

CHAPTER ~~X~~9. UTILITIES ELEMENT

EDIT NOTE: ***Horizon 2040*** incorporates portions of both Volume 1 and Volume 2 of ***Plan 2015***. To help your review, the existing language is in black text, Blue underlined is new, red strikethrough is deleted, and green was moved to or from a different section.

9.1 INTRODUCTION/PURPOSE

County residents rely on a number of basic services, or utilities, that help define their quality of life and maintain their health and ~~well being~~well-being. Water supply and sewage waste disposal involving more than one user, and the delivery of natural gas, electricity, and telecommunication services are considered utilities. ~~These services are usually taken for granted.~~ Yet without coordination and conscientious planning for future growth, service may be ~~interrupted or inadequate~~interrupted, inadequate, or prohibitively expensive.

~~The Growth Management Act's Procedural Criteria define "utilities" or "public utilities" as enterprises or facilities serving the public by means of an integrated system of collection, transmission, distribution, and processing facilities through more or less permanent physical connections between the plant of the serving entity and the premises of the customer. Included are systems for the delivery of natural gas, electricity, telecommunications services, and water, and for the disposal of sewage (WAC 365-195-200(25)). The Utilities Element includes water, natural gas, and electric utilities, sewage and waste water collection, irrigation, solid waste, and telecommunications. Some of these utilities may also require capital facilities.~~

This Utilities Element was developed consistent with Section 36.70A.070 of the Growth Management Act (GMA) to address utility service issues in Yakima County through the year ~~2015~~2040. Coordinating its goals and policies with the other ~~***Plan 2015***~~***Horizon 2040*** elements should ensure adequate and cost effective utility service for all County residents. ~~The Utilities Element also describes how the goals in the other plan elements will be implemented through utility policies and regulations.~~

The Utilities Element has been developed in accordance with the County-wide Planning Policies and is integrated with all other planning elements to ensure consistency through-out the comprehensive plan.

Maps of utilities in Yakima County are maintained and updated by the County Geographic Information Systems (GIS) ~~to meet the requirements of the Utilities Element as outlined in state law~~. In addition, County Utility Plans are hereby adopted by reference to meet the requirements of including capacity data; identifying existing and proposed facilities; and inconsistent with the County's GMA Update Schedule. All plans have been reviewed and can be provided upon request.

9.2 GROWTH MANAGEMENT ACT REQUIREMENTS

State laws RCW 36.70A.70 (4) and WAC 365-196-420 requires a Utilities Element that includes the general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunication lines, and natural gas lines.

The GMA Procedural Criteria define "*utilities*" or "*public utilities*" as enterprises or facilities serving the public by means of an integrated system of collection, transmission, distribution, and processing facilities through more or less permanent physical connections between the plant of the serving entity and the premises of the customer. Included are systems for the delivery of natural gas, electricity, tele-communications services, and water, and for the disposal of sewage (WAC 365-195-~~200~~ 210 (~~25~~36)). The ~~***Plan 2015***~~***Horizon 2040*** Utilities Element includes domestic water, irrigation, sewer, solid waste, electrical, natural gas~~, electricity, sewage and waste water collection, irrigation, solid waste~~, and telecommunications. Some of these utilities may also require capital facilities.

In order to meet these requirements, ~~***Plan 2015***~~***Horizon 2040*** ~~will~~ compares the location and capacity of existing and proposed utility facilities with the Land Use Element, and asks the following questions: Is the capacity sufficient to serve the expected growth for the next 20 years? Where should utility lines and facilities be placed to serve the anticipated needs?

The Washington Administrative Code (WAC) recommends a ~~common sense~~common-sense approach to developing criteria for siting utilities. A key consideration is whether a siting proposal is consistent with the locations and densities for growth identified in the ~~l~~Land U~~u~~se element. Another consideration is the public service obligations of the utility involved. The element must also consider how the siting decision will affect the utility's ability to provide service. Finally, local design considerations must be balanced against the need for system uniformity.

The Utilities Element should also call for effective coordination of transportation projects and permits. Joint use of transportation right~~s~~-of-ways and utility corridors are recommended. Interested utilities should be notified of road construction projects, maintenance and road upgrade projects to facilitate public and private utility trenching activities. Whenever possible, a proposed project and its utility permits should be approved simultaneously.

Finally, the element needs to address coordination among adjacent planning jurisdictions to ensure the consistency of each jurisdiction's utilities element and regional utility plans. The element's goal is to develop a coordinated process for siting regional utility facilities in a timely manner.

Washington State's Growth Management Act (GMA) contains 13 goals for the purpose of guiding the development of comprehensive plans and development regulations. The following GMA goals (goals 1, 2, 5, 6, and 12) specifically relate to utilities:

> (1) Urban growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
>
> (2) Reduce sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.
>
> (5) Economic development. Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, promote the retention and expansion of existing businesses and recruitment of new businesses, recognize regional differences impacting economic development opportunities, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.
>
> (6) Property rights. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.
>
> (12) Public facilities and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

~~ORGANIZATION OF THE ELEMENT~~

~~This Utilities Element is organized into five sections:~~

- ~~An elaboration of major issues associated with long-range utility planning in the County;~~
- ~~A description of existing utility systems and facilities;~~
- ~~A strategy for defining the Level of Service (LOS) requirements for each utility;~~
- ~~A profile of planned utility improvements and an assessment of future facility needs;~~
- ~~A finance plan which examines the costs and potential funding sources for needed improvements.~~

9.3 MAJOR ISSUES/OPPORTUNITIES

Recognizing the major issues is the first step in creating the utilities plan agenda. Once challenges have been identified in an orderly and meaningful fashion, a plan of action can be created. This section identifies issues that will be addressed through ~~***Plan 2015's***~~***Horizon 2040's*** Utilities Element.

9.3.1 Service Provision

As growth occurs, utilities will need to be extended or developed. For water and wastewater, if no public system exists in the vicinity, satellite systems may need to be constructed, as noted in the County's 1988 Rural Water and Sewer General Plan and 2010~~2004~~ Water System Satellite Management Plan. ~~–~~These systems provide greater protection of groundwater supplies than a proliferation of individual wells and septic systems, ~~and make possible a~~allowing for a clustered land use pattern that facilitates eventual connection to a larger system~~, which the County prefers~~. ~~-~~Within UGAs, the city, town, special purpose district or regional comprehensive plan should be first consulted to determine service providers and timing of service.~~–~~ Utility services must be based on the ~~***Plan 2015***~~***Horizon 2040*** Level of Service (LOS) standards. The following questions help to determine the desired level of service:

- What level of service is appropriate for each type of utility in urban and rural areas?
- What type of water and wastewater facilities are desirable in which locations: Who (i.e., what institution, municipality, public or private entity or other service provider) should provide them? Who should own them and be responsible for their operation?
- In what ways, does development of land within an irrigation district affect the supply of potable ground water, the availability of surface water for commercial agriculture (as opposed to weeds, pasture or lawns), and efficient irrigation system management?

9.3.2 Coordination Among Service Providers

The County must coordinate with service providers of water and sewer in order to provide efficient service, solve utility problems and accommodate growth.~~–~~ The County's role in providing these utility services needs to be redefined through the development of consolidated water systems plans and a sewerage general plan. ~~–~~The responsibility for the implementation of these plans would be defined through interlocal agreements between the County and the service providers. ~~–~~Where urban services cannot be provided by the municipality or district economically or equitably, the County may need to become a service provider.

9.3.3 Concurrency and Implications for Growth

As development occurs, system and facility improvements must keep pace to meet the higher demand. The improvements must take place within in a certain time frame while maintaining appropriate levels of service. Establishing common-use corridors is an important element in meeting these requirements. The following factors may be taken into account:

- At what density or level of development is it feasible to provide each type of utility (water, sewer, telephone, natural gas, electricity, cellular phone access, solid waste disposal)? Is there a public cost,

as well as a private cost, when these services are provided (e.g., aesthetic damage, obstruction of views, environmental damage, odor)?

- What is the County's role in assuring that the level of service provision is appropriate to the type and density of development that is occurring? Should the County require that certain services be available before development can occur in certain areas, or at certain densities?

9.3.4 Environmental Sensitivity

Important environmental issues associated with planned utility improvements must be addressed. They include the following utilities:~~.~~

- Sewer: What are the impacts associated with pipeline construction? How can the specialized wastewater requirements of different industrial and commercial operations be accommodated?

- Water: What is the cumulative effect of 8-inch lines, which are exempted from SEPA requirements? What are the water withdrawal impacts of well development?

- Solid Waste: What impacts are associated with management of the solid waste system, siting of new transfer stations, and bio-solids management, and how can they be addressed?

- Satellite Systems: How can satellite water and wastewater systems be used to support clustered development? What incentives can the County offer to make satellite systems financially viable, given the state regulatory framework?

- Aesthetics: How can views be protected from excessive numbers of unsightly towers and lines? When (or in which areas) should the County require what types of utilities to be buried?

The answers to these questions will affect the feasibility of future plans for land use, housing, economic development, capital facilities, transportation, and even parks and ~~recreation~~open space.

9.4 WATER AND SEWER CONSIDERATIONS

9.4.1 Water and Sewer

Cities are the main service providers for water and sewage disposal within their boundaries. Outside of the cities, water and sewage disposal can be provided in various ways: extension of city services; extension of lines by existing water companies, water districts, and sewer districts; creation of new water and sewer districts; city-operated satellite water and/or sewer systems; County-operated rural domestic water systems, satellite water and/or sewer systems; water and/or septic systems (serving new structures and 2 to 9 or more units); or on-site water and/or septic systems. Some types of utilities are better suited than others to each of the ~~land use patterns~~zoning designations: 1) ~~unincorporated urban areas~~Urban Growth Areas, 2) ~~economic r~~Resource Areas~~lands~~, and 3) each of the ~~four~~five types of rural area ~~land use~~zones.

In deciding which type of service is appropriate in each area, we need to consider development density (number of houses per acre), configuration of housing units, and environmental constraints (soils, depth to water table). Other considerations include quality of drinking water, quality of sewage effluent produced, availability and capacity of existing systems, government policy (e.g., not serving areas outside municipal limits), ease of maintenance, public liability for non-County systems, and financial feasibility. The water and sewer policy matrix from Yakima County Code (YCC), Title 19, Unified Land Development Code (Table ~~I-2~~19.25-1 Water and 19.25-2 Sewer) summarizes these considerations for each ~~land use pattern~~zoning designation and system type.

Some service types may not be desirable in any area. For example, if a private water company or district cannot meet state or federal standards, and is forced into bankruptcy, the provider of last resort is the County in unincorporated areas. The County could end up owning a number of small water systems of varying quality, with no standardization of parts, making maintenance difficult and costly. If the County were able to design and be responsible for the systems from the beginning, it could have greater control over quality and require standardization. For these reasons, additional private water companies, water districts, and sewer districts are not favored. Yet existing systems, regardless of ownership, typically provide safe drinking water (or, in the case of sewage, properly treated effluent) at a reasonable cost to users, and should be used where they are available.

Within a land use area (e.g., rural settlement), the specific location, size, and financial and technical feasibility of a proposed development would determine the appropriate water and sewage system.

9.4.2 Water and Sewer Systems

Water and sewer system improvement needs to handle anticipated growth are similar under all land use alternatives. ~~A summary of the water and sewer facilities deficiencies, recommended improvements and estimated costs are shown in Tables X-13 and X-14, respectively.~~ It should be noted that current and future deficiencies for sewer facilities within Urban Growth Areas are not listed since the respective city or town's comprehensive plan should address these service issues and establish LOS. Where the cities or special purpose districts either cannot or will not address sewer service deficiencies, it may be necessary for another service provider to step in, to maintain equitable access to service within the UGAs. A Comprehensive Sewer Plan for the urban areas of Yakima County will help establish service deficiencies and prospective means for their solution.

~~**Table X-13 Current and Future Deficiencies and Improvements for Water Facilities**~~

~~Facility/Service~~	~~Year 1995 Deficiencies~~	~~Year 2001 Facility Needs All Alternatives~~	~~Year 2015 Facility Needs All Alternatives~~
~~**Supply Wells**~~	~~**Buena – 1 Well**~~	~~**Buena – Backup Well $450,000**~~	~~**None Identified**~~
~~**Pump Station**~~	~~**No Deficiencies**~~	~~**No Improvements Required**~~	~~**No Long – Term Improvements Identified**~~

~~Pipelines~~	~~Terrace Heights Main Intertie Needs~~	~~Terrace Heights Mains/Interties $1.8M~~	~~No Long – Term Improvements Required~~
~~Reservoirs~~	~~No Deficiencies~~	~~No Improvements Required~~	~~No Improvements Required~~
~~Water Treatment Facilities~~	~~No Deficiencies~~	~~No Improvements Required~~	~~No Improvements Required~~

~~Table X-14 – Current and Future Deficiencies and Improvements for Buena Sewer Facilities~~

~~Facility/Service~~	~~Year 1995 Deficiencies~~	~~Year 2001 Facility Needs All Alternatives~~	~~Year 2015 Facility Needs All Alternatives~~
~~Pipelines~~	~~Terrace Heights Main Intertie Needs~~	~~Terrace Heights Mains/Interties $1.8M~~	~~No Long – Term Improvements Required~~

~~Thresholds LOS standards were applied to the existing systems and to future system growth anticipated under each land use alter-native for the years 2001 and 2015 in order to identify facility needs. These standards measure the impacts of new development on the existing system. Then appropriate mitigation, commensurate with measurable impacts, can be applied to development approvals. This ensures that the system continues to provide service at the acceptable local level.~~

9.5 DOMESTIC WATER

9.5.1 Potable Water Supply

More people moving to newly-developed areas means more demand on the ground water supply. As new residents install individual or community wells or connect to existing systems that rely on ground water, concerns about available (legal and physical) ground water grow. Residents of the West Valley, Wenas, North Selah, and Terrace Heights areas have already voiced their concern about declining well production.

~~The taste of potable water from wells in some areas varies seasonally.~~ While the quality of ground water in Yakima County in generally excellent, high concentrations of iron and manganese affect the taste in some areas. Local land use impacts have degraded water quality in a few locations.

The Washington State Wellhead Protection Program, adopted in 1994, requires all Group A public water systems (those serving at least 15 connections or 25 people) to develop a wellhead protection program to prevent contamination of groundwater used for drinking. The systems must delineate wellhead protection areas, inventory potential contaminant sources, and manage wellhead protection areas to prevent pollution. The Washington State Department of Health is responsible for enforcement. Yakima County is one of eight purveyors in the Upper Valley and member of the Regional Wellhead Protection Committee (RWPC) through an interlocal agreement.

9.5.2 ~~A ground water availability analysis based on preliminary data needs to be developed for each subbasin in the County. In the future, a more accurate groundwater analysis will require additional stream flow data, monitoring of ground water elevations, and evaluation of the hydraulic connection and rate of flow between the shallow and deep aquifer systems.~~

~~A water level monitoring program should be developed and implemented within each subbasin to evaluate the long-term potential water level declines in both the shallow and deep aquifer systems and aid in developing and refining a ground water budget. To reduce costs, the water level measurements could be collected during seasonal high and low water periods each year. To evaluate resource availability, it is essential to understand the interrelationship between the shallow and deep aquifers. Evaluation of the aquifer interconnection would require installation of monitoring wells and pumping tests to generate data needed to calculate the potential rate of water loss or gains from the interconnecting aquifer and refine the ground water budget. In the absence of the data needed for a ground water budget, one way to prevent excessive demands on ground water would be for the County to obtain all unappropriated water rights in the unincorporated urban and transitional areas.~~

Satellite Management Agencies (SMA)

Satellite Management Agencies are authorized and approved entities by the Washington State Department of Health under WAC 246-295-001 and RCW 70.119A.060 to own and/or manage and operate public water systems. Group A is regulated by Chapter 246-290 WAC Public Water Supplies and Group B by Chapter 246-291 WAC Public Water Systems. Yakima County has five approved agencies to operate and manage public water systems (see Table 9.5.2-1).

Table 9.5.2-1 Washington State Department of Health – Yakima County Approved Satellite Management Agencies (SMA)
1. Evergreen Valley Utilities SMA #149
2. Nob Hill Association SMA #109 - Limited Service Area: Within Nob Hill's Service Area Boundary
~~*Eligible Systems: Systems 3 connections or greater inside Yakima County Urban Area Boundary; 5 connections or greater outside the Yakima County Urban Area Boundary.~~
3. Northwest Water Systems SMA #119
4. Valley Water Services SMA #155
5. Yakima County Public Works Department SMA #117 - Limited Service Area: All of Yakima County except incorporated areas, the Yakima Firing Center, and certain areas of the Yakama Indian Nation.
*Eligible Systems: Within the Urban Growth Area, systems with 3 or more connections. Outside the Urban Growth Area, systems with 5 or more connections.

Source: Washington State Department of Health (DOH)

~~Satellite management water systems have a lower annual cost per connection than individual wells. While the annual user fees are higher for satellite systems, the initial cost per connection less for satellite systems, which translates into lower mortgage payments, as shown in Table X-15. For example, a system with nine connections would have an annual cost per connection of approximately $759, while one with three connections would be about $1,208, and an individual well would be about $1,230. These costs include operations, maintenance, administrative expenses, testing, energy costs, reserve for repair or replacement, and the annual principal plus interest on equipment installation (based on a 15-year mortgage~~

~~at 7-1/2% interest). If the homes in the 9-connection system are clustered, the annual cost drops to about $734 (slightly less pipe required). In addition, satellite water systems would have a modest one-time connection fee for meter inspection and account activation.~~

~~**Table X-15 Satellite Management Water Systems: Cost Analysis per Connection**~~

	~~Rural Settlement~~	~~Rural Transitional (Clustered)~~	~~Rural Transitional (Nonclustered)~~	~~Urban Unincor-porated~~	~~Individual~~
~~**Service Connections per System**~~	~~9~~	~~9~~	~~9~~	~~3~~	~~1~~
~~**Annual User Fees per Connection**~~					
~~Reserve Account~~	~~25~~	~~25~~	~~25~~	~~68~~	~~159~~
~~Maintenance, Operations and Administration~~	~~166~~	~~166~~	~~166~~	~~499~~	~~0~~
~~Testing and Energy~~	~~70~~	~~70~~	~~70~~	~~96~~	~~114~~
~~**Debt Payments (principal and interest) on Equipment Installation**~~	~~497~~	~~472~~	~~497~~	~~545~~	~~957~~
~~**TOTAL, Annual User Costs/Connection**~~	~~759~~	~~734~~	~~959~~	~~1,208~~	~~1,230~~

9.5.3 County-Owned ~~UTILITIES~~Water Supply Systems

9.5.3.1 Group A and B Water Supply Systems

~~**Water Supply Systems**~~

Yakima County owns and operates four ~~water systems~~Group A and twenty-~~four~~five Group B water systems (see Table 9.5.3.1-1).~~: the public systems in the unincorporated communities of Terrace Heights, Buena, and the Gala Estates north of Selah.~~ The County ~~recently~~ assumed the management and planning role for ~~these~~these systems ~~(See Figure X-1)~~. Maps 9.5.3-1, 9.5.3-2, 9.5.3-3, and 9.5.3-4 shows the locations of Group A systems. The inventory of the Group A Water Systems are outlined in Table 9.5.3.1-2. The location of Group B systems can be seen in Maps 9.5.3-5 and 9.5.3-6.

Table 9.5.3.1-1 Yakima County Water Systems (Group A and B)

Number of Systems	Group A Water Systems	Location	Existing Number of Customers	Maximum Number of Customers
1	Buena	Buena	145	160
2	Crewport	Crewport	48	60
3	Gala*	N. of Selah	37	44
4	Terrace Heights	Terrace Heights	1530	Unspecified
		Total	**1760**	
Number of Systems	**Group B Water Systems**	**Location**	**Existing Number of Customers**	**Maximum Number of Customers**
5	Beckon Ridge	W. of Selah	8	8
6	Bittner	Terrace Heights	1	4
7	Bonair	Buena	6	6

8	Buchanan	N. of Selah	8	8
9	Fairway Estates	S.E. of Sunnyside	10	12
10	Gibson	Wenas	6	6
11	Heysman	N. of Selah	8	8
12	Horizon View	Terrace Heights	~~8~~0	8
13	Kodi South 1	N. of Selah	8	8
14	Kodi South 2	N. of Selah	8	8
15	Meadowbrook	W. of Union Gap	6	8
16	Nagler	N. of Selah	7	7
17	Norman	Terrace Heights	4	8
18	Oliver	Terrace Heights	1	4
19	Pleasant Hill	Selah	4	8~~4~~
~~19~~20	Raptor	Terrace Heights	0	6
2~~0~~1	Ray Symmonds	E. Selah	6	6
22~~1~~	Speyers	N. of Selah	6	7
23~~2~~	Star Crest	Terrace Heights	4	~~3~~4
24~~3~~	Stein Lower	West Valley	7	8
25~~4~~	Stein Upper	West Valley	7	8
26~~5~~	Wenas-Button	Wenas	4	4
27~~6~~	Wenas-Huntzinger	Wenas	4	4
28~~7~~	Wendt Road	Terrace Heights	1	8
29~~8~~	Wiseacre	E. Selah	7	7
		Total	**131~~5~~**	**1735~~6~~**
***Gala Water System will not be expanding.**				

Source: Yakima County Utilities Division

Table 9.5.3.1-2 Yakima County Group A Water Systems

System Feature	Buena	Terrace Heights	Gala Estates	Crewport
Number of Customers Original (date of startup)	102 (1986)	Terraced Estates: 277 (4/1/91) Country Club: 520 (1994)	11 (1995)	45 (3/12/01)
Current (5/20/16)	145	1530	37	48
Number of Wells	2	6	1	2
Gallons per year delivered	14 million	238 million	2.78 million	7.1 million
Distribution pipe	3.5 miles	31 miles	1.4 miles	5,025 feet
Estimated peak hour demand	260 gpm	2,450 gpm	12 gpm	36 gpm
Storage Capacity (in gallons)	157,000	Res. #1: 1,500,000 Res. #2: 60,000 Res. #3: 88,000	73,000	173,000

Current Level of Service				
Minimum Fire Flow	500 gpm for 30 min	Existing Residence: 500 gpm for 30 min New Residence: 1,000 gpm for 30 min Industrial area: 2,250 gpm for 60 min	Not required due to lot size	1000 gpm for 30 min
Minimum Pressure	30 psi	30 psi	30 psi	30 psi
Potential Number of Connections*	160	Unspecified	44	60

*Estimated based on existing water rights. Source: Buena, Terrace Heights, Gala Estates, and Crewport Water Systems Plans

Washington State defines public water systems as all systems serving more than one single family residence. Group A systems serve 15 or more connections, or 25 or more people per day, for 60 or more days per year. Group B water systems are all the smaller systems that serve more than one single family residence but are not large enough to fit into the Group A category.

The state Department of Health (DOH) in Spokane maintains a comprehensive list of all community water systems for the counties in eastern Washington. Group A water systems are required to develop a water system plan to be approved by the DOH and updated every six years. The purpose of a plan is to evaluate the water system facilities and operations, and to develop an improvement plan to meet future needs for 6 and 20 year planning periods.

The DOH list of water systems for Yakima County is summarized in Table 9.5.3.1-3.~~X-3.~~

Table 9.5.3.1-3 Yakima County Water Systems

System Type	Number of Systems
Group A, Community, Residential, Unincorporated	~~81~~78
Group A, Community, Incorporated	~~17~~14
~~Group A, Transient and Non-transient Non-Community~~ Group A, Non-transient, Non-community	~~92~~31
Group A, Transient, Non-Community	72
Group B	~~542~~741
Total Number of Listings	~~732~~936

Source: Washington State Department of Health (DOH), https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx

~~Table X-3 Yakima County Water Systems~~

~~System Type~~	~~Number of Systems~~
~~Group A, Community, Residential, Unincorporated~~	~~81~~

~~Group A, Community, Incorporated~~	~~17~~
~~Group A, Transient and Nontransient Noncommunity~~	~~92~~
~~Group B~~	~~542~~
~~**Total Number of Listings**~~	~~**732**~~

Group A, Community, Residential, Unincorporated systems serve residences in unincorporated areas while Group A, Community, Incorporated systems serve incorporated areas. Group A, Transient and Non-transient, Non-community systems serve hotels and other businesses that cater to people who do not live permanently at the site. Transient systems serve operations that experience intermittent use such as camp-grounds and other seasonal businesses. Non-transient systems include businesses and other operations serving nonresidents more than six months out of the year.

The first category listed includes those systems that are clearly distinguishable as residential and not associated with a city or town's water supply. The largest of these independent water systems is the Nob Hill Water Association.

State Health Regulations now require new public water systems serving three or more connections to be operated by a Satellite Management Agency, where one is available. The DOH has approved Nob Hill Water Association and Yakima County as SMAs.

9.5.3.2 Yakima County Water Resource Systems

On December 10, 2013, the Yakima County Board of Commissioners adopted Resolution 399-2013, "In the Matter of the Formation of the Yakima County Water Resource System" which required the Director of the Public Services Department to develop and organize a water system to address a County-wide rural-domestic water supply to be available to those who would otherwise rely on the "exempt" well strategy offered by RCW 90.44.050. As part of the initial development of the water resource system a technical report called, "Assessment of the Availability of Groundwater for Residential Development in the Rural Parts of Yakima County," was developed to provide an assessment of potential mitigation strategies for providing rural domestic water in Yakima County. The report identifies mitigation strategies for providing water for rural development, while avoiding impacts to flows in main stem reaches and tributaries. The two primary mitigation strategies are: a) the purchase of main stem surface water rights where they are available and identified, and b) the establishment of well depth standards consistent with the hydrologic connectivity between the groundwater body and the senior surface water rights obtained. There is strong emphasis on the development of wells depth standards in the tributary basins, and the purchase of senior water rights mostly in the main stem reaches. The report identifies measures to mitigate domestic groundwater development on the vast majority of currently undeveloped rural residential parcels in Yakima County.

The Yakima County Water Resource System (YCWRS) was developed in accordance to the strategies identified in the report. All new rural domestic water users, prior to the land use approval or the issuance of a building permit must obtain a rural domestic water right certificate from the YCWRS (we need to also recognize that an applicant may have their own water right). The Yakima County Public Services Department is currently in negotiations for the purchase of senior surface water rights to provide at least a five year supply of rural domestic water for anticipated rural domestic land development. As funds become available, YCWRS will continue to purchase the necessary senior water rights to adequately

supply rural domestic water to rural land developers through the life of this plan. Details regarding the funding sources and operation of the YCWRS can be found in Yakima County Code Title 12.08 – Water System.

9.5.4 ~~Water Supply Purveyors~~

~~Independent Public Water Systems~~Independent Public Water System - Nob Hill Water Association

Nob Hill Water Association (Nob Hill Water) is an independent public water system that serves ~~operates a drinking water system in~~ the West Yakima area with drinking water. Its system lies both within the corporate limits of the City of Yakima and in unincorporated Yakima County. ~~According to the Association's April 1994 Comprehensive Plan, it~~Nob Hill Water currently has 11,326~~6,661~~ service connections and serves~~s~~ a population of approximately 27,837~~16,653~~ people. The Department of Health has approved Nob Hill Water for 11,951 connections, resulting in 625 Equivalent Residential Units (ERUs) additional connections available. Storage is currently the limiting factor. If storage capacity can be redistributed through the use of existing booster pumps, enhancements and operations (e.g. Pressure Reducing Valves (PRV's)), then source capacity will become the limiting factor instead. This would then increase the approved number of connections to 12,607. Nob Hill Water will also need to reduce their Distribution System Leakage (DSL), which consumes 2,381 ERUs, or construct new facilities for source, storage, etc., during the next couple of years in order to accommodate projected growth. The Nob Hill 2015-2035 planning period projects a population of 51,536 people and 22,226 ERUs.

Nob Hill Water was incorporated under the laws of the State of Washington on December 26, 1908 as a private non-profit organization. In 1983, it was converted from a private non-profit corporation to a (private non-profit) association.

Its initial source of water supply was the Pacific Power and Light Company which, at that time, owned the water system for the City of Yakima. In the 1940s, the City of Yakima took over ownership of the local water system from Pacific Power. Shortly thereafter, Nob Hill Water drilled its own well, becoming independent of the City of Yakima in 1946. Nob Hill Water has grown and expanded to become the largest private water system in the Yakima Valley except for the City of Yakima~~, and the largest private system in the state~~.

9.5.5 Existing Water Sources

The water supply for the Nob Hill Water Association comes from 5 wells (~~Figure~~Map 9.5.5-1~~X-6~~). Specific characteristics of each of the wells are detailed in Table 9.5.5-1~~X-4~~. ~~A sixth well is currently being developed, but is awaiting state approval before any water withdrawals take place.~~

~~**Table X-4 Nob Hill Water Supply Wells**~~

Table 9.5.5-1 Nob Hill Water Supply Wells

	Well 1	Well 2	Well 3	Well 4	Well 5	Well 7
Year Drilled	1945~~6~~	1956~~61~~	1969~~70~~	1987	1986~~85~~	1983

Static Level (feet)	~~71~~160	~~91~~166	~~306~~392	~~266~~277	0	50
Pumping Level (feet)	~~152~~350	~~133~~325	~~360~~398	~~450~~483	~~230~~410	160
Pumping Capacity (gpm)	~~800~~1,400	800	2,200~~2850~~	~~500~~350	~~1600~~2,350	1,300
Horsepower	~~75~~200	~~75~~125	350	100	~~250~~600	300
Type Pump	Turbine	Turbine	Turbine	Submerged	Turbine	Turbine
Well Depth (feet)	1,624~~5~~	~~550~~500	1,050~~1~~	~~1800~~1,812	850	700
Treatment	Chl/Aer	Chl/Aer	Chl	Chl	Chl	Chl
a. Chl = Chlorination Aer = Aeration						

Source: Nob Hill Water System Plan~~ Aer = Aeration~~
~~**Source: Nob Hill Water System Plan**~~

~~**Table X-5 Nob Hill Distribution System (Feet of Pipe)**~~

						~~Type of pipe~~
	~~Asbestos~~			~~Galvanized~~		
~~Pipe size~~	~~Cement~~	~~Steel~~	~~Cast Iron~~	~~Iron~~	~~Copper~~	~~PVC~~
~~16 inch~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~	~~2,000~~
~~12 inch~~	~~66,520~~	~~500~~	~~–~~	~~–~~	~~–~~	~~83,050~~
~~10 inch~~	~~2,990~~	~~–~~	~~–~~	~~–~~	~~–~~	~~–~~
~~8 inch~~	~~102,680~~	~~–~~	~~1,400~~	~~–~~	~~–~~	~~33,100~~
~~6 inch~~	~~146,990~~	~~21,120~~	~~8,600~~	~~–~~	~~–~~	~~18,350~~
~~4 inch~~	~~36,730~~	~~9,580~~	~~–~~	~~–~~	~~–~~	~~2,340~~
~~3 inch~~	~~–~~	~~–~~	~~–~~	~~1,220~~	~~–~~	~~1,140~~
~~2 inch~~	~~–~~	~~360~~	~~–~~	~~12,410~~	~~400~~	~~3,790~~

The total production capacity from the ~~five~~six wells is ~~6,550~~12,000 gallons per minute (gpm) or ~~9.438~~17.28 million gallons per day (mgd). In 2002, a change in the original water rights certificate consolidated withdrawals from Wells 1 and 6 for a total capacity of 1,600 gpm or 980 acre-feet per year. However, Well 1 ~~is~~is primarily used to meet high summer demands and a backup source in the winter ~~kept on standby for emergency purposes only~~ because of its hydrogen sulfide content. Well 6 is inactive and not necessary in backing up Well 1 as intended. When ~~this well is~~both wells are removed, the maximum capacity ~~is 5,750~~ of Wells~~,~~ 2, 3, 4 and 5 is 10,400 gpm, 7,902 acre-feet per year, or ~~8.285~~14.98 mgd, as indicated on an approved ~~.~~Department of Ecology 2003 change in application.

Water Association records show a daily per capita use of 144~~173~~ gallons of water. Maximum day per capita usage was ~~370~~302 gallons ~~and minimum day per capita use was 87 gallons~~ (2015~~1993~~ data). Peak day usage is typically higher in the summer than in the winter due primarily to local summer irrigation needs.

~~Storage~~ ~~-~~Storage for the system is provided by ~~five~~six reservoirs serving three distinct pressure zones. The reservoirs are located at ~~three~~four different sites, two of the sites containing two reservoirs each (see Table 9.5.5-2). ~~There is a one million gallon reservoir at the site of Well 3 which serves the upper and intermediate pressure zones. A one-million and a 500,000 gallon reservoir are located in the north central~~

~~portion of the service area the Westbrook Reservoir, and serve the larger lower pressure zone. A one-million and a 150,000-gallon reservoir near Well 4, the Minnesota Reservoir, also serve the lower pressure zone.~~ Total storage is ~~3.65~~4.23 million gallons.

~~Distribution System~~ ~~-~~ The distribution system comprises ~~105.16~~165 miles of pipe.

Table 9.5.5-2 Nob Hill Water Reservoir Characteristics

Characteristic	Minnesota Reservoir No. 1	Westbrook Reservoir No. 2	Minnesota Reservoir No. 3	Hayes Reservoir No. 4	Westbrook Reservoir No. 5	Barrett Reservoir No. 6
Location	56th Ave & Englewood Dr.	8001 Popular View Way	56th Ave & Englewood Dr.	8403 Scenic Drive	8001 Popular View Way	12900 Barrett Rd.
Status	Active	Active	Active	Active	Active	Active
Date Constructed	1947	1952	1955	1967	1974	1998
Storage Capacity (gallons)	150,000	276,400	1,000,000	1,000,000	803,100	1,000,000
Pressure Zone	Low	Low	Low	High	Low	Intermediate

Source: Nob Hill Water System Plan, 2015

9.6 SEWER

9.6.1 County-Owned S~~s~~ewer/S~~s~~anitation S~~s~~ystem

Most rural residents rely on-site septic tanks and drain fields for their waste water system needs. If residences are not served by a collection sewer, they're considered to be using an on-site system. All on-site systems in the County are permitted and regulated by the County Health District, which promulgates threshold standards for these systems.

Currently, the ~~only~~ County-owned collection systems ~~is~~consist of the Buena, Fairway Estates, and Mtn. Shadows Sewer Systems~~, 10 miles east-southeast of Yakima and north of Toppenish. The Buena Sewer System was constructed to reduce groundwater contamination identified by the Yakima Health District's 1983 environmental survey. Construction of the system, which includes individual septic tanks at each service connection, a collection system consisting of 3.4 miles of conveyance pipe, and a recirculating~~

~~gravel filter treatment plant, was completed in the fall of 1993. Project financing was provided by a Federal Environmental Protection Agency grant, a Washington State Department of Ecology Centennial Clean Water Fund Grant, a Washington State Department of Community Development Block Grant, and Yakima County funds. With the exception of a few new service connections the system has not changed since it was constructed. The system serves about 175 equivalent residential units (ERUs) and treats about 16 million gallons per year of sewage~~. Maps 9.6.1-1, 9.6.1-2, and 9.6.1-3 shows ~~Figure X-4 shows a~~the ~~recent~~ Yakima County Department of Public Works ~~map of the~~ three systems~~, the treatment plant, and outfall locations~~.

Table 9.6.1-1 shows the location and current number of existing and maximum number of connections.

Table 9.6.1-1 Wastewater Systems

Systems	Location	Existing Number of Customers	Maximum Number of Customers
Buena	Buena	282	390
Fairway Estates	S.E. of Sunnyside	10	12
Mtn. Shadows	West Valley	8	11
	Total	**300**	**413**

Source: Yakima County Utilities Division

~~The permitted discharge capacity of the treatment plant, under the current NPDES permit, is 52,000 gallons per day averaged over a one month period. The peak hour flow to the wastewater treatment plant has been measured at 70 gallons per minute. The average BOD loading for 1994 was 108 milligrams per liter (mg/L), or 39 pounds per day (lbs/d). Average monthly BOD levels are typically less than 30 mg/L, or 13 lbs/d. The highest BOD loading recorded to date, based on 24-hour composite sampling, was 157 mg/L, or about 70 lbs/d.~~

Urban area residents receive sewer service either from a municipality, or in the greater Yakima Urban Area, from the regional wastewater system established under the ~~four~~three party agreement between the cities of Yakima and Union Gap, and the Terrace Heights Sewer District ~~and Yakima County~~. Service outside city limits may be provided subject to outside utility agreement (to annex) according to the jurisdiction's policies.

9.6.2 S~~s~~ewer D~~d~~istricts

The~~re are~~ two sewer districts in the County~~:~~ are the Cowiche Sewer District and Terrace Heights Sewer District. Together, they serve approximately 6,470~~32,00~~ people in two distinct areas. In addition, the Port of Sunnyside owns and operates its own industrial sewer system. Details of these three systems are listed in Table 9.6.4-1~~X-6~~.

9.6.3 Cowiche Sewer District

The Cowiche Sewer District (~~Figure~~Map 9.6.3-1~~X-7~~) was built in 2001 and came online the same year. Cowiche-Tieton Regional Wastewater Treatment Plant is owned and operated as a joint effort with both entities being involved in the building of the plant monetarily. The treatment plant also provides services to the city of Tieton through an interceptor line that runs down Summitview Road.~~,~~ The district currently has 142 connections in Cowiche and 435 connections in Tieton, all inclusive of commercial, industrial, and residential customers. ~~north of Yakima near Tieton, serves 73 homes, a packing warehouse and limited commercial facilities with a central collection system and treatment plant.~~ The plant is at 35 percent capacity and estimated to reach capacity by 2040. The wastewater treatment plant consists of ~~a series of evaporation~~two sewage ponds, four basins, and cooled by wetlands~~which stabilize and evaporate raw sewage~~. ~~The treatment system is operated by the town of Tieton under contract. Two of the originally constructed five ponds are being held in reserve for future growth.~~ Comprehensive land use planning for the sewer district is dependent on the County commissioners.

~~As a result of sewer system capacity problems, the city of Tieton has approached the Cowiche Sewer District to evaluate whether the two entities could collaborate on service issues. One suggestion would connect residential development in Cowiche with an upgraded plant in Tieton via a force main, utilize the Sewer District system for wastewater from the agricultural industries in the Rural Settlement.~~

9.6.4 Terrace Heights Sewer District

Terrace Heights Sewer District (~~Figure~~Map 9.6.4-1~~X-8~~), serves about 2~~1~~,500 units with a collection system that discharges to the city of Yakima collection system and treatment plant. The system was built in 1953 and is under continuous expansion as new residents move to the area. The system's current service level is 2~~1~~,7~~8~~00 equivalent residential units (ERUs). One ERU = 760 Cubic feet/month. Improvements to the system completed in 2008 include a new lift station and pipeline that will last 50 years. ~~Its contractual capacity with the city of Yakima is 3,700 ERUs. The physical capacity of the main lift station and trunk sewer is 3,900 ERUs. However, some improvements would be needed within the District's system (e.g., parallel lines) to convey these higher flows. Such improvements cannot be implemented though until sufficient growth occurs to generate needed funding.~~

~~**Table X-6 Sewage Collection and Treatment**~~

Table 9.6.4-1 Sewage Collection and Treatment

Agency	Population Served	Average, Annual Flow -(mgd)	Treatment	Discharge
Cowiche S.D.	1,470~~200+~~	0.144~~02+~~	WWTP~~Facultative~~ Lagoon	~~Evaporation~~North Fork Cowiche Creek
Terrace Heights S.D. ~~**Port of Sunnyside**~~	5~~3~~,000+ ~~NA[b]~~	0.6~~0.3+~~ ~~1.6~~	Yakima WWTP ~~Aerated Lagoon~~	Yakima R. ~~Land Application~~
Port of Sunnyside	NA~~a~~1	2	Aerated Lagoon, Anaerobic Lagoon, & Sequencing Batch Reactors	Surface Water & Land Application
Note: ~~*a*~~*1* ~~-~~ ~~**To be completed**~~**Industrial Wastewater only**				

Source: Cowiche Sewer District, Terrace Heights Sewer District, and Port of Sunnyside

The ~~four~~three-party agreement between Yakima~~, Selah~~, Union Gap and ~~Yakima County~~the Terrace Heights Sewer District coordinates sewer services among the jurisdictions. Moxee has a separate agreement with ~~limits the amount of sewage~~ Terrace Heights ~~can~~ and limits the amount of sewage both can dispose of at the regional wastewater treatment plant to 4 percent of the capacity of the treatment plant (currently 850,000~~20 mg~~pd). Terrace Heights Sewer District is well within capacity averaging 600,000 gallons per day. No further improvements will be needed. A new pipeline and lift station was just installed and will last until 2080. ~~There is also a limit on the capacity of the district's sewer connections to the regional system. Current peak monthly flow is about 0.41 mgd or 50 percent of contractual limit. Average annual growth is about 3 percent, based on annual flow increases for 1992-1994. The District is completing a comprehensive Sewer Plan for its service area in 1997.~~

9.6.5 Port of Sunnyside

The Port of Sunnyside owns and operates an industrial ~~sewerage system~~wastewater treatment system serving the~~13~~ industrial facilities within the city of Sunnyside. The industries ~~vary from fruit and vegetable processors to dairy products, plastics manufacturing and wineries~~are primarily food processing industries. The largest industry discharging to the Port treatment works is a dairy processor producing cheese, whey powder, and infant formula. Other industries are primarily fruit and vegetable processors. The treatment system consists of two aerated lagoons, one anaerobic lagoon, two sequencing batch reactors, a storage lagoon, and a land application system. The total capacity of the storage lagoon is nearly 150 million gallons. The Port has a National Pollutant Discharge Elimination System (NPDES) permit which allows the treatment plant to discharge treated effluent both to surface water and to its land application system. In 2016, the Washington State Department of Ecology approved capacity of the treatment works is 2.0 million gallons per day.~~The treatment system consists of a 6-acre aerated lagoon and a 40-acre winter storage pond. During summer, the Port irrigates about 425-acres of alfalfa with the approximately 1.6 mgd flow. The port has a state waste discharge permit for land application for the plant which is currently being renewed.~~

~~Satellite management sewer systems have administrative fees and inspection costs not required for individual, on-site septic systems, as shown in Table X-16.~~

~~When the consumer debt service (principal and interest) for the higher initial equipment cost is included, however, the total annual user cost per connection is similar, ranging from $1,044 for a clustered 9-unit system to $1,115 for an individual system. Given the level of accuracy of the estimates, this is not a significant difference.~~

~~Costs for the satellite systems are based on a septic tank effluent pumping system and community drainfield. Costs include annual inspections, pump out every three years, equipment replacement every 15 years, maintenance and administrative costs, and miscellaneous. In addition, satellite sewer systems would have a modest one-time charge for septic tank installation inspection and account activation.~~**~~Table X-16 Satellite Management Sewer Systems: Cost Analysis Per Connection~~**

	~~Rural Settlement~~	~~Rural Transitional (Clustered)~~	~~Rural Transitional (Nonclustered)~~	~~Urban Unincorporated~~	~~Individual~~
~~Service Connections per System~~	~~9~~	~~9~~	~~9~~	~~3~~	~~1~~

~~**Annual User Fees per Connection**~~					
~~Reserve Account~~	~~96~~	~~96~~	~~96~~	~~96~~	~~96~~
~~Electrical/Energy~~	~~17~~	~~17~~	~~17~~	~~17~~	~~17~~
~~Drainfield, Pump-out, Inspection~~	~~100~~	~~100~~	~~100~~	~~100~~	~~60~~
~~Admin. And Misc.~~	~~43~~	~~43~~	~~43~~	~~121~~	
~~**Debt Payments (principal and interest) on Equipment Installation**~~	~~794~~	~~488~~	~~803~~	~~764~~	~~942~~
~~**TOTAL, Annual User Costs/ Connection**~~	~~1,050~~	~~1,044~~	~~1,059~~	~~1,098~~	~~1,115~~

9.7 SOLID WASTE SYSTEM

Yakima County owns and operates the Terrace Heights Landfill and Transfer Station; Cheyne Road Landfill and Transfer Station; and Lower Valley Transfer Station. The Anderson Limited Purpose Landfill and Caton Limited Purpose Landfills are privately-owned and operated, and are open to the public. The Yakima Waste Systems transfer station is also a privately-owned facility which serves self-haulers primarily from the Yakama Nation and vicinity. Yakima Training Center Limited Purpose Landfill operates a facility restricted to military use only. Map 9.7-1 provides the location and county service areas.

The County's solid waste system is a countywide, coordinated effort. The County and all the incorporated cities work together through a Solid Waste Interlocal Agreement. The County's service area includes all incorporated cities and the unincorporated area outside the Yakama Indian Reservation, the U.S. Military ~~Reservation~~installation, and the Wenatchee and Snoqualmie National Forests.

State law has directed the County's solid waste programs. Yakima County's Solid Waste and Moderate Risk Waste Management Plan (Plan) is the guiding document that provides the details required by RCW 36.70A.070 (4) and WAC 365-196-420. The goals of the Plan seek to achieve convenient and reliable services; promote innovative and economical waste handling; and reduce environmental impacts associated with disposal and illegal dumping. The plan recognizes Horizon 2040 as the policy framework for development and seeks consistency to incorporate policies. The Plan addresses the challenges with waste management through alternatives, while maintaining a list of implementation status of recommendations from previous solid waste management plan(s).

9.7.1 ~~The first Yakima County Solid Waste Management Plan was prepared in 1973 as a result of the 1969 Solid Waste Management Act (RCW 70.95). This law, requiring a comprehensive solid waste management plan, was updated in 1985.~~

~~Prompted by the 1985 update, a final development and closure plan for the Terrace Heights landfill was completed in 1987 and revised in 1995. A hydro-geologic study of the site was completed in 1988. Property for a buffer zone was purchased, and a recycling/recovery program is operating at the landfill. In addition, the final development and closure plans for the Cheyne Road Landfill and the Snipes Mountain Landfill were revised in March 1991. Snipes Mountain Landfill closed in 1994 and a transfer~~

~~station was constructed in 1995. Hazardous waste information programs were introduced through the 1991 Hazardous Waste Management Plan.~~

~~Landfill staff was trained to handle hazardous waste, and public information programs were initiated. The County also adopted an unsecured load ordinance. The County instituted an in-house recycling program at the Yakima County Courthouse and other County offices that collects paper, cardboard and aluminum cans. The County also developed a public education program to promote waste reduction and recycling by County residents.~~

~~The Yakama Indian Nation recently closed its landfill, located on the reservation, and now disposes of its waste at Yakima County's Cheyne Road landfill. The U.S. Military Training Center within the County is involved in solid waste management but is not a part of the planning area. The landfill within the Center's jurisdiction was recently closed.~~

~~The system data and information presented in this chapter comes from Yakima County's Solid Waste Management Plan, completed in November, 1993.~~

Collection System

Table 9.7.1-1~~X-2, from the 1993 Plan,~~ shows the collection services for all the municipalities in the County. In Yakima County, four~~eight~~ of the 14 municipalities operate their own garbage collection systems. ~~The cities of Grandview, Toppenish, Moxee City, and Mabton and the town of Granger~~ City, Basin Disposal Inc., and Yakima Waste Systems collect both residential and commercial waste. ~~The cities of Selah and Yakima collect residential waste. The city of Selah collects some commercial waste but the larger accounts are collected by Yakima Waste Systems, Inc.~~ Commercial accounts in the City of Yakima are collected by Yakima Waste Systems.

Table 9.7.1-1 Yakima County SWMP Collection Services in Incorporated Areas

Incorporated Areas	Collection Service	Mandatory Service
Grandview	City	Yes
Granger	City	Yes
Harrah	Yakima Waste Systems	Yes
Mabton	Yakima Waste Systems	Yes
Moxee	Basin Disposal Inc.	Yes
Naches	Yakima Waste Systems	Yes
Selah	Basin Disposal Inc.	Yes
Sunnyside	Yakima Waste Systems	Yes
Tieton	Yakima Waste Systems	Yes
Toppenish	City	Yes
Union Gap	Basin Disposal Inc.	Yes
Wapato	Basin Disposal Inc.	Yes
Yakima	City, Yakima Waste Systems	Yes

Zillah	Yakima Waste Systems	Yes
Unincorporated Areas	Basin Disposal Inc., Yakima Waste Systems	No

Source: Yakima County Solid and Moderate Risk Waste Management Plan, 2010

~~Six of the municipalities contract with a state-certified hauler to collect garbage within their city. The towns of Naches and Tieton, and the cities of Sunnyside and Zillah contract with Yakima Waste Systems. The cities of Union Gap and Wapato contract with Superior Refuse. Residents in the town of Harrah, located on the Yakama Indian Reservation, contract with Waste Management, Inc. (an individual hauler) directly for their garbage service.~~

Residents living in the County's unincorporated areas are served by three garbage haulers: ~~Tri-County Disposal Service,~~Basin Disposal LLC ~~Inc.~~, ~~Country Garbage Service~~Rabanco, and Yakima Waste Systems, Inc. ~~(See Figure X-5).~~ Each hauler is certified by the Washington Utilities and Transportation Commission (WUTC).

~~Disposal Service, Inc. holds a franchise for the southwest corner of the County bordering the Yakima Indian Reservation. However, it currently has no accounts in Yakima County. Country Garbage Service's franchise area is in the southeastern corner of the County. It serves the unincorporated areas north of the Yakima River, excluding the cities of Grandview and Sunnyside, and east of the town of Granger. Yakima Waste Systems, Inc. serves the unincorporated areas of Yakima County, excluding the U.S. Military Reservation, the Snoqualmie National Forest, and the Yakama Indian Reservation. The Yakama Indian Nation contracts with Waste Management, Inc. (which does not operate under a certificate issued by the WUTC) for garbage collection on the Indian Nation's lands. The U.S. Army is responsible for collection on the U.S. Military Reservation.~~

~~According to the County's 1993 Solid Waste Management Plan, the current garbage collection system is adequate to handle the County's present and future needs. Residential recycling programs in Yakima County have historically included drop-off and buy-back sites. The 1993 Plan recommends establishing a countywide program for recycling and composting. This program would offer separate services for the County's Urban Area (which includes the greater city of Yakima, Selah, and Union Gap areas, including unincorporated fringes) and the County's Rural Area (which includes the rest of the County, including both unincorporated areas and other cities).~~ According to the Yakima County Solid Waste Division, the Terrace Heights Landfill will reach capacity in 2027 and will then be closed. It will remain open as a transfer station to take in hazardous waste and recycling to be transferred to the Cheyne Landfill & Transfer Station. The permitted capacity of Cheyne is projected to the year 2053.

~~**Landfills**~~

~~The Terrace Heights and Cheyne Road landfills are the two active landfills within Yakima County currently accepting municipal solid waste (see Figures XII-6 and 7). They are owned and operated by Yakima County. The Yakama Indian Nation, which recently closed a landfill on its reservation, now hauls its waste to the Cheyne Road landfill for disposal.~~

~~The Terrace Heights landfill is 408 acres and has a remaining capacity of 3.0 million cubic yards. It is expected to reach capacity between 2003 and 2006. The Cheyne Road landfill site is 960 acres. It currently has 40 acres permitted for landfilling. The 40 acres has the capacity to handle waste from the existing service area until between 2005 and 2008.~~

~~An upcoming 1998 study will explore the feasibility of expanding the Cheyne Road and Terrace Heights landfills, developing new in-County disposal sites, and exporting waste. This study will be completed approximately five years before the projected closure of these landfills. If new or expanded landfills are needed, they could be planned, permitted and built between 2004 and 2007.~~

~~Two privately operated demolition waste landfill sites are located in Yakima and near Naches. Permits are pending for a third private demolition waste landfill operation near Grandview.~~

~~**Transfer and Drop Box Facilities**~~
~~In the lower valley, the Snipes Mountain landfill closed and was replaced with a transfer station near the landfill site in October of 1995. It is the only transfer facility in the lower Yakima Valley and all waste collected is hauled to the Cheyne Road Landfill.~~

~~Yakima County residents are served by seven coin-operated drop box facilities. These 30- and 40-yard compactor bins sit on a concrete pad with an overhead structure that provides shelter for the self-hauler. The sites are open 24 hours per day except on holidays. The drop box facilities prohibit animals, hazardous wastes, pesticides, and over-sized items. The drop boxes are emptied at the Terrace Heights landfill. Money changer machines and recycling drop offs have recently been added to the Ahtanum, Cowiche, and Selah drop box facilities.~~

9.8 WATER, SEWER, AND SOLID WASTE LEVELS OF SERVICE

The purpose of LOS standards is to adequately serve both current and future residents without compromising the service they receive.

Levels of service (LOS) are established for the following Yakima County owned and operated utilities:

- Buena, Crewport, ~~Terrace Heights, and~~ Gala ~~Estates~~, and Terrace Heights water systems;~~:~~
- Buena, Fairway Estates, and Mtn. Shadows sewer systems;
- Potential future satellite water and sewer systems; and
- County-wide solid waste system.

9.8.1 Existing County Water, Sewer, and Solid Waste Facilities

LOS standards focus on present needs and future growth. The first step is to study the capacity of existing facilities and assess the need for facility improvements in order to accommodate growth. This is accomplished through capacity analysis, which estimates the number of years before improvement is required.

This approach is well suited to the County's water, wastewater, and solid waste utilities since they must already meet specific and stringent federal, state, and local standards for service, capacity and development. It also addresses the County's on-site septic systems, which are considered a type of waste-water facility. Capacity LOS for water and wastewater facilities rates the unused capacity of each system component, using an A-through-F rating system, where the A-level rating indicates a large amount of unused capacity (see Tables 9.8.1-1~~X-8~~ and 9.8.1-2~~X-9~~).

Table 9.8.1-1 Percent of Capacity (Operation) LOS for Water System Facilities

System Element	Parameter Defining LOS	Definition of Letter Rating (Percent of Capacity Used)					
		A	B	C	D	E	F
Supply Wells	Total Supply Capacity	0-20	21-40	41-60	61-84	85-100	>100
Pump Stations	Peak Pumping Rate	0-20	21-40	41-60	61-84	85-100	>100
Pipelines	Peak Flow Rate	0-20	21-40	41-60	61-84	85-100	>100
Reservoirs	Total Capacity	0-20	21-40	41-60	61-84	85-100	>100
Water Treatment Facilities	Treatment Capacity	0-20	21-40	41-60	61-84	85-100	>100

Table 9.8.1-2 Percent of Capacity (Operation) LOS for Wastewater Treatment Facilities

		A	B	C	D	E	F
Pipelines	Peak Flow Rate	0-20	21-40	41-60	61-84	85-100	>100
Pump Stations	Peak Pumping Rate	0-20	21-40	41-60	61-84	85-100	>100
Wastewater Treatment Facilities/Liquid Stream	Hydraulic Loading or Organic Loading (whichever is limiting)	0-20	21-40	41-60	61-84	85-100	>100
Wastewater Treatment Facilities/Solid Stream	Hydraulic Loading or Solids Loading (whichever is limiting)	0-20	21-40	41-60	61-84	85-100	>100

The capacity LOS for solid waste facilities (see Table 9.8.1-3~~X-10~~) examines the availability of different system components. For example, how available are landfill sites, transfer stations, and recycling facilities? What are the collection days for waste pickup? Another important consideration is the geographical distribution of facilities. Future additional transfer stations, for instance, need to be sited near population center where they are needed. Appropriate siting is an important part of capacity LOS and future development of facilities.

Table 9.8.1-3 LOS Standards for Solid Waste Management Facilities and Services

	Letter Rating for LOS		
Facility/Service	**A**	**B**	**C**
Regional Landfills (Number of Facilities)	2	1	0
Regional Limited Purpose Landfills (Number of Facilities)	2	0	0
Regional Transfer Station (Number of Facilities)	~~2~~4	1	0
Garbage Pickup (Pickup Days Per Month)	~~4~~20	2	1
Curbside Recycling Pickup (Pickup Days Per Month)	~~4~~10	2	1
Rural Recycling Centers (Number of Facilities)	~~10~~4	~~5~~0	0

Source: Yakima County Solid Waste Division

9.8.2
Future Satellite Wastewater and Water Systems

Under ~~***Plan***~~*Horizon* ~~***2015***~~*2040*, LOS standards must be adopted for future satellite systems that the County will manage. ~~Current ***Plan 2015*** policies require that satellite systems be established for developments of 3 or more residences, or residential equivalents, in unincorporated UGAs; and for 5 or more residences, or residential equivalents, in rural areas throughout the County.~~ YCC, Title 19, Tables 19.25-1 Water and 19.25-2 Sewer provides the system options in order of priority for the zoning and number of lots/connections. All systems will be required to meet established County and state standards for design, construction, and performance. Water systems will be subject to State Health SMA requirements.
~~Several ***Plan 2015*** land use designations are not included in the future satellite system analysis. They include the Rural Self-Sufficient, Rural Remote/Extremely Limited Development Potential and resource land designations, which allow satellite systems to be established.~~

Table X-8 – Percent of Capacity (Operation) LOS for Water System Facilities

System Element	Parameter Defining LOS	Definition of Letter Rating (Percent of Capacity Used)					
		A	B	C	D	E	F
Supply Wells	Total Supply Capacity	0-20	21-40	41-60	61-84	85-100	>100
Pump Stations	Peak Pumping Rate	0-20	21-40	41-60	61-84	85-100	>100
Pipelines	Peak Flow Rate	0-20	21-40	41-60	61-84	85-100	>100
Reservoirs	Total Capacity	0-20	21-40	41-60	61-84	85-100	>100
Water Treatment Facilities	Treatment Capacity	0-20	21-40	41-60	61-84	85-100	>100

Table X-9 – Percent of Capacity (Operation) LOS for Wastewater Treatment Facilities

System Element	Parameter Defining LOS	Definition of Letter Rating (Percent of Capacity Used)					
		A	B	C	D	E	F
Pipelines	Peak Flow Rate	0-20	21-40	41-60	61-84	85-100	>100
Pump Stations	Peak Pumping Rate	0-20	21-40	41-60	61-84	85-100	>100
Wastewater Treatment Facilities/Liquid Stream	Hydraulic Loading or Organic Loading (whichever is limiting)	0-20	21-40	41-60	61-84	85-100	>100
Wastewater Treatment Facilities/Solid Stream	Hydraulic Loading or Solids Loading (whichever is limiting)	0-20	21-40	41-60	61-84	85-100	>100

9.8.3 LOS Thresholds

Establishing LOS thresholds means that a base standard is applied to each County system. These thresholds provide the standards against which existing and new systems can be evaluated. System evaluations identify deficiencies, which can be remedied with facility upgrades or new construction. Assessing each system's needs will lead to realistic recommendations for necessary improvements. Then these improvement needs will be incorporated into the finance portion of this element.

Table X-10 – LOS Standards for Solid Waste Management Facilities and Services

Facility/Service	Letter Rating for LOS		
	A	B	C
Regional Landfills (Number of Facilities)	2	1	0
Regional Transfer Station (Number of Facilities)	2	1	0
Garbage Pickup (Pickup Days Per Month)	4	2	1
Curbside Recycling Pickup (Pickup Days Per Month)	4	2	1
Rural Recycling Centers (Number of Facilities)	10	5	0

9.8.4 Water and Sewer Facilities

Thresholds for both water and sewer facilities were established to identify deficiencies in the system that must be corrected in order to meet Growth Management Act requirements (see Table 9.8.4-1~~X-11~~). These standards represent the proposed level of service the County would provide to residents for each type of facility. A facility with an LOS rating worse than the threshold is considered deficient and in need of improvement.

Table 9.8.4-1 Thresholds LOS for Water and Sewer/Sanitary Facilities	
Type of Water Facility	**Percent-of-Capacity LOS**
Supply Wells	D
Pump Stations	D
Pipelines	D
Reservoirs	D
Water Treatment Facilities	E
Type of Sewer Facility	**Percent-of-Capacity LOS**
Pipelines	D
Pump Stations	D
Wastewater Treatment facilities – Liquids Stream	E
Wastewater Treatment facilities – Solids Stream	E

These threshold LOS standards are to be applied to the existing systems and to future system growth anticipated under each land use alternative for the years 2015~~01~~ and 2040~~15~~ in order to identify facility needs.

9.8.5 Solid Waste Facilities

Thresholds for solid waste facilities are shown in Table 9.8.5-1~~X-12~~. LOS threshold standards are used to identify deficiencies in the system that must be corrected to meet Growth Management Act requirements. Future solid waste facility upgrades will be based on the LOS ratings thresholds established in this section.

Table 9.8.5-1 Threshold LOS for the Solid Waste System	
Facility	**LOS**
Regional Landfills	B
Regional Transfer Stations	B
Garbage Pickup	B
Curbside Recycling Pickup	B

Rural Recycling Centers	B

9.9 IRRIGATION

The Yakima Project is an irrigation system that uses water developed by the Bureau of Reclamation to irrigate about 465~~5~~4,000 acres of land extending 175 miles along both sides of the Yakima River. The Yakima Project consists of an extensive system of reservoirs, canals and laterals, five diversion dams, three hydroelectric power plants, transmission lines, and pumping plants, ~~that~~which supply~~ies~~ irrigation water for most of the irrigated land in the Yakima River Basin.~~, and o~~Over 90% of the harvested cropland ~~are~~is located in ~~the~~ Yakima County and Kittitas County, about half of Benton County, and a small area in Klickitat County.

Within Yakima County the Yakima Project is divided by Union Gap into upper and lower planning areas.~~:~~ As reported by the Bureau of Reclamation, the Yakima Project: consists of the Tieton, Roza, Sunnyside, and Wapato Irrigation Divisions. Private interests not included with the four Divisions contract their services with the Bureau of Reclamation. Private interests not included with the four Divisions contract their services with the Bureau of Reclamation. Irrigation Districts are governed by RCW Title 87. The Storage Division has supervision over the entire Yakima River water supply, both natural riverflow and the stored water in six reservoirs. The reservoirs have a total active capacity of 1,065,400 acre-feet. Map 9.9-1 provides the locations and service areas of Yakima County Irrigation Districts.

9.9.1 Upper Yakima Planning Area

~~The Upper Yakima area, north of Union Gap, contains the Tieton Division.~~ The Tieton Division is west of Yakima between the Naches River and Ahtanum Creek and covers ~~27,271~~28,000 acres. Irrigation waters for the district are diverted from the Tieton River via the Tieton Diversion Dam (a concrete weir, five feet high with an embankment wing, eight miles downstream from Rimrock Lake), and Tieton Canal (capacity 347 cubic feet per second). The Tieton division and its facilities are operated by the Yakima-Tieton Irrigation District.

Other irrigation districts within the ~~Tieton Division~~Upper Yakima Planning Area include the ~~Broadway,~~ Naches-Selah, ~~Selah-~~Moxee-Selah, Terrace Heights, Union Gap, and city of Yakima~~, and Yakima Valley Irrigation Districts as well as the Moxee unit (the unit includes both the ditch company and the irrigation district)~~. There are two irrigation districts in this area which are not part of the Yakima Project: the Wenas and Ahtanum Districts.

9.9.2 Lower Yakima Planning Area

The Lower Yakima Area is south of Union Gap and is heavily agricultural. It consists of Wapato, Sunnyside, and Roza Divisions. *Wapato Division* is the largest project operated by the Bureau of Indian Affairs. It receives its water supply from the Yakima Project and irrigates more than 136,000 acres. It's service area is located in the Lower Valley West of Interstate 82 from Parker to Highway 240 on the Yakama

Reservation, covering more land west of U.S. Route 97 and State Route 22.~~The Wapato Division, formerly known as the Wapato Indian Project, has three units, Ahtanum, Satus and Toppenish and is under the administration of the Bureau of Indian Affairs.~~ The following details for Sunnyside and Roza irrigation divisions were assembled from the Bureau of Reclamation website for the Yakima Project – Lower Yakima Planning area.

The *Sunnyside Division* consists of 103,000 acres north of the Yakima River, extending from the Sunnyside Diversion Dam, a concrete weir near Parker (eight feet high with an embankment wing) and flows through the Sunnyside Canal to the vicinity of Benton City. Four irrigation districts in the Sunnyside Division pump water to their lands by hydraulic turbine pumps at drops along the canal. The Sunnyside Division and its facilities are operated by the Sunnyside Valley Irrigation District. ~~The other districts within the Division are Grandview, Granger, Outlook, and Snipes Mountain.~~

The *Roza Division* spans 72,500 acres north of the Yakima River, from Pomona to Benton City. The distribution system is supplied by the Roza Canal (capacity 2,200 cubic feet per second), which originates at the Roza Diversion Dam (a concrete weir, movable crest structure that is 67 feet high) on the Yakima River about ten miles north of Yakima. The Roza Power plant develops and delivers ~~11,250~~12,937 kilo-watts of power to pumping plants within the division along 70 miles of transmission lines. The Roza Division and its facilities are operated by the Roza Irrigation District. The other district~~s~~ within the Division is~~are~~ Buena ~~and Home~~.

9.9.3 Irrigation Water

The demand for irrigation water continues to grow. The need for irrigation water is likely to continue even when some land converts to non-agricultural uses. Gardens and lawns will also require water. Irrigation districts must be notified of proposed subdivisions, and the subdivision plat must be recorded and filed with the district, showing how the water is to be delivered to the irrigable acres in the subdivision. Under state law, an irrigation district must review each proposed subdivision within its boundaries. The district can require an internal distribution system as a condition of approval.~~–~~ The district must approve extensions of service to subdivided units, and can require the extensions of service to subdivided lots at the landowner's expense. The irrigation district's responsibility for delivering water ends at the established point of delivery.

~~Under state law, an irrigation district must review each proposed subdivision within its boundaries. The district can require an internal distribution system as a condition of approval. While some of the County's irrigation districts have policies requiring the developer to install an internal irrigation water distribution system to serve the new parcels, others do not.~~

If a farm is subdivided ~~on the Wapato Project~~within an irrigation district, the developer must show how the water is to be delivered to the irrigable acres in the subdivision (as per RCW 58.17.310). Extensions of service to subdivided units are at the landowner's expense.~~-~~ The district's responsibility ends at the established point of delivery.~~-~~ The Project is not responsible for operation and maintenance of systems to serve the subdivided properties (see 25 CFR Ch. I, 171.6). While some of the County's irrigation districts have policies requiring the developer to install an internal irrigation water distribution system to serve the new parcels, others do not.

9.9.4 Irrigation Districts

The Yakima County Treasurer's office provides billing services for 16 irrigation districts in the County (Table 9.9.4-1~~X-7~~). Other districts provide their own billing services.

~~**Table X-7 Yakima County Irrigation Districts**~~

~~District~~	~~Address~~
~~Ahtanum*~~	~~Post Office Box 590 Yakima, WA 98907~~
~~Buena*~~	~~270 Eagle Peak Road Zillah, WA 98953~~
~~Grandview*~~	~~Post Office Box 188 Grandview, WA 98930~~
~~Granger*~~	~~Post Office Box 1099 Granger, WSA 98932~~
~~Home*~~	~~Post Office Box 755 Granger, WA 98932~~
~~Moxee~~	~~3106 Beaudry Road Moxee, WA 98936~~
~~Naches-Selah*~~	~~143 East Naches Avenue Selah, WA 98942~~
~~Naches-Union*~~	~~Post Office Box 3042 Chinook Tower Yakima, WA 98908~~
~~Outlook*~~	~~2489 North Outlook Outlook, WA 98938~~
~~Roza~~	~~Post Office Box 810 Sunnyside, WA 98944~~
~~Selah-Moxee*~~	~~1910 South 44th Avenue Yakima, WA 98908~~
~~South Naches*~~	~~6931 South Naches Road Naches, WA 98937~~
~~Snipes Mountain*~~	~~414 Concord Drive Outlook, WA 98938~~
~~Sunnyside valley~~	~~Post Office Box 239 Sunnyside, WA 98944~~
~~Terrace Heights*~~	~~1910 South 44th Avenue Yakima, WA 98908~~
~~Union Gap*~~	~~4720 Konnowac Pass Wapato, WA 98951~~
~~Wenas*~~	~~543 Sisk Road Selah, WA 98942~~
~~Wapato Irrigation Project~~	~~Post Office Box 220 Wapato, WA 98951-0220~~
~~Yakima City Irrigation~~	~~2301 Fruitvale Boulevard Yakima, WA 98902~~
~~Yakima-Tieton~~	~~470 Camp 4 Road Yakima, WA 98902~~
~~Zillah*~~	~~Post Office Box 385 Zillah, WA 98953~~
	~~*County Treasurer provides billing service.~~

Table 9.9.4-1 Yakima County Irrigation Districts

Ahtanum Irrigation District*
Buena Irrigation District*
Naches/Selah Irrigation District*
Naches Union Irrigation District*
Roza Irrigation District
Selah & Moxee Irrigation District*
South Naches Irrigation District*
Sunnyside Valley Irrigation District
Terrace Heights Irrigation District*
Union Gap Irrigation District*
Wenas Irrigation District*

Yakama Reservation Irrigation District*
Yakima City Irrigation
Yakima-Tieton Irrigation District
Zillah Irrigation District*

Source: Yakima County Treasurer & Utilities
*County Treasurer provides billing service.

9.10 ELECTRICAL

~~**Electrical Utilities**~~

Yakima County's electricity is provided by Pacific Power & Light Company (PP&L), ~~and~~ the Benton Rural Electric Association (Benton REA), and Yakama Power~~.~~ (see Map 9.10~~1~~-1). ~~Both~~These utilities are part of a regional power system. PP&L and Benton REA continually research means to expand supply and upgrade equipment since the law requires utilities to service all customers requesting service. Both power companies have a territorial agreement that minimizes duplication of service areas and promotes coordination of line extensions, looping of facilities, and other facility improvements.

System planners for utilities design and build their systems to follow population and employment growth projections based on County and city plans. The electricity load is determined from these plans and projections. An electric system plan is then developed to serve those loads at the reliability level prescribed by the individual utility, taking into account environmental, economic, financial, and operational factors. Utility construction is coordinated with the appropriate jurisdictions and agencies and is typically phased in as actual growth occurs.

Future electrical service plans are not only designed to provide for future growth and accommodate new and increased load. They also include changes to the existing systems to improve reliability, power quality, and looping of the system for redundancy backup service.

9.10.1 Pacific Power and Light Company (PP&L)

Most of Yakima County is served by Pacific Power & Light. ~~Pacific Power & Light Company~~PP&L builds, upgrades, operates, and maintains the electrical system serving approximately ~~85,000~~105,500 accounts throughout the greater Yakima Valley area ~~(Figure X-9)~~. The electrical utility has a very well developed backbone transmission system with major load centers near Grandview, Sunnyside, Toppenish, Wapato, Wiley Area, Tieton-Cowiche, Naches, Selah, Wenas, and White Swan.

Electric power reaches the Yakima Valley via five transmission lines, three supplying 230,000 volts each and two providing 115,000 volts each. The three large services are connected to Wanapum Dam on the Col-umbia River, the Bonneville Power Administration's (BPA's) Midway substation near Priest Rapids Dam on the Columbia River and BPA's Outlook substation northwest of Sunnyside. The two smaller transmission lines are connected to BPA's substations at Moxee and Grandview.

These transmission lines form an interconnected open access network across the western states. Consequently, Yakima County customers have access to Pacific Power's powered generation plants in

Washington, Oregon, California, Wyoming, Utah and Montana. In addition, the network provides a connection to over 50 other electrical purveyors allowing exchanges of power, if the need arises.

The utility takes a proactive approach to system capacity, developing its system in anticipation of eventual growth. PP&L is very supportive of economic growth and diversification and tries to avoid being an impediment to the area's economic growth and vitality. Existing facilities place no restrictions on normal residential, commercial or industrial growth, and major industries and institutions can be readily accommodated. While the utility has an abundant supply of energy, its demand-side resource management policy encourages conservation to assure continued availability of power to accommodate new growth and keep the cost low.

Transmission for a 115,000-volt system can be accommodated on a single pole structure that uses the road right-of-way. A substation capable of serving 10,000 residential customers typically requires no more than 2 acres, and is compatible with most adjacent land uses.~~, except possibly ballfields. Although substations are fenced and not energized below nine feet, and are generally impenetrable, persons attempting to retrieve stray balls might be tempted to try to circumvent these protections.~~

9.10.2 Benton Rural Electric Association (Benton REA)

Benton Rural Electric Association provides electrical service to commercial/industrial users and residences in Yakima County. Its service is concentrated in the Lower Yakima Valley, south of Union Gap, although it draws some of its power from the Tieton Reservoir, northwest of Yakima. Benton REA service extends east to the Richland area in Benton County. Benton REA mainly serves the rural and the outskirts of cities.

9.10.3 Yakama Power

The following information comes directly from the Yakima Power website. Yakama Power is owned and operated by the Yakama Nation. Electrical services are only provided on the Yakama Reservation. The Wapato Irrigation Project is the renewable energy source between Drop 2 and 3 with three generators that have the capacity to produce 4.2 MW. Between them all 1000Kw=1MW is produced. 1MW of electricity can supply energy to power 1000 homes.

Yakama Power's overall mission is to provide employment with a local workforce, training, and eventually affordable and reliable electrical energy throughout the entire reservation. Growth and expansion of Yakama Power is dependent upon the qualifications of their employees. Yakama Power took on its first prospective customer, Legends Casino, on March 24, 2006.

The system's capacity can deliver 16 million kilowatts of electricity or power 700 homes for one year, which makes it 7th out of eight Tribal Utilities in the United States. The approximate average usage is 4 megawatts. Yakima Power is at the final stage of providing retail electricity to retail, commercial, and industrial end users. Other renewable energy sources the Tribe are pursuing include solar, woody biomass, hydroelectric, wind, and geothermal.

The existing infrastructure consists of over 25,000 feet of underground conduit and vaults installed at the Tribal Campus. The purchases of existing utilities infrastructure will provide initial service in Toppenish. New distribution lines will be built to adjacent sovereign loads in White Swan and Wapato.

9.11 NATURAL GAS

Yakima County is served by two natural gas companies, Northwest Pipeline (NWP) and Cascade Natural Gas (CNG).

9.11.1 Northwest Pipeline

Williams Northwest Pipeline LLC is a natural gas transmission company which wholesales gas to local distribution companies. It owns and operates main feeder lines in Grandview, Sunnyside, Zillah, Moxee, Yakima, Selah, and the Yakima Training Center. Its major customer in Yakima County is Cascade Natural Gas. Occasionally, Northwest Pipeline receives a request from a private industrial operation for a direct hook-up to their network. After Northwest Pipeline provides a cost estimate for the construction of the pipeline, valves, and other facilities necessary to deliver gas to the industry requesting service~~. Then the private operation must decide whether the cost savings of direct supply will offset the cost of the hook-up improvements.~~, the industry can decide whether the cost savings of direct supply will offset the cost of the hook-up improvements. In the future, however, applicants may have to fund all necessary improvements.

~~No direct service requests have been granted recently.~~ Granting of future or pending requests may be contingent upon the grantee funding all necessary improvements.

9.11.2 Cascade Natural Gas

Cascade Natural Gas (~~CNG is an investor-owned utility serving customers in sixteen counties within the State of Washington. This section describes CNG's existing system within Yakima County.~~ CNG) is an investor-owned utility serving customers in sixteen counties within the State of Washington. This section describes CNG's existing system within Yakima County.

Washington, Oregon, and Idaho receive natural gas from the southwestern United States and Canada. Natural gas is applied to the entire region via two interstate pipeline systems, Pacific Gas Transmission Company and Northwest Pipeline Corporation. Both own and operate their respective regional pipeline networks.

System components include gate stations high pressure lines, pressure reduction stations and distribution mains. The gate station is the delivery point of natural gas from the upstream interstate pipeline to CNG's system. Gate stations normally include metering stations, odorizing stations and pressure reduction stations. High pressure lines transport gas to district regulators throughout CNG's service area. High pressure line mains may vary in size from 2 to 20 inches and in pressure from 150 to 600 pounds per square inch. Pressure reduction stations are installed at the point of delivery of natural gas from the high pressure lines to the lower pressure distribution systems. Distribution system mains vary in size from 2 to 16 inches.

Cascade Natural Gas ~~(CNG)~~ serves areas along I-82 and most of the cities in Yakima County. The natural gas supply system meets existing demands of residential, commercial, and public customers.~~ Cascade Natural Gas Corporation (~~CNG~~) builds, operates, and maintains natural gas facilities serving Yakima County. ~~CNG is an investor-owned utility serving customers in sixteen counties within the State of Washington. This section describes CNG's existing system within Yakima County.~~CNG should be consulted for any proposed development that will require natural gas.~~ The developer should not assume that service is available without checking with the local utility. ~~Cascade Natural Gas~~CNG will build to any customer in its service area that meets the criteria in its financial feasibility formula. Additional customers can be served if they are willing to contribute to the cost of extending the lines. ~~If~~ additional customers connect to the same main, part of the contribution may be reimbursed. ~~T~~The utility that wants to serve development outside its service area~~, the utility~~ must apply~~ies~~ for a "certificate of convenience" from the Public Utilities Commission.

~~According to Cascade's Natural Gas Utilities Element (June 1993), the natural gas supply system in Yakima County fully meets existing demand.~~ To accommodate future demand, the maximum capacity of the existing distribution system can be increased as required by one or more of the following:

- Increasing distribution and supply pressures in existing lines
- Adding new distribution and supply mains for reinforcement
- Increasing existing distribution system capacity by replacement with larger sized mains.
- Adding district regulators from supply mains to provide additional intermediate pressure gas sources to meet the needs of new development.

Future utility needs should be anticipated and planned for in advance. Yet connection to CNG's distribution system is driven by demand. This means that connections cannot be planned in advance. New customer hookups to the distribution system is governed by CNG's tariffs as filed with and approved by the WUTC.

Developers should consult Cascade Natural Gas if their proposed development will require natural gas. The developer should not automatically assume that service is available without checking. ~~Cascade Natural Gas~~ will build to any customer in its service area provided they meet its financial feasibility formula criteria. CNG will serve other customers if they are willing to contribute to the cost of extending the lines. Those contributions may be refundable; if additional customers connect to the same main, part of the contribution may be reimbursed. To serve development outside its service area, the utility will apply for a "certificate of convenience" from the Public Utilities Commission to include the area within its service area, if the proposed development meets the financial feasibility criteria.

~~**Electrical**~~

~~Most of Yakima County is served by Pacific Power & Light (PP&L). The electrical utility has a very well developed backbone transmission system. Currently, Yakima County is served by 20 Pacific Power distribution substations, each located near major load centers. The 20 substations serve 90 distribution circuits, each capable of delivering 11 megawatts, or about 2,500 accounts. In the last five years, Pacific Power has added one new substation and modified five others to serve new distribution circuits. PP&L is very supportive of economic growth and diversification. Existing facilities place no restrictions on normal residential, commercial or industrial growth, and major industries and institutions can be readily accommodated. The utility also encourages conservation to assure continued availability of power to accommodate new growth and keep the cost low.~~

~~Transmission for a 115,000 volt system can be accommodated on a single pole structure that uses the road right-of-way. A substation capable of serving 10,000 residential customers typically requires no more than 2 acres, and is compatible with virtually any adjacent land use, except possibly ballfields.~~

~~Benton Rural Electric Association (Benton REA) serves about 2,500 accounts in Yakima County, including 272 commercial/industrial users. Although its service is concentrated in the Lower Yakima Valley, it draws some of its power from the Tieton Reservoir.~~

9.12 TELECOMMUNICATIONS

The rapidly changing telecommunications industry has transformed the way service is delivered. Cellular and fiber optics are blurring the distinctions that separate data, video and voice technologies. As a result, assessing the future configuration of telecommunications service is very different.

Telecommunications is the transmission of information by wire, radio, fiber optics~~al cable~~, electromagnetic or other similar means. In Yakima County, telecommunication utilities include, telephone, cellular telephone, satellite and cable television.

9.12.1 Telephone

The telephone exchange companies serving Yakima County that are registered and regulated by the Washington Utilities and Transportation Commission (WA UTC) include the Ellensburg Telephone Company, Frontier Communications Northwest, Inc., CenturyTel of Cowiche, Inc. – d/b/a CenturyLink, CenturyTel of Washington – d/b/a, CenturyLink, Qwest Corporation – d/b/a CenturyLink QC, and United Telephone Company of the Northwest (see Map 9.10-1). ~~U.S. West Communications, with 70,000 customers, is the largest provider in Yakima County. According to U.S. West, t~~Telecommunication services delivery doesn't always coincide with the exact location of customers. As a result, many of the telecommunication facilities are co-located with those of the electrical power provider. ~~Other service providers include Cowiche Telephone, Sprint/United Telephone, GTE and Ellensburg Telephone.~~

Non-regulated services consist of cable, internet, wireless phones, and Voice over Internet Protocol (VoIP). Most if not all telecommunications companies also provide internet services. Many public areas offer access to free or paid Wi-Fi hotspots for laptops, personal devices or cell phones. People have become linked to the devices which require the constant exchange of electronic data whether for business, education, or pleasure.

9.12.2 Cellular Telephone

Yakima County is now served by a variety of wireless communication service providers including, but not limited to U.S. Cellular, AT&T ~~Wireless, Nextel~~, Sprint, T-Mobile, and Verizon. ~~—~~Cellular telephone companies are regulated by the Federal Communications Commissions (FCC) ~~rather than the Washington State Utilities and Transportation Commission (WUTC)~~ because they use radio signals rather than lines for communications. Siting and design of towers ~~is~~are regulated by the Federal Aviation Administration (FAA). Wireless Telecommunications technology and expanded FCC licensing will result in significant changes in this service over the life of ~~***Plan***~~ ***Horizon 2040~~2015~~.***

Cellular telephones require a network of receivers~~, often referred to~~ such as a ~~"~~cell~~"~~ site or ~~"~~wireless communication ~~facilty~~facility~~"~~. Cell sites are placed on tall poles, lattice-type towers, or existing buildings. The County currently has 118 wireless communication facilities, with ~~an average of 2.4 wireless~~multiple carriers per facility. As the demand for wireless service increases and as development moves to more remote areas of the County more wireless facilities ~~could~~ are to be expected. Local residents sometimes object to cell sites in their neighborhoods. If siting is a problem, it may be worth considering using the special process developed for siting Essential Public Facilities. Llocal governments provide input to the siting process through their approval and conditioning responsibilities within their jurisdictions. Siting issues are expected. Siting and design of towers is regulated by the Federal Aviation Administration (FAA) and local zoning authority.

~~Cellular telecommunication allows people to have mobile telephone communication via radios which send and receive signals from a network of receivers placed at several cellular communication ("cell") sites.~~

~~Cell sites are placed on tall poles, lattice-type towers or on existing buildings.~~ Each cell site has a coverage area of several miles, depending on topography and number of customers. As the cellular telephone user moves form one cell to the next, the call is passed to an open channel at an adjacent cell site. Transmission quality and dialing of cellular telephones are comparable to that of conventional wireline telephones. ~~The primary difference between cellular and conventional telephone systems is that cellular phones don't need wire.~~

~~Yakima County is currently served by two cellular telephone companies: AT&T Wireless and United States Cellular. They are licensed to operate in the County and throughout the region within guidelines set by the Federal Communications Commission (FCC). Siting and design of towers is regulated by the Federal Aviation Administration (FAA) and local zoning authority. Considerable expansion of the wireless telecommunications industry is expected.~~

9.12.3 Cable Television

~~TCI Cablevision of Yakima Valley, Inc. has franchise agreements with Yakima County and most of the cities. The TCI signal originates from satellite dishes at key locations ("head ends").~~ Charter Communications serves the Yakima region. Cable generally follows electrical and telephone lines. Only easements are needed, and are not usually a problem. Anyone within 200 feet of the cable can hook up; otherwise, there would be an additional charge to the customer.

~~In addition, Northwest Cable Network offers "wireless cable," which originates from a transmitting antenna in the Union Gap area, on Rattlesnake Ridge. Service is available to customers within a 50-mile line-of-sight radius. It does not fall under local regulation since it does not use public rights-of-way.~~

~~Cable follows the electrical and telephone lines. In order to be installed, an easement must be granted. The available provider breaks even financially if there are 30 or more potential customers per linear mile of cable. Anyone within 200 feet of the cable can hook up; otherwise, there would be an additional charge to the customer.~~ Wireless cable is regulated by the FCC, and does not come under local regulation since it does not use public rights-of-way. Direct TV (a subsidiary of AT&T) and DISH Network are the two satellite cable providers for the county and a great choice for rural internet. Satellite cable is virtually available everywhere if customers have a clear view of the southern sky.

~~An alternative to TCI and Northwest Cable services is a satellite dish, which requires costly installation. As technology improves, other choices will become available.~~

~~**Solid Waste**~~

~~Three private haulers have certificates to collect solid waste in the unincorporated portions of Yakima County.~~

~~The County operates eight coin-operated drop box facilities and has opened a Lower Valley transfer station near the closed Snipes Mountain Landfill. The County Solid Waste plan calls for the County's rural area, including rural cities, to be serviced by a drop-off recycling system.~~

~~Yakima County owns and operates the Terrace Heights and Cheyne Road Landfills, which serve the entire County except the Yakima Training Center. The Yakama Indian Nation has been transporting its waste to Cheyne Road Landfill since its landfill closed in October 1993. The Terrace Heights landfill is expected to reach capacity between 2003 and 2006.~~

~~The growing number of customers has reduced the capacity of the currently permitted portion of the Cheyne Road Landfill from 20 to 14 years, or until between 2005 and 2008. The landfill currently occupies 40 acres of a 960 acre site, and the site could be expanded to provide additional capacity. Approximately~~

five years before the projected closure of the two landfills, the County plans to study the feasibility of expanding the existing sites, developing new in-County disposal sites, and exporting waste.

B. EXISTING CONDITIONS

Introduction

This section describes the current conditions and capacities of County-owned public utilities. Under the guidelines for preparing the Utilities Element (WAC 365-195-320), an inventory of the location and capacity of existing utility facilities is required. The inventory provides the baseline conditions for county-wide utility service delivery to existing residents and users. Analysis and application of Level of Service (LOS) to both existing and future residents and users will begin with the baseline conditions.

The following sections cover the existing inventory of County-owned and non-County-owned public utilities. County-owned utilities include water, seer, and solid waste. Non-County-owned utilities include municipally-owned utilities that deliver services outside of municipal boundaries, special service districts (e.g., sewer, water, and irrigation districts), and private utilities such as natural gas, telecommunications, and electrical power.

COUNTY-OWNED UTILITIES

Water Supply Systems

Yakima County owns and operates four water systems: the public systems in the unincorporated communities of Terrace Heights, Buena, and the Gala Estates north of Selah. The County recently assumed the management and planning role for these systems (See Figure X-1).

Terrace Heights Water System

The Terrace Heights Water System includes both the former Terraced Estates Water Company and the former Country Club District Water Company. Yakima County acquired the Terraced Estates Water Company in May 1991. In March 1994, Yakima County acquired the Country Club District Water Company and incorporated it into the Terrace Heights Water System.

The Terraced Estates Water Company was established in the late 1970s by a private developer to serve the proposed 160-acre, 400-residence Terraced Estates Subdivision. Of the ten original parcels making up the proposed subdivision, eight have been developed and another is currently under construction.

The Country Club District Water Company (CCDWC) water system was established over 70 years ago to serve residential development in the Terrace Heights area. The system was originally owned by a private individual who constructed the first well and storage facility. The system was expanded over the years as development occurred. Approximately 40 years ago ownership of the company was transferred to the customers, with each customer owning a share of stock. After that time, all administrative decisions were made by an elected Board of Directors.

~~In 1988, the CCDWC Board of Directors, at the direction of the State Department of Health (DOH), hired a consulting firm to prepare an engineering report for the CCDWC water system. The report, completed in 1989, identified major deficiencies within the existing system. The most notable deficiency was in water storage and the hydraulic capacity of the distribution system. The report was reviewed by DOH and approved with the provision that the CCDWC undertake the improvements recommended in the report. The recommended improvements were never made.~~

~~In 1994, the County Club Water District shareholders voted overwhelmingly (approximately 90 percent) to sell their system to Yakima County. Their decision was based on Yakima County's assurance that the needed improvements would be implemented and with the knowledge that their individual water rates would increase approximately 90 percent to help fund the needed improvements.~~

~~In 1994, the first phase of improvements was constructed. This work included a new supply well, booster station, storage reservoir and transmission main. The second phase of improvements is scheduled for construction during 1995 and 1996.~~

~~**Starcrest Water System**~~
~~Starcrest Water System is the most recent (1996) water system to be acquired by the County. Constructed in 1996, the system serves a three-lot subdivision in Terrace Heights.~~

~~**Buena Water System**~~
~~In 1983, the Yakima Health District conducted an environmental health survey in the unincorporated community of Buena. The survey revealed that a large number of on-site sew-age disposal systems were discharging poorly treated wastewater into the ground-water. As a result, private wells in the area were prone to intermittent bacteriological and chemical contamination. The problem was complicated by high residential densities, permeable soils, and high groundwater conditions in the area.~~

~~To solve the problem, Yakima County constructed the Buena Water System. The system, constructed in 1985-86, included a supply well, pump station, storage reservoir, transmission main and distribution network. Financing for the project was provided by a Community Development Block Grant from the Washington State Department of Community, Trade and Economic Development and a Referendum 38 Grant from the Washington State Department of Social and Health Services. The Buena Water System has remained virtually unchanged since it was constructed.~~

~~**Gala Estates Water System**~~
~~The Gala Estates water system was acquired by the County in 1995. This system encompasses the Larson/Emerald Acres subdivisions northeast of the city of Selah. Both subdivisions were orchards for many years before recent clearing and as a result, there were concerns that pesticides may have contaminated the groundwater. Extensive testing, however, has not detected non-leaching pesticides commonly used in the orchards while they were in production.~~

~~Low profits and perceived demand for building sites prompted owners to remove their orchards. Since a water utility is not available, an on-site domestic water system has been developed. The system presently serves 11 connections, with a design capacity for 99 connections.~~

~~**System Inventory**~~
~~Table X-1 outlines current inventory information. The systems are treated by chlorination process equipment at each well. The systems are shown in Figures X-1, X-2 and X-3, respectively.~~

~~**Sewer/Sanitation System**~~

~~Most rural residents rely on-site septic tanks and drain fields for their waste water system needs. If residences are not served by a collection sewer, they're considered to be using an on-site system. All on-site systems in the County are permitted and regulated by the County Health District, which promulgates threshold standards for these systems.~~

~~Currently, the only County-owned collection system is the Buena Sewer System, 10 miles east-southeast of Yakima and north of Toppenish. The Buena Sewer System was constructed to reduce groundwater contamination identified by the Yakima Health District's 1983 environmental survey. Construction of the system, which includes individual septic tanks at each service connection, a collection system consisting of 3.4 miles of conveyance pipe, and a recirculating gravel filter treatment plant, was completed in the fall of 1993. Project financing was provided by a Federal Environmental Protection Agency grant, a Washington State Department of Ecology Centennial Clean Water Fund Grant, a Washington State Department of Community Development Block Grant, and Yakima County funds. With the exception of a few new service connections the system has not changed since it was constructed. The system serves about 175 equivalent residential units (ERUs) and treats about 16 million gallons per year of sewage. Figure X-4 shows a recent Yakima County Department of Public Works map of the system, the treatment plant, and outfall locations.~~

~~The permitted discharge capacity of the treatment plant, under the current NPDES permit, is 52,000 gallons per day averaged over a one-month period. The peak hour flow to the wastewater treatment plant has been measured at 70 gallons per minute. The average BOD loading for 1994 was 108 milligrams per liter (mg/L), or 39 pounds per day (lbs/d). Average monthly BOD levels are typically less than 30 mg/L, or 13 lbs/d. The highest BOD loading recorded to date, based on 24-hour composite sampling, was 157 mg/L, or about 70 lbs/d.~~

~~Urban area residents receive sewer service either from a municipality, or in the greater Yakima Urban Area, from the regional wastewater system established under the four-party agreement between the cities of Yakima and Union Gap, the Terrace Heights Sewer District and Yakima County. Service outside city limits may be provided subject to outside utility agreement (to annex) according to the jurisdiction's policies.~~

~~**Solid Waste System**~~

~~The County's solid waste system is a countywide, coordinated effort. The County and all the incorporated cities work together through a Solid Waste Interlocal Agreement. The County's service area includes all incorporated cities and the unincorporated area outside the Yakama Indian Reservation, the U.S. Military Reservation, and the Wenatchee and Snoqualmie National Forests.~~

~~State law has directed the County's solid waste programs. The first Yakima County Solid Waste Management Plan was prepared in 1973 as a result of the 1969 Solid Waste Management Act (RCW 70.95). This law, requiring a comprehensive solid waste management plan, was updated in 1985.~~

~~Prompted by the 1985 update, a final development and closure plan for the Terrace Heights landfill was completed in 1987 and revised in 1995. A hydro-geologic study of the site was completed in 1988. Property for a buffer zone was purchased, and a recycling/recovery program is operating at the landfill.~~

Table X-1 Yakima County Public Works Water SystemSystem Feature	Buena	Terrace Heights	Gala Estates	Starcrest
Number of Customers				
Original (date of startup)	102 (8/1/87)	Terraced Estates: 277 (4/1/91)	(1995)	2 (11/96)
		Country Club: 520 (1994)	11	2 (11/96)
Current (5/5/96)	114	972	11	2 (11/96)
Number of Wells	1	6	1	1
Gallons per year delivered	14 million	140 million	2 million	300,000 (estimated)
Distribution pipe	3 miles	21 miles	1.4 miles	280 feet
Estimated peak hour demand	180 gpm	1,300 gpm	35 pgm	20 gpm
Storage (in gallons)	157,000	Res. #1: 1,500,000 Res. #2: 60,000 Res. #3: 88,000 Res. #4: 90,000	70,000	90
Current Level of Service				
Minimum Fire Flow	500 gpm for 30 min	Existing Residence: 500 gpm for 30 min New Residence: 1,000 gpm for 30 min Industrial area: 2,250 gpm for 60 min	Not required due to lot size	No fire flow established
Minimum Pressure	30 psi	30 psi	30 psi	40 psi
Potential Number of Connections*	208	7,090	60	Not yet established

Table X-1 Yakima County Public Works Water System

In addition, the final development and closure plans for the Cheyne Road Landfill and the Snipes Mountain Landfill were revised in March 1991. Snipes Mountain Landfill closed in 1994 and a transfer station was constructed in 1995. Hazardous waste information programs were introduced through the 1991 Hazardous Waste Management Plan.

Landfill staff was trained to handle hazardous waste, and public information programs were initiated. The County also adopted an unsecured load ordinance. The County instituted an in-house recycling program at the Yakima County Courthouse and other County offices that collects paper, cardboard and aluminum cans. The County also developed a public education program to promote waste reduction and recycling by County residents.

~~The Yakama Indian Nation recently closed its landfill, located on the reservation, and now disposes of its waste at Yakima County's Cheyne Road landfill. The U.S. Military Training Center within the County is involved in solid waste management but is not a part of the planning area. The landfill within the Center's jurisdiction was recently closed.~~

~~The system data and information presented in this chapter comes from Yakima County's Solid Waste Management Plan, completed in November, 1993.~~

~~Collection System~~

~~Table X-2, from the 1993 Plan, shows the collection services for all the municipalities in the County. In Yakima County, eight of the 14 municipalities operate their own garbage collection systems. The cities of Grandview, Toppenish, Moxee City, and Mabton and the town of Granger collect both residential and commercial waste. The cities of Selah and Yakima collect residential waste. The city of Selah collects some commercial waste but the larger accounts are collected by Yakima Waste Systems, Inc. Commercial accounts in the City of Yakima are collected by Yakima Waste Systems.~~

~~Six of the municipalities contract with a state certified hauler to collect garbage within their city. The towns of Naches and Tieton, and the cities of Sunnyside and Zillah contract with Yakima Waste Systems. The cities of Union Gap and Wapato contract with Superior Refuse. Residents in the town of Harrah, located on the Yakama Indian Reservation, contract with Waste Management, Inc. (an individual hauler) directly for their garbage service.~~

~~Residents living in the County's unincorporated areas are served by three garbage haulers: Tri-County Disposal Service, Inc., Country Garbage Service, and Yakima Waste Systems, Inc. (See Figure X-5). Each hauler is certified by the Washington Utilities and Transportation Commission (WUTC).~~

~~Disposal Service, Inc. holds a franchise for the southwest corner of the County bordering the Yakima Indian Reservation. However, it currently has no accounts in Yakima County. Country Garbage Service's franchise area is in the southeastern corner of the County. It serves the unincorporated areas north of the Yakima River, excluding the cities of Grandview and Sunnyside, and east of the town of Granger. Yakima Waste Systems, Inc. serves the unincorporated areas of Yakima County, excluding the U.S. Military Reservation, the Snoqualmie National Forest, and the Yakama Indian Reservation. The Yakama Indian Nation contracts with Waste Management, Inc. (which does not operate under a certificate issued by the WUTC) for garbage collection on the Indian Nation's lands. The U.S. Army is responsible for collection on the U.S. Military Reservation.~~

~~According to the County's 1993 Solid Waste Management Plan, the current garbage collection system is adequate to handle the County's present and future needs. Residential recycling programs in Yakima County have historically included drop off and buy back sites. The 1993 Plan recommends establishing a countywide program for recycling and composting. This program would offer separate services for the~~

~~County's Urban Area (which includes the greater city of Yakima, Selah, and Union Gap areas, including unincorporated fringes) and the County's Rural Area (which includes the rest of the County, including both unincorporated areas and other cities).~~

Incorporated Areas	Collection Service	Type of Arrangement	Disposal Site	Population Density (Pop./Acre)
Grandview	Grandview	City Service	Snipes Mountain or Cheyne Road	3.5
Granger	Granger	City Service	Snipes Mountain	3.1
Harrah	Waste Management	Individual	Yakama Indian Site	2.0
Mabton	Mabton	City Service	Snipes Mountain or Cheyne Road	5.8
Moxee City	Moxee City	City Service	Terrace Heights	1.1
Naches	Yakima Waste Systems	Contract	Terrace Heights	2.4
Selah	Selah	City Service	Terrace Heights	2.9
Sunnyside	Yakima Waste Systems	Contract	Snipes Mountain	3.9
Tieton	Yakima Waste Systems	Contract	Terrace Heights	2.1
Toppenish	Toppenish	City Service	Cheyne Road	6.3
Union Gap	Superior Refuse	Contract	Terrace Heights	1.3
Wapato	Superior Refuse	Contract	Cheyne Road	6.6
Yakima[b]	Yakima	City Service	Terrace Heights	4.9
Zillah	Yakima Waste Systems	Contract	Cheyne Road	2.2
a. Commercial collection contracted to Waste Management. b. Commercial collection by WUTC regulated hauler.				

Table X-2 Yakima County SWMP Collection Services in Incorporated Areas

Table X-3 Yakima County Water Systems

System Type	Number of Systems
Group A, Community, Residential, Unincorporated	81
Group A, Community, Incorporated	17
Group A, Transient and Nontransient Noncommunity	92
Group B	542
Total Number of Listings	**732**

Landfills

The Terrace Heights and Cheyne Road landfills are the two active landfills within Yakima County currently accepting municipal solid waste (see Figures XII-6 and 7). They are owned and operated by Yakima County.

~~The Yakama Indian Nation, which recently closed a landfill on its reservation, now hauls its waste to the Cheyne Road landfill for disposal.~~
~~The Terrace Heights landfill is 408 acres and has a remaining capacity of 3.0 million cubic yards. It is expected to reach capacity between 2003 and 2006. The Cheyne Road landfill site is 960 acres. It currently has 40 acres permitted for landfilling. The 40 acres has the capacity to handle waste from the existing service area until between 2005 and 2008.~~

~~An upcoming 1998 study will explore the feasibility of expanding the Cheyne Road and Terrace Heights landfills, developing new in County disposal sites, and exporting waste. This study will be completed approximately five years before the projected closure of these landfills. If new or expanded landfills are needed, they could be planned, permitted and built between 2004 and 2007.~~

~~Two privately operated demolition waste landfill sites are located in Yakima and near Naches. Permits are pending for a third private demolition waste landfill operation near Grandview.~~

~~**Transfer and Drop Box Facilities**~~
~~In the lower valley, the Snipes Mountain landfill closed and was replaced with a transfer station near the landfill site in October of 1995. It is the only transfer facility in the lower Yakima Valley and all waste collected is hauled to the Cheyne Road Landfill.~~

~~Yakima County residents are served by seven coin operated drop box facilities. These 30- and 40 yard compactor bins sit on a concrete pad with an overhead structure that provides shelter for the self-hauler. The sites are open 24 hours per day except on holidays. The drop box facilities prohibit animals, hazardous wastes, pesticides, and over sized items. The drop boxes are emptied at the Terrace Heights landfill. Money changer machines and recycling drop offs have recently been added to the Ahtanum, Cowiche, and Selah drop box facilities.~~

~~**Water Supply Purveyors**~~

~~**Independent Public Water Systems**~~
~~Washington State defines public water systems as all systems serving more than one single family residence. Group A systems serve 15 or more connections, or 25 or more people per day for 60 or more days per year. Group B water systems are all the smaller systems that serve more than one single family residence but are not large enough to fit into the Group A category. The state Department of Health (DOH) in Spokane maintains a comprehensive list of all community water systems for the counties in eastern Washington. The DOH list of water systems for Yakima County is summarized in Table X-3.~~

~~Group A, Community, Residential, Unincorporated systems serve residences in unincorporated areas while Group A, Community, Incorporated systems serve incorporated areas. Group A, Transient and Nontransient Noncommunity systems serve hotels and other businesses that cater to people who do not live permanently at the site. Transient systems serve operations that experience intermittent use such as camp grounds and other seasonal businesses. Nontransient systems include businesses and other operations serving nonresidents more than six months out of the year.~~

~~The first category listed includes those sytems that are clearly distinguishable as residential and not associated with a city or town's water supply. The largest of these independent water systems is the Nob Hill Water Association.~~

~~Nob Hill Water Association~~

~~Nob Hill Water Association operates a drinking water system in the West Yakima area. Its system lies both within the corporate limits of the City of Yakima and in unincorporated Yakima County. According to the Association's April 1994 Comprehensive Plan, it has 6,661 service connections and serves a population of approximately 16,653 people. Nob Hill Water was incorporated under the laws of the State of Washington on December 26, 1908 as a private non-profit organization. In 1983, it was converted from a private nonprofit corporation to a private nonprofit association.~~

~~Its initial source of water supply was the Pacific Power and Light Company which, at that time, owned the water system for the City of Yakima. In the 1940s, the City of Yakima took over ownership of the local water system from Pacific Power. Shortly thereafter, Nob Hill Water drilled its own well, becoming independent of the City of Yakima in 1946. Nob Hill Water has grown and expanded to become the largest water system in the Yakima Valley except for the City of Yakima, and the largest private system in the state.~~

~~Existing Water Sources~~ ~~The water supply for the Nob Hill Water Association comes from 5 wells (Figure X-6). Specific characteristics of each of the wells are detailed in Table X-4. A sixth well is currently being developed, but is awaiting state approval before any water withdrawals take place.~~

~~Table X-4 Nob Hill Water Supply Wells~~

	~~Well 1~~	~~Well 2~~	~~Well 3~~	~~Well 4~~	~~Well 5~~
~~Year Drilled~~	~~1946~~	~~1956~~	~~1969~~	~~1987~~	~~1986~~
~~Static Level (feet)~~	~~71~~	~~91~~	~~306~~	~~266~~	~~0~~
~~Pumping Level (feet)~~	~~152~~	~~133~~	~~360~~	~~450~~	~~230~~
~~Pumping Capacity (gpm)~~	~~800~~	~~800~~	~~2850~~	~~500~~	~~1600~~
~~Size Bowls (inch)~~	~~8~~	~~12~~	~~14~~	~~8~~	~~12~~
~~Horsepower~~	~~75~~	~~75~~	~~350~~	~~100~~	~~250~~
~~Bowl Setting~~	~~185~~	~~150~~	~~390~~	~~500~~	~~240~~
~~Type Pump~~	~~Turbine~~	~~Turbine~~	~~Turbine~~	~~Submerged~~	~~Turbine~~
~~Well Capacity (gpm)~~	~~1000~~	~~1900~~	~~3000~~	~~550~~	~~3100~~
~~Well Depth (feet)~~	~~1625~~	~~550~~	~~1050~~	~~1800~~	~~850~~
~~Treatment~~	~~Chl/Aer~~	~~Chl/Aer~~	~~Chl~~	~~Chl~~	~~Chl~~
~~a. Chl = Chlorination~~ ~~Aer = Aeration~~					

Table X-5 Nob Hill Distribution System (Feet of Pipe)

	Type of pipe					
	Asbestos			Galvanized		
Pipe size	Cement	Steel	Cast Iron	Iron	Copper	PVC
16 inch	--	--	--	--	--	2,000
12 inch	66,520	500	--	--	--	83,050
10 inch	2,990	--	--	--	--	--
8 inch	102,680	--	1,400	--	--	33,100
6 inch	146,990	21,120	8,600	--	--	18,350
4 inch	36,730	9,580	--	--	--	2,340
3 inch	--	--	--	1,220	--	1,140
2 inch	--	360	--	12,410	400	3,790

The total production capacity from the five wells is 6,550 gallons per minute (gpm) or 9.438 million gallons per day (mgd). However, Well 1 is kept on standby for emergency purposes only because of its hydrogen sulfide content. When this well is removed, the maximum capacity is 5,750 gpm, or 8.285 mgd.

Water Association records show a daily per capita use of 173 gallons of water. Maximum day per capita usage was 370 gallons and minimum day per capita use was 87 gallons (1993 data). Peak day usage is typically higher in the summer than in the winter due primarily to local summer irrigation needs.

Storage Storage for the system is provided by five reservoirs serving three distinct pressure zones. The reservoirs are located at three different sites, two of the sites containing two reservoirs each. There is a one million gallon reservoir at the site of Well 3 which serves the upper and intermediate pressure zones. A one million and a 500,000 gallon reservoir are located in the north central portion of the service area the Westbrook Reservoir, and serve the larger lower pressure zone. A one million and a 150,000 gallon reservoir near Well 4, the Minnesota Reservoir, also serve the lower pressure zone. Total storage is 3.65 million gallons.

Distribution System The distribution system comprises 105.16 miles of pipe. Specific sizes and types of pipe are listed in Table X-5.

5. SPECIAL DISTRICTS

Sewer Districts

There are two sewer districts in the County: Cowiche Sewer District and Terrace Heights Sewer District. Together, they serve approximately 32,00 people in two distinct areas. In addition, the Port of Sunnyside owns and operates its own industrial sewer system. Details of these three systems are listed in Table X-6.

Cowiche Sewer District

Cowiche Sewer District (Figure X-7), north of Yakima near Tieton, serves 73 homes, a packing warehouse and limited commercial facilities with a central collection system and treatment plant. The wastewater

~~treatment plant consists of a series of evaporation ponds which stabilize and evaporate raw sewage. The treatment system is operated by the town of Tieton under contract. Two of the originally constructed five ponds are being held in reserve for future growth. Comprehensive land use planning for the sewer district is dependent on the County commissioners.~~

~~As a result of sewer system capacity problems, the city of Tieton has approached the Cowiche Sewer District to evaluate whether the two entities could collaborate on service issues. One suggestion would connect residential development in Cowiche with an upgraded plant in Tieton via a force main, utilize the Sewer District system for wastewater from the agricultural industries in the Rural Settlement.~~

~~Terrace Heights Sewer District~~

~~Terrace Heights Sewer District (Figure X-8), serves about 1,500 units with a collection system that discharges to the city of Yakima collection system and treatment plant. The system was built in 1953 and is under continuous expansion as new residents move to the area. The system's current service level is 1,800 equivalent residential units (ERUs). Its contractual capacity with the city of Yakima is 3,700 ERUs. The physical capacity of the main lift station and trunk sewer is 3,900 ERUs. However, some improvements would be needed within the District's system (e.g., parallel lines) to convey these higher flows. Such improvements cannot be implemented though until sufficient growth occurs to generate needed funding.~~

~~Table X-6 Sewage Collection and Treatment~~

~~Agency~~	~~Population Served~~	~~Average, Annual Flow (mgd)~~	~~Service Area (acres)~~	~~Treatment~~	~~Discharge~~
~~Cowiche S.D.~~	~~200±~~	~~0.02±~~	~~a~~	~~Facultative Lagoon~~	~~Evaporation~~
~~Terrace Heights S.D.~~	~~3,000±~~	~~0.3±~~	~~a~~	~~Yakima WWTP~~	~~Yakima R.~~
~~Port of Sunnyside~~	~~NA[b]~~	~~1.6~~	~~a~~	~~Aerated Lagoon~~	~~Land Application~~

~~a To be completed~~
~~b Industrial Wastewater only~~

~~The four-party agreement between Yakima, Selah, Union Gap and Yakima County limits the amount of sewage Terrace Heights can dispose of at the regional wastewater treatment plant to 4 percent of the capacity of the treatment plant (currently 20 mgd). There is also a limit on the capacity of the district's sewer connections to the regional system. Current peak monthly flow is about 0.41 mgd or 50 percent of contractual limit. Average annual growth is about 3 percent, based on annual flow increases for 1992-1994. The District is completing a comprehensive Sewer Plan for its service area in 1997.~~

~~Port of Sunnyside~~

~~The Port of Sunnyside owns and operates an industrial sewerage system serving 13 industrial facilities within the city of Sunnyside. The industries vary from fruit and vegetable processors to dairy products, plastics manufacturing and wineries. The treatment system consists of a 6-acre aerated lagoon and a 40-~~

~~acre winter storage pond. During summer, the Port irrigates about 425 acres of alfalfa with the approximately 1.6 mgd flow. The port has a state waste discharge permit for land application for the plant which is currently being renewed.~~

~~Irrigation Districts~~

~~The Yakima County Treasurer's office provides billing services for 16 irrigation districts in the County (Table X-7). Other districts provide their own billing services.~~

~~The Yakima Project is an irrigation system that uses water developed by the Bureau of Reclamation to irrigate about 465,000 acres of land extending 175 miles along both sides of the Yakima River. The Yakima Project consists of an extensive system of reservoirs, canals and laterals, diversion dams, hydroelectric power plants, transmission lines, and pumping plants that supplies irrigation water for most of the irrigated land in the Yakima River Basin, and over 90% of the harvested cropland in the Yakima County and Kittitas County, about half of Benton County, and a small area in Klickitat County.~~

~~Within Yakima County the Project is divided into upper and lower planning areas:~~

~~Upper Yakima Planning Area~~
~~The Upper Yakima area, north of Union Gap, contains the Tieton Division. The Division is west of Yakima between the Naches River and Ahtanum Creek and covers 27,271 acres. Irrigation waters for the district are diverted from the Tieton River via the Tieton Diversion Dam (a concrete weir, five feet high with an embankment wing, eight miles downstream from Rimrock Lake), and Tieton Canal (capacity 347 cubic feet per second). The Tieton division and its facilities are operated by the Yakima-Tieton Irrigation District.~~

~~Other irrigation districts within the Tieton Division include the Broadway, Naches-Selah, Selah-Moxee, Terrace Heights, Union Gap, city of Yakima, and Yakima Valley Irrigation Districts as well as the Moxee unit (the unit includes both the ditch company and the irrigation district). There are two irrigation districts in this area which are not part of the Yakima Project: the Wenas and Ahtanum Districts.~~

~~Lower Yakima Planning Area~~
~~Lower Yakima Area is south of Union Gap and is heavily agricultural. It consists of Wapato, Sunnyside, and Roza Divisions. The Wapato Division, formerly known as the Wapato Indian Project, has three units, Ahtanum, Satus and Toppenish and is under the administration of the Bureau of Indian Affairs.~~

~~The Sunnyside Division consists of 103,562 acres north of the Yakima River, extending from the Sunnyside Diversion Dam, a concrete weir near Parker (eight feet high with an embankment wing) and flows through the Sunnyside Canal. Four irrigation districts in the Sunnyside Division pump water to their lands by hydraulic turbine pumps at drops along the canal. The Sunnyside Division and its facilities are operated by the Sunnyside Valley Irrigation District. The other districts within the Division are Grandview, Granger, Outlook, and Snipes Mountain.~~

~~The Roza Division spans 72,511 acres north of the Yakima River, from Pomona to Benton City. The distribution system is supplied by the Roza Canal (capacity 2,200 cubic feet per second), which originates~~

~~at the Roza Diversion Dam (a concrete weir, movable crest structure that is 67 feet high) on the Yakima River about ten miles north of Yakima. The Roza Power plant develops and delivers 11,250 kilowatts of power to pumping plants within the division along 70 miles of transmission lines. The Roza Division and its facilities are operated by the Roza Irrigation District. The other districts within the Division are Buena and Home.~~

~~PRIVATE UTILITIES~~

~~Many public and private agencies are involved in regulations, coordination, production, delivery, and supply of utility services. Franchise agreements between purveyors and local jurisdictions provide additional level of service requirements for the delivery of utility services.~~

~~Regulatory Setting~~

~~Washington Utilities and Transportation Commission (WUTC)~~
~~The Washington Utilities and Transportation Commission (WUTC) is composed of three members appointed by the governor empowered to regulate private utilities (including, but not limited to electric, gas, irrigation, telecommunication, and water companies). State law (WAC 480-120) regulates the rates and charges, services, facilities, and practices of private utilities. Any change in customer charges or service provision policy requires WUTC approval.~~

~~The WUTC requires gas providers to demonstrate that existing ratepayers will not subsidize new customers. Thus, historically gas main extensions have not been planned in advance but have been initiated only when sufficient customer demand is manifest. The WUTC regulations are, therefore, inconsistent with the Growth Management Act's concurrency goals.~~

~~Federal Energy Regulatory Commission~~
~~FERC~~ ~~The Federal Energy Regulatory Commission (FERC) is an independent five member commission with the U.S. Department of Energy. FERC establishes rates and charges for the interstate transportation and sale of natural gas, for the transmission and sale of electricity, and the licensing of hydro-electric power projects. In addition, the commission establishes rates or charges for the interstate transportation of oil by pipeline.~~

~~Natural Gas Policy Act of 1978~~
~~The central theme of the National Gas Policy Act (NGPA) is to encourage competition among fuels and suppliers across the country. As a result, natural gas essentially has been decontrolled. The NGPA also contained incentives for developing new natural gas resources and a tiered pricing structure aimed at encouraging the development of nationwide transmission pipelines. The result of the Act has been that many consumers are now paying less for natural gas than they were in 1980.~~

~~Northwest Power Planning Council~~
~~The Northwest Power Planning Council (NWP PC) focuses on the generation of electricity; however, its policies have implications for gas too. The NWPPC, in its recently released power plan, has directed the~~

region to develop "co-generation" as an energy resource and "hydro-firming," which uses gas-fired turbines as a backup or insufficient hydro-electric power.

Co-generation is the use of heart, as a by-product of power generation, for industrial processes or for space and water heating. natural gas is often used as a fuel source for co-generation.

Hydro-firming is the back-up of the region's intermittent excess spring hydro-generation with gas-fired combustion turbines to provide back-up if hydro-electric power is insufficient.

These two policies could have a major impact on natural gas consumption in the Northwest. However, providing natural gas directly to customers for heating purposes is up to 50 percent more efficient than generating electricity with gas, then providing that electricity to the customer for the same heating function. The most efficient use of natural gas-direct application for space and water heating-can contribute to a balanced regional energy policy.

Table X-7 Yakima County Irrigation Districts

District	**Address**
Ahtanum*	Post Office Box 590 Yakima, WA 98907
Buena*	270 Eagle Peak Road Zillah, WA 98953
Grandview*	Post Office Box 188 Grandview, WA 98930
Granger*	Post Office Box 1099 Granger, WSA 98932
Home*	Post Office Box 755 Granger, WA 98932
Moxee	3106 Beaudry Road Moxee, WA 98936
Naches-Selah*	143 East Naches Avenue Selah, WA 98942
Naches-Union*	Post Office Box 3042 Chinook Tower Yakima, WA 98908
Outlook*	2489 North Outlook Outlook, WA 98938
Roza	Post Office Box 810 Sunnyside, WA 98944
Selah-Moxee*	1910 South 44th Avenue Yakima, WA 98908
South Naches*	6931 South Naches Road Naches, WA 98937
Snipes Mountain*	414 Concord Drive Outlook, WA 98938
Sunnyside valley	Post Office Box 239 Sunnyside, WA 98944
Terrace Heights*	1910 South 44th Avenue Yakima, WA 98908
Union Gap*	4720 Konnowac Pass Wapato, WA 98951
Wenas*	543 Sisk Road Selah, WA 98942
Wapato Irrigation Project	Post Office Box 220 Wapato, WA 98951-0220
Yakima City Irrigation	2301 Fruitvale Boulevard Yakima, WA 98902
Yakima-Tieton	470 Camp 4 Road Yakima, WA 98902
Zillah*	Post Office Box 385 Zillah, WA 98953
	*County Treasurer provides billing service.

and BPA's Outlook substation northwest of Sunnyside.The two smaller transmission lines are connected to BPA's substations at Moxee and Grandview. Additional capacity is planned for the late 1990s by

~~installing a second large (230,000-volt) line to Wanapum Dam and the construction of the Lichty Siding substation near Grandview.~~

~~These transmission lines form an interconnected open access network across the western states. Consequently Yakima County customers have access to Pacific Power's coal and hydro powered generation plants in Washington, Oregon, California, Wyoming, Utah and Montana. In addition, the network provides a connection to over 50 other electrical purveyors allowing exchanges of power, if the need arises.~~
~~Currently, Yakima County is served by 20 Pacific Power distribution substations. Each substation is located near major load centers which include Grandview, Sunnyside, Toppenish, Wapato, Wiley Area, Tieton-Cowiche, Naches, Selah, Wenas, and White Swan. The 20 substations serve 90 distribution circuits, each of which is capable of delivering 11 megawatts, or about 2,500 accounts. In the last five years Pacific Power has added one new substation and modified five others to serve new distribution circuits.~~

~~Benton Rural Electric Association (Benton REA)~~ ~~Benton REA provides electrical service to 272 commercial/industrial users and 2,223 residences in Yakima County. Its service is concentrated in the Lower Yakima Valley, south of Union gap, although it draws some of its power from the Tieton Reservoir, northwest of Yakima. Benton REA service extends east to the Richland area, in Benton County. Its business office is in nearby Prosser.~~
~~Natural Gas~~

~~Yakima County is served by two natural gas companies, Northwest Pipeline and Cascade Natural Gas.~~

~~Northwest Pipeline~~ ~~Northwest Pipeline is a natural gas wholesale transmission company. Its major customer in Yakima County is Cascade Natural Gas. It owns and operates main feeder lines in Grandview, Sunnyside, Zillah, Moxee, Yakima, Selah, and the U.S. Army firing range adjacent to the city of Selah.~~

~~Cascade Natural Gas~~ ~~Cascade Natural Gas Corporation (CNG) builds, operates, and maintains natural gas facilities serving Yakima County. CNG is an investor-owned utility serving customers in sixteen counties within the State of Washington. This section describes CNG's existing system within Yakima County.~~

~~Washington, Oregon, and Idaho receive natural gas from the southwestern United States and Canada. Natural gas is applied to the entire region via two interstate pipeline systems, Pacific Gas Transmission Company and Northwest Pipeline Corporation. Both own and operate their respective regional pipeline networks.~~

~~System components include gate stations high pressure lines, pressure reduction stations and distribution mains. The gate station is the delivery point of natural gas from the upstream interstate pipeline to CNG's system. Gate stations normally include metering stations, odorizing stations and pressure reduction stations. High pressure lines transport gas to district regulators throughout CNG's service area. High pressure line mains may vary in size from 2 to 20 inches and in pressure from 150 to 600 pounds per square inch. Pressure reduction stations are installed at the point of delivery of natural gas from the high~~

~~pressure lines to the lower pressure distribution systems. Distribution system mains vary in size from 2 to 16 inches.~~

~~Telecommunications~~

~~Telecommunications is the transmission of information by wire, radio, optical cable, electromagnetic or other similar means. In Yakima County, telecommunication utilities include, telephone, cellular telephone and cable television. Considerable expansion of the telecom munications industry is expected, as a result of expanded licensing by the F.C.C. and technological innovation, such as digital TV signals which can be linked to personal computers and the Internet.~~

~~Telephone~~

~~US WEST, Ellensburg Telephone, Cowiche Telephone, Sprint United and GTE supply local telephone and related services to Yakima County. The service areas for each provider are shown in Figure X-9.~~

~~US WEST is the County's main supplier of local telephone and related services. US WEST provides telecommunication services to approximately 70,000 business and residential subscribers in Yakima County. Cowiche Telephone provides services to the US Route 12 corridor, including Cowiche, Tieton, and Rimrock areas. GTE is the service purveyor to selected urban areas in the northwest part of the County, including Naches and Nile. Ellensburg Telephone, primarily serving the city of Selah, has approximately 5,000 residential and 850 business customer hookups. Sprint United Telephone is the local carrier for lower valley cities and their environs (e.g., Grandview, Granger, Harrah, Mabton, Sunnyside, Toppenish, Wapato and Zillah.~~

~~Cellular~~

~~Cellular telecommunication allows people to have mobile telephone communication via radios which send and receive signals from a network of receivers placed at several cellular communication ("cell") sites.~~

~~Cell sites are placed on tall poles, lattice-type towers or on existing buildings. Each cell site has a coverage area of several miles, depending on topography and number of customers. As the cellular telephone user moves form one cell to the next, the call is passed to an open channel at an adjacent cell site. Transmission quality and dialing of cellular telephones are comparable to that of conventional wireline telephones. The primary difference between cellular and conventional telephone systems is that cellular phones don't need wire.~~

~~Yakima County is currently served by two cellular telephone companies: AT&T Wireless and United States Cellular. They are licensed to operate in the County and throughout the region within guidelines set by the Federal Communications Commission (FCC). Siting and design of towers is regulated by the Federal Aviation Administration (FAA) and local zoning authority. Considerable expansion of the wireless telecommunications industry is expected.~~

~~Cable Television~~

~~TCI Cablevision provides television broadcasting to all of the Yakima Valley area between a central facility and individual subscriber sets.~~

~~TCI's direct cable facilities in Yakima County include trunk lines and smaller distribution lines. Distribution lines run either along poles on space leased from an electrical or telephone utility, or underground along the street right-of-way. The number of network miles of overheard and underground coaxial cable and the number of customers, or households served, is considered to be proprietary information by TCI and could not be obtained for this inventory report.~~

~~An electronic control center ("head-end site") processes reception and generation for distribution through the cable system. The signal can be received for a hard line (cable), a satellite dish, microwave antenna and/or a TV antenna. TCI has "head ends" (where a satellite dish sits and the signal originates) in Toppenish, Sunnyside, and Grandview.~~

~~In addition, Northwest Cable Network offers "wireless cable," originating from a transmitting antenna on Rattlesnake Ridge near Union Gap. Service is available to customers within a 50-mile line-of-sight radius.~~

~~Northwest Cable Network is exclusively a wireless system beaming signals to individual microwave antennas throughout the city of Yakima and more remote, outlying areas. Its customer base numbers around 7,500 house holds in the County. The microwave head-end site operated by Northwest Cable Network is located on Rattlesnake Ridge.~~

~~This industry is also expected to undergo substantial change due to technological innovations, linking digital TV with personal computers and both the Internet and the World Wide Web.~~

~~LEVELS OF SERVICE~~

~~The purpose of LOS standards is to adequately serve both current and future residents without compromising the service they receive.~~

~~Levels of service (LOS) are established for the following Yakima County owned and operated utilities:~~

~~Buena, Terrace Heights, and Gala Estates water systems:~~

- ~~Buena sewer system;~~
- ~~Potential future satellite water and sewer systems; and~~
- ~~County wide solid waste system.~~

~~Existing County Water, Sewer, and Solid Waste Facilities~~

~~LOS standards focus on present needs and future growth. The first step is to study the capacity of existing facilities and assess the need for facility improvements in order to accommodate growth. This is accomplished through capacity analysis, which estimates the number of years before improvement is required.~~

~~This approach is well suited to the County's water, wastewater, and solid waste utilities since they must already meet specific and stringent federal, state, and local standards for service, capacity and development. It also addresses the County's on-site septic systems, which are considered a type of waste-water facility. Capacity LOS for water and wastewater facilities rates the unused capacity of each system component, using an A-through-F rating system, where the A-level rating indicates a large amount of unused capacity (see Tables X-8 and X-9).~~

~~The capacity LOS for solid waste facilities (see Table X-10) examines the availability of different system components. For example, how available are landfill sites, transfer stations, and recycling facilities? What are the collection days for waste pickup? Another important consideration is the geographical distribution of facilities. Future additional transfer stations, for instance, need to be sited near population center where they are needed. Appropriate siting is an important part of capacity LOS and future development of facilities.~~

~~**Future Satellite Wastewater and Water Systems**~~

~~Under ***Plan 2015***, LOS standards must be adopted for future satellite systems that the County will manage. Current ***Plan 2015*** policies require that satellite systems be established for developments of 3 or more residences, or residential equivalents, in unincorporated UGAs; and for 5 or more residences, or residential equivalents, in Rural areas throughout the County. All systems will be required to meet established County and state standards for design, construction, and performance. Water systems will be subject to State Health SMA requirements.~~

~~Several ***Plan 2015*** land use designations are not included in the future satellite system analysis. They include the Rural Self-Sufficient, Rural Remote/Extremely Limited Development Potential and resource land designations, which allow satellite systems to be established.~~

~~Table X-8 – Percent of Capacity (Operation) LOS for Water System Facilities~~

~~System Element~~	~~Parameter Defining LOS~~	~~Definition of Letter Rating (Percent of Capacity Used)~~					
		~~A~~	~~B~~	~~C~~	~~D~~	~~E~~	~~F~~
~~Supply Wells~~	~~Total Supply Capacity~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~
~~Pump Stations~~	~~Peak Pumping Rate~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~
~~Pipelines~~	~~Peak Flow Rate~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~
~~Reservoirs~~	~~Total Capacity~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~
~~Water Treatment Facilities~~	~~Treatment Capacity~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~

~~Table X-9 – Percent of Capacity (Operation) LOS for Wastewater Treatment Facilities~~

~~System Element~~	~~Parameter Defining LOS~~	~~Definition of Letter Rating (Percent of Capacity Used)~~					
		~~A~~	~~B~~	~~C~~	~~D~~	~~E~~	~~F~~
~~Pipelines~~	~~Peak Flow Rate~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~
~~Pump Stations~~	~~Peak Pumping Rate~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~
~~Wastewater Treatment Facilities/Liquid Stream~~	~~Hydraulic Loading or Organic Loading (whichever is limiting)~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~
~~Wastewater Treatment Facilities/Solid Stream~~	~~Hydraulic Loading or Solids Loading (whichever is limiting)~~	~~0-20~~	~~21-40~~	~~41-60~~	~~61-84~~	~~85-100~~	~~>100~~

~~LOS Thresholds~~

~~Establishing LOS thresholds means that a base standard is applied to each County system. These thresholds provide the standards against which existing and new systems can be evaluated. System evaluations identify deficiencies, which can be remedied with facility upgrades or new construction. Assessing each system's needs will lead to realistic recommendations for necessary improvements. Then these improvement needs will be incorporated into the finance portion of this element.~~

~~Table X-10 – LOS Standards for Solid Waste Management Facilities and Services~~

~~Facility/Service~~	~~Letter Rating for LOS~~		
	~~A~~	~~B~~	~~C~~
~~Regional Landfills (Number of Facilities)~~	~~2~~	~~1~~	~~0~~
~~Regional Transfer Station (Number of Facilities)~~	~~2~~	~~1~~	~~0~~
~~Garbage Pickup (Pickup Days Per Month)~~	~~4~~	~~2~~	~~1~~
~~Curbside Recycling Pickup (Pickup Days Per Month)~~	~~4~~	~~2~~	~~1~~
~~Rural Recycling Centers (Number of Facilities)~~	~~10~~	~~5~~	~~0~~

Water and Sewer Facilities

Thresholds for both water and sewer facilities were established to identify deficiencies in the system that must be corrected in order to meet Growth Management Act requirements (see Table X-11). These standards represent the proposed level of service the County would provide to residents for each type of facility. A facility with an LOS rating worse than the threshold is considered deficient and in need of improvement.

These threshold LOS standards are to be applied to the existing systems and to future system growth anticipated under each land use alternative for the years 2001 and 2015 in order to identify facility needs.

Solid Waste Facilities

Thresholds for solid waste facilities are shown in Table X-12. LOS threshold standards are used to identify deficiencies in the system that must be corrected to meet Growth Management Act requirements. Future solid waste facility upgrades will be based on the LOS ratings thresholds established in this section.

C. ANALYSIS OF ASSETS, NEEDS AND OPPORTUNITIES

Introduction

Thresholds LOS standards were applied to the existing systems and to future system growth anticipated under each land use alter native for the years 2001 and 2015 in order to identify facility needs. These standards measure the impacts of new development on the existing system. Then appropriate mitigation, commensurate with measurable impacts, can be applied to development approvals. This ensures that the system continues to provide service at the acceptable local level.

Potable Water Supply

More people moving to newly developed areas means more demand on the ground water supply. As new residents install individual or community wells or connect to existing systems that rely on ground water, concerns about available ground water grow. Residents of the West Valley, Wenas, North Selah, and Terrace Heights areas have already voiced their concern about declining well production.

The taste of potable water from wells in some areas varies seasonally. While the quality of ground water in Yakima County in generally excellent, high concentrations of iron and manganese affect the taste in some areas. Local land use impacts have degraded water quality in a few locations.

The Washington State Wellhead Protection Program, adopted in 1994, requires all Group A public water systems (those serving at least 15 connections or 25 people) to develop a wellhead protection program to prevent contamination of groundwater used for drinking. The systems must delineate wellhead protection areas, inventory potential contaminant sources, and manage wellhead protection areas to prevent pollution. The Washington State Department of Health is responsible for enforcement.

Table X-11 Thresholds LOS for Water and Sewer/Sanitary Facilities

Type of Water Facility	Percent-of-Capacity LOS
Supply Wells	D
Pump Stations	D
Pipelines	D
Reservoirs	D
Water Treatment Facilities	E
Type of Sewer Facility	**Percent-of-Capacity LOS**
Pipelines	D
Pump Stations	D
Wastewater Treatment facilities – Liquids Stream	E
Wastewater Treatment facilities – Solids Stream	E

Table X-12 Threshold LOS for the Solid Waste System

Facility	LOS
Regional Landfills	B
Regional Transfer Stations	B
Garbage Pickup	B
Curbside Recycling Pickup	B
Rural Recycling Centers	B

A ground water availability analysis based on preliminary data needs to be developed for each subbasin in the County. In the future, a more accurate groundwater analysis will require additional stream flow data, monitoring of ground water elevations, and evaluation of the hydraulic connection and rate of flow between the shallow and deep aquifer systems.

A water level monitoring program should be developed and implemented within each subbasin to evaluate the long-term potential water level declines in both the shallow and deep aquifer systems and aid in developing and refining a ground water budget. To reduce costs, the water level measurements could be collected during seasonal high and low water periods each year. To evaluate resource availability, it is essential to understand the interrelationship between the shallow and deep aquifers. Evaluation of the aquifer interconnection would require installation of monitoring wells and pumping tests to generate data needed to calculate the potential rate of water loss or gains from the interconnecting aquifer and refine the ground water budget. In the absence of the data needed for a ground water budget, one way to prevent excessive demands on ground water would be for the County to obtain all unappropriated water rights in the unincorporated urban and transitional areas.

Irrigation Water

The demand for irrigation water continues to grow. The need for irrigation water is likely to continue even when some land converts to nonagricultural uses. Gardens and lawns will also require water. Irrigation districts must be notified of proposed subdivisions, and the subdivision plat must be recorded and filed with the district, showing how the water is to be delivered to the irrigable acres in the subdivision. The district must approve extensions of service to subdivided units, and can require the extensions of service

~~to subdivided lots at the landowner's expense. The irrigation district's responsibility for delivering water ends at the established point of delivery.~~

~~**Water and Sewer Systems**~~

~~Water and sewer system improvement needs to handle anticipated growth are similar under all land use alternatives. A summary of the water and sewer facilities deficiencies, recommended improvements and estimated costs are shown in Tables X-13 and X-14, respectively. It should be noted that current and future deficiencies for sewer facilities within Urban Growth Areas are not listed since the respective city or town's comprehensive plan should address these service issues and establish LOS. Where the cities or special purpose districts either cannot or will not address sewer service deficiencies, it may be necessary for another service provider to step in, to maintain equitable access to service within the UGAs. A Comprehensive Sewer Plan for the urban areas of Yakima County will help establish service deficiencies and prospective means for their solution.~~

~~**Satellite System Facilities**~~

~~Satellite management water systems have a lower annual cost per connection than individual wells. While the annual user fees are higher for satellite systems, the initial cost per connection less for satellite systems, which translates into lower mortgage payments, as shown in Table X-15. For example, a system with nine connections would have an annual cost per connection of approximately $759, while one with three connections would be about $1,208, and an individual well would be about $1,230. These costs include operations, maintenance, administrative expenses, testing, energy costs, reserve for repair or replacement, and the annual principal plus interest on equipment installation (based on a 15-year mortgage at 7-1/2% interest). If the homes in the 9-connection system are clustered, the annual cost drops to about $734 (slightly less pipe required). In addition, satellite water systems would have a modest one-time connection fee for meter inspection and account activation.~~

~~Satellite management sewer systems have administrative fees and inspection costs not required for individual, on-site septic systems, as shown in Table X-16.~~

~~When the consumer debt service (principal and interest) for the higher initial equipment cost is included, however, the total annual user cost per connection is similar, ranging from $1,044 for a clustered 9-unit system to $1,115 for an individual system. Given the level of accuracy of the estimates, this is not a significant difference.~~

~~Costs for the satellite systems are based on a septic tank effluent pumping system and community drainfield. Costs include annual inspections, pump out every three years, equipment replacement every 15 years, maintenance and administrative costs, and miscellaneous. In addition, satellite sewer systems would have a modest one-time charge for septic tank installation inspection and account activation.~~

~~**Table X-13—Current and Future Deficiencies and Improvements for Water Facilities**~~

~~Facility/Service~~	~~Year 1995 Deficiencies~~	~~Year 2001 Facility Needs All Alternatives~~	~~Year 2015 Facility Needs All Alternatives~~
~~**Supply Wells**~~	~~**Buena—1 Well**~~	~~**Buena—Backup Well $450,000**~~	~~**None Identified**~~
~~**Pump Station**~~	~~**No Deficiencies**~~	~~**No Improvements Required**~~	~~**No Long Term Improvements Identified**~~
~~**Pipelines**~~	~~**Terrace Heights Main Intertie Needs**~~	~~**Terrace Heights Mains/Interties $1.8M**~~	~~**No Long Term Improvements Required**~~
~~**Reservoirs**~~	~~**No Deficiencies**~~	~~**No Improvements Required**~~	~~**No Improvements Required**~~
~~**Water Treatment Facilities**~~	~~**No Deficiencies**~~	~~**No Improvements Required**~~	~~**No Improvements Required**~~

~~**Table X-14—Current and Future Deficiencies and Improvements for Buena Sewer Facilities**~~

~~Facility/Service~~	~~Year 1995 Deficiencies~~	~~Year 2001 Facility Needs All Alternatives~~	~~Year 2015 Facility Needs All Alternatives~~
~~**Pipelines**~~	~~**Terrace Heights Main Intertie Needs**~~	~~**Terrace Heights Mains/Interties $1.8M**~~	~~**No Long Term Improvements Required**~~

~~**Table X-15—Satellite Management Water Systems: Cost Analysis per Connection**~~

	~~**Rural Settlement**~~	~~**Rural Transitional (Clustered)**~~	~~**Rural Transitional (Nonclustered)**~~	~~**Urban Unincorporated**~~	~~**Individual**~~
~~**Service Connections per System**~~	~~9~~	~~9~~	~~9~~	~~3~~	~~1~~
~~**Annual User Fees per Connection**~~					
~~Reserve Account~~	~~25~~	~~25~~	~~25~~	~~68~~	~~159~~
~~Maintenance, Operations and Administration~~	~~166~~	~~166~~	~~166~~	~~499~~	~~0~~
~~Testing and Energy~~	~~70~~	~~70~~	~~70~~	~~96~~	~~114~~
~~**Debt Payments (principal and interest) on Equipment Installation**~~	~~497~~	~~472~~	~~497~~	~~545~~	~~957~~
~~**TOTAL, Annual User Costs/Connection**~~	~~759~~	~~734~~	~~959~~	~~1,208~~	~~1,230~~

Table X-16—Satellite Management Sewer Systems: Cost Analysis Per Connection

	Rural Settlement	Rural Transitional (Clustered)	Rural Transitional (Nonclustered)	Urban Unincorporated	Individual
Service Connections per System	0	0	0	3	1
Annual User Fees per Connection					
Reserve Account	96	96	96	96	96
Electrical/Energy	17	17	17	17	17
Drainfield, Pump-out, Inspection	100	100	100	100	60
Admin. And Misc.	43	43	43	121	
Debt Payments (principal and interest) on Equipment Installation	794	488	803	764	942
TOTAL, Annual User Costs/ Connection	1,050	1,044	1,059	1,098	1,115

Table X-17 Current and Future Deficiencies and Improvements for Solid Waste Facilities

Facility/Service	Year 1995 Deficiencies	Year 2001 Facility Needs All Alternatives	Year 2015 All Alternatives
Regional Landfills	No Short-Term Deficiencies	1 Regional Landfill or Regional Expansion No estimate from Plan	
Regional Transfer Station	No Short-Term Deficiencies		1 Upper Valley Station $2.07 Million (built) Paid entirely by tip fees
Garbage Pickup	No Short-Term Deficiencies	Increased Operational expenses will be totally offset by rates	Increased Operational expenses will be totally offset by rates
Curbside Recycling Pickup	Curbside program for UGAs	Establish One Pickup Day Per Month Cost to totally offset by rates collected through municipal programs	Establish One Pickup Day Per Month Cost to be totally offset by rates collected through municipal programs
Rural Recycling	Some Short-Term Deficiencies	Establish 5 new Drop-Offs No funds allocated	Establish 5 New Drop-Offs No funds allocated

~~Solid Waste Facilities~~
~~Solid waste system improvement needs to handle anticipated growth are the same under all the alternatives. A summary of the existing and future solid waste facility deficiencies, needed improvements, and estimated costs are shown in Table X-17.~~

~~Private Utilities~~

~~Electrical Utilities~~
~~Benton REA and Pacific Power continually research means to expand supply and upgrade equipment since the law requires utilities to service all customers requesting service. Utilities are not allowed to limit development by discriminating among customers. Benton REA and Pacific Power have a territorial agreement that minimizes duplication of service areas and promotes coordination of line extensions, looping of facilities, and other facility improvements.~~

~~System planners for both utilities design and build their systems to follow population and employment growth projections based on County and city plans. The electricity load is determined from these plans and projections. An electric system plan is then developed to serve those loads at the reliability level prescribed by the individual utility, taking into account environmental, economic, financial, and operational factors. Utility construction is coordinated with the appropriate jurisdictions and agencies and is typically phased in as actual growth occurs.~~

~~Future electrical service plans are not only designed to provide for future growth and accommodate new and increased load. They also include changes to the existing systems to improve reliability, power quality, and looping of the system for redundancy backup service.~~

~~Existing facilities of Pacific Power & Light place no restrictions on normal residential, commercial or industrial growth, and major industries and institutions can be readily accommodated. The electrical utility has a well developed backbone transmission system which already serves most of Yakima County.~~

~~The utility takes a proactive approach to system capacity, developing its system in anticipation of eventual growth. In general, Pacific Power is very supportive of economic growth and diversification, and tries to avoid being an impediment to the area's economic growth and vitality. The utility has an active "Power Quality Program," and works with industries that have high reliability requirements to accommodate their needs. While the utility has an abundant supply of energy, its demand-side resource management policy encourages conservation to assure continued availability of power to accommodate new growth and keep the cost low.~~

~~Transmission for a 115,000 volt system can be accommodated on a single pole structure that uses the road right-of way. A substation capable of serving 10,000 residential customers typically requires no more than 2 acres, and is compatible with virtually any adjacent land use. One possible exception to this would be ballfields. Although substations are fenced and not energized below nine feet, and are~~

~~generally impenetrable, persons attempting to retrieve stray balls might be tempted to try to circumvent these protections.~~

~~Natural Gas~~

~~Cascade Natural Gas serves areas along I-82 and most of the cities in Yakima County. The natural gas supply system meets existing demands of residential, commercial, and public customers.~~

~~*Northwest Pipeline* On occasion, Northwest receives a request from a private industrial operation for a direct hook-up to their pipeline network. In these cases, Northwest develops a cost estimate for the construction of the pipeline, valves, and other facilities necessary to deliver gas to the industry requesting service. Then the private operation must decide whether the cost savings of direct supply will offset the cost of the hook-up improvements.~~

~~No direct service requests have been granted recently. Granting of future or pending requests may be contingent upon the grantee funding all necessary improvements.~~

~~*Cascade Natural Gas* According to Cascade's Natural Gas Utilities Element (June 1993), the natural gas supply system in Yakima County fully meets existing demand. To accommodate future demand, the maximum capacity of the existing distribution system can be increased as required by one or more of the following:~~

~~1. Increasing distribution and supply pressures in existing lines~~

~~1. Adding new distribution and supply mains for reinforcement~~

~~2. Increasing existing distribution system capacity by replacement with larger sized mains.~~

~~3. Adding district regulators from supply mains to provide additional intermediate pressure gas sources to meet the needs of new development.~~

~~Future utility needs should be anticipated and planned for in advance. Yet connection to CNG's distribution system is driven by demand. This means that connections cannot be planned in advance. New customer hookups to the distribution system is governed by CNG's tariffs as filed with and approved by the WUTC.~~

~~Developers should consult Cascade Natural Gas if their proposed development will require natural gas. The developer should not automatically assume that service is available without checking. Cascade Natural Gas will build to any customer in its service area provided they meet its financial feasibility formula criteria. CNG will serve other customers if they are willing to contribute to the cost of extending the lines. Those contributions may be refundable; if additional customers connect to the same main, part of the contribution may be reimbursed. To serve development outside its service area, the utility~~

~~will apply for a "certificate of convenience" from the Public Utilities Commission to include the area within its service area, if the proposed development meets the financial feasibility criteria.~~

~~Telecommunication Utilities~~

~~The rapidly changing telecommunications industry has transformed the way service is delivered. Cellular and fiber optics are blurring the distinctions that separate data, video and voice technologies. As a result, assessing the future configuration of telecommunications service is very different.~~

~~Telephone~~

~~The 1984 Bell Telephone divestiture has dramatically increased customer service options. Franchises now offer local and some long distance telephone service, and long distance calls between regions are handled by customer-selected private firms.~~

~~According to U.S. West, the delivery of telecommunication services sometimes does not coincide with the exact location of customers. Many of the telecommunication facilities, including aerial and underground, are co-located with those of the electrical power provider.~~

~~Cellular Communications~~
~~Both Cellular One and United States Cellular currently own and operate cell sites in the city of Yakima. Both the number of cell sites and the customer count are considered proprietary information by the cellular companies. Even so, local governments provide input to the siting process through their approval and conditioning responsibilities within their jurisdictions. Siting issues are expected.~~

~~Cable Television~~
~~Cable follows the electrical and telephone lines. In order to be installed, an easement must be granted. The available provider breaks even financially if there are 30 or more potential customers per linear mile of cable. Anyone within 200 feet of the cable can hook up; otherwise, there would be an additional charge to the customer. Wireless cable is regulated by the FCC, and does not come under local regulation since it does not use public rights-of-way.~~

~~An alternative to TCI and Northwest Cable services is a satellite dish, which requires costly installation. As technology improves, other choices will become available.~~

9.13 UTILITIES~~:~~ GOALS AND POLICIES

The goals and policies listed in this element pertain to Yakima County, such as: Yakima County as a whole, City of Yakima's UGA including West Valley. The goals and policies are identified as follows:

- County-wide Utilities Goals and Policies – UT-X.XX
- Yakima UGA Urban Land Use Goals and Policies – YKUT-U-X.XX
- West Valley Neighborhood Plan - WNVP

GENERAL UTILITY

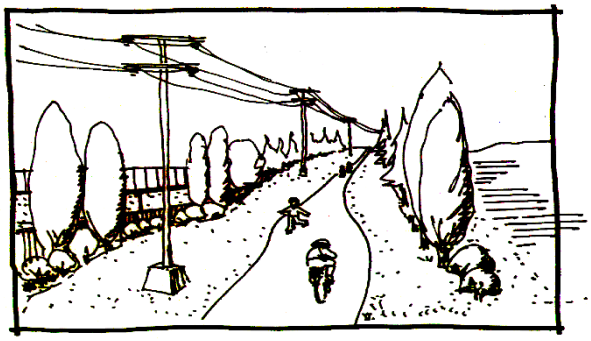
PURPOSE STATEMENT UT 1

The County must plan for the utility and land use needs in a consistent manner, to ensure that growth occurs in areas which can be served by necessary utilities. This requires coordination with service providers for the location and timing of utility installation. This goal and its policies define how the coordination should take place.

GOAL UT 1:	**Ensure that necessary and adequate utilities are provided to all development in Yakima County in a cost effective manner consistent with ~~Plan 2015~~ Horizon 2040.**
POLICIES:	
UT 1.1	Adopt and implement separate utility level of service standards for urban and rural areas.
UT 1.2	Ensure consistency of utility elements and utility plans by coordinating plans among adjacent jurisdictions.
UT 1.3	Develop interlocal agreements to coordinate procedures and standards in urban growth areas.
UT 1.4	Develop a coordinated process for siting regional utility facilities in a timely manner.
UT 1.5	Consult with service providers as part of the process of identifying land useful for future planned development and for the sharing of utility corridors.
UT 1.6	Coordinate the installation of utility facilities among utility service providers and with other infrastructure providers.
UT 1.7	Provide the private utilities with up-to-date County planning materials such as land use categories, population forecasts, etc. so that their utility delivery plans are accurate.

PURPOSE STATEMENT UT 2

Utility corridors, especially above-ground utilities, can have an impact on the natural environment. Camouflaging or screening utility structures and opening up utility corridors for trail or other recreational use can lessen the utilities' visual and physical impact on the natural environment. This goal and its policies describe steps that can be taken to lessen the impact of utilities.

GOAL UT 2:	Reasonably protect the physical and natural environment while providing utilities.
POLICIES:	
UT 2.1	Whenever possible, utility corridors should be made available for recreational use when such use does not negatively impact adjacent land uses and does not pose a public health or safety hazard, or result in property damage on adjacent lands.
	
	Figure 9.13-1 Recreational Use in a Utility Corridor. (UT 2.1)
UT 2.2	Encourage private utility structures (e.g., electric substations) to have design and screening that is compatible in bulk and scale with surrounding land uses.
UT 2.3	Assist and facilitate the siting of linear transmission facilities and utility-related infrastructure in a manner consistent with ~~***Plan 2015***~~*Horizon 2040* through land use planning and development review policies and procedures. ~~{Amended Ord. No. 1-2012}~~
UT 2.4	Encourage energy resource development in locations within Yakima County that take advantage of the County's energy resources, existing infrastructure, and also are sited to minimize environmental impacts. ~~{Amended Ord. No. 1-2012}~~
UT 2.5	Consider low impact development and other appropriate "green" building standards and guidelines to comprehensively address design elements such as transportation and storm water management utility infrastructure, in order to reduce costs and retain natural hydrology and processes, using appropriate techniques such as limiting impervious surfaces, clustering, and preserving open spaces and forests.

PURPOSE STATEMENT UT 3

Utility services are costly to the community. To the extent that location and timing of utility service installation can be coordinated, the community will save on the cost of utility provision. This goal and its policies suggest coordination methods that may be cost effective over the long term.

GOAL UT 3:	Ensure cost effective provision of utility services.
POLICIES:	

UT 3.1	Utility services should be provided in accordance with approved utility comprehensive plans that are consistent with future population projections and the preferred land use categories defined by ~~*Plan 2015*~~***Horizon 2040***.
UT 3.2	Solicit community input prior to county approval of private utility facilities which may significantly impact the surrounding community.
UT 3.3	Support electricity, natural gas, and water efficiency programs that include quantitative objectives for reducing energy and water consumption, specific programs to achieve objectives (including regular audits of facilities), a time schedule for implementation, identification of responsible departments, energy accounting, and identified sources of funding.
UT 3.4	Require timely and effective notification of interested utilities of road construction projects, and of maintenance and upgrades of existing roads to facilitate coordination of public and private utility trenching activities.
UT 3.5	Require that utility permits be considered simultaneously with the proposals requesting service and, when possible, approval of utility permits when the project to be served is approved.
UT 3.6	Preserve right-of-way needed for irrigation system maintenance.

WATER SUPPLY AND SEWAGE DISPOSAL

PURPOSE STATEMENT UT 4

~~*Plan 2015*~~***Horizon 2040*** *should define where water and sewer systems are appropriate.* ~~*Then depending upon density and location of future development, different solutions for utility provision can be provided. The following policies offer guidance regarding what type of systems are appropriate for each land use category.*~~

GOAL UT 4:	**Ensure that water supply and sewage disposal facilities throughout the County support the desired land use, and are consistent with other goals, policies and objectives of** ~~***Plan 2015***~~ ***Horizon 2040*****.**
POLICIES:	
UT 4.1	Follow the guidance in ~~Table I-2, the Development Matrix for Ownership and Management of Satellite Water and Sewer Systems,~~ YCC, Title 19, Tables 19.25-1 Water and 19.25.2 Sewer to ensure that the level of water and sewer service is appropriate and consistent with the land use goals and policies for each area of the County ~~{Amended 6/16, Replaced Table I-2}.~~
UT 4.2	Specific physical location and site suitability should determine which of the "required" water and sewer utilities listed in ~~Table I-2~~ YCC, Title 19, Tables 19.25-1 Water and 19.25-2 Sewer is the most appropriate. ~~{Amended 6/16, Replaced Table I-2}.~~

UT 4.3	Utilities for master planned resorts and new communities should be consistent with the guidance in ~~Table I-2~~ YCC, Title 19, Tables 19.25-1 Water and 19.25-2 Sewer for the zoning designations in which they are located. ~~{Amended 6/16, Replaced Table I-2}.~~
UT 4.4	Existing water companies, water districts, and sewer districts should be used if they have capacity to serve~~, but new districts and companies should be prohibited or at least discouraged.~~

~~***TABLE I-2: DEVELOPMENT MATRIX FOR OWNERSHIP AND MANAGEMENT OF SATELLITE WATER AND SEWER SYSTEMS***~~

~~***Number of Lots/Connections***~~	~~***2***~~	~~***3–4***~~	~~***5–8***~~	~~***9+***~~
		~~***WATER***~~		
~~*URBAN*~~	~~*3 Options:*~~ ~~• *City;*~~ ~~• *Existing Public Water System,***~~ ~~• *Exempt**~~	~~*3 Options:*~~ ~~• *City;*~~ ~~• *Existing Public Water System**;*~~ ~~• *Yakima County under state approved SMA program****~~		
~~*RURAL*~~ ~~*Rural Transitional*~~ ~~*Rural Settlement*~~ ~~*Master Planned Resorts*~~	~~*3 Options:*~~ ~~• *Existing Public Water System**;*~~ ~~• *Private*~~ ~~• *Exempt**~~	~~*2 Options:*~~ ~~• *Existing Public Water System**;*~~ ~~• *New Public Water System***~~	~~*3 Options:*~~ ~~• *Existing Public Water System**;*~~ ~~• *County under state approved SMA program***;*~~ ~~• *Non-County SMA*~~	~~• *State approved SMA****~~
		~~***SEWAGE***~~		
~~*URBAN*~~	~~*City, County or Other State Approved Operator*~~			
~~*RURAL*~~ ~~*Rural Transitional*~~ ~~*Rural Settlement*~~ ~~*Master Planned Resorts*~~	~~• *Individual on-site septic only*~~		~~*2 Options:*~~ ~~• *County; or*~~ ~~• *individual on-site septic if public water is available*~~	~~*County*~~

~~** Exempt means that the public water system is exempt from being owned/operated by a city or the County, as provided for under Policy note #7 below. Systems serving two lots/connections are also exempt from state DOH requirements.*~~
~~*** Existing & New public water system means state-approved water system.*~~
~~**** Nob Hill Water Association and Yakima County are currently the Washington State Dept. Of Health approved SMAs.*~~
~~*{Table I-2 amended 10/13/09 Ord. 3-2009}*~~

~~*Policy Notes:*~~
~~*1. UGA boundaries and rural land use categories will determine which of the required water and sewer utilities are most appropriate.*~~
~~*2. Existing public water systems and sewer districts should be used if they have capacity and ability to serve. New public water purveyors should be discouraged.*~~
~~*3. Minimum Fire Flow (for houses under 3600 sq ft): Ability to deliver 1,000 gallons per minute for 30 minutes, @ 20 psi. Urban: Require minimum fire flow for 3 or more lots. Rural: Require minimum fire flow water where 5 or more lots are created, if any lot is less than 1/3 acre, or for any development where 9 or more dwelling units or lots are created.*~~
~~*4. The size of individual lots must be at least 1/3 to 1/2 acre depending on soils, even when public water supply is available, unless a community sewer system is used. Public management and operation of a community sewer system is required by state law, except as approved by the Dept. of Ecology (see WAC 173-240-104).*~~
~~*5. Urban only: Yakima County will only own or operate community water systems of 3 or more connections/lots; systems with 2 lots/connections will be required, where appropriate, but these systems are exempt from state public water system requirements.*~~
~~*6. Rural only: Yakima County or another approved and qualified Satellite System Management Agency (SMA) will operate and manage water systems with 5-8 connections/lots. The County or other SMA (see LU R 3.4) will be the sole owner and manager for water systems with nine or more connections. Public water systems serving 3 to 4 lots/connections will be required, as appropriate, but systems serving two lots/connections are exempt from state public system water requirements.*~~
~~*7. The Satellite System Management Agency (SMA) must be an established water service provider that has been approved by the State of Washington. If one is not available, the Washington State Department of Health may conditionally approve a community water system, provided that it has the financial resources and sufficient management to provide safe and reliable service, and meets other requirements of RCW 70.119A.060.*~~

PURPOSE STATEMENT UT 5

~~*A built in system of checks and balances to measure anticipated future development needs against the available water supply should be implemented.*~~ *These policies develop guidelines to promote a checks and balances system while encouraging efficient water use and water resource planning.*

GOAL UT 5:	Ensure that future development does not exceed the available amount of raw water.
POLICIES:	
UT 5.1	Encourage water resource planning to promote more efficient management of both ground and surface water resources. ~~{Amended 12/98. Previous Policy UT 5.2 deleted, policies UT 5.2 through UT 5.4 renumbered.}~~
UT 5.2	Develop specific guidelines for determining the adequacy of water supplies proposed to serve new parcels and new structures and uses on existing parcels.
UT 5.3	In conjunction with the ~~Yakima River Watershed Council and the~~ irrigation districts, evaluate the implications of the use of irrigation water for residential landscaping.
UT 5.4	File on unappropriated water rights within urban growth and transitional areas.

UT 5.5	Develop a water resource system that addresses the need for ~~rural~~domestic water for development in unincorporated Yakima County ~~and~~that meets the water availability requirements of state law.

PURPOSE STATEMENT UT 6

Rural area residents depend on groundwater as their source of drinking water. ~~Yet g~~Groundwater contamination is a major concern in the County. The purpose of this section is to minimize the risk to groundwater for new development, and to identify and mitigate existing threats to the quality of groundwater.

GOAL UT 6:	Protect the quality of groundwater used for domestic water supplies.
POLICIES:	
UT 6.1	Develop~~Enforce~~ existing regulations regarding well construction standards~~and abandonment.~~
UT 6.2	Implement a long-term groundwater quantity and quality monitoring program for basins that provide domestic water supplies.
UT 6.3	Minimize impacts of development and agricultural practices on groundwater supplies.
~~**UT 6.4**~~	~~Establish and enforce septic tank regulations.~~
UT 6.5	Maintain~~Develop~~ and enforce a wellhead protection program.

PURPOSE STATEMENT UT 7

The city of Yakima takes most of its drinking water from the Naches River, just below the town of Naches. To protect this important source of drinking water, Yakima County should ensure that land use in the Naches and Tieton watersheds does not impact water quality in the tributaries that drain into the Naches River.

GOAL UT 7:	Protect the quality of surface water used for potable water supply.
POLICIES:	
UT 7.1	Support cooperation with other governmental agencies in conducting source identification studies in the Lower Naches River watershed (all lands draining into the Naches River below the confluence with the Tieton River) to determine the cause of elevated pH levels and water temperature.
UT 7.2	Encourage the use of best management practices in the Lower Naches River watershed, especially those targeted to reducing pH and temperature levels.
UT 7.3	Support cooperative efforts to develop and implement a comprehensive water quality monitoring program for the Upper Naches River (above the confluence of the Naches and Tieton rivers).
UT 7.4	Support water quality monitoring efforts in the Upper Naches River and Tieton rivers, and make information available for these purposes.
UT 7.5	Participate with other agencies to develop and implement water quality information and educational programs for recreational users of the Upper Naches and Tieton River watersheds.

UT 7.6	Participate in cooperative forest watershed management programs designed to protect water quality.
UT 7.7	Participate in cooperative programs to educate recreational users and residents in the Naches and Tieton River watersheds about proper sanitary practices.

PURPOSE STATEMENT UT 8

A key component of water quality management is to ensure the health, safety and welfare of Yakima County residents. To this end, existing problems must be mitigated, and new water and sewer systems must be installed in a manner which minimizes the risk to public health and safety. This goal and its policies encourages water quality management to meet this objective.

GOAL UT 8:	**Ensure the safety of public and private potable water systems.**
POLICIES:	
UT 8.1	Implement a satellite management program for new or failing water systems.
UT 8.2	Ensure that water service for new development complies with all applicable laws and regulations, including operating under an approved water system plan.
UT 8.3	Review water plans to ensure that they are compatible with land use planning.
UT 8.4	Require water systems to satisfy current regulations when expanding service to additional customers, with the new customers paying for their fair share of the cost of meeting current standards or reducing the level of service available to existing customers (e.g., provide funds for future replacement of undersized lines, looping systems to increase fire flow pressure, loss in pressure on maximum demand day).
UT 8.5	Support the efforts of privately-owned public water systems to bring systems up to public standards, at which point the County will consider owning and operating them, if requested. ~~{Amended 12/98}~~

PURPOSE STATEMENT UT 9

Water conservation should play a major role in a community's water resource management. Two ways to meet this goal are educational training on voluntary water use reduction and requiring the installation of water conserving devices in new construction. This goal and its policies describe these methods and encourage them as part of a water conservation program.

GOAL UT 9:	**Promote water conservation.**
POLICIES:	
UT 9.1	Encourage water purveyors to create and implement water conservation education programs.
UT 9.2	Promote~~Require~~ water conserving fixtures in new buildings.
UT 9.3	Promote the use of water conserving landscaping.

PURPOSE STATEMENT UT 10

In order to reduce wastewater and the costs associated with treating it, water conservation should play a major role in a community's water resource management. ~~*Two ways to meet this goal are educational training on voluntary water use reduction and requiring the installation of water conserving devices in new construction. This goal and its policies follows the water conservation techniques to reduce wastewater that needs to be treated.*~~

GOAL UT 10:	**Minimize the amount of wastewater that requires treatment.**
POLICY:	
UT 10.1	Follow policies UT 9.1-9.3, which are designed to conserve domestic water.

PURPOSE STATEMENT UT 11

To protect the health, safety and welfare of its citizens, Yakima County should ensure the quantity and quality of its water resources. This goal and its policies addresses this issue by requiring specific development standards for water and sewer services throughout the County.

GOAL UT 11:	**Protect surface and ground water quality and quantity.**
POLICIES:	
UT 11.1	Development proposed for individual wells and septic systems should be allowed only at densities which meet self-sufficiency standards.
UT 11.2	The intensity to which a specific parcel can be used should be determined, to a large degree, by regulations pertaining to environmental, health, and safety concerns.
UT 11.3	In urban areas ~~or Rural Settlements~~ where sewer is not currently available but may be available in the future, developers shall~~may~~ be required to sign sewer hookup covenants and install dry lines from the septic systems to the future sewer easement. ~~{Amended 10/13/09 Ord.3-2009}~~
UT 11.4	Encourage the appropriate use of community/public water and sewerage systems in Rural Transitional and Rural Settlement areas and other areas where small lots are allowed. ~~{Amended 10/13/09 Ord.3-2009}~~
UT 11.5	Require urban density development within the urban growth area to be served by public sewer service.
UT 11.6	Municipal Public sewer service should not be extended outside the urban growth area unless:
	• Public sewer service will remedy an existing ground water contamination or other health problem by replacing septic systems and community on-site sewage systems; or
	• A formal binding agreement to service an approved planned development was made prior to the establishment of an Urban Growth Area; or
	• It is mandated by the State Department of Health, Ecology, or other regulatory agency with jurisdiction over local ground water quality.
UT 11.7	Interim on-site approved septic systems may be permitted within the urban growth area if public sewer service is not available, only if:
	• Ground water protection policies are enforced; and

	• The design incorporates stub-outs to facilitate future hook-up; and
	• The applicant agreed not to object to future Local Improvement Districts (LID) or hook-up actions; and
	• Land use densities and soil conditions allow for safe operation of the septic system.
UT 11.8	Sewage system expansion must be consistent with Yakima County's ~~*Plan 2015*~~***Horizon 2040*** and other land use planning documents, as well as the sewage treatment plant capacity.
UT 11.9	Review current local planning and interlocal service agreements and restructure governmental and financing mechanisms as needed to ensure timely, scheduled access to regional sewer services.

URBAN WATER

PURPOSE STATEMENT UT 12

To protect the health, safety and welfare of its citizens, Yakima County should ensure the quantity and quality of its water resources. This goal and its policies addresses this issue by requiring specific development standards for water and sewer services in unincorporated urban areas.

GOAL UT 12:	**Ensure protection of public health, safety and welfare by safeguarding surface and groundwater resources.**
POLICIES:	
UT 12.1	Require all new urban development to connect~~ion~~ to public drinking water supplies ~~where available~~, or provide proof of water availability, both legal and physical, prior to the County's land use or building permit approval.
~~**UT 12.2**~~	~~Establish a well tracking program for all wells with a projected yield less than the threshold for a water right permit under state law.~~
~~**UT 12.3**~~	~~Establish minimum water quality and quantity standards for community wells.~~
UT 12.4	Encourage use of community (public) water supply wells where area wide public water supply systems are not available.
UT 12.5	Establish well location and construction standards that will facilitate future interconnection with other public water supply systems.
~~**UT 12.6**~~	~~Establish community well monitoring/testing, operation and maintenance programs.~~
UT 12.7	Encourage development or consolidation of public water supplies through:
	• County application for water rights from the state for cluster development;
	• Developing financing mechanisms for public water supplies;
	• Establishing latecomer agreements to compensate and encourage use of existing public water supplies.

RURAL WATER

PURPOSE STATEMENT UT 13

To protect the health, safety and welfare of its citizens, Yakima County should ensure the quantity and quality of its water resources. This goal and its policies addresses this issue by requiring specific development standards for water and sewer services in rural areas.

GOAL UT 13:	Ensure groundwater resources are safeguarded to protect public health and welfare.
POLICIES:	
UT 13.1	Limit number of wells penetrating the aquifer to protect groundwater quality and supply.
UT 13.2	Encourage use of community (public) water supply.
~~**UT 13.3**~~	~~Establish monitoring/testing and maintenance program for community wells.~~
~~**UT 13.4**~~	~~Establish a well tracking program for all wells under 5,000 gallons per day.~~
~~**UT 13.5**~~	~~Establish well location standards.~~
~~**UT 13.6**~~	~~Establish construction standards for community wells.~~
~~**UT 13.7**~~	~~Evaluate Ecology's well construction standards.~~
UT 13.8	Encourage development and consolidation of community water supplies through:
	• County application for water rights for cluster development;
	• Establishing financing methods for public water supply;
	• Developing ~~latecomers~~latecomers' fees to compensate/encourage use of existing public water supplies.

NATURAL GAS

PURPOSE STATEMENT UT 14

Natural gas can supplement electric power needs in the County. This goal and its policies encourages its use through cooperation with the utility provider in the installation of new lines in conjunction with road improvement or new construction projects.

GOAL UT 14:	Coordinate natural gas service within Urban Growth Areas that have or desire service.
POLICIES:	

UT 14.1	Foster the extension of natural gas distribution lines to and within Urban Growth Areas. ~~that are served by natural gas.~~
UT 14.2	Coordinate land use and facility planning to allow eventual siting and construction of natural gas distribution lines within rights-of-way which are being dedicated or within roads which are being constructed or reconstructed.

SOLID WASTE

PURPOSE STATEMENT UT 15

~~*The cost of solid waste management is becoming increasingly expensive.*~~ *This goal and its policies encourage continued improvements in methods of reducing landfill waste and recognizes that planning for future land needs is an important cost-control method.*

GOAL UT 15:	**Manage the solid waste system in a manner that cost effectively preserves the environment and protects the public health.**
POLICIES:	
UT 15.1	Identify and adopt measures to improve the energy efficiency of recycling and trash collection, and implement feasible and effective measures.
UT 15.2	Review and revise the County Solid and Moderate Risk Waste ~~Comprehensive~~ Management Plan at least every five years; continue to assess the need for solid waste transfer facilities, recycling centers, and materials recovery facilities, identifying potential locations and suggesting revisions to the zoning code as needed.
UT 15.3	Provide an environmentally safe bio-solids management program to provide for present and future bio-solids utilization needs.

PURPOSE STATEMENT UT 16

~~*Solid waste management is expensive and facilities are difficult to site.*~~ *In order to reduce the amount of waste that ends up in landfills, this goal and its policies encourages recycling and educational programs designed to reduce and minimize waste.*

GOAL UT 16:	**Improve existing waste reduction/recycling programs.**
POLICIES:	
UT 16.1	In developing and implementing waste reduction/recycling programs, strive to maximize the use of local markets, capabilities, and resources.

UT 16.2	Establish requirements for the use of recycled and used materials in construction activities undertaken by the County or its contractors.
UT 16.3	Provide convenient recycling opportunities to the public to maximize participation in waste reduction/recycling programs.
UT 16.4	Encourage owners of new and existing multifamily, commercial and industrial buildings to provide space for separating and storing recyclable materials.
UT 16.5	Encourage recipients of construction and demolition permits to separate, recycle, and/or reuse demolition debris.
UT 16.6	Encourage applicants for construction permits to use recycled and used materials, where practicable.
	• Provide information on how and where to obtain used and recycled materials.
	• Assess the economic, legal, and technical feasibility of requiring the use of specific recycled or used materials in certain types of construction.

ELECTRICITY

PURPOSE STATEMENT UT 17

System planners for electrical utilities design and build their systems to follow population and employment growth projections. The electrical system is planned and designed to serve the electrical loads that are projected, based on county and city plans. Construction is typically phased in as growth actually occurs. Future electrical service plans are designed for not only the new and increased load from future growth, but changes to improve reliability and power quality. Availability of low cost, reliable electrical power is an important consideration for many industries. Transmission lines are typically sited on a single pole, located within the road right-of-way. Electrical substations are fenced, are generally impenetrable, are not energized below nine feet, and are generally compatible with most other land uses.

GOAL UT 17:	**Promote the delivery of electrical services, on demand, within the County consistent with utility's public service obligations.**
POLICIES:	
UT 17.1	Yakima County and the utilities should identify and preserve corridors to accommodate future electric power transmission and distribution lines. Corridors designation should include:
	• Identification of appropriate shared uses;
	• Recognition of County roads as utility corridors; and
	• Evaluation of proposed facility plans on a system-wide basis, rather than project by project.
UT 17.2	When new, expanded or upgraded transmission is required, use of existing corridors should be evaluated first. Yakima County should facilitate appropriate corridor sharing among different utility types and owners.
UT 17.3	Yakima County should encourage underground placement of existing distribution lines through such tools as local improvement districts.

UT 17.4	Install new utilities lines underground where feasible.[WVNP]
UT 17.5	Work with electrical utility providers and neighboring jurisdictions to meet regional service needs and to accommodate future facility improvements.
UT 17.6	Ensure there are sufficient electric utility facilities that are sufficient to support economic development. Foster cooperation among private enterprise, the County, and the utility provider.

TELECOMMUNICATIONS

~~*Telecommunications include electronic transportation of voi ce, data, video and multimedia via both wire and wireless media.*~~

PURPOSE STATEMENT UT 18

Telecommunications are important to Yakima County's economic future. This goal and its policies supports the installation of telecommunication systems, encourages coordination with service providers, and seeks to reduce telecommunications' impact on the physical and natural environment.

GOAL UT 18:	**Promote reliable and cost-effective telecommunication systems to facilitate communication among members of the public, public institutions, and business.**
POLICIES:	
UT 18.1	The County's development regulations should be flexible and receptive to innovations and advances in telecommunications technology.
UT 18.2	Minimize visual impacts when authorizing the siting of new telecommunication facilities by requiring low visibility technology, including:
	• Reduced heights;
	• Low mass/slender profile poles;
	• Use of existing towers and buildings;
	• co-locating multiple users on a single site/facility; and,
	• requiring removal of abandoned ~~abandonment of older~~ telecommunication sites when new replacement site approvals are authorized.

- ***Yakima Urban Growth Area Utilities Goals and Policies***

Water:

GOAL YKUT-U 1	Provide adequate water services within the urban area in a manner that is environmentally sensitive, safe and aesthetically compatible with surrounding land uses.

POLICIES:	
YKUT-U 1.1	Coordinate with other jurisdictions and suppliers in the Urban Area to ensure a reliable, economic source of water and to address the long-term regional water demand needs of all of the area's agencies and suppliers.
YKUT-U 1.2	Encourage the conservation of water resources and undertake actions, when possible and appropriate, to conserve water and water resources.

Wastewater:

GOAL YKUT-U 2:	Protect public health and environmental quality through appropriate and efficient design, installation and maintenance of sanitary sewer facilities.
POLICIES:	
YKUT-U 2.1	Work with adjoining jurisdictions, and local purveyors to manage, regulate and maintain the regional sewer systems.

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Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.5.3-1
Terrace Heights Water System

- Wells
- Booster Stations
- Fire Hydrants
- Private Fire Hydrants

Water Lines

- Diameter > 12"
- Diameter 10-12"
- Diameter 6-8"
- Diameter < 6"
- UGA Boundary
- Retail Service Area
- Future Service Area

Parcel 19131442001 will be added to the Retail Service Area

Parcel 19132243001 will be removed from the Retail Service Area

Location Map

0 0.125 0.25 0.5 0.75 1 Miles

March 2017

Yakima County GIS

Yakimap.com

Parcel Lot lines are for visual display only. Do not use for legal purposes.

Sources: Esri, USGS, NOAA

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5/6/2016

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.5.3-2
Gala Water System

Buchanan Rd

Emerald Acres Dr

Brathovde Rd

Hoffman Rd

Winesap Ln

N Johnson Rd

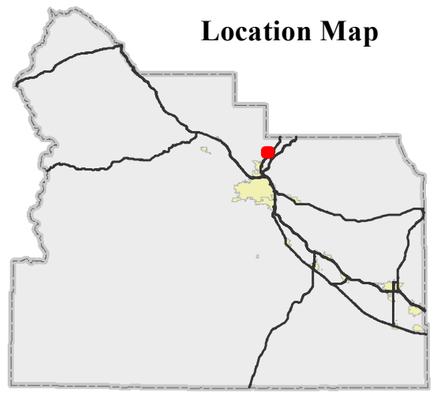
Gala Dr

Rome Rd

Ames Rd

Nagler Rd

Location Map



- Well
- Storage

Water Lines

- Diameter 6-8"
- Diameter < 6"
- Retail and Future Service Area

0 125 250 500 750 1,000 Feet

March 2017

Yakima County GIS

Yakimap.com

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5/6/2016

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.5.3-3
Buena Water System

- Wells
- Fire Hydrants
- Storage
- Water Lines
- Diameter < 6"
- Diameter 6"
- Diameter 8"
- UGA Boundary
- Retail and Future Service Area

0 250 500 1,000 1,500 2,000 Feet

March 2017

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Yakimap.com

N

S

Parcel Lot lines are for visual display only. Do not use for legal purposes.

Location Map

Sources: Esri, USGS, NOAA

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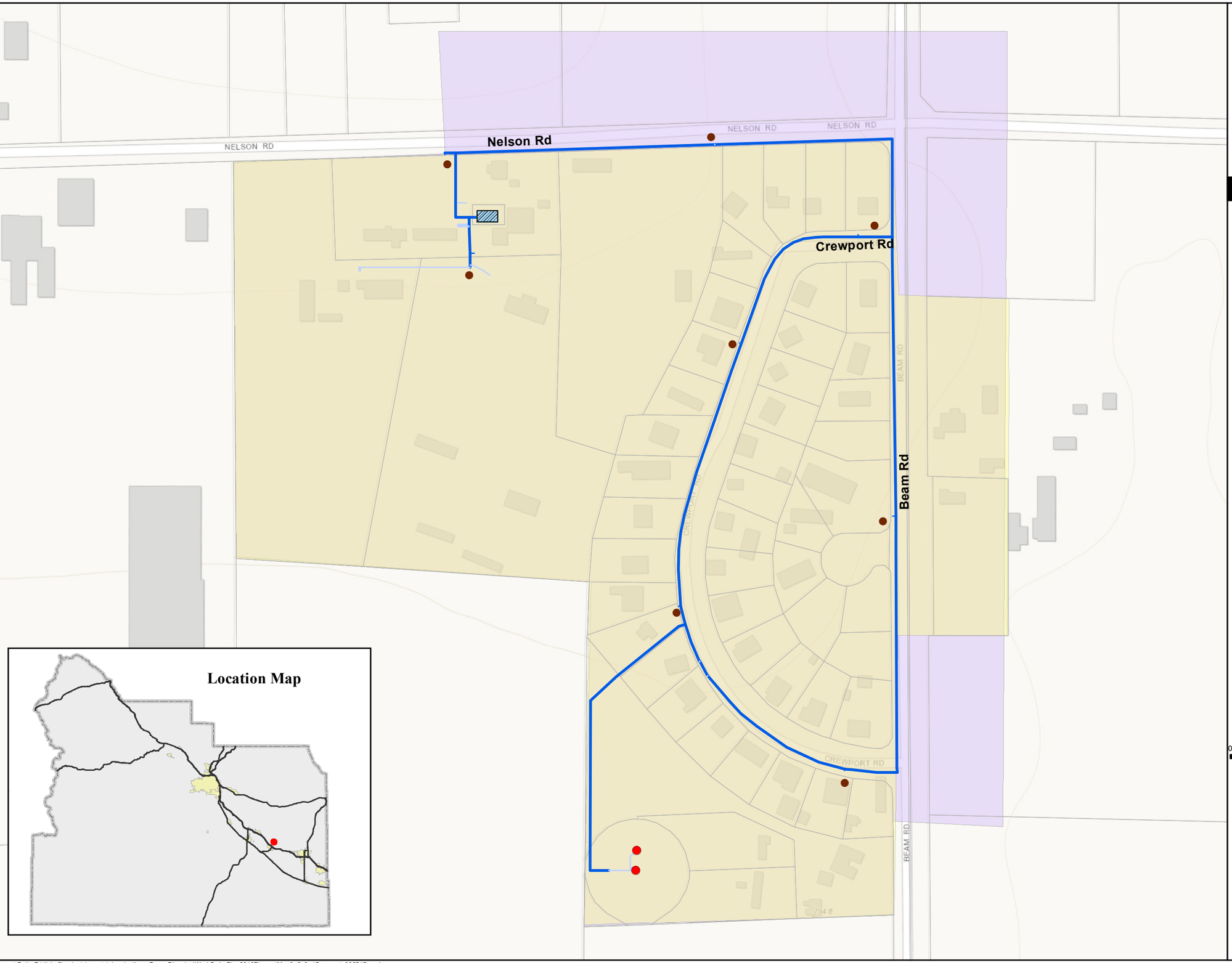
5/6/2016

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.5.3-4
Crewport Water System



- Wells
- Fire Hydrants
- Storage

Water Lines

- Diameter < 6"
- Diameter 6"
- Diameter 8"

- Retail Service Area
- Future Service Area

0 62.5 125 250 375 500 Feet

March 2017

N

S

Yakima County GIS

Yakimap.com

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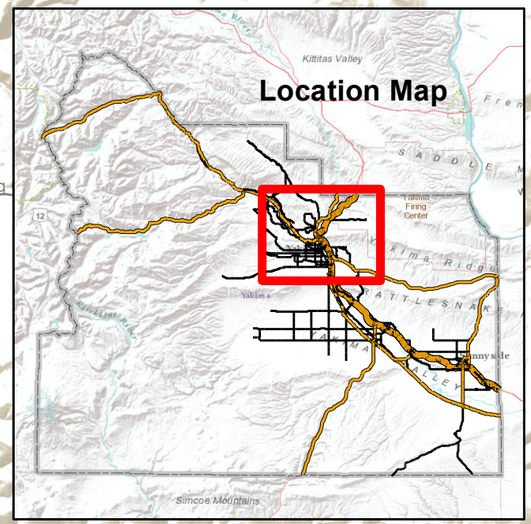
5/6/2016

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.5.3-5
Group B Water Systems
North Yakima County



- B Water Systems
- UGA Boundary
- City Limits

0 1 2 4
Miles

March 2017

Yakima County GIS
Yakimap.com

N
S

Parcel Lot lines are for visual display only. Do not use for legal purposes.

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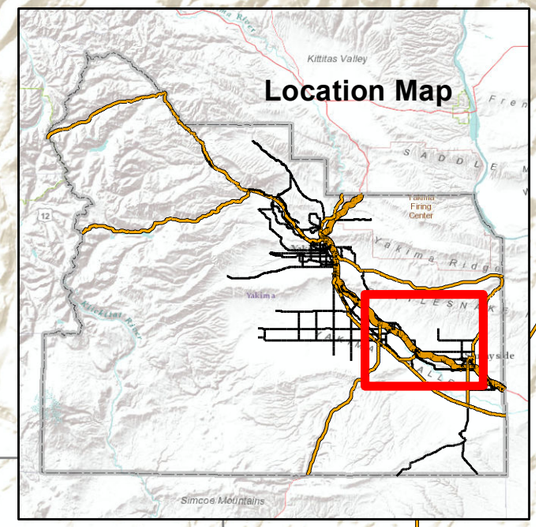
Date: 5/3/2017

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.5.3-6
Group B Water Systems
South Yakima County



- B Water Systems
- UGA Boundary
- City Limits

0 1 2 4
Miles

March 2017

Yakima County GIS
Yakimap.com

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Document Path: R:\disk_5\projects\county\planning\LongRangePlanning\WorkOrderPlan2040Figures\Map9_5_3_6GroupBSouth_050417.mxd

Date: 5/3/2017

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.5.5-1
Nob Hill
Water Association

- Wells
- Storage
- Fire Hydrants
- Water Lines
  - Diameter < 6"
  - Diameter 6"
  - Diameter 8"
  - Diameter > 8"
- Retail and Future Service Area
- UGA Boundary

0 1,200 2,400 4,800 7,200 9,600 Feet

March 2017

Yakima County GIS

Yakimap.com

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Location Map

Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

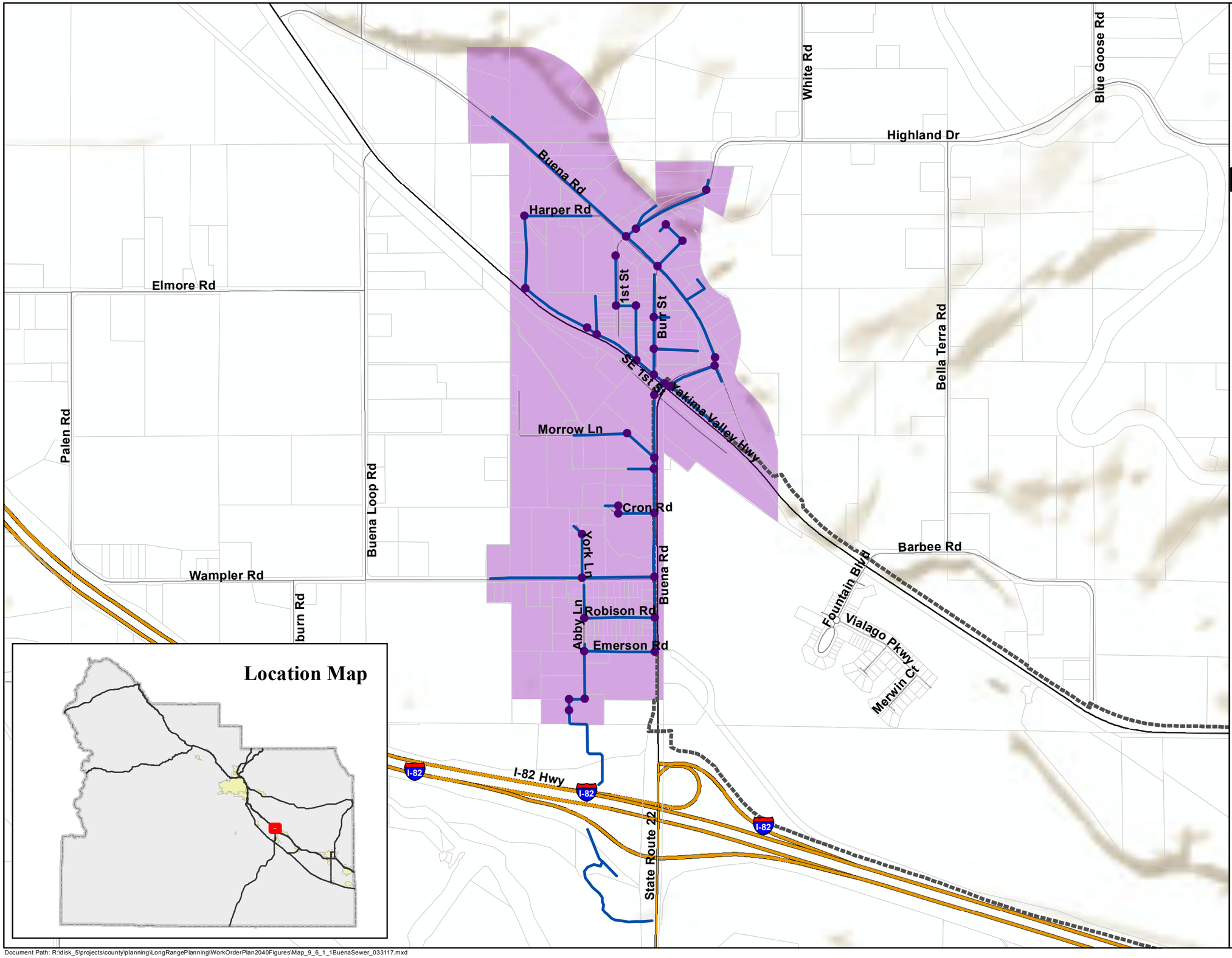
Document Path: R:\disk_5\projects\county\planning\LongRangePlanning\WorkOrderPlan2040Figures\Map9_5_5_1NobHill_032817.mxd

5/6/2016

Utilities Element

HORIZON 2040
YAKIMA COUNTY

Map 9.6.1-1
Buena
Yakima County
Waste Water System



Location Map

- Manhole
- Sewer Lines
- Current Service Area
- UGA Boundary

0 255 510 1,020 1,530 2,040 Feet

March 2017

Yakima County GIS

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4/3/2017

Utilities Element

HORIZON 2040
YAKIMA COUNTY

Map 9.6.1-2
Fairway Estates
Yakima County
Waste Water System

Current Service Area

UGA Boundary

0 125 250 500 750 1,000 Feet

March 2017

Yakima County GIS
Yakimap.com

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S

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Date: 4/3/2017

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.6.1-3
Mtn. Shadows Estates
Yakima County
Waste Water System

N 112th Ave

Wickersham Rd

Summitview Rd

N 102nd Ave

Mountain Shadows Pl

N 101st Ave

N 99th Ave

N 98th Ave

Summitview Ext

Summitview Ave

W Summitview Ave

Orchard Ave

Location Map

Current Service Area

UGA Boundary

0 125 250 500 750 1,000 Feet

March 2017

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Yakimap.com

N

S

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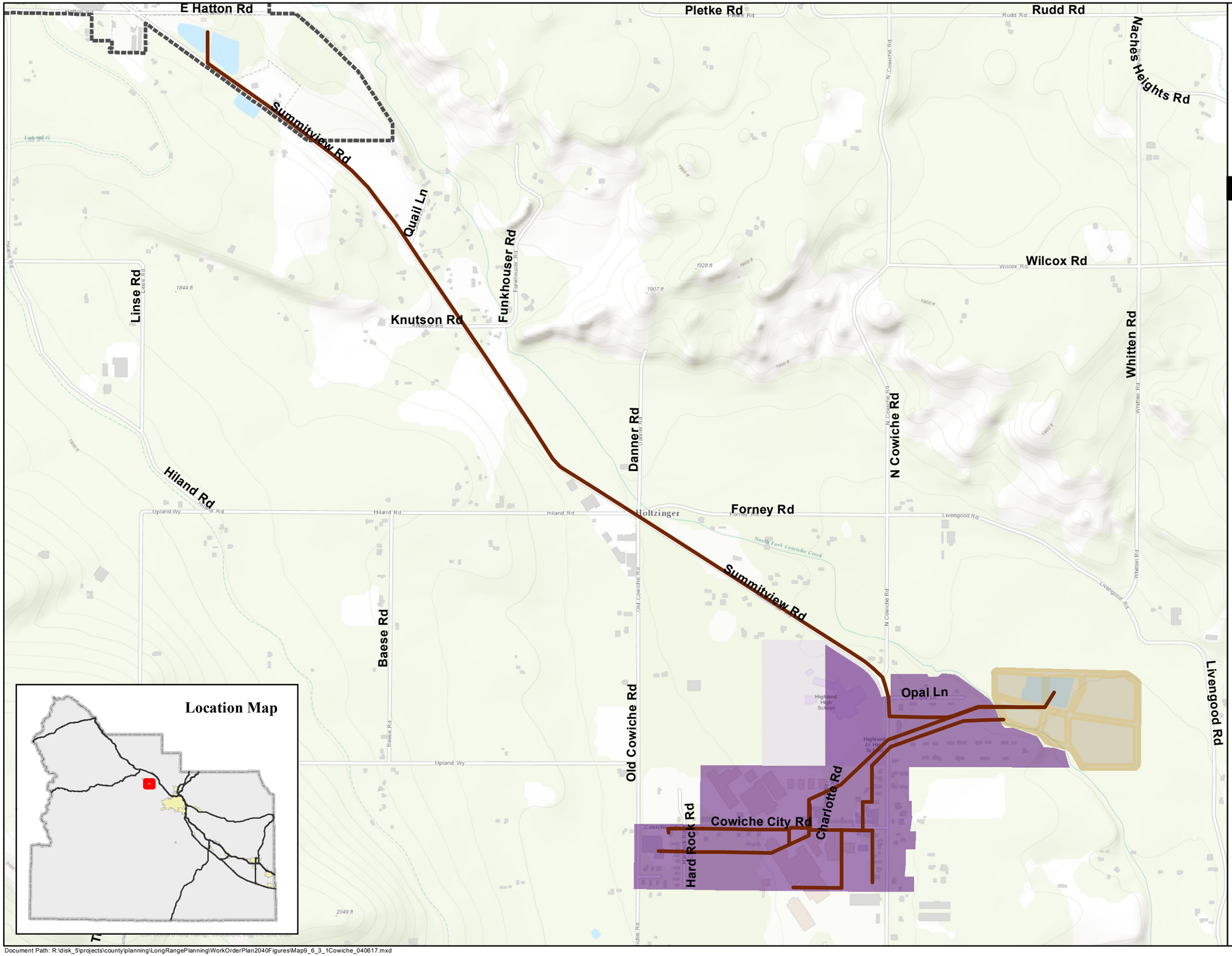
4/3/2017

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.6.3-1
Cowiche Sewer District



- SewerLines
- Service Area
- Sewer Lagoons
- UGA Boundary

0 250 500 1,000 1,500 2,000 Feet

March 2016

Yakima County GIS

Yakimap.com

N

S

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Document Path: R:\disk_5\projects\county\planning\LongRangePlanning\WorkOrderPlan2040Figures\Map9_6_3_1Cowiche_040617.mxd

4/3/2016

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.6.4-1
Terrace Heights Sewer District

- MANHOLES
- Future Service Area
- District Boundary
- UGA Boundary
- City Limits Boundary
- Sewer Lines

0 0.25 0.5 1
Miles

March 2017

Yakima County GIS

Yakimap.com

N

S

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Location Map

Selah
Yakima
Union Gap
Terrace Hgts Dr
Roza Hill Dr
Norman Rd
Terrace Hgts Dr
University Pkwy
W I St
E I St
Fruitvale Blvd
N 1st St
N 5th Ave
N Fair Ave
E Lincoln Ave
W Lincoln Ave
E Yakima Ave
W Yakima Ave
Summitview Ave
S 5th Ave
Tieton Dr
E Beech St
S 1st St
82 Ramp
W Nob Hill Blvd
E Nob Hill Blvd
S 3rd Ave
S 1st St
W Washington Ave
E Washington Ave
Valley Mall Blvd
Main St
Servide Ave
12
82
24

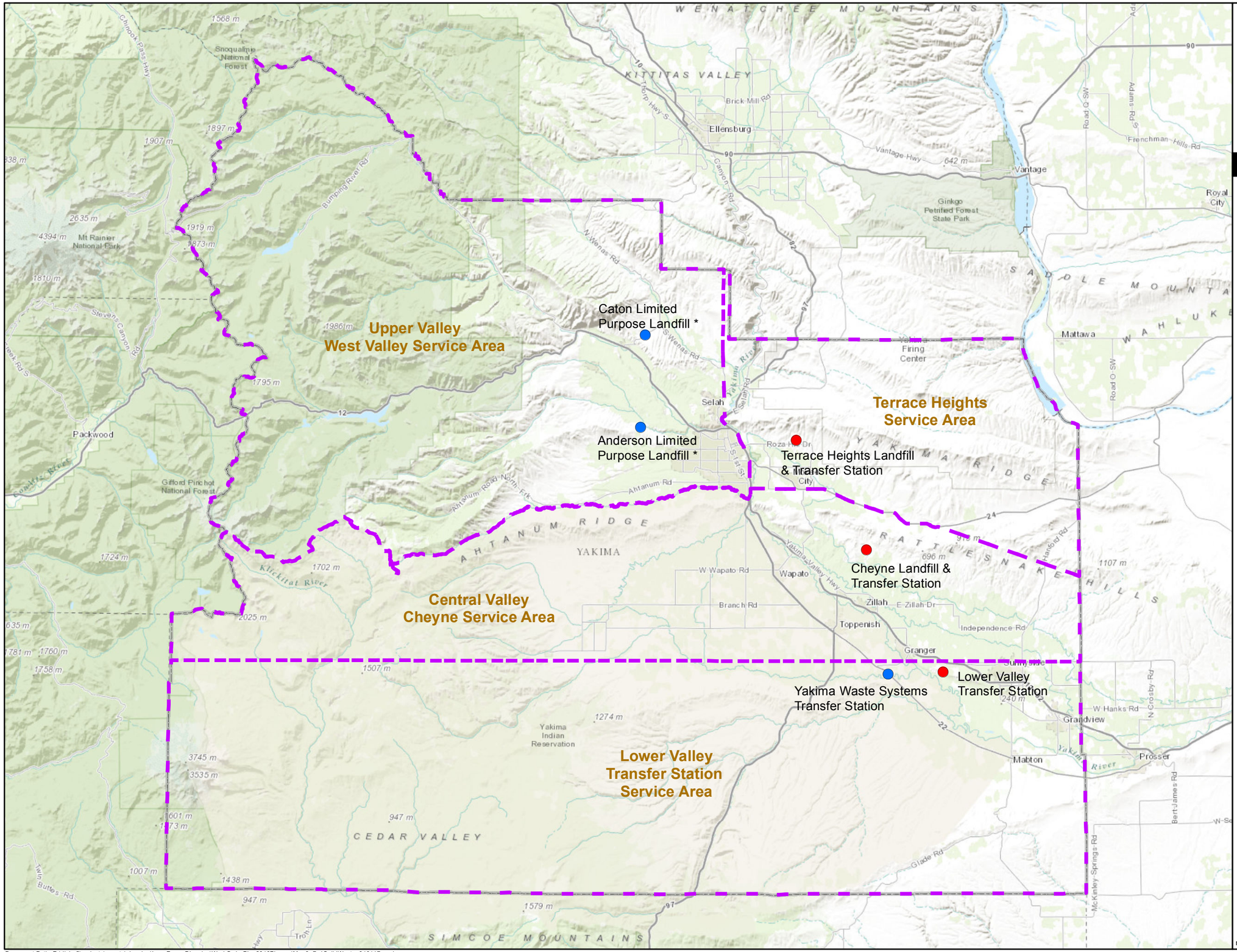
Document Path: R:\disk_5\projects\county\planning\LongRangePlanning\WorkOrderPlan2040Figures\Map9_6_4_1TerraceHeights_030417.mxd

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.7-1
Solid Waste Facilities and Service Areas



0 2 4 8 12 16 Miles

March 2017

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Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.9-1
Irrigation Districts

- Ahtanum
- Buena
- Moxee-Selah
- Naches-Selah
- Naches-Union
- Roza
- South Naches
- Sunnyside Valley
- Terrace Heights
- Union Gap
- Wenas
- Yakima Reservation
- Yakima-Tieton
- Zillah
- Yakima County Boundary

0 1.25 2.5 5 7.5 10 Miles

March 2017

Yakima County GIS

Yakimap.com

N

S

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Location Map

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5/6/2016

Utilities Element

HORIZON 2040

YAKIMA COUNTY

Map 9.10-1
Utility Boundaries

- Cell Towers
- BPA Transmission Lines
- Northwest Gas Pipeline
- Fiber Optic Line
- Pacific Power General Boundary (Not Official)
- Benton REA General Service Area
- Terrace Heights Sewer
- Nob Hill Water Service Area
- Yakima County Boundary

Telephone Company

- CenturyTel of Cowiche, Inc.
- CenturyTel of Washington
- Ellensburg Telephone Company
- Frontier Communications Northwest, Inc.
- Qwest Corporation
- United Telephone Company of The Northwest

0 2 4 8 12 16 Miles

March 2017

Yakima County GIS

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N

S

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Sources: Esri, USGS, NOAA

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