided by the City. Sanitary sewer services are provided by one of the two Wastewater Treatment Facilities (WWTF) operated by the City. The Sand Dunes Treatment Plant serves the Wheeler Corridor, and the Larson Treatment Plant serves the Port area. The Port also operates an industrial wastewater treatment plant. This plant only processes industrial wastewater; it cannot process domestic wastewater.

Industrial Land Deficiencies

Industrial land demand requirements do not lend themselves to population-driven formulas or methods. Most manufacturers serve national and global markets and do not serve solely Grant County. As a result, the demand for industrial land is driven by forces external to anticipated population growth.

In the 2001 Comprehensive Plan, the total UGA had 2624 acres designated Industrial that were developed, and 2469 vacant Industrial acres. That was determined to be a sufficient amount of vacant land to allow for growth, although there was concern that this did not take into account location trends or infrastructure capacities, and also that there might not be enough very large parcels. In 2014, there are 2416 acres designated Industrial that are developed, and 3597 acres that are either vacant or in agricultural use. This should provide sufficient room for future industrial growth.

As a result, the Future Land Use Plan does not indicate a deficiency of industrial lands. Table 9 identifies the amount of industrial designated lands within the City and unincorporated UGA.

| Table 9 | | | |
|---|-------------|-------------|-------------|
| Available Industrial Land (Vacant + Agriculture) (Acres) | | | |
| Designation | City | UGA | Total |
| Industrial | 2212 | 1385 | 3597 |
| Port | 0 | 963 | 963 |
| Total | 2212 | 2348 | 4560 |

Recommendation

Enough industrial zoned land should be available so that expansion of individual industrial establishments may be accommodated, or so that several establishments may be served in one contiguous area.

At the same time, buffer areas must be provided to separate industrial uses from any adjacent non-industrial areas. Few residential or commercial uses should exist on lands considered for zoning as industrial. (Grant County Draft Comprehensive Plan, Land Use Element, pg 5-14, March 1999.)

The Plan is based on the following assumptions:

- Grant County employment base will increase by 3.2% annually (Grant County Economic Profile, Comprehensive Plan, 1999).
- Industrial land consumption will continue based on historical land trends.
- Water rights will be expanded to support industrial growth.
- The Port Industrial WWTF will be upgraded as demand increases.
- The Sand Dunes and Larson WWTF's will

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continue to be upgraded as needed to meet demand.

- The City and County will work cooperatively
- Land in agricultural use will be redeveloped.
- in support of industrial recruitment.

Section 3.6 - Environment

Introduction

This section evaluates environmental implication of the Comprehensive Plan. It evaluates how the Plan's goals and policies can reduce the potential impacts on the environment from changes in land use and development. The level of environmental analysis is programmatic in nature focusing on potential impact resulting from plan implementation. Additional environmental review of future development, if needed, will be handled project-by-project as the City receives development applications. The following environmental issues are addressed:

- ▶ Wetlands
- ▶ Critical Areas
- ▶ Shoreline
- ▶ Historic and Cultural Resources
- ▶ Open Space
- ▶ Surface Water
- ▶ Ground Water
- ▶ Climate

Wetlands

Wetlands are an attractive habitat for many plants and animals which make it an integral component of the Moses Lake ecosystem. Wetlands provide important habitat necessary to the survival of aquatic and terrestrial species and are integral parts of the hydrologic system necessary for the maintenance of water supplies and water quality. In addition to the environmental concerns of wetland protection, practical

issues warrant attention. Wetlands are characterized by drainage conditions that limit land uses and may significantly increase overall development costs due to special requirements for site drainage, flood protection, and facility maintenance. Wetlands are typically underlain by organic soils that may present financial and environmental challenges to development.

Goals and Policies

As mandated by the GMA (RCW 36.70A), the City of Moses Lake adopted a Wetlands Ordinance August 1993, Chapter 19.06 of the Moses Lake Municipal Code (MLMC). This chapter was updated in 2000, 2003, 2005, and 2011. The general goal of this chapter is to avoid impacts to wetlands where such avoidance is feasible and reasonable. Where such impacts are unavoidable, the city seeks to minimize impacts on wetlands as a result of land development by the following:

- ▶ Maintaining and enhancing the biological and physical functions and values of wetlands.
- ▶ Maintaining the natural value of wetlands to control flooding and storm water runoff through the storage and regulation of natural flow.
- ▶ Providing opportunities for recreation, scientific study, and natural resources education.
- ▶ Providing for reasonable buffers around wetlands in order to stabilize soil, filter suspended solids and excess nutrients, moderate impacts from storm water runoff, provide a local habitat for wetland plant and animal communities, and to reduce or minimize intrusions from humans and domestic animals.
- ▶ Implement the goals, objectives and policies of the State of Washington Growth Management Act, the State Environmental Policy Act, and the City of Moses Lake's Comprehensive Land Use Plan.

Within the corporate limits, all activities occurring in a wetland, or its associated buffer area, that

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require a land-use permit or license must adhere to the regulations for the conservation and protection of wetlands within Chapter 19.06. These regulations are intended to promote the enhancement and preservation of critical areas by avoiding or minimizing adverse impacts from construction and development. The City works cooperatively with jurisdictional agencies in developing conditions that balance wetland protection with private property rights. If a wetland is identified on a site, a wetlands analysis report is required prior to any project approval. Development buffer zones are commonly utilized as wetland protective measures. However, wetland alteration may be allowed if all significant adverse impacts are mitigated.

The Community Development Department utilizes the National Wetlands Inventory (NWI) maps and aerial photographs as general guides to determine the location and extent of wetlands within the City limits and UGA. The NWI maps are consulted when a development application is received to determine if the site is within an area shown as wetlands, and aerial photographs are consulted to determine if a site appears to have wetland characteristics. However, it is the responsibility of the applicant to identify any wetlands on or near the proposed development.

Existing Conditions

Chapter 19.06 of the Municipal Code defines wetlands using the State definition of “Areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass lined swales, canals, detention facilities, retention facilities, wastewater treatment facilities, farm ponds, and landscape amenities. However, wetlands include those wetlands intention-

ally created to mitigate conversion of wetlands.”

Based on the NWI maps and aerial photographs, wetlands in the area are located throughout the corporate limits and UGA and are predominantly classified as Palustrine systems. Palustrine systems include freshwater wetlands fed by ground and surface water. Few wetlands were classified on the NWI maps within the lacustrine system, which are associated with lakes and ponds; however, the undisturbed state of much of the Moses Lake shoreline is a fringe wetland. It is estimated that wetlands consume as much as 610 acres with significant sites located in the following areas:

- ▶ Southwest of town in the Laguna and Westlake area.
- ▶ NE section of town between Wheeler and Broadway Extended
- ▶ Northern tip of Pelican Horn and along the eastern shoreline.

Within the county portion of the UGA few wetlands were noted in the following areas:

- ▶ South of the old Sugar Beet Refinery
- ▶ West of the Municipal Airport
- ▶ Crab Creek shoreline

Currently the City of Moses Lake has 43 wetland delineations on file. These sites have been designated as environmentally sensitive areas. The approximate location and extent of wetlands within the UGA are shown on the Environmentally Sensitive Areas Map (See Figure LU-5). This map combines floodplains, steep slopes, and wetlands and is intended to be used only as a general guide for comprehensive planning purposes.

Deficiencies

Wetland protection involves two activities: Management of existing land uses, and planning future land uses. Existing land uses can damage and destroy wetlands while new development is scrutinized for long term wetland conflicts at the

state and local level including impacts from construction and on-site development. However, temporary conditions created by construction, such as site preparation, can impact wetlands, altering stormwater runoff, creating conditions which lead to soil erosion, sedimentation of wetlands and ultimately building encroachment on or near the wetland site.

When wetlands are present on vacant lands, a wetland analysis and delineation are required prior to project approval. However, wetland analysis and delineation are typically site-limited and do not recognize the larger system. As a result the water source and water flow system are subject to impacts unrelated to the site and project. Therefore, the function of the site may be vulnerable to alterations from land use that could affect the wetland. As long as the controlling wetland system is analyzed independently from a site-specific wetland, and is excluded from review, individual wetlands may be vulnerable to impacts from offsite land uses.

Development under the Comprehensive Plan could affect wetlands if adequate measures are not enforced to protect both the site-specific wetland and the controlling wetland system from permanent and/or temporary conditions related to land uses or activities. Also, undelineated wetlands may be affected by existing or future development, and may affect the function of the wetland system.

Additionally, private property owners with wetlands on site may be restricted from developing their property due to the wetlands regulations. However, the property remains taxable as real property by Grant County and could create a financial hardship or encourage property owners to consider development options rather than site preservation.

Recommendations

The Comprehensive Plan incorporates the regulations of the City's Classification and designation of wetlands and regulations for the conservation and protection of wetlands ordinance. This ordinance contains standards, guidelines, criteria, and require-

ments to identify, analyze, and mitigate impacts on wetlands and to enhance and restore the areas when possible. The goal of the regulations is to avoid impacts where such avoidance is feasible and reasonable. Alteration of wetlands may only be allowed when all significant adverse impacts to wetland functions and values can be shown to be fully mitigated.

Under the Comprehensive Plan, public ownership of some wetlands provides an opportunity to develop and implement stewardship strategies for the long-term management of the wetland. Protection of other wetland areas will depend in part on the design of individual development projects and the City's enforcement of local regulations.

In cases of privately-owned wetlands, the properties should be designated by the City as Environmentally Sensitive Open Space Area. At the discretion of the property owner, these properties may be candidates for the Current Use Taxation program. The Current Use Taxation program allows property owners to enroll property in the program to defer or permanently reduce taxes. The "Open Space Land" category, described in RCW 84.34, addresses wetlands and riparian area classification. Eligible open space properties include land designated by a city or county comprehensive plan that would "Promote conservation of soils, wetlands, beaches, or tidal marshes." The City should update the SA designated areas annually providing an opportunity for property owners to pursue tax breaks.

Critical Areas and Natural Resource Lands

The Growth Management Act (RCW 36.70A.030.5) defines critical areas as inclusive of the following areas and ecosystems: (a) Wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas. RCW 36.70A.170 states that

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natural resource lands include agricultural, forest and mineral resource lands. GMA mandates that each County or City designate critical areas, and natural resource lands that have long term significance for commercial production, within their boundaries. Information on resource lands and critical areas is taken from the City of Moses Lake Critical Areas Ordinance No. 1532.

Goals and Policies

It is the City's goal to protect sensitive areas, which may have limited development potential due to environmental conditions, by reducing the development pressure through a variety of development options.

As mandated by the State of Washington, RCW 36.70A.060, the City of Moses Lake adopted interim development regulations in 1992 to ensure the conservation of agricultural, forest, and mineral lands, and prevent land uses or development that are incompatible with critical areas designated under RCW 36.70A.17. These regulations were updated in 2000, 2003, and 2009. The goals of Chapter 19.03 of the Moses Lake Municipal Code are:

- ▶ Classify and designate critical areas and resource lands.
- ▶ Conserve the inherent economic, social, and cultural values of resource lands.
- ▶ Protect environmentally sensitive critical areas and the functions they perform.
- ▶ Protect aquifer recharge areas.
- ▶ Preserve natural forms of flood and storm water control.
- ▶ Protect human life and health from damage due to geologically hazardous areas.
- ▶ Protect and maintain fish and wildlife habitat conservation areas for rare, threatened, or endangered species.
- ▶ Develop appropriate regulatory and non-regulatory options and strategies.

The Resource Lands and Critical Areas Ordinance contain standards, applicable classification, assessment and review guidelines. It is the purpose of the ordinance to promote the conservation of resource lands and promote the enhancement and preservation of critical areas by avoiding or minimizing adverse impacts from construction and development. In appropriate circumstances, impact on critical areas resulting from regulated activities may be minimized, rectified, reduced, or compensated for, consistent with the requirements of the ordinance.

Existing Conditions

Agricultural Lands: Agricultural lands are defined as lands that are not already characterized by urban growth and are of long-term significance for the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products, or of berries, grain, hay, straw, turf, seed, livestock, and Christmas trees not subject to excise tax. These areas are identified by the USDA Soil Conservation Service Classification system of prime and unique farmlands soils in compliance with WAC 365-190-050. In accordance with RCW 36.70A.170, the city does not have agricultural lands of long-term significance.

Mineral Lands: Mineral lands are defined as lands that are not already characterized by urban growth and are of long-term commercial significance for the extraction of aggregate and mine resources, including sand, gravel, and valuable metallic substances. Mineral lands of long-term commercial significance are identified by the Washington State Department of Natural Resources (DNR) Division of Geology and Earth Resources mineral resource land classification system in compliance with WAC 365-190-070. In accordance with RCW 36.70A.170, the city does not have mineral lands of long-term commercial significance.

Aquifer Recharge Areas: Aquifer Recharge Areas are defined as areas which serve as critical groundwater recharge areas and which are highly vulnerable

to contamination from intensive land uses within these areas. The City has not completed an inventory of these areas. However, based on the criteria presented in WAC 365-190-080(2), there are potential aquifer recharge areas within the current city limits.

Pursuant to WAC 365-190-080(2), aquifer areas shall be classified according to the vulnerability of the aquifer. Vulnerability is the combined effect of hydrogeological susceptibility to contamination and the contamination loading potential. In classifying and designating aquifer recharge areas, the criteria for establishing vulnerability must be met.

- ▶ High vulnerability is indicated by land uses that contribute contamination that may degrade ground water and hydrogeologic conditions that facilitate degradation.
- ▶ Low vulnerability is indicated by land uses that do not contribute contaminants that will degrade ground water and by hydrogeologic conditions that do not facilitate degradation.

Hydrogeological susceptibility is determined by factors which include depth to ground water, hydraulic conductivity and gradients, soil conditions, and permeability and attenuation properties. Loading potential refers to the land use, i.e. wastewater treatment plants, solid waste disposal sites, and sites where hazardous substances are handled, processed, or stored.

Frequently Flooded Areas: Frequently flooded areas are defined within the City of Moses Lake as areas which are determined to be at risk of having one percent (1%) or greater chance of experiencing a flood in any one year, with those areas defined and identified on the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Maps for the City of Moses Lake in compliance with WAC 365-190-080(3). These areas, known as the 100-year floodplain, have been inventoried in a study conducted by the Federal Emergency Management Agency (FEMA), dated February 18, 2009. Based on the criteria of frequently flooded areas under the

WAC, frequently flooded areas do exist within the corporate limits.

The City passed a Flood Hazard Areas Ordinance, #1012 in 1981 which regulates development within the 100-year flood plain. This ordinance was updated in 1988, 2003, 2005, and 2009. See Moses Lake Municipal Code 18.53. All flood hazard areas are delineated by FEMA as a part of the National Flood Insurance Program and are identified by the Flood Insurance Rate Maps on file with the City in the Community Development Department. The National Flood Insurance Program defines the following two zones:

- I. The regulatory floodway is the lowest part of the floodplain where the deepest and most frequent floodflows are conducted.
- II. The floodway fringe which is the margin of the regulatory floodway and an area that would be lightly inundated by the 100 year flood.

The primary flood threat at Moses Lake is from Crab Creek exceeding the channel capacity in the upper reaches of Parker Horn. Rising lake elevations from large-volume flood events can also inundate areas adjacent to the lake. Most flooding problems in the Crab Creek basin occur from extreme runoff events of short duration. These flash floods are usually caused by heavy rain on snow-covered frozen ground. The Environmentally Sensitive Areas Map, Figure LU-5, depicts an approximate 100 Year Flood Plain Area.

Geologically Hazardous Areas: Geologically hazardous areas are defined within the City of Moses Lake as areas which are not suited for siting commercial, residential, or industrial development because of their susceptibility to erosion, sliding, earthquake, or other geological events. These areas include erosion hazard areas, landslide hazard areas, and seismic hazard areas. Based on the criteria of geologically hazardous areas presented in WAC 365-190-080(4), there are geologically hazardous areas

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within the corporate limits. The City has not completed an inventory of these areas but utilizes the following documents for identification purposes:

- ▶ Soil Survey of Grant County Washington, United States Department of Agriculture, Soil Conservation Service.
- ▶ Seismic Zone Map of the United States, 2012 International Building Code, Volume 2.

Fish and Wildlife Habitat Areas: Fish and Wildlife Habitat areas are defined as areas which in a natural state serve as an important habitat for locally important species, including but not limited to, riparian ecosystems, naturally occurring ponds under 20 acres; or areas in which rare, threatened, or endangered species have a primary association.

These areas are identified by the Washington Department of Fish and Wildlife in WAC 232-12-011 and 232-12-014 and in the Priority Habitat Species lists compiled in compliance with WAC 365-190-080.

Priority habitats identified on the Priority Habitat Species and Non-game Data Systems maps located throughout the Moses Lake UGA include the following types of areas :

- ▶ Publicly and privately owned islands which provide important wildlife nesting sites for ducks, western and Canadian geese, long billed curlews, western clarks, grebes, black crowned night herons, marsh hawks, and pheasants.
- ▶ Shoreline and riparian areas which may be characterized by high fish and wildlife density or species diversity, provide important fish and wildlife seasonal ranges and breeding habitat, and movement corridors and valuable cover.
- ▶ Wetlands which provide high-quality wildlife cover, waterfowl breeding habitat, habitat for upland game birds, waterfowl, raptors, shore-birds, and other non-game birds.
- ▶ Documented habitat of threatened or endangered species.
- ▶ Major and traditional feeding sites, migratory

and regular concentration areas, nesting, staging and brood-rearing sites for a diversity of species of waterfowl, shorebirds, etc.

Portions of the Moses Lake area are home to three sensitive animal species:

1. Burrowing owl, a state Candidate Species and federal Bird of Conservation Concern
2. Northern Leopard Frog, a State Endangered Species
3. Washington Ground Squirrel, a state and federal Candidate Species

Deficiencies

Agricultural Lands: No deficiencies. In accordance with RCW 36.70A.170, the city does not have agricultural lands of long-term commercial significance.

Mineral Lands: No deficiencies. In accordance with RCW 36.70A.170, the city does not have mineral lands of long-term commercial significance.

Aquifer Recharge Areas: Groundwater is the City's water supply source. If ground water becomes contaminated it is expensive and sometimes impossible to correct. Preventing contamination is necessary to avoid exorbitant costs, hardships, and potential physical harm to people.

Groundwater is a complex part of the environment and can be dramatically affected by land use activities. Development may alter natural drainage patterns and increase the amount of storm water runoff as the amount of impervious surfaces increases. Due to the fact that technical information is not available to identify aquifer areas and recharge areas, sites which are determined to be highly vulnerable should be protected from potentially polluting activities.

Frequently Flooded Areas: No deficiencies. Measures to mitigate flooding problems at Moses Lake have not been warranted. The Flood Hazard Areas Ordinance regulates all development within the 100-year floodplain and promotes sound

floodplain management while protecting the public from unnecessary property damage. In addition, the lake elevation is lowered at the end of the fall irrigation season by the Bureau of Reclamation, as part of the Columbia Basin Project, to make room for runoff, to protect the boat docks from winter ice, and to clean up the beaches. Source: Flood Insurance Study, City of Moses Lake, WA, Grant County, February 18, 2009, prepared by Federal Emergency Management Agency.

The Environmentally Sensitive Areas Map, Figure LU-5, depicts an approximate 100 Year Flood Plain Area.

Geologically Hazardous Areas: Erosion is temporarily accelerated by urbanization. As development occurs, soils are exposed during site preparation, increasing the likelihood of soil erosion.

However, the soil is quickly secured under buildings, roads, and landscaped surfaces as development is completed. Consideration of soil erosion stems not only from a concern over the loss of topsoil and depletion of the soil resources in general, but also the impact of sedimentation on terrestrial vegetation, wetlands, river channels, and drainage facilities such as storm sewers.

The *Washington State Earthquake Hazards* (Information Circular 85) portrays Grant County as located within Seismic Risk Zone 2, on a scale of 0 to 4, where only minor to moderate damage from landslide or earthquakes can be expected. The 2012 International Building Code Seismic Risk Zone Map of the United States classifies the UGA within Seismic Risk Zone 2b.

Development under the Comprehensive Plan could temporarily increase the potential for soil erosion.

Fish and Wildlife Habitat Areas: Intense urban development typically causes the reduction of the places fish and wildlife need for food, cover, water, movement corridors, and other life requirements. Undeveloped areas are replaced with buildings, roads, parking, lots, landscaping, etc. Depending on the location, density, and intensity of land uses this can result in the removal and displacement of

habitat and cause some wildlife species to relocate. Human needs must be balanced with those of fish and wildlife.

Loss of wetlands, riparian areas, and adjacent fields may affect the overall number and variety of wildlife and water fowl. Loss of riparian vegetation could affect migrating or nesting areas. Plant and animal species can also be affected by erosion and sedimentation of streams and wetlands. Without protective measures, growth will come at the expense of important habitat.

Development under the Comprehensive Plan could minimally affect some areas identified on the PHS Maps as well as unidentified habitat sites. The PHS maps were developed based on the priorities of the Department of Fish and Wildlife and do not reflect local priorities. The maps were created in 1992 using information available at that time. It should be recognized that habitat is an evolutionary function and always changing. However, development regulations within the Critical Areas Ordinance and Shoreline Management Program, in conjunction with designated Open Space areas, will help maintain existing habitat.

Recommendations

The Comprehensive Plan incorporates the regulations of the City's Critical Areas Ordinance. MLMC Chapter 19.03 contains standards, guidelines, criteria and requirements to identify, analyze, and mitigate impacts on geologically hazardous areas, aquifer recharge areas, fish and wildlife habitat, and to further enhance and restore the areas when possible.

The preliminary inventory of data indicates the city has areas which may be considered aquifer recharge areas. Despite the lack of technical expertise and available data in this area, emphasis should be placed on "protection" of groundwater until such time that information is available to indicate that there is not a threat to groundwater quality. The City should complete an aquifer recharge area inventory consistent with WAC 365-190-080. Until then, the development standards as outlined in the Critical Areas and Regulations Ordinance shall be

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utilized for the protection of aquifer recharge areas.

Impacts of future development in the floodplains will be addressed by existing floodplain ordinances that provide the means to prohibit, permit, and regulate development in flood hazard areas. Any development within designated flood hazard areas will be required to meet standards set forth in the floodplain ordinances.

Land management for maintaining species in suitable habitats within their natural geographic distribution is critical so that isolated subpopulations are not created. The PHS maps should be used as the framework to help guide growth in a manner that will preserve important fish and wildlife habitat. However, the City should continue to work collaboratively with agencies of jurisdiction to insure adequate protection of critical habitat sites which may not be reflected on the 1992 maps. Cooperative and coordinated land use planning is critically important among counties and cities in this region.

Shoreline Environment

Overview of RCW

RCW 90.58, entitled the Shoreline Management Act of 1971, declares shorelines of the state among the most valuable and fragile of its natural resources and finds reason for concern relating to their utilization, protection, restoration, and preservation. Due to increasing pressures of additional uses placed on the shoreline, increased coordination in the management and development of these shorelines is necessary. Coordinated planning, which recognizes private property rights consistent with the public interest, is required in order to protect public interests from the impacts of unrestricted construction on privately and publicly owned shorelines. Therefore, a demand exists for a planned, rational, and concerted effort jointly performed by federal, state, and local governments to prevent the inherent harm in the uncoordinated and piecemeal development of the state's shoreline.

As part of the state/local partnership, local governments must prepare a detailed shoreline inventory and a Shoreline Master Program (SMP) for managing shoreline resources and development. Local SMP's must be prepared consistent with the policy of RCW 90.58.020 and the applicable guidelines.

Goals and Policies

Shoreline Management ACT - RCW 90.58

The SMA, RCW 90.58.020, identifies the state policy as:

To provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses.

This policy was designed to insure the development of the shorelines in a manner which, while allowing for limited reduction of rights to the public in the navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto.

The interest of all the people shall be paramount in the management of shorelines of state-wide significance. Local governments, in developing master programs for shorelines of state-wide significance, are required to give preference to uses in the following order of preference which:

1. Recognize and protect the state-wide interest over local interest
2. Preserve the natural character of the shoreline
3. Result in long term over short term benefit
4. Protect the resources and ecology of the shoreline
5. Increase public access to publicly owned areas of the shorelines
6. Increase recreational opportunities for the public in the shoreline
7. Provide for any other element as defined in RCW 90.58.100 deemed appropriate or neces-

sary.

RCW 90.58.020 directs entities to ensure that in the implementation of the state policy that the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally. To this end, uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state's shoreline. Alterations of the natural condition of the shorelines of the state, in those limited instances when authorized, shall be given priority for single family residences and their appurtenant structures, ports, shoreline recreational uses including but not limited to parks, marinas, piers, and other improvements facilitating public access to shorelines of the state, industrial and commercial developments which are particularly dependent on their location on or use of the shorelines of the state and other development that will provide an opportunity for substantial numbers of the people to enjoy the shorelines of the state. Permitted uses in the shorelines of the state shall be designed and conducted in a manner to minimize, insofar as practical, any resultant damage to the ecology and environment of the shoreline area and any interference with the public's use of the water.

Growth Management Act (GMA)

For shorelines of the state, the goals and policies of the Shoreline Management Act as set forth in RCW 90.58.020 are added as one of the thirteen goals of the GMA. Pursuant to RCW 36.70A.480 the goals and policies of the Shoreline Management Master Plan (SMMP) shall be considered an element of the Comprehensive Plan. All other portions of the SMMP, including use regulations, shall be considered a part of the City's development regulations.

City of Moses Lake Shoreline Management Master Program

The City adopted its Shoreline Management Master

Plan (SMMP) in 1974. The Plan was reviewed in 1977, 1980, 1983, 1986 and 1988. The SMMP is in the process of being revised and scheduled for completion in the year 2014. As a result, the Goals and Policies of the 1974 SMMP will not be adopted as a part of this plan. The city will adopt the subsequent goals and policies established in the revised SMMP, consistent with RCW 90.58, as an element of the Comprehensive Plan.

Historic and Cultural Resources

Goals and Policies

The Growth Management Act requires all lands, sites, and structures which may have historic or archeological significance be identified and preserved (RCW 36.70A.020(13)), and further requires that the goals and policies of the Shoreline Management Act (RCW 90.58) are included as goals and policies of GMA. The goals and policies of a shoreline master program for a city approved under chapter 90.58 RCW shall be considered an element of the city's comprehensive plan (RCW 36.70A.480). The Shoreline Management Act of 1971 states that master programs shall include, when appropriate, a historic, cultural, scientific, and educational element for the protection and restoration of buildings, sites, and areas having historic, cultural, scientific, or educational values (RCW 90.58.100.(2)(g)). Upon completion of the revision of the Shoreline Master Program the goals and policies for Historic, Cultural, Scientific, and Education Element shall be applicable to this section.

Existing Conditions

Historical Setting

For centuries before the first ranchers and farmers came to the area, the area was used by the middle Columbia Salish Indian Tribe as a summer encampment. The Indian bands were semi-nomadic. The Rocky Ford area, approximately seven miles north of the Moses Lake Planning Area, was one of the most intensely used encampment areas due to a year-round supply of fresh spring water. The site, at the only ford of the creek, was a gathering place where

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Indians from Montana came to trade buffalo hides for horses with the Salish Indians, now called the Moses Columbia People.

The City of Moses Lake was originally laid out in 1910 as the Town of Neppel. Neppel was founded to serve the needs of a small group of pioneering farmers who settled on the shores of the lake. The original town was on the site of the present downtown area of Moses Lake. Since the 1800's the area has been owned by ranchers and farmers. The most famous rancher was Thomas "Lord" Blyth who, between 1885 and 1904, owned over 50,000 acres of range land and pasture land extending from Rocky Ford Creek to what is now the Potholes Reservoir. Moses Lake was first settled in 1897 by a horse trader named Parker who lived near a spring at the foot of a hill northwest of where the town now lies.

In 1938 the city was incorporated and the new name of Moses Lake was chosen to replace the original name of Neppel. The town was renamed after an Indian chief of the Kowalchia Tribe which inhabited the area.

Although there has been a settlement at the site of Moses Lake since the 1890's, the present city is a product of the Columbia Basin Irrigation Project and the Larson Air Force Base, now the Moses Lake Port District.

Larson was established in 1943. After a brief closure following World War II, the base was reopened and enlarged as an outpost of the Strategic Air Command. In the mid 1960's a decision was made to deactivate the facility, and in 1968 the Air Force transferred control of the physical plant to the Port of Moses Lake. The Port District has encouraged business and industry to locate at what is now the Grant County International Airport. In 1962 the federal government established a Job Corps Center at the airport. Big Bend Community College is located at the airport and occupies many of the buildings formerly occupied by the Air Force.

The construction of the Bureau of Reclamation

Columbia Basin Irrigation Project helped make the City flourish in the 1950's. The irrigation project allowed the development of over 200,000 acres of irrigated farm land. Moses Lake developed as the home base of the construction activities of both the Air Force Base and the irrigation project. Agricultural development drew agriculturally-oriented business and industry into the Columbia Basin. Many of these businesses and industries located in Moses Lake due to the central location of the city and the existence of transportation systems and services available from the city.

As a result of the closure of Larson Air Force Base and the completion of the Columbia Basin Irrigation project, the economy of Moses Lake changed from being dependent on federal payrolls and construction to an agriculturally-oriented economy with an expanding base of diversified industry.

Historic Resources

Due to the relatively young age of the community, few historic resources exist. As of 2014, 61 sites have been recorded with the Washington State Department of Archaeology and Historic Preservation (DAHP). Most of these sites have been determined to be ineligible for the National Historic Register due to alterations and/or lack of significance. There are a few structures from the early 1900's, including a ranchhouse in the Cascade Valley Area, Section 17, T19, R 28; the John Ewald House at 605 E. Nelson Road, the "Old White Hotel" at 415 S. Alder Street, and carp holding ponds in the lake.

The John Ewald House was built as a cabin in 1902, with an addition in 1916. This farmhouse continued as a residence with only four owners through 1997. In 1998, the building was converted to a reception center and another addition built.

The Old White Hotel was built in Ruff, WA, in the early 1900's and moved to Moses Lake in 1946 to be used as a hotel. It was subsequently used as a residence, then a fourplex, and finally converted into a commercial use (Alder Street Tan) in 1988.

The carp holding ponds were built in 1912. Carp are thought to have been introduced into Moses Lake in the 1890's. While not eaten locally, they were sold to immigrants in the eastern United States. The McGrath Brothers began commercial harvesting of carp in about 1912, transferring them to holding ponds to be fed on corn. The carp fishery continued into the 1930's.

Records have also been filed with the DAHP for the original Big Bend Community College buildings (now South Campus), the Alder/Stratford bridge, several municipal water tanks, and a number of houses built in the 1940's and 1950's.

Portions of the former Larson Air Force Base were considered for the registry, (the SAGE Complex and 1,186 Wherry housing units), but the structures were determined ineligible primarily due to extensive alteration. The housing units were constructed sometime during 1951 through 1955, in response to the demand for Air Force personnel families need for housing. The Wherries (both duplexes and single family units) were remodeled during the 1980's by the Housing Authority. The SAGE Complex, a Strategic Air to Ground Equipment Building, was constructed in 1959, as a Command Center of Larson Air Force Base and was used as the Spokane Air Defense Sector Headquarters from 1960 to 1963. From 1964 -1965 the building served as 462nd Group Headquarters. The DAHP has stated that although the SAGE Building and Wherry Housing Project are not eligible for listing in the National Register of Historic Places, if a comprehensive inventory and evaluation of the base were to occur, the status may change. Such an effort may reveal historic associations that would indicate properties as National Register eligible. As the city does not have a local historic preservation program, no properties within the city have been locally designated as historic.

Cultural Resources

Flat ground near water was often used by historic and prehistoric peoples for a variety of purposes. Therefore, many archeological sites are found within

the shoreline jurisdiction. The Washington State Department of Historic and Archeological Preservation maintains records of previous investigations in the region. Sites have been identified throughout Grant County with 8 sites within the vicinity of the Urban Growth Area as of 2001. Until an agreement is reached between the City and the DAHP, all information must be obtained directly from the DAHP.

The 1982 "City of Moses Lake Comprehensive Plan," pg. 73, identifies the archaeological surveys conducted in the region surrounding the Moses Lake Planning Area up to 1980 (See Table 10). Additional surveys were conducted in the Moses Pointe and Dune Lake areas prior to project approval by Grant County.

Deficiencies

No deficiencies have been identified as a result of growth under the comprehensive plan primarily due to the relatively young age of the community and surrounding area.

Cultural resources are endangered by disturbance and by excavation in areas where they are likely to exist. Cultural resources are typically discovered during excavation and site preparation for development proposals. While it is difficult to know where every cultural resource site exists, the DAHP has records of previous investigations in the region. However, since flat ground near water was often used by historic and prehistoric peoples for a variety of purposes, many archeological sites are found within the shoreline jurisdiction and assumptions regarding potential sites can be made.

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| Year | Survey/Team | Location |
|---------|---|---|
| 1947-48 | Smithsonian River Basin Survey by F.A. Riddell and R.D. Daugherty | North end of Moses Lake near Rocky Ford Creek |
| 1950 | Smithsonian River Basin Survey by R.D. Daugherty | Pot Holes Reservoir and the Lind Coulee |
| 1970 | Irwin and Moody Expedition | Lind Coulee |
| 1973 | Green and Irwining Expedition | Lower Crab Creek |
| 1979 | Bureau of Reclamation Survey by Chatters | Upper Crab Creek and Willow Lake |
| 1980 | U.S. Bureau of Water and Power Resources Service Survey by Chatters | Near Moses Lake and Rocky Ford Creek |
| 1980 | Moses Lake Irrigation District Survey by Office of Public Archaeology, University of Washington | North end of Moses Lake and Crab Creek |

Recommendations

Goals and policies in the Comprehensive Plan provide a framework for reviewing and permitting future development proposals. Coordination with the State Department of Archaeology and Historic Preservation and implementation of the policies relating to the preservation of cultural and historic resources not only in the Comprehensive Plan, but also in the Shoreline Management Master Program, will help to ensure that these resources are protected.

The City should adopt an ordinance which clearly identifies procedures for archaeological site preservation consistent with RCW 27.44, (Indian Graves and Records) RCW 27.53 (Archaeological Sites and Records), and WAC 25-48 (Archaeological Excavation and Removal Permit). The City should work closely with local tribal bodies of jurisdiction to identify potential sites based on assumptions and records from previous investigations maintained by the DAHP.

Historical structures are at greatest risk from

deterioration and alterations. Historic resources have been lost to the community in both the downtown area and the former Larson Housing Area as a result of neglect and remodels. Historic structures identified by the DAHP should be protected as a resource for the benefit of the community. Local ordinances should be adopted which require on-going maintenance and repair consistent with the authentic historic qualities of the structure.

Open Space

Goals and Policies

The planning goals of the Growth Management Act direct cities to “Encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks.”

The County-Wide Planning Policies incorporate green belt and open space provisions from the Act which stipulate that green belt and open space areas shall be included in each UGA. (CWPP 1.I.B)

Existing Conditions

Open space within the city and unincorporated UGA includes land designated as parks/open space and sensitive areas.

The parks/open space areas include public and privately owned parklands. These areas include a variety of passive and recreational facilities, either developed, or in its natural state, and located throughout the corporate limits. The Capital Facilities element discusses park and recreation facilities in detail.

The environmentally sensitive open space category deals with the undeveloped open space component which includes public and privately owned delineated wetland and buffer areas, critical areas, and conservation areas. These areas have limited development potential due to the significant environmentally sensitive conditions on site, and

are intended to remain in a natural state as long-term undeveloped open space. Development on lands with critical areas or wetlands located on site are regulated by the Critical Areas and Wetlands Ordinances.

As of 2014, the City has 43 wetland delineations on file. Most of these delineations are either lake-fringe wetlands or are associated with the wetland system of Crab Creek and the parallel groundwater flow that connects to Pelican Horn of Moses Lake.

Public and privately-owned islands located on Moses Lake provide important wildlife nesting sites and have been identified by the Washington Department of Fish and Wildlife (WDFW) within the Priority Habitats and Species GIS Database Report. Several islands are owned by the WDFW. All development within 200' of the Ordinary High Water Mark is regulated by the Shoreline Master Program and subject to the implementation of the applicable goals and policies.

Deficiencies

Wetlands and critical areas are prevalent throughout the community primarily due to the significant amount of shoreline. However, relatively few sites have been delineated. Areas within the corporate limits are experiencing a significant amount of development pressure. As the development occurs, habitat and wetland sites are continually delineated, thereby increasing the amount of environmentally sensitive open space area. It is not expected that growth under the Comprehensive Plan will result in the conversion of sensitive areas to urban uses.

Therefore, the plan generates no deficiencies related to open space.

Recommendations

The goals and policies in the Comprehensive Plan promote the preservation of open space and encourage the best use of existing natural features and open spaces. Implementation of these goals and policies, as well as the goals and policies of the Shoreline Management Master Program, and Wetlands and Critical Areas Ordinances, will ensure

that environmentally sensitive open space in the Moses Lake UGA is protected and retained.

Surface Water

Existing Conditions

Moses Lake is a shallow warm water lake covering an area of approximately 6,800 acres (10.6 square miles). The watershed tributary to Moses Lake encompasses approximately 2,450 square miles, principally within the Crab Creek drainage. The lake is regulated as part of the Columbia Basin Project which supplies water stored behind Grand Coulee Dam to over 500,000 acres of farmland. Moses Lake serves as a supply route for water passing from the East Low Canal, north of Moses Lake, and south to the Potholes Reservoir, to the lower part of the irrigation project.

The City of Moses Lake and adjacent urban areas occupy much of the southeastern shoreline including areas within the lake known as Parker Horn and Pelican Horn. Crab Creek waters enter the lake at the upper end of Parker Horn; the northern or main arm of Moses Lake is fed by a small spring fed tributary known as Rocky Ford Creek.

Moses Lake is used for recreational purposes, fishing, boating, and swimming.

Water Quality

Pursuant to the Clean Water Act, Moses Lake is a 303(d) listed water, meaning that the lake has eutrophication problems. It has experienced algae and aquatic weed growth in some shoreline areas. Moses Lake exhibits high phosphorous and nitrogen loads both naturally and due to non-point sources of pollution. Non-point sources are spatially diffuse sources that emanate from relatively large areas and enter streams and lakes via stormwater, precipitation, atmospheric fallout, interflow, and groundwater. The prime contributors include urban stormwater, septic system seepage, air pollution, and agricultural runoff.

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Nitrogen and phosphorus are the major nutrients causing over-fertilization of the Lake. The 1984 Moses Lake Clean Lake Project identified nutrient rich groundwater and contributions from Crab Creek as major sources of nitrogen. The most significant source was linked to agricultural activity in the watershed between Stratford and Moses Lake. Other sources included cattle operations, fish hatcheries, urban runoff, septic tanks, and potential contributions for in-lake recycling of nutrients from carp and decay of aquatic plants. Major sources of phosphorous included Rocky Ford Creek, on-site septic systems, and agricultural activities. It is estimated that over 75% of the total phosphorus load to Moses Lake originates from agricultural fertilizers and farm animal wastes (DOE , Publication No. 00-03-036, October 2000).

Since the 1970's, low-nutrient water has been added to dilute a portion of the lake. USBR dilution water releases from the East Low Canal enter Crab Creek, via Rocky Coulee Wasteway, approximately one mile north of Parker Horn. A portion of the diluted water within Parker Horn is pumped across a narrow peninsula to Pelican Horn in order to dilute nutrients and improve local water quality. In 1987 a small dam was constructed at the lower end of Rocky Ford Creek as part of the Moses Lake Clean Lake Project. This dam was designed to prevent upstream migration of carp into the creek system as part of a program to enhance water quality within the creek and Moses Lake. On-farm irrigation system improvements in the Block 40 and Block 41 area of the Columbia Basin Project decreased the amount of nutrients reaching groundwater, particularly the deep percolation of nitrates from irrigation of agricultural lands. Since 1984, municipal wastewater has been treated at the Sand Dunes Wastewater Facility Plant and is no longer discharged into the lake.

Deficiencies

Land uses within the watershed area dramatically impact Moses Lake water quality. Groundwater flow gradients indicate that groundwater from the entire watershed flows directly into Moses Lake

or enters the Lake through the many springs that are found along Crab Creek and Rocky Ford Creek. Rocky Ford Creek, Moses Lake, and Crab Creek are also ground water discharge areas. Excessive permeability is a particular concern in the Ephrata-Malaga soils found in the Moses Lake area because of the mobility of nitrogen and phosphorus through these granular soils. Local ordinances are designed to protect public health and are not oriented to nutrient control. The importance of the lake to the region and the high permeability of the local soils suggest that urban wastewater disposal rules and facilities also need to be reviewed.

Recommendations

Due to the complex interrelationships of Moses Lake water quality, groundwater quality, and environmental constraints, other related problems and concerns associated with nonpoint source solutions must be considered. The May 1986 Urban Wastewater Disposal Report offers the following conclusions: (1) Local soils and groundwater levels in many areas near Moses Lake are unsuitable for septic tank systems either because subsoils are too coarse or seasonal groundwaters are too high, or both, (2) Elevated phosphorous values in shallow groundwaters around Moses Lake are indicative of sewage contamination from nearby septic tank areas, and (3) ground water is an important nutrient source contributing to the over-fertilization of Moses Lake.

Nonpoint source abatement must be approached as an environmental management problem focusing on the sites, activities, and conditions that produce the pollutants. Water quality protection measures implemented thus far have led to improved water quality of the Lake. However, continued emphasis is needed on mitigation of near-shore urban development impacts and on-farm irrigation water management needs as related to water quality of Moses Lake and its tributaries, including local ground waters. Water quality improvements can be attained through continued efforts at point source control.

However, more recent studies present a slightly

differing conclusion. The Washington State Department of Ecology (DOE) concludes that although Moses Lake is listed for both Total Phosphorous (TP) and Total Nitrogen (TN) on the 303(d) list, the historical studies on Moses Lake have shown that TP is the nutrient to control to limit algal biomass. As a result, DOE recommends that future lake management decisions focus on the control of TP to manage algal biomass in Moses Lake (DOE Publication No. 00-03-036, October 2000). However, it should be noted that a major conclusion within this DOE report is that additional work and studies should be completed before establishing a final management strategy for the lake.

Ground Water

Groundwater is a complex part of the environment and can be dramatically affected by land use activities. Therefore, it is important to understand the local groundwater system to protect it from potentially polluting activities.

Existing Conditions

The Moses Lake area is underlain by a complex multi-layer hydrogeologic system which has been subdivided into a five-layer hydrostratigraphic model. The model consists of a shallow unconfined aquifer (Pleistocene flood deposits); a shallow, locally discontinuous aquitard (Ringold Clay); a multi-layer semi-confined to confined basalt aquifer system within the Wanapum Basalt; an aquitard (either all or part of the lower Wanapum, Vantage Interbed, or upper Grande Ronde); and an underlying Grande Ronde confined aquifer system.

Regional groundwater studies by the U.S. Geological Survey generally regard the shallow unconsolidated materials and Wanapum Basalt as a single hydrogeologic unit. Regional groundwater elevations in the Grande Ronde are generally 100 feet lower than the overlying basalts and unconsolidated material. Water quality data indicated a more sodium-bicarbonate water in the Grande Ronde compared to a calcium-magnesium bicarbonate water in the

Wanapum and unconsolidated flood deposits.

Seasonal fluctuations in groundwater levels in the upper unconsolidated materials is annually less than 10 feet, while the basalt aquifers decline during the summer months between 50 and 160 feet due to municipal and irrigation pumpage. Since irrigation of the Columbia Basin Project began in 1952, groundwater levels throughout the area have increased up to 200 feet due to irrigation recharge. However groundwater levels in the Basalt Aquifers have declined regionally. Per USGS studies, recharge for the unconsolidated aquifers and basalt aquifers is primarily from irrigation, while the Beezly Hills to the northwest of the Quincy Basin and the basalt and coarse-grained sedimentary deposits in the Eastern Uplands (the Lind-Odesa area) serve as recharge areas for the basalts under the Moses Lake area.

Regional groundwater flow directions have been established in the Columbia Plateau based on the ongoing monitoring of the USGS. Their studies indicate that the groundwater flow within the Wanapum and unconsolidated deposits in the Moses Lake area converge toward Moses Lake and the Potholes Reservoir and further indicate that these surface water bodies are regional discharge points for the shallow groundwater system in the Quincy Basin.

Over the last 30 years, groundwater flow directions in the area have been influenced by irrigation and recharge in the CBIP and pumpage from the basalts for irrigation and municipal supply. Groundwater flow direction, both vertical and horizontal, appear to vary seasonally as a result of these influences. However, USGS studies suggest a southwesterly groundwater flow direction in the upper unconfined aquifer. Flow directions in the underlying basalts appear to be to the southwest in the winter/spring months and possibly southerly in the summer months in response to heavy pumpage from the central parts of the Quincy Basin. A continuous downward groundwater succession occurs between the Wanapum and Grande Ronde units and is not

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seasonally influenced.

A hydrological investigation was completed for the Larson area in association with a Trichloroethylene (TCE) contamination problem. Per the Golder Associates evaluation, the groundwater contamination appears to be restricted to the unconsolidated deposits. TCE was used, and potentially disposed of, at the former Larson Air Force Base. It is likely that more than one source of TCE is contributing to the groundwater contamination. Modification of the contaminated wells in the area was aggressively undertaken to prevent TCE from entering the municipal water supply system.

Deficiencies

The capacity of groundwater to serve future population is discussed in the Utilities Element of the Comprehensive Plan.

Recommendations

Currently the City of Moses Lake operates 19 wells with a capacity ranging from 50 gpm to 2,000 gpm. The City of Moses Lake does not have a formal wellhead protection program. However, a groundwater contamination susceptibility assessment has been completed for each municipal well site. Additionally the Classification and Designation of Resource Lands and Critical Areas and Regulations for the Conservation and Protection of Resource Lands and Critical Areas Development Regulations provide protection to the groundwater from contaminants and require best management practices be utilized. Until the methodology to understand groundwater and associated impacts is developed, the city should continually update its policies and programs using the best available science.

Climate

The climate is the mildest of the high elevation and interior climates and has four distinct seasons. Warm summers and moderate winters characterize the semi-arid climate.

Annual average low temperatures are 40° with high temperatures about 62°. Yearly precipitation levels average 8 inches with most rainfall occurring in the winter months. Approximately 19 inches of snowfall occurs predominantly in December through January with a maximum depth of 3 inches accumulating in January. Snows are frequently washed away by winter rains. (See Table 11)

Seasonal winter temperatures range from lows of 23° to highs of 36° with 1/3 of the days cooler than 30°. Spring temperatures average around 60° with extreme highs and lows between 40-80°. Summer temperatures are warmer with average lows of 58° to highs of 85°. One third of the days are warmer than 90°. Fall temperatures are comparable to spring with average evening lows of 40° and daily highs of 62°. Few days fall below freezing, and an occasional day may rise above 90°.

The warmest months are July and August, with average highs in the upper 80's and some days above 100. The highest recorded temperature was 115 in August, 1961. December is the coldest month, with an average high of 33, average low of 21, and generally some days below 0. The lowest recorded temperature was -24 in February, 1950. Average date of the last frost in the spring is May 8, and average date of the first frost in the fall is October 4.

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| Table 11 Monthly Climate Summary | | | | | | | | |
|-------------------------------------|--------------|-------------|------|-------------|------------|-----------------|---------------------------------|-----------------------------|
| Month | Average High | Average Low | Mean | Record High | Record Low | Average Precip. | Average Total snowfall (inches) | Average Snow Depth (inches) |
| Jan | 35 | 22 | 29 | 61 (1953) | -22 (1950) | 0.91 | 6 | 3 |
| Feb | 43 | 26 | 35 | 65 (1977) | -24 (1950) | 0.77 | 2.6 | 1 |
| Mar | 54 | 32 | 43 | 75 (1999) | 2 (1955) | 0.68 | 1 | 0 |
| Apr | 63 | 38 | 51 | 94 (1977) | 21 (2008) | 0.48 | 0 | 0 |
| May | 72 | 46 | 59 | 101 (1986) | 28 (2002) | 0.65 | 0 | 0 |
| June | 80 | 54 | 67 | 105 (1973) | 33 (1976) | 0.61 | 0 | 0 |
| July | 88 | 60 | 74 | 109 (1960) | 40 (1981) | 0.40 | 0 | 0 |
| Aug | 87 | 59 | 73 | 115 (1961) | 36 (1960) | 0.19 | 0 | 0 |
| Sept | 78 | 50 | 64 | 106 (1988) | 28 (2000) | 0.36 | 0 | 0 |
| Oct | 62 | 39 | 51 | 86 (1991) | 8 (2002) | 0.53 | 0.1 | 0 |
| Nov | 45 | 29 | 37 | 72 (1989) | -15 (1985) | 1.06 | 2.3 | 0 |
| Dec | 33 | 21 | 27 | 63 (1972) | -21 (1983) | 1.24 | 7.1 | 2 |

Source: Weather.com (temperature and precipitation data) and 2001 City of Moses Lake Comprehensive Plan (snow information)