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1. Study Purpose

The City of White Salmon secured a grant from the Washington State Department of Community, Trade and Economic Development to analyze future land needs within White Salmon and its potential urban expansion area. This Urbanization Study Area (see **Figure 1**) includes the City of White Salmon and extends north and west to the Columbia River Gorge National Scenic Area (NSA) boundary. The project includes a buildable lands inventory and map, a land needs assessment, and urbanization strategies to promote orderly City expansion. A series of funding and implementation strategies are also presented in the form of proposed strategies, policies and standards for future consideration by the City and Klickitat County to ensure adequate levels of public service accompany future growth.

Figure 1. White Salmon Urbanization Study Area Aerial

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2. Study Methods

This report includes an analysis of land needs based on historic growth trends and future projections, including various aspects of population, housing and employment growth. The assessment tracks historic housing and job growth in the area and projects a range of future housing and jobs and their associated land needs based on a projected City capture rate of Klickitat County growth. Included is a buildable land map to show parcels that are vacant and available to accommodate growth. This phase of the work breaks the Study Area into several subareas for further evaluation of growth alternatives. Gross vacant land is tabulated in acres, and then adjusted for constraints such as slopes, critical areas and land needs for roads and utility easements. The available land is then compared to projected land needs, showing development opportunities. The process also evaluates potential for providing urban services and associates constraints in expansion areas, including results of traffic analysis for two key intersections. Growth strategies and service delivery options are explored, including potential infill capacity within the City. The study concludes with a Preferred Urbanization Plan and implementation strategies, to be considered and refined with input from the City, County, stakeholders and the public.

3. Urbanization Study Areas

The City of White Salmon is located along the Columbia River and is served by Highway 14 and Highway 141. It adjoins the City of Bingen to the southeast, and the NSA boundary to the east. Potential urban expansion areas are located north and west of the City, where the City's urbanization study areas meets both the NSA boundary and the White Salmon River. Study subarea acreage and gross vacant lands are given in **Table 1**, and shown in **Figures 2 through 7** below. A full study area zoning and vacant lands map is illustrated as **Figure 11**.

Table 1 Urbanization Study Areas

Subareas	Acres	Vacant Acres
City of White Salmon	790	306
A. Pucker Huddle	311	132
B. Los Altos	338	109
C. Loop Road	362	111
Draft Husum/BZ Corner Plan Area*	409	142
Total Land Area	**2210**	**800**

Source: Klickitat County and CPD

Approximately one-third of the study area is considered vacant. For purposes of this study, vacant land is any of the 1920 parcels that have an improvement value of less than $10,000 – which is the lowest value "cabin" – type dwelling in the County Assessor's data base. Note that not all of the gross acreage is developable, do to constraints such as wildlife habitat, shorelines, slopes and roads/utilities/public use needs. In addition, these figures do not include potential for redevelopment (i.e. a home on 5-acres is considered "developed" although it could be further divided).

Project Area and Subareas

Please refer to **Figures 2 through 7** for the project area and subarea maps. These maps indicate land area and vacant land calculations by zone; and show Klickitat County Critical Areas (wildlife, slopes, etc) designations for the project and its subareas.

City of White Salmon – within the existing city limits.

Subarea A. Pucker Huddle – this area is located west of Highway 141, north of the Columbia River, west of the White Salmon River, and south of the proposed expansion of the Husum/BZ Corner Community Plan Area.

Subarea B. Los Altos – the second study area adjoins Strawberry Mountain and the City to the east and south; Highway 141 to the west; Loop Road and the proposed expansion of the Husum/BZ Corner Community Plan area to the north.

Subarea C. Loop Road – the third study area is north of the City, and adjoins the NSA to the east and north. It includes the High School and adjoins the proposed, expansion of the Husum BZ Corner Community Plan Area to the west along Loop Road.

Proposed Husum/BZ Corner Community Plan expansion area – the study area includes that portion of the Husum/BZ Corner Community Plan area proposed for expansion within the urban exempt area of the NSA. Because this area has future urban potential, it was analyzed for buildable land potential regardless of whether Husum/BZ or the City of White Salmon ultimately oversees its land use.

4. Existing Development

The City of White Salmon has developed along the bluff overlooking Bingen, Highway 14 and the Columbia River. Along Highway 141, the downtown core branches north up Main Street toward Snowden and Loop Road and west along Highway 141 to Los Altos, and Pucker Huddle en route to Husum, BZ Corner and Trout Lake. The City achieves urban levels of development, but includes some large lot residential land within its limits. The rural study area adjacent to the City is characterized by homes on half-acre and larger lots, consistent with County zoning.

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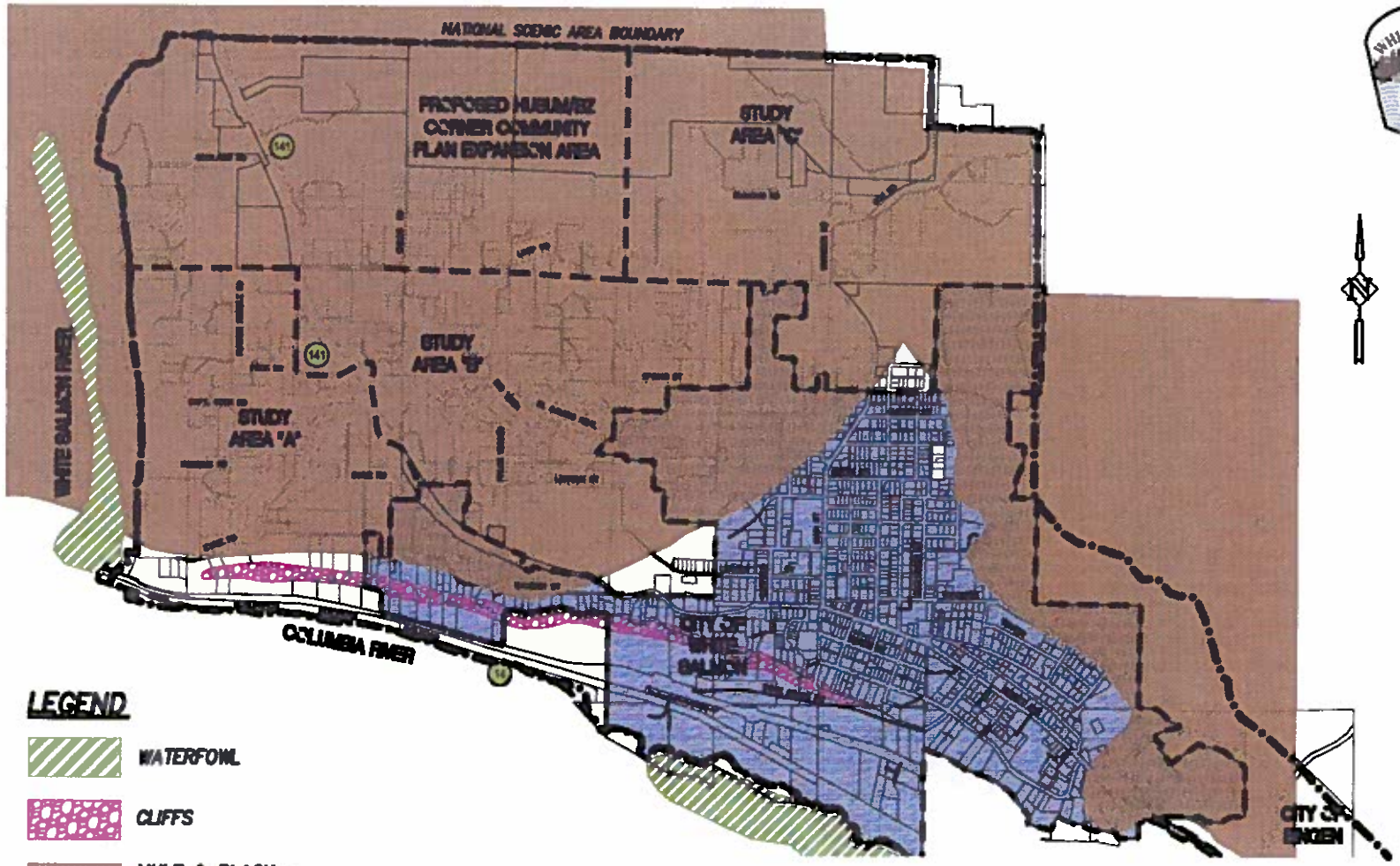

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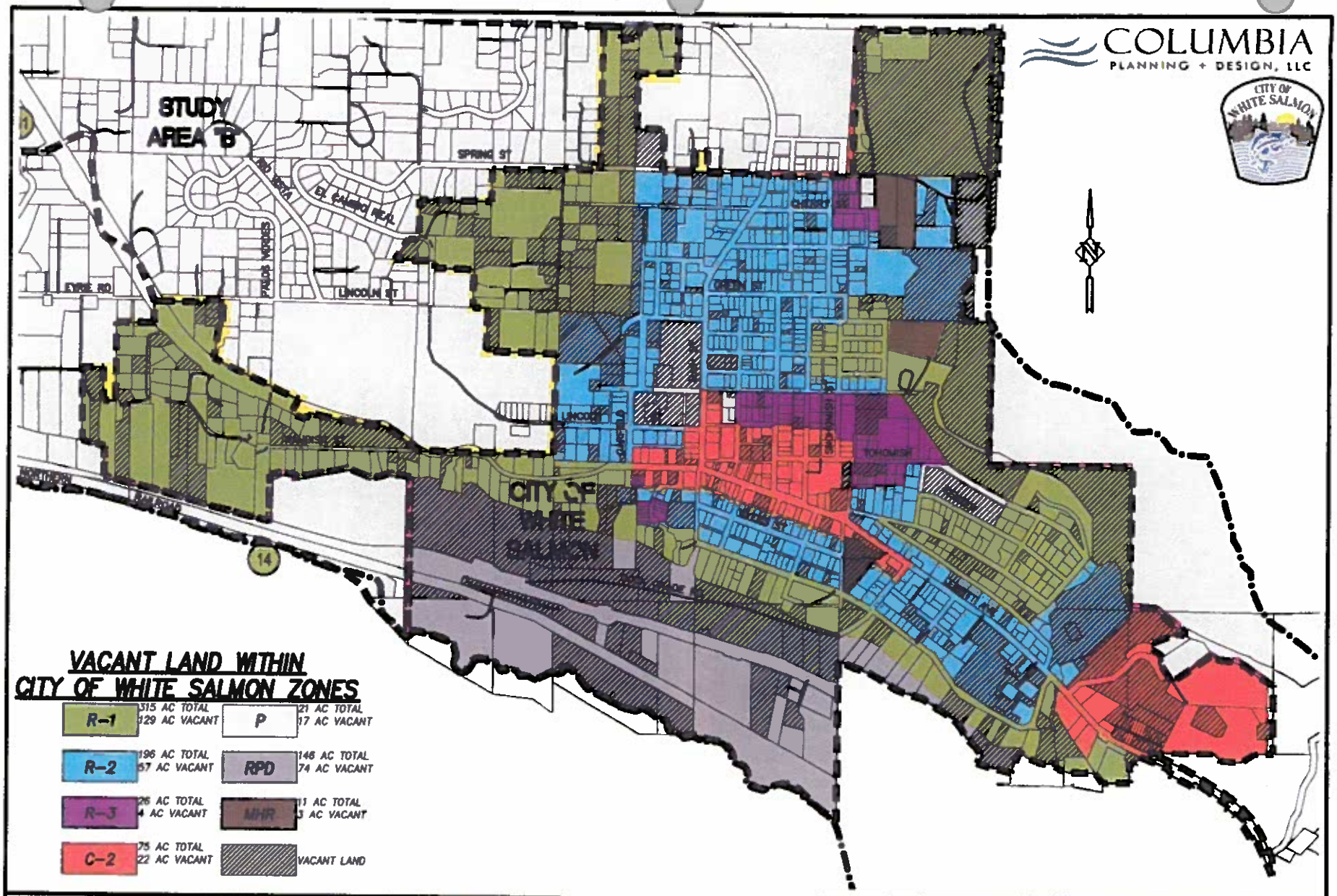
PROJECT AREA WITH CRITICAL AREAS

WHITE SALMON URBANIZATION STUDY

WHITE SALMON, WASHINGTON



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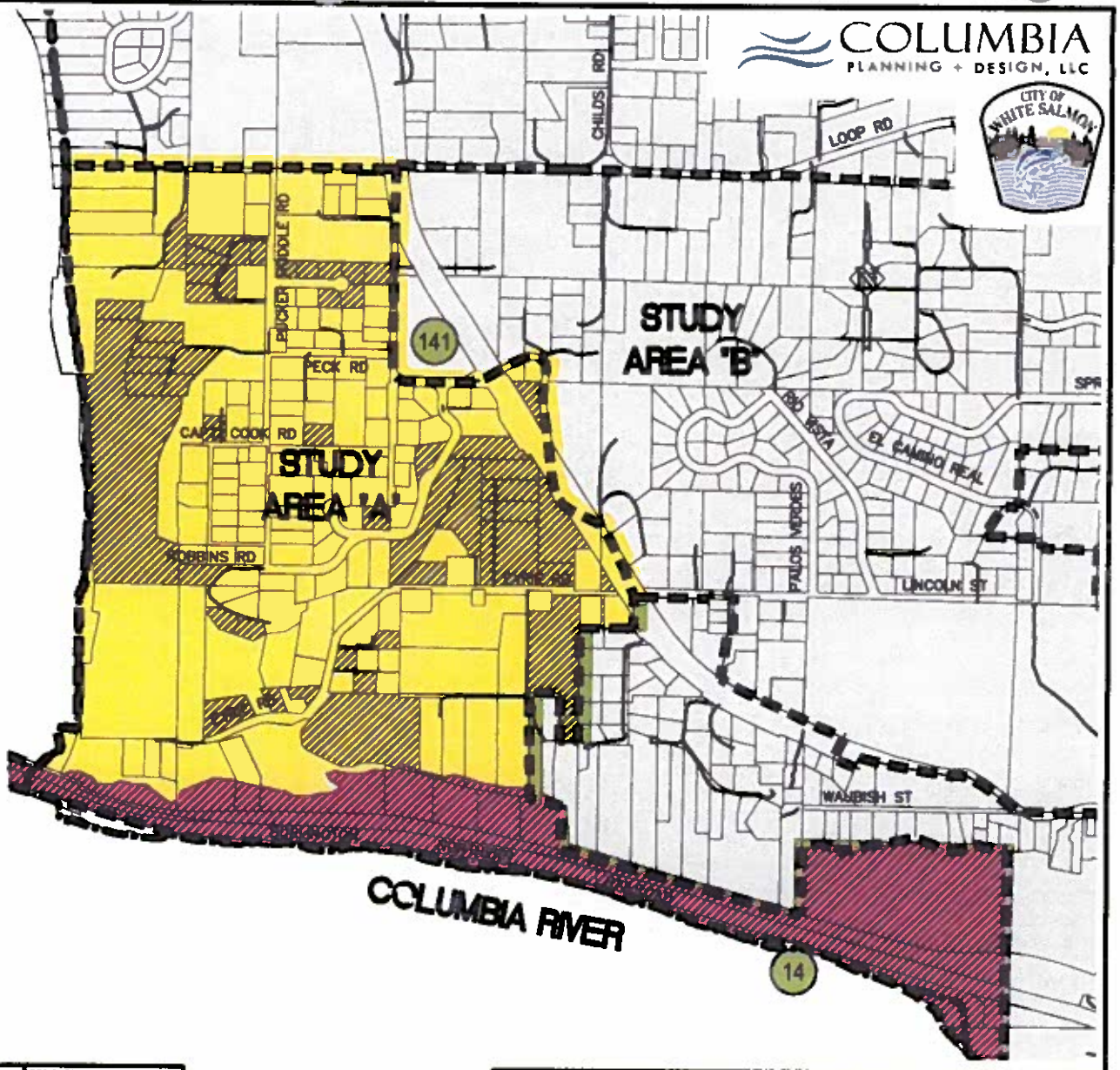
CITY OF WHITE SALMON
WHITE SALMON URBANIZATION STUDY
WHITE SALMON, WASHINGTON



VACANT LAND WITHIN KLICKITAT COUNTY ZONES

SR	246 AC TOTAL 87 AC VACANT	P	0 AC TOTAL 0 AC VACANT
RR1	0 AC TOTAL 0 AC VACANT	R	0 AC TOTAL 0 AC VACANT
RR2	0 AC TOTAL 0 AC VACANT	OS	85 AC TOTAL 85 AC VACANT
GC	0 AC TOTAL 0 AC VACANT		VACANT LAND

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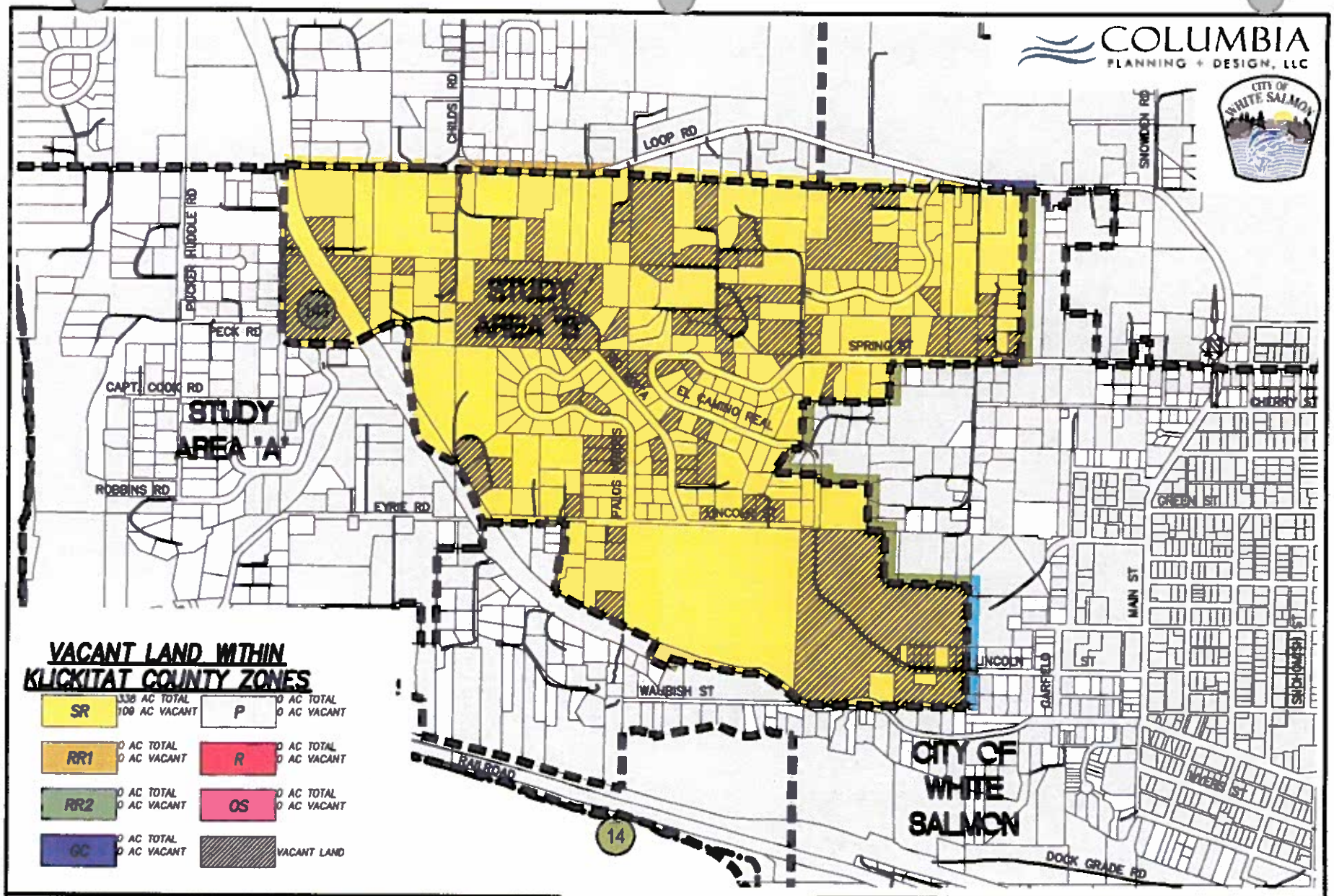
STUDY AREA "A"

WHITE SALMON URBANIZATION STUDY

WHITE SALMON, WASHINGTON



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STUDY AREA "B"

WHITE SALMON URBANIZATION STUDY

WHITE SALMON, WASHINGTON

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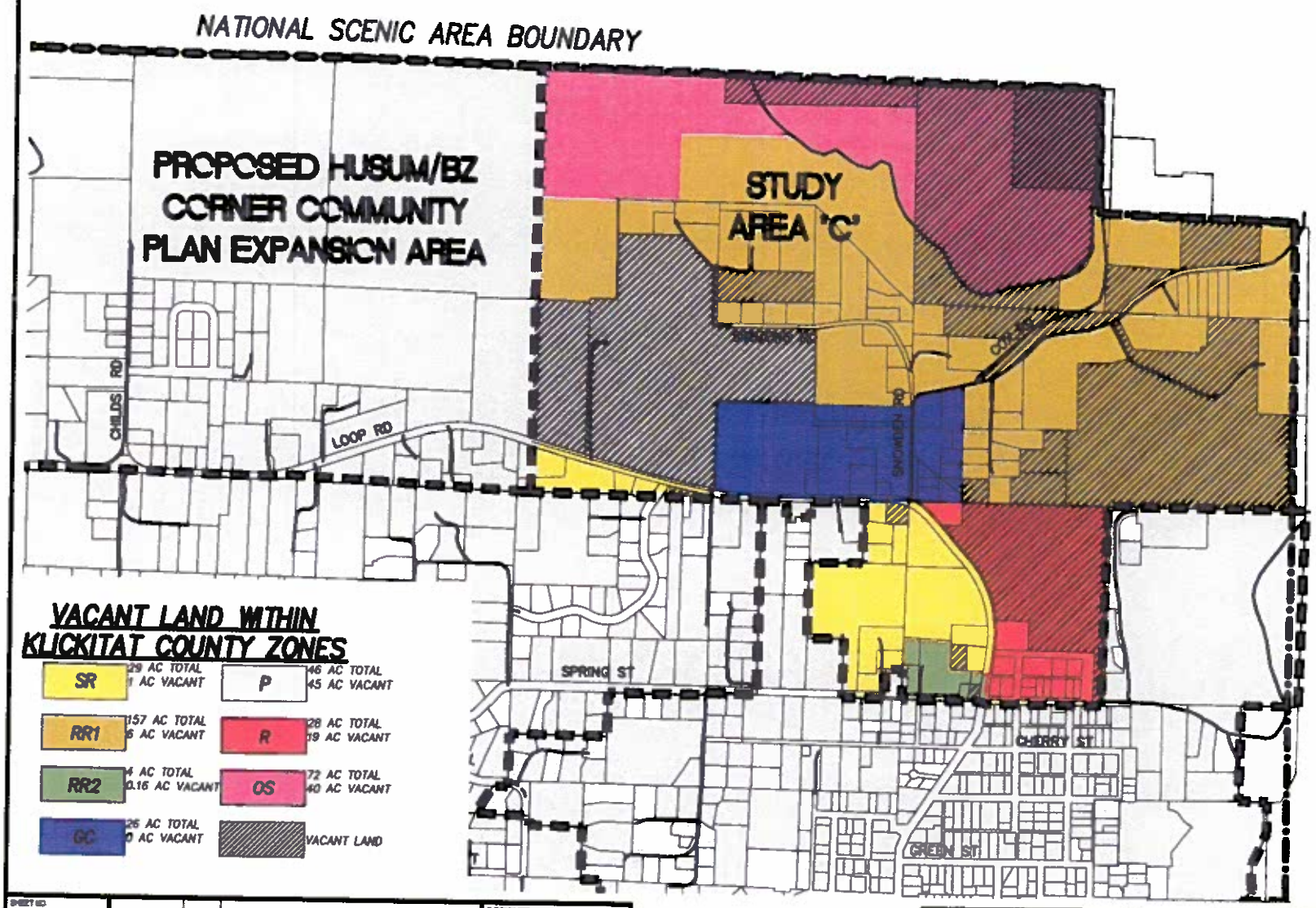
CITY OF WHITE SALMON



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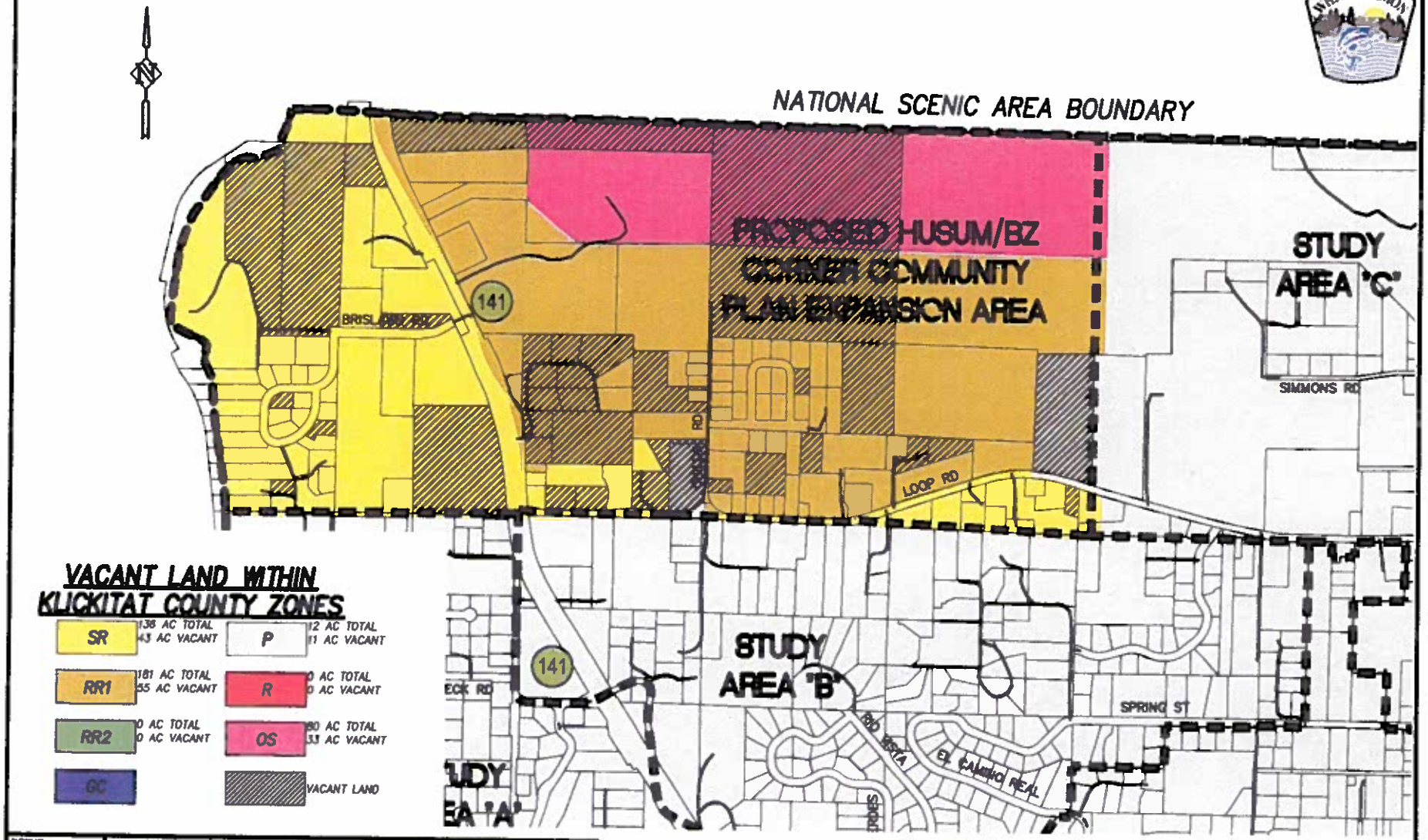
STUDY AREA "C"

WHITE SALMON URBANIZATION STUDY

WHITE SALMON, WASHINGTON

COLUMBIA
PLANNING + DESIGN, LLC

CITY OF WHITE SALMON



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HUSUM/BZ CORNER COMMUNITY PLAN AREA

WHITE SALMON URBANIZATION STUDY

WHITE SALMON, WASHINGTON

5. Existing Zoning and Supply

The study area includes seven City zones and seven Klickitat County zones. There are a range of urban densities allowed in the City, which include provisions for single family homes on 5,000 square foot lots and zones for duplexes, townhomes and condominiums at higher densities. The City also allows mixed use potential as a conditional or accessory use for up to 50% residential occupancy in the C2, General Commercial (downtown) and RPD, Riverfront Planned Development Districts (near the Hood River bridge).

Klickitat County zoning in the study area allows for housing on half-acre to 2-acre lots, and includes a district for near-urban densities (6,000 square foot lots) where a community sewer system is available. There is also a small general commercial district on Loop Road adjacent east of the High School (in Subarea C). Study area zones, residential minimum lot size, mixed-use potential and available land supply per zone are given in **Table 2** below for **(a) city** and **(b) county** areas.

Table 2 Study Area Zoning and Land Supply
a. City of White Salmon

Zone	Minimum Residential Lot Size/Density	Total Acres	Developed	Vacant*
R1 Single Family Residential	5,000 SF	315	185	130
R2 Medium Density Residential	5,000 SF 6,000 SF/duplex 3,000 SF/townhome	196	139	57
R3 Multi-Family Residential	5,000 SF 6,000 SF Duplex 2,000 to 2,500/townhome	26	22	4
C2 General Commercial	Up to 50% residential as a conditional use	75	53	22
Public	N/A	21	5	16
RPD Riverfront Planned District	Up to 50% residential as an accessory use	146	72	74
MHR Mobile Home Residential	Mobile Home Parks on min. 2.5 acres	11	8	3
Total City Land		**790**	**484**	**306**

Source: City of White Salmon; Klickitat County Assessor's Office
**vacant lands include all lands with less than a $10,000 improvement value*

b. Klickitat County

Zone	Minimum Residential Lot Size/Density	Total Acres	Developed	Vacant*
SR Suburban Residential	20,000 SF (1/2 acre)	749	529	220
RR1 Rural Residential	1 acre	338	277	61
RR2 Rural Residential	2 acre	4	4	0
GC General Commercial	N/A	26	26	0
P Public	N/A	58	2	56
R Residential	6,000 SF with sewer 20,000 SF w/o sewer	28	9	19
OS Open Space	N/A	217	79	138
Total County Land		**1420**	**926**	**494**

Source: City of White Salmon; Klickitat County Assessor's Office
**vacant lands include all lands with less than a $10,000 improvement value*

6. Utilities

The City provides water within its boundaries, as well as many points within the rural study area, depending on elevation. The City recently rolled back its water rate surcharge of 40% outside of the City Limits, so rural residents now pay the same rates as do City residents. The City also recently lifted a moratorium based on water source and water rights issues. The present solution is based on the City bringing the Buck Creek water source back on line. There are still many improvements needed to accommodate rural growth, including booster pump stations and water line upsizing. The City completed a Water Master Plan update in 2004. Wastewater service is largely contained to the City Limits, with some exceptions. The City has a Wastewater Master Plan that dates back to 1993-94 and covers the cities of Bingen and White Salmon. A Stormwater Master Plan is also available, and is important for understanding future stormwater needs for the White Salmon area. The more comprehensive review of public facilities; service availability; and general improvement needs are given under Public Facilities, pages 31 through 44; with opportunities and constraints listed in Figure 12. See also Appendix A, Utility System Review, including planning-level cost estimates for needed improvements.

7. Streets

The City of White Salmon is served by two State Routes: Highway 14 along the Columbia River; and Highway 141, which connects from Highway 14 at Bingen, north through White Salmon and up the White Salmon River through Husum, BZ Corner and Trout Lake. The Washington State Department of Transportation has jurisdiction on the highway system and planning coordination between the City, County and WASDOT is required to facilitate growth and address both local access needs and state access spacing requirements along these routes.

The City has a series of standards for local streets, but no formal classification system. There is a Transportation Improvement Board local street inventory and pavement condition report. The report rates pavement conditions and lists street widths under categories, such as primary, secondary and local access. This data was used as part of the basis for proposing a local street classification system later in this report. This system will be important for applying consistent standards and facilitating City and urbanization area growth. To augment limited local traffic count data, a traffic study of two key intersections was completed for this project (see Appendix B). The intersections of Highway 141 and Lincoln Street; and the Highway 141/Main Avenue are operating at acceptable levels-of-service. However, the traffic engineer does recommend that the City evaluate another study area intersection at Main Avenue/Loop Rood/Snowden Road for stop control configuration improvements to improve traffic safety.

For rural routes, the City and the County have an agreement to coordinate on future street system needs. This study will help facilitate a discussion and start to address the need for a common set of roadway standards and procedures for guiding development in the urbanization area. Key concerns for joint City of White Salmon and Klickitat County review regarding streets in the urbanizing area include the need for:

- ✓ Consistent street right-of-way widths
- ✓ Common street sections and standards
- ✓ Minimum levels of street frontage improvements
- ✓ Consistent procedures for development review
- ✓ Minimum improvements required with land use approvals
- ✓ Implementation and funding strategies for street system development

8. Market Analysis

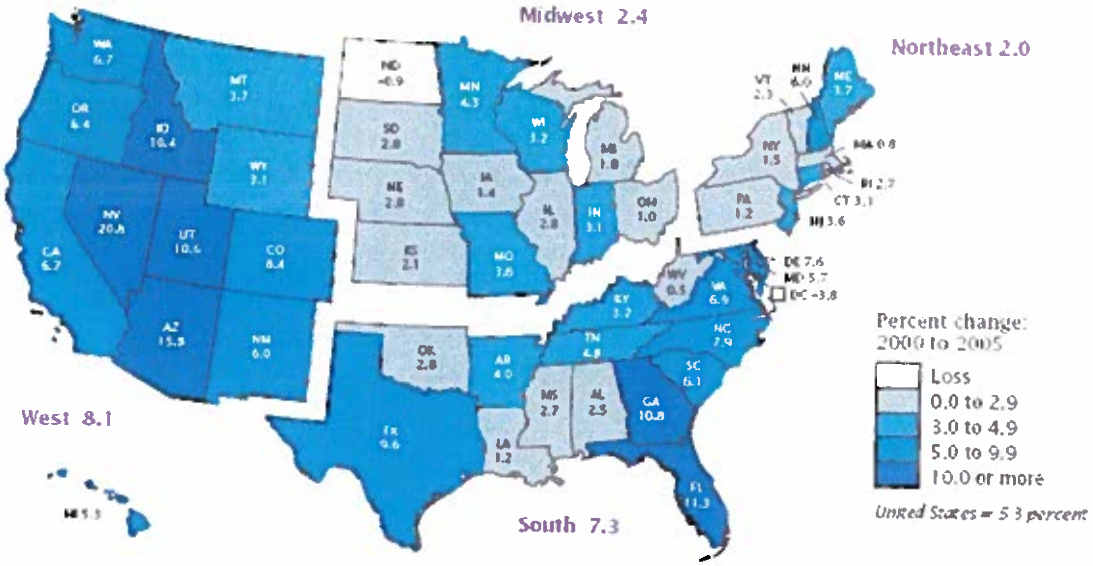
This portion of the analysis is intended to identify recent market dynamics that impact White Salmon's residential and commercial market capture rates, absorption, and land requirements. This work provides a basis for establishing a market-supportable development program for White Salmon urbanization over the next 20 years.

White Salmon is a small city located in Klickitat County, WA in the Columbia River Gorge Region. Klickitat County's prior and current economic fortunes have largely been tied to the recreational amenities contained in the Columbia Gorge, as well as the agricultural commodities grown in central Washington, and the economic influence exerted on it by the expanding Portland-Vancouver Consolidated Metropolitan Statistical Area (CMSA). The Portland-Vancouver CMSA is a seven county metropolis that is home to over two million people, and is the seventh largest metropolis along the West Coast of the United States.

The CMSA (which includes adjacent Skamania County) is the largest economy situated between San Francisco and Seattle and ranks 5th in the western United States in terms of population. The Portland-Vancouver Region had more than 1.58 million residents in year 2000. There are more than 946,000 workers in the Portland-Vancouver Region with a total payroll in excess of $33 billion. Steady positive growth has been occurring within the greater Portland-Vancouver Region for more than a decade, with employment and payroll increases in each year except between 2000-2001, during the most recent national recession.

Oregon and Washington states continue to outpace the nation in average population growth, as indicated in **Figure 8**. Increases in year round and seasonal population levels are forecasted to continue in the Columbia River Gorge, from in migration as well as natural increases.

Figure 8 Population Change, 2000 to 2005



Source: U.S. Census Bureau, Population Estimates Program, April 1, 2000, to July 1, 2005.

Klickitat County's physical, economic, demographic, and cultural characteristics set the framework within which businesses can establish themselves and grow. An analysis of Klickitat County's context can help narrow down the list of target industries as well as identify where policies could be adjusted to help remove barriers to housing and job growth.

Location and Geography

Klickitat County is located within the heart of the Columbia River Gorge National Scenic Area, and is within a one-hour drive of Portland and Vancouver. This unique location provides excellent access to active and passive recreation in the Gorge, including fishing, hunting, boating, windsurfing, kite boarding, kayaking and hiking.

The Columbia Gorge Region is defined in this study to include Klickitat and Skamania Counties in Washington and Hood River and Wasco Counties in Oregon.

Transportation

Transportation access to/from western Klickitat County is provided via Washington State Route 14 and via the Hood River bridge/I-84, approximately 56 miles northeast of I-5 in Vancouver, Washington. I-205 near Portland can be accessed via I-84 within approximately 55 minutes from White Salmon. The Burlington Northern Santa Fe Railroad provides freight rail access between the central United States and Portland and Seattle through Klickitat County. Barge access in the Columbia River is provided at the Port of Klickitat in Bingen.

Utilities

There are no known natural gas or telecommunications limitations within the White Salmon area that would curtail long-term growth. The city provides water service to most locations within the White Salmon urbanization study area, and sewer is provided primarily within the city limits. Considerable levels of infrastructure improvements are required in order to adequately serve growth within the urbanization area.

Development Overview

Several recent and planned development projects have occurred in the Gorge Region. Recent and planned developments within Klickitat County and the surrounding area include:

- Port of Klickitat completed a new 25,000 square foot light industrial building at Bingen Point in 2004. The building is occupied by The Insitu Group, maker of Unmanned Aeronautical Vehicles. Insitu has been a Klickitat Port tenant since 1996 and has been rapidly expanding in recent years.
- Broughton Landing Project—On April 8, 2008 the Columbia River Gorge Commission voted 10-2 in favor of allowing a proposed $70 million resort development project at the former Broughton Lumber mill site near the Spring Creek Hatchery. Preliminary plans include a mix of housing types, lodging, ancillary commercial and public open space.
- Google recently located its state of the art data service and research center near the banks of the Columbia River in The Dalles. The new facility includes two buildings on a 30-acre site and is now employs over 70 workers.
- The US Bureau of Indian Affairs is currently considering a proposal to locate a new resort/casino in Cascade Locks, Oregon. If the resort/casino project is approved it is expected to have significant construction related economic benefits and long term employment benefits to the Gorge Region.

Population and employment often drive the demand for new buildings, land development, and the need for public roads and other infrastructure, including schools and public facilities. Population growth and corresponding household formations lead to increases in consumer buying power, which in turn strengthens the local market for commercial retail development. Population growth also increases the local labor force, which feeds local employment expansion.

Population and Income

As indicated in **Table 3**, between 1980 and 2007 Klickitat County has steadily grown in population to approximately 19,900 residents. Klickitat County's average annual growth rate has been slightly lower than the Washington State average, but equal to the Gorge Region average since 2000.

Klickitat County's residents are a bit older than the Washington state average. In 2000, the median age was 39.5 in Klickitat County, higher than the national and state median of 35.3 for the same year.

Table 3 Population Trends, 1980-2007

	1980	1990	2000	Est. 2007
United States	227,224,719	249,622,814	282,194,308	298,754,819
Washington	4,132,156	4,866,692	5,894,121	6,488,000
Gorge Region	61,550	63,491	73,235	76,195
Hood River Co.	*15,861*	*16,903*	*20,411*	*21,470*
Wasco Co.	*21,948*	*21,683*	*23,791*	*24,125*
Klickitat Co.	*15,822*	*16,616*	*19,161*	*19,900*
Skamania Co.	*7,919*	*8,289*	*9,872*	*10,700*

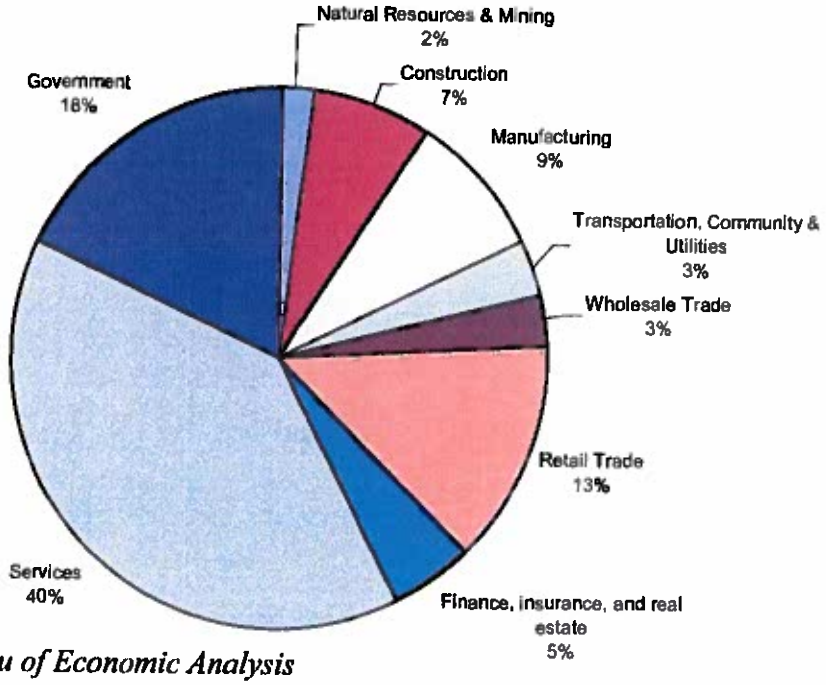
Sources: US Census Bureau, Washington OFM, Oregon Pop. Research Center, Portland State University.
Gorge Region includes Klickitat, Skamania, Hood River and Wasco Counties.

Klickitat County continues to lag behind the statewide average with respect to income levels. Average income levels in the county dropped from about 80 percent of the state level to below 65 percent in 2005. However, income levels in White Salmon are the highest in Klickitat County, with current per capita income levels estimated at $29,190 per person.

Employment

According to the Oregon Employment Department and the Washington Employment Security Department, there were over 40,600 people in the civilian labor force within the four-county Gorge Region. Given the high variation in number of employed workers throughout the year (reflecting the seasonal worker demand attributed to the tourism and agricultural economy), the US Bureau of Economic Analysis estimates that there were 37,662 total (full and part time) non-farm jobs in the Gorge Region in 2006. A separate estimate for "covered" employment indicates that there were 26,978 workers during 2006 in the four-county Columbia Gorge Region that were covered by unemployment insurance. The distribution of employment in the Gorge Region is illustrated in **Figure 9.**

Figure 9 Distribution of Non-farm Employment in the Gorge Region, 2005



Source: U.S. Bureau of Economic Analysis

Klickitat County had approximately 5,643 non-farm wage and salary workers in 2007, as indicated in **Table 4.** A slight dip in employment occurred in Klickitat County since 2000, primarily attributed to the closing of the aluminum plant in Goldendale.

Table 4, Employment Trends, 1990-2007

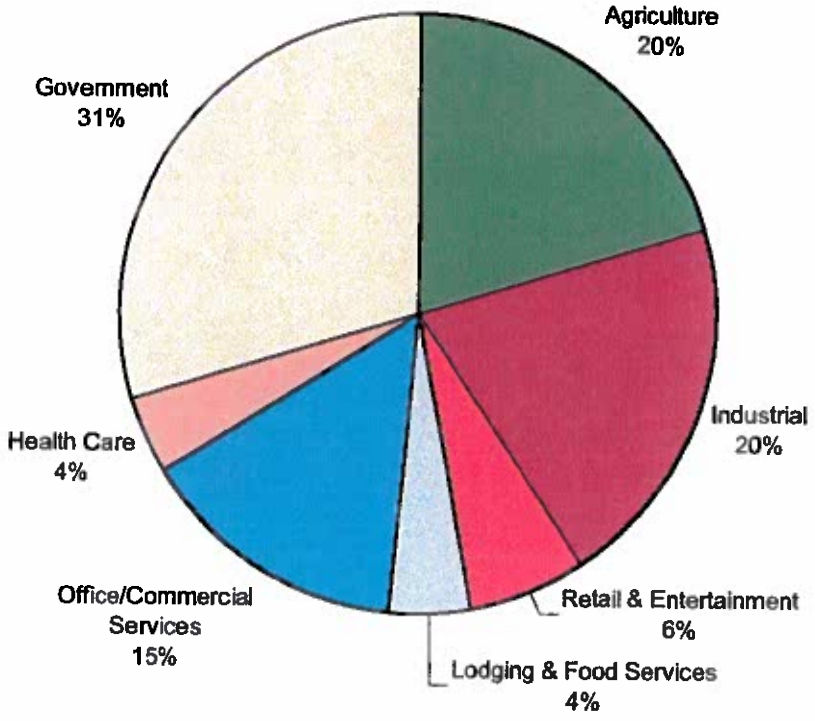
	Average Employment - Year /1			Change in Jobs		Percent Change	
Geography	**1990**	**2000**	**2007**	**1990 - 00**	**2000 - 07**	**1990 - 00**	**2000 - 07**
Klickitat (WA)	5,079	5,852	5,643	773	(209)	15.2%	-3.6%
Gorge Region 2/	**28,102**	**34,730**	**37,662**	**6,628**	**2,932**	**23.6%**	**8.4%**
WA State	2,128,436	2,691,210	2,841,337	562,774	150,127	26.4%	5.6%
OR State	1,236,243	1,596,943	1,693,500	360,700	96,557	29.2%	6.0%
Region share of OR & WA	0.8%	0.8%	0.8%	0.7%	1.2%		
Klickitat share of Gorge Region	18.1%	16.8%	15.0%	11.7%	-7.1%		

Notes:
1) Seasonally Adjusted Average Annual Employment. YR 2007 imputed from 1st Quarter reports.
2) Gorge Region includes Klickitat, Skamania, Wasco and Hood River counties.
Sources: Washington State Employment Security Dept. and Oregon Employment Department.

As reflected by **Table 4**, Klickitat County's share of employment within the Gorge Region has hovered between 15% and 18% capture rate since 1990. Annual job growth in the Gorge Region since 1990 has generally ranged from 100 to 1,300 additional jobs per year. The average annual increase in employment for the Gorge Region was 420 total non-farm jobs per year between 2000 and 2007, according to the US Bureau of Economic Analysis.

The current (March 2008) distribution of jobs in Klickitat County is dominated by government, agriculture, industrial and service job classification, as reflected in **Figure 10.**

Figure 10 Employment Distributions in Klickitat County, March 2008



Source: Washington Employment Security Department.

The top industry sectors in Klickitat County are listed in **Table 5.**

Table 5 Leading Private Employment Sectors, Klickitat County, 2007

Industry (NAICS 3-digit classification)	Total Employment
111 Crop Production	741
562 Waste Management and Remediation Services	189
722 Food Services and Drinking Places	185
445 Food and Beverage Stores	146
236 Construction of Buildings	127
541 Professional, Scientific, and Technical Services	118
621 Ambulatory Health Care Services	110
113 Forestry and Logging	98

Source: U.S. Census Bureau; includes private firms only.

The future outlook for job growth in the Gorge Region is favorable. According to the Oregon Employment Department and the Washington Employment Security Department,

regional job growth is expected to continue over the next decade for each major job sector. Because of the significant variation in job growth, we have conducted a sensitivity analysis of White Salmon job growth capture that takes into account the industry sector employment growth forecasts, and includes low, medium and high growth capture rates.

If we assume the Washington Office of Financial Management (OFM) medium growth forecast for Klickitat County, and vary the White Salmon capture rate for specific types of employment sectors, we can forecast employment growth potential for White Salmon.

According to the Washington OFM, the employment sectors that are expected to generate the most job growth over the next 10 years in Klickitat County include:

- Office and commercial services
- Government
- Retail and entertainment
- Health care and social services

Klickitat employment growth projections have been made by general land use/building type by grouping the industry sector level forecasts into general categories including retail/commercial; service/office; government/public; industrial; and agriculture/natural resources. As indicated in **Table 6**, it is projected that Klickitat County could realize a 10-year job growth of nearly 600 jobs.

Table 6 Klickitat County Employment Growth Forecasts, 2007-2017

			Change	
	Est. 2007	**Proj. 2017**	**Number**	**%**
Agriculture	1,128	880	-248	-22%
Industrial	1,125	1,360	235	21%
Retail & Entertainment	361	385	24	7%
Lodging & Food Services	247	264	17	7%
Office/Commercial Services	827	1,143	316	38%
Health Care	232	263	31	14%
Government	1,654	1,872	218	13%
Total	**5,574**	**6,168**	**594**	**11%**

Source: Washington OFM medium growth forecast.

White Salmon can partially affect the County's long-term employment growth potential by providing competitive sites and buildings for new tenants to move or expand into over time. In the absence of buildable land or vacant buildings with adequate public infrastructure (such as roads, sewer and water service) we would expect the growth potential to be near the low end of the range shown in **Table 7.** If the White Salmon

urbanization area is prepared to accommodate competitively priced sites and buildings through redevelopment and/or new land served by public utilities, the city could benefit from higher levels of job growth than would occur otherwise.

Table 7 White Salmon 20-Year Employment Growth Forecast

Jobs	Low	High	Midpoint
Industrial	0	0	0
Retail & Entertainment	5	38	21
Lodging & Food Services	3	10	6
Office/Commercial Services	63	7	35
Health Care	13	126	69
Government	44	19	31
Total	**128**	**199**	**163**

Source: FCS GROUP based on the capture rates shown in Table 8.

As structural shifts occur in national and regional economies due to increasing foreign competition and an aging baby boom population (people born between 1945 and 1965), we would expect more demand in the service sectors and less in the goods producing industrial sectors. The resulting job growth capture rates for White Salmon are summarized in **Table 8.**

Table 8 Forecasted White Salmon Capture Rates of Klickitat County Employment Growth, Next 20 Years

	Low	Med	High
Agriculture	0%	0%	0%
Industrial	0%	4%	8%
Retail & Entertainment	10%	14%	20%
Lodging & Food Services	10%	14%	20%
Office/Commercial Services	10%	14%	20%
Health Care	20%	25%	30%
Government	10%	14%	20%

The job growth forecasts shown in **Table 7** are considered to be baseline growth forecasts that take into account recent levels of local and regional economic activity. It should be noted that these growth forecasts do not reflect special uses that may be attributed to regional employment needs or special institutional uses (such as schools).

Housing

Consistent with the moderate population growth that has occurred in White Salmon over the past few decades, housing growth and new development has also increased moderately in recent years. As indicated in **Table 9**, there were an estimated 983 total dwellings in 2007 in White Salmon. Total housing construction has outpaced demand in recent years, resulting in an increase in the vacancy rate from 6.5% in 2000 to 9.6% in 2007.

Table 9 Population, Households, and Dwellings, White Salmon, 1990-2007

	1990	2000	Est. 2007
Population	1,861	2,193	2,195
Households	763	887	889
Avg. HH Size	2.43	2.46	2.47
Dwellings	816	949	983
Vacancy Rate	6.5%	6.5%	9.6%

Source: US Census Bureau; with 2007 estimates by FCS GROUP.

Other interesting findings for White Salmon from the 2000 census are reflected in **Tables 10, 11 and 12** and include:

- The distribution of housing in the West Klickitat County area (White Salmon and Bingen) included: 67% single family; 20% multifamily; and 13% mobile homes/other.

- The housing tenancy for White Salmon consisted of 57% owner, and 43% renter occupied units.

- There were approximately 61 vacant housing units in White Salmon counted in 2000, with a vacancy rate of 6%.

- The county recorded 165 residential building permits in the White Salmon urbanization area between 2003 and May of 2008. This equates to approximately 33 permits per year. Nearly 88% were for single family detached dwellings with the remainder for mobile homes. County Assessor records confirm that no new multifamily dwellings were permitted in the study area during the past five years.

Table 10 Housing Types in Klickitat County, 2000

Type of Unit	West County [1]	East County [2]	Wahkiahus Dist. [3]	Other Klickitat Co.	Klickitat County Total	WA State Total
Single Family	67%	66%	53%	70%	66%	65%
Detached	65%	65%	50%	69%	64%	62%
Attached	2%	1%	2%	1%	2%	3%
Multifamily	20%	19%	8%	2%	10%	26%
2 to 4 units	13%	14%	6%	1%	6%	7%
5 to 19 units	6%	3%	2%	0%	2%	10%
20+ units	2%	1%	0%	1%	2%	9%
Mobile homes/Other	13%	15%	40%	28%	24%	9%
Total	100%	100%	100%	100%	100%	100%

Source: US Census
Note: columns may not add to 100% due to rounding.
1. White Salmon and Bingen.
2. Goldendale
3. Centerville, Dallesport & Lyle.

Table 11 White Salmon Housing Characteristics, 2000

	2000 Census	
	Count	**Dist.**
Population	2,193	
Group Quarters Pop.	8	
Households	2,185	
Avg. HH size	2.46	
Housing Tenancy		
Owner Occupied	507	57%
Renter Occupied	380	43%
Subtotal	**887**	**100%**
Vacant Housing	61	6%
Total Housing Units	**948**	
Total Housing by Type		
Single Family Detached	606	64%
Single Family Attached	18	2%
Multifamily	193	20%
Mobile Home/Other	131	14%
Total	**948**	**100%**

Source: US Census Bureau.

Table 12 Residential Building Permit Trends, White Salmon Urbanization Area, 2003 to May, 2008

Dwelling Type	2008 (Jan-May)	2007	2006	2005	2004	2003	Total Homes	Average Permits Per Year
Single Family Detached	5	32	32	24	34	17	**144**	**28**
Mobile Homes	0	3	3	4	5	6	**21**	**4**
Multifamily	0	0	0	0	0	0	**0**	**0**
Total	**5**	**35**	**35**	**28**	**39**	**23**	**165**	**33**

Source: Klickitat County.

Future growth forecasts for Klickitat County by the Washington Office of Financial Management (medium growth forecast) assumes an increase of 2,782 people in the county between 2007 and 2030, as illustrated in **Table 13**. The level of population growth expected to occur in White Salmon will depend on the amount of buildable land inside the urban area, and the relative cost of housing compared to other areas in the Gorge Region and Klickitat County. For urbanization study purposes, the population growth capture rate for the White Salmon urbanization area is forecasted to range from 11% (low) to 13% (medium) and 16% (high) over the next 20 years.

Table 13 Population Growth Forecasts, Klickitat County and White Salmon Urbanization Area, 2007 to 2030

	Est. 2007	Proj. 2020	Proj. 2030	Proj. Change: 2007-2030
Klickitat Co.	23,049	24,470	25,831	2,782
White Salmon Area				
Low	2,195	2,692	2,841	**646**
Medium	2,195	3,181	3,358	**1,163**
High	2,195	3,915	4,133	**1,938**
White Salmon Pop. Capture				
Low	*10%*	*11%*	*11%*	--
Medium	*10%*	*13%*	*13%*	--
High	*10%*	*16%*	*16%*	--

Source: Klickitat County growth forecast by Washington OFM, local capture rate assumptions by FCS GROUP.

As indicated in **Table 14**, the forecasted increase in population of 646 to 1,938 new residents, combined with an assumption for second home demand (at 10% of total

housing demand) results in a total forecasted housing demand for the White Salmon urbanization area that ranges from 291 dwelling units (low), to 525 dwelling units (medium), and 879 dwelling units (high). The majority of this new housing demand is likely to consist of single family detached housing units (65%). Townhomes/infill development is expected to account for about 5% of total demand, multifamily expected to account for 20% of total demand, and manufactured housing expected to account for 10% of total demand.

Table 14 Forecasted Housing Need, White Salmon Urbanization Area, 2007 to 2030

	Low	Med	High	
Pop. Change	**646**	**1,163**	**1,938**	
Avg. HH Size	2.47	2.46	2.45	
Occupied Dwellings	262	473	791	
Second Homes*	29	53	88	
Total New Dwellings	**291**	**525**	**879**	*Housing Mix Assumptions*
Single Family	189	341	571	*65%*
Townhomes/Infill	15	26	44	*5%*
Multifamily	58	105	176	*20%*
Manufactured/Mobile Homes	29	53	88	*10%*

** assumes that 10% of future demand will be comprised of second home demand.*

9. White Salmon Urbanization Area Land Need

Assuming there are adequate public facilities (roads, water, sewer) to service new development, and competitive buildings and sites are developed to retain/attract new residents and businesses, we expect the White Salmon urbanization area's development potential to range from medium to high growth capture within Klickitat County. **Table 15** indicates that the expected housing demand of 291 to 879 new housing units, translates into approximately 89 to 268 buildable acres of residential land demand.

Table 15 Forecasted Residential Land Need,
White Salmon Urbanization Area, 2007 to 2030 (net acres)

Land Demand (acres)	Low	Med	High	Density Assumption	
Single Family	63	114	190	3	per acre
Townhomes & Urban Infill	2	3	5	8	per acre
Multifamily	5	9	15	12	per acre
Manufactured/Mobile Homes	3	5	9	10	per acre
Subtotal	73	131	219		
Plus roads/easements	16	29	48	18	percent
Total Buildable Land Need	**89**	**160**	**268**		

Taking into account the full range of projected employment growth scenarios described previously (see **Table 7**), the amount of new employment over the next 20 years in White Salmon is forecasted to range from approximately 128 to nearly 200 jobs.

The amount of land required to accommodate this development will vary depending upon the ability to provide redevelopment sites as well as adequate vacant lands in marketable locations. For study purposes, we have applied localized development density assumptions regarding: the amount of jobs needing new development (adjustments made to account for work at home and enhanced utilization of existing buildings); average building floor area required per new job; average building floor area ratios by building use classification; and net to gross land adjustments to account for additional land required for public roads and easements.[1] These assumptions are provided in **Table 16**.

Table 16 Employment Development Density Assumptions, White Salmon Urbanization Area, 2007 to 2030

Sector/Use	Jobs Needing New Development [1]	Bldg. floor area per Job in SF[2]	Building FAR [2]	Gross: Net Land Adjustiment[3]
Industrial	90%	1,200	0.18	1.15
Retail & Entertainment	75%	500	0.30	1.15
Lodging & Food Services	75%	400	0.30	1.15
Office/Commercia l Services	80%	300	0.30	1.15
Health Care	80%	500	0.20	1.15
Government	80%	350	0.25	1.15

Notes:
1/ Allowances based on estimated share of jobs that could be accommodated by existing underutilized buildings and home based employment.
2/ Building density derived from Portland Metro Employment Density Study, 2005; adjusted to local conditions by CPD.
3/ Allowances take into account land dedicated to public road and utility easements.

Using the aforementioned assumptions for job growth and development densities, the amount of building area absorption potential for employment development in the White Salmon urbanization area, ranges from 35,000 to 75,000 net square feet of floor area over the next 20 years, as reflected in **Table 17.**

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[1] Floor to area (FAR) ratios are used to estimate the amount of building floor area that is developed on a single site. For example, a 10,000 square foot building with a 0.18 FAR would require a site of approximately 56,000 square feet (1.3 net acres); computed as: 10,000/0.18.

Table 17 Employment Land Needs Forecasts, White Salmon Urbanization Area, 2007 to 2030

Jobs	Low	High	Midpoint
Industrial	0	0	0
Retail & Entertainment	5	38	21
Lodging & Food Services	3	10	6
Office/Commercial Services	63	7	35
Health Care	13	126	69
Government	44	19	31
Total	**128**	**199**	**163**

Supportable Building Square Feet (floor area)	Low	High	Midpoint
Industrial	0	0	0
Retail & Entertainment	2,000	14,000	8,000
Lodging & Food Services	1,000	3,000	2,000
Office/Commercial Services	15,000	2,000	8,500
Health Care	5,000	51,000	28,000
Government	12,000	5,000	8,500
Total	**35,000**	**75,000**	**55,000**

Gross Buildable Acres	Low	High	Midpoint
Industrial	0	0	0
Retail & Entertainment	0.5	1.5	1
Lodging & Food Services	0.5	0.5	0.5
Office/Commercial Services	1	0	1
Health Care*	1	7	4
Government*	1	1	1
Total	**4**	**10**	**7.5**

** Excludes special uses, such as schools and churches.*

After adjusting for home-based jobs and enhanced use of underutilized sites/buildings though redevelopment, this amount of employment-related development is forecasted to require between 4 and10 gross buildable acres of land area over the next 20 years. The land needs forecasts do not take into account any land that may be unbuildable due to environmental constraints (such as shorelines, wetlands, wildlife habitat and floodplains), steep slopes, and public roads/utility easements. These land demand forecasts also do not reflect special land uses that are not typically accounted for by market trends, including public parks and open space, community facilities, schools, public works shops/yards, churches and cemeteries. It is recommended that interviews be conducted with local public officials, and major private and non-profit land users to ascertain their specific growth needs for new development in the White Salmon urbanization area.

10. Urbanization Alternatives

There are several alternative approaches to consider in selecting a preferred urbanization strategy, which is the next step in the study process. Alternatives include consideration for land suitability, levels of infrastructure available to serve urban expansion, and the level of infill provided within the City of White Salmon. This portion of the study will conclude by estimating the net buildable land per zone needed to meet projected growth.

Net Buildable Land Supply

The White Salmon urbanization area appears to contain more than enough gross vacant land to meet projected 20-year residential and commercial demand in the medium to high growth scenarios. However, the land supply must be adjusted from gross to net buildable by accounting for Critical Areas, steep slopes, and needed area for roads and utilities. Several key assumptions are made in providing estimates for non-buildable land within the study area, as described below.

Critical Areas – it is difficult to estimate the impact of Critical Areas on future development. This is in part based on the uncertain nature of the impact habitats, shorelines, bluffs and slopes may have on future development applications. In addition, for purposes of this study, non-employment and non-residential land (i.e. public and open space lands) are not considered as available vacant land. For example, densities may or may not be impacted by deer habitat or waterfowl areas, and incomplete topographic data makes it difficult to estimate the amount of land which will not be buildable due to cliffs and steep slopes. The following assumptions are made to estimate the range of undevelopable land based on critical areas and slopes:

Buildable Lands Assumptions:

1. **Vacant Public and Open Space Lands.** The estimated 242 acres of public and open space lands are not available to meet housing and employment growth projections of this analysis, although they may be needed for future schools, church, park, recreation and public utility needs.

2. **Critical Area Deer and Waterfowl Habitat.** The Klickitat County Comprehensive Plan designates areas along the Columbia and White River as waterfowl habitat and shoreline, as shown in **Figure 2 through 7** above. The only potential residential city district impacted is the RPD district near the Columbia River Bridge. Because this is a planned district, it is likely that development can be clustered to avoid impacts and therefore no density reduction is assumed. The Deer Habitat overlay impacts nearly all of the rural county zones. It is difficult to assess future impacts to be assessed during development review, but a 10% reduction for habitat buffers are assumed for study purposes.

3. **Bluffs and Steep Slopes.** The County Comprehensive Plan indicates where the White Salmon buffs are located (**Figure 2** above). There is also good topographic data for the City of White Salmon. However, only USGS 40-foot contour data is available for the rural plan areas, and is not accurate enough to determine slope impacts on land development potential. Based on an assessment of typical topography in the City and assumptions in the outlying rural area, an estimated 20% reduction in buildable land area is assumed. It is recommended that additional topographic survey data be completed in the outlying area as part of any urbanization plan.

4. **Roads and Utilities.** The above section assumes 18% of commercial land is needed for roads and utilities (see Table 16). Therefore, we adjust gross employment land by 18% and adjust residential lands by 15% to accommodate for roads and utilities. The higher requirements for commercial lands are due to their urban location and higher levels of infrastructure need.

5. **Commercial and Riverfront Districts.** The City of White Salmon encourages potential for mixed uses, allowing at up to 50% of C2 Commercial land (downtown) and RPD Riverfront land (near Hood River bridge). There are considerable numbers of apartments over shops downtown, and the potential for riverfront housing is attractive. Not all development will take advantage of this option, so we assume 25% of commercial land will develop in residential uses.

Table 18 applies the above assumption is estimating study area net buildable residential and commercial lands for the **city (a)** and the **county (b)** urbanizable areas. There are an estimated total of 366 net buildable acres, of which 45 acres are zoned commercial and 321 acres are zoned residential. The residential supply is split between city and county.

Table 18 Residential and Commercial Buildable Land

a. City of White Salmon

Residential and Commercial Zones	Minimum Residential Lot Size/Density	Gross Vacant Acres*	Avail. Com. Use 75%	Steep Slopes -20%	Streets & Utilities -15-18%	Net Buildable Acres
R1 Single Family Residential	5,000 SF	130		-26	-20	84
R2 Medium Density Residential	5,000 SF 6,000 SF/duplex 3,000 SF/townhome	57		-11	-9	37
R3 Multi-Family Residential	5,000 SF 6,000 SF Duplex 2,000 to 2,500/townhome	4		-1	-0.5	2.5
C2 General Commercial	Up to 50% residential as conditional use	22	16.5	-3	-3	10.5
RPD Riverfront Planned District	Up to 50% residential as accessory use	74	55.5	-11	-10	34.5
MHR Mobile Home Residential	Mobile Home Parks min. 2.5 ac	3		-0.5	-0.5	2
Total City Land		**290**	**72**	**-52.5**	**-43**	**170.5**

b. Klickitat County

Residential & Commercial Zones	Minimum Residential Lot Size/Density	Gross Vacant Acres*	Habitat -10%	Steep Slopes -20%	Streets & Utilities -15-18%	Net Buildable Acres
SR Suburban Residential	20,000 SF	220	-22	-44	-33	121
RR1 Rural Residential	1 acre	61	-6	-12	-9	34
RR2 Rural Residential	2 acre	0	0	0	0	0
GC General Commercial	N/A	0	0	0	0	0
R Residential	6,000SF w/ sewer 20,000 SF w/o sewer	19	-2	-4	-3	10
Total County Land		**300**	**-30**	**-60**	**-45**	**165**

Table 19 summarizes the forecasted 20-year demand for both residential and commercial land needs and estimated buildable land in the White Salmon urbanization area.

Table 19 White Salmon Area Land Needs Summary

Land Type	20-year Land Need Low	20-year Land Need Midpoint	20-year Land Need High	Study Area Buildable Land Supply	Difference (oversupply) Midpoint	Difference (oversupply) High
Residential	89	160	268	290.5	130.5	22.5
Commercial	5	7.5	10	45	37.5	35
Total	94	167.5	278	**335.5**	**168**	**57.5**

The supply of estimated buildable land within the study area appears adequate to meet both the midpoint and high demand estimates for residential and commercial land needs (Tables 15, 17 and 19). Additional study is required to further test land supply and net buildable assumptions, and to assess general public water and sewer feasibility in order to refine the buildable lands inventory and pursue a preferred urbanization strategy. Further City, stakeholder and public input is recommended in refining urbanization strategies.

Redevelopment Potential

The land inventory includes land as "developed" where any of the 1920 study parcels have more than $10,000 in improvements. Recall that this is the lowest value in the Assessor's data base for a "cabin", which the county considers as a dwelling. There are also "developed" parcels with a home or shop, and additional land available for a short plat, subdivision or planned development application that could increase development potential. Finally, there are opportunity parcels within the City zoned C2 Commercial, or RPD Riverfront Planned Development that could be developed or redeveloped at higher densities than exist today.

The study team proposes to further analyze and take direction from the City and its stakeholders and citizens regarding preferred redevelopment, infill and urbanization strategies. With a better-defined vision, we will more closely address redevelopment potential for preferred areas and opportunity sites.

11. Land Needs Summary

The findings contained in this memorandum indicate that White Salmon can be reasonably positioned to benefit from economic growth and development in the Gorge Region. The amount of supportable development potential for the White Salmon urbanization area will be directly dependent upon the city's ability to provide adequate infrastructure service to competitive sites and buildings. We expect the long-term (20 year) development potential to range from 89 to 268 acres of residential land absorption,

primarily for single family detached housing. There are an estimated 291 acres of buildable residential land available to meet this demand. An additional 4 to 10 acres of employment land absorption is also forecasted to serve new job growth that would not likely be accommodated in existing vacant or underutilized commercial buildings in the city. An estimated 45 buildable acres of buildable commercial land has been inventoried to address commercial land needs. The wide variation in future land demand reflects the uncertainty that currently exists with respect to the city's infrastructure capacity, and net buildable land estimates are based on some fairly broad assumptions.

For a graphic overview of the proposed White Salmon Urbanization Plan, see **Figure 11**, Zoning and Vacant Lands; **Figure 12**, Draft Public Facilities Plan; and **Figure 13**, Preferred Urbanization Plan. Further stakeholder and public review will help to shape the community's vision regarding future growth and refine the plan prior to adoption.

12. Public Facilities

The urbanization study team reviewed a number of documents provided by the City, including a Pavement Management study and Utility Reports listed in Appendix A. This section also includes a summary of existing conditions, and utility needs by urbanization subarea. Please refer to Appendix A for a more detailed Utility System Review.

1. **Area A – Pucker Huddle**
   Area A is located west of White Salmon, and is generally bounded by Highways 14 and 141, the White Salmon River and the Proposed Husum/BZ Corner Community Plan Expansion Area. It contains 132 gross acres of vacant land, split fairly evenly between residential and open space zones.

   a. **Water System**
      This area is located entirely within the Los Altos pressure zone. The Los Altos reservoir is the only reservoir in the system that has more capacity than demand. There are a number of system improvements listed in Appendix A that should be addressed before urban levels of development are allowed to occur.

   b. **Sanitary Sewer System**
      A 1992 sanitary sewer study recommended alternatives for upgrading the White Salmon/Bingen sewer treatment plant. There are a number of reasons, including topographic constraints that resulted in west White Salmon in the preferred alternative under the 1992 study. Therefore, a new treatment facility and conveyance system will be required to treat this area. Appendix A cost estimates include developer contributions to the system, but with the City providing sanitary sewer trunk lines.

c. **Stormwater System**
There is no storm sewer system for this area, so new developments will be required to provide for conveyance, detention and water quality.

2. **Area B – Los Altos**
This study area is located west to northwest and adjacent to White Salmon, and is bordered by the City Limits, Highway 141 and Loop Road. This area includes 109 gross acres of vacant residential land.

a. **Water System**
This area is located within the Strawberry Mountain and Strawberry Mtn. Pump Station pressure zones. The reservoir is undersized for fire flow needs, but recommended pump replacement could provide some capacity improvements for this area. The Strawberry Mtn. reservoir has identified leaks, and is a source of major water loss for the City. Improvements are required to serve development in this area.

b. **Sanitary Sewer System**
Los Altos is served by the Waubish Street pump station, and has limited piping capacity. There is a mainline extension east that connect for the treatment facility in Bingen. There appears to be capacity with some conveyance improvements to serve this area, however, the northwest corner of Area "B" was excluded from the 1992 treatment plant service area. Property owners or developers would need to extend lines and make any pump station upgrades to serve future development.

c. **Stormwater System**
There is no storm sewer system for this area, so new developments will be required to provide for conveyance, detention and water quality.

3. **Area "C" Loop Road (County Commercial Zone Area)**
Area "C" is located north of White Salmon, extending north and east to the National Scenic Area boundary, and west to the proposed Husum/BZ Corner Community Plan Expansion Area – it contains 111 gross vacant acres. Due to a general lack of services and topographic conditions, the utility review in this area was targeted to the commercial area is located just north of the City Limits. It contains approximately 25 acres, bounded by Loop Road to the south and the High School to the west. Although the commercial area has no vacant land, it has considerable redevelopment potential.

a. **Water System**
The Area "C" commercial component is located just east of the High School and within the Simmons Road pressure zone, which is served by the Strawberry Mountain reservoir. The reservoir has a capacity of 100,000 gallons, but has a fire suppression demand of 210,000 gallons. The

commercial area on Loop Road cannot be adequately served without improvements outlined in Appendix A and in the 2004 Water Master Plan.

b. Sanitary Sewer System
The Loop Road commercial area is served by a newer 8" sanitary sewer line adjacent to Spring Creek. Any new development must extend sewer service to each building or site, but capacity appears adequate.

c. Stormwater System
The 2003 stormwater report did not include any areas outside the City Limits of White Salmon. There is no storm sewer system for this area, so new developments will be required to provide for conveyance, detention and water quality. The area is dissected by Spring Creek, which would be the most likely discharge point for storm water generated in this commercial area.

4. **Downtown/Hospital Area**
The downtown and hospital areas are joined by Jewett Blvd/Highway 141, and are both zoned (C-2) General Commercial. Most of the lots in this area have been developed, but there are some private lots, and some owned by local governments and schools. The downtown/hospital area is being considered for its redevelopment and infill potential. Because the area is already served by utilities, it can accommodate a portion of the City's forecast growth at a lower cost than required to deliver services outside the City and within the County-zoned urbanization area.

a. Water
The core area is serviced by the Spring Street reservoir. This is the oldest and largest reservoir in the system, and has recently received upgrades to stop leaks. There appears to be capacity to serve redevelopment needs.

b. Sanitary Sewer
Although there are likely leaks in the system requiring repair over time, adequate piping is available to serve redevelopment and infill needs.

c. Stormwater
A majority of the downtown and hospital area stormwater drains to Highway 141 through Jewett Street and discharges to Jewett Creek near NE. Skyline Road. The area south of Jewett Road drains to Wyers Road, where it discharges over the bluff at the Dock Grade outfall. A 2003 report recommends upgrading the Jewett Street trunk line and abandoning the Dock Grade outfall in favor of a new regional detention pond. See Exhibit A for details and cost estimates. Although improvements should be funded over time, it appears the existing pipes are properly sized to accommodate redevelopment and infill in the downtown/hospital area.

13. Implementation Strategies

This study shows that the City of White Salmon has ample land to meet its 20-year projected growth, but significant challenges must be met to serve future urbanization. Development issues include physical constraints based on topography, utility capacity and delivery, funding, permitting, and intergovernmental agreements. However, this study gives the City a vacant lands inventory (opportunities) and lists infrastructure challenges as constraints. This section of the report recommends a Preferred Urbanization Plan, including strategies for addressing challenges facing White Salmon's future growth.

Preferred Urbanization Plan

Selection of a preferred urbanization plan area is difficult and premature based on the lack of detailed information on subarea serviceability (i.e. limited topographic and utility capacity data). In addition, the limitations on development imposed by the Columbia River Gorge National Scenic Area result in a reasoned assignment of the entire study area as the Preferred Urbanization Plan area, including proposed roadway classifications (see Figure 13).

Intent of Urbanization Strategies

The strategies below are intended as an outline for the City to use in pursuing urbanization over time. They include both practical needs for coordination between the City and Klickitat County, and specific recommendations for plan and code updates to insure that urbanization areas are properly served in an orderly manner. These policy recommendations and service delivery strategies will require further refinement and adoption by the City, with endorsement from Klickitat County.

Infrastructure Delivery Strategies

The urbanization study team reviewed a number of documents provided by the City, including a Pavement Management study and utility studies listed in Appendix A. The following gives a brief overview of a proposed street classification system, including street sections recommended for use in urban and rural areas within the study area. This section also includes a summary of utility needs by urbanization subarea. Please refer to Appendix A for a more detailed Utility System Review.

Street System

The City has a pavement management system, but lacks specific street standards. As part of this effort, an existing conditions traffic study (see Appendix B), which finds adequate levels-of service (LOS) at key intersections, including:

- W. Jewett Boulevard (Highway 141)/. Main Avenue
- W. Jewett Boulevard (Highway 141)/NW Lincoln Street

The traffic study includes field observations, resulting in recommended to make improvements to traffic controls to another intersection: North Main and Grange Loop Road. In summary, the intersection has an atypical stop control wherein one of the major streets (eastbound Loop Road) is stop controlled, while the other major street (westbound North Main Avenue) is allowed a free movement. The traffic engineer recommends the City further evaluation this intersection for a more typical stop control configuration to stop all three approaches, or only stop the one minor street approach (Snowden Road).

The pavement management system and traffic study data were used to develop street classifications and sections for both rural and urban areas. Please refer to Figures 13 through 17. Note that we propose to classify State Highways 14 and 141 (segments labeled as "collectors" in traffic study) as "arterials", because they connect through the study area and beyond to other communities and the Interstate system.

Because adequate capacity exists, the study effort was focused on providing street cross sections for both urban and rural streets within the system in order to facilitate consistent review standards between the City and County. The proposed street standards include minimum rights-of-way and are designed to allow some flexibility during the City/County development review process. This would facilitate, for example, the ability to reduce a pavement section where a physical constraint, such as a slope of wetland is shown to justify the reduction. There are also provisions to require a pathway within a rural roadway shoulder where there is significant foot traffic anticipated (i.e. close to neighborhoods or schools, or as part of a subdivision).

a. Arterials

State Route 14 along the Columbia River and Route 141 connecting through White Salmon to Husum form the arterial system. The design standards for these roadways will be determined by the Washington Department of Transportation. Local input is anticipated and appropriate where these routes cross through the City.

b. Major Collectors

These roadways include both urban and rural segments which serve to convey traffic from neighborhoods and shopping districts to the arterial system. Major Collectors include Main Street, Lincoln/Spring Street, Snowden Road, Loop Road and Estes Street. These roadways are proposed within 60' rights-of-way to provide for pavement sections of 36' to 40' width. The street width can be adjusted within this range based on the level of use and traffic projected. In urban locations, curbs, planter strips and sidewalks are required; while swales and optional pathways are allowed to serve rural areas. See **Figure 14**.

c. Minor Collectors and Local Streets

All roadways not identified in **Figure 12** are considered as Minor Collector or Local

Streets. Such streets make up the majority of White Salmon's existing (and future) grid, serving neighborhoods and minor activity centers. **Figure 15** shows the proposed Minor Collector and Local Street section within a 60' right-of-way, with paved travel lanes from 32' (local streets) to 36' (minor collectors). Again, urban sections will require curb, planter strip and sidewalk; with rural sections including swales and pathways as deemed necessary during development review needed.

Within the Local Street system, we propose adoption of a Limited Access Street, **Figure 16**, which is design to accommodate no more than 12 dwelling units at a maximum length of 600'. An applicant must submit a future street plan to show that no future connectivity for additional homes is feasible. Limited access streets include a 50' right-of-way and pavement from 22' to 26', with curbs, planter strips and sidewalks in urban sections; while swales and optional pathways for rural areas.

d. Urban Alleys

The proposed alley standard (**Figure 17**) is for use in urban areas, requiring 18' to 20' of right-of-way and a 12' to 14' paced section. The alley is designed with a central or "v" drainage and 1.5' shoulders. The actual width can be determined during development review with input from the Fire Marshal.

Infrastructure Constraints/Needs

The following summary utility needs are given in Figure 12, Draft Public Facilities Plan by urbanization area. These improvements should be made through a combination of public and public funding sources to ensure adequate utilities are made available to serve future development.

1. **Area A – Pucker Huddle**

   a. **Water System**
   Improvements to the Los Altos pressure zone system are required.

   b. **Sanitary Sewer System**
   Additional treatment options may be required due to limited connection options. Incrementally less capacity demand may result where private step-system conveyance to the public system is allowed with adequate development review and construction standards.

   c. **Stormwater System**
   Limited improvements may require conveyance and detention facilities.

2. **Area B – Los Altos**

   a. **Water System**
   The Strawberry Mountain reservoir is undersized for fire flows, and

additional capacity is required.

b. **Sanitary Sewer System**
Improvements to conveyance system are required. The northwest corner of this area was not included in the 1992 treatment plant upgrades and service area. Incrementally less capacity demand may result where private step-system conveyance to the public system is allowed with adequate development review and construction standards.

d. **Stormwater System**
There are no storm water facilities existing, so new development will require conveyance and detention facilities.

3. **Area C – Loop Road Commercial**

a. **Water System**
Improvements are required to address deficiencies in Strawberry Mountain reservoir capacity to meet fire flows. Los Altos pump station upgrades are also required to support new development.

b. **Sanitary Sewer System**
Capacity exists, but localized conveyance improvements are required to serve new development.

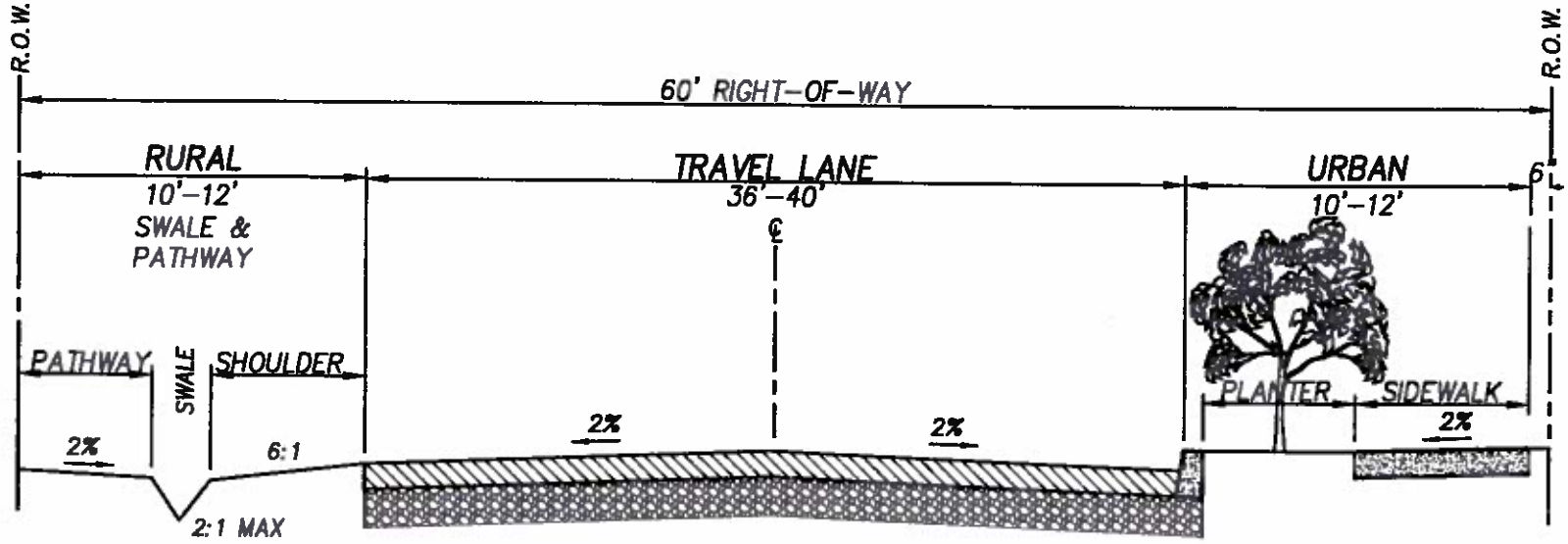
c. **Stormwater System**
New development will require conveyance and detention facilities.

4. **Downtown/Hospital Area**

a. **Water System**
Capacity improvements, including Spring Street reservoir leak repairs are recommended to enhance capacity for new developments.

b. **Sanitary Sewer System**
Repairs to old concrete pipes are recommended to stop infiltration and enhance capacity to support new development.

c. **Stormwater System**
Although pipe sizes currently appear adequate, significant improvements to include upgrades to the Jewett Street trunk line; abandonment of the Dock Grade outfall; and construction of a new treatment and detention facility.



RURAL

- 6' SHOULDER
- 1'-5' SWALE SIZED FOR CONVEYANCE*
- 4'-5' PATHWAY AS DETERMINED BY DEVELOPMENT REVIEW

*Swale capacity to be sized to meet detention and /or infiltration needs where no public stormwater system is available.

TRAVEL LANES

- TRAVEL WAY MAY BE REDUCED TO 32' FOR PHYSICAL CONSTRAINTS
- STRUCTURAL SECTION TO BE DESIGNED BY ENGINEER

URBAN

- 6" CURB
- 3.5'-5' PLANTER
- 5'-6' SIDEWALK
- 6" MONUMENT

Note: Curb and planting strip may be required to be designed to accommodate rather than convey stormwater; or detention may be required on development site.

MAJOR COLLECTOR

N.T.S.

SHEET NO.
FIGURE
14
JOB NO.
CPD-02

DATE	NO.	DESCRIPTION

REVISIONS

DESIGNED: -
DRAWN: -
CHECKED: -
DATE: -

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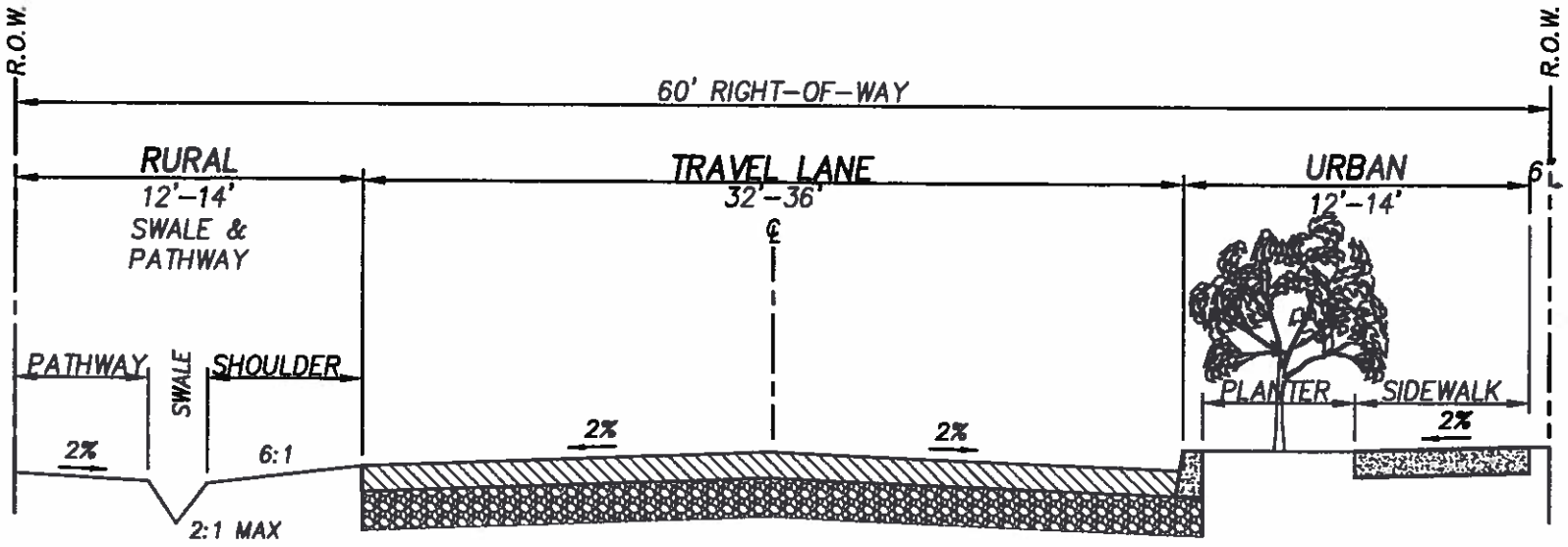
MAJOR COLLECTOR

ROADWAY SECTIONS

WHITE SALMON, WA.



RURAL

- 6' SHOULDER
- 1'–5' SWALE SIZED FOR CONVEYANCE*
- 4'–5' PATHWAY AS DETERMINED BY DEVELOPMENT REVIEW

* Swale capacity to be sized to meet detention and /or infiltration needs where no public stormwater system is available.

TRAVEL LANE

- TYPICAL 36' MINOR COLLECTOR & 32' LOCAL STREETS MAY BE REDUCED TO 26' MINIMUM FOR PHYSICAL CONSTRAINTS
- STRUCTURAL SECTION TO BE DESIGNED BY THE ENGINEER

URBAN

- 6" CURB
- 5'–7' PLANTER
- 6' SIDEWALK
- 6" MONUMENT

Note: Curb and planting strip may be required to be designed to accommodate rather than convey stormwater; or detention may be required on development site.

MINOR COLLECTOR & LOCAL STREETS

N.T.S.

SHEET NO.
FIGURE
15
JOB NO.
CPD-02

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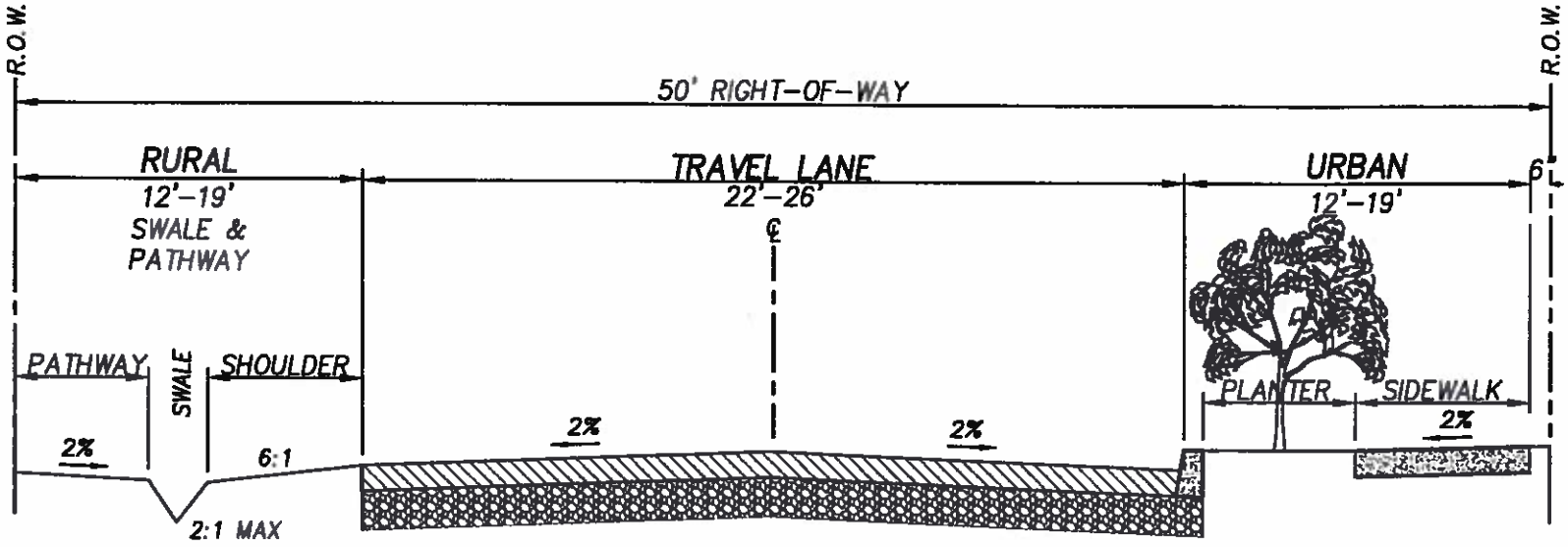
MINOR COLLECTOR & LOCAL STREETS

ROADWAY SECTIONS

WHITE SALMON, WA.



RURAL

- 6' SHOULDER
- 2'-6' SWALE SIZED FOR CONVEYANCE*
- 4'-6' PATHWAY AS DETERMINED BY DEVELOPMENT REVIEW

*Swale capacity to be sized to meet detention and /or infiltration needs where no public stormwater system is available.

TRAVEL LANE

- TRAVEL WAY MAY BE REDUCED TO 20' MINIMUM FOR PHYSICAL CONSTRAINTS
- 12 DWELLING +600' MAX. W/ FUTURE STREET PLAN TO SHOW NO CONNECTIVITY IS FEASIBLE
- STRUCTURAL SECTION TO BE DESIGNED BY THE ENGINEER

LIMITED ACCESS STREET

N.T.S.

URBAN

- 6" CURB
- 5'-12' PLANTER
- 6' SIDEWALK
- 6" MONUMENT

Note: Curb and planting strip may be required to be designed to accommodate rather than convey stormwater; or detention may be required on development site.

SHEET NO.
FIGURE
16
JOB NO.
CPD-02

DATE	NO.	DESCRIPTION

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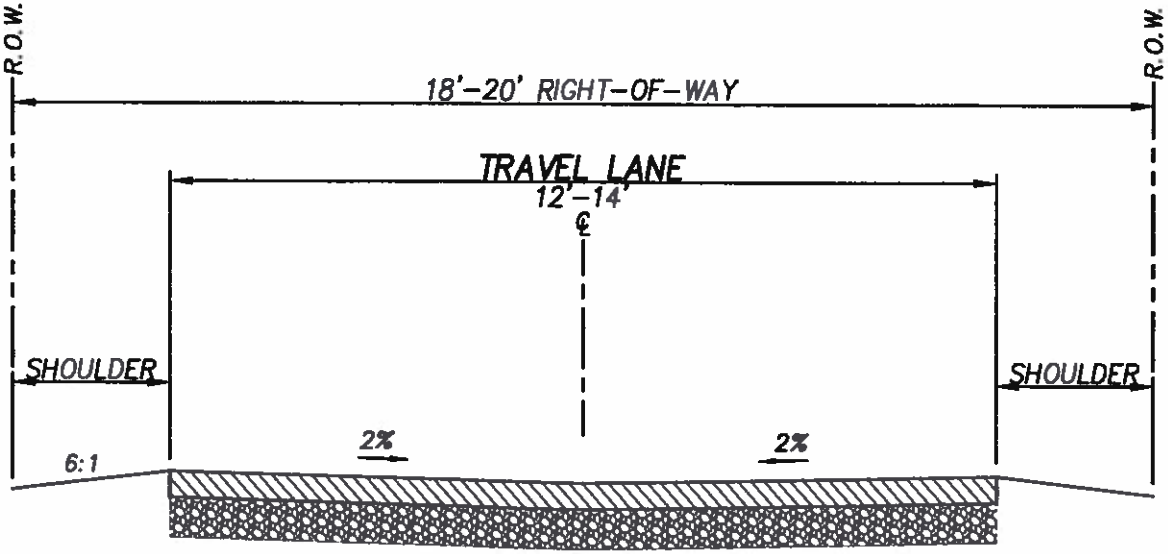
LIMITED ACCESS STREET

ROADWAY SECTIONS

WHITE SALMON, WA.



TRAVEL LANE

- TRAVEL WAY WIDTH TO BE DETERMINED BASED ON LEVEL OF USE/ACCESS DURING DEVELOPMENT REVIEW
- PAVED SURFACE. STRUCTURAL SECTION TO BE DESIGNED BY THE ENGINEER
- 1.5' SHOULDER
- "V" CENTRAL DRAINAGE

URBAN ALLEY

N.T.S.

FIGURE 17

CPD-02

DATE	NO.	DESCRIPTION

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DATE: –

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URBAN ALLEY

ROADWAY SECTIONS

WHITE SALMON, WA.

FINANCING STRATEGIES

The purpose of this chapter is to provide a preliminary long-range financing strategy that will help guide the City of White Salmon in funding necessary capital projects and estimated ongoing operating and maintenance activities. As noted in **Table 20,** the White Salmon Urbanization Study Area has the potential to accommodate approximately 1,205 equivalent additional dwelling units (EDUs) on 274 net acres of buildable land area.

Table 20A. Preliminary Estimated New Development (Equivalent Dwelling Units White Salmon Urbanization Study Area

Location	Net Acres	EDUs per Acre	New EDUs*
In City Limits			
Downtown	6	12	72
PUD	38	12	456
Other	99	3	297
Out of City Limits			
Area A, Pucker-Huddle	45	3	135
Area B, Los Altos	73	3	219
Area C, Loop Road	13	2	26
Total	**274**		**1,205**

Table 20B. Preliminary Local Public Capital Cost for New Development*

Location	Water	Sewer	Stormwater	Roads	Total***
City and UGA Supply/Treatment	$2,000,000	$4,500,000	--	**	$6,500,000
Downtown	$350,000	$80,000	$1,680,000	**	$2,110,000
Area A, Pucker-Huddle	$235,000	--	$200,000	**	$235,000
Area B, Los Altos	$2,400,000	--	--	**	$2,400,000
Area C, Loop Road	$1,700,000	--	--	**	$1,700,000
Total	**$6,685,000**	**$4,580,000**	**$1,880,000**	**	**$12,945,000**

Notes:

** Preliminary estimates for long-range planning purposes. Water supply/treatment cost estimate assumes $3 million in non-local/state funding is provided.*

*** No local roadway capital costs have been identified at this time.*

**** Development capacity and cost estimates contained in White Salmon Urbanization Study do not reflect additional costs associated with non-local funding grants that have been committed to date, nor private on-site development costs for local streets, drainage, and utility hook-ups.*

The construction of additional water treatment and conveyance capacity, and added sanitary sewer system capacity are the two primary cost factors in the White Salmon Urbanization Study Area. Stormwater collection is a relatively smaller capital cost item, but may present the greatest challenge to construct since the recommended stormwater collection system enhancements are targeted for downtown White Salmon in areas that are already developed.

The City has multiple funding options available to partly mitigate both short-term and total financial impacts. Private developers and future property owners/residents will likely be the primary source of funding new wastewater and water infrastructure through connection charges, impact fees and rates.

The City of White Salmon will likely need to revisit its inter-local agreements with the City of Bingen and Klickitat County to ensure that there is good coordination regarding the role of future water and sewer service providers, and expectations regarding capital improvement costs and timing of facility and service conveyance expansion; as well as revenue collection and funding allocations.

The purpose of this chapter is to identify potential funding and financing options for the City of White Salmon to consider for implementation the public facilities needed to address urbanization issues. Key items covered in this chapter include:

- Funding Options
    - Developer Extensions and Latecomer Agreements
    - Assistance Programs and Grants
    - General Obligation and Revenue Bonds
    - Local Improvement Districts (LID) and Utility Local Improvement Districts (ULID)
    - General Facilities Charges (connection charges)
- Rates and Connection Charges
- Conclusions

FUNDING OPTIONS

The planned sewage transmission system, necessary to serve both current and some future needs, is a significant financial expenditure for both the City of White Salmon and the City of Bingen. Both cities have several funding options available to mitigate this impact, however, including outright grants and/or developer donations.

Developer Extensions and Latecomer Agreements

Cities may require new development to construct infrastructure necessary to serve growth (RCW 35.91.020). While this infrastructure is usually an extension to an existing system, the statutes do not preclude the City from requiring developers to construct a new facility

as a condition of permitting. Furthermore, the City may require developers to oversize mains and pumps beyond that which would otherwise be necessary to meet the needs of their own specific development. In so doing, the developer could be partly reimbursed by any latecomers wishing to connect to the system. This payment would be made directly to the developer donating the facility, less any administration fees incurred by the City.

Developer extensions are commonly used to build necessary infrastructure. However, because of the magnitude of costs for the proposed system, it is doubtful that a single developer will have the financial capacity to fund such a project or ever realize a return on his/her investment. This may or may not be true of a group of developers or larger construction firm. However, the development community might be unwilling to shoulder the full financial burden or risk, particularly beyond the area directly adjacent to the improved property. If this inability or unwillingness exists, the City might wish to consider dividing the burden. Over-sizing of pipes to meet future needs can be financed through available grants or long-term bonds (as long as there is an annual source of stable revenue to repay the debt).

Assistance Programs and Grants

Federal and state grant programs, once readily available for financial assistance, were mostly eliminated or replaced by low-cost loan programs. Remaining miscellaneous grant programs are generally limited in application, lightly funded and heavily subscribed. Nonetheless, the economic benefit of an applicable grants and low-interest loans make the effort of applying worthwhile.

Common special programs identified as potential funding sources are summarized below:

Public Works Trust Fund. The Public Works Trust Fund (PWTF) is a low cost revolving loan program established to provide financial assistance to local governments for public works projects. Eligible projects include repair, replacement, rehabilitation, reconstruction, or improvement of public works systems to meet current standards for existing users. With recent revisions to the program, growth-related projects consistent with 20 year projected needs are now eligible.

The applicant must be a local government, such as a city, county or special purpose district, and have an "approved" long-term plan for financing its public works needs. Local governments must compete for PWTF dollars since more funds are requested each year than are available. The Public Works Board evaluates each application and transmits a prioritized list of projects to the legislature. The legislature then indicates its approval by passing an appropriation from the Public Works Assistance Account to cover the cost of the approved loans. Once the Governor has signed the appropriations bill into law, the local governments receiving the loans are offered a formal loan agreement with the appropriate interest rate and term, as determined by the Public Works Board.

PWTF loans are available at interest rates of 0.5 percent, 1 percent, and 2 percent, with the lower interest rates given to applicants who pay a larger share of the total project

costs. Loan applicants must pay 5 percent of the project cost to qualify for a 2 percent loan, 10 percent for a 1 percent loan, and 15 percent for a 0.5 percent loan. The useful life of the project determines the loan term up to a maximum of 20 years.

The maximum loan amount is $10 million per jurisdiction per biennium.

Community Economic Revitalization Board (CERB). Managed by the Department of Community Trade and Economic Development, CERB is strategically focused to help business and industry create and retain jobs in partnership with local communities. CERB's primary focus is to provide low-interest loans or, in unique circumstances grants to local governments to help finance the construction of public facility projects necessitated by private sector development. Job creation and/or retention are the primary goals of the CERB program.

Washington State counties, cities, towns, port districts, special purpose districts, and municipal corporations may apply for CERB funding. Eligible public facilities include bridges, roads, domestic and industrial water, sanitary sewer, storm sewer, railroad spurs, electricity, natural gas, buildings or structures and port facilities. CERB funds public infrastructure that will result in specific private development or expansions in manufacturing, production, food processing, assembly, warehousing, industrial distribution, recycling facilities, or businesses that substantially support the trading of goods and services outside of the state's borders. Applications must include evidence that a private development or expansion is ready to occur and will only occur if CERB funds are provided. Applicants must demonstrate that no other timely sources of funds are available at reasonably similar rates.

Interest rates generally match the most current rate of Washington State bonds but do not exceed 10 percent. The maximum loan amount is $1 million per project, and 80% of the CERB request or $300,000 whichever is the lesser amount, for a grant (there is a local match target of 25%).

The funding program is very specific in focus. Presently, CERB might not be an applicable nor viable financing option for the City of White Salmon.

Community Development Block Grant (CDBG) Program. A federal government program administered by the Department of Housing and Urban Development (HUD), the CDBG program provides grants and loans for infrastructure improvements, including sewer projects, for business development that creates or retains jobs for low and moderate-income residents. The CDBG program was first introduced in 1974 providing a flexible source of annual grant funds for local governments nationwide.

All cities and towns are eligible. Funding is available for projects (1) benefiting low- and moderate-income families; (2) eliminating slums or blight; or (3) intended to meet other urgent community development needs. These projects can include economic development projects or wastewater treatment systems.

Department of Ecology (DOE) Water Quality Financial Assistance Program. The DOE administers the following grant and loan programs:

1. *The Centennial Clean Water Fund* - provides grants and low-interest loans to construct wastewater treatment facilities and fund-related activities to reduce nonpoint sources of water pollution.

2. *State Revolving Fund Loans* – provides low-interest loans to construct wastewater treatment facilities and related activities, or to reduce nonpoint sources of water pollution.

3. *Section 319 Nonpoint Sources Grants Program* – provides grants to reduce nonpoint sources of water pollution.

While most of the funding goes to wastewater programs, projects such as development and implementation of groundwater and wellhead protection programs are included. All DOE loans require a facilities plan, which is more comprehensive than an engineering plan. This is an added expense. There is only one application for all three loan and grant programs.

The following interest rates would apply:

- 0 to 5-year term: Fiscal Year 2004 interest rate is 0.5 percent
- 6 to 20-year term: Fiscal Year 2004 interest rate is 1.5 percent

Grants for nonpoint stormwater source activities are available for up to 50 percent of eligible project costs. Grants for constructing point source wastewater facilities are available only in financial hardship cases.

The Department of Ecology considers hardship cases when capital projects require user fees to exceed 1.5 percent of the local area median household income. This is of particular interest to the City. For White Salmon to qualify, monthly rates must exceed approximately $51 dollars per month, based on DOE local income projections. Centennial Grants are available up to $5 million or 50% of the total project cost, whichever is lower. However, DOE will first attempt to bring rates below the 1.5 percent ceiling by lowering interest rates, to as low as 0%, and extending the repayment period.

Rural Community Assistance Corporation (RCAC). This is a special federally subsidized loan program for public agencies and local governments with fewer than 50,000 people (under 10,000 people for USDA Guaranteed Loans). Funds may be used for water, wastewater, solid waste, and stormwater facilities serving low-income rural communities. Eligible activities include pre-engineering, design, and construction. Loans are limited to $1.0 million for construction activities, $250,000 for design, and $50,000 for pre-engineering studies.

USDA Rural Development Programs (Rural Utilities). This is another federally subsidized loan program for public agencies and local governments with fewer than 10,000 people. Similar to RCAC in that it covers a variety of public facilities and activities. In addition to low-interest loans, this program includes grants for eligible facilities through the Water and Waste Disposal Grant Program, Emergency Community Water Assistance Grants, and Technical Assistance Grants. Water and waste water grants can cover up to 75% of eligible project facilities capital costs.

Drinking Water State Revolving Loan Fund (DWSRF). This program is a federal/state partnership program to provide loans to public water systems for capital improvements aimed at increasing public health protection and providing a source of funds other than Safe Drinking Water Act activities. Loans cannot exceed $4.0 million per jurisdiction, with rates that vary according to local income levels.

Economic Development Administration (EDA) Grant Funding. The economic Development Administration provides federal grant funding for projects that support long-term economic development, in areas experiencing substantial economic distress, through the creation, expansion, or retention of permanent, private sector jobs that help raise income levels. An economic development project is defined as "any public capital investment that constructs a public facility such as a road in industrial areas, bridge, water and sewer line, dock facility, etc." Eligible activities include the acquisition, rehabilitation, design and engineering, or improvement of public land or publicly owned and operated development facilities, including machinery and equipment. Although there might be exceptions, the amount of federal grant funds provided is around $1.0 million to $3.0 million per request, and cannot exceed 50% of the total project cost.

Each of these programs might offer potential opportunities for below-market interest debt for project funding, as compared to more traditional general obligation or revenue bond funding. However, as noted above, many of the loans programs offer limited benefit in terms of interest rates, while potentially introducing additional costs to comply. An exception to this is the PWTF program, which offers low interest rates without onerous qualification requirements. The Centennial and SRF programs could potentially offer the greatest financial support to the City. Regardless, the City would need to fund applicable matching requirements

Issuing Debt

Absent assisted funding and low-cost loan programs, the City will be forced to rely on conventional municipal bond debt to finance the construction of its proposed capital program. There are some benefits to this form of financing. First, as with all debt, debt service spreads capital costs over the term of the bonds. At present, the City is not in a financial position to pay for needed capital improvements with fund reserves or taxes.

Further, bonds implement a level of equity by dissipating the burden among current and future customers. Finally, bonds allow flexibility that the aforementioned assisted programs do not through repayment options.

Municipal bond issues may be structured all or in part as a term bond, which require only interest payments for a number of years, with "balloon payments" of principal at specific points in the amortization schedule. Balloon payments can have both positive and negative consequences. "Near loading" of debt principal may result in higher interest costs. Further, if developer financing does not occur, balloon payments and term bonds may leave the City with large liabilities in the future years without adequate reserves to call bonds. However, such a structured debt may still be appealing to the City if it projects the immediate infusion of funds with growth.

Municipal bonds have several disadvantages. General Obligation (G.O.) and revenue bonds often have higher interest rates than assisted programs. Use of revenue bonds would also require the City to exceed otherwise sufficient utility rate revenues in order to meet coverage requirements. One viable option might include issuing tax-backed G.O. bonds to finance a significant portion of the project, repaying the debt with rate revenues. In any case, the City should only issue debt in the absence of outside assistance.

Revenue Bonds

Revenue Bonds are, by definition, backed by the revenue of a utility or enterprise fund. Because the payment stream is less secured than tax backed bonds, revenue bonds carry higher interest rates than G.O. bonds. This differential, however, may be minimal. There are also tax backed or revenue backed G.O. bonds discussed later.

Revenue bonds are perhaps the most common source of funding for construction of major utility projects. To issue revenue bonds, the City will be required to commit to certain security conditions related to repayment, specifically reserve and coverage requirements for annual rate revenues. These conditions are included in the bond resolution to be adopted by the City, and essentially impose certain conservative financial practices on the City as a way of making the bonds more secure.

The reserve requirement commits the City to maintain a bond reserve, which could be used to meet payments if the utility is incapable of doing so. This reserve is often set at the least of (a) 10 percent of the issue price of all new and outstanding parity bonds, (b) maximum annual debt service on all new and outstanding parity bonds, and (c) 1.25 times average annual debt service on all new and outstanding parity bonds. The reserve requirement is dictated by the terms of the bond resolution. Since the reserve can be invested and earn interest, the net cost of providing the reserve is relatively small. The City has the option of borrowing the reserve requirement as part of the total loan amount, or can fund it over a five-year period through rates and interest earnings.

Revenue bond coverage is a legal requirement binding a utility to demonstrate that annual revenues exceed expenses by a multiple of the debt service payment. This factor is usually at least 1.25, and is higher for agencies with unrated bonds or low bond ratings. Revenue bond coverage factors can require higher utility rates than otherwise necessary,

in order to meet the coverage target. However, the scope of the coverage test is very specific, as defined in the bond resolution, and generally limited. The requirement only considers operating expenses. Capital outlays, replacement funding or any other expenses, which could otherwise be delayed if necessary to meet debt service payments, are excluded from the coverage test. Further, the coverage test usually only includes revenue bond debt service or other debt issued on par with the revenue bonds. Thus, other loans or obligations, such as the aforementioned assistance loans, would generally be held as subordinate and excluded from the test.

Revenue bond coverage is an annual test, with no consideration of fund reserves or assessment pre-pays, and usually excludes General Facilities Charge revenues. Consequently, even if the utility has the necessary debt service payment available, coverage requirements will necessitate rate increases.

Coverage requirement rate impacts can be somewhat assuaged if the City is able to secure five and ten year calls. Consequently, any accumulated assessment reserves or other available fund reserves may be used to pay off all or some of the outstanding principal.

General Obligation Bonds

General Obligation Bonds offer attractive conditions relative to revenue bonds. G.O. bonds are issued against the City's general fund and taxing authority. RCW 39.36.020 authorizes the City to issue councilmanic debt up to 1.5 percent of the value of taxable property located within the City's jurisdiction, and 2.5 percent with three-fifths approval at election. Councilmanic debt may be issued without a public vote.

G.O. bonds offer slightly lower interest rates than revenue bonds, being backed by the City's tax base. From the investor's perspective, tax backed debt is more secure. These bonds also carry no additional coverage requirement, allowing the City to collect revenues necessary to meet annual debt service with no additional financial consequences.

G.O. bonds can be politically unpalatable if the municipality's constituency doesn't support the project purpose. A three-fifths majority required to secure up to 2.5 percent of the taxable property is often difficult, particularly in light of the current economic conditions. Furthermore, the City may not wish to exhaust its full debt capacity, reserving some for other capital projects.

General obligation bonds, while issued against the taxing authority of the City, may be repaid by utility rate revenues. This arrangement takes advantage of the more favorable terms, while still requiring system users to repay the debt. The General Fund would ultimately remain responsible for debt repayment should rate revenues prove insufficient.

Bond Anticipation Notes

If the City believes it will be fully reimbursed for all capital expenditures by the end of facility construction, it may wish to consider issuing Bond Anticipation Notes (BANs). BANs are short-term financing instruments, usually issued for a two-year period to finance planning, design, or in expectation of near-term reimbursement. BANs require

interest only payments over the term of the issue. The principal is paid back in full on the termination date or rolled into a long-term debt issue.

Bond anticipation notes might provide a short term financing mechanism for the City if it truly believes it will be fully reimbursed by the end of the instrument term. As with G.O. and revenue bonds, BANs carry issuance costs of 1.5 to 2 percent of the borrowed amount. Rolling the full construction costs into long-term debt will result in double issuance costs. Consequently, BAN's may have limited benefit, and regardless, must be repaid.

Local Improvement Districts & General Facilities Charges

The construction cost of a new sewer transmission system is well beyond the limitations of general fund resources. The City is consequently dependent on other forms of revenue to finance this project. The Revised Code of Washington provides several means of funding such an investment, including formation of a Local Improvement District (LID) and imposition of General Facilities Charges (GFCs).

Local Improvement District

The City could consider trying to create a Local Improvement District (LID) or Utility Local Improvement District (ULID) as a means of recovering the capital investment made on behalf of its constituents. Washington's Revised Code 35.43 specifically authorizes a municipality to impose assessments against a property *specifically benefiting* from local improvements. ULIDs additionally pledge utility revenues for the repayment of bonds.

LIDs are a means of instituting equity. The RCW states that the amount assessed must be proportionate with benefit received. Moreover, the assessment may not exceed the increase in the fair market value gained with the improvement.

Several assessment calculation methods are available. However, any method selected must meet the special benefit and fair market value tests identified above. Further, the City must necessarily be concerned with imposing draconian financial constraints on low-income families, including seniors. RCW 35.43.250 and 35.54.100 allows a four-year deferral for economically disadvantaged households. RCW 84.38 permits indefinite deferral for qualified low-income seniors. Assessments are liens against property, making deferrals payable at the time of transfer of ownership.

LIDs are created as a means of paying back G.O. debt, while ULIDs are established to pay the debt service on revenue bonds. ULIDs are often useful instruments, in spite of associated coverage requirements. Revenue bonds debt service and applicable coverage would have to be collected through rates.

General Facilities Charges

The Revised Code of Washington 35.92.025 explicitly authorizes municipalities "to charge property owners seeking to connect to the water or sewage system of the city or

town as a condition to granting the right to so connect." A general facilities charge or "connection charge" is assigned to new or existing development wishing to connect to the system after the municipality has taken ownership of the facility. This connection charge serves two primary purposes – reimbursement of investment made in the existing system, and financing of facility expansion to meet growth needs.

Allowing new development to connect to the sewer system without paying "a fair share" of the facility cost dilutes the investment made by existing customers through rates, LIDs and GFCs. Furthermore, deficiencies created by under-collection become the burden of the utility as a whole, requiring existing customers to subsidize new development.

General facilities charges are intended to reflect a proportional share of the system costs, and therefore shall be applied based on potential demand. This potential demand or volume may best be reflected by water meter size. Quite simply, the bigger the meter size, the greater the potential volume.

Purveyor General Facilities Charges

Beyond any GFC imposed by the City, residents may be subject to treatment purveyor imposed GFCs. As with the City's system, potential purveyors have oversized their existing facilities to accommodate growth, including outside service area treatment. New customers must in turn pay a proportionate share of that investment. This connection charge would be additive to any imposed by the City. This would depend on the agreement(s) that the City will need to enter into to provide conveyance and treatment service.

Existing Customers

It is important to note that any existing customers already served with water or sewer by the city as a condition of development may not be assessed or charged a GFC. These customers have paid for the existing system and any relevant purveyor GFCs. Thus, expansion of the system or construction of a new system to accommodate growth should become the sole burden on new customers. Any expansion or upgrade attributable to an existing customer must be reflected in sewer service rates.

Limitations to GFCs

Finally, general facilities charge revenues are collected over time as growth occurs. Due to fluctuations in growth, GFC revenues are sometimes haphazard and should not necessarily be considered a reliable revenue source, particularly to meet debt service payments. For this reason, most revenue bond resolutions to do not include GFC revenues in the coverage requirement test. The City has a near-term financial need, which GFCs cannot meet. Rather, GFCs provide supplementary revenue that can be used for future capital needs and to make debt service payments in lieu of other revenues as long as debt service coverage is met each year.

Water and Sewer Rates and Connection Charges

Increasing water and sewer rates are the most common way to raise local revenues to pay for required infrastructure facilities and operations, but require approval and adoption by

the City Council, and must meet state and local regulations. RCW 35.91 allows cities to approve the construction water and sewer lines and facilities and accept them as facilities of the municipality and to charge for their use such water or sewer rates. Separate RCWs, authorized cities to construct and operate a water or sanitary sewer system and collect necessary rates. There are several components to the City's sewer and water rate formula – administrative costs, purveyor (treatment) costs, operation and maintenance of transmission mains, and any outstanding debt service or debt coverage requirements, that can be included in rates and fees.

Currently, the City of White Salmon charges water and sewer rates at varying levels depending on where customers are located (inside or outside city municipal boundaries). Rates also vary according to usage and income levels. Connection charges also vary between in-city, out-of-city location for water hook ups but not sewer hook ups.

Rates and connection charges for water and sewer services will likely need to increase to finance increased capacity and needed improvements for collection, transmission and treatment. A two-tiered connection charge for sewer systems (in-city vs. out-of-city) should be considered along with any rate increases.

In light of the fact that a portion of the City of White Salmon is provided sewer service by the City of Bingen (each city currently contribute the same $10.25/ERU/month towards the Bingen treatment plant fund), both cities will need to develop a new inter-local agreement covering wastewater treatment capacity and transmission to serve planned urbanization areas.

Financing Plan Conclusions

To reduce the cost to be borne by initial connections and, ultimately, ratepayers, the City of White Salmon should continue to pursue any and all available grants and loan assistance programs. Assisted loans offer low interest rates and no additional debt service coverage requirements. The City will also need to revisit its sewer and water rates and connection charges to fund planned capacity improvements and ongoing operational needs.

Within the constraints discussed previously, water, sewer and storm water capital costs should be recovered through the creation of LIDs or ULIDs in newly designated benefit districts. This approach will require Klickitat County approval (for any LIDs proposed outside the city limits) to comply with state law. For example, one LID can be created for downtown storm water facility improvements, and a separate LID can be created for newly urbanizing areas for water and sewer improvements. Creation of new LIDs should coincide with market demand and planned water and sewer treatment plant capacity expansions. Those wishing to connect to the system after it has been LID-financed would be subject to a general facilities charge or developer latecomer's agreement – whichever is appropriate.

The City of White Salmon (with Klickitat County approval for areas outside city limits) has several options to ensure that later connections outside of an LID area would not be rewarded for their decisions not to participate in the LID:

- Establishing Zone A and Zone B assessment zones of benefit. Zone A would include those properties that will connect initially and the assessments would include the cost of general and local facilities. Zone B assessments would include the costs of general facilities only, leaving those customers to pay for local facilities costs at the time of connection. This should result in a higher net cost for customers in Zone B.
- Using a one-zone LID approach and developing a GFC for subsequent connections outside the LID area. The City could maximize the GFC by aggressively defining the cost of general facilities (verses local facilities) within the LID area. A maximized GFC, when combined with the local facilities costs that must still be paid by later connecting customers (outside the LID) would result in total costs that should exceed the assessments paid inside the LID area.
- Charging a fee-in-lieu-of assessment to later connecting customers that, by definition, is at least as much as what the assessment would have been if the connecting customer participated in the LID. A potential problem with this alternative is the difficulty of finding a way to effectively "reimburse" those who have or will pay assessments, other than through generally lower rates.
- Re-allocating the funding of capital improvements so that less is funded by the LID and more is funded by (future) rates. This would reduce the assessments, but would increase the rates and more importantly, GFCs to a level that could substantially exceed the assessments. However, if development does not occur as expected outside of the LID, ratepayers would carry the long-term burden of facilities funding, as well as the short-term burden.

The City of White Salmon will need to re-evaluate its long-term range financial plan after final agreements are in place with respect to inter-local contributions to Bingen wastewater treatment plant expansion and Buck Creek water treatment plant expansion costs have been negotiated. The number of existing and future customers in the water and sewer service areas will have a major impact on the ability to create a reasonable monthly user rate over the long-term. It will be in the best interests of the City of White Salmon to have as many customers as possible within the urbanization areas to minimize the fees on the rate payers.

URBANIZATION AREA PERMITTING

It is critical that the City and County coordinate permitting and development review functions in urbanizing areas. This typically includes an Intergovernmental Agreement (IGA) that formalizes how the jurisdictions will coordinate, and specifically which standards and processes they will use. For White Salmon, coordination with Klickitat County will be required to determination of which codes and process apply to

development applications and public works projects. Typically, urbanization areas (Urban Growth Areas in Oregon, Areas of Influence in Washington, or Areas of Impact in Idaho) are best served by adoption of City standards, since the area will one day become part of the City. It is also common for the County to retain its procedural code provisions to implement City codes.

We recommend the following steps toward development of an Intergovernmental Agreement (IGA) between the City f White Salmon and Klickitat County:

Step 1. Engage in the review of appropriate standards for the urban areas. Priority should be given to standards that will allow land to urbanize over time.

Step 2. Revisit the Development Review process between the City and the County to determine where adjustments can be made to enhance the process.

Step 3. Draft an Intergovernmental Agreement in which the City and County agree upon what standards and procedures will govern in urbanization areas, and who will lead in the review of development applications.

Step 4. Present the IGA and associated plan and code revisions to the City and County for review and adoption.

Step 5. Implement the IGA by preparing materials and forms that explain the development review process and guide the public through the process.

RECOMMENDED PLAN AND CODE STRATEGIES

Based of study findings, the following components are recommended for consideration, refinement and adoption into the City's Comprehensive Plan and Development Code. These recommendations are organized into the following categories:

- Sustainable Development
- Comprehensive Plan Policies
- Development Code Considerations

1. Sustainable Development

The City of White Salmon and its urbanization area share the need to minimize infrastructure demands and development impacts to ensure efficient future developments. Specific limitations on available water, sewer and storm water capacity can be mitigated through sustainable development practices that minimize the demands on these systems. Such practices are increasingly common as a means of managing development impacts and associated environmental and capital costs.

The following list of sustainable development concepts are derived from common practices and specific concerns raised by White Salmon staff. Policy-level concepts are reflected in the comprehensive plan and code amendment sections that follow.

Energy

- Recognize and streamline permitting for LEED certified projects.
- Encourage alternative energy production (i.e. small wind projects and micro hydro-electric projects).
- Passive solar orientation for streets and buildings.
- Sustainable eco-roofs and use of photovoltaic cells in windows and roofs for heating and cooling.

Transportation

- Sustainable streets (landscape medians and swales for to control storm runoff).
- Use of pervious paving for parking lots.
- Bicycle and trail systems.
- Shared parking provisions for uses with compatible off-peak use timing (minimizes paving).

Land Use

- Encourage passive solar (north/south) lot orientation in land division review process.
- Walkable streets with transit-oriented entrances downtown (buildings on street with street-facing entrances).
- Encourage redevelopment and mixed use opportunities downtown
- Encourage urbanization "close in" to avoid "leap-frog" and associated higher infrastructure costs further from the City of White Salmon.
- Natural landscaping, xeriscaping and vegetation.
- Integrated public parks and open spaces.
- Consider lot dimensional standards that accommodate future infill
- Consider future connectivity and access provisions that accommodate new development and infill.
- Accommodate buffered redevelopment and infill projects that allow for ¼ lots in areas predominantly developed as ½ acre lots.

Infrastructure

- Encourage storm water infusion to supplement ground water source where permeable soils exist. -integrating a pathway and on-street system to encourage walking and bicycling.
- Sustainable streets with swales rather than curb and gutter for rural urbanizing areas; swales and medians where feasible in urban area.

- Develop standards to allow private, rural "step system" sewer treatment that reduce solids and covey effluent into public sewer system.
- Coordinate with County to improve development review process, providing standards and inspections for private water connections to avoid inflow and infiltration (leak stop program).
- Implement public improvements to water and sewer projects to gain efficiencies (improve water sources, stop leaks in conveyance and enhance wastewater and storm water treatment capacity).

2. Comprehensive Plan Policies

White Salmon is presently in the process of updating its Comprehensive Plan. There are many aspects of the Urbanization Plan that should be considered for inclusion as part of the comprehensive plan update. The following list of plan update recommendations is categorized generally, and will need to be further refined to fit the new plan update format.

Plan Designations
- encourage County adoption of urbanization policies for urbanization area

Land Use Planning
- coordinate with County for land use decisions in the White Salmon Urbanization Area
- consider development of an IGA wherein the County's procedures and zones apply; but with adoption of City urbanization area policies and standards. Include a coordinated development review process involving the City and County.

Natural Resources
- work with the Washington Department of Natural Resources and Klickitat County to further define how the County's critical areas impact urbanization area development.
- encourage the preservation of the County's "Mule and Black-tailed Deer" critical area in part by retaining existing zoning for minimum half-acre lot sizes in portions of the urbanization area.

Sustainability
- Encourage sustainable development practices and policies within the Urbanization Area.

Open Space
- Protect existing open space areas, including designated cliffs, waterfowl and shoreline critical areas.

Recreation

- Encourage an integrated system of parks, open spaces and pathways in urbanization areas.
- Work with the County, Washington State Parks and the Columbia Gorge National Scenic Area to link the Urbanization Area parks, trails and open space system to its larger context where feasible.

Economy

- Incorporate economic and demographic data from the Urbanization Study.
- Encourage redevelopment of the Loop Road (GC) General Commercial (County) zone with adequate public facilities to accommodate job growth.

Housing

- Include appropriate housing and demographic date from the Urbanization Study, together with the findings from the Housing Study developed by the Klickitat County Homeless Housing Task Force, 2008.
- Encourage appropriate redevelopment and infill with development standards to ensure compatibility in the (C2) General Commercial (City) zones in the downtown and hospital areas.
- Consider additional density for redevelopment and infill with development standards to ensure compatibility within several blocks of the (C2) General Commercial (City) zones in the downtown and hospital areas as indicated on the Preferred Urbanization Plan map.
- Target minimum half-acre lot sizes for residential zones in the urbanization area, except where zoning permits smaller lots with adequate services.
- Where lots are proposed greater than the minimum lot size are proposed, ensure a "shadow plat" or redevelopment plan that indicates how redevelopment can occur in the future including a future street plan.

Public Facilities

- Develop standards to ensure all new development is adequately served by public or allowed private water, storm water and sanitary sewer services.
- Develop standards to allow rural sanitary step systems that reduce solids and are allowed to convey effluent to the public sanitary sewer system.
- Ensure adequate standards and inspections are provided to review private water systems connected to the public system and avoid inflow (backflow) and infiltration.
- Develop a 5-year Capital Improvement Plan to schedule and fund capital improvement plans to meet future urbanization needs.
- Evaluate funding needs, sources and utility rates to implement the Capital Improvement Plan for the Urbanization Area.

Transportation

- Adopt an Urbanization Area street system classification, as shown on the Preferred Urbanization Plan map.
- Work with the Washington Department of Transportation to develop appropriate arterial street standards and local review procedures where Highways 14 and 141 cross through the City and its Urbanization Area.
- Adopt local street standards from the White Salmon Urbanization Area Study.
- Encourage sustainable streets, as outlined in the Urbanization Study.

Energy

- Encourage sustainable development practices given in the Urbanization Study

Urbanization

- Coordinate with Klickitat County and encourage County adoption of urbanization policies for urbanization area.
- Coordinate with County for land use decisions in the White Salmon Urbanization Area
- Develop an IGA wherein the County's procedures and zones apply; but with adoption of City urbanization area policies and standards. Include a coordinated development review process involving the City and County.
- Encourage redevelopment and mixed use opportunities downtown and in the (RP) Riverfront Planned District
- Encourage developments "close in" to avoid "leap-frog" and associated higher infrastructure costs further from the City of White Salmon.
- Ensure urbanization area developments are served with adequate public facilities
- Consider a utility rate structure that encourages development within the City, and charges associates higher delivery fees for urbanization area development.

3. Development Code Considerations

Code Considerations given in **Table 21** are designed to provide a quick reference to recommended code updates within the City's Development Codes: Title 16, Subdivisions and Title 17, Zoning. There are also recommendations for City/County consideration regarding County zones in the Urbanization Area. All code revision concepts are general, and will require refinement prior to adoption.

Development Code Considerations

Table 21A. City of White Salmon Subdivision Code

Code/Section	City of White Salmon	Klickitat County	City/County
Title 16, Subdivisions: 16.28.050 Road Classifications	Consider proposed new roadway sections for adoption, including a limited access local street for max. 12 dwellings at 50' ROW		Coordinate with County for adoption of new urbanization area street standards
16.36.020 Sewer and Water	Add ability to approve private step system connection to City sanitary sewer with acceptable design review	Add ability to approve private step system connection to City sanitary sewer with acceptable design review	Coordinate design and review process for private sewer and water connections
16.40.020 Drainage and storm sewers	Add ability to provide swales and pathways in rural areas.	Add ability to provide swales and pathways in rural areas.	Coordinate the review process for drainage swales
16.24.020 (S)	Add a new provision to require a Future Street Plan for all land divisions. This plan identifies roadways and pathways within 600' for potential connectivity	Add a new provision to require a Future Street Plan for all land divisions. This plan identifies roadways and pathways within 600' for potential connectivity	Coordinate adoption and review process for connectivity through requirement of a Future Street Plan for all new land divisions
16.24.020 (T)	Add a provision for a "shadow plan" or redevelopment plan for all land divisions at less than 200% of the minimum lot size	Add a provision for a "shadow plat" or redevelopment plan for all land divisions at less than 200% of the minimum lot size	Coordinate the review and require a "shadow plat" if less than 200% of min. lot size
16.40.030 Sidewalks	Consider requiring minimum 6', rather than 4' sidewalks	Consider pathways in rural roadway sections	Coordinate review for pathway needs

Table 21B. White Salmon Zoning Code

Code/Section	City of White Salmon	Klickitat County	City/County
Title 17, Zoning: 17.38 new (RU) Residential Urbanizing Zone	Consider a new RU zone to allow ½ acre and ¼ acre (in addition to existing 5,000 sf zoning) for lots with services to be applied upon annexation in UA		Coordinate on Urban Area (UA) developments until annexation occurs
17.40.020 Condition Uses in Residential Zones	Consider Accessory Dwelling within 600' of C-2 zone (downtown/hospital) subject to design standards		
17.50.040 Riverfront Planned District Accessory Uses	Describe accessory residential uses to include condos and timeshares as part of a mixed use PUD		
17.68 Design and Use Standards	Adapt standards from Section 17.74.090 PUD accessory dwelling for downtown/hospital area		
17.72.090 Number of Parking Spaces per Use	Consider allowing 1 space per accessory structure, where allowed		
17.74 Mixed Use Planned Development (PUD); General Provision	Encourage sustainable development practices as part of a PUD; and offer incentives for "sustainable development".		
17.88.070 new provision to apply a City Zone upon annexation	Provide a new section to allow the City to apply an appropriate zone district to newly annexed area. The new RU zone is recommended within the Urbanization Area		

Table 21C. Klickitat County Code

Code/Section	City of White Salmon	Klickitat County	City/County
Klickitat County: RR-1 and RR-2 zones	Assist County with the review and comment on all land divisions and other developments to ensure Urbanization Area standards are met.	Require a Future Street Plan and shadow plat for land division to show how redevelop will work upon urbanization	Coordinate with City on land divisions in the Urbanization Area to ensure future zoned density can be achieved.
Public Facilities	Assist County in the review and inspection of Urbanization Area facilities standards.	Administer City Urbanization Area standards through an Intergovernmental Agreement (IGA)	Coordinate with County on Urbanization Areas standards through an IGA

14. Next Steps

The White Salmon Urbanization Study provides a comprehensive urbanization strategy to guide future development of the City and its urbanization area. This includes a Buildable Lands Inventory, Utility System Review, a new Street Classification System and Implementation Strategies. We recognize the need for further stakeholder review and refinement in pursuing next steps outlined in the study, including:

- City/County review of proposed urbanization policies and procedures;
- Further review of policy recommendations by the public, land use committee and Planning Commission;
- Further City Council review of policy recommendations; and
- Follow-up on study recommendations, including potential Intergovernmental Agreement between the City and Klickitat County, Comprehensive Plan revisions, and development code updates.

Appendix A. Utility System Review

CPD-02

Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
LANDSCAPE ARCHITECTS • SURVEYORS

White Salmon Urbanization Study
Utility System Review

Comments within this memo refer to the White Salmon Urbanization Study subareas and are based on a review of documents and drawings provided by the City of White Salmon.

Documents Provided by the City of White Salmon:
Water: City of White Salmon Water Master Plan 2004, Bell Design Company.
Sanitary Sewer: Bingen/White Salmon Wasterwater Treatment Facilities Engineering Report 1993, Gray & Osborne, Inc.
Stormwater: Stormwater Analysis & Report for the City of White Salmon, June 2003, Taylor Engineering, Inc.
Autocad files: Sanitary Sewer and Water System Base Maps.

The water system improvements were taken from the Water Master Plan Capital Improvement Plan and are designated as Long Term (LT), to be completed between 2008 and 2022 or Sort Term (ST) to be completed by 2008. Cost were adjusted upwards 9% to account for inflation and are presented in 2008 dollars.

Area 'A':

Area A is located in west White Salmon. The vacant lands within this area fall under two county zoning designations, OS Open Space (65 acres) and SR Suburban Residential (67 acres). See Figure 4, Study Area A, White Salmon Urbanization Study.

Water: The entire area is within the Los Altos pressure zone. The Los Altos pressure zone is fed directly from the Child's reservoir 14-inch main line and the Los Altos reservoir. There are several areas within area 'A' included in the City's 2004 Master Plan as areas of expansion within six years. The Los Altos reservoir is the only reservoir within the system that has more capacity than demand. The Master Plan Capital improvement plan identified numerous projects within area 'A' that should be addressed before any new development occurs. See the attached table for projects and costs.

Sanitary Sewers: The sanitary sewer study completed in 1992 recommended several alternatives for upgrading the White Salmon/Bingen sewer treatment plant. The selected alternative excluded west White Salmon for a number of reasons. The report recommended construction of a new treatment facility to service this area. Therefore, it is unclear if the treatment plant has the capacity to treat this area, therefore a new treatment facility and conveyance

system will be required to serve this area. Conveyance costs within each development should be passed on to any proposed developments; however trunk lines would be installed by the City.

The city wide sewer system is suspected of having inflow and infiltration issues. Smoke testing should be performed to determine if roof drains are connected to existing sewers and TV inspections should be conducted to identify breaks, cracks and infiltration.

Stormwater: This area was not included in the stormwater report prepared in 2003. Based on the information provided HHPR assumes there are no storm sewer improvements in this area. Therefore, any new developments will be required to provide for conveyance, detention and water quality. All costs for improvements should be borne by the developer. Developments should be required to retain all increased storm water flows on site.

Area 'B':

The vacant lands within this area fall under the County's SR Suburban residential zone. There are approximately 110 acres of vacant land under this designation. See figure 5, Study Area B, White Salmon Urbanization Study.

Water: Area 'B' falls within the Strawberry Mt. and Strawberry Mt. Pump Station pressure zones. The reservoir has a capacity of 100,000 gallons and is undersized for the current fire flow requirements. The Strawberry Mt. pump station is used to service the area adjacent to the reservoir because the gravity head will not supply adequate pressures. The reservoir is supplied by two pumps at the Los Altos reservoir. The pumps are old and replacement was recommended in the 2004 Master Plan. Replacing these pumps could provide some help for this area. A small section of area "B" is serviced by the Spring Street reservoir. This reservoir has been plagued by leaks and is suspected of being a major source of water loss to the city and should not be considered a source for new development areas.

Sanitary Sewer: Area 'B' has limited piping available. The area north of Spring Street flows north through a series of 8-inch pipes where it eventually flows through to the treatment plant in Bingen. The area south of Spring Road has a series of 6 and 8-inch pipes which flow south to a pump station in Waubish Street. No information regarding the pump station was provided so capacity is unknown. The main line continues eastward along the ridge, eventually tying into the treatment facility in Bingen. The City should update the lift station study to better understand the existing capacity as well as future demand.

The map also indicates a 2-inch pressure pipe in Rio Vista which apparently serves individual step systems. A new pump station may be necessary to

consolidate the system. The area appears to have adequate elevation change to provide for gravity sewers. Generally pressure mains are no smaller than 4-inch, so this line and pump station may require upsizing.

It appears that service can be provided in this area, however the northwest corner of Area 'B' was excluded from the 1992 treatment plant service area. The property owner or developer would be required to extend lines to each prospective property and make any necessary pump station upgrades. The City should confirm this area is within the City's service area boundary.

Stormwater: This area was not included in the stormwater report prepared in 2003. Based on the information provided HHPR assumes there are no storm sewer improvements in this area. Therefore, any new developments will be required to provide for conveyance, detention and water quality. All costs for improvements should be borne by the developer. Developments should be required to retain all increased storm water flows on site.

Area "C" Commercial Area

The commercial area is outside the current City boundary line. It is bounded by Loop Road to the south and east of the high school. The area is approximately 25-acres in size. See figure 6, Study Area C, White Salmon Urbanization Study.

Water: The existing White Salmon water system is a complicated system of wells, pumps, and reservoirs. The area "C" commercial area is located east of the high school within the Simmons Road pressure zone. The water system pumps water to the Child's Reservoir, which gravity feeds the Los Altos reservoir, which in turn feeds the Strawberry Mt. reservoir through a booster pump. The Strawberry Mt. reservoir services the Simmons Road pressure zone. The Los Altos reservoir is fed by an old 14-inch transmission line with a maximum flow capacity of 1759 gpm. The Master Plan states the maximum flow can only be achieved when the Los Altos and Spring Street reservoirs are empty. The Los Altos reservoir is serviced through an 8-inch pipe branch line which restricts flows even more. The City's water system master plan calls for replacing both lines with a new 20-inch pipe. As stated earlier the Simmons Road pressure zone is serviced by the Strawberry Mt. reservoir. The reservoir is fed through a duplex booster pump system at the Los Altos reservoir, which has a maximum capacity of 320 gpm when both pumps are operating. The Strawberry Mt. reservoir has a maximum storage capacity of 100,000 gallons, and previous studies have stated this reservoir is undersized for the service area. The fire suppression storage demand is 210,000 gallons alone. The master plan calls for an additional 200,000 gallons of storage capacity. The city's current standard for fire flow is 500 gpm for residential and 750 gpm for one hour for commercial. The actual fire flow demand is determined by several factors, including the building class and construction type. Typically

commercial developments require 1500 gpm for two hours at a minimum; 500 gpm for one hour is unsatisfactory. The City's goal is to provide 1750 gpm for two hours. The existing system cannot provide adequate fire protection for this area without making the improvements recommended in the 2004 Master Plan.

Sanitary Sewers: The area has a newer 8" sanitary sewer line adjacent to Spring Creek. This line appears to have been installed within the last six years. Any new development must extend sewers to each building or site. This area was included in the 1993 facilities report. This area appears to have capacity but has a high water table and subject to inflow and infiltration.

Stormwater: The stormwater report prepared in 2003 did not include any areas outside the city limits and did not include this commercial area. The area appears to be dissected by Spring Creek, which would be the most likely location to discharge storm water. The report recommends that any new development in the area should be required to provide detention and water quality prior to discharge. The report states that all new development should discharge stormwater at a rate equal to the pre-pdevelop rate. Based on the information provided to HHPR there does not appear to be storm sewers or improvements in this area. Developments should be required to retain all increased storm water flows on site.

Downtown Proper:

The downtown area is defined as the C-2 commercially zoned area in White Salmon downtown proper. Most of the lots that have been identified as having no improvements are owned by the City, County, PUD or school district, but there are a few undeveloped private lots within the area. See figure 3, City of White Salmon Urbanization Study.

Water: The downtown core area is serviced by the Spring Street reservoir. This reservoir is the oldest and largest reservoir within the White Salmon Water District. It is a concrete, below ground reservoir and the probable cause of the City's 20% water loss. The reservoir has adequate capacity for the area it serves but has issues associated with it that have been identified in the Master Plan. The deficiencies should not preclude any development or redevelopment of this area as they are not capacity related.

Sanitary Sewer: The downtown core area appears to have adequate piping to service the area. Many of the pipes are concrete and may need to be tested for leakage. Generally speaking concrete pipes can be repaired by installing an insituform © liner. The City should inspect the sewer lines using a television camera to verify condition and then make repairs as necessary.

Stormwater: Most of the downtown area north of Jewett Blvd. drains to Hwy 141 through the Jewett St. trunk line where it eventually discharges to Jewett Creek near N.E. Skyline St. This area was identified as Basin 'D' in the 2003 report by Taylor Engineering. The area south of Jewett Blvd. was identified as Basin 'E' and drains to Wyers Rd. where it discharges over the bluff at the Dock Grade outfall. The stormwater report recommended upgrading the Jewett St. trunk line at a cost of just under $400,000. The report recommended abandoning the Dock Grade outfall and installing a new Oak St. trunk line at a cost of just over $400,000. Both of these systems would discharge to the proposed Graves or PUD site, where the report recommends construction of a 280,000 cubic-foot detention pond at a cost of $830,000. The report states that the Jewett St. trunk line is undersized for the current development. The Oak St. trunk line is proposed as a result of abandoning the Dock Grade outfall due to undocumented downstream issues. The existing pipes appear to be sized properly, but abandoning the outfall requires a new trunk line to Jewett Creek and the subsequent detention system.

Next Steps

This brief analysis has identified numerous improvements necessary for the City to address as part of the Urbanization Plan. The City water system appears to be the weak link and in need of the most attention. The 2004 Water System Master Plan identified many projects that should be addressed. The sanitary sewer system has numerous inflow and infiltration issues that should be identified by smoke test and/or TV inspection. The City should prepare a plan to prioritize and systematically correct the water system deficiencies prior to expanding its boundaries.

WHITE SALMON URBANIZATION STUDY

PUBLIC UTILITY SYSTEM REVIEW

RECOMMENDED IMPROVEMENT COSTS

Area 'A'					
Water		**Sanitary Sewer**		**Storm Sewer**	
City Capital Improvements	***Cost***		***Cost***		***Cost***
Install PRV Eyrie/Cherry Blossom	$40,000	* New Treatment Facility	$4,500,000	Conveyance	$200,000
Install PRV Panarama	$40,000				
Install isolation valve Panarama	$3,500				
Install isolation valve Puckerhuddle	$1,800				
Install 8" pipe Eyrie Rd	$40,000				
Install 6" pipe Eyrie Rd	$35,000				
Install PRV Puckerhuddle	$40,000				
Install PRV Eyrie Rd.	$35,000				
Total	**$235,300**		**$4,500,000**		**$200,000**
Developer Improvements					
8" Line McCoy	$240,000	Conveyance System	$1,584,000	Stormwater Management	$800,000
Replace existing 2" with 8" Puckerhuddle	$53,000				
Replace 2" with 8" Thorton	$34,000				
Replace 2" Peck to Martin	$68,000				
Total	**$395,000**		**$1,584,000**		**$800,000**

* As recommended in 1993 Engineering Report

WHITE SALMON URBANIZATION STUDY
PUBLIC UTILITY SYSTEM REVIEW
RECOMMENDED IMPROVEMENT COSTS

Area 'B'					
Water		Sanitary Sewer		Storm Sewer	
City Capital Improvements	*Cost*		*Cost*		*Cost*
Install 10" Spring St.	$85,000				
Main St. PRV	$36,700				
Install PRV Cochran	$36,700				
10" Gate Vbalve Lincoln St.	$4,000				
6" coversion kit Dock Grade	$1,200				
Install 8" pipe Lincoln St.	$6,000				
Install PRV Lincoln St.	$37,000				
Install 6900 lf 20" pipe	$825,000				
Install 8" pipe at Loop and Childs	$24,000				
Install 10" pipe for Los Altos Pump Sta.	$24,000				
Install 10" pipe east of Los Altos	$95,000				
Install 10" pipe on Country View	$38,000				
Install 8" Pipe on Strawberry Mt. Rd.	$68,000				
Install PRV on Lincoln St.	$37,000				
Install 8" pipe on Spring St.	$108,000				
Install three 6" isolation valves on El Cam	$8,300				
Install 8" pipe on Rio Vista	$12,075				
Install 6" isolation valve on Rio Vista	$2,800				
Install 8" Pipe on Paolos Verdes	$44,000				
Install 6" pipe to feed Palos Verdes	$7,800				
Install PRV in Rio Vista	$32,675				
Install PRV in El Camino	$32,670				
Install PRV on Lincoln for new 20" pipe	$36,700				
Install isolation valve on Loop Rd.	$1,865				
Add 200,000 gallon storage Strw. Mt.*	$414,000				
Los Altos Pump Station	$320,000				
Strawberry Mt. Pump Station	$90,000				
	$2,428,485				
Developer Improvements					
Loop System off Cochran Estates	$75,000	Conveyance System dependent on need		Stormwater Management	
Install PRV along Cochran Estates	$36,700				
Replace 2" with 8" Thorton	$32,000				
Total	**$143,700**				

WHITE SALMON URBANIZATION STUDY
PUBLIC UTILITY SYSTEM REVIEW
RECOMMENDED IMPROVEMENT COSTS

Area 'C' Commercial Area

Water		Sanitary Sewer		Storm Sewer	
City Capital Improvements	*Cost*		*Cost*		*Cost*
Install 8" pipe on Loop Road	$207,000				
Add 200,000 gallon storage Strw. Mt.*	$414,000				
Install 6900 lf 20" pipe	$759,000				
Los Altos Pump Station	$296,000				
Total	**$1,676,000**				
* Required for Area B as well					
Developer Improvements					
Conveyance System dependent on need		Conveyance System dependent on need		Stormwater Management	$100,000

Downtown Proper

Water		Sanitary Sewer		Storm Sewer	
City Capital Improvements	*Cost*		*Cost*		*Cost*
Spring St. Reservoir Repairs	$100,000	TV sanitary lines and repair	$80,000	Jewett St. trunk line	$400,000
Install 6" pipe between Oak and Wyers	$18,400			Re-route Dock Grade Outfall	$400,000
Replace 2" to 6" pipe on Oak St.	$13,700			Construct regional detention facility	$762,000
Replace 6" to 8" on Grandview	$30,000				
Replace 4" to 8" on Okeefe	$14,700				
Replace 2" to 8" on Park	$14,000				
Install PRV on Overlander	$32,000				
Install PRV at Main and Jewett	$36,000				
Install PRV on Estes	$32,000				
Install PRV on Snohomish	$32,000				
Install PRV at Skagit ans Washington	$32,000				
Total	**$354,800**		**$80,000**		**$1,562,000**

White Salmon Rate Comparison

Monthy Utility Rates

	Water*	Sewer	Storm and Surface		Website/Contact Info
Vancouver	$ 18.30	$33.16 per mo. or $3.31 per CCF	$ 6.38		http://www.cityofvancouver.us/atservice.asp?serviceID=44034
Camas	$ 18.83	$ 24.05	$ 4.71		http://bpc.iserver.net/codes/camas/index.htm
Washougal**	$ 16.47	$ 26.92	$ -		http://srch.mrsc.org:8080/code/template.htm
Stevenson	$ 16.00	$ 24.50	$ -		City of Stevenson
White Salmon	$41***	$43.20 (city) to $44.20 (adjacent) ****	$ -		http://www.cityofwhitesalmon.doodlekit.com & City memo dated 9/19/08
Goldendale	$ 26.17	$ 31.50	$ -		Per city correspondence at (509) 773-3771

*Water includes base charge plus 10 CCF for Vancouver and Camas; based on 3/4 water meter.

**Bi-Monthly Rate divided by 2 for comparison purposes

*** Current rate of $39 (first 5000 gpm) expected to increase to $41 in 2009. Base rate excludes overage rates of: $1 per 000 for first 3000 gpm. May rise to $2 for next 12000 gpm, $3 for next 12000 gpm, $4 for next $12000 gpm, etc. until $5 is reached.

**** Monthly rates for wastewater may rise for next several years at about 150% of baseline inflation rate, or $2 per month.

System Development Charges and Hookup Fees for Single Family Residences

	Water	Sewer	Storm and Surface	Road Impact Fees	Website/Contact Info
Vancouver	$ 1,716.00	$ 1,999.00	$ -	$ 1,131	http://www.cityofvancouver.us/atservice.asp?serviceID=44034
Camas	$ 1,714.00	$ 2,349.00	$ -	$ 2,755	http://bpc.iserver.net/codes/camas/index.htm
Washougal	$ 2,930.00	$ 5,620.00	$ -	$ 2,191	http://washougal.biz/cow/planning/building%20forms
Stevenson	$ 3,000.00	$ 2,800.00	$ -	$ -	City of Stevenson
White Salmon	$2150 (city) or $3010 (adjacent)**	$ 2,000.00			http://www.cityofwhitesalmon.doodlekit.com & City memo dated 9/19/08
Goldendale*	$ 2,000.00	$ 2,000.00	$ -	$ -	Per city correspondence at (509) 773-3771

*Goldendale is looking into a street development fee.

** Hookup fees may rise to $5000 (city) and $8000 (adjacent) in 2009. Currently $1500 of user fee goes to Bingen for plant improvements. ($1000 to Port?)

Currently there are 1,681 water hookups in White Salmon district and 154 customers on waitlist. City has received $1.5 M grant to expand water supply using Buck Creek.

Source: compiled by FCS GROUP.

Appendix B. Existing Traffic Conditions

DKS Associates
TRANSPORTATION SOLUTIONS

MEMORANDUM

TO: Scott Keillor, A.I.C.P., Columbia Planning and Design

FROM: Scott Mansur, P.E.
Brad Coy, E.I.T.

DATE: July 14, 2008

SUBJECT: **White Salmon Annexation Study – Existing Traffic Conditions** P08136-000-000

This memorandum provides a report of existing traffic conditions in the City of White Salmon, Washington. It includes study area roadway characteristics, traffic volumes and operating conditions at two study intersections, collision data along three key roadways, and observed safety and deficiency issues.

Study Area Roadways

The characteristics of key roadways in White Salmon are listed in Table 1.

TABLE 1: Key Study Area Roadway Characteristics

Roadway	Classification	Cross Section	Posted Speed
W Jewett Blvd (Hwy 141)			
Grangeview Lp Rd to SW Peck Rd	Major Collector	2 Lanes	45 mph
SW Peck Rd to NW Garfield Ave	Major Collector	2 Lanes	35 mph
NW Garfield Ave to N Main Ave	Major Collector	2 Lanes	25 mph
NW Lincoln St	Minor Collector	2 Lanes	25 mph
N Main Ave			
W Jewett Blvd (Hwy 141) to N Lincoln St	Minor Collector	2 Lanes	25 mph
NW Lincoln St to NW Spring St	Local	2 Lanes	25 mph
NW Spring St to Grangeview Lp Rd	Major Collector	2 Lanes	25 mph
Grangeview Lp Rd			
W Jewett Blvd (Hwy 141) to NW Bakhan Rd	Major Collector	2 Lanes	35 mph
NW Bakhan Rd to N Main Ave	Major Collector	2 Lanes	25 mph

247 Commercial Street NE
Suite 201
Salem, OR 97301
(503) 391-8773
(503) 391-8701 fax
www.dksassociates.com

Study Intersection Traffic Volumes and Operating Conditions

Traffic volumes were collected and operating conditions were analyzed for the PM peak hour at two key study intersections:

- W Jewett Boulevard (Highway 141)/N Main Avenue
- W Jewett Boulevard (Highway 141)/NW Lincoln Street

TRAFFIC VOLUMES

The traffic volumes were collected on May 28, 2008, and are shown in Figure 1.

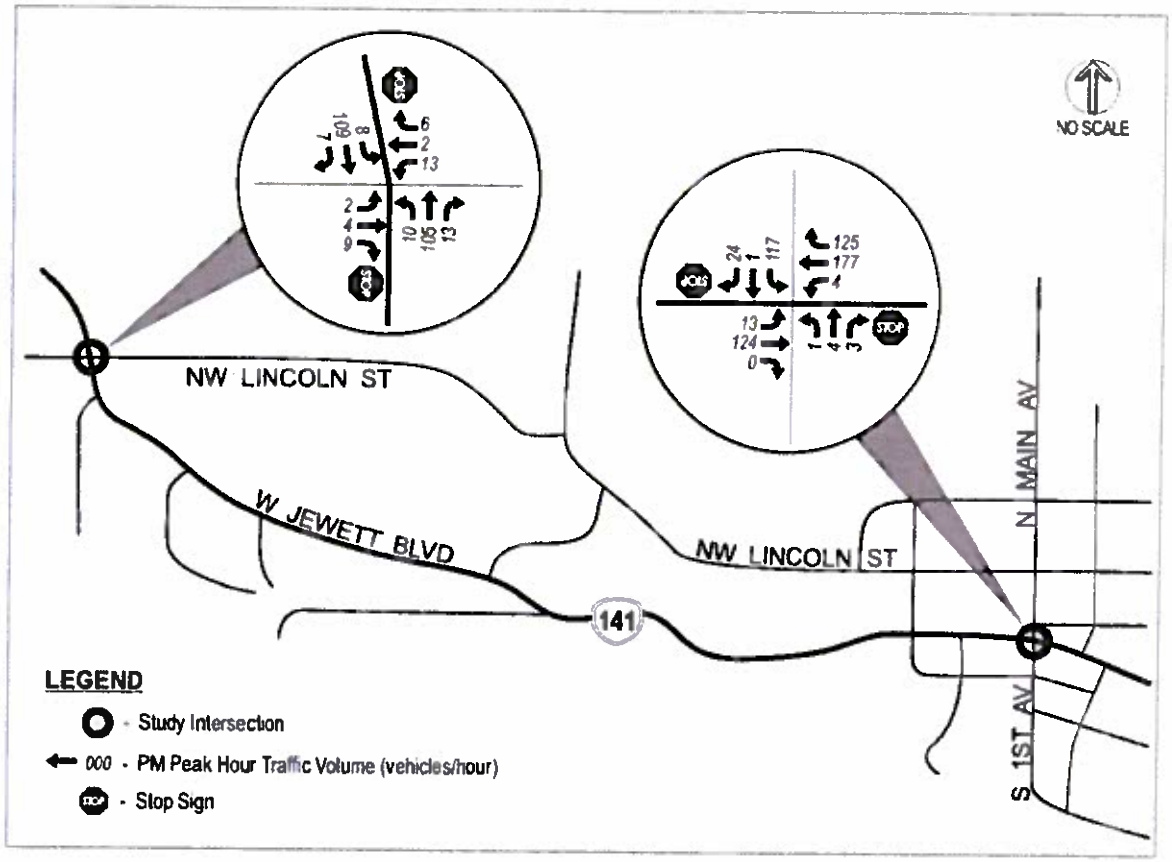

FIGURE 1: Existing Traffic Volumes (PM Peak Hour)

OPERATING CONDITIONS

Level of service (LOS) operating standards (also referred to as thresholds) for state highways in Klickitat County have been set by the Southwest Washington Regional Transportation Council (RTC). Because Highway 141 is not considered a highway of statewide significance (HSS) and because the study intersections are in an urban area, the applicable level of service standard for the two study intersections is LOS E.

Intersection operating conditions were analyzed at the study intersections for the PM peak hour. The analysis used *2000 Highway Capacity Manual* (HCM) methodology[1] for unsignalized intersections to calculate level of service (LOS) and delay at the intersection. The results of the analysis are listed in Table 2. As shown in the table, both intersections meet standards. Detailed HCM reports are included in the appendix.

TABLE 2: Existing Operating Conditions (PM Peak Hour)

Intersection	PM Peak Hour Operations			Operating Standard
	Delay	*LOS*	*V/C*	
W Jewett Blvd (Hwy 141) / N Main Ave	15.1	A/C	0.31	LOS E
W Jewett Blvd (Hwy 141) / NW Lincoln St	10.7	A/B	0.04	LOS E

Delay = Average Stopped Delay per Vehicle (seconds) at Worst Movement
LOS = Level of Service of Major Street/Minor Street
V/C = Volume/Capacity Ratio of Worst Movement
Bold Underlined values exceed standards.

Collision Data

Five years (2002–2007) of collision data at the two study intersections were obtained from the Washington State Department of Transportation (WashDOT) Collision Data and Analysis Branch. The collision histories were analyzed, and did not indicate a higher than average collision rate; a rate greater than or equal to 1.0 collision per million entering vehicles (MEV) generally indicates a higher than average collision rate. As shown in Table 3, both intersections have collision rates below 1.0. In addition to listing the collision rate, Table 3 also lists the breakdown of collisions by severity; there were no fatal collisions reported at the intersection during the five years reported.

TABLE 3: Study Intersection Collisions (2002–2007)

Intersection	Collisions (by Severity)				Collisions per year	Collision Rate[b]
	Fatal	*Injury*	*PDO*[a]	*Total*		
W Jewett Blvd (Hwy 141) / N Main Ave	0	1	3	4	**0.67**	**0.33**
W Jewett Blvd (Hwy 141) / NW Lincoln St	0	1	0	1	**0.17**	**0.02**

[a] PDO = Property damage only.
[b] Collision Rate = Average annual crashes per million entering vehicles (MEV). MEV estimates are based on PM peak hour counts.

[1] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.

Study Area Field Observations

Study area field observations were performed during the PM peak period[2] to identify potential transportation constraints. Based on the observations and on the existing conditions analysis, there is significant capacity for future growth within the study area.

During the field observations, there was a traffic control concern observed at the intersection of North Main Avenue and Grangeview Loop Road. This intersection has atypical traffic control due to the fact that one of the major street approaches (i.e., the eastbound Grangeview Loop Road approach) is stop controlled while the other (i.e., the westbound North Main Avenue approach) is allowed a free movement. In addition, the southbound North Main Avenue minor street approach is currently stop controlled, which makes two of three approaches stop controlled. Typical operation would be to stop all three approaches or only stop the one minor street approach. The City should reevaluate this intersection with new traffic counts to determine the appropriate traffic control configuration based on criteria provided in the Manual on Uniform Traffic Control Devices (MUTCD). It should also be noted that this intersection has a marked pedestrian crossing that should be addressed in conjunction with the traffic control evaluation.

If you have any questions or comments concerning this memorandum feel free to give us a call.

[2] Field observations were performed by DKS Associates on June 13, 2008.