Attachment D. Capital Facilities

Capital Facilities and Utilities Report

Capital Facilities and Utilities in the R-1 Area
City of Woodinville

Prepared January 2007
Revised February 2007

Table of Contents

1. Overview 1

2. Service Providers 2

3. Capital Facilities Plans 2

4. Levels of Service 3

5. Service Provision Capacity Analysis 3

5.1. Police and Fire and Life Safety 3
5.2. Northshore School District 4
5.3. Public and Private Water Facilities 7
5.4. On-site Sewage Disposal Systems 8
5.5. Sanitary Sewage 9
5.6. Stormwater 11
5.7. Conclusions 11
5.8. References Cited 12

Tables

Table 1. District Projected FTE Enrollment 4

Table 2. Enrollment Capacities for Wellington Elementary and Leota Junior High 7

Figure

Figure 1 Capital Facilities Sustainability Map ..... Follows text

Graphs

Graph A. Enrollment Trends....5

Graph B. Enrollment Trends....6

List of Acronyms

DU	dwelling units
FAR	Floor Area Ratio
FTE	full-time equivalent
GMA	Washington State Growth Management Act
gpd	gallons per day
I/I	Infiltration/Inflow
MBR	membrane bioreactor
PRO	Parks, Recreation, and Open Space
UGA	Urban Growth Area
WF&LSD	Woodinville Fire and Life Safety District
WWD	Woodinville Water District

Appendices

Appendix A. Capital Facilities Frequently Asked Questions

Appendix B. Woodinville Fire & Life Safety District

Appendix C. R-1 Surface Water Map

1. Overview

This report describes the existing inventory of service providers in the R-1 Zoning District of the City of Woodinville for sewer, water, stormwater, schools, police, and fire and life safety. These are major services most likely to be affected by future density increases in the area. Parks and recreation is not addressed in this report, because the Woodinville Parks, Recreation, and Open Space (PRO) plan outlines a neighborhood park level of service and an implementation method (Park Impact Fee Ordinance) that is designed to keep pace with increases in housing density.

Woodinville is currently conducting a Sustainable Development Project for an area of approximately 1,100 acres on an upland plateau east of the central city. It is a predominantly residential area developed at an average density of less than one dwelling per acre. The City's Comprehensive Plan designates the area as Low Density Residential, suitable for one dwelling per acre, while allowing it to be rezoned to permit four units per acre if adequate public services can be provided. Chief among these services is public sewer.

The Washington State Growth Management Act (GMA) requires cities to provide adequate urban services along with growth. Cities are also required to account for capacity for growth. The geographic area of study for this report contains 170 net acres of land suitable for growth as determined by the City's Buildable Lands Reports that are required by the GMA. Future development in this area at an average density of one unit per acre would result in an increase of 170 new housing units; future development at densities of four units per acre would add 680 new units. There currently are 864 housing units in the area.

The objective of this report is to determine if the facilities and utilities in the study area are adequate to accommodate growth at an R-4 density. Other requirements of the GMA mandate forecasts of future needs for capital facilities, and the use of minimum standards for levels of service of facility capacity. As a result, all of the providers of facilities and services must have plans based on quantifiable, objective measures of capacity. These are discussed in detail in the various provider agency plans and to a lesser extent in the Woodinville Comprehensive Plan, and are included herein by reference.

2. Service Providers

All of the service providers included in this report, except for police and stormwater service providers, have extraterritorial jurisdiction beyond the boundaries of the City.

Police services are contracted with the King County Sheriff's Office.

The Woodinville Fire and Life Safety District (WF&LSD) (King County) serves Woodinville and unincorporated areas of King County (King County Fire Districts #36/42). A plan is underway by the Fire District that will replace the Fire Services Study of 1992 by Hughes, Heiss and Associates (Backer pers. comm.).

Students in the R-1 study area are served by the Northshore School District, which also serves unincorporated King County, Snohomish County, and the City of Bothell. The source for background information for this report is the *2006 Northshore School District Plan for Capital Facilities*.

The Woodinville Water District (WWD), a municipal corporation, serves all of the City of Woodinville, which is only a portion of their 29-square-mile service area that includes parts of unincorporated King County. A water facility comprehensive plan (1993) is under revision with completion due in the summer of 2007 (Jamison pers. comm.).

In addition to water service, the Woodinville Water District also provides sanitary sewer service within the corporate boundaries of the City of Woodinville and to more than 30 square miles of unincorporated King County.

The City of Woodinville has a stormwater utility, and regulates the provision of stormwater facilities in new development.

3. Capital Facilities Plans

All of the capital facilities plans of service providers are required to be consistent with land use; transportation; utilities; and parks, recreation, and open space elements of the Comprehensive Plan and with the plans of other governments and agencies.

For purposes of the Sustainable Development Project, existing service and facility plans were evaluated for impacts that might result from increases of densities to four units per acre on lands suitable for development in the R-1 study area.

4. Levels of Service

Each service provider uses standards of service that are typically quantitative, but that can vary according to issues such as financial feasibility or quality. Most standards measure the size, amount, or capacity of the capital facility. Police and fire services are measured in time of response. School services are measured in the number of students per teacher (student/teacher ratio), as well as student/classroom ratio. Water and sewer service is measured in terms of gallons of waste or water usage per household or per person. These are discussed in detail in the various agency capital facility plans.

5. Service Provision Capacity Analysis

Each service provider is analyzed in this report for capacity to absorb additional growth based on increases in population and housing due to potential R-4 development in areas that can realistically accommodate density increases as determined by buildable lands numbers discussed earlier. From this analysis a map has been developed showing suitable areas for growth in the R-1 area based on service provider's abilities to accommodate that growth. Each of the agency providers' capacities are reviewed below. In addition, some frequently asked questions are addressed in Attachment A.

5.1. Police and Fire and Life Safety

Correspondence with John McSwain, Police Chief for the City of Woodinville, indicates that projected increases in housing units due to zoning changes from R-1 to R-4 would not affect response time for the department. Population and housing increases may require additional personnel and facilities (vehicles), but response time is not usually affected by increases in density unless access is restricted (McSwain pers. comm.).

Fire and life safety service uses the same standards as police response time. Correspondence with Bud Backer of WF&LS indicates that level of service also would not be affected by increases to R-4 densities in the R-1 area, unless access was made more difficult (Backer pers. comm.) See also Appendix B for a letter from the District.

This report must conclude that for these two service providers, R-4 density in the report area presents no decreases in service. Therefore, R-4 is a suitable designation for the R-1 study area outlined on Figure 1 at the end of this report.

5.2. Northshore School District

Any changes in R-1 area densities will be obscured in an analysis of the area due to the extent of school district boundaries. However, taken in context, some measures of predictability can be gleaned from the District Plan.

Enrollment in the Northshore district has fluctuated over the past 6 years. Over the last 2 years, enrollment has gradually increased at the elementary and high school levels, and these increases have offset the decline in enrollment at the junior high level. Projections for enrollment have been made with consideration of the following factors: the School District's enrollment trends, population and housing growth, any market share losses or gains due to private school, as well as the effects of the District's recent adoption of new school service boundary lines. Projected full-time equivalent (FTE) enrollments are predicted to be 19,510 students for 2012; 20,305 for 2020; and 21,317 for 2025 (see Table 1).

Table 1. District Projected FTE Enrollment

Level	2012	2020	2025
Elementary	9, 725	10, 390	10, 951
Junior High	4, 952	4, 982	5, 258
High School	4, 834	4, 932	5, 108
Total	19, 510	20, 305	21, 317

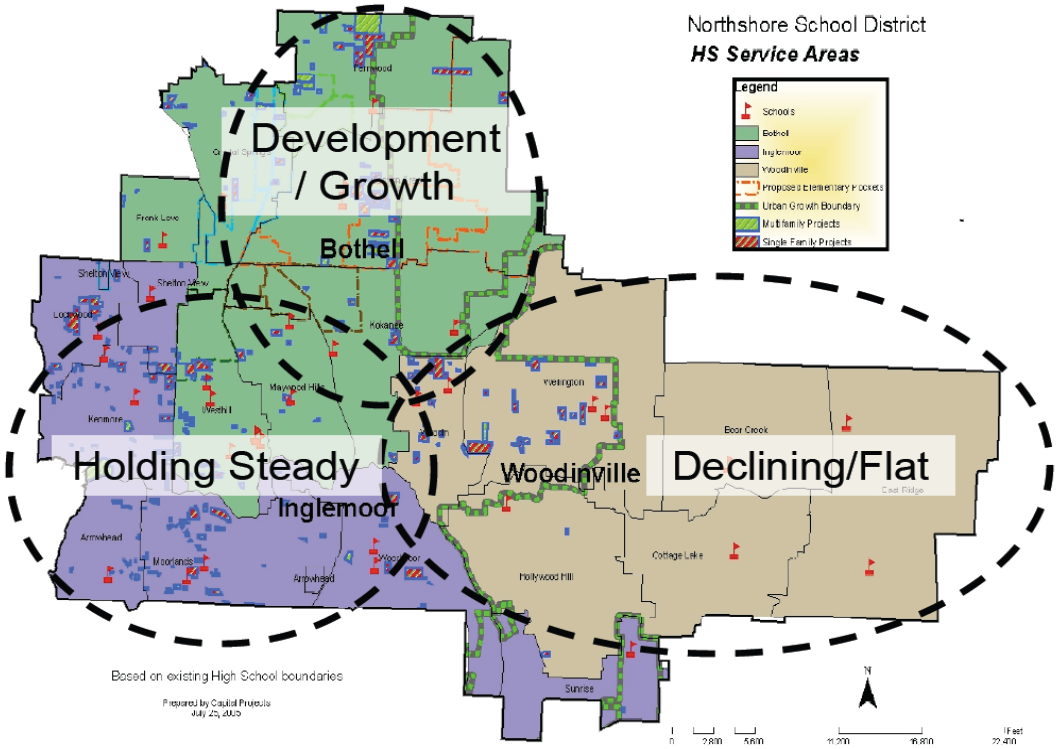
Table 1 illustrates an overall increase in enrollment at all levels. However, a recent study by the School Board of the Northshore School District has revealed that the projected increase in enrollment is unbalanced among the schools. A trend for increased enrollment can be seen in the northern part of the district, while a decline is projected for the eastern part of the district (see Graph A). The School Board felt this imbalance would affect students' access to high-quality education. Thus, it moved to change the district's boundary service lines in order to balance enrollment. The results of this study enabled the Board to approve boundary changes to be phased in over the next 3 years. These changes would affect eight elementary schools and all of the junior high and high schools in the District. The Board approved this change with the assumption that further development of the eastern portion of the district was unlikely.

The eastern part of the district partly includes an area zoned currently at 1 house per acre (R-1). This is the area of projected declining enrollment. Leota Junior High is located in this area. The boundary changes will increase, instead of decrease, projected enrollment for Leota Junior High by 147 students over the next 3 years (see Graph B). Wellington Elementary is also in this R-1 area, but is not affected by the

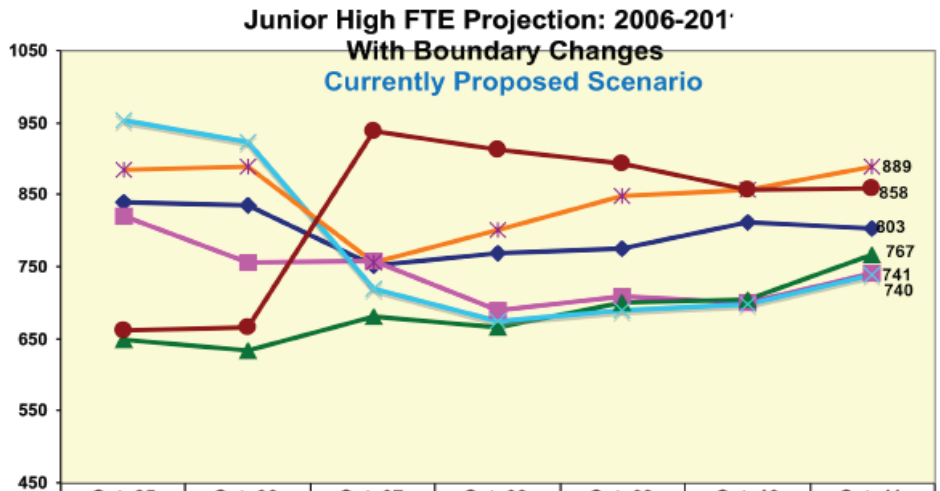
boundary service line changes. However, both schools would be impacted by any development to the R-1 area.

Capacities of Wellington Elementary and Leota Junior High (R-1 schools) become important when considering the possibility of increased development densities in the R-1 area of the district. Graph A and Graph B below illustrate the trends in enrollment. Due to the inconsistency in population projection base data and boundaries, it is only possible to generalize about geographic impact from the R-1 area on enrollment at the area's two schools, Wellington Elementary and Leota Junior High.

Graph A. Enrollment Trends



Graph B. Enrollment Trends



	Oct_05	Oct_06	Oct_07	Oct_08	Oct_09	Oct_10	Oct_11
Canyon Park	840	836	753	769	775	813	803
Kenmore	821	756	758	689	710	700	741
Leota	648	635	681	667	700	705	767
Northshore	954	923	720	675	690	698	740
Skyview	886	890	756	801	849	857	889
Timbercrest	662	666	938	913	893	858	858

School facilities and student capacity needs are dictated by the types and amounts of space required to accommodate the District's adopted educational program. The educational program standards, which typically drive facility space needs, include grade configuration, optimum facility size, class size, educational program offerings, classroom utilization and scheduling requirements, and use of relocatable (portable) classroom facilities. Current enrollment for the R-1 area schools can be seen in Table 2.

Table 2. Enrollment Capacities for Wellington Elementary and Leota Junior High

	Classrooms	Student Capacity	Portables Contributing to Capacity	Student Portable Capacity	Total Capacity
Wellington Elementary	22	526	4	68	594
Leota Junior High	37	912	8	54	966

Based on these capacities, growth at R-4 densities in the R-1 area of Woodinville would limit these schools' ability to support a dramatic influx of new students. However, the ratio of R-1 area student contribution in relation to the contribution of the remainder of the district would be small. Projections required to ascertain that kind of detail are not possible using current geographic data limitations.

In conclusion, it must be noted, that the Northshore School District maintains ordinance authority to exact impact fees from new development to pay for new facilities caused by increases in enrollment due to those developments. As such, for school services within the R-1 Study Area (see area in Figure 1) suitability is indicated as R-4, due, in part, to minor projections in student population that may result from R-4 density increases in the R-1 area, and due to the District's ability to charge impact fees.

5.3. Public and Private Water Facilities

The Woodinville Water District (WWD) covers about 18,660 acres and serves about 13,000 connections. It is supplied by the City of Seattle Public Utilities through the Tolt Pipeline and the Tolt Eastside Supply Line, which run through the Water District service area. The Water District has eight connections to the Tolt Pipeline and one to the Tolt Eastside Supply Pipeline. Each connection is separately metered. The Water District owns and maintains one well near the Water District office as an emergency standby water source. The Water District has seven emergency inter-ties. The Water District does not have formal inter-tie agreements with any adjacent water purveyors, though emergency connections exist with the City of Bothell, the Northshore Utility District, and the City of Redmond.

Average Day Demand in 2004 was about 5 million gallons per day. Demand in recent years has averaged between 86 and 96 gallons per capita per day on an annual basis. Historically, about 73% of water demand has been from single family residences, with multi-family customers taking another 10%. Commercial customers take another 10% and industrial demand is about 3% with the remainder going to

municipal and irrigation uses. The Water District operates an aggressive conservation program. The ratio of maximum day demand to average day demand within the Water District has been about 3.0, while about 2.1 is the average for the Seattle system as a whole. The higher Water District value reflects the larger lot sizes present within the Water District and significant irrigation use.

Increases in R-1 area zoning to R-4 over buildable parcels, under the above ratios result in an increase in demand for 4,312 gallons per day in the entire study area, considered by Water District officials to have no major impact to the current capacity of supply or facilities.

5.3.1. Wells

There are a number of wells that are on record with the Washington State Department of Ecology within the Water District boundary and only five on record in the R-1 area. Wells within the service area serve individual water supply, are resource protection wells, or have been decommissioned. These wells are typically privately owned, shallow (less than 100 feet deep) wells, with low capacities of 20 gallons per minute (gpm) or less. Due to the small number of wells in the R-1 area, and because most supply comes from surface water sources, there appears to be no capacity implications for future development.

5.4. On-site Sewage Disposal Systems

There are many privately owned and operated on-site sewage disposal systems within the Water District sewer service area. The Water District is not involved with the operation and maintenance of these systems. Failure of on-site sewage facilities within the Urban Growth Area (UGA), or development of the properties, may necessitate an extension of sewerage facilities, which will be constructed by the affected property owners. It is estimated that approximately 80% of the Water District's residential water customers use on-site sewage disposal systems, most of these customers being outside the UGA. Approximately 25% of these customers are inside the UGA. On-site sewage disposal consists of a facility located typically on a single lot or tax parcel that incorporates a septic tank discharging to a drainfield. Operated properly, on-site sewage disposal systems are an acceptable means of treating and disposing of sewage on a small scale at low development densities. However, if on-site sewage disposal systems are improperly maintained, or are constructed in soils with poor percolation rates, or the lots are too small, operating problems may develop. Repair scenarios in accordance with WAC 246 272-16501 then may be required by Seattle-King County Public Health authorities to resolve the problem. These repairs may include the addition of treatment devices such as a sand

filter, a different disposal technique such as a mound, disinfection, or an alternate technology such as a membrane bioreactor (MBR). In severe cases, individual properties may be required to use holding tanks and haul sewage to an approved receptacle.

Septic failures in the R-1 area do not indicate a need for sewerage on an area-wide basis and therefore have no impact on suitability for R-4 zoning in the study area of this report.

5.5. Sanitary Sewage

Sewerage facilities and service is managed by the WWD and structured within the 2006 General Sewer Plan. The Plan is based on an ultimate R-4 density in the current R-1 study area because the City of Woodinville Comprehensive Plan land use designation (Low Density Residential) for the R-1 area allows rezones up to a maximum R-4 density when adequate facilities are present. The Plan for the R-1 area also indicates that it is currently feasible physically and economically to extend facilities up to and including the western third of the R-1 area (Figure 1). The eastern two-thirds of the area is more difficult due to severe grade change that would involve pump stations and major expense. For these reasons, this report is classifying the R-1 area into two categories. The western portion, consisting of the western one-third of the R-1 zone, is suitable, in terms of ease of extension, for R-4 density while the eastern portion should remain at R-1 until such time as sewer facility economics becomes feasible.

The characteristics of the system and capacity calculations are included in the following part of this report.

Sewage flow includes residential, commercial, and industrial contributions. Most mini-basins include a mix of these land uses. Typical residential sewage generation can be calculated from the flow data developed by the King County Regional Infiltration/Inflow (I/I) Control Program and checked against the water consumption actually billed to selected neighborhoods. No flow monitoring data is available to quantify sewage generated by other land uses, which is likely highly variable according to the specific activity of each individual parcel.

Accordingly, for calibration of the hydraulic flow model, a specific number will be developed for each mini-basin defining infiltration, rain-induced inflow, and single-family residential sewage. Other unit flow rates from land uses will then be adjusted to balance the actual flows recorded on selected dates by the King County I/I Program.

5.5.1. Residential Sewage

Residential land uses occupy most of the land area within the Water District sewer service area and also in the R-1 study area of this report. The average quantity of sewage generated by residences within the Water District can be computed from the flows monitored in Mini-basin WDN 001, described in the WWD 2006 General Sewer Plan, because it is entirely residential except for the elementary school. Winter water consumption data was provided by the Woodinville Water District for 445 customer accounts in the English Hill area, identified as Mini-basins WDN 001 and 002. These two mini-basins had an average water use of 98,915 gallons per day (gpd). The average water use per customer water was 222 gpd.

Sewage flow for Mini-Basin WDN 001 derives from 502 parcels, and averaged 97,000 gpd. This is an average of 194 gpd per parcel, and at 2.6 persons per household is equivalent to 75 gpd per capita. Dividing the sewage flow per parcel by the winter water usage per parcel indicates that on average about 87% of the total winter water billed per customer becomes sewage, which is approximately the ratio observed in most residential communities and indicates the value is realistic of actual conditions. Homes in English Hill may not be typical in all respects for all homes receiving sewer service from the Water District. More water may be used for summer landscape irrigation, for example. However, household size is believed typical, and water appliances that generate sewage are believed typical. Therefore, existing residential sewage flow for the entire Woodinville Water District is assumed to average 194 gpd per parcel.

At these ratios, the R-1 area may be assumed to use an additional 131,920 gallons of sewage flow for future developed buildable parcels at R-4 densities, and 132,696 for existing developed parcels. These increases do not have major capacity or facility implications viewed as a percent of the whole Water District. All capital improvements and additions to the sewer system are, as a matter of Water District policy, the responsibility of the developer, and are feasible if engineered according to the 2006 General Sewer Plan.

5.5.2. Future Service Area Conditions

For sewer capacity planning purposes the entire City of Woodinville will be served by sewers in the future, including the eastern portion of the City, which is not currently served. The entire City of Woodinville lies within the King County UGA; therefore, sewer service is allowed throughout the City limits. As previously stated, these sewers are expected to be built by developers and/or those requiring service in their area, not by the Water District.

Due to the topography of the eastern R-1 portion of the City of Woodinville, lift stations will be needed to convey the sewage generated in that area to existing Water District and King County pipes for treatment. Approximately four lift stations will be required in the eastern portion of the City. The Lake Leota area of the City will require special consideration to define how sewers will serve the surrounding homes due to the lake topography. Service may be viable through grinder pumps or a vacuum sewer system. The Water District will determine the type of service to be used prior to extending sewers in that area. It is important to note that the piping and pump stations are approximations of what is necessary to serve the currently unserved areas of the City. The elevations and design have been derived from existing topographic maps. Actual development may differ from what is shown in the WWD Sewer Plan and will depend on plans prepared by the developers.

5.5.3. Build-out Conditions

The 2006 WWD General Sewer Plan makes the assumption that the entire City of Woodinville will be served by sewers in the future, as stated above. This is defined as the "build-out condition." These build-out conditions are assumed to occur by the year 2025. Included in the sewer service area is the eastern portion of the City not currently served. This area will need approximately two new mini-basins, along with several lift stations.

5.6. Stormwater

At any future density, developments would be required to meet the requirements of the City's Stormwater Manual (WMC 14.09) and provide for detention and discharge to safe locations. Appendix C contains a R-1 Surface Water Map prepared by the City for background information.

5.7. Conclusions

An analysis of suitability of capital facilities for police protection, fire protection, school facilities and water supply revealed that no future impacts to level of service standards would occur due to increases from R-1 to R-4 densities in the study area. The major determinant or catalyst for density increase will be sewer availability and the 2006 WWD General Sewer Plan.

The preceding explanations of conditions, and the assumptions, opportunities, and liabilities found in the WWD 2006 General Sewer Plan suggest that the R-1 area be considered as two separate potential zoning areas. The western portion (see

Figure 1), which has gravity access to the existing facilities, may be physically suitable for R-4 zoning while the eastern section, due to its topographic liability, is currently most suitable for R-1 zoning.

5.8. References Cited

2006 Northshore School District Plan for Capital Facilities

Backer, Bud. Personal Communication.

Jamison, Dee. Personal communication.

McSwain. Personal communication.

Woodinville, City of. 2002. Comprehensive Plan.

City of Woodinville

Sustainable Development Project

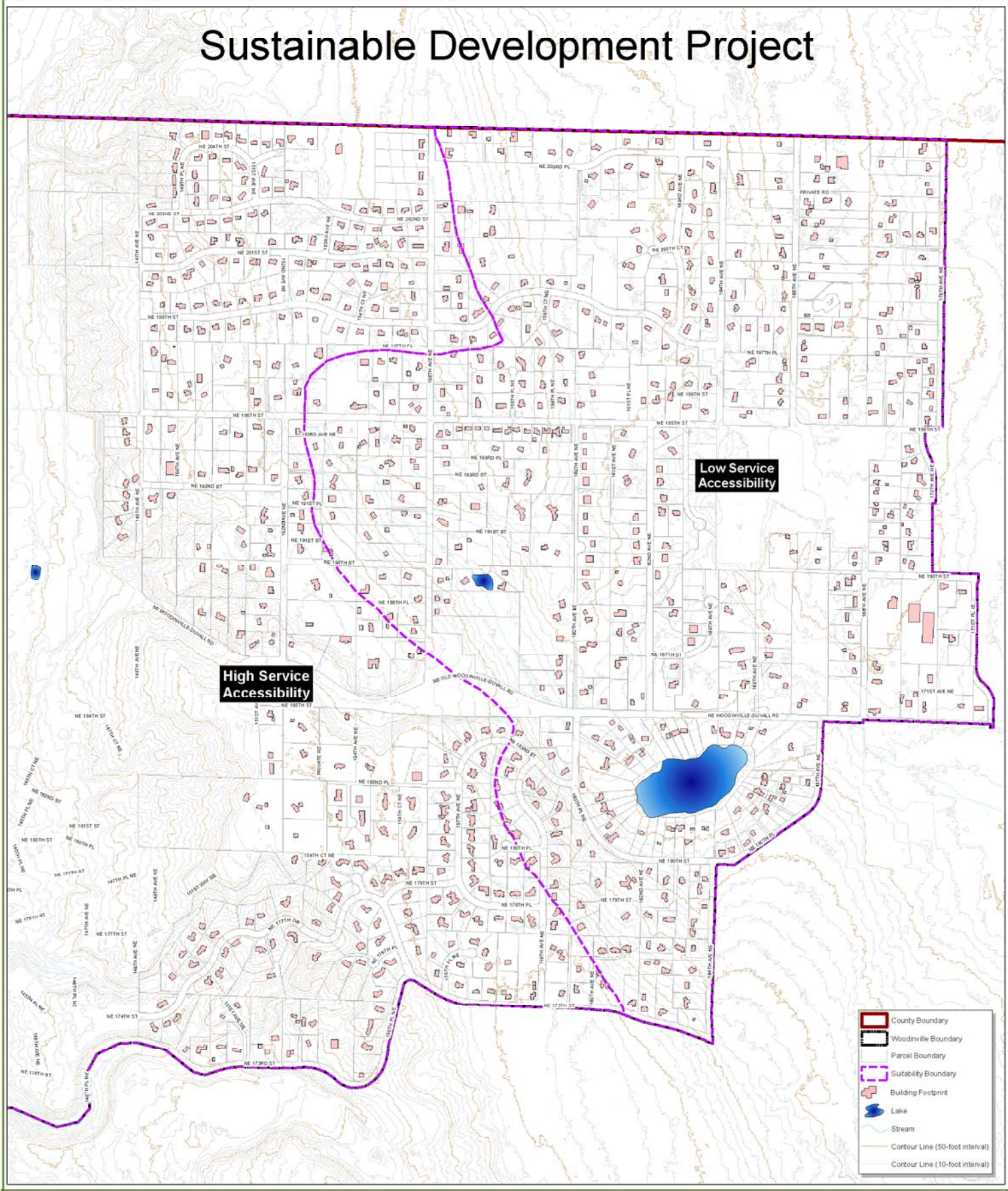


Figure 1
Composite Capital Facility and Utility Suitability

0 500 1,000
Feet

Appendix A

Capital Facilities Frequently Asked Questions

Appendix A. Capital Facilities Frequently Asked Questions

Staff response is shown in *Italics.*

#1. Is higher service accessibility going to equal to higher residential density if it negatively impacts the environment and neighborhood character?

Environmental and neighborhood character are under consideration as part of the sustainable study along with transportation and capital facilities.

#2. Why do sewers require higher density?

This is a policy of the sewer service provider and not of the City. The reasoning behind a certain level of density, to support a sewer system, is that the revenues generated by the customers serviced by a system needs to be sufficient to cover the maintenance, operation and long range replacement of that system.

Appendix B

Woodinville Fire and Life Safety District

Woodinville Fire and Life Safety District
P.O. Box 2200 • 17718 Woodinville - Snohomish Rd NE
Woodinville, WA 98072
Phone 425-483-2131 • Fax 425-486-0361

EXHIBIT 2/8
PAGE __ OF __

RECEIVED
FEB 13 2007
CITY OF WOODINVILLE
DEVELOPMENT SERVICES

February 12, 2007

Cindy Baker
City of Woodinville
Community Development

Re: Fire Department Emergency Response times and criteria for the urban area as defined by the Woodinville Fire and Life Safety District (WFLSD) Standards of Coverage.

Responding to the question of how a zoning change in the R-1 area, located on the east side of the city of Woodinville, may affect the emergency response times of the fire district requires the need to understand the tools by which WFLSD measures its responding vehicles speed in reaching an emergency scene. The WFLSD "Standards of Coverage" is the basic tool for measuring times and establishing distribution of stations.

Standards of Coverage

The purpose of the Standards of Coverage is as follows:

Standards of response coverage are defined as those written policies and procedures that establish the distribution and concentration of fixed and mobile resources of an organization. This document serves as the Woodinville Fire and Life Safety District's (WFLSD's) operational business plan maintaining and improving upon the high quality, effective fire protection and emergency medical services to the community.

Long range planning is crucial to meet the needs of the community. Among the elements examined in this standard are Risk Assessment (a makeup of the occupancies in the district and the probability/consequence of an incident), and the historical performance of the WFLSD's responses to emergency incidents.

The examination of risk assessment and historical response performance will assist the district in developing distribution and concentration plans for fixed and mobile resources that best meet the community's needs.

Maintenance of the Standard
Annual review of the standard will be conducted to assure that it continues to meets the needs of the community, the fire service and the philosophy of the WFLSD and its Board of Fire Commissioners. The Deputy Chief of Administration shall be responsible for annual review of this standard.

Note: The above are important statements as they assure our citizens that WFLSD has taken in account the need to project and look forward as our district undergoes changes associated with development or growth.

Distribution of resources is critical to providing the citizens of our district the most effective emergency services possible within the financial framework established by the Board of Commissioners.

The term distribution is defined as the geographical location of first due resources for initial intervention in all classifications of risk. Proper location of stations and resources ensures the rapid response and deployment of first due units to minimize and handle routine emergencies. Distribution is measured by the percentage of the jurisdiction covered by first due units within the specifically adopted response time goals.
The WFLSD has divided its coverage area into three population density types, urban, suburban and rural. Response time goals have been established specifically for each zone. Rural response zones were defined using available water supply and accessibility as key components. The urban and suburban response zones were established using the King County urban growth boundaries set forth in the Washington State Growth Management Act (GMA) of 1990.

The R-1 area in question is defined in the Standards of Coverage as urban.

The urban area of the fire district covers approximately 12 square miles and includes the City of Woodinville.

The Standards of Coverage has response time goals for first unit response times in the Urban Zone as follows:

Urban Response Times Goals

First in units on fire responses in:	< 08 minutes	70% of the time
First in units on BLS responses in:	< 07 minutes	80% of the time
First in units on ALS responses in:	< 07 minutes	80% of the time

Urban Response Times (actual)		**2003**	**2004**
First in units on fire responses in:	< 08 minutes	72%	73%
	< 07 minutes	59%	60%
	< 06 minutes	41%	43%
First in units on BLS responses in:	< 08 minutes	89%	87%
	< 07 minutes	82%	80%
	< 06 minutes	68%	67%

First in units on ALS responses in:	< 08 minutes	90%	91%
	< 07 minutes	81%	84%
	< 06 minutes	69%	68%

As can be seen from the above numbers WFLSD is meeting and exceeding the current objectives in the urban zone. Given that WFLSD has established the urban objectives with an eye to the future it is apparent that increased traffic due to growth, although it may have a minimal effect, should not place the fire district in a position of not meeting the current response time goals. It also must be restated that the Standards of Coverage must be maintained on an annual basis with complete review by the Deputy Chief of Administration for the purposes of determining if a rethinking of distribution of resources is needed.

As part of the equation of emergency response times it is noted that the State of Washington allows that emergency vehicles may, with lights and sirens operating and with due caution exceed the speed limit, travel in the opposing lane of traffic and otherwise provide necessary actions to access an emergency scene. All WFLSD emergency vehicle drivers are held to the highest standards for the purpose of acting in the appropriate manner to the hazards of emergency response. Each driver is continually trained and required to be nationally certified every 3 years.

With any zoning change, street standards have the greatest affect on response times. Providing streets adequate (wide enough) for response vehicles is a primary concern of the fire service.

As stated in the Standards of Coverage "A commitment by the WFLSD to continue to pursue excellence through constant evaluation of services has been made by the board of fire commissioners." The District is currently evaluating the need for additional fire stations as part of the Strategic Planning Process.

The affect on call volume

Assuming a complete build out of an additional 800 homes, and assuming three (3) persons per home, we can project 2,400 residents. This number is most likely high, as the national average pre home is less than three, and there are already a number of homes in this area that would substantially reduce "new" residents well below the 2,400 Using a conservative estimate of one (1) incident per every 100 persons, this zoning change would result in an additional 24 alarms per year (barring any senior housing). The affect on call volume would be insignificant.

If you have any questions, please do not hesitate to contact me.

Sincerely,

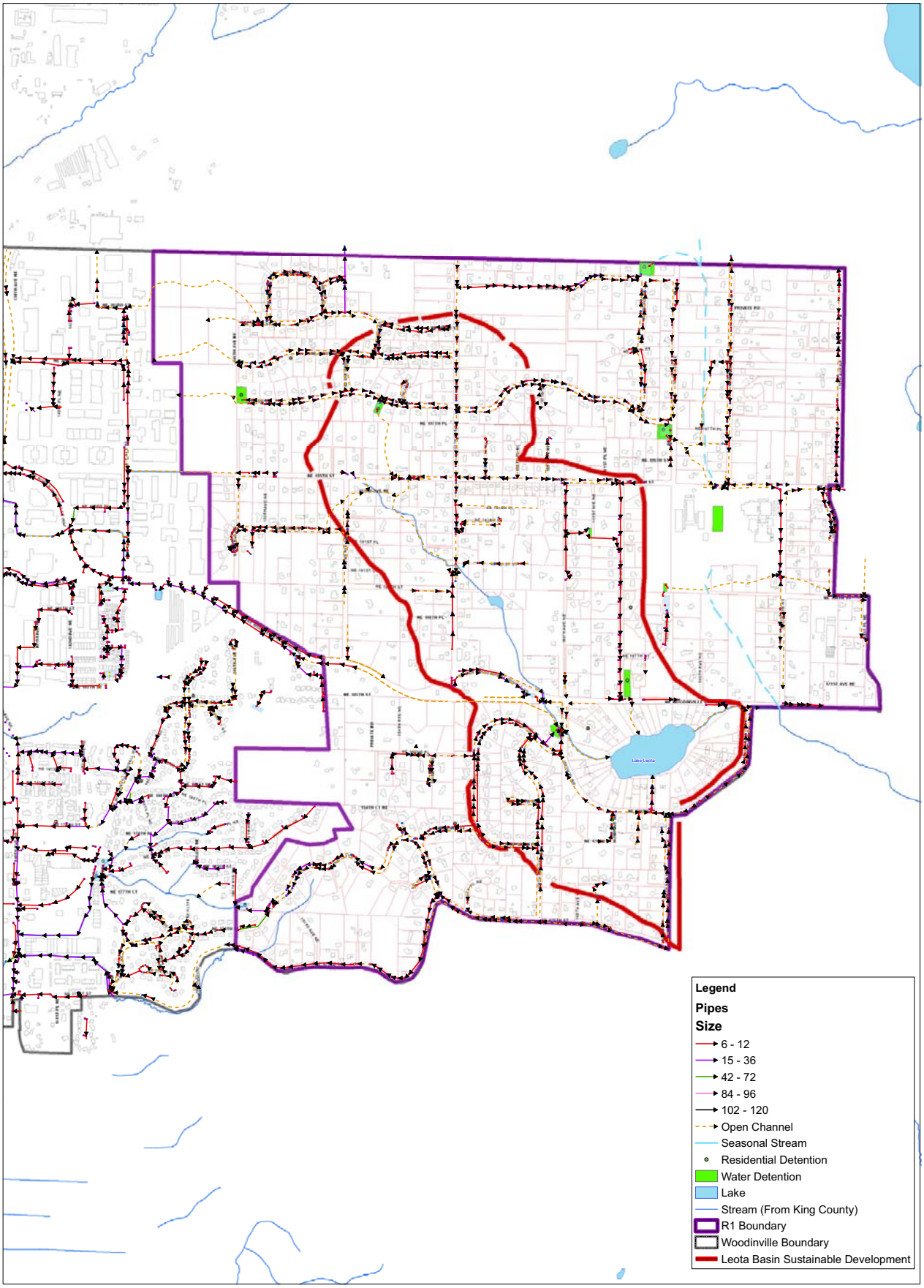
Bud Backer

Bud Backer, Deputy Chief

Appendix C

R-1 Surface Water

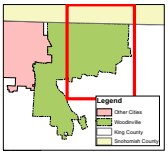
City of Woodinville



R1 Surface Water

0 250 500 1,000 Feet

File Name: R1 Surface Water_020507.mxd



NO	DESIGN/REVISION	DATE	BY
1	Draft	10/30/06	AU
2	Revision	02/05/07	AU
3			
4			
5			

City of Woodinville
17301 - 133rd Ave NE
Woodinville, WA 98072
www.woodinville.wa.us
425-489-2700

Disclaimer
Any use of or reliance upon the information contained in this document is at the user's sole risk. The City of Woodinville does not warrant the accuracy, currency, completeness or quality of said information. The City expressly disclaims any warranty of merchantability or fitness for any particular purpose with respect to such information. The City further disclaims all responsibility or liability for any damage, injury or loss resulting therefrom.