MAJOR URBAN GROWTH BOUNDARY AMENDMENT

Advance Road Property

Submitted to Metro by West Linn-Wilsonville School District

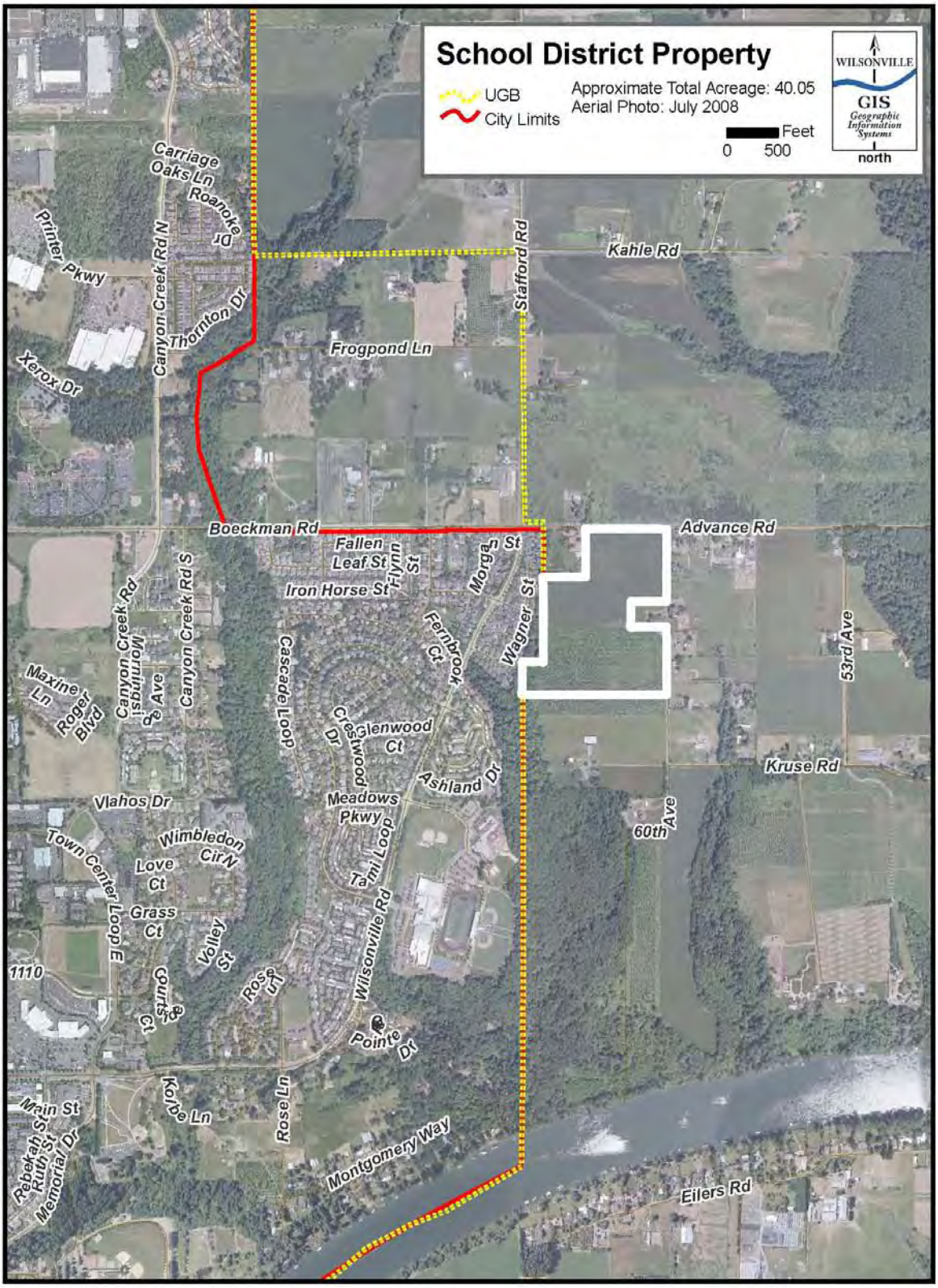
March 15, 2013

METRO UGB MAJOR AMENDMENT APPLICATION
Advance Road Site
for
West Linn-Wilsonville School District
3.15.13

SECTION I: APPLICATION SUMMARY

CASE:	Major UGB Amendment
PETITIONER:	West Linn-Wilsonville School District Tim Woodley, Director of Operations 2755 SW Borland Road Tualatin, OR 97062 Phone: 503.673.7976 E-mail: woodleyt@wlwv.k12.or.us
REPRESENTATIVE:	Keith Liden 319 SW Washington, Suite 914 Portland, OR 97204 Phone: 503.757.5501 E-mail: keith.liden@gmail.com
PROPOSAL:	An Urban Growth Boundary (UGB) Amendment to bring a 40.05-acre portion of Metro Urban Reserve Area 4H into the UGB. The purpose of the UGB amendment is to allow for the future construction of a new middle school, primary school, and city park. The most immediate need is for additional middle school capacity. The district's three middle schools are all at or over capacity, and the enrollment pressure is forecast to increase. The district will soon need to sponsor a bond measure to finance a new middle school, and having the site available to develop is a critical first step. While not as pressing, additional primary school and park capacity will be necessary as the city develops within the existing UGB and the Urban Reserve areas within Wilsonville's sphere of influence. The district and city have a long history of co-locating school and park facilities to obtain the maximum benefit for the community and using land and financial resources efficiently. The entire site, along with the abutting Advance Road and 60th Avenue right-of-way, is proposed to be added within the UGB because the current EFU zoning does not allow partitions or property line adjustments.
LOCATION:	The property is located on the south side of SW Advance Road, immediately east of the Wilsonville city limit, and west of SW 60th Avenue (Figure 1).
PLAN/ZONING DESIGNATION:	Clackamas County EFU
APPLICABLE REVIEW CRITERIA:	Metro Code 3.07.1440 and 3.07.1425 – Major Amendments - Criteria

Figure 1 – Vicinity Map



SECTION II: PROPOSAL DESCRIPTION

OVERVIEW

The West Linn-Wilsonville School District, in coordination with the city of Wilsonville, requests an adjustment of the UGB to include the subject 40-acre site, which is often referred to as the "Advance Road" property (Figure 2). As described in Section III, this site is proposed to be utilized for a primary and middle school campus on the southern 30 acres and a city community park on the northern 10 acres. This site is especially important to the district to address a growing capacity deficit at the middle school level. The capacity shortage is most apparent in the Wilsonville area, but all three of the district's middle schools are presently operating at or over capacity. The need for an additional primary school and community park is expected to become more acute over the short-term.

The West Linn-Wilsonville School District prepared its first long range plan in 1996. It has been updated several times, including a revision that nearing completion (see draft in Appendix A). In anticipation of future residential development and enrollment increases, the district purchased the Advance Road site in 2003 to accommodate forecast needs at the primary and middle school levels. The site was selected because of its proximity to the city of Wilsonville, accessibility to students living in the city and unincorporated portions of the district, and flat topography to accommodate athletic fields and minimize construction costs.

The city and district have a long history of collaborating to gain maximum efficiency of park and school land for the benefit of district athletics and city recreation programs. This cooperation continues with the Advance Road site. The city and district jointly developed a concept plan for the property, which culminated with the "Advance Road Site Report" in August 2010. A copy of the report is provided in Appendix B. The district and the city analyzed the feasibility of providing urban services and facilities, including a traffic report. A preferred conceptual site plan was developed as part of this analysis (Figure 3).

Figure 2 – Site Map

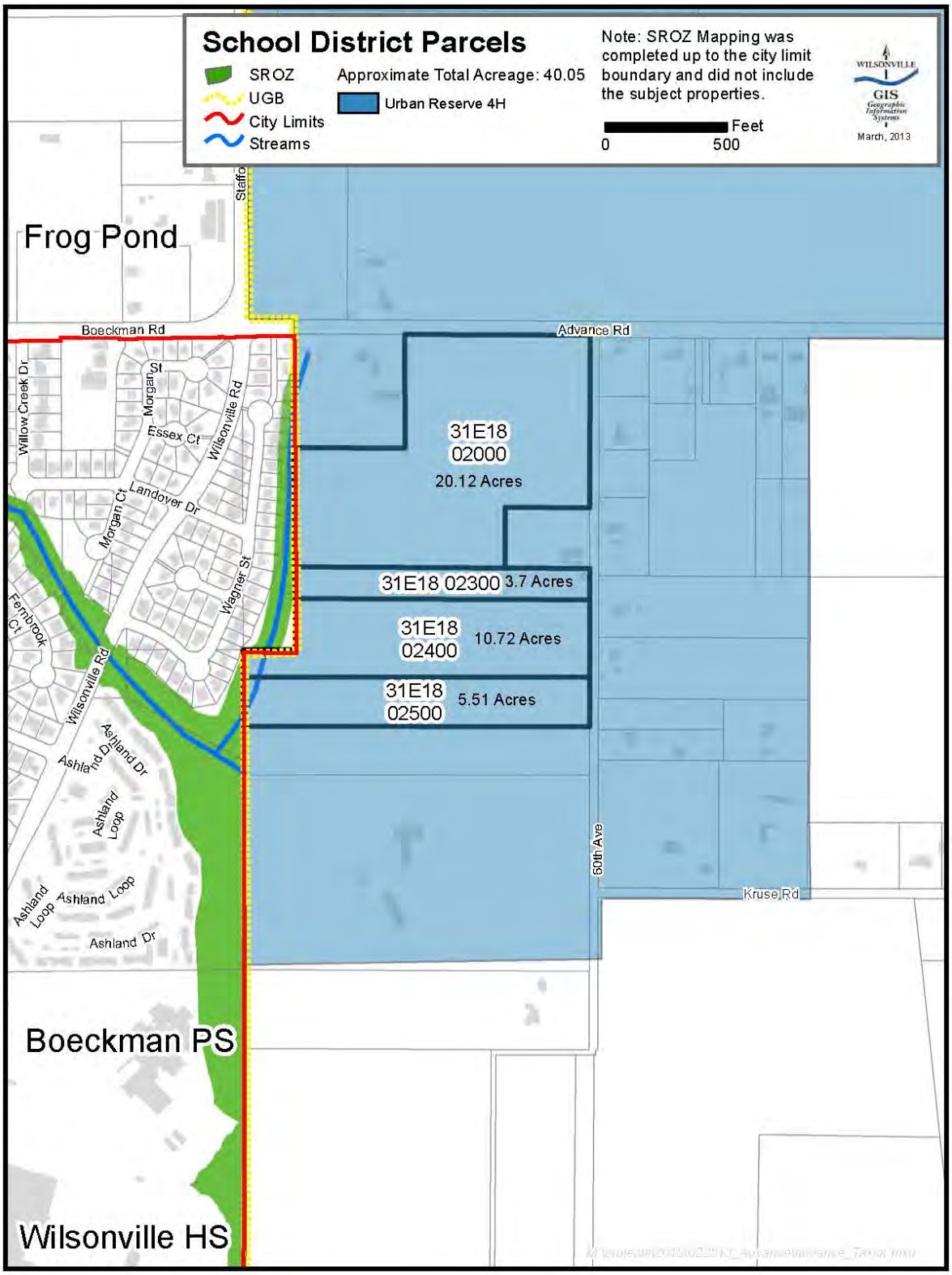
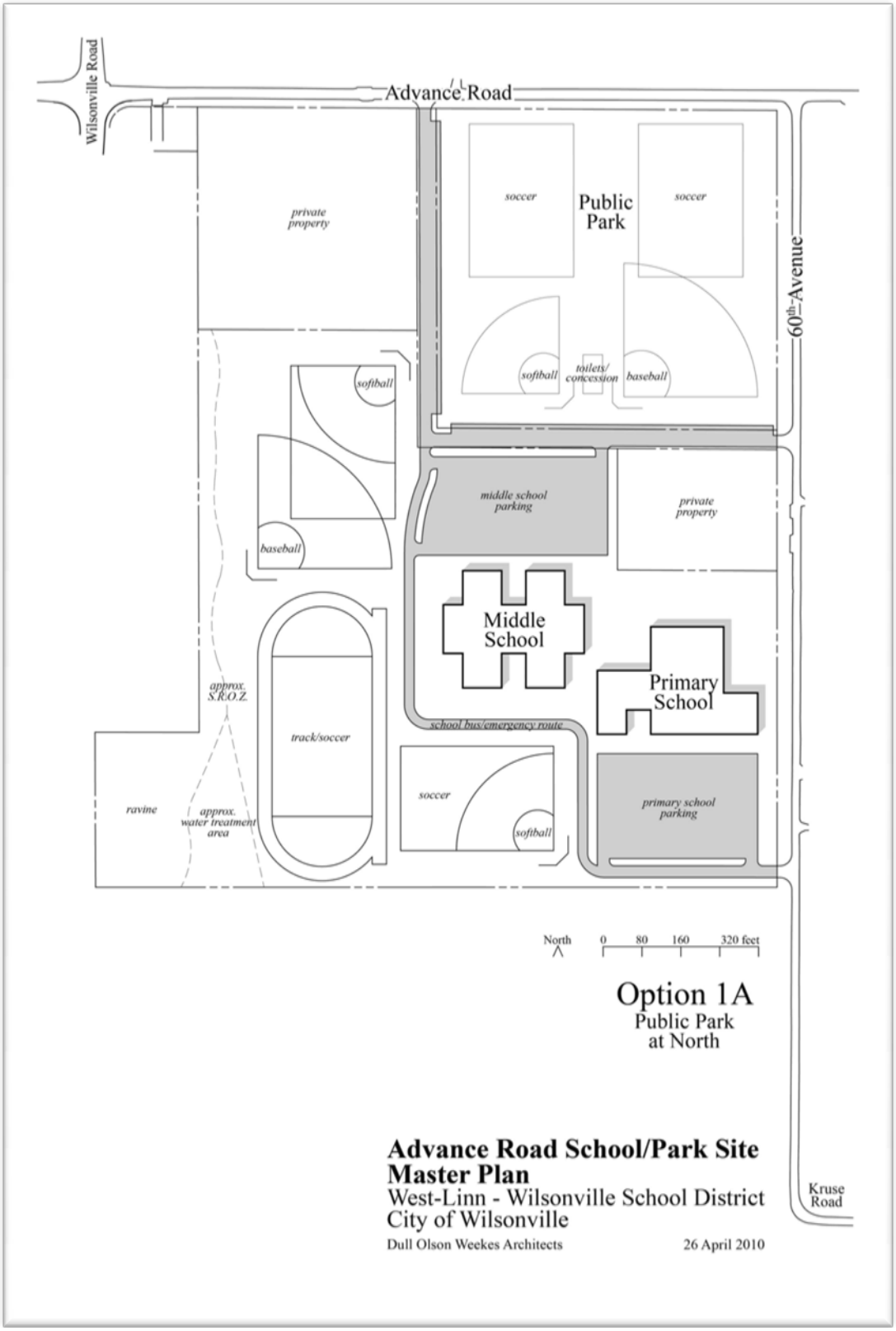


Figure 3 – Preferred Site Master Plan



SECTION III: BACKGROUND INFORMATION

SITE INFORMATION

The site, which consists of four tax lots, is located within unincorporated Clackamas County on the south side of Advance Road, immediately east of the Wilsonville city limit, and west of 60th Avenue. The property has frontage on both roads (Figure 4). The entire property is zoned EFU (Exclusive Farm Use) by Clackamas County. The minimum parcel size in the EFU Zone is 80 acres. It is located within Metro Urban Reserve Area 4H, which includes the entire property plus properties to the south, east, and on the north side of Advance Road (Figure 2).

The property is not actively farmed. The northern portion (TL 2000) is an open field, and the southern portion contained an old Filbert orchard, which was recently removed due to age and disease (TL 2300, 2400 and 2500). According to the Clackamas County Planning Department, Tax Lot 2000 is a legally separate parcel, and the remaining tax lots constitute one additional legal parcel.

Traversing the west property line of the site is the east fork of the headwaters of Meridian Creek. Meridian Creek is an intermittent stream with a shallow gradient at the northern end, becoming a steep sided ravine heading south toward the Willamette River. Areas north of Boeckman Road and Advance Road provide the surface runoff for the creek. Culverts under the road convey the water south.

The vegetation in the area is mostly Douglas-fir with alder, and Big-leaf maple as the deciduous component. The understory is disturbed and mostly comprised of sword fern, vine maple, Himalayan blackberry, and English ivy. Meridian Creek is considered a wildlife corridor for large and small mammals, including deer, coyote, raccoon, possum, squirrel, and chipmunk. The creek is a fish bearing stream, with the lower reaches adjacent to the Willamette River containing Cutthroat trout and Coho salmon.

The portion of the stream and associated riparian area, which is currently in the city is regulated under Wilsonville's Significant Resource Overlay Zone (SROZ) and is considered a significant Statewide Planning Goal 5 Natural Resource. Following annexation and rezoning, the SROZ area is anticipated to include the slopes adjacent to the creek extending from the 2- year bank full stage or wetland edge to top of bank or 50 feet, whichever is greater.

VICINITY INFORMATION

The zoning and land use for the properties in the vicinity of the proposed site are summarized in Table 1 and shown in Figure 4. Although the site is adjacent to EFU land to the north, east, and south, there is no significant agricultural use in the immediate vicinity. Larger parcels in the area are generally grassland with no active farm operations. Several small-scale agricultural uses, such as nursery stock and Christmas trees, are found on a few rural acreages of five acres or less. An established single family residential subdivision is on the west side of Meridian Creek within the Wilsonville city limits.

Figure 4 – Property and Vicinity Description

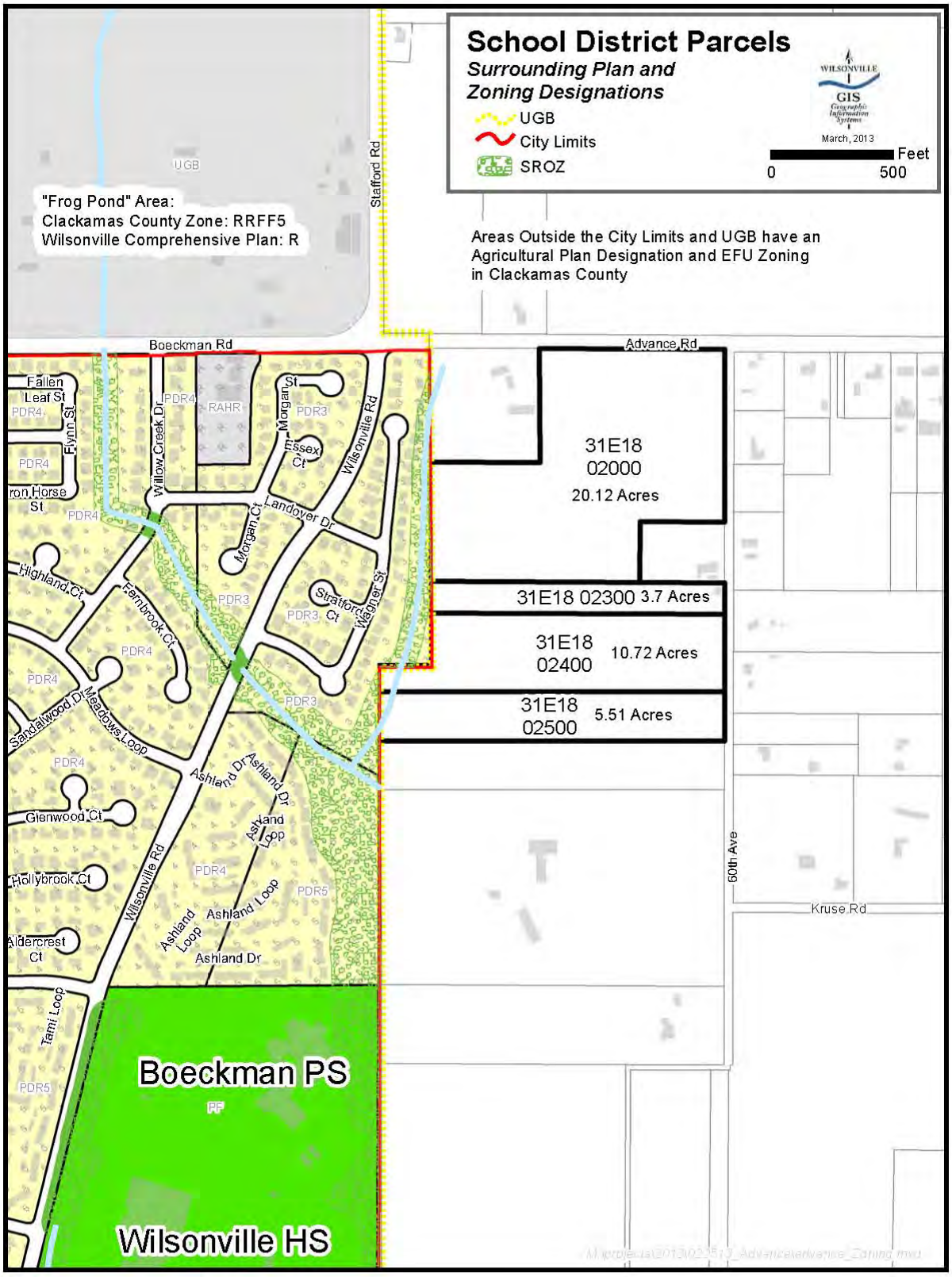


Table 1
Zoning and Land Use Summary

PARCELS	ZONE DESIGNATION	LAND USE	METRO DESIGNATION
Subject Property	Clackamas Co. EFU	Open field and riparian area on extreme western edge	Urban Reserve Area 4H
North	Clackamas Co. EFU	Unfarmed land and rural residences	Urban Reserve Area 4H
East	Clackamas Co. EFU	Rural residences and minor agricultural use	Urban Reserve Area 4H
South	Clackamas Co. EFU	Rural residences and minor agricultural use	Urban Reserve Area 4H
West	Wilsonville PDR-3*	Single family residential	-

*PDR-3: Planned Development Residential 3 (avg. lot size of 7,000 sq. ft.)

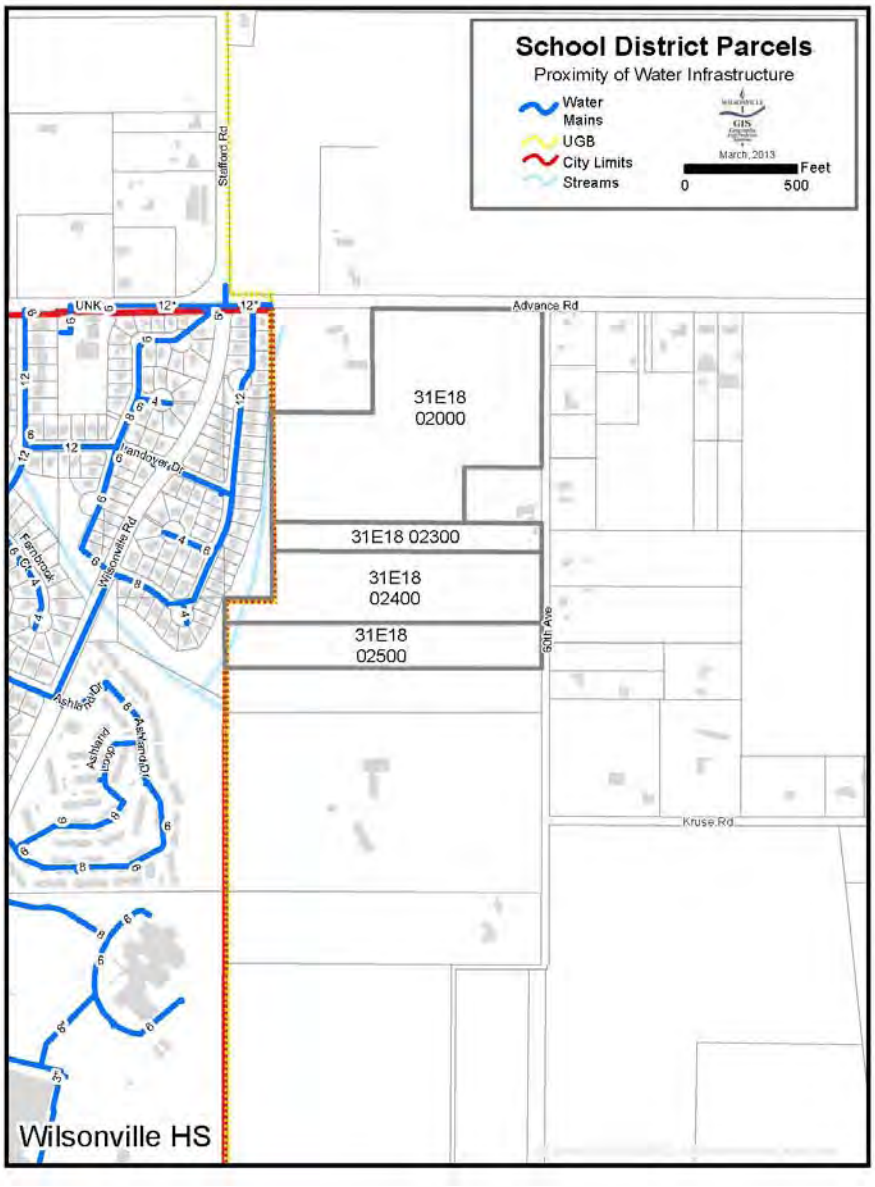
PUBLIC FACILITIES AND SERVICES

Urban facilities and services are available or can be made available working with the city of Wilsonville and Tualatin Valley Fire and Rescue (TVFR).

Water

The Advance Road site will be serviced by an existing 12-inch water main located in Advance Road at the edge of the city limits (Figure 5). A water system analysis would need to be performed to show that fire flows to the project site are in compliance with the Public Works and Tualatin Valley Fire and Rescue Standards. Preliminary analysis by the City indicates Upsizing of water mains will not be required, however a second connection to existing water mains may be required to provide adequate fire flows. One factor that helps reduce the overall impact of a school on municipal water systems is that the maximum demand for the school is concentrated during the middle of the day, whereas residential demand is higher in the early morning and evening when more people are at home.

Figure 5 – Water System

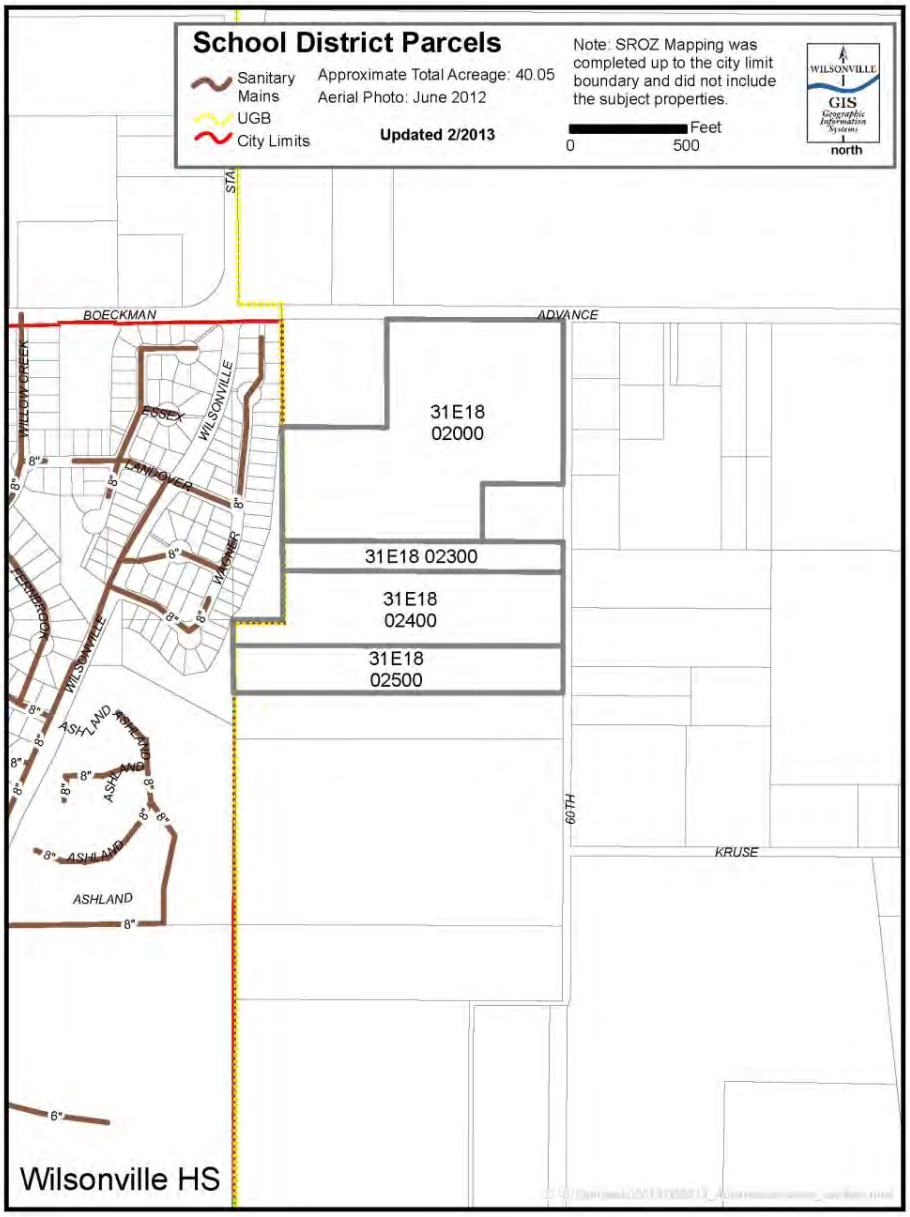


Sanitary Sewer

The existing sanitary sewer system has adequate capacity to serve the proposed school campus and community park (Figure 6). However, the city does not currently have sufficient line capacity to serve all of the Advance Road UR 4H and the Frog Pond site (within the UGB on the northwest corner of SW Stafford and SW Boeckman Roads). To address this issue, the city has hired a consultant to evaluate the sanitary sewer system and determine how these future growth areas could be best served. The city also intends to apply for a Metro grant to help finance a concept planning effort for Frog Pond and Advance Road (UR 4H). Similar to water, the highest demand for the school generally occurs at a different time of the day compared to residential uses.

Based on discussions with the city's public works staff, there appear to be several alternatives for providing sanitary sewer service to the site. The alternative selected will largely depend upon the timing of development of the subject site and the surrounding area.

Figure 6 – Sanitary Sewer System



Storm Water Drainage

The Advance Road site straddles land located in both the Meridian Creek drainage basin and a small, unnamed drainage basin located southeast of the site. Storm drainage from the site will be directed to Meridian Creek, and connection with other storm water facilities will not be necessary (Figure 7). Storm water flows from the developed site will conform with city standards for both water quantity and water quantity. There will be no storm water system capacity issues which cannot be resolved at the design and construction stages.

Figure 7 – Storm Water System

Transportation

Major Streets

The City of Wilsonville 2003 Transportation Systems Plan (TSP) was partially updated in 2009 (Figure 8), and a current TSP update is nearing completion. It designates Boeckman Road (the west extension of Advance Road) as a Minor Arterial west of Wilsonville Road. Wilsonville Road is designated as a minor arterial. East of Wilsonville Road, outside of the city limits, Advance Road and Stafford Road are designated as minor arterials and proposed bikeways in the 2001 Clackamas County TSP, which is currently being updated. The city and county designations contemplate a three-lane cross section with bike lanes and sidewalks for these streets. The Clackamas County TSP indicates that Stafford Road, from Boeckman Road north to Newland Road, is scheduled for reconstruction and widening within the next 20 years.

A transportation review was conducted by DKS Associates as part of the Advance Road Site Report (Appendix B). The study found that several roadway improvements would be necessary to support a school campus and city park. However, the report did not find that overall traffic capacity would an issue. The development of the school/park site will trigger street improvements along the property street frontages as well as potential off-site improvements to afford safe access for all transportation modes.

Pedestrian and Bicycle Facilities

The Wilsonville Bicycle and Pedestrian Master Plan (December 2006), which is an element of the Wilsonville Comprehensive Plan, contains a hierarchy of interconnected trails to serve the community. In the vicinity of the project site, a number of trails are planned. A pathway connection (Community Walkway/Bikeway No. 19, shown in Figure 9) is planned to link Wilsonville Road at the Boeckman Creek Primary School/Wilsonville High School site east across Meridian Creek, north to the subject site. This trail is envisioned to provide an off-street alternative to Wilsonville Road. This multi-modal path would provide bicyclists and pedestrians with valuable connections between educational facilities, sports complexes, and nearby residential neighborhoods. The on-street connections include contiguous sidewalks and bicycle lanes along the existing length of Wilsonville Road west of the project site. Boeckman Road to the west does not currently have bike lanes, but it does have sidewalks on the south side of the street. As the future Frog Pond residential area develops, Boeckman Road will be improved to include on-street bicycle lanes and contiguous sidewalks on both sides.

When the site is developed, the applicable city and county plans and standards will require street improvements along Advance Road and 60th Avenue to provide appropriate vehicular, school bus, transit, pedestrian, and bicycle access to the site. Pedestrian and bicycle path connections, in addition to Community Walkway/Bikeway No. 19 may be possible across Meridian Creek to further enhance access between the school site and the residential neighborhoods located immediately west of the site.

Figure 8 – Transportation System Plan Designations

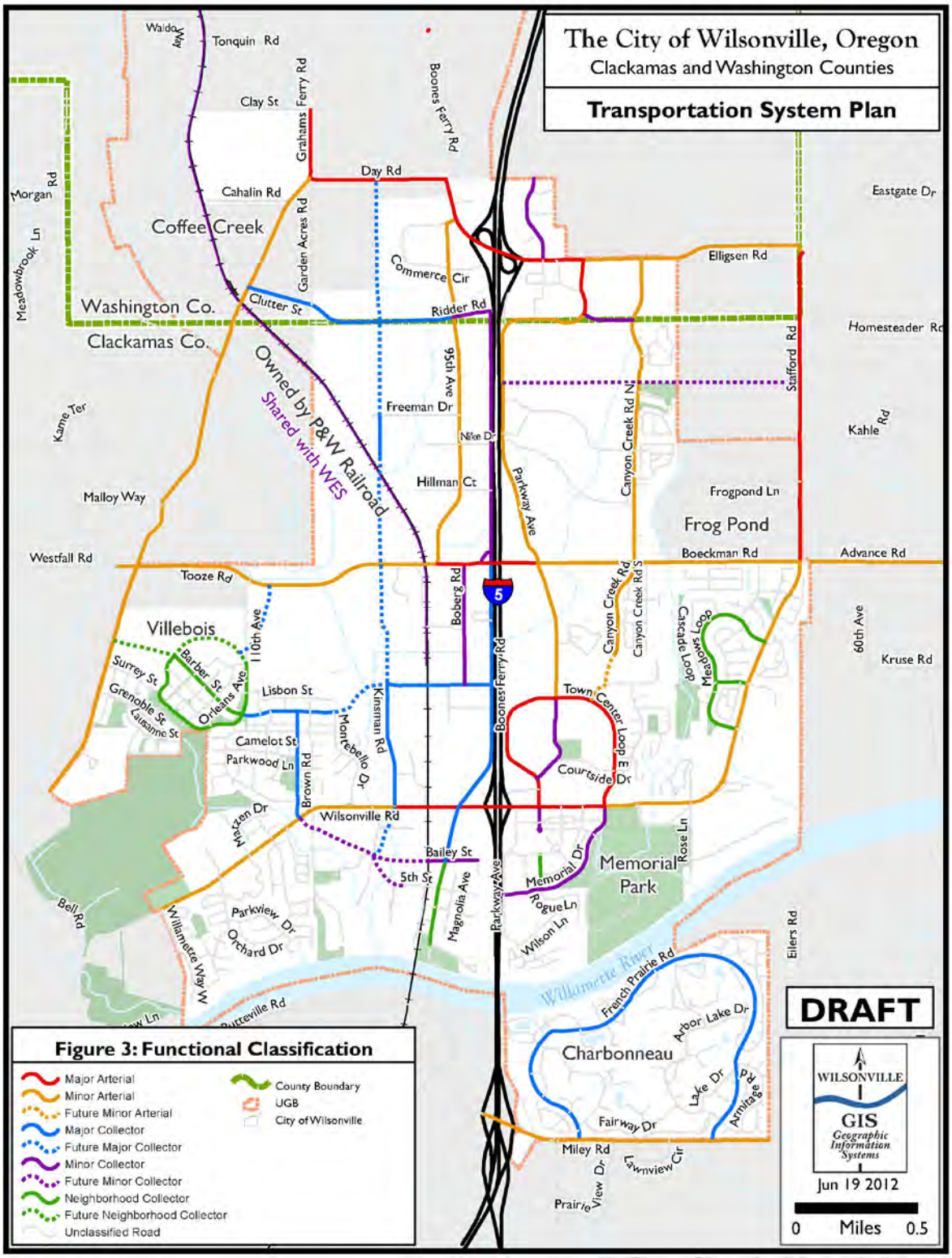
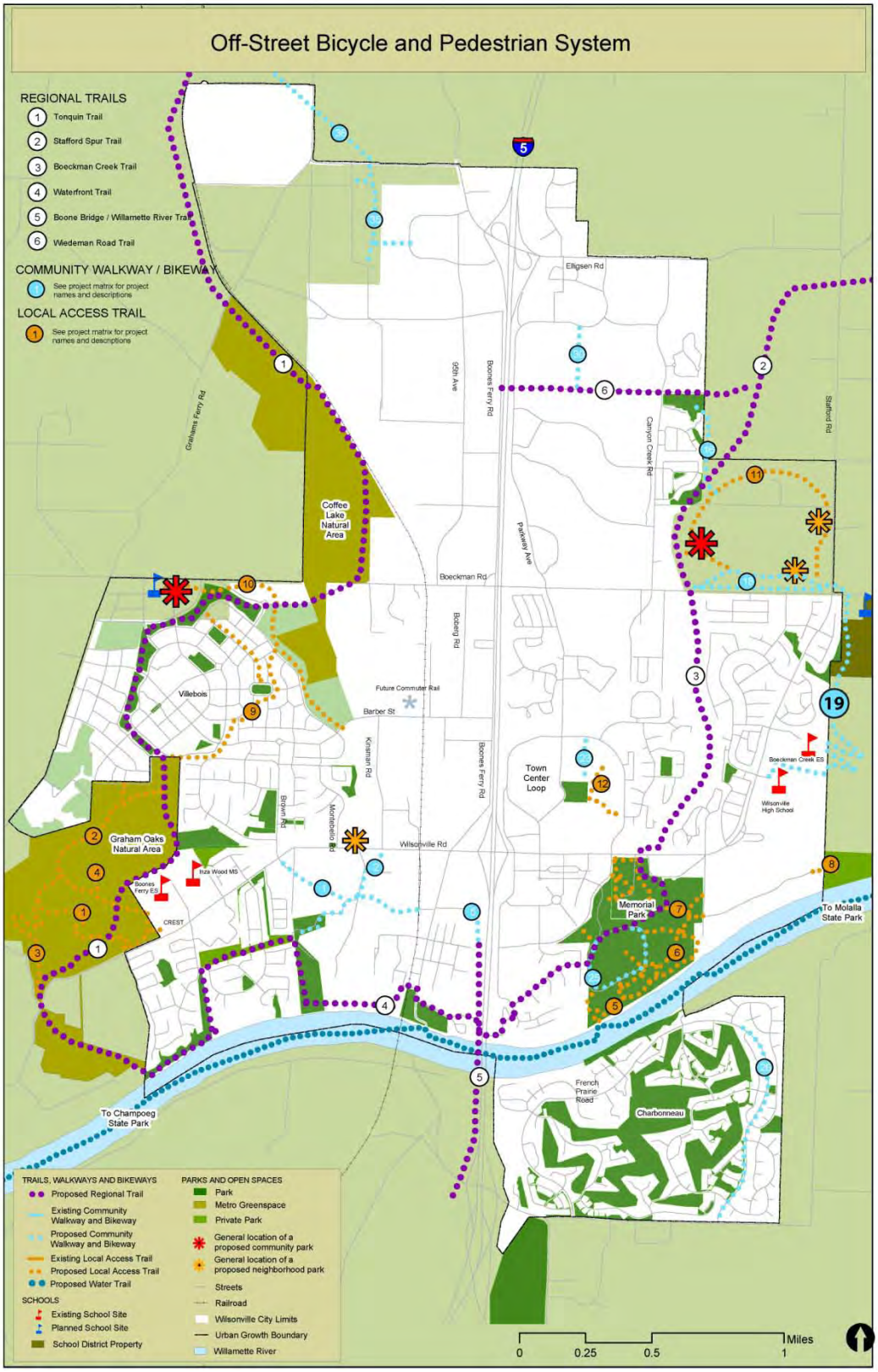


Figure 9 – Planned Pathway Connections

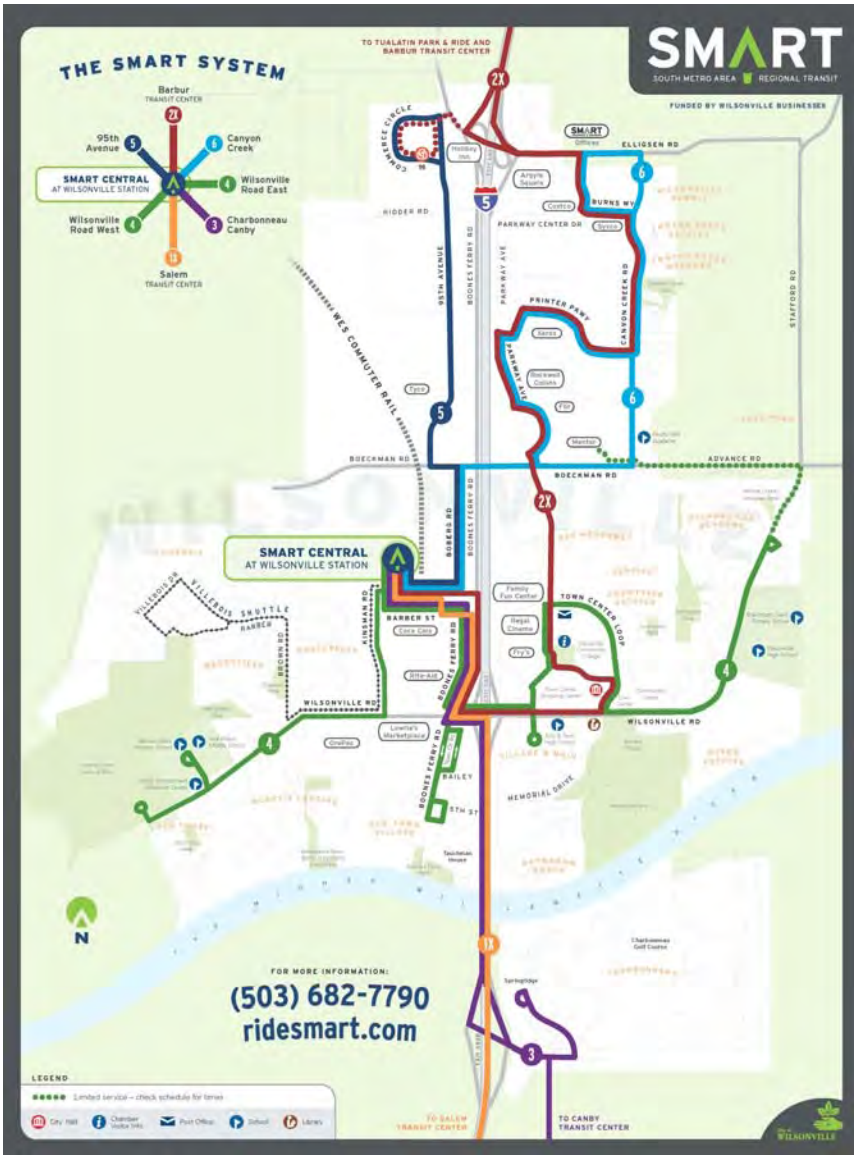


Transit

The city operates its own transit system, South Metro Area Rapid Transit (SMART). SMART operates fixed lines, shuttles, dial-a-ride services and links to other transit providers in Portland, Salem and Canby (Figure 10). All rides inside the city are free of charge. TriMet operates the Westside Express Service (WES), which is a commuter rail service terminating at SMART Central at Wilsonville Station on Barber Road. WES connects Tigard, Tualatin, and Beaverton via morning and evening commutes Monday through Friday.

SMART busses are staged and prepared to meet WES visitors delivering them to their places of destination in approximately 10 minutes of arriving at SMART Central. SMART bus line 4 is the closest bus service to the subject site, operating Monday – Saturday along Wilsonville Road immediately west of the subject site.

Figure 10 – Transit Service Map



Fire Protection and Emergency Services

Fire protection and emergency services are provided by Tualatin Valley Fire and Rescue (TVFR). TVFR currently has one operating station (No. 52) on the west side of I-5 and north of Wilsonville Road. A second station (No. 56), which is being rebuilt, is located on Elligsen Road on the east side of I-5. It is scheduled to return to operation in summer 2013. TVFR supports the application (Appendix D).

Police

The city of Wilsonville contracts with Clackamas County Sheriff's Office to provide law enforcement services to the city. The contract provides the city a dedicated Chief of Police, a School Resource Officer, a detective, and 15 deputies. The city does not anticipate any difficulty providing law enforcement services to this site.

Parks and Recreation

The city has a Parks and Recreation Department, which is responsible for senior programs, adult and youth programs, special events, and parks planning and maintenance. The department operates a community center, a variety of parks, and sports fields. The Wilsonville Parks and Recreation Master Plan was created in 2007 to guide how the city provides recreational opportunities for its residents.

One of the "key overarching elements" of the plan is to "continue to provide sports field space for the growing needs of the community." One of more significant projects highlighted in the plan is to "create shared use community/school parks at the Advance Road and Villebois school sites that include shared use gymnasium and sports field space." This was partially implemented with the opening of Lowrie Primary School in Villebois in fall 2012. The city and district now intend to collaborate in a similar manner at the Advance Road site, as described in this application.

The city has three soccer fields and five baseball fields, which are all located in Memorial Park, south of the Town Center. Memorial Park is the city's preeminent recreational facility. Because of limited space, the fields overlap so that only a maximum of five baseball games or three soccer games and one baseball game may be played at any given time. The last of these athletic fields was completed in 1999.

Since the completion of the last sports field, the city's population has risen by over 40% from approximately 14,000 in 2000 to almost 20,000 in 2010 according to the US Census Bureau. The increase in the city's population, coupled with the inability to utilize all athletic fields at once, has contributed to rising pressure to have more athletic fields in the city to accommodate baseball, soccer, lacrosse, and other field sports.

SECTION IV: PURPOSE AND NEED

OVERVIEW

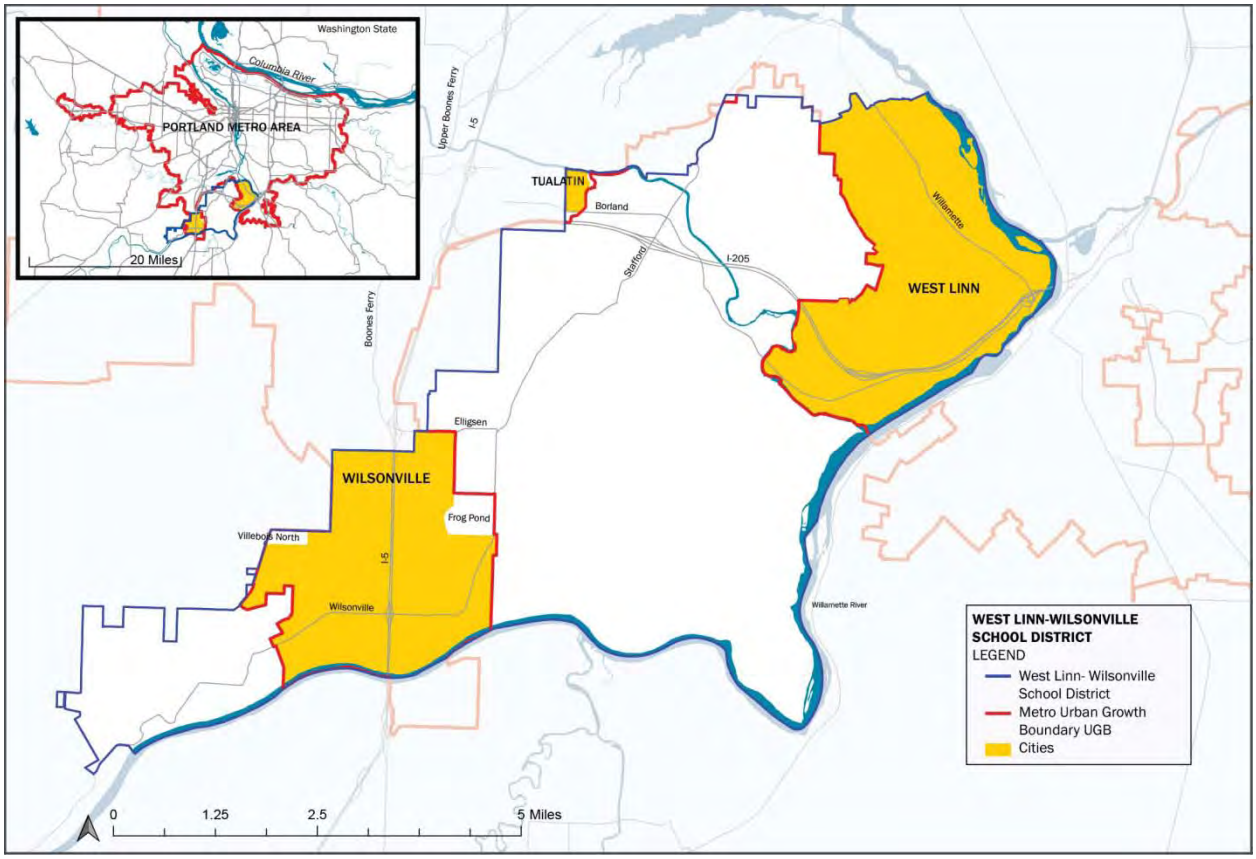
West Linn-Wilsonville School District

The West Linn-Wilsonville School District includes:

- The city of West Linn;
- The city of Wilsonville (except for Charbonneau and the extreme northwestern portion of the city);
- A small southeastern portion of the city of Tualatin;
- Clackamas County (primarily between West Linn and Wilsonville); and
- A small section of Washington County along the western edge of the District.

The current UGB includes the cities and generally excludes unincorporated land as shown in Figure 11.

Figure 11 – West Linn-Wilsonville School District



Source: West Linn-Wilsonville School District Long Range Plan

West Linn-Wilsonville School District Long Range Plan

To facilitate future planning and to comply with state requirements for fast-growing school districts, the West Linn-Wilsonville School District adopted its first long range plan in April 1996. The plan was subsequently updated several times with the most recent update nearing completion. The School Facilities section of the Long Range Plan is provided in Appendix A. The plan has proven to be a valuable tool that has enabled the district to forecast future school enrollment growth, the distribution of that growth, and the timing and need for new educational facilities.

STUDENT ENROLLMENT AND SCHOOL CAPACITY

Existing Conditions

There are currently nine primary schools, three middle schools, three high schools, and one charter school operated by the district. Of the nine primary schools, Lowrie and Trillium Creek primary schools are new facilities that opened in the fall of 2012. The existing school capacities are shown in Table 2. As shown in the table, school capacity is currently adequate with the exception of the district's three middle schools that are currently over capacity. The capacity problem is especially acute at Wilsonville's Wood Middle School where portable classrooms must remain until permanent facilities are funded and constructed.

Short-Term Student Enrollment Forecast

The West Linn-Wilsonville School District's Long Range Plan considers potential enrollment and school facility needs based on full residential development within the existing UGB and future UGB expansion areas identified in the Metro growth forecast. In addition to this longer-term evaluation, which estimates the total potential enrollment, the district conducts short-term enrollment forecasts for the upcoming 5-year period. The short-term forecasts are based upon actual residential development projects that are being considered, approved, or under construction.

The district retained a demographer to provide an updated short-term enrollment forecast (Appendix C). The forecast is based upon an evaluation of current enrollment, birth rates (particularly relevant for K-5 enrollment), and residential development projects that are underway or expected to be under construction over the next five years. The demographer interviewed the local planning departments and selected developers to create a residential development forecast.

As can be seen in Appendix C, a significant amount of residential development (over 1,800 units) is anticipated in Wilsonville over the next five years. This development information was then used to forecast enrollment by multiplying the number and type of residences by the observed number of students coming from new residential units. The short-term forecast conducted this year shows that the number of students will continue to climb, and the overall enrollment pressure will be the most pronounced at the middle school level (Table 2). With middle schools generally designed to accommodate approximately 700 students, the middle school enrollment deficit in Wilsonville will be the equivalent of one half of a new school by 2017.

Table 2 – Current Enrollment and Short-Term Forecast

SCHOOL	CAPACITY	ENROLLMENT			PROJECTIONS*				
		2010	2011	2012	2013	2014	2015	2016	2017
PRIMARY									
Boeckman	498	640	631	555	549	532	511	496	493
Boones Ferry	633	805	823	531	587	607	601	613	626
Lowrie	450	0	0	407	496	598	665	716	743
Wilsonville Subtotal		1,445	1,454	1,493	1,633	1,738	1,777	1,824	1,863
WV Available Capacity	1,581			88	-52	-157	-196	-243	-282
Bolton	282	332	269	278	256	250	232	214	202
Cedaroak	409	415	413	318	284	283	275	270	257
Stafford	520	543	525	450	358	366	366	364	370
Sunset	479	427	409	285	394	375	368	346	343
Willamette	495	601	609	510	542	542	550	532	528
Trillium Creek	450	0	0	458	433	445	450	441	446
West Linn Subtotal		2,318	2,225	2,299	2,266	2,260	2,239	2,167	2,145
WL Available Capacity	2,635			336	369	375	396	468	490
Subtotal		3,763	3,679	3,792	3,899	3,997	4,016	3,992	4,008
Total Available Capacity (K-5)	4,216			424	317	219	200	224	208
MIDDLE									
Wood		697	706	737	769	818	868	943	990
Avail. Capacity	640			-97	-129	-178	-228	-303	-350
Athey Creek		566	602	607	534	515	481	495	485
Avail. Capacity	624			17	90	109	143	129	139
Rosemont Ridge		695	692	684	732	729	719	721	716
Avail. Capacity	668			-16	-64	-61	-51	-53	-48
Subtotal		1,958	2,000	2,028	2,034	2,062	2,068	2,159	2,191
Total Available Capacity (6-8)	**1,932**			**-96**	**-102**	**-130**	**-136**	**-227**	**-259**
HIGH									
Wilsonville	1,472	1,049	1,084	1,121	1,123	1,133	1,182	1,164	1,203
West Linn	1,748	1,548	1,506	1,553	1,499	1,472	1,509	1,471	1,449
Art Tech	86	77	86	105	105	105	105	105	105
Subtotal		2,674	2,676	2,779	2,727	2,710	2,795	2,740	2,756
Total Available Capacity (9-12)	3,306			527	579	596	511	566	550
TOTAL		8,395	8,355	8,599	8,660	8,770	8,880	8,891	8,956
Total Available Capacity (K-12)	9,454			855	794	684	574	564	498

*** Projections assume that current school attendance areas remain unchanged.**

It is worth noting that the primary school enrollment is also expected to increase markedly in the Wilsonville area over the next five years. The district will respond initially by adjusting school attendance areas, but this will only be an interim solution. Ultimately, additional primary school capacity in the Wilsonville area will be required to accommodate new residential growth within the current city limit and the identified Urban Reserve expansion areas.

POTENTIAL SCHOOL SITES

School Site Size Guidelines

The district uses school site size guidelines to identify potential school sites. The guidelines are based upon the district's experience regarding the land needs for different school functions. The district has strived to use land efficiently to support local land use planning goals and minimize capital costs. The district size guidelines for primary and middle schools are summarized in Table 3.

Table 3 – School Site Size Guidelines

SCHOOL TYPE	BUILDING FOOTPRINT	PARKING AND ACCESS	ATHLETIC FIELDS PLAYGROUNDS	TOTAL ACRES*	ENROLLMENT
Primary	1.5 – 2	2.5 – 3	6 -10	10-15	450-550 (800 campus**)
Middle	2-3	3-4	12-14	17-21	600-800

* Approximate usable acreage

** A primary school campus is an alternative design that would have land needs similar to a middle school. Boones Ferry Primary School is an example of this type of facility.

Usable acreage is defined as land that is relatively flat, free of environmental constraints, and suitable for the school building(s), parking and access, and sports fields and playgrounds. An area of 1.5± acres, located along Meridian Creek, has been identified as being unbuildable due to riparian areas and steep slopes, leaving approximately 38.5 usable acres on the 40-acre site. The net site size will be further reduced to provide the necessary street right-of-way to accommodate the anticipated street frontage improvements.

School Site Selection

The enrollment growth will continue to be the most pronounced in the Wilsonville portion of the district. Therefore, the best location for new schools will be in this area as well. In a perfect world, schools would be located in the middle of their attendance areas. However, in reality, the geographic distribution of students shifts over time, and suitable school sites are very difficult to secure – especially within the UGB. A major factor influencing site selection is the scarcity of viable alternatives. Small parcel sizes, physical limitations, such as steep slopes and flood plains, unsuitable locations, and zoning restrictions all combine to make school site selection and acquisition a significant challenge.

Analysis of Potential Sites

Location of Future Growth

The majority of the residential growth in the city is presently occurring to the west of I-5 in Villebois. In addition, there are significant residential developments, including Jory Trail, located to the north of the city center. Looking to the future, residential development activity will shift to the east as Frog Pond and Advance Road (UR 4H) urbanize. Looking further ahead, there are several Urban Reserve areas located north of Frog Pond, which will contribute to long-term enrollment growth. This includes Norwood (UR 4D) and I-5 East Washington County (UR 4F and 4G). A small UGB expansion is also planned for Wilsonville Southwest (UR 5H), but the city has identified this as its lowest priority for urbanization. Figure 12 illustrates the location of current and future growth areas (note that Grahams Ferry UR is in the Sherwood School District).

Site Evaluation and Comparison

Potential school sites selected for evaluation included sites of one or more properties which were vacant or underdeveloped with a minimum total area of 20 acres (the size guideline for a middle school) or larger. This search yielded seven potential sites (Figure 13). In evaluating the potential school sites (summarized in Table 4), the district must consider several variables. The primary considerations include:

- *Plan Designation* – Like all other developments, schools must be located on land that is designated to allow the uses proposed. These typically include land that is planned for residential or institutional uses. All properties of sufficient size were considered. However, residentially designated land is generally favored over commercial/industrial land because residential land will typically be located within the residential neighborhoods to be served by the school.
- *Availability* – The time required for site acquisition, permitting, and construction must allow completion of the school in time to meet the educational needs of the students in the district. One of the key issues relating to the seven potential sites is that four have owners who have been historically unwilling to sell, and of the four, two are designated for industrial and commercial use. These conditions lead to uncertainty and extra time to either acquire them and/or obtain the necessary plan and zoning amendment.
- *Site Character* – Important characteristics of the site include size, configuration, topography, environmentally sensitive areas, and surrounding land uses.
- *Location* – To provide efficient access to school facilities throughout the district, schools should be located close to where students live. While primary schools may be located relatively close together because of their relatively small attendance areas, middle and high schools should be located farther apart. For the Wilsonville area, which will ultimately have comparable amounts of residential development on both sides of I-5, it is important to "balance" the Wood MS facility with a middle school in the eastern side of the city. This also provides better access for students living in Clackamas County.
- *Urban Facilities, Services, and Transportation* – The availability of water, sanitary sewer, storm water facilities, and multi-modal transportation improvements are essential to successfully operate a school.

Figure 12 Primary Growth Areas

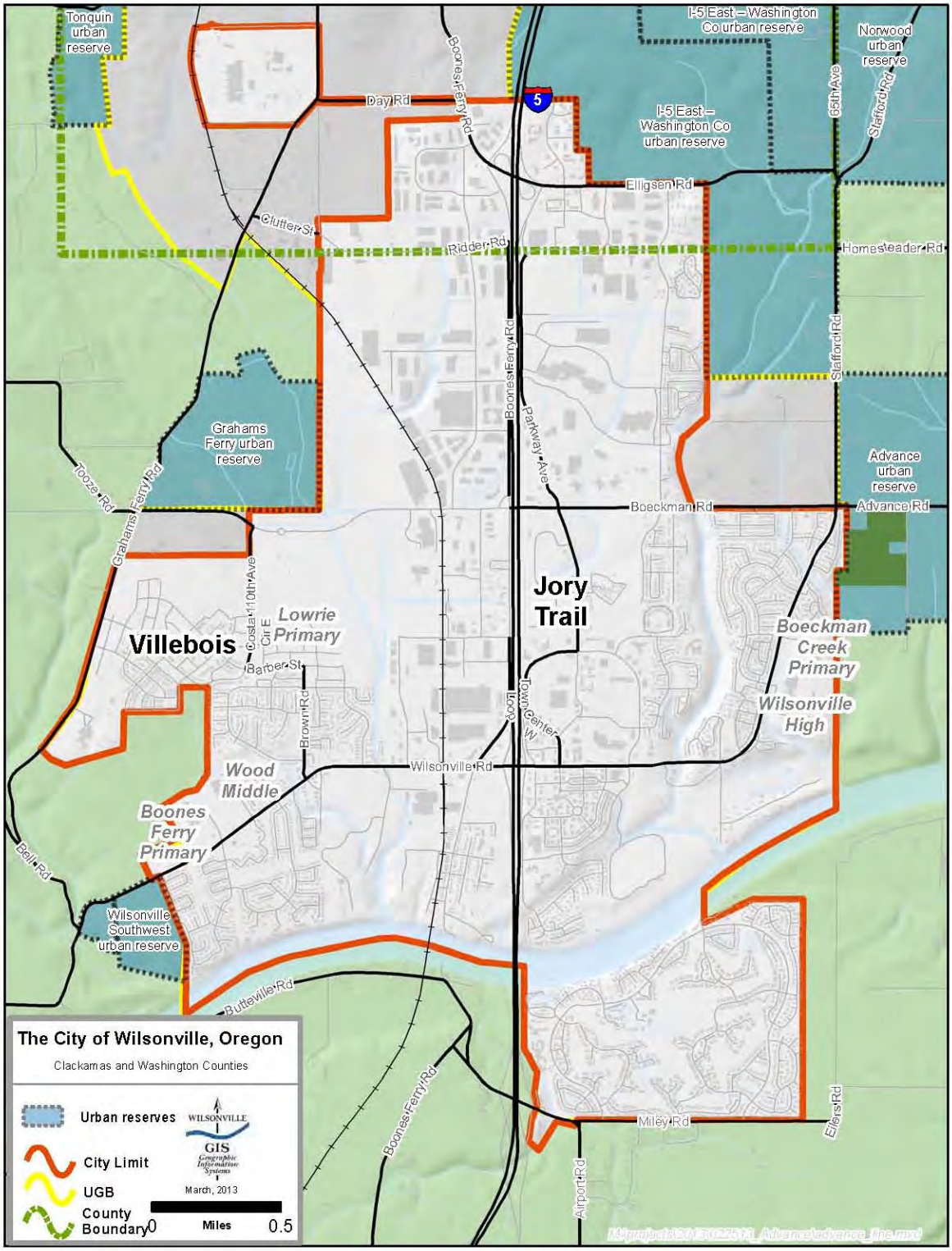


Figure 13 – Potentially Available Sites in the Wilsonville Area

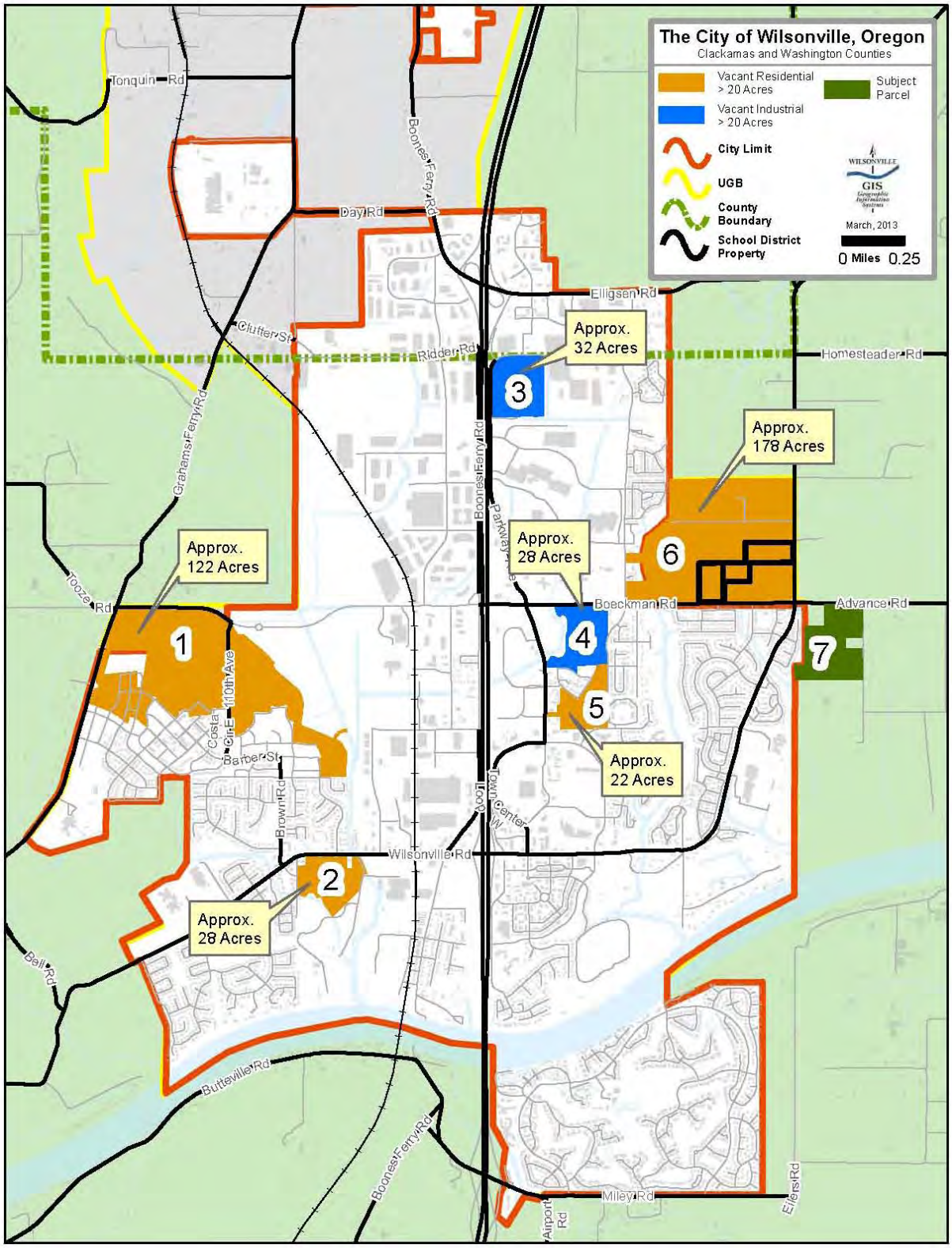


Table 4
Site Evaluation and Comparison

SITE*	RATING	PLAN DESIGNATION	AVAILABILITY	SITE CHARACTER	LOCATION	URBAN FACILITIES, SERVICES & TRANSPORTATION	COMMENTS
1	Poor	Residential – Village	Not available. This entire area is part of the Villebois Village Master Plan. One primary school was planned, and this school (Lowrie PS) is now open. No other land is available.	This 122-acresite is within the UGB and most of it is annexed. There are several older homes, but the area is being developed with single and multi-family residences, small mixed-use commercial center, and open spaces.	Not well suited for primary or middle school use because of the close proximity to Lowrie PS and Wood MS and its location near the western edge of the district. Middle school capacity is needed on the east side of I-5.	Services and facilities are available, with the exception of the northern portion of this area. However, the planning and design would need to be significantly reconfigured to change the master plan for a school.	This site would be an extremely poor option because the Villebois Village plan is well established making it impractical to amend and the site is too close to Wood MS and the western edge of the district.
2	Poor	Residential	Possibly available. The Bernert/Young property is within the city of Wilsonville and is planned for residential development, but the owner has not been willing to sell.	The entire 28-acre site continues to be in agricultural use. Some of the property is environmentally constrained (SROZ). It may be of sufficient size to support a primary/middle school campus, but not large enough for the addition of a community park.	Poor location because of its close proximity to Boones Ferry PS and Wood MS. Middle school capacity is needed on the east side of I-5 to more conveniently accommodate students living in the east side of Wilsonville and in Clackamas County.	Services and facilities are available.	Condemnation would probably be necessary to purchase it, the site is not large enough to support a school campus and community park. More important, its location is too close to existing primary and middle schools.
3	Poor	Industrial	Not available. The Elligsen property is within the city and is planned for industrial or commercial development. In addition, the owner has not been willing to sell at a reasonable, market-based price.	This 32-acre site is flat and developable. It may be of sufficient size to support a joint primary/middle school campus and a community park.	With its location next to I-5, surrounded by commercial and industrial uses and near the northern edge of the district, this site is a poor candidate for a school or community park.	Services and facilities are available.	Condemnation would probably be necessary to purchase the property. Potentially adequate size for a primary/middle school campus, but not a community park. Most important, it is an extremely poor candidate due to its isolation from the residential areas it must serve. Intended primarily for industrial or commercial use.
4	Poor	Industrial	Not available. Mentor Graphics property is within the city and is planned for industrial development. In addition, it is being held by the company for future expansion and the owner is not willing to sell.	This 28-acre site is flat and developable. It may be of sufficient size to support a joint primary/middle school campus and a community park. Some of the property is environmentally constrained (SROZ) and the addition of a community park may not be possible.	With industrial/commercial development to the north and I-5 not far to the west, this site is not as accessible to residential neighborhoods as others.	Services and facilities are available.	Condemnation would probably be necessary to purchase the property. May not be large enough for a school campus, and clearly not sufficient to include a community park. It is somewhat isolated from the residential areas it must serve. Intended primarily for industrial or commercial use.
5	Poor	Residential	Possibly available. Mentor Graphics property is within the city and is planned for residential development. However, it is being held by the company for future expansion and the owner is not willing to sell.	This 22-acre site has an irregular shape along with a wooded area, which would make it difficult to accommodate a middle school. A campus including a primary school and community park would not be possible.	This has a central location on the east side of I-5. However, providing appropriate access and a compatible relationship with surrounding residential development could pose some difficulties.	Services and facilities are available.	Condemnation would probably be necessary to purchase the property. Potentially adequate for a middle school, but would not be capable of accommodating a school campus and community park.
6	Fair	Rural Residential (Clackamas Co.) but within the UGB and planned primarily for urban residential use.	Available. Within the UGB but not the city limits because a concept plan must be completed first. Although the district owns a 25-acre site, it will not be available to develop for at least several years.	The majority of Frog Pond (178 acres) is developable. The district currently owns 25 acres in this area. Due to its irregular shape, the district regards this as a potential primary school site only. The district property would have no room for a middle school or community park.	Good location on the east side of I-5 to serve future residential growth within Frog Pond and the Urban Reserve areas to the north.	Sufficient capacity is available to serve the existing district property. However, the city is currently evaluating public utility needs to support an upcoming concept planning effort for Frog Pond (and UR 4H). To provide optimal local circulation and efficient utility systems, this plan must be completed before any properties in Frog Pond are urbanized. The location and configuration of the district property require its inclusion as part of the larger concept planning effort to appropriately provide streets, utilities, open space, etc. for the entire area.	The two primary issues are: 1) property size and configuration; and 2) timing. At 25 acres, the district would need additional property to create a primary/middle school campus. The configuration with 2 halves connected at a property corner makes a campus arrangement impossible. Timing is the second major issue. The city has submitted a Metro grant request to fund a concept plan for the area, which will take about 2 years to complete (longer if a grant is not forthcoming). When the district property was purchased, a concept plan was expected to occur shortly thereafter. The district intends to retain the site for a potential future primary school.
7	Good	Agriculture (Clackamas Co.), but planned for future residential development.	Within UR 4H but not the UGB or city limit.	Most of this 40-acre site is flat and developable with sufficient usable acreage to provide a primary/middle school campus plus a community park.	Good location east of I-5 to serve existing and future residential development in Wilsonville. Complementary location to Wood MS located on the west side of I-5.	Services and facilities are available to serve this site. Because it is defined by existing roads and Meridian Creek, a concept plan was prepared for this site without involving the remainder of UR 4H. Concept planning for UR 4H is proposed to occur with Frog Pond a noted above.	Clearly the best of the alternative sites considering all the factors. Good timing because a concept plan is completed for the site. It is a perfect site to efficiently accommodate a primary/middle school campus and community park. Development of this site will not impair efficient urbanization of the surrounding UR 4H. Multi-modal access improvements are planned.

* See Figure 13

Conclusion

The location of existing schools and their associated attendance areas leaves the eastern portion of Wilsonville as the only general area that makes sense in the context of Metro, Clackamas County, and Wilsonville planning directives. All things considered, the Advance Road site is the most desirable location for the primary and middle school campus and community park. . The site represents a logical middle school location to complement Wood Middle School on the west side of I-5. The property is relatively self-contained by two roadways (Advance Road and 60th Avenue) and the Meridian Creek riparian corridor and existing urban development in the city, enabling the creation of a concept plan that is separate from the remainder of UR 4H.

The only other candidate site with reasonable potential is the Frog Pond area. The primary problems here revolve around property size/configuration and timing. At 25 acres, this site does not have sufficient land area for a primary/middle school campus. Perhaps more important, the configuration, with the two halves of the property touching at one corner, does not allow a cohesive arrangement of school improvements and access. In addition, a community park would not be possible on this property.

The uncertain timing associated with the necessary concept planning for Frog Pond is another major issue. When the district purchased the property prior to 2002, the housing market was booming, and a concept plan was expected to be completed shortly thereafter. A concept planning effort was initiated by the developers in Frog Pond, but when the market cooled, the concept plan evaporated. The city now hopes to re-initiate the concept planning work, but it is contingent on receiving a grant from Metro. The best case would be plan completion in approximately two years. However, this will be longer if funding is not available.

These considerations lead the district to conclude that the Advance Road site is clearly the best option available. Frog Pond, and district property in particular, is best suited as a potential future primary school site to accommodate anticipated enrollment growth coming from Frog Pond and the Urban Reserve areas to the north.

WILSONVILLE PARKS AND RECREATION MASTER PLAN

The Wilsonville Parks and Recreation Master Plan was completed in 2007. The primary goal of the plan is to keep pace with community growth and continue to provide quality parks throughout the city. Working cooperatively with the school district is a consistent theme throughout the plan. A key finding in the plan notes the demand for additional athletic fields and areas for more passive activities will increase as the city grows. Creating “school parks”, which include design features and amenities to facilitate harmonious sharing of facilities for school and city use, is a major component of the plan. Significant projects identified in the plan include creating “… shared use community parks at the Advance Road and Villebois school sites that include shared use gymnasium and sports field space.” The Villebois project has been completed with the opening of Lowrie Primary School in 2012. Both outdoor and indoor (e.g., gymnasiums) facilities are being shared as contemplated in the master plan.

A school community park is identified in the plan on the Advance Road site (Figure 3: Parks System Map and project P18 in Chapter 3 of the master plan). The city and district intend to create a school community park as described in the plan. Not only will this be more economical to build and maintain, it will maximize efficient use of land by sharing outdoor areas, indoor facilities, parking, and access.

SECTION V: APPLICABLE REVIEW CRITERIA

The criteria for a major UGB amendment are contained in Metro Code 3.01.020. The criteria (shown in *italic*) and district analysis follow.

Title 14: Urban Growth Boundary
3.07.1440 Major Amendments – Criteria

A. The purpose of the major amendment process is to provide a mechanism to address needs for land that cannot wait until the next analysis of buildable land supply under ORS 197.299. Land may be added to the UGB under sections 3.07.1430 and 3.07.1440 only for public facilities and services, public schools, natural areas and other non-housing needs and as part of a land trade under subsection D. An applicant under section 3.07.1430 must demonstrate compliance with this purpose and these limitations.

Response: Metro is required to evaluate the region's ability to accommodate anticipated residential and employment growth for a 20-year period. This analysis of the buildable land supply will be underway again in 2014, and according to the Metro Code (§3.07.1430 A.) major amendment applications may not be accepted, unless special approval is granted by the Metro Council. As explained in this application, the enrollment pressure at the middle school level is becoming increasingly acute, with a district-wide capacity shortfall roughly equivalent to one half of a middle school expected by 2017 (Table 2, p. 19).

From beginning to end, the process for constructing a new school takes several years to complete. This is because there is a series of steps that must be completed before an identified school facility need can be fulfilled:

1. The district must identify facility capacity needs along with the general area to be served.
2. The district works with district stakeholders to shape a bond package to take to the voters.
3. The district must have a school site that is within the UGB and zoned for development.
4. The development plans for the school must be created and permits obtained.
5. The school is constructed and opened.

The district has identified the need (Step 1 above) as described in Section IV and is beginning initial conversations with stakeholders (Step 2) about how to finance future school district improvements, including a middle school in Wilsonville. Experience with previous school construction projects suggests that the final three steps will take approximately four years to complete. Waiting to apply for a major amendment in 2015 would lead to a middle school opening until 2019, meaning that the middle school overcrowding will plague the district well into the future.

Wilsonville has a pressing need for additional athletic field space. The number of sports fields has remained constant since 2000 as the city's population has risen by over 40% from approximately 14,000 to over 20,000 residents.

As described in Section IV, potential sites within the UGB/Wilsonville city limit with adequate size for a middle school are not suitable primarily due to location, zoning, and availability. When the land needed to create a school campus and community park is also considered, all of the alternative sites with a residential plan designation are too small (Table 4, p. 24).

B. The applicant shall demonstrate that the proposed amendment to the UGB will provide for an orderly and efficient transition from rural to urban land use and complies with the criteria and factors in subsections B, C, D, E, F and G of section 3.07.1425. The applicant shall also demonstrate that:

Response: The factors in subsections B, C, D, and F (there is no subsection G) are addressed under 3.07.1425 below.

1. The proposed uses of the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land;

Response: The proposed major amendment site is surrounded by land that is either within the city of Wilsonville or Urban Reserve 4H (Figure 2, p. 4). The land in the city is fully urbanized with single and multi-family residences. The Meridian Creek tributary and SROZ environmental overlay provide a permanent buffer between the subject property and nearby city properties.

The remaining properties within UR 4H are relatively large (2 acres and greater) and the existing homes have substantial setbacks from their respective property boundaries. The conceptual site plan (Figure 3, p.5) places school buildings and major activity areas away from adjoining properties. As is the district's standard practice, it will work closely with surrounding property owners as development plans are created to minimize any potential adverse impacts related to school construction and operation.

While the development of a school site and park would potentially be the first urban development in UR 4H, the regional and local plans anticipate redevelopment of this entire area. The early urban development projects always will cause some tension between existing residents who welcome the change and those who are content with its current rural character. So well-designed solutions to deal with compatibility issues may still feel like "encroachment" to rural residents. The development of the site will include public involvement during the design development and permit approval process, allowing ample opportunity for the neighbors to help address specific compatibility issues. In the long term, establishing the school and park first will provide the opportunity for subsequent urban developments to be oriented and designed to optimize their physical relationship with the school and park. This will allow the Advance Road Urban Reserve properties to "grow up together" compared to inserting a large public facility into an established residential neighborhood.

2. If the amendment would add land for public school facilities, the coordination required by subsection C(5) of section 3.07.1120 of this chapter has been completed;

Response: C(5) states: "Provision for the amount of land and improvements needed, if any, for public school facilities sufficient to serve the area added to the UGB in coordination with affected school districts. This requirement includes consideration of any school facility plan prepared in accordance with ORS 195.110." This requirement is satisfied as described in this application. The district has had a long range plan since the mid-90s, and it is completing an update of the plan with a focus on enrollment demands and facility needs. The district and city have been coordinating their planning regarding this site for years as demonstrated by the identification of this site for future school and park use in the West Linn-Wilsonville School District Long Range Plan and the Wilsonville TSP and Parks and Recreation Master Plan.

3. *If the amendment would add land for industrial use…*

Response: Not applicable. No industrial land or development is proposed.

C. *If the application was filed under section 3.07.1435, the applicant shall demonstrate that the amendment is consistent with any concept plan for the area developed pursuant to section 3.07.1110 of this chapter.*

Response: Section 3.07.1435 of the Metro Code applies to expedited procedures for major amendments to add industrial land into the UGB. Therefore, a concept plan is not required by this section. As noted above, this site is identified in applicable district and city plans as a future school/park site. In preparing for its annexation and development the district and city jointly prepared a concept plan for the site as detailed in Appendix B. The city proposes to conduct a concept plan for all of Frog Pond and the Advance Road UR 4H area. This plan will be completed prior to any further UGB expansion in this area.

D. *To facilitate implementation of the Metropolitan Greenspaces Master Plan of 1992, the Council may add land to the UGB in a trade that removes a nearly equal amount of land from the UGB. If the Council designates the land to be added for housing, it shall designate an appropriate average density per net developable acre.*

Response: Not applicable because this application does not propose a land trade.

3.07.1425 Legislative Amendment to the UGB – Criteria

A. *This section sets forth the factors and criteria for amendment of the UGB from state law and the Regional Framework Plan. Compliance with this section shall constitute compliance with statewide planning Goal 14 (Urbanization) and the Regional Framework Plan.*

Response: Compliance with the relevant factors and criteria is demonstrated in this application and therefore, it complies with statewide planning Goal 14 and the Regional Framework Plan.

B. *The Council shall determine whether there is a need to amend the UGB. In determining whether a need exists, the Council may specify characteristics, such as parcel size, topography or proximity, necessary for land to be suitable for an identified need. The Council's determination shall be based upon:*

1. *Demonstrated need to accommodate future urban population, consistent with a 20-year population range forecast coordinated with affected local governments; and*

Response: As described herein, the need for additional middle school capacity is well documented in the district's Long Range Plan (Appendix A) and Table 4, which shows the existing and projected capacity deficit. The district's three middle schools are currently operating at or over capacity and substantial residential development is occurring or planned in the near-term within the existing UGB. The long-range outlook shows this growth will shift to the east side of the city as Frog Pond, Advance Road (UR 4H) and other Urban Reserve areas (Norwood and I-5 East Washington County) develop. The requested

UGB amendment will allow the district and the city meet current as well as anticipated short- and long-term needs for educational and recreation capacity.

2. *Demonstrated need for land suitable to accommodate housing, employment opportunities, livability or uses such as public facilities and services, schools, parks, open space, or any combination of the foregoing in this paragraph; and*

Response: As documented in Section IV, viable middle school sites are not readily available within the current UGB. The existing 20+ acre sites (Figure 13, p. 23) are not suitable for the reasons summarized in Table 4 (p. 24). The Advance Road site is the best alternative considering:

- Availability and the ability to construct a school on a reasonably predictable schedule once the UGB amendment is approved.
- Site characteristics including sufficient area to provide an efficient primary/middle school campus and community park complex.
- A location that will provide proper distribution of middle schools in Wilsonville. Considering future residential growth in the eastern Wilsonville area, the site is also well positioned to provide primary school capacity in addition to the middle school.
- Urban facilities and services may be planned, designed and provided on a schedule necessary to allow timely provision of much needed middle school capacity.

3. *A demonstration that any need shown under paragraphs 1 and 2 of this subsection cannot reasonably be accommodated on land already inside the UGB.*

Response: As described in Section IV and summarized in Figure 13 and Table 4, there are very limited possibilities for locating a middle school within the current UGB to serve the district's target population. A GIS search for potential sites of 20+ acres consisting one or multiple parcels yielded a total of seven possible school sites. Of these, only the Advance Road site has all of the necessary qualities to enable the district to provide a middle school that could relieve the overcrowding at the middle school level. As explained in this application, there are significant advantages associated with combining a primary/middle school campus and community park. When these additional elements are considered, the Advance Road site is the only one that will accommodate this symbiotic combination of uses.

C. *If the Council determines there is a need to amend the UGB, the Council shall evaluate areas designated urban reserve for possible addition to the UGB and shall determine which areas better meet the need considering the following factors:*

1. *Efficient accommodation of identified land needs;*

Response: The district and city have identified needs for additional school and park capacity to accommodate current residents and anticipated population growth. The West Linn-Wilsonville School District Long Range Plan in Appendix A documents this growing middle school capacity deficit. Relative to the existing school facilities in the Wilsonville area, the Advance Road site represents an efficient location because:

- The other middle school in Wilsonville (Wood) is located on the west side of I-5, and a second middle school located in the eastern portion of the city will facilitate convenient access for students in Wilsonville and unincorporated Clackamas County to the east.

- City utilities are available to serve this site, which is adjacent to the city limit and only a short distance from utility lines that have sufficient capacity to accommodate a school campus/community park.
- Direct and efficient access will be available via major streets, which are intended to accommodate significant motor vehicle, pedestrian, bicycle, and transit needs. In addition, the Wilsonville TSP and Parks and Recreation Master Plan call for a pathway connection between Wilsonville Road and this site.
- It is in an optimal location to serve future development in UR 4H, Frog Pond, and other designated Urban Reserve areas (Norwood and I-5 East Washington County) to the north.
- Utilizing a 40-acre site to ultimately accommodate two schools and a community park will allow much greater efficiency than locating each use on a separate site. The proposed site will allow for shared parking and access, more efficient programming for school physical education and school/community sports, and reduced operations and maintenance costs. The district and city have long history of partnering to maximize public funding of educational and community programs.

2. *Orderly and economic provision of public facilities and services;*
   (Includes: water, waste water, storm water, transportation, police/public safety, fire, parks, schools)

Response: As noted in Section III, sufficient capacity is available to provide urban facilities and services:

- Water and sanitary sewer facilities currently have adequate capacity to serve the site.
- Storm water capacity will be provided by on-site facilities releasing storm water into Meridian Creek according to city standards.
- Transportation facilities have adequate capacity to serve the site. As noted above and in the appendices, improvements will need to be made as the site is developed.
- Police/public safety services can be provided by the city and county.
- Fire/emergency services are available from TVFR.
- Park and recreation capacity will be greatly enhanced to address the significant population growth, which has occurred and will continue.
- School capacity is currently deficient at the middle school level, and additional pressure will be felt by the district at the primary and middle school level in the coming years. Securing and developing this site will address these short- and long-term issues.

3. *Comparative environmental, energy, economic and social consequences; and*

Response: The consequences of bringing this site into the UGB compares favorably with the other candidate sites reviewed in Figure 13 and Table 4.

- Environmental Consequences. Other than the Meridian Creek corridor located on the extreme west edge of the site, it is devoid of any environmental constraints. Because of its location adjacent to the city, facilities and services can be efficiently provided, and the site is located to enable efficient transportation to and from the site for students and park users alike. The shared use of the site for schools and a community park allow for efficient use of land and reduced impervious surfaces – especially with shared access and parking.
- Energy Consequences. As noted above, the site is well-served by transportation facilities. With the development of the site additional improvements will be made to facilitate multi-modal

access to the site, including street improvements, pathway improvements, and potential SMART bus service extension. As the remainder of UR 4H urbanizes, the site will be centrally located within a pedestrian- and bicycle-friendly neighborhood, reducing the need for motorized access to the school campus and the community park.

- Economic Consequences. The cost to develop this property, with its relatively flat topography, access to utilities, and the ability to share common facilities between two schools and a community park, make this site significantly more economical than any of the other potential sites. The cost of providing urban facilities and services are comparable to providing similar levels of service within the existing UGB. As noted in Section III, facilities and services are readily available to the site.
- Social Consequences. Quality education and recreational opportunities are essential elements for building and maintaining successful communities. The proposed UGB expansion site represents a location that can provide equitable access to quality educational and recreational facilities through the district and city of Wilsonville.

4. *Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on land outside the UGB designated for agriculture or forestry pursuant to a statewide planning goal.*

Response: As noted in Section III, the surrounding uses within UR 4H do not include significant active farming activity. This relative absence of agricultural value and activity along with proximity to the city of Wilsonville led to its designation as an Urban Reserve rather than a Rural Reserve. The larger parcels typically have grass fields single family residences. Several of the smaller acreages have limited agricultural use, such as nursery stock and Christmas trees. Other farm crops or livestock are not evident on any of the properties surrounding the subject site. As UR 4H is urbanized, the site will be within an urban neighborhood and not on the edge of a more permanent boundary between urban and agricultural activities.

5. *Equitable and efficient distribution of housing and employment opportunities throughout the region;*

Response: This criterion is not directly relevant to the location of school and park facilities. However, the location of schools and a community park on this site will provide equitable and efficient distribution of school and park facilities to serve existing and future residential neighborhoods.

6. *Contribution to the purposes of Centers and Corridors;*

Response: The site is not within a Center or Corridor but, it is near the Wilsonville Town Center, which is zoned to accommodate mixed use development. As a relatively low intensity use, this proposed school campus and community park is well located to support the more intensive uses that are more appropriately situated within the Town Center.

7. *Protection of farmland that is most important for the continuation of commercial agriculture in the region;*

Response: With the designation of the Advance Road area as an Urban Reserve area, Metro and Clackamas County have determined that this area is clearly not critical for the continuation of

commercial agriculture in the region. As noted in this application, there is very little agricultural activity occurring on the properties surrounding the site. Bringing this site into the UGB before the remainder of UR 4H will have no impact upon the future or viability of agriculture in the county or the region.

8. Avoidance of conflict with regionally significant fish and wildlife habitat; and

Response: As noted in this application, the property is well-suited for development because it is relatively flat with a minor drainage and environmentally sensitive area along the western edge of the site. The size and shape of the property will allow for development of school facilities, athletic fields, and a community park while keeping all of the identified sensitive areas intact.

9. Clear transition between urban and rural lands, using natural and built features to mark the transition.

Response: With its location adjacent to the Wilsonville city limit and its northern and eastern boundary largely defined by public roads, the site will have built features, which will provide a buffer and transition between an urban school campus/community park and nearby rural uses (Figure 2). Because UR 4H extends beyond the site, the significance of such a buffer will disappear as the remainder of this Urban Reserve area is transformed from rural to urban uses.

D. The Council may consider land not designated urban or rural reserve for possible addition to the UGB only if it determines that:

1. Land designated urban reserve cannot reasonably accommodate the need established pursuant to subsection B of this section; or

Response: This criterion is not relevant because the site and surrounding properties to the north, east and south are within an Urban Reserve area.

2. The land is subject to a concept plan approved pursuant to section 3.07.1110 of this chapter, involves no more than 50 acres not designated urban or rural reserve and will help the concept plan area urbanize more efficiently and effectively.

Response: This criterion is not relevant because the site and surrounding properties to the north, east and south are within an Urban Reserve area.

E. The Council may not add land designated rural reserve to the UGB.

Response: This criterion is not relevant because the site and surrounding properties to the north, east and south are within an Urban Reserve area.

F. The Council may not amend the UGB in such a way that would create an island of urban land outside the UGB or an island of rural land inside the UGB.

Response: As noted above, the site and the remaining portion of UR 4H are adjacent to the city of Wilsonville. The transformation of this area from rural to urban represents a logical and methodical way to enlarge an urban area, which will not create an island of urban development outside of the UGB.

APPENDICES

APPENDIX A

West Linn-Wilsonville School District

Long Range Plan – Part B

WEST LINN-WILSONVILLE SCHOOL DISTRICT

LONG RANGE PLAN

FEBRUARY 6, 2013

ACKNOWLEDGEMENTS

WEST LINN-WILSONVILLE SCHOOL BOARD

Dale Hoogestraat, Board Chair
Keith Steele, Vice-Chair
Kristen Keswick
Betty Reynolds
Cheri Zimmerman

Dr. William Rhoades, Superintendent

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C CAPITAL IMPROVEMENTS

B

School Facilities

INTRODUCTION

This section, School Facilities, provides the framework for facilities planning, defines the issues facing the District, and identifies future facility needs and improvements. It is the second of three parts that collectively provide the framework for school facility needs are:

- Part A: Framework for Educational Excellence – Describes the values, themes and educational needs and approaches that are the basis of facility planning and maintenance decisions.
- Part B: School Facilities – Identifies the existing school capacity, potential growth, and educational trends and factors that could impact future facility needs, and future facility needs.
- Part C: Capital Improvements – Outlines the capital improvement planning process and identifies future capital improvement projects.

SNAPSHOT OF TODAY

EXISTING DEVELOPMENT AND ENROLLMENT

The 2010 Census shows there are approximately 19,033 residences within the District with a total enrollment that same year of 8,400 students. The majority of residences and development is located within the cities, with the city of West Linn accounting for the largest share. For planning purposes, the District is divided into four geographic sub-areas (Figure 1). Table 1 summarizes the number of residential units (single and multi-family) and students by sub-area.

To evaluate enrollment information at the neighborhood level, the District has developed a GIS (Geographic Information System) mapping framework for tracking existing development and enrollment, location of students, and anticipating future enrollment. The mapping system is based upon 175 "study areas" that include discrete neighborhoods (Figure 1). These study areas are the building blocks for the attendance areas for primary, middle, and high schools.

Figure 1
STUDY CELLS AND SUB-AREAS

1 West Linn Sub-Area
2 Stafford Basin Sub-Area
3 Clackamas County Sub-Area
4 Wilsonville Sub-Area

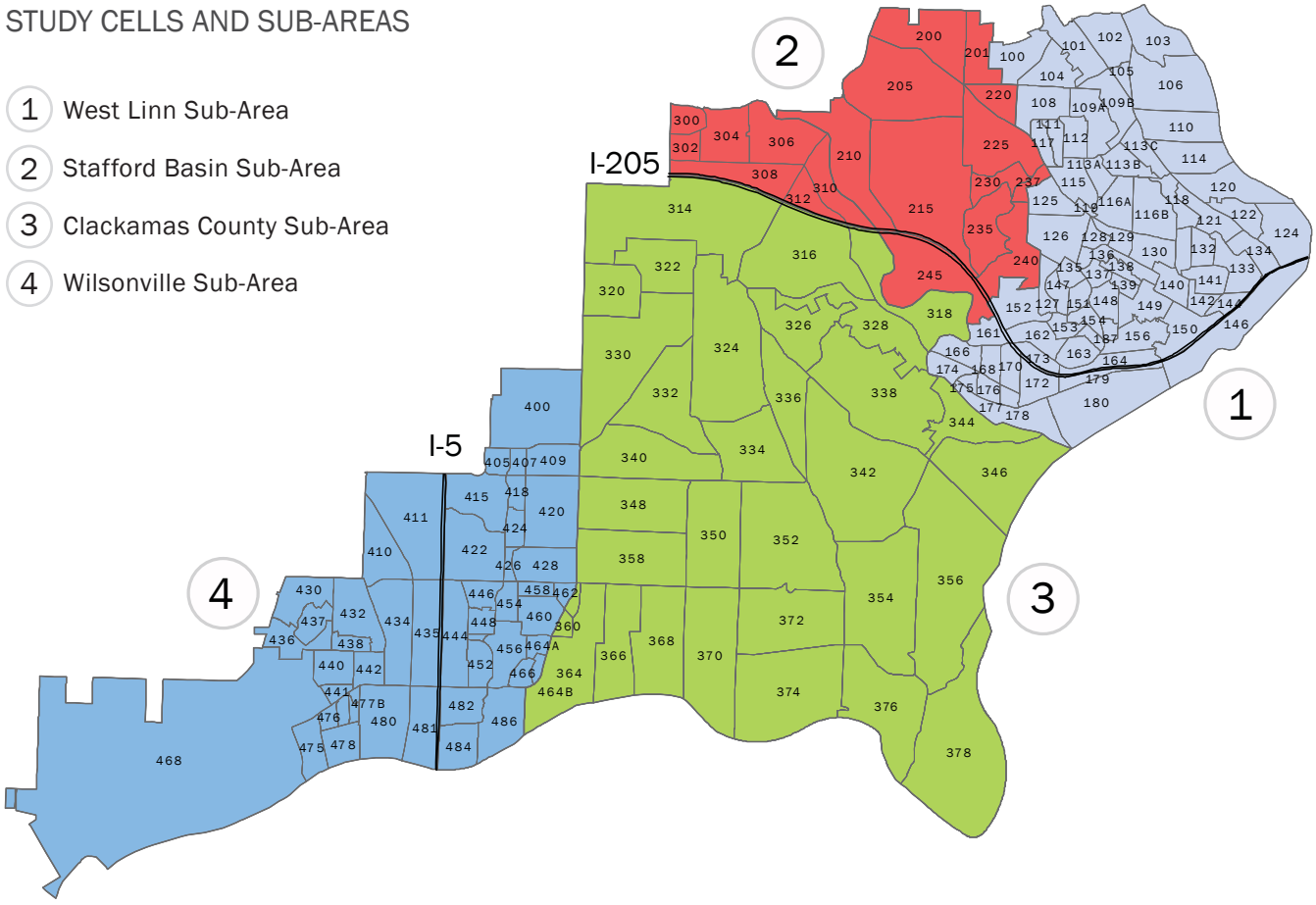


Table 1
ESTIMATED HOUSING UNITS AND ENROLLMENT BY JURISDICTION - 2010

Area	Housing Units	Enrollment
1 West Linn Area*	9,976	4,651
2 Stafford Basin Area (north of I-205)	921	361
3 Clackamas County (south of I-205)	1,995	714
4 Wilsonville Area	6,141	2,674
TOTAL	19,033	8,400
TOTAL excluding Three Rivers Charter School		8,298

** The West Linn area is not exactly the same as the incorporated city. The city of West Linn counted 10,217 housing units within its city limit in 2010.*

The District collects quarterly enrollment data for each of the schools. On September 30, 2012, the District had a total enrollment of 8,599 students in kindergarten through 12th grade. Enrollment has steadily increased across the District with some of the highest growth rates occurring in the 1990's. Enrollment for September 2012 is shown in Table 2.

EXISTING FACILITIES

There are currently nine primary schools, three middle schools, three high schools, and one charter school operated by the District. Of the nine primary schools, two schools, Lowrie and Trillium Creek primary schools, are new facilities that opened in the fall of 2012. To better define the true educational capacity of each school, an evaluation of the facilities and programs was conducted

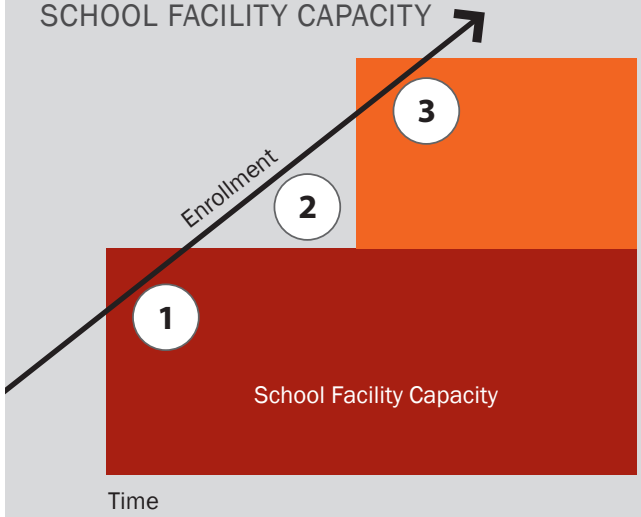
Table 2
2012 SCHOOL CAPACITY & ENROLLMENT

SCHOOL	CAPACITY	ENROLLMENT 9/30/12	AVAILABLE CAPACITY
PRIMARY			
Boeckman	498	555	-57
Boones Ferry	633	531	102
Lowrie	450	407	43
Wilsonville Subtotal	1,581	1,493	88
Bolton	282	278	4
Cedaroak	409	318	91
Stafford	520	450	70
Sunset	479	285	194
Willamette	495	510	-15
Trillium Creek	450	458	-8
West Linn Subtotal	2,635	2,299	336
Primary Subtotal	4,216	3,792	424
MIDDLE			
Wood	640	737	-97
Athey Creek	624	607	17
Rosemont Ridge	668	684	-16
Middle Subtotal	1,932	2,028	-96
HIGH			
Wilsonville	1,472	1,121	351
West Linn	1,748	1,553	195
Art Tech	86	105	-19
High School Subtotal	3,306	2,779	527
TOTAL	9,454	8,599	855
*Three Rivers Charter**	*100*	*103*	*-3*

* Not included as part of the District enrollment.

in 2001 and again in 2006 to derive an accurate capacity figure for each school. Educational capacities of the schools are updated as existing schools are expanded, remodeled, or as curriculum and special education programs change. The current school capacities are shown in Table 2. For the 2012-13 school year, the primary schools are operating under capacity, and middle schools are operating slightly over capacity. The high schools have room for additional enrollment growth. The opening of Lowrie and Trillium Creek primary schools for the 2012-13 school year, with an additional capacity of 450 students each, alleviated the capacity shortfall at the primary level. Portable classrooms at Wood Middle School will remain to address the middle school capacity issue until permanent facilities are funded and constructed.

Figure 2
SCHOOL FACILITY CAPACITY

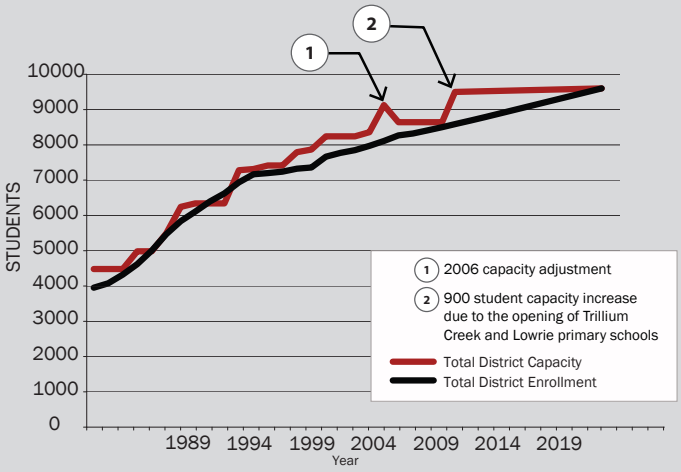


1. As enrollment exceeds capacity, the District constructs one or more facilities to increase capacity. There is excess capacity following construction, but because of associated operating expenses, to be financially efficient, this extra capacity should not be too large.

2. After completion, the enrollment continues to increase and the capacity remains static. Eventually the extra capacity is absorbed, and the District is over capacity. Portable classrooms, larger class sizes, and other measures are used to accomodate students during this period.

3. Periodic capacity deficits are considered necessary, however, they soon need to be addressed with another increment of new capacity or serious overcrowding will result.

Figure 3
TOTAL ENROLLMENT VERSUS CAPACITY



PLANNING FOR THE FUTURE

EFFICIENT PROVISION OF SCHOOL FACILITIES

As noted earlier, the District has experienced a steady increase in enrollment over the past 20 years. To provide adequate school facilities for primary, middle, and high school students, the District received voter approval of school bond measures during this same period to construct new facilities and upgrade and maintain existing assets.

The District is committed to providing educational facilities in the most financially prudent manner possible. The key is to balance efficiency with maintaining quality educational environments. The District must balance steady enrollment growth with capacity, which must occur in distinct increments because new facilities, such as a new school or school addition, must be constructed at once, not incrementally. The graph in Figure 2 demonstrates the balance the District must maintain between enrollment growth and capacity.

POTENTIAL CAPACITY IMPACTS OF SCHOOL PROGRAMS

In addition to the size of the facilities, school capacity is directly influenced by educational programs, such as early childhood education, all-day kindergarten, alternative education, personalized special needs education, and team teaching as described in Part A: Framework for Educational Excellence. The implementation of these programs has effectively changed the District's capacity because many of them have building space ramifications. For example, with half-day kindergarten, two classes can be accommodated using one classroom, but all-day kindergarten requires two classrooms to accommodate the same number of students. Improving educational programs may reduce school capacity. However, modest declines in capacity are outweighed by the improved educational results created by these programs.

Figure 3 illustrates how the enrollment has grown steadily and capacity has increased in increments when new schools or school expansions were completed. The capacity adjustment to accommodate educational programs decreased capacity in 2006. The capacity increase related to the addition of Lowrie and Trillium Creek primary schools is shown in 2012.

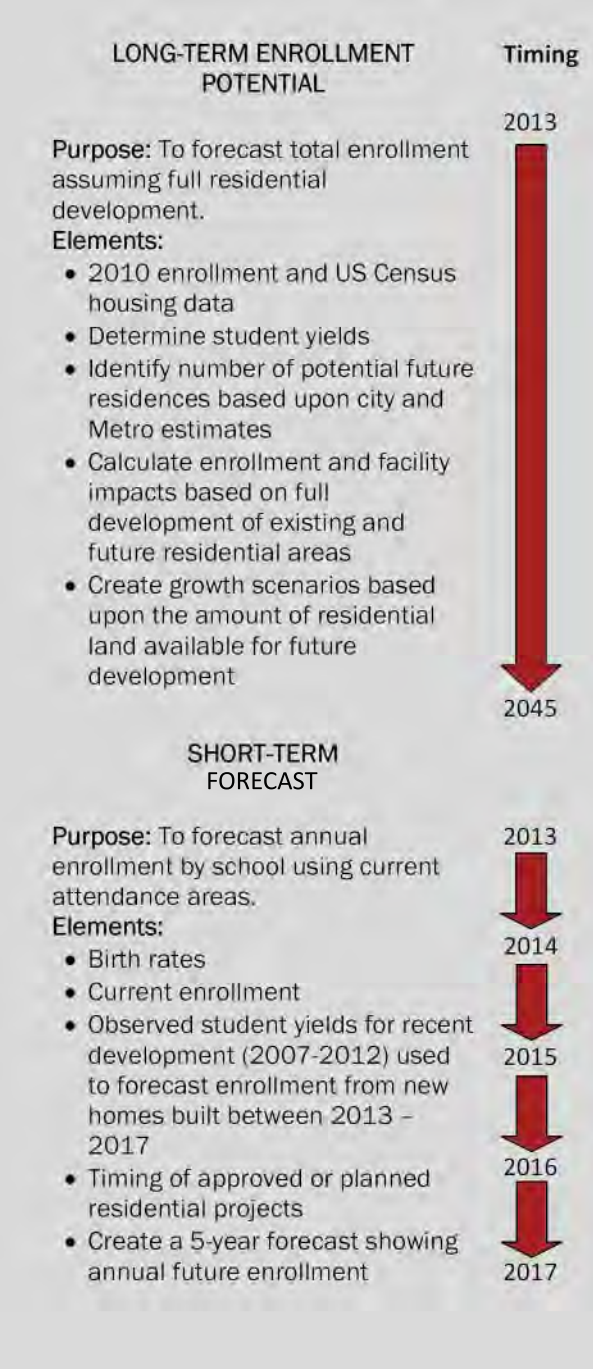
ACCOMMODATING FUTURE ENROLLMENT GROWTH

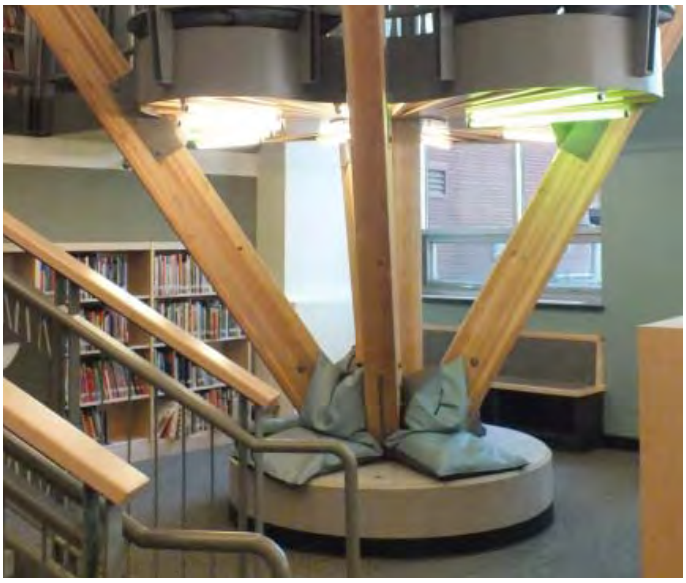
Creating and maintaining a quality educational environment is constantly challenged by enrollment growth, which has increased by approximately 50% from 5,644 students in 1990 to 8,599 students in 2012. In addition to providing the capacity to give each and every student a superior education, the District must also maintain and upgrade existing facilities and constantly look for ways to improve educational programs and techniques.

The District periodically evaluates demographic and land development trends assessing how they may affect enrollment and the ability of the schools to have the appropriate capacity to serve the students. These efforts involve understanding the potential enrollment impacts associated with full development of existing residential land within city limits and the Metro Urban Growth Boundary (UGB) as well as planned future expansion of the UGB and city limits. In addition to this long-term view of potential enrollment and associated facility needs, the District must also conduct short-term enrollment forecasts based upon the rate and location of new residential development for the next five years to respond to imminent enrollments demands. A summary of the purpose, elements, and timing associated with forecasts for long-term enrollment potential and short-term enrollment growth is provided in Figure 4.

The long- and short-term evaluations are explained in the following sections: Long-Term Enrollment Potential and Short-Term Enrollment Forecasts.

Figure 4
ENROLLMENT FORECASTS





LONG TERM ENROLLMENT POTENTIAL

Long-term enrollment forecasts are used by the District to estimate facility needs. They rely on existing regional and local plans to understand what the District enrollment could be once defined areas for future residential development are fully developed. This planning analysis enables the District to anticipate future facility demands and secure necessary school sites and/or financing to continue to provide additional school capacity in a timely manner. Because the rate of development and enrollment change is very difficult to predict more than a few years ahead, the long-term forecast is focused primarily on three elements: number of students per residence; number of potential future residences; and general timing for new residential development.

Understanding the number of students coming from all residences throughout the District is a key ingredient to estimating the impact of future residential development. Data from 2010 is used because it is the most recent year where US Census data for the number of housing units (single and multiple family) and District enrollment are available. This data is summarized in Table 1.

To create an estimate of students per household, or "student yield", the 2010 District enrollment US Census housing count in Table 1 were compared to calculate student yields. The student yields for 2010 are assumed to remain constant for the purposes of estimating future enrollment as more residences are built within the District. The student yields for the four sub-areas in the District are summarized in Table 3.

The potential for new residential development within the current UGB and city limits is the second critical element to forecasting future development potential and enrollment. Areas within the UGB, including the cities of West Linn, Wilsonville, and Tualatin are planned for urban development. To provide a greater level of certainty regarding which areas may be eligible for future UGB expansion, Metro completed a process with local governments in 2010 to designate "urban reserves." These lands identify the locations where future UGB expansions can (urban reserves) and cannot (rural reserves) occur. Metro, in coordination with local governments, developed and adopted estimates in November 2012 for the residential development potential of these UGB expansion areas – several of which are located within the District. Any land brought into the UGB will come from areas designated as urban reserves. The estimated enrollment impact of the portions of the urban reserve areas within the District is summarized in Figure 5.

Table 3
STUDENT YIELD FACTORS - 2010 ALL UNITS BY SUB-AREA

Grade Ranges	K-5	6-8	9-12	K-12
West Linn Sub-Area				
	0.21	0.11	0.15	0.47
Stafford Basin Sub-Area				
	0.17	0.10	0.12	0.39
Clackamas County Sub-Area				
	0.15	0.09	0.12	0.36
Wilsonville Sub-Area				
	0.20	0.10	0.13	0.44
District-wide Average				
	0.20	0.10	0.14	0.44

The third element considered is the general timing for expanding the UGB for urbanization. Following designation of urban and rural reserve areas in 2010, Metro considered potential expansion of the UGB. In 2011, Metro completed this review process, and no land in the West Linn-Wilsonville School District was added to the UGB. The next residential UGB evaluation for potential expansion, which is sponsored by Metro, is scheduled to occur in 2014-2016. In 2012, Metro reviewed the timing of when all designated urban reserves will likely be brought into the UGB based on the availability of public infrastructure and anticipated growth rates for the region. The time period considered extends to 2045. The Metro timing estimates for UGB expansion are used to form the District's long-term enrollment forecast and the growth scenarios described in the following section.

GROWTH SCENARIOS

Three long-term scenarios for future growth are considered. They are based upon adopted comprehensive plans and supporting information provided by the cities of West Linn, Wilsonville and Tualatin, Clackamas County, and Metro. The 2010 US Census was used to determine the number and general distribution of existing housing units. These scenarios provide a snapshot of how the District might change as additional development and redevelopment occurs within the current UGB and as urban reserve areas are brought into the UGB and fully urbanized.

Three scenarios are based on the following assumptions:

- The remaining undeveloped residential land within the existing UGB will develop to the maximum current density allowable.
- The capacity for existing schools will remain constant. Existing guidelines for future new school sizes will also remain constant. The guidelines for new school sizes are: primary school - 450 to 550 students (or up to 800 with a campus design); middle school - 600 to 800 students; and high school 1,200 to 1,500± students.
- The ratio of school age children per residence will be consistent with 2010 student yield ratios calculated for all housing units by comparing the 2010 US Census for residential units with the 2010 enrollment (Tables 1 and 3). Considering all residences provides a good indicator of how many students to expect in the long-term across the District.
- The urban reserve areas brought into the UGB will be developed at densities assumed by Metro (typically 10 to 15 units per acre).

POTENTIAL ENROLLMENT OF FUTURE URBANIZED AREAS

Future Annexation of Urban Reserve Areas	Future Potential Dwelling Units	Future Enrollment Estimates*			
		Primary	Middle	High	Total
Scenario 1					
Frog Pond	2,000	400	200	260	860
Villebois North	976	195	98	127	420
Subtotal	2,976	595	298	387	1,280
Scenario 2					
4H Advance Road	2,400	360	216	288	864
5H Wilsonville Southwest	600	120	60	78	258
Subtotal	3,000	480	276	366	1,122
Scenario 3					
4A Stafford	15,456	2,628	1,546	1,855	6,028
4B Rosemont	1,200	204	120	144	468
4C Borland	6,200	1,054	620	744	2,418
4D Norwood	9,718	1,458	875	1,166	3,498
4F I-5 E. Washington Co.	1,919	384	192	249	825
4G I-5 E. Washington Co.	4,089	818	409	532	1,758
Subtotal	38,582	6,545	3,761	4,690	14,996
Total	44,558	7,620	4,335	5,443	17,397

* Estimates are derived by multiplying the Future Potential Dwelling Units by the student yield factors for the applicable sub-area shown in Table 3 (see Figure 1 for sub-area locations). For example, Scenario 1 Frog Pond enrollment is calculated as follows: 2,000 units X 0.20 = 400.

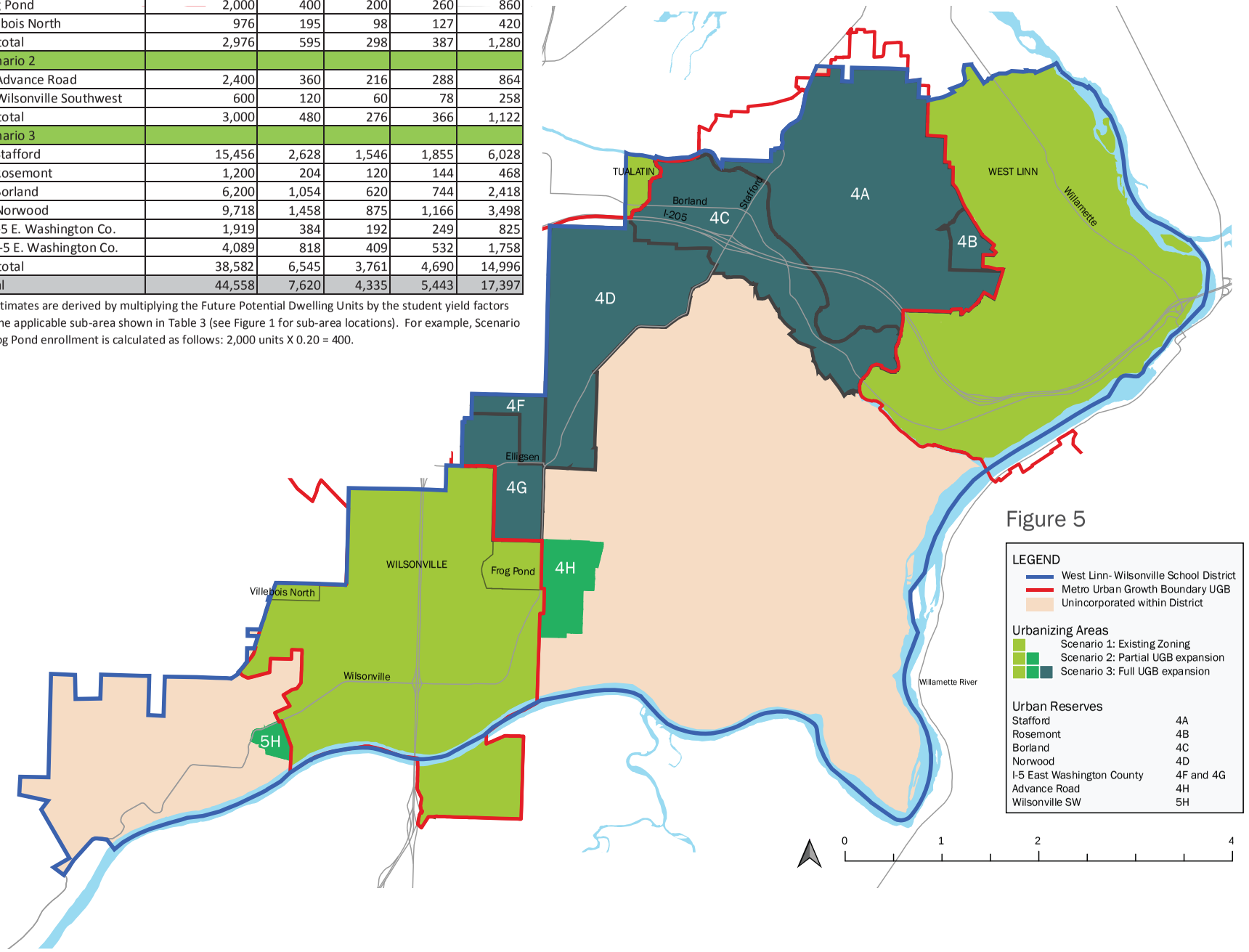


Figure 5

LEGEND

- West Linn-Wilsonville School District
- Metro Urban Growth Boundary UGB
- Unincorporated within District

Urbanizing Areas

- Scenario 1: Existing Zoning
- Scenario 2: Partial UGB expansion
- Scenario 3: Full UGB expansion

Urban Reserves

Stafford	4A
Rosemont	4B
Borland	4C
Norwood	4D
I-5 East Washington County	4F and 4G
Advance Road	4H
Wilsonville SW	5H

GROWTH SCENARIOS

SCENARIO 1 - EXISTING ZONING WITHIN EXISTING UGB

existing zoning within existing UGB

Scenario 1 assumes no additional land is brought into the UGB, and all existing urban zoning designations remain in place (Figure 6). The student enrollment anticipated in the 2017 residential development (Table 4) is assumed to be within a few key areas within the Wilsonville city limit including Villebois Village and Brenchley Estates North and South. The remainder will be smaller redevelopment and infill projects. West Linn contains several smaller residential developments.

Two notable additions to these new units would be the Frog Pond area on the northwest corner of Boeckman Road and Stafford Road along with the northern portion of Villebois Village. Both of these areas are within the UGB, but have not been annexed. The northern portion of Villebois Village is part of the overall 2,300-unit master plan, and is simply awaiting annexation which will be initiated once development is imminent. Frog Pond is also within the UGB, but the city of Wilsonville must complete a concept plan before it may be annexed and developed. The city plans to initiate a concept planning process within the next two years. Preliminary city estimates suggest approximately 2,000 units once Frog Pond is fully redeveloped. All 2,300 residential units in Villebois Village are assumed to be built as part of Scenario 1.

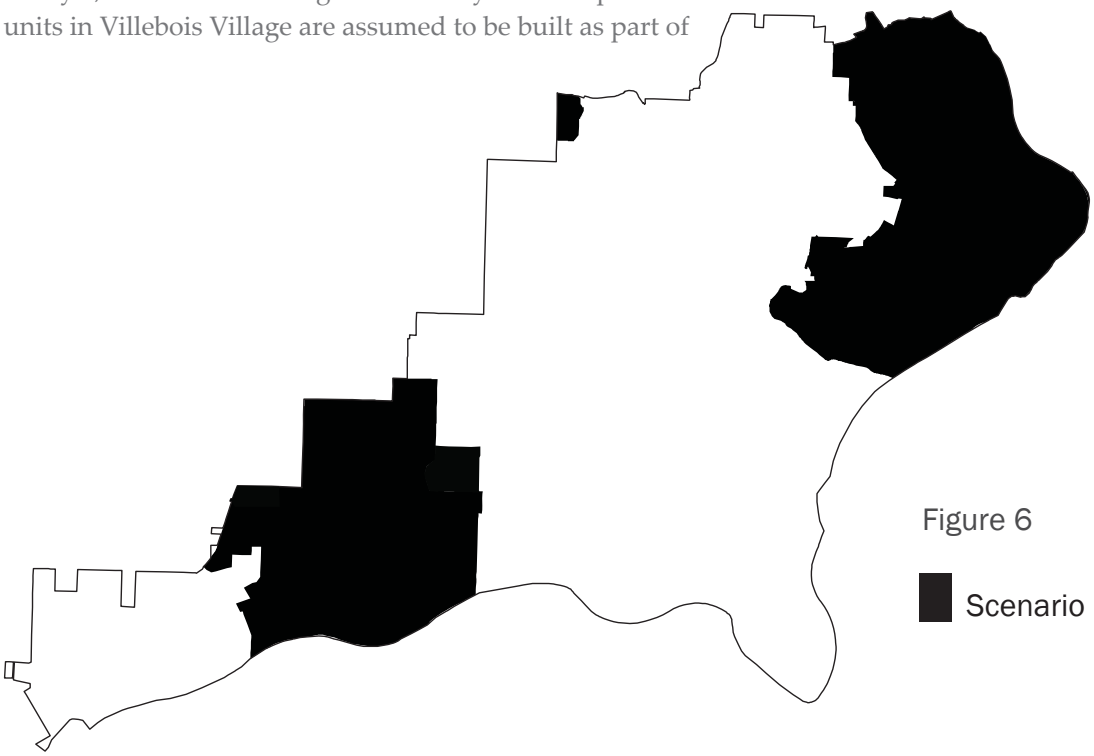


Figure 6

Scenario 1

GROWTH SCENARIOS

SCENARIO 2 - EXISTING ZONING WITH EXISTING UGB, PLUS URBAN RESERVES MOST LIKELY TO COME INTO THE UGB WITHIN THE NEXT 5 TO 10 YEARS DEVELOPED AT URBAN DENSITIES

existing zoning within existing UGB + urban reserves most likely to come into the UGB within the next 5 years developed at urban densities

Scenario 2 includes the development estimated in Scenario 1, and adds the assumption that the urban reserves identified by Metro as having infrastructure available in the short-term will also be developed at urban densities (Figure 7). Only the Advance Road and Wilsonville Southwest urban reserve areas in Wilsonville have been identified as likely sites to be ready within the next five to ten years. Advance Road includes a 40-acre site adjacent to the Wilsonville city limit, which has been jointly planned by the City and District for a community park, primary school, and middle school. These two areas are estimated to accommodate approximately 3,000 new housing units. Other than limited infill development and redevelopment, the change in residential units in West Linn is assumed to be minor.

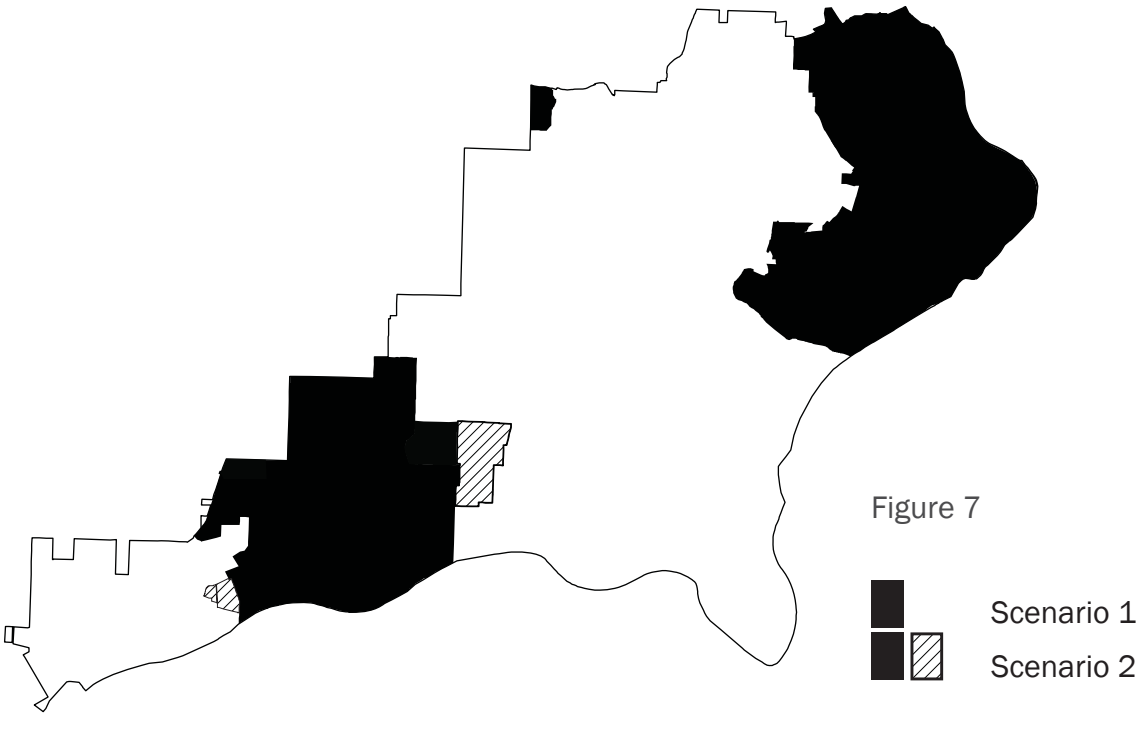


Figure 7

GROWTH SCENARIOS

SCENARIO 3 - EXISTING ZONING WITH EXISTING UGB, PLUS ALL URBAN RESERVES WITHIN THE DISTRICT BOUNDARIES DEVELOPED AT URBAN DENSITIES

existing zoning within existing UGB + urban reserves most likely to come into the UGB within the next 5 years developed at urban densities + all urban reserves within the District boundaries developed at urban densities

Scenario 3 includes the development estimates in Scenario 2 and assumes that all remaining urban reserves are developed at urban densities (Figure 8). This includes land located in the north-central portion of the District with Stafford Basin/Borland Road representing the major areas involved. Several of the urban reserve areas are only partially within the District. All of these areas are estimated to yield almost 34,000 residential units. Metro anticipates that development in these urban reserve areas will not occur until around 2045. This amount of development would clearly have an enormous impact on enrollment. The challenges will encompass much more than school facilities, including governance and providing a wide range of urban services and facilities. The issues related to urbanization of these areas will continue to be evaluated by Metro and local government. Subsequent updates of this plan will need to revisit the magnitude and timing of residential development in Scenario 3.

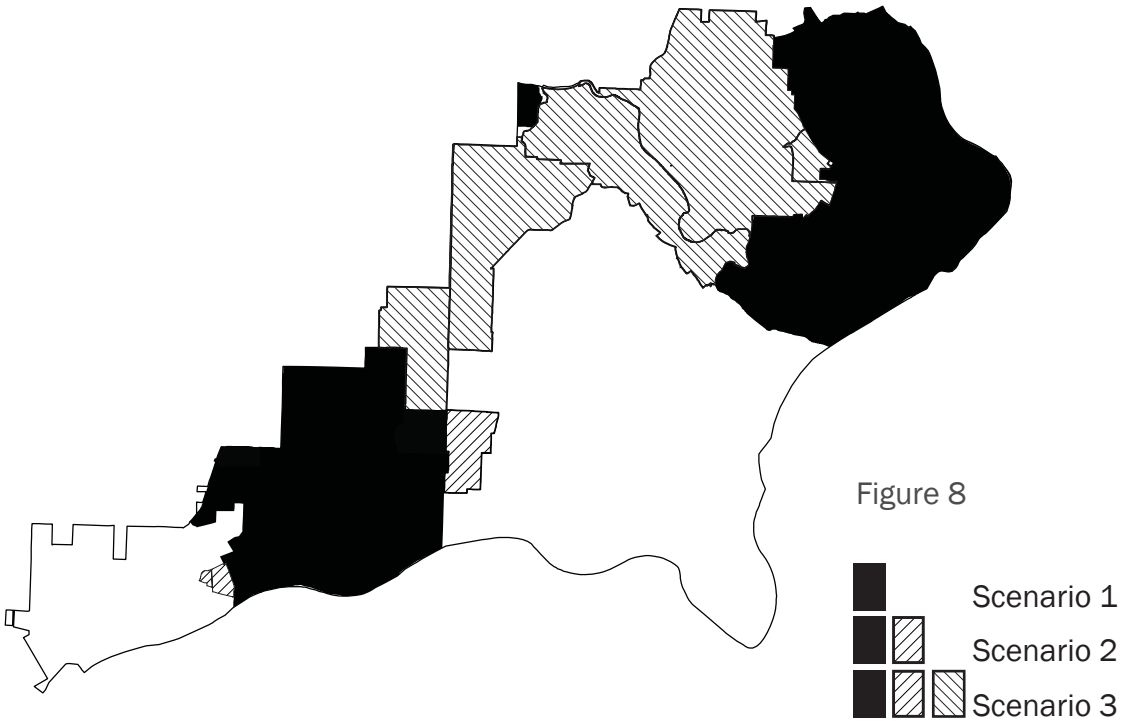


Figure 8

FUTURE SCHOOL NEEDS

Translating Residential Development into Enrollment Impact

The future development scenarios must be interpreted to estimate the enrollment impacts associated with each scenario. The number of estimated residential units is multiplied by the district-wide student yield factors presented in Table 3. Table 4 summarizes the district-wide future potential enrollment impact by school type. This information is then used to help identify the related school facilities necessary to accommodate future enrollment.

Table 4

FUTURE POTENTIAL SCHOOL FACILITY NEEDS SUMMARY

	Primary	Middle	High	Total
Existing Conditions				
Current Educational Capacity	4,216	1,932	3,306	9,454
2010 Enrollment (9/30/10)	3,763	1,958	2,674	8,395
Remaining Capacity	453	-26	632	1,059
Schools	9	3	3	15
Scenario 1: Existing Zoning & UGB				
Enrollment in addition to existing conditions	1,714	864	1,098	3,676
Total enrollment district-wide	5,477	2,822	3,772	12,071
Additional educational capacity needed once remaining capacity is utilized	1,261	890	466	2,617
Schools required in addition to existing conditions	2.5	1.3	0.3	4.1
Total schools required district-wide	11.5	4.3	3.3	19.1
Scenario 2: Existing Zoning & Expanded UGB (Advance Road)				
Enrollment in addition to Scenario 1	480	276	366	1,122
Total enrollment district-wide	5,957	3,098	4,138	13,193
Schools required in addition to Scenario 1	1.0	0.4	0.2	1.6
Total schools required district-wide	12.5	4.7	3.6	20.7
Scenario 3: Existing Zoning & UGB				
Enrollment in addition to Scenario 2	6,545	3,761	4,690	14,996
Total enrollment district-wide	12,502	6,859	8,828	28,189
Schools required in addition to Scenario 2	13.1	5.4	3.1	21.6
Total schools required district-wide	25.6	10.0	6.7	42.3

Enrollment Impact across the District

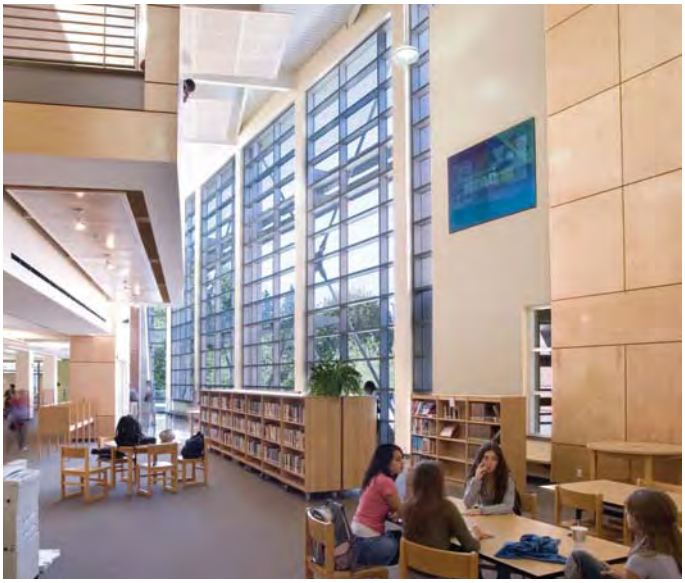
The student enrollment across the District for the three scenarios is not evenly distributed, and the concentration of students is expected to vary widely between sub-areas. In Scenario 1, the majority of the enrollment growth is forecast for the Wilsonville area with approximately 3,000 new students. West Linn is expected to see moderate growth with almost 500 new students, and the Stafford Basin and Clackamas sub-areas are anticipated to have insignificant enrollment gains.

For Scenario 2, enrollment growth is expected to be the strongest in the Wilsonville and Clackamas sub-areas with the development of the Advance Road and Wilsonville Southwest urban reserve areas, accounting for a potential of approximately 1,100 new students.

Scenario 3 would produce unprecedented enrollment growth totaling over 15,000 new potential students. Because of the uncertainty over the fate of the urban reserve areas and the distant horizon for their development, the potential enrollment and school facility impacts of Scenario 3 are not considered in the following evaluation of school facility needs. Scenario 3 should be revisited in future updates of the Long Range Plan.

SHORT-TERM ENROLLMENT FORECASTS

Short-term forecasts are designed to help the District anticipate enrollment looking out five years into the future. Forecasts are based on recent demographic trends, existing residences, and approved residential developments. A short-term forecast was prepared in January 2013 by Davis Demographics and Planning. The development data was created by interviewing city staff regarding approved residential developments and the timing for their completion, and the types of residences involved. As part of this analysis, a large sample of new housing units, built within the last five years, was taken to estimate the average number of students generated by new (built between 2007-2012) single family detached, multi-family attached (e.g., townhouses, condos, and apartments). These student yield factors shown in Table 5 were used in the projections. It shows that single family, detached residences typically generate approximately one student for every two homes while four or more multi-family attached or apartment units produce one student. The student yield factors were applied to the number and types of anticipated new homes to forecast future enrollment. The short-term projection anticipates modest enrollment growth from 8,599 students in September 2012 to 8,956 students in 2017. Table 6 summarizes the results of the short-term forecast.



With the opening of Lowrie and Trillium Creek primary schools in September 2012, the primary school capacity is 4,216 students with approximately 3,800+ students to accommodate. Similarly, the high schools, with a capacity of 3,306 and an enrollment of approximately 2,800, will continue to be adequate. The primary problem will be the increasing enrollment pressure on middle schools, which is estimated to be over capacity by approximately 260 students in 2017.

Table 5
STUDENT YIELD FACTORS (students per household)
FALL 2012 PROJECTIONS

Grade Ranges	K-5	6-8	9-12	K-12
Single Family Detached Units (724 built*)				
Student Yield Factor	0.29	0.12	0.13	0.54
Multi-family Attached Units (475 built*)				
Student Yield Factor	0.09	0.05	0.05	0.19
Average				
Student Yield Factor	0.21	0.09	0.10	0.40

* From a sample of units built between 2007-2012

Table 6
2012 SCHOOL CAPACITY & ENROLLMENT FORECAST

SCHOOL	CAPACITY	ENROLLMENT			PROJECTIONS*				
		2010	2011	2012	2013	2014	2015	2016	2017
PRIMARY									
Boeckman	498	640	631	555	549	532	511	496	493
Boones Ferry	633	805	823	531	587	607	601	613	626
Lowrie	450	0	0	407	496	598	665	716	743
Wilsonville Subtotal		1,445	1,454	1,493	1,633	1,738	1,777	1,824	1,863
WV Available Capacity	1,581			88	-52	-157	-196	-243	-282
Bolton	282	332	269	278	256	250	232	214	202
Cedaroak	409	415	413	318	284	283	275	270	257
Stafford	520	543	525	450	358	366	366	364	370
Sunset	479	427	409	285	394	375	368	346	343
Willamette	495	601	609	510	542	542	550	532	528
Trillium Creek	450	0	0	458	433	445	450	441	446
West Linn Subtotal		2,318	2,225	2,299	2,266	2,260	2,239	2,167	2,145
WL Available Capacity	2,635			336	369	375	396	468	490
Subtotal		3,763	3,679	3,792	3,899	3,997	4,016	3,992	4,008
Total Available Capacity (K-5)	**4,216**			**424**	**317**	**219**	**200**	**224**	**208**
MIDDLE									
Wood		697	706	737	769	818	868	943	990
Avail. Capacity	640			-97	-129	-178	-228	-303	-350
Athey Creek		566	602	607	534	515	481	495	485
Avail. Capacity	624			17	90	109	143	129	139
Rosemont Ridge		695	692	684	732	729	719	721	716
Avail. Capacity	668			-16	-64	-61	-51	-53	-48
Subtotal		1,958	2,000	2,028	2,034	2,062	2,068	2,159	2,191
Total Available Capacity (6-8)	**1,932**			**-96**	**-102**	**-130**	**-136**	**-227**	**-259**
HIGH									
Wilsonville	1,472	1,049	1,084	1,121	1,123	1,133	1,182	1,164	1,203
West Linn	1,748	1,548	1,506	1,553	1,499	1,472	1,509	1,471	1,449
Art Tech	86	77	86	105	105	105	105	105	105
Subtotal		2,674	2,676	2,779	2,727	2,710	2,795	2,740	2,756
Total Available Capacity (9-12)	**3,306**			**527**	**579**	**596**	**511**	**566**	**550**
TOTAL		8,395	8,355	8,599	8,660	8,770	8,880	8,891	8,956
Total Available Capacity (K-12)	**9,454**			**855**	**794**	**684**	**574**	**564**	**498**

* Projections assume that current school attendance areas remain unchanged.

DISTRICT PROPERTIES

In anticipation of future school needs, the District has acquired several properties, which could potentially be used to accommodate new school facilities. The scenarios assume the District will use these available sites. Additional sites will need to be acquired, especially in Scenario 2. The properties owned by the District are shown in Table 7.

All of the District properties are available for future school use. As the enrollment and attendance area picture changes with future expansion of the UGB, the District may need to sell a property holding in favor of another more suitable location. However, the appropriateness of using any of the sites should be subject to a detailed review of the site selection criteria prior to committing a specific site for school use. The availability of school sites between 10 to 50 acres is very limited due to development that has occurred and the UGB, which prevents urban growth, including schools, on rural and resource lands. The constrained number of possible sites will often make it impractical for the District to construct new schools on or near an "ideal" location. In addition, future expansions of the UGB may cause significant shifts in future attendance areas and ideal school locations. Because of this uncertain future, it will be critical for the District to evaluate its land holdings for their value as future school sites. The District will work closely with local governments and property owners in the planning and development of these areas.

Table 7
SCHOOL DISTRICT PROPERTIES

Property	Total Acreage	Location
Dollar Street	23 acres	Between Dollar Street and Willamette Falls Drive
Oppenlander	15.6 acres	North side of Rosemont Road
Wilsonville - Frog Pond	25 acres	NW of Stafford and Boeckman Roads
Advance Road	30 acres	South side of Advance Road, immediately east of Wilsonville city limit

ACCOMMODATING SCHOOL FACILITY NEEDS

SHORT-TERM: SCHOOL FACILITY NEEDS

The short-term enrollment forecast in Table 6 illustrates what the District should expect over the next five years. As noted above, the most acute capacity problems will be associated with middle schools, which are currently operating slightly above capacity. However, this forecast also indicates that primary school enrollment will probably need to be redistributed between schools to allow all primary schools to operate within their capacity limits.

LONG-TERM: SCENARIO 1

Looking beyond the next five years, the majority of the Scenario 1 enrollment growth (3,000 + students) is expected from the Wilsonville sub-area. West Linn will contribute almost another 500 students. Very little enrollment growth is expected from the other sub-areas.

Based on communication with Metro and local governments, full development of this scenario, which includes the enrollment growth estimated in the short-term forecast, could be anticipated between 2020 and 2030. Assuming that existing capacity is fully utilized

Table 8
SCENARIO 1 FUTURE POTENTIAL SCHOOL FACILITY NEEDS

	2012 Capacit	Additional Capacity Needed	New Schools	Location and Approximate Timing*
Primary Schools	4,216	1,261	3.5	Replace Sunset - 2017 Frog Pond - 2020-2025 Advance Road - 2020-2025 Portables may be needed when Scenario 1 approaches full development.
Middle Schools	1,932	890	1.3	Advance Road - 2017 Portables may be needed when Scenario 1 approaches full development (2020-2025).
High Schools	3,306	466	0.3	Establish a permanent location for Arts and Technology High School - 2017 Portables may be needed when Scenario 1 approaches full development (2020-2025).
Total	9,454	2,617	5.1	

*Approximate year of completion

before building new school capacity, a total of four new schools will be necessary. In addition, Sunset Primary School is ending its useful life and must ultimately be replaced for a total of five new schools. The need for new schools will occur gradually over this time period. The most pressing need will be to construct the planned middle school site is on the Advance Road property and to replace Sunset Primary with a new school on the same site. The Advance Road urban reserve area is not planned to be included in the UGB for some time. The District will need to work with Metro and the city of Wilsonville to determine if the school site could be brought into the UGB at an earlier date. The Arts and Technology High School is operating in a leased building, and a new facility must be found within the next several years. A summary of the primary, middle, and high school needs for Scenario 1 is provided in Table 8.

LONG-TERM: SCENARIO 2

The majority of the enrollment growth (over 1,100 students) is expected from the Clackamas County sub-area near Wilsonville on the Advance Road site. The Wilsonville sub-area will also see growth due primarily to the Wilsonville Southwest urban reserve area. West Linn and Stafford Basin sub-areas will contribute very little additional enrollment.

Based on communication with Metro and local governments, full development of this scenario could be anticipated between 2025 and 2040. Assuming that existing capacity is fully utilized before building new school capacity, a total of 1.6 new schools will be necessary. Perhaps most significant will be the probable need for a third high school. Scenario 1 is expected to exceed the capacity of the three existing high schools (including the Arts and Technology High School), but probably not enough to justify building a fourth school. However, the additional enrollment expected from Scenario 2 should create the need for a new facility. A summary of the primary, middle, and high school needs for Scenario 2 is provided in Table 9.

NEXT STEPS

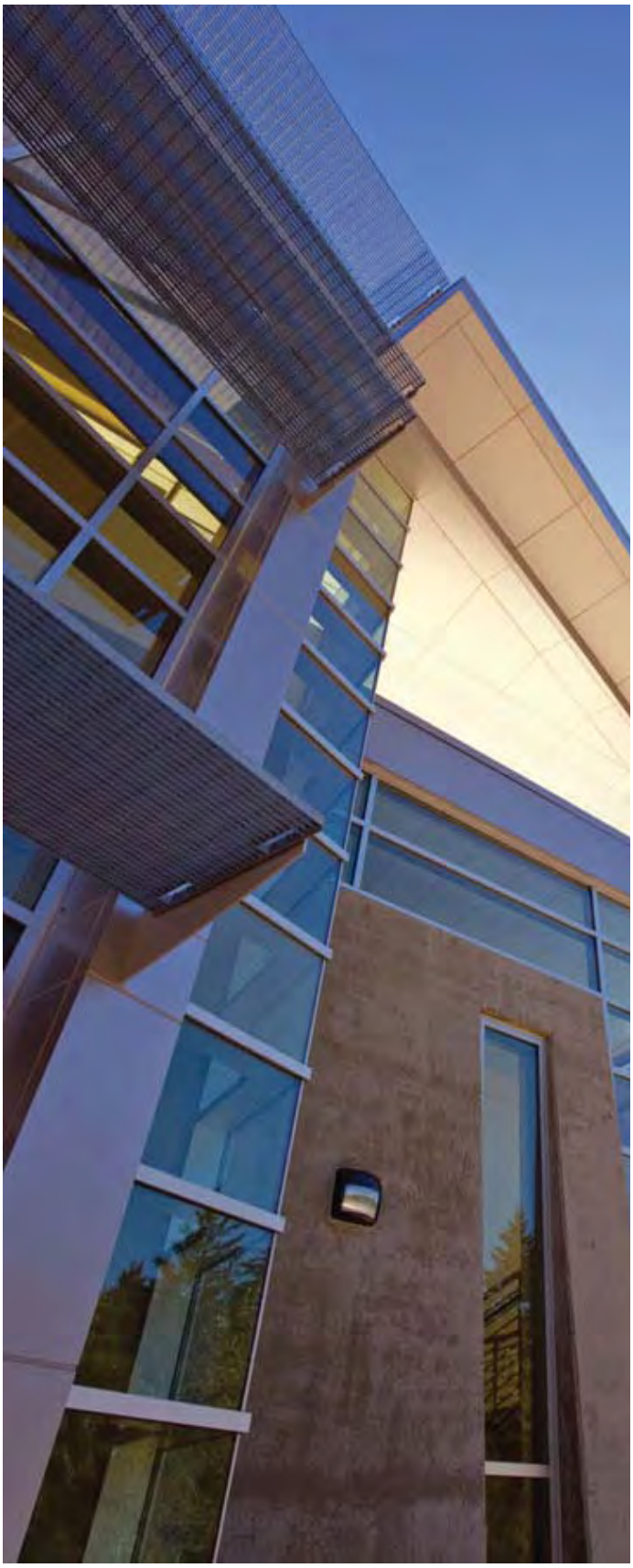
The short-term enrollment forecast coupled with a longer-term evaluation of what potential lies ahead are essential for proactive planning and being prepared for future district needs. Our understanding of current enrollment, capacity, and short-term enrollment growth highlight the immediate needs for additional middle school capacity, replacement of Sunset Primary School, and finding a permanent home for the Arts and Technology High School. The long-term estimates, by their very nature, are not as clearly defined, and the timing for new facilities is only generally understood. Future influences, such as the economy, household demographics, and evolving educational programs, will influence the ultimate timing of these long-term facility needs.

Table 9
SCENARIO 2 FUTURE POTENTIAL SCHOOL FACILITY NEEDS

	Additional Capacity Needed	New Schools	Location and Approximate Timing
Primary Schools	480	1.0	Dollar Street - 2020-2025 New facility to accommodate over capacity situation with full development of Scenario 1 (2030).
Middle Schools	276	0.4	New facility to accommodate over capacity situation with full development of Scenario 1 (2030).
High Schools	366	0.2	New facility to accommodate over capacity situation with full development of Scenario 1 (2025).
Total	1,122	1.6	

The District must continuously monitor future facility needs. Several "next steps" should be followed between now and the next update of the Long Range Plan: Monitor the effect of open enrollment on facility capacity and needs. This program will begin in September 2012, and it
will take some time to understand how it will impact the District. Evaluate the potential impact of all-day kindergarten on
primary school capacity as it shifts from an optional to a standard program. Prepare a 5-year short-term enrollment
forecast annually to enable the District to proactively anticipate future enrollment and related capacity issues. Continue coordination with the City of Wilsonville regarding the planning and development for Frog Pond and north
Villebois. Monitor the urban reserves planning being conducted by Metro in coordination with local governments.

- Monitor the effect of open enrollment on facility capacity and needs. This program will begin in September 2012, and it will take some time to understand how it will impact the District.
- Evaluate the potential impact of all-day kindergarten on primary school capacity as it shifts from an optional to a standard program.
- Prepare a 5-year short-term enrollment forecast annually to enable the District to proactively anticipate future enrollment and related capacity issues.
- Continue coordination with the City of Wilsonville regarding the planning and development for Frog Pond and north Villebois.
- Monitor the urban reserves planning being conducted by Metro in coordination with local governments.



APPENDIX B

Advance Road Site Report

Advance Road Site Report

August 20, 2010

West Linn-Wilsonville School District

City of WILSONVILLE in OREGON

ADVANCE ROAD SITE ANALYSIS REPORT CONTENTS

EXECUTIVE SUMMARY

As a part of the joint planning and development cooperation between the City of Wilsonville ("City") and the West Linn-Wilsonville School District ("School District"), the parties agreed to jointly plan the use of approximately 40 acres owned by the School District and located near the intersection of Advance Road and Wilsonville Road near the Wilsonville city limits. The division of the 40 acre Advance Road Site would result in a school site for middle school and elementary school of approximately 30 acres and a city community park of approximately 10 acres.

The City and School District assigned the development of a concept plan for the Advance Road Site to a work group with city planners, engineers, and coordinators as well as school district facilities director, architect and land use planner. A facilitator was hired by the School District to assist with the project. The scope of work for the planning group was determining the appropriate parcel locations, sizes and configuration to divide the property between the City and the School District

This report represents the collective work of the planning group to identify the preferred location for a City community park and the school sites for the School District. This report presents a recommendation only, with final site development postponed until financing is available for construction by each party.

The planning group investigated site conditions, legal status, land use issues, infrastructure needs and anticipated uses by each party while developing a recommendation. The planning group also engaged sports group representatives and neighboring land owners in Wilsonville for their comments and suggestions. Periodic reports were given to the City Manager and School Superintendent about the progress of the work. A status report was given to a joint meeting of the City Council and School Board mid-way during the project.

Based on the anticipated uses by each party, the planning group concluded that an approximately 11 acre site in the northeast corner of the Advance Road Site would be the best location for the City community park. This proposed division of the site is identified as Option 1A, Attachment 1, in the List of Attachments and is shown here for reference.

INTRODUCTION

In July, 2008 the City and District agreed to a Letter of Intent ("LOI") for the exchange of a 10 acre site owned by City in the Villebois Master Plan for a 10 acre site owned by District near the intersection of Wilsonville Road and Advance Road ("Advance Road Site"). The Villebois School Site originally identified in the LOI has been substituted, but the scope and intent of the exchange between City and District remains unchanged. An updated Exchange Agreement will be entered between the parties formalizing the property exchange.

For the purposes of the exchange the City and District appointed a planning group led by facilitator Greg McKenzie to jointly develop a concept plan for use of the 40 acre Advance Road Site with the City owning 10 acres for a Community Park and the District owning 30 acres for a middle school, primary school and associated play/field/parking areas. The primary purpose was identification of the location on the site for the City park and District schools. As a part of the concept plan, the planning group was charged with optimizing the opportunities for shared use of facilities for the City and District. Design for actual facilities will be postponed until funds are available for construction. Also, the concept plan anticipates that City and District may improve their respective portions of the site in phases and on different schedules.

SITE HISTORY

City Property

The City owns or will acquire that certain real property described as the Villebois School Site in the Exchange Agreement. The Villebois School Site is approximately 11.4 acres and is located within the Villebois Master Plan Area of Wilsonville.

District Property

The District owns property acquired in 2003 identified as tax lots 2000, 2300, 2400 and 2500 on tax map 3S1E18 consisting of approximately 40.11 acres located near the intersection of Wilsonville Road, Boeckman Road, Stafford Road and Advance Road near the Wilsonville city limits. The Advance Road site is currently outside the Urban Growth Boundary and is located in Clackamas County. The particulars of the Advance Road Site are:

Ownership: West Linn – Wilsonville School District No. 3Jt

Site: An irregular shaped property located at NW ¼, T3S, R1E, Section 18, Willamette Meridian, Clackamas County, Oregon consisting of 4 separate tax lots (Attachment 10):

TL 2000	20.12 ac.
TL 2300	3.70 ac.
TL 2400	10.72 ac.
TL 2500	5.51 ac.
	40.05 ac.

Zoning Exclusive Farm Use (Clackamas County Zoning & Development Ordinance)

Land Use Outside Urban Growth Boundary

JOINT PLANNING GROUP

Beginning in July, 2009 and meeting every 2-3 weeks the planning group outlined the project and began discussions about development of the concept plan. The group's work involved:

- Joint planning discussions and exchange of ideas
- Conceptual site layouts
- Citizen engagement
- Investigation of site conditions
- Explore land use issues
- Review potential options for site partition
- Negotiation of mutually agreeable options
- Periodic reports to governing bodies
- Development of a shared facilities use plan

Planning Group Representatives

City

Sandy Young, Planning Director (former)

Chris Neamtzu, Planning Director (current)

Brian Stevenson, Recreation Coordinator

Stephan Lashbrook, Assistant Community Development Director

Steve Adams, Deputy City Engineer

School District

Tim Woodley, Director of Operations

Norm Dull, architect (DOWA)

Jeff Johansen, architect (DOWA)

Keith Liden, planner (PBPlaceMaking)

Mark Wharry, engineer (Winzler & Kelly)

Facilitator

Greg McKenzie

CONCEPT PLAN OBJECTIVES

The planning group's scope of work was to prepare a conceptual site layouts in the form of a concept plan for future development and shared use between District and City on the Advance Road Site. The concept plan should include:

1. Identify approximately 10 acres for a City Park
2. Identify approximately 30 acres for a middle school, primary school and adjacent fields
3. Develop a plan for shared use of facilities

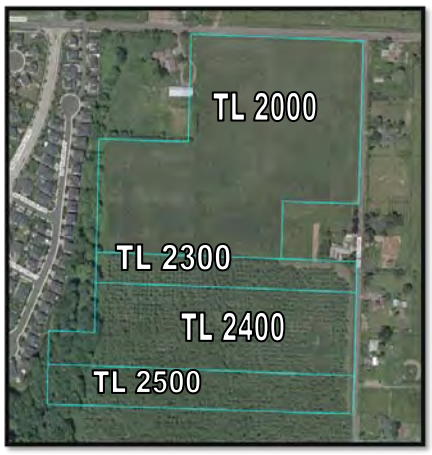
The concept plan should include existing conditions, site plan, maps, natural resources, and other information relevant to development of the site along with supporting text to describe the project, processes, issues, and timelines.

LAND USE

PROPERTY DESCRIPTION AND ZONING

As described above, the district property consists of four tax lots that total approximately 40 acres. The property is not actively farmed. The northern portion (TL 2000) is an open field, and the southern portion contained an old Filbert orchard recently removed (TL 2300, 2400, and 2500). According to the Clackamas County Planning Department, Tax Lot

2000 is a legally separate parcel and the remaining tax lots (2300, 2400 and 2500) constitute one additional legal parcel.



The entire property is zoned EFU (Exclusive Farm Use) by Clackamas County. The minimum parcel size in the EFU Zone is 80 acres. Because a primary purpose of the EFU zone is to promote long-term agricultural use, the creation of smaller parcels is generally prohibited, even in the case of property line adjustments. The Clackamas County Zoning and Development Ordinance (ZDO) does not allow for a property line adjustment to modify the two 20± acres into the 10- and 30- acre configuration desired by the city and the district.

METRO RESERVES AND UGB EXPANSION PROCESS

Metro recently concluded a process with Clackamas, Multnomah, and Washington counties and the region's municipalities to identify urban and rural reserves (Attachment 4). Urban reserves are those lands that may be needed to accommodate urban development over the next 50 years. Rural reserves are areas that will be protected as resource land for the same period.

The process concluded with final Metro Council approval of the reserve areas on June 3, 2010. The district property is within an urban reserve area. As such, this property will be eligible to be brought into the Urban Growth Boundary (UGB). A variety of criteria must be satisfied to demonstrate a need to expand the UGB and obtain Metro approval. A concept plan would also be a requirement for such a UGB expansion. As part of participating in the urban and rural reserves establishment process, the city conducted what is commonly referred to as the "20-Year Look" project which placed a high priority on land in the Frog Pond/Advance Road area as it relates to inclusion in the UGB.

Now that the reserves decision is finalized, Metro will consider potential UGB expansion areas. A decision to expand/not expand the UGB will be made in December 2010. The city of Wilsonville has indicated that it has no interest in expanding the UGB within its planning area at this time. The next Metro-initiated process to consider UGB expansion will be in 2014. The district will have annual opportunities to initiate a major UGB amendment to bring the property into the UGB. The only exception will be in 2014 when Metro will be conducting a buildable land supply analysis. During that year, bringing the property into the UGB may only be considered as part of the Metro-wide UGB evaluation process. To be successful, the city must support such an application.

Following the expansion of the UGB, the city, in partnership with the property owners and development community may master plan the area, and annex the property and change the zoning from EFU to a city zoning designation. At this time, a property line adjustment could be initiated under city zoning requirements to create the desired 10-acre parcel for the city park and 30-acre school site.

As an alternative, the City and School District may consider the creation of a parcel in the future urban category as a possible interim step, once in the UGB, but prior to master planning and annexation.

DESIGN ELEMENTS

The requirements for a 10 acre City park and School District school sites are found in the following documents.

West Linn-Wilsonville Long Range School Facilities Plan (Feb., 2005)

Wilsonville Parks & Recreation Master Plan (2007)

Wilsonville Bicycle & Pedestrian Master Plan (Dec., 2006)

In summary the concept plan incorporates space for the following facilities and uses:

- A new middle school with parking
- An 8-lane track with sports field (possibly "all weather" surface)
- A new primary school with parking
- Maintenance and equipment storage units with drive-way access
- Trails and Pedestrian paths
- Community Park (10 acres)
    - Sports fields
    - Parking and access
    - Exterior Community rest rooms

- Concessions area
- Alternative energy opportunities such as solar and wind

- Outdoor areas for school district

  programs

- Storm water facilities

DESIGN CRITERIA

The planning group agreed to certain initial design criteria. After meetings with sports group representatives and neighbors surrounding the site as described in the Community Involvement Process section of this report additional criteria were included. The design criteria considered by the planning group were:

- Collaborative concept planning between District and City
- Quality education for students of District will not be compromised
- Parks and amenities will be a centerpiece of a high quality of life and community livability for City
- Interconnect the system of trails and pedestrian pathways in City
- Site for a middle school and a primary school
- Shared use of activity facilities and playfields by City and District
- Safety and security for staff, students and community will be paramount
- Phased construction of facilities for both City and District
- Duplication of facilities and use between City and District should be avoided
- Distinct property boundaries for District and City must exist after separation of Advance Rd. site into 30 ac. and 10 ac. parcels

CONCEPT PLAN CHARACTERISTICS

The planning group considered those characteristics necessary to achieve the objectives of the City to provide a high quality of life and livability for the community and of the District to provide a quality education to its students. The characteristics deemed important by the planning group included:

- Energy and resource conservation
- Convenient linkage to transit
- Low maintenance for facilities
- Innovative designs for facilities
- Community involvement in planning process
- Minimize negative impacts on neighbor's quality of life
- Mitigate impact of sports field lighting on neighboring properties
- Account for nearby wildlife corridors
- Create a "soft footprint" to the extent possible, but recognize that this site when fully developed will be facility and use intensive
- Maximize sustainable, green design elements
- Incorporate flexible-use fields for maximum utilization

COMMUNITY INVOLVEMENT PROCESS

The planning group committed to an actively involved community engagement process. Representatives for various sports groups were invited to a meeting on August 27, 2009 to discuss the objectives for the concept plan and solicit their comments and suggestions.

Later the same evening a meeting was held for neighbors around the Advance Road Site for the same purpose. Notice was given by the City to all neighbors contiguous to the site, all property owners within 500' of the site, plus other property owners within adjacent subdivisions. Approximately, 30 neighbors attended the meeting. After reporting the scope of the project to the group, comments and suggestions were invited.

A status report presentation was given to a joint meeting of the City Council and School Board on November 30, 2009 outlining progress to date and expectations for completing the planning group's work. Comments and suggestions from board members and councilors were recorded.

The planning group re-visited both the sports and neighbor groups at another meeting on February 2, 2010 to report preliminary options for location of the community park and school sites and invite comments. Personal interviews were given to representatives from Wilsonville Parks and Recreation Commission and to the Lowrie's whose property is surrounded by the Advance Road Site.

COMMUNITY CONCERNS AND COMMENTS

The following comments, observations and concerns were raised by those attending sports and neighbor group meetings:

Wilsonville Sports Groups Meeting (Aug. 27, 2009)

- Play fields are needed
- Design for flexible, multi-use
- Parking should be close to fields
- Lighting available for night play
- All weather surfaces on the fields
- Nearby playgrounds for non-participants

Neighbors Meeting (Aug. 27, 2009)

- Traffic impacts need to be considered
- Access and internal traffic circulation to minimize impacts
- Maintain natural setting in designs
- Buffer for Landover subdivision neighbors
- Provide access from Landover subdivision to site
- Mitigate noise impacts
- Mitigate light impacts
- Provide adequate safety and security both on and off site)

PUBLIC FACILITIES AND INFRASTRUCTURE (PLANNING PERSPECTIVE)

During the planning group's investigation of the Advance Road Site conditions, the following infrastructure expectations from a planning perspective were identified.

Field and Park

The city-owned park at the Advance Rd. site will encompass approximately 10-acres and its primary recreational focus will be to provide athletic fields to meet the growing needs of the community. The fields will be constructed to accommodate a wide variety of sports including: soccer, softball, baseball, lacrosse, and field hockey. Multi-use fields will be a key and field layouts will be designed to maximize the use of space to accommodate as many different sports activities and age groups as possible. The most likely scenario will be soccer-sized fields laid over the outfields of baseball/softball fields. The baseball/softball fields will be designed to accommodate multiple age groups, with multiple base/mound settings allowing users of all ages to use the fields. Appropriate parking will also be a part of the

park design. Other amenities at the park could include field lights, synthetic turf, a playground, restroom building, concession area, and picnic shelter.

Local sports groups will be the primary users of the park fields, with the city potentially expanding offerings to use the fields for recreation programs. Fields will be available for rental to the general public and the WLWV School District.

On the School District side of the site, there will be enough room to accommodate 2-3 soccer fields overlaid in the outfields of 3-4 softball/baseball fields and 1 football field. Typical with middle school construction is a 400 meter rubberized track, with a football field in the interior. The field could contain lights and synthetic turf to maximize play during the winter months. Other outdoor recreational elements that are often found at school sites include covered basketball, wall ball and play structures (slides, swings, creative play) for children in multiple age groups.

SHARED USE

The current shared use agreement between the City and the School District will be revised to better serve both user groups. The goal of the shared use agreement is to serve the community at the highest level without duplicating services from either entity. The shared use agreement will allow the School District access to the City's fields, rooms, and park shelters, while allowing the City access to gyms, fields, and rooms in the School District facilities. Staff from the City and School District have been working collaboratively on this issue.

TRAFFIC

A conceptual traffic review of the proposal was conducted by DKS Associates (Attachment 7 – DKS Associates memo dated April 21, 2010). The traffic memorandum documents a transportation review for a conceptual school campus and public park location on the southwest corner of the Advance Road/60th Avenue intersection on the eastern edge of the City. The purpose of the study is to evaluate two separate conceptual site plans and provide transportation related feedback. The main difference between the two is whether the public park is located on the north or south end of the site. The memorandum should not be used for a land use application since it is conceptual in nature and is solely intended

to provide a preliminary understanding of critical transportation needs. A complete traffic impact study will be needed at the time of a formal development application.

Multiple analysis periods were analyzed due to the varied trip levels associated with schools and park versus the nearby transportation network. The following scenarios were evaluated as part of the traffic study:

- Weekday a.m. peak hour (highest hourly volumes generated by the school between 7-9 a.m.);
- Weekday midday peak hour (highest hourly volumes generated by the school between 2-4 p.m.) also commonly referred to as the school p.m. peak hour;
- Weekday p.m. peak hour (highest hourly volumes generated on the adjacent streets between 4-6 p.m.);
- Saturday peak hour (highest hourly volumes generated by the sports fields, approximately at midday).

The conceptual analysis indicates that the following project related measures are likely to be required of the project at the time of site build-out:

- Construct a traffic signal with left-turn lanes on all approaches at the Wilsonville Road-Stafford Road/Boeckman Road-Advance Road intersection; the School District should coordinate with City staff to determine its proportionate share of the future improvements.

- Construct improvements at the Advance Road/60th Avenue intersection, including an eastbound right-turn lane on Advance Road and a northbound left-turn lane on 60th Avenue. A westbound left turn at this intersection was also warranted and should be coordinated with City staff.
- Sight distance at the proposed project access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.
- Improve the site connectivity. One solution for Site Plan Option #1 (Options 1 & 2 are shown Attachments 5 & 6) is to construct a two way public street between the primary school and public park/sports fields. Then, provide access to the primary school and public park parking lots from the public street. In addition, consolidate the middle school parking lot access and the school bus loop access onto 60th

Avenue. While there was a clear solution to improving the internal connectivity of Site Plan Option #1, Site Plan Option #2 would not be as easy to improve. A new connection could be provided between the primary school parking lot and the school bus loop (on the south side of Site Plan Option #2); however, if the middle school parking lot (on the north) was connected to the school bus loop, then the middle school would be completely separated from the track, and the middle school parking lot may have cut-through traffic.

- Coordinate the provision of pedestrian and bicycle facilities to and from this site with City staff, including sidewalks, bike lanes, pedestrian paths/bridges, and/or trails on the site or between the site and the adjacent neighborhoods.
- Cooperate to share the parking facilities at the school and public park, especially during special events.

PARKING

The primary school, middle school, and public park would be required to comply with the City of Wilsonville Planning and Land Development Ordinance for the number of vehicular parking stalls and bicycle parking spaces that are provided on site. It is also important that adequate parking be provided to serve the expected demand of possible site usage (particularly sporting events at the public park), but that not too much parking be provided that there are large areas of underutilized parking.

The City's vehicular parking requirements for the schools are based on the number of students and staff and are based on the following assumptions:

- The primary school would have 550 students and 60 teachers and/or staff members.
- The middle school would have 800 students and 70 teachers and/or staff members.

Based on the City of Wilsonville Code rates: minimum of 0.2 stalls per student/staff and maximum of 0.3 stalls per student/staff. the range for required parking at a middle school is 174-261 stalls and for a primary school 122-183 stalls. The two schools combined would require between 296 and 444 parking stalls. The estimated vehicular parking demand using the Institute of Traffic Engineers (ITE) parking demand rate for elementary schools (based only on number of students: 0.26 stalls per student) is 351 stalls.

In addition to the school parking, some park-specific parking is desired. However, because the peak usage periods for the public park/sports fields will be different from the schools, it is expected that the school parking lots can serve the majority of the parking needs for the park. To ensure optimal provision and use of parking facilities, the School District and the City should cooperate in the future to determine how to share parking, especially during special events. To assist in coordination efforts, the following assumption was used to estimate how much parking would be needed for the public park/sports fields:

- The public park/sports fields may have an occasional soccer or baseball/softball tournament (or other significant Saturday usage). The parking demand for tournaments has been measured at approximately 60 vehicles per field, and it is likely that at least four fields on the site (i.e., the two park fields and two of the school fields) would be used at once. This tournament use is assumed to be the highest estimated parking demand associated with the public park/sports fields.

As shown in the traffic memorandum (Attachment 8), the elementary and middle schools combined (a minimum of 296 stalls) would be expected to provide sufficient parking to accommodate the highest estimated parking demand associated with the public park/sports fields (240 stalls).

NATURAL RESOURCES

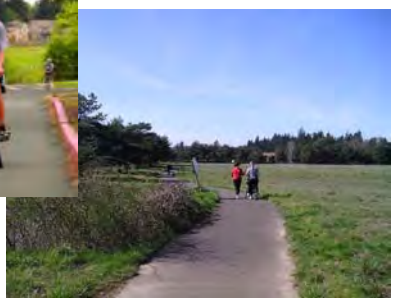
Traversing the west property line of the site is the east fork of the headwaters to Meridian Creek. Meridian Creek is an intermittent stream with a shallow gradient at the northern end, becoming a steep sided ravine heading south toward the Willamette River. Agricultural areas north of Boeckman Road and Advance Road provide the surface runoff for the creek. Culverts under the road convey the water south.

The vegetation in the area is mostly Douglas-fir with alder, and Big-leaf maple as the deciduous component. The under story is disturbed and mostly comprised of sword fern, vine maple and Himalayan blackberry and English ivy.

The stream and associated riparian area is regulated under the City's Significant Resource Overlay Zone (SROZ) and is considered a significant Statewide Planning Goal 5 Natural Resource. The SROZ area includes the slopes adjacent to the creek extending from the 2-year bank full stage or wetland edge to top of bank or 50', whichever is furthest.

Meridian Creek is considered a wildlife corridor for large and small mammals. Deer, coyote, raccoon, possum, squirrel and chipmunk frequent the area. The creek is a fish bearing stream, with the lower reached adjacent to the Willamette River containing Cutthroat trout and Coho salmon.

Bicycle and Pedestrian Facilities



The City's Bicycle and Pedestrian Master Plan (December 2006) contains a hierarchy of interconnected trails to serve the community. In the vicinity of the project site, a number of trails are planned. A community connector (Trail C-11) is envisioned to connect Wilsonville Road at the Boeckman Creek Primary School/Wilsonville High School site east across Meridian Creek, north to the subject site. This trail is envisioned to provide an off-street alternative to Wilsonville Road. At 1.35 miles in length, the path would be muti-modal allowing for bicycles and pedestrians providing valuable connections between educational campus' and sports complexes.

The on-street connections include contiguous sidewalks and bicycle lanes the existing length of Wilsonville Road west of the project site. Boeckman Road to the west is currently unimproved with bike lanes, but does contain sidewalks on the south side of the street. As the future Frog Pond residential area builds out, Boeckman Road will be improved to contain on-street bicycle lanes and contiguous sidewalks on both sides.

Transit

The City operates its own transit system, South Metro Area Rapid Transit (SMART). SMART operates fixed lines, shuttles, dial-a-ride services and links to other transit providers in Portland, Salem and Canby. All rides inside the city are free of charge.

Tri-Met operates the Westside Express Service (WES), which is a commuter rail service terminating at SMART Central at Wilsonville Station on Barber Road. WES connects Tigard, Tualatin and Beaverton via morning and evening commutes Monday through Friday.

SMART busses are staged and prepared to meet WES visitors delivering them to their places of destination in approximately 10 minutes of arriving at SMART Central.

SMART bus line 4 is the closest bus service to the subject site, operating Monday – Saturday along Wilsonville Road, linking Boones Ferry Primary with the Bridge Creek Apartments immediately west of the subject site.

UTILITIES (ENGINEERING PERSPECTIVE)

The Advance Road Site is located at the southwest corner of Advance Road and 60th Ave. and lies outside of the Urban Growth Boundary (UGB) and City limits; therefore no City services are located adjacent to the property. The following infrastructure needs from an engineering perspective must be addressed before development of the site.

Sanitary Sewer

The Advance Road Site would be located within the High School Interceptor sanitary sewer basin, and would likely be serviced by an extension from the sanitary sewer line located in Wagner Street or the Boulder Creek Apartments. If a gravity feed connection is not feasible, the school site would need to construct a lift station to pump the sewage from the site.

Presently, the City of Wilsonville Wastewater Collection System Master Plan indicates sections of the High School Interceptor line as being over capacity at full build out within the basin and the lift station in Memorial Park as being at maximum capacity. Upgrades to both the High School Interceptor line and the Memorial Park lift station may be required to accommodate the school site. In addition the sanitary lateral lines from the Interceptor to the point of connection of the site service line would need to be analyzed to show adequate capacity for the additional flows from the project site.

Water

The Advance Road Site would be serviced by the existing 12" water main located in Advance Road at the edge of the City limits. A water system analysis would need to be performed to show that fire flows to the project site are in compliance with the Public Works and Tualatin Valley Fire & Rescue Standards. Upsizing of water mains and/or a second connection to the existing water mains located in Wagner Street or the Boulder Creek Apartments may be required to provide adequate fire flows.

STORM DRAINAGE

The Advance Road Site straddles land located in both the Meridian Creek drainage basin and a small, unnamed drainage basin located southeast of the site. Storm water flows from the developed site will be in conformance to the Public Works Standards for both water quantity and water quantity, and all storm water flow shall be returned to the appropriate pre-developed basin.

TRANSPORTATION

Vehicle

The City of Wilsonville 2003 Transportation Systems Plan (TSP) shows Boeckman Road (the west extension of Advance Road) as a Minor Arterial west of Wilsonville Road. East of Wilsonville Road, outside of city limits, no designation has been applied to Advance Road. However, to maintain adequate transportation requirements to the project site when this unincorporated property is eventually brought into the UGB, it may be assumed that Advance Road would be designated, at a minimum, to Major Collector status and 60th Avenue may be assumed to be designated, at a minimum, to a Residential (Transit) Street status.

Bike/Ped

When the Advance Road Site is developed, with Advance Road designated, at a minimum, to Major Collector status and 60th Avenue designated, at a minimum, to a Residential (Transit) Street status, the bike lanes and sidewalks associated with the streets would provide bicycle and pedestrian connections to the site. Additionally, a bicycle/pedestrian path connection directly from the school site to the residential area located immediately west of the site (housing units adjacent to Wilsonville Road) should be further examined for feasibility as a safe passage for adults and students accessing the school/park site.

CONCLUSION/RECOMMENDATION

After investigating, discussing and evaluating numerous designs for site configuration the planning group unanimously recommends Option No. 1A (Attachment 1) in the List of Attachments. Several prior site configurations are included in Attachment 9, for illustration purposes. Each rejected sketch was thoroughly discussed and circulated within the City and District staffs for input. Many variations of the initial sketches were also discussed.

The planning group recommends for the City's Community Park at the Advance Road Site approximately 11 acres located in the most northerly portion of tax lot 31E18 02000 including all frontage on Advance Road represented as Option #1A as shown in Attachment 1. The School District's middle school and a primary school would be situated on the remainder of the Advance Road Site to the south of the City's Community Park. If this recommendation is adopted by the City and School District, the Advance Road Site should be surveyed to identify the location of this property division..

NEXT STEPS

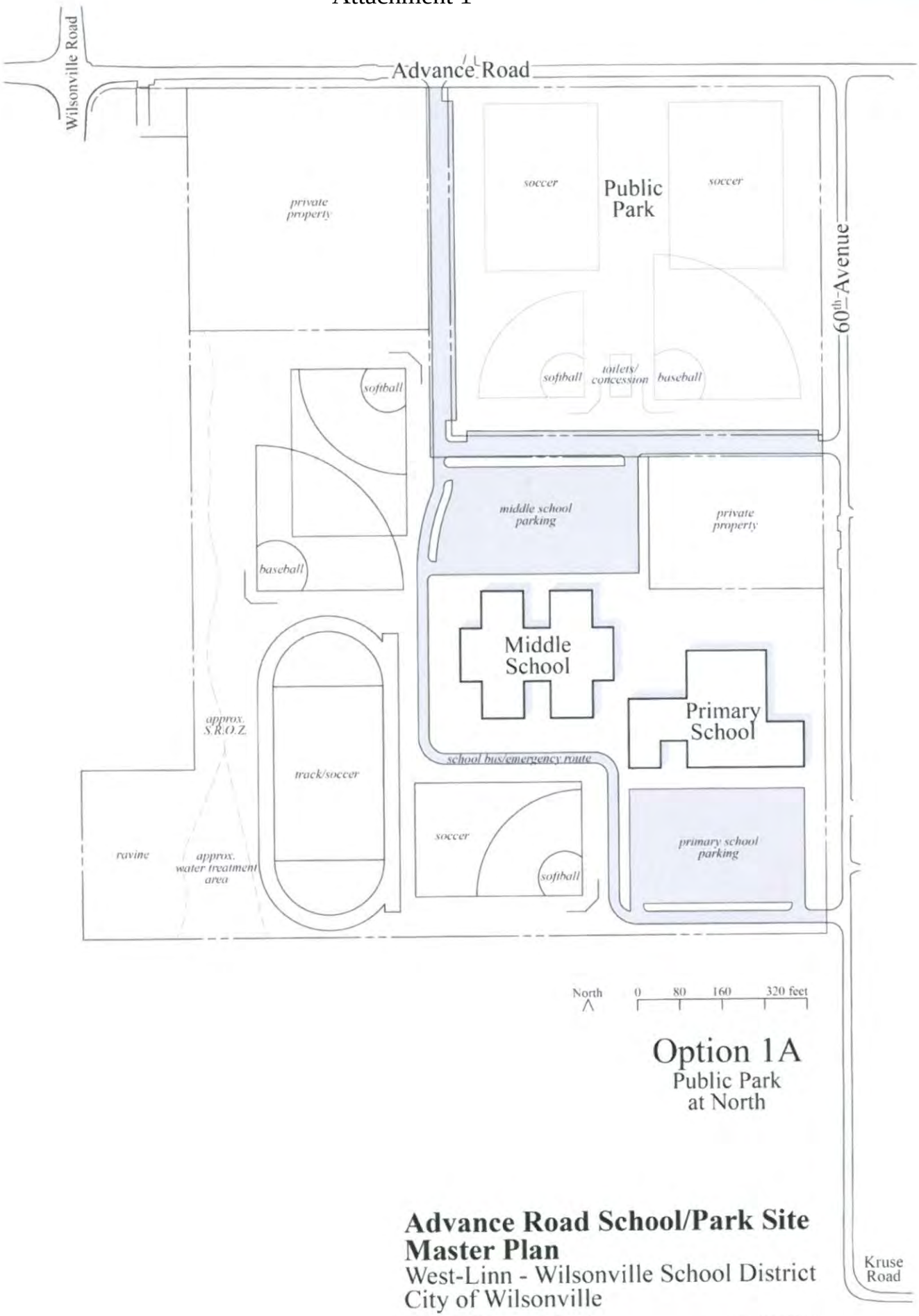
The remaining tasks to complete the objectives for a concept plan based on this report are:

- Approval by City of Wilsonville Council
- Approval by West Linn-Wilsonville School District Board
- Legal descriptions prepared for City parcel and School District parcels
- Villebois exchange documents prepared and executed
- Amend WLWV School District Long Range Facilities Plan
- Amend City of Wilsonville Parks and Recreation Master Plan
- Include Advance Road Site within Wilsonville's Urban Growth Boundary
- Annex the site within the City
- Land use amendments to allow partition of the site
- City and District enter a shared use agreement for site

LIST OF ATTACHMENTS

1. Advance Road Master Plan Option 1-A
2. School District Parcels (Aerial Views- July, 2005, 2008)
3. Topographic Site Map
4. Metro map showing Clackamas Co. urban reserve area
5. Advance Road/School Park Site Plan - Option 1
6. Advance Road/School Park Site Plan - Option 2
7. DKS Traffic Report
8. Parking Summary
9. Prior site sketches
10. Land survey
11. Tax Map

Attachment 1



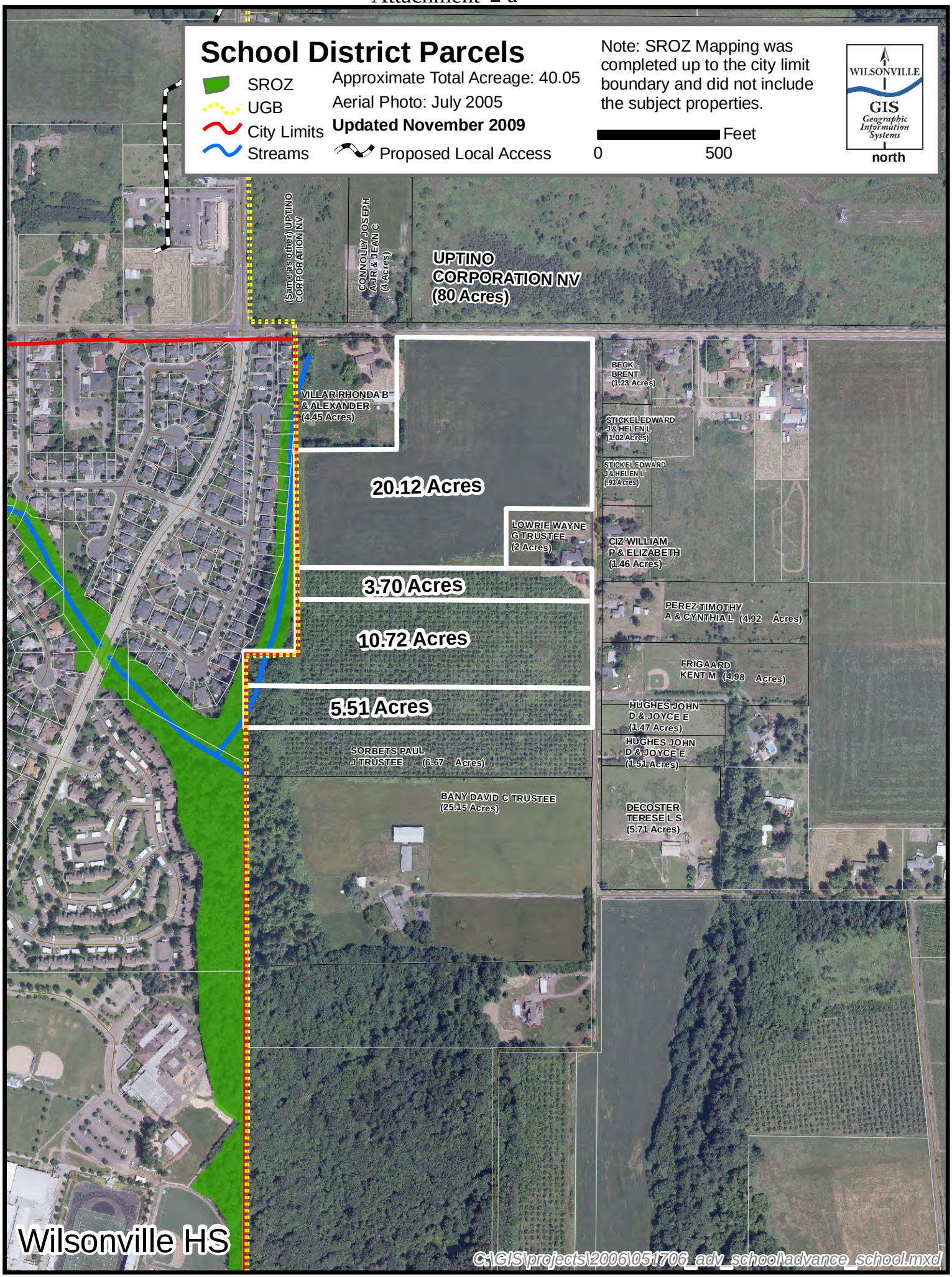
Advance Road School/Park Site Master Plan

West-Linn - Wilsonville School District
City of Wilsonville

Dull Olson Weekes Architects

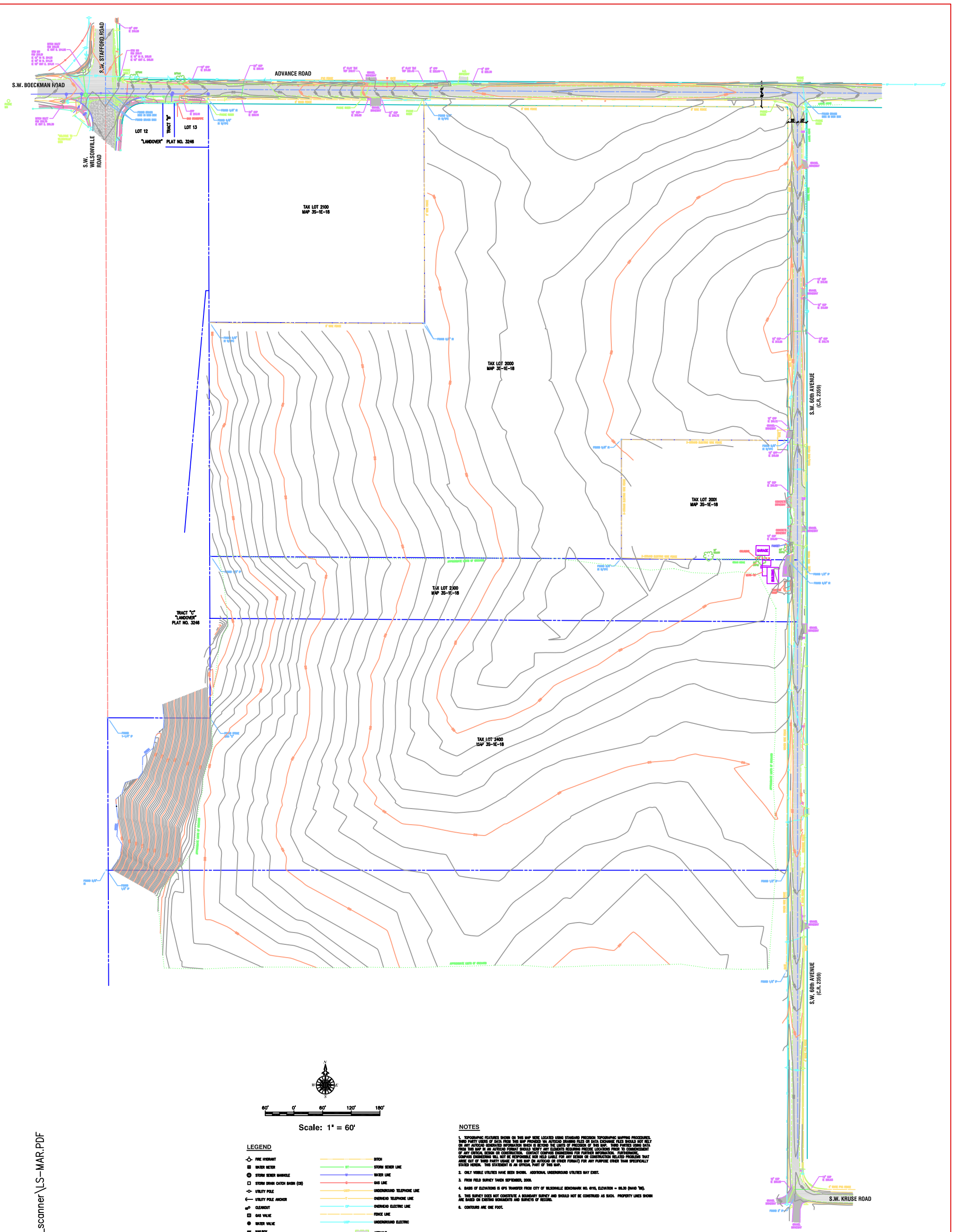
26 April 2010

Attachment 2 a



Attachment 2 b

Attachment 3



NOTES

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2. ONLY VISIBLE UTILITIES HAVE BEEN SHOWN. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST.
3. FROM FIELD SURVEY TAKEN SEPTEMBER, 2009.
4. BASIS OF ELEVATIONS IS GPS TRANSFER FROM CITY OF WILSONVILLE BENCHMARK NO. 6115, ELEVATION = 98.30 (NAVD '88).
5. THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY AND SHOULD NOT BE CONSTRUED AS SUCH. PROPERTY LINES SHOWN ARE BASED ON EXISTING MONUMENTS AND SURVEYS OF RECORD.
6. CONTOURS ARE ONE FOOT.

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TOPOGRAPHIC SITE MAP

DATE	NO.	REVISION

DRAWN MMM | DESIGNED | CHECKED MAR
SCALE 1" = 60' | DATE SEPT., 2009
PLAN 09-6729 | 6729 Topo.dwg

COMPASS ENGINEERING
ENGINEERING SURVEYING PLANNING
4105 SE INTERNATIONAL WAY, SUITE 501
MILWAUKIE, OREGON 97222
www.compass-engineering.com
(503) 653-9083 PHONE
(503) 653-9095 FAX

WEST LINN-WILSONVILLE SCHOOL DISTRICT 3JT
P.O. Box 35
West Linn, Oregon 97068

ERICKSON PROPERTY
TAX LOTS 12300, 12301, 12500, 12600, 12700 & 12800
SE 1/4 OF THE SW 1/4 SECTION 23, T.2S., R.1E., W.M.
CLACKAMAS COUNTY, OREGON

Attachment 4 a

URBAN RURAL RESERVES

Clackamas County
Multnomah County
Washington County
Metro

06/24/10

Columbia Co.
Washington Co.
Multnomah Co.
Yamhill Co.
Clackamas Co.
Marion Co.
Clark Co.

9E rural
9F rural
9D rural
8F rural
8E rural
8B urban
8C urban
8A urban
9C rural
9B rural
9A rural
7H rural
7B urban
7A urban
7I urban
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7F rural
7E urban
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1C urban
1D urban
1F urban
1B rural

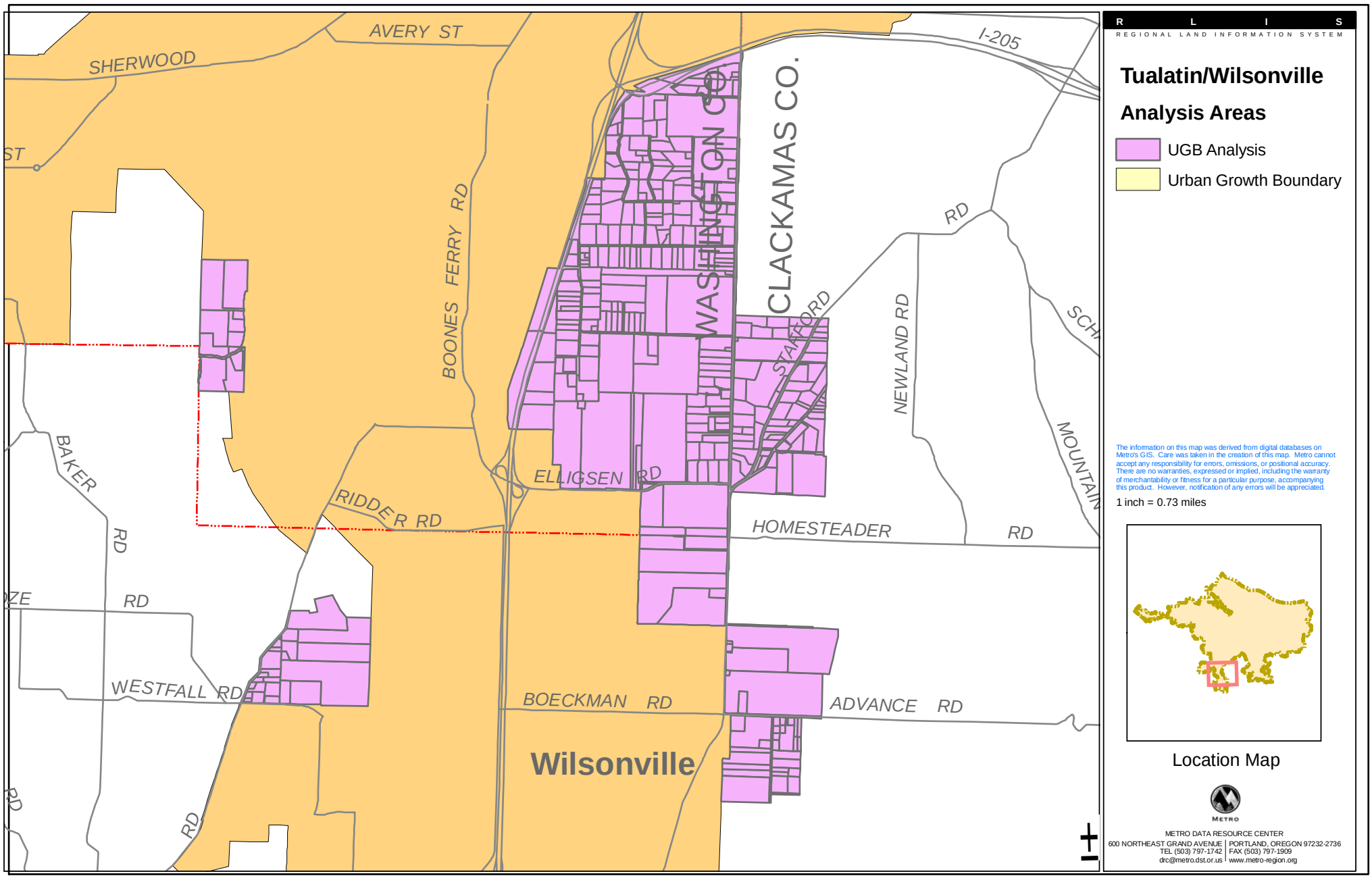
Vancouver
Salmon Creek
Orchards
Camas
Washougal
Columbia River Gorge National Scenic Area
Portland
Hollywood
Gateway
Fairview
Wood Village
Troutdale
Rockwood
Gresham
Lents
Pleasant Valley
Happy Valley
Clackamas
Milwaukie
Oregon City
West Linn
Gladstone
Damascus
Sandy
Estacada
St. Johns
Bethany
Tanasbourne
Orenco
Hillsboro
Forest Grove
Cornelius
Banks
North Plains
Cedar Mill
Sunset Transit Center
Beaverton
Aloha
Raleigh Hills
Hillsdale
Washington Square
West Portland
Murray Scholls
Tigard
Tualatin
Sherwood
King City
Lake Grove
Lake Oswego
Wilsonville
Newberg
Dundee
Carlton
Yamhill
Gaston
Lafayette
McMinnville
Dayton
St. Paul
Donald
Aurora
Canby
Barlow
Hubbard
Woodburn
Molalla
Sturgeon Lake
Vancouver Lake
Hagg Lake

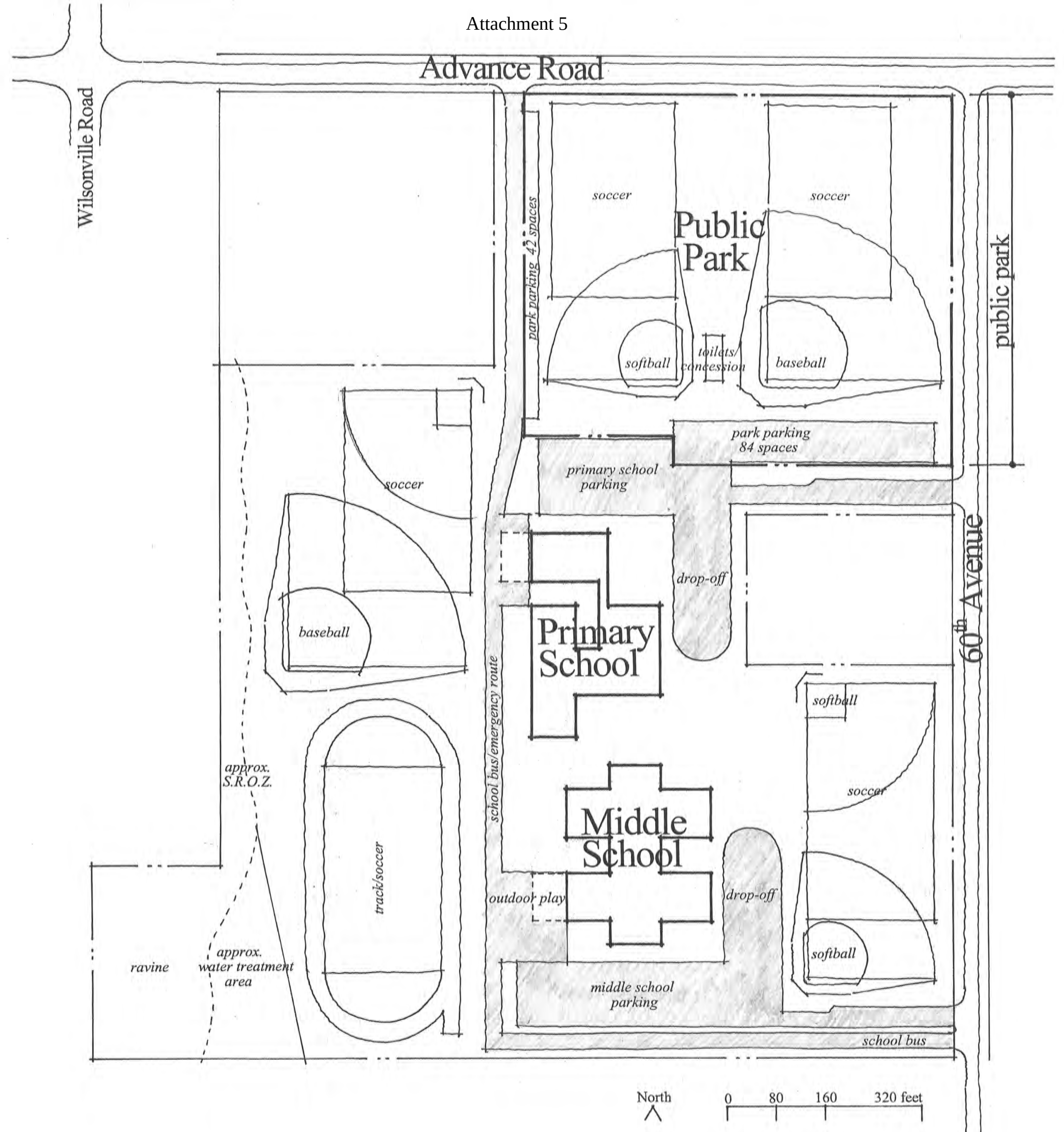
Columbia River
Willamette R.
Multnomah Channel
Salmon Ck.
Johnson Ck.
Sandy R.
Clackamas R.
Abernathy Ck.
Eagle Ck.
Molalla R.
Tualatin R.
McKay Ck.
W Fork Dairy Ck.
E Fork Dairy Ck.
Gales Ck.

Rural reserve areas
Urban reserve analysis areas
Urban reserve areas
Undesignated areas
Reserve study area
Urban centers
Urban growth boundaries

Miles
0 1 2 4

Attachment 4 b



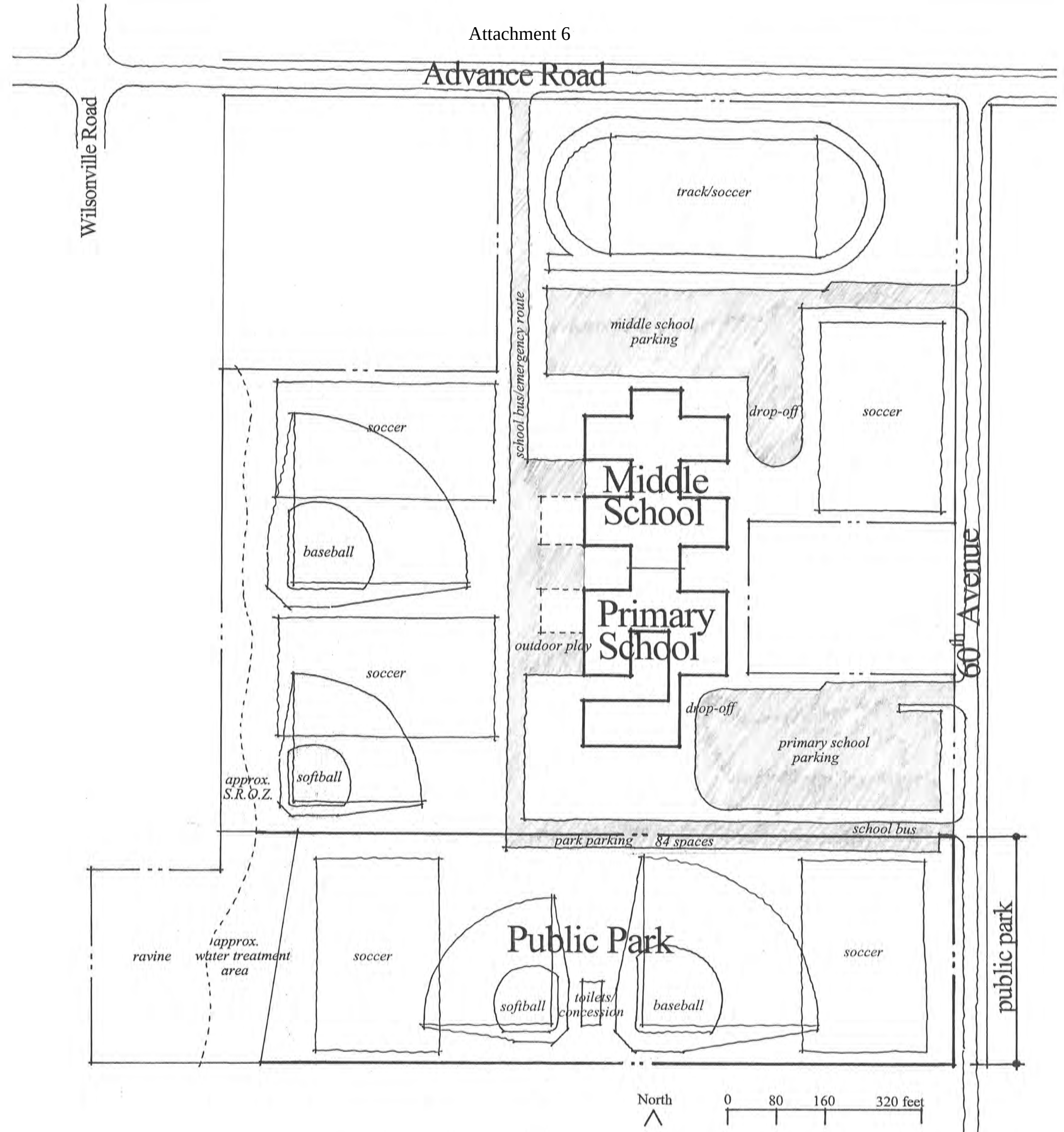


Option 1
Public Park
at North

Advance Road School/Park Site Master Plan
West Linn -Wilsonville School District
City of Wilsonville

Dull Olson Weekes Architects

03 November 2009



Option 2
Public Park
at south

Advance Road School/Park Site Master Plan
West Linn -Wilsonville School District
City of Wilsonville

Dull Olson Weekes Architects

03 November 2009

DKS Associates
TRANSPORTATION SOLUTIONS

MEMORANDUM

TO: Steve Adams, P.E., City of Wilsonville

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

DATE: April 21, 2010

SUBJECT: **Conceptual Advance Road School/Park – Transportation Review**
P10004-003-000

This memorandum documents a transportation review for a conceptual school campus and public park location on the southwest corner of the Advance Road/60th Avenue intersection on the eastern edge of the City of Wilsonville. The project study area is shown in Figure 1. The purpose of this study is to evaluate two separate conceptual site plans and provide transportation related feedback. The two site plans are provided in the appendix, and the main difference between the two is whether the public park is located on the north or south end of the site. This memorandum should not be used for a land use application since it is conceptual in nature and is solely intended to provide a preliminary understanding of critical transportation needs. Therefore, a complete traffic impact study should be performed at the time of a formal development application.

Multiple analysis periods were analyzed due to the varied trip levels associated with schools and parks versus the nearby transportation network. The following scenarios were evaluated as part of this study:

- Weekday a.m. peak hour (highest hourly volumes generated by the school between 7-9 a.m.)
- Weekday midday peak hour (highest hourly volumes generated by the school between 2-4 p.m.); also commonly referred to as the school p.m. peak hour
- Weekday p.m. peak hour (highest hourly volumes generated on the adjacent streets between 4-6 p.m.)
- Saturday peak hour (highest hourly volumes generated by the sports fields, approximately at midday)

The sections of this memorandum discuss existing conditions, project impact analysis, the site plan review, and a summary of findings.

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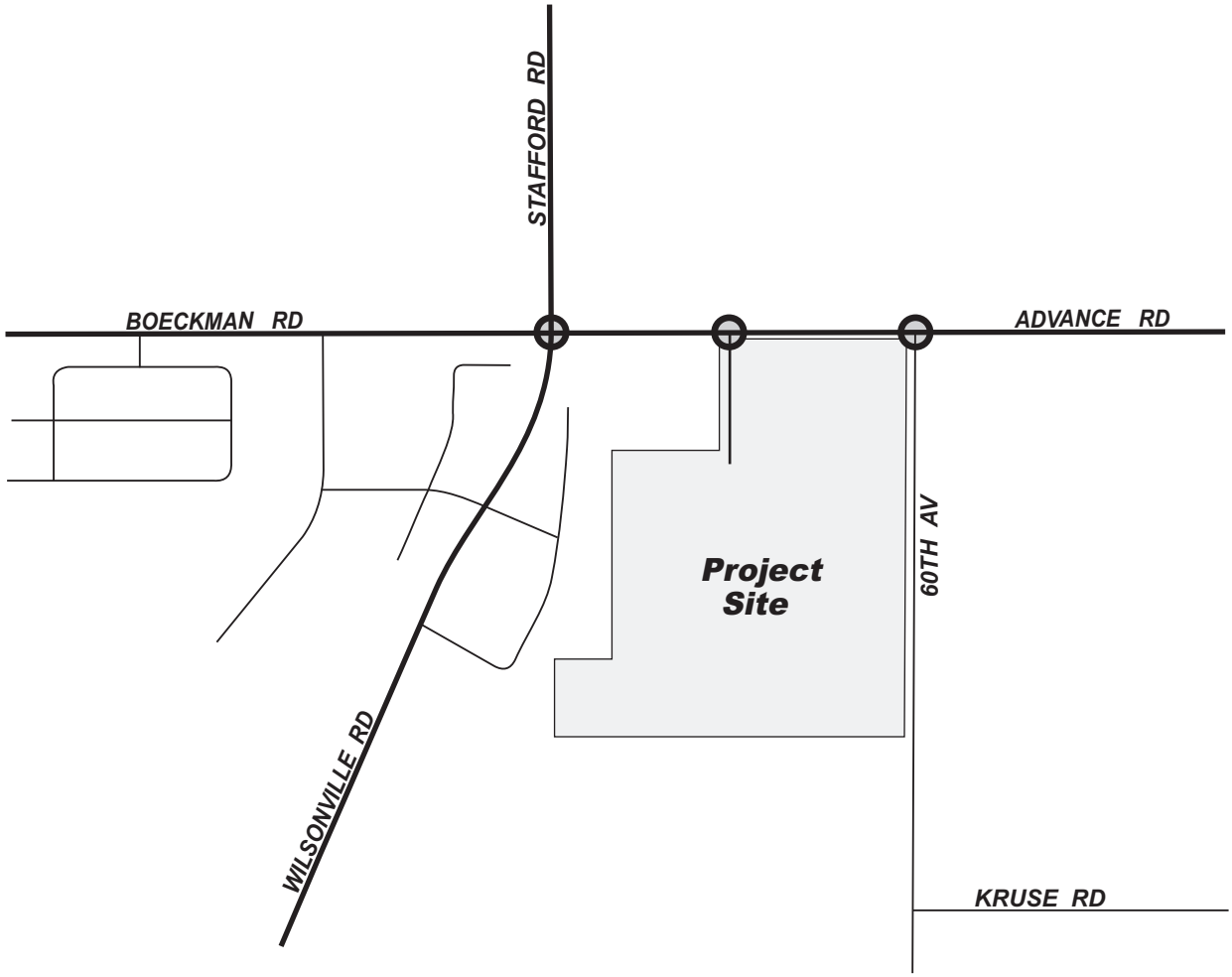


LEGEND

- Study Intersection

DKS Associates
TRANSPORTATION SOLUTIONS

NO SCALE

Figure 1

STUDY AREA

Existing Conditions

Existing traffic conditions were analyzed at the two existing study intersections to understand existing study area traffic operations and provide a baseline for comparing future alternatives:

- Wilsonville Road-Stafford Road/Boeckman Road-Advance Road
- Advance Road/60th Avenue

The Wilsonville Road-Stafford Road/Boeckman Road-Advance Road intersection is all-way stop controlled, with Stafford Road being classified as a major arterial and both Wilsonville Road and Boeckman Road as minor arterials. Advance Road is not classified by the City because it extends beyond City limits and the Wilsonville Urban Growth Boundary (UGB). The Advance Road/60th Avenue intersection and the project site are also outside the Wilsonville UGB. Therefore, the Wilsonville UGB would need to be expanded for the schools/park site to be developed. In conjunction with the UGB expansion and the site development, roadway classification and associated cross-section improvements to Advance Road and 60th Avenue should be coordinated with City staff.

Traffic Volumes

Intersection turn movement counts were collected at the study intersections on Tuesday, February 23, 2010, for the weekday a.m. (7-9 a.m.), midday (2-4 p.m.), and p.m. (4-6 p.m.) peak periods, and on March 6, 2010 for the Saturday midday (11 a.m.-1 p.m.) peak period. The peak hour volumes used for the intersection operations analysis and the detailed traffic counts are included in the appendix.

Intersection Operations Analysis

Operations analysis was performed for the study intersections using the *2000 Highway Capacity Manual* methodology[1] for unsignalized intersections. The average delay, level of service (LOS), and volume to capacity (v/c) ratio of each study intersection are shown in Table 1. As shown, both intersections currently meet the City of Wilsonville level of service D operating standard for all peak periods.

Table 1: 2010 Existing Conditions Intersection Performance

Intersection	Operating Standard	AM Peak		Midday		PM Peak		Saturday	
		LOS	*V/C*	*LOS*	*V/C*	*LOS*	*V/C*	*LOS*	*V/C*
All-Way Stop Controlled									
Wilsonville Rd-Stafford Rd/ Boeckman Rd-Advance Rd	LOS D	B	0.63	B	0.41	C	0.64	A	0.30
Two-Way Stop Controlled									
Advance Rd/60th Ave	LOS D	A/A	0.04	A/A	0.05	A/A	0.06	A/A	0.05

All-Way Stop Controlled intersections:
LOS = Level of Service of Intersection
V/C = Volume-to-Capacity Ratio of Intersection

Two-Way Stop Controlled intersections:
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement

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

Proposed Project

The conceptual project consists of a new primary school and middle school along with a public park on the southwest corner of the Advance Road/60th Avenue intersection (just outside the eastern edge of the City of Wilsonville). Two conceptual site plans are provided in the appendix. This project site currently has a farm field, an orchard, and a residence. The specific details for each of the conceptual uses are listed below:

- **Primary School:** 550 student capacity with school-related sports fields
- **Middle School:** 800 student capacity with school-related sports fields
- **Public Park:** 10-acres with 2 baseball/softball fields and 2 soccer fields (with soccer fields overlapping with baseball/softball outfields)

This section of the memorandum discusses the project trip generation, trip distribution, and trip volumes through the study intersections.

Trip Generation

Project traffic generated by the proposed development was estimated using a combination of trip generation rates estimated for other schools and parks in the area as well as rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation*[2] manual, which is based on research conducted at similar land uses throughout the United States. The trip generation results are shown in Table 2, and details regarding the rates for each of the land uses are explained below:

- **Primary School:** Recent traffic counts (2009) were performed for all weekday peak periods at the Boones Primary School in Wilsonville, which had an enrollment of 796 students. The rates shown in Table 2 were calculated from this local data.
- **Middle School:** Historic traffic counts (2002) were performed for the p.m. peak hour at Wood Middle School (the existing middle school in Wilsonville), which had an enrollment of 642 students. The p.m. peak hour rates shown in Table 2 were calculated from this data. The a.m. and midday peak hour rates shown in Table 2 were provided by ITE (land use 522).[3]
- **Public Park:** Historic traffic counts (2004 through 2006) were performed at similar public parks that included sports fields. These counts indicate that most of the use occurs during the weekday p.m. peak hour and on Saturday; therefore, no park-related trips were assumed for the a.m. and midday peak hours. The data also indicate that Saturday use is more intensive than weekday use, especially when there are sport-related tournaments. During tournaments, a trip rate of approximately 65 trips per active field was observed (for baseball, softball, or soccer). To analyze worst case Saturday impacts, the tournament rate was used assuming four active fields (the two public park fields and two of the school fields). For the weekday p.m. peak hour, a trip rate of approximately 30 trips per active field was observed; this is expected because weekday games or practices are typically lower traffic generators than tournaments. Also, for the purpose of the

[2] *Trip Generation Manual, 8th Edition*, Institute of Transportation Engineers, 2008.
[3] *Trip Generation Manual, 8th Edition*, Institute of Transportation Engineers, 2008.

proposed site, only the two public park fields were accounted for in the weekday p.m. peak hour public park trip generation because the school trip rates are expected to account for use of the schools' sports fields.

Table 2: Project Trip Generation Summary

Land Use (ITE Code)	Size	Trip Rate	Trips Volumes		
			In	*Out*	***Total***
Weekday AM Peak Hour (one hour between 7-9 a.m.)					
Primary School (520)	550 students	0.59 trips/student	164	161	325
Middle School (522)	800 students	0.54 trips/student	238	194	432
Public Park/Sports Fields	-	-	-	-	-
		Total	**402**	**355**	**757**
Weekday Midday Peak Hour (one hour between 2-4 p.m.)					
Primary School (520)	550 students	0.36 trips/student	94	104	198
Middle School (522)	800 students	0.31 trips/student	112	136	248
Public Park/Sports Fields	-	-	-	-	-
		Total	**206**	**240**	**446**
Weekday P.M. Peak Hour (one hour between 4-6 p.m.)					
Primary School (520)	550 students	0.07 trips/student	14	25	39
Middle School (522)	800 students	0.36 trips/student	153	136	289
Public Park/Sports Fields	2 fields[a]	30 trips/field	96	24	120
		Total	**263**	**185**	**448**
Saturday Peak Hour (one hour between 11 a.m. - 1 p.m.)					
Primary School (520)	-	-	-	-	-
Middle School (522)	-	-	-	-	-
Public Park/Sports Fields	4 fields[a]	65 trips/field	130	130	260
		Total	**130**	**130**	**260**

[a] Two public park fields were assumed for weekday trip generation because school trip rates expected to account for use of the schools' fields. On Saturdays, a total of four active fields were assumed because school would not be in session, but fields would likely be used for regular season play and/or tournaments.

Conceptual Trip Distribution

The conceptual trip distribution for the project site is shown in Table 3 and is a preliminary estimation of where project trips would be coming from and going to (given as percentages at key gateways to the study area). The trip distribution for the two schools was provided by the West Linn-Wilsonville School District,[4] while the trip distribution for the public park/sports fields was estimated based on the location of residential neighborhoods throughout the City of Wilsonville and the probable routing to access the site. Also, regarding access to the site, it is

[4] Email from Tim Woodley, West Linn-Wilsonville School District, March 10, 2010.

anticipated that the east access would receive most of the site-related traffic since it provides access to both school parking lots.

Table 3: Trip Distribution Percentages by Land Use

Key Gateways into Study Area	Trip Distribution Percentages		
	Primary School	*Middle School*	*Public Park/ Sports Fields*
East on Advance Road	40%	30%	5%
West on Boeckman Road	0%	10%	30%
South on Wilsonville Road	0%	25%	55%
North on Stafford Road	60%	35%	10%

Conceptual Project Impact Analysis

This section provides a sketch-level assessment of the impact that the proposed primary school, middle school, and public park would have on the following study area intersections:

- Wilsonville Road-Stafford Road/Boeckman Road-Advance Road
- Advance Road/60th Avenue
- Advance Road/Project Access

Future traffic operating conditions were analyzed at these study intersections to determine if the transportation network can support the additional proposed trips. If City of Wilsonville operating standards are not met, then mitigations would be required to improve network performance.

Future Analysis Scenarios

To assess possible project impacts, future traffic operations were analyzed at the study intersections for the following two scenarios:

- 2014 Background Traffic
- 2014 Total Traffic (Background + Project)

The 2014 horizon year was selected for the current conceptual analysis since this would be the earliest estimated date of desired occupancy of the schools. The selection of an analysis year should be revisited at the time of a formal development application and the preparation of a complete traffic impact study. It should also be kept in mind that as the construction date goes further out, traffic needs may change, and the findings of this memorandum are subject to revision, especially in conjunction with a complete traffic impact study. The traffic volumes and intersection operations associated with these scenarios are now discussed.

2014 Traffic Volumes

The future 2014 background traffic volumes were estimated by factoring the 2010 existing traffic volumes by four years of growth. The growth rate was determined to be 2.7 percent per year based on volume projections for the area, which were provided for the year 2020 in the City of Wilsonville Transportation System Plan (TSP).[5] The 2014 total traffic volumes were developed by combining the 2014 background traffic volumes with the proposed project's trips. The 2014 background and total traffic volumes are provided in the appendix.

Intersection Operations Analysis

Intersection operating conditions for the 2014 background and total traffic scenarios are listed in Table 4. As shown, all three study area intersections are expected to meet applicable City mobility standards under background conditions. However, with the addition of project traffic, the following two study intersections would not meet standards (corresponding peak periods when standards are not met are provided in parenthesis):

- Wilsonville Road-Stafford Road/Boeckman Road-Advance Road intersection (a.m. and p.m. peak hours)
- Advance Road/60th Avenue (a.m. peak hour)

Table 4: 2014 Background and Total Intersection Performance

Intersection	Operating Standard	AM Peak		Midday Peak		PM Peak		Saturday Peak	
		LOS	*V/C*	*LOS*	*V/C*	*LOS*	*V/C*	*LOS*	*V/C*
2014 Background									
All-Way Stop Controlled									
Wilsonville Rd-Stafford Rd/ Boeckman Rd-Advance Rd	LOS D	C	0.74	B	0.47	C	0.76	A	0.35
Two-Way Stop Controlled									
Advance Rd/60th Ave	LOS D	A/A	0.05	A/A	0.06	A/A	0.07	A/A	0.06
2014 Total									
All-Way Stop Controlled									
Wilsonville Rd-Stafford Rd/ Boeckman Rd-Advance Rd	LOS D	**F**	1.73	C	0.71	**F**	1.22	B	0.44
Two-Way Stop Controlled									
Advance Rd/60th Ave	LOS D	**A/E**	0.88	A/C	0.41	A/B	0.33	A/B	0.21
Advance Rd/Project Access	LOS D	A/B	0.23	A/B	0.15	A/B	0.20	A/A	0.14

All-Way Stop Controlled intersections:
LOS = Level of Service of Intersection
V/C = Volume-to-Capacity Ratio of Intersection
Bold Underlined values do not meet standards.

Two-Way Stop Controlled intersections:
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement (typically a major movement)
Bold Underlined values do not meet standards.

[5] City of Wilsonville Transportation Systems Plan, Figure 4.8, Adopted June 2, 2003.

Conceptual Project Mitigations

Because preliminary estimates of project traffic would contribute to the two study intersections not meeting standards, mitigation measures would be needed at these locations. Possible mitigations and the resulting intersection operations are shown in Table 5.

As shown in Table 5, the Wilsonville Road-Stafford Road/Boeckman Road-Advance Road intersection would be expected to meet operating standards either with the installation of a traffic signal with left-turn lanes on all approaches.

For the Advance Road/60th Avenue intersection to meet operating standards, it would need either a northbound left-turn lane or an eastbound right-turn lane. However, both improvements would improve operations to and from the site and should be considered as part of the off-site and frontage improvements, especially because turn-lane warrants are met (as discussed in the next section of this memorandum). Another potential consideration that may change the results of this analysis is whether the area north of Advance Road is brought into the UGB and city limits and develops at approximately the same time as the school site. If it does, then the Advance Road/60th Avenue intersection may become a four-legged intersection at the time of the school's development and would need to be accounted for in future transportation analysis.

Table 5: Possible Mitigation Measures and 2014 Total Intersection Performance

Mitigation Measure (by Intersection)	Operating Standard	2014 Total Intersection Performance							
		AM Peak		Midday Peak		PM Peak		Saturday Peak	
		LOS	*V/C*	*LOS*	*V/C*	*LOS*	*V/C*	*LOS*	*V/C*
Wilsonville Rd-Stafford Rd/ Boeckman Rd-Advance Rd									
Existing All-Way Stop	LOS D	**F**	1.73	C	0.71	**F**	1.22	B	0.44
Traffic Signal with Left-Turn Lanes on All Approaches	LOS D	A	0.62	-[a]	-[a]	A	0.52	-[a]	-[a]
Advance Rd/60th Ave									
Existing Single-Lane Approaches	LOS D	**A/E**	0.88	A/C	0.41	A/B	0.33	A/B	0.21
With Northbound Left-Turn Lane on 60th Avenue	LOS D	A/D	0.71	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]
With Eastbound Right-Turn Lane on Advance Road	LOS D	A/D	0.73	-[a]	-[a]	-[a]	-[a]	-[a]	-[a]

All-Way Stop Controlled intersections:
LOS = Level of Service of Intersection
V/C = Volume-to-Capacity Ratio of Intersection
Bold Underlined values do not meet standards.

Two-Way Stop Controlled intersections:
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement (typically a major movement)
Bold Underlined values do not meet standards.

[a] Mitigated operations not analyzed because unmitigated conditions already would meet standards during these time periods.

Turn Lane Warrants

Left-turn and right-turn lane warrants were analyzed on Advance Road at 60th Avenue and the project access for the 2014 total traffic scenario. Different methodologies were used for each type of warrant analysis based on typical traffic engineering practice due to research findings by different transportation organizations.

The left-turn warrant analysis was performed based on methodologies provided by the Highway Research Board (HRB). Table 6 provides the results of the warrant analysis and associated worksheets are attached in the appendix. As shown in the table, a left-turn lane warrant would be met for the westbound approach on Advance Road at the Advance Road/60th Avenue intersection for the a.m. weekday peak period. One consideration for a left-turn lane is that it would require widening both the east and west legs of the intersection to accommodate the shifted westbound through lane's alignment. The addition of westbound left turn lane would also allow for the installation of a pedestrian refuge island on the west leg in the center of the roadway opposite the westbound left-turn lane, as shown in Figure 2 on the following page.

Table 6: Left-Turn Lane Warrant Summary (2014 Total Traffic)

Intersection	Movement	Left-Turn Warrant Results (2014 Total Traffic)	
		HRB Warrant Met? [a]	*Recommended Storage*
Advance Rd/60th Ave	WB LT	Yes (a.m. only)	125'
Advance Rd/Project Access	WB LT	No	-

[a] HRB = Highway Research Board

The right-turn lane warrant analysis was performed using the National Cooperative Highway Research Program (NCHRP) methodology. The results are summarized in Table 7, and associated worksheets are attached in the appendix. The analysis indicates that right-turn lane warrants would be met in the eastbound direction at the Advance Road/60th Avenue intersection for all three weekday peak periods. A schematic is shown in Figure 2 on the following page.

Table 7: Right-Turn Lane Warrant Summary (2014 Total Traffic)

Intersection	Movement	Right-Turn Warrant Results (2014 Total Traffic)
		NCHRP Warrant Met? [a]
Advance Rd/60th Ave	EB RT	Yes (a.m., midday, p.m.)
Advance Rd/Project Access	EB RT	No

[a] NCHRP = National Cooperative Highway Research Program

The installation of a right-turn lane should be coordinated with the City Engineer. If an eastbound right-turn lane is provided on Advance Road at 60th Avenue, then it would increase pedestrian crossing distances of Advance Road and would also separate right-turn traffic from through traffic. One likely consequence of separating right-turn traffic from through traffic is that through traffic would be able to travel through the intersection at a higher speed, which could create a possible safety concern at the school crossing. Therefore, overhead pedestrian flashers and other safety treatments at the crossing may be required by the City.

Another important consideration related to turn-lanes and pedestrian crossing needs on Advance Road is whether development is anticipated on the undeveloped land on the north side of Advance Road. Therefore, due to potential future development and safety concerns, turn lane needs and pedestrian crossing locations should be carefully considered and coordinated with City staff. A schematic of possible turn lane locations is provided in Figure 2 below.

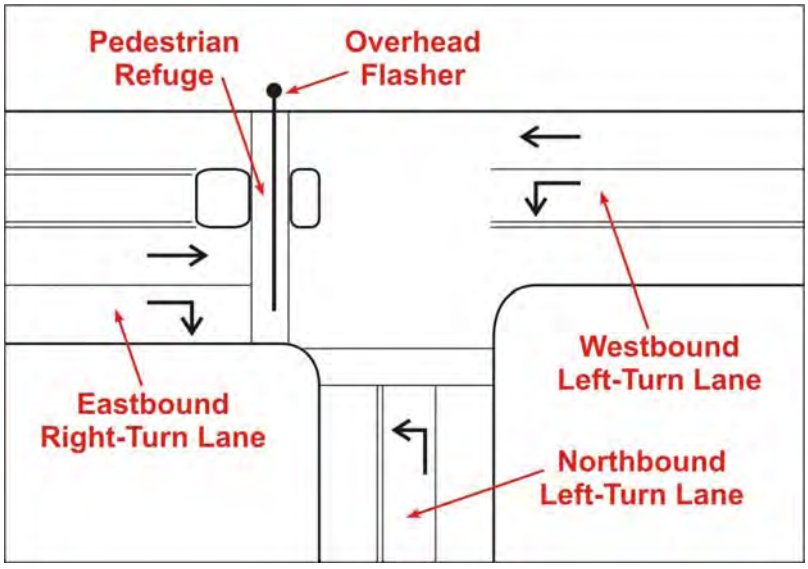


Figure 2: Possible Turn-Lanes and Pedestrian Refuge Island at Advance Road/60th Avenue

Site Plan Review

Two conceptual site plans for the Advance Road school/park site were reviewed to evaluate the site access, internal street circulation, pedestrian and bike facilities, and parking. The two site plans are provided in the appendix, and the main difference between the two is whether the public park is located on the north or south end of the site.

Site Access

Both site plans have one driveway onto Advance Road. This driveway is located approximately 750 feet from 60th Avenue (which is the nearest intersection on the east) and 700 feet from Stafford Road-Wilsonville Road (which is the nearest intersection on the west). Assuming that Advance Road would be classified by the City of Wilsonville as a minor arterial (which would match the nearby Wilsonville Road and Boeckman Road classifications), the minimum spacing standard would be 600 feet. Therefore, spacing standards would be met (assuming the residential driveways west of the accesses are not considered).

The two site plans both provide three driveways onto 60th Avenue. It is expected that 60th Avenue would be classified as a local street; therefore, its spacing standard would be 300 to 500 feet. For Site Plan Option 1, the middle school access and the 60th Avenue bus access would be too closely spaced to meet the local street spacing standard. Therefore, these two accesses should be consolidated into a combined driveway. For Site Plan Option 2, the driveways are spaced further apart and would be expected to meet spacing standards.

Sight Distance

Based on the posted speed of 45 miles per hour (mph) on Advance Road, 500 feet of sight distance is needed for the project access onto Advance Road.[6] Preliminary measurements suggest that there will be sufficient sight distance as long as the vegetation adjacent to the project driveway is sufficiently cut back. Also, on 60th Avenue there is no posted speed; therefore, if the the 55 mph basic rule is assumed to apply, then 610 feet of sight distance should be provided. However, if the streets are urbanized, then a 25 mph speed may be expected and 280 feet of sight distance would be needed at the project driveways.

At the time that the project site is built, sight distance at all proposed project access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon prior to occupancy.

Internal Street Circulation

For both site plans, the internal street network has no cross-access between the various roadways and parking lots. The primary school and middle school have separate parking lots, with each parking lot having its own access onto 60th Avenue. The school bus loop/emergency route wraps around the two schools and also has its own two accesses: one onto Advance Road and the other onto 60th Avenue. Parking for the public park/sports fields is shown adjacent to the park along the bus loop and appears to consist of head-in parking. Neither site plan shows any internal connections between the bus loop and school parking lots even though they are adjacent to one another at various locations. This limited connectivity would be problematic for the following reasons:

- All school traffic (with the exception of school buses) would be required to use 60th Avenue and the Advance Road/60th Avenue intersection. This would likely result in significant congestion and delay at this intersection during the peak 15 minutes before and after school.
- The parking facilities for the public park/sports fields would be isolated from one another with no street connection. For example, should the head-in stalls along the bus loop be full, then drivers would be required to drive out of the site and use 60th Avenue to access overflow parking (i.e., the parking provided by the school parking lots). In Site Plan Option #1, this would require that drivers circle around the entire site.

One solution to improve the site connectivity for Site Plan Option #1 would be to construct a two-way public street between the public park/sports fields and the primary school, as shown in the site plan markup schematic in Figure 3. Access to the primary school and public park parking lots could then be taken from the public street, as shown conceptually in the figure. Furthermore, for Site Plan Option #1, a potential connection between the middle school parking lot and school bus loop is also shown. This connection would allow a consolidation of accesses, which is needed given the site access spacing discussion provided previously in this memorandum.

[6] *Geometric Design of Highways and Streets,* AASHTO, 2004; Case B1, p. 661.

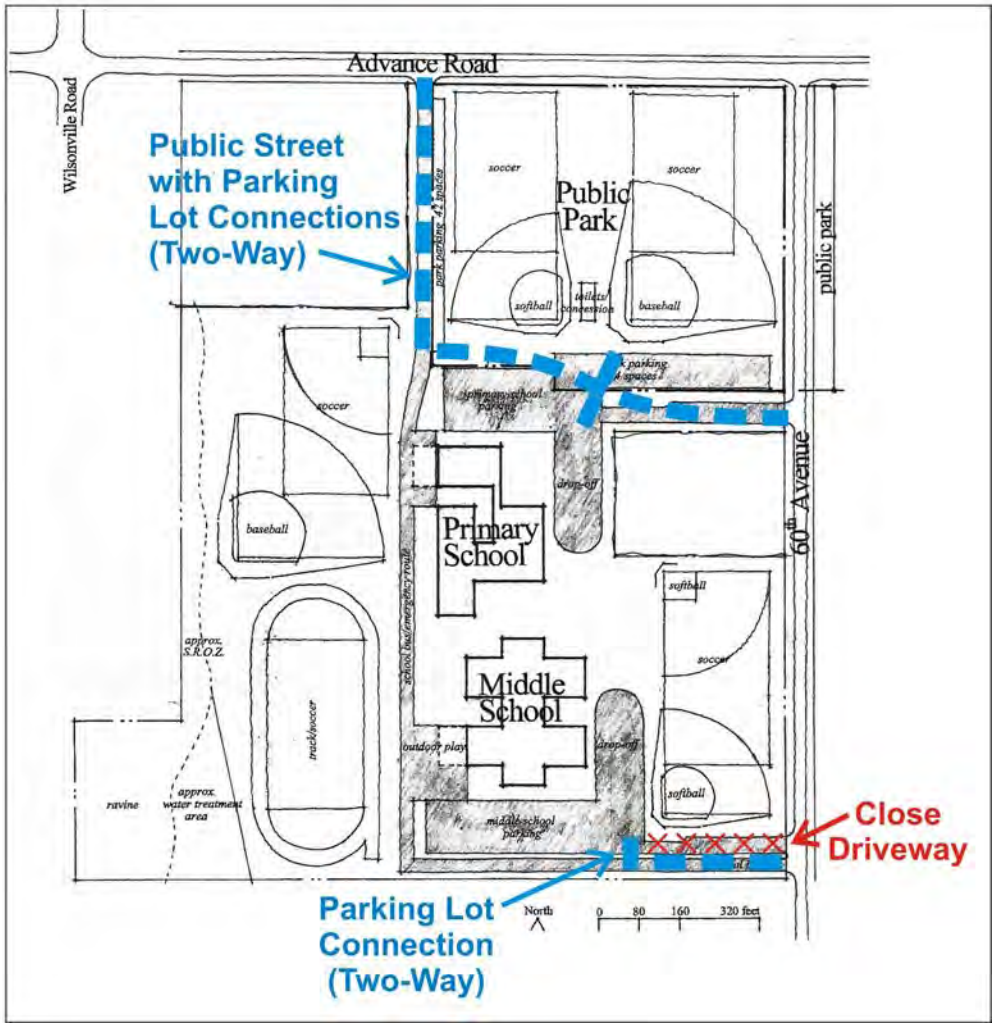


Figure 3: Site Plan Modification Schematic (Site Plan Option #1)

While there was a clear solution to improving the internal connectivity of Site Plan Option #1, Site Plan Option #2 would not be as easy to improve (see the appendix for the site plan). A new connection could be provided between the primary school parking lot and the school bus loop (on the south side of Site Plan Option #2); however, if the middle school parking lot (on the north) was connected to the school bus loop, then the middle school would be completely separated from the track, and the middle school parking lot may have cut-through traffic.

Pedestrian and Bike Connectivity

It is not clear from the site plan what pedestrian and bicycle facilities are provided on the site or between the site and the neighborhoods where the students live. The provision of connected facilities improves safety and also encourages walking and bicycling to school, which are important travel modes for students who live close to the school. The provision of pedestrian and bicycle facilities (e.g., sidewalks, bike lanes, pedestrian paths/bridges, and trails) should be coordinated with City staff, including a potential connection to Wilsonville Road through the subdivision west of the site.

Parking

The primary school, middle school, and public park would be required to comply with the City of Wilsonville Planning and Land Development code for the number of vehicular parking stalls and bicycle parking spaces that are provided on site.[7] It is also important that adequate parking be provided to serve the expected demand of possible site usage (particularly sporting events at the public park).

Vehicular Parking

The City's vehicular parking requirements for the schools are based on the number of students and staff and are shown in Table 8 based on the following assumptions:

- The primary school would have 550 students and 60 teachers and/or staff members.
- The middle school would have 800 students and 70 teachers and/or staff members.

The two schools combined would require between 296 and 444 parking stalls based on the following City of Wilsonville Code rates: minimum of 0.2 stalls per student/staff and maximum of 0.3 stalls per student/staff. The estimated vehicular parking demand is estimated to be 351 stalls using the ITE parking demand rate for elementary schools (based only on number of students: 0.26 stalls per student).[8]

In addition to the school parking, some park-specific parking may be desired. However, because the peak usage periods for the public park/sports fields will be different from the schools, it is expected that the school parking lots can serve the majority of the parking needs for the park. To ensure optimal provision and use of parking facilities, the School District and the City should cooperate in the future to determine how to share parking, especially during special events. To assist in coordination efforts, the following assumption was used to estimate how much parking would be needed for the public park/sports fields (with the analysis results shown in Table 8):

- The public park/sports fields may have an occasional soccer or baseball/softball tournament (or other significant Saturday usage). The parking demand for tournaments has been measured at approximately 60 vehicles per field, and it is likely that at least four fields on the site (i.e., the two park fields and two of the school fields) would be used at once. This tournament use is assumed to be the highest estimated parking demand associated with the public park/sports fields.

As shown in Table 8, the elementary and middle schools combined (a minimum of 296 stalls) would be expected to provide sufficient parking to accommodate the highest estimated parking demand associated with the public park/sports fields (240 stalls).

[7] City of Wilsonville, Planning and Land Development Ordinance, Sections 4.154-4.198, Updated Feb. 2004.
[8] *Parking Generation*, 3rd Edition, 2003, Institute of Transportation Engineers; insufficient data provided for Middle School parking generation.

Table 8: Vehicular Parking Summary

Land Use (ITE Code)	Size	Estimated Demand[a]	City Standards[b]	
			Minimum	*Maximum*
Weekday				
Elementary (520)	550 students, 60 staff	143 stalls (0.26 per student)	122 stalls (0.2 per students/staff)	183 stalls (0.3 per students/staff)
Middle (522)	800 students, 70 staff	208 stalls (0.26 per student)	174 stalls (0.2 per students/staff)	261 stalls (0.3 per students/staff)
	Total	**351 stalls**	**296 stalls**	**444 stalls**
Saturday				
Public Park/Sports Fields	4 fields	240 stalls (60 per active field)[d]	-	-
	Total	**240 stalls**		

[a] Estimated demand based on *Parking Generation, 3rd Edition*, Institute of Transportation Engineers, 2003, and/or *Parking and Vehicle Trip Generation for Soccer Fields and Elementary Schools*, Ransford McCourt, DKS Associates, April 2009.
[b] City of Wilsonville, Planning and Land Development Ordinance, Section 4.155, Updated Feb. 2004.
[c] Assuming practices on only the two public park fields (consistent with weekday p.m. peak hour trip generation assumptions).
[d] Assuming sports tournament using four fields (consistent with Saturday trip generation assumptions).

Bicycle Parking

The City bicycle parking requirements are shown in Table 9 and are based on the number of classrooms and square footage by grade. For bicycle parking, the City of Wilsonville Planning and Land Development code requires a minimum of 1 space per 3,500 square-feet (for Kindergarten through 2nd grade) and 8 spaces per class (above 2nd grade). The bicycle racks should be placed near school entrances in visible locations.

Table 9: Bicycle Parking Summary

Grade (by School)	Size	Bicycle Parking	
		City Code Requirement[a]	*Spaces*
Elementary School			
Pre-Kindergarten through 2nd Grade	TBD[b]	1 space per 3,500 ft^2	TBD[b]
3rd Grade and Up	TBD[b]	8 spaces per class	TBD[b]
		Total	**TBD[b]**
Middle School			
All Grades	TBD[b]	8 spaces per class	TBD[b]
		Total	**TBD[b]**

[a] City of Wilsonville, Planning and Land Development Ordinance, Section 4.155, Updated Jan. 2010.
[b] TBD = To Be Determined; Because the project is in the conceptual stages, the information provided in this table is solely for planning purposes.

Summary

This memorandum documents a transportation review for a conceptual school campus and public park location on the southwest corner of the Advance Road/60th Avenue intersection on the eastern edge of the City of Wilsonville. This memorandum should not be used for a land use application since it is conceptual in nature and is solely intended to provide a preliminary understanding of critical transportation needs. Therefore, a complete traffic impact study should be performed at the time of a formal development application.

The conceptual analysis indicates that the following project related measures are likely to be required of the School District at the time of site build-out:

- Construct a traffic signal with left-turn lanes on all approaches at the Wilsonville Road-Stafford Road/Boeckman Road-Advance Road intersection; the School District should coordinate with City staff to determine its proportionate share of the future improvements.
- Construct improvements at the Advance Road/60th Avenue intersection, including an eastbound right-turn lane on Advance Road and a northbound left-turn lane on 60th Avenue. These improvements should be coordinated with City staff. A westbound left-turn at this intersection was also warranted and also should be coordinated with City staff.
- Sight distance at the proposed project access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon prior to site occupancy.
- Improve the site connectivity. One solution for Site Plan Option #1 is to construct a two-way public street between the primary school and public park/sports fields. Then, provide access to the primary school and public park parking lots from the public street. In addition, consolidate the middle school parking lot access and the school bus loop access onto 60th Avenue (these improvements are shown schematically in Figure 3). While there was a clear solution to improving the internal connectivity of Site Plan Option #1, Site Plan Option #2 would not be as easy to improve. A new connection could be provided between the primary school parking lot and the school bus loop (on the south side of Site Plan Option #2); however, if the middle school parking lot (on the north) was connected to the school bus loop, then the middle school would be completely separated from the track, and the middle school parking lot may have cut-through traffic.
- Coordinate the provision of pedestrian and bicycle facilities to and from this site with City staff, including sidewalks, bike lanes, pedestrian paths/bridges, and/or trails on the site or between the site and the adjacent neighborhoods.
- Cooperate with the City to ensure optimal provision and sharing of the parking facilities at the school and public park, especially during special events.

Let us know if you have any questions or comments.

Appendix

Conceptual Site Plans

Traffic Counts

Intersection Analysis Volumes – 2014

Level of Service Descriptions

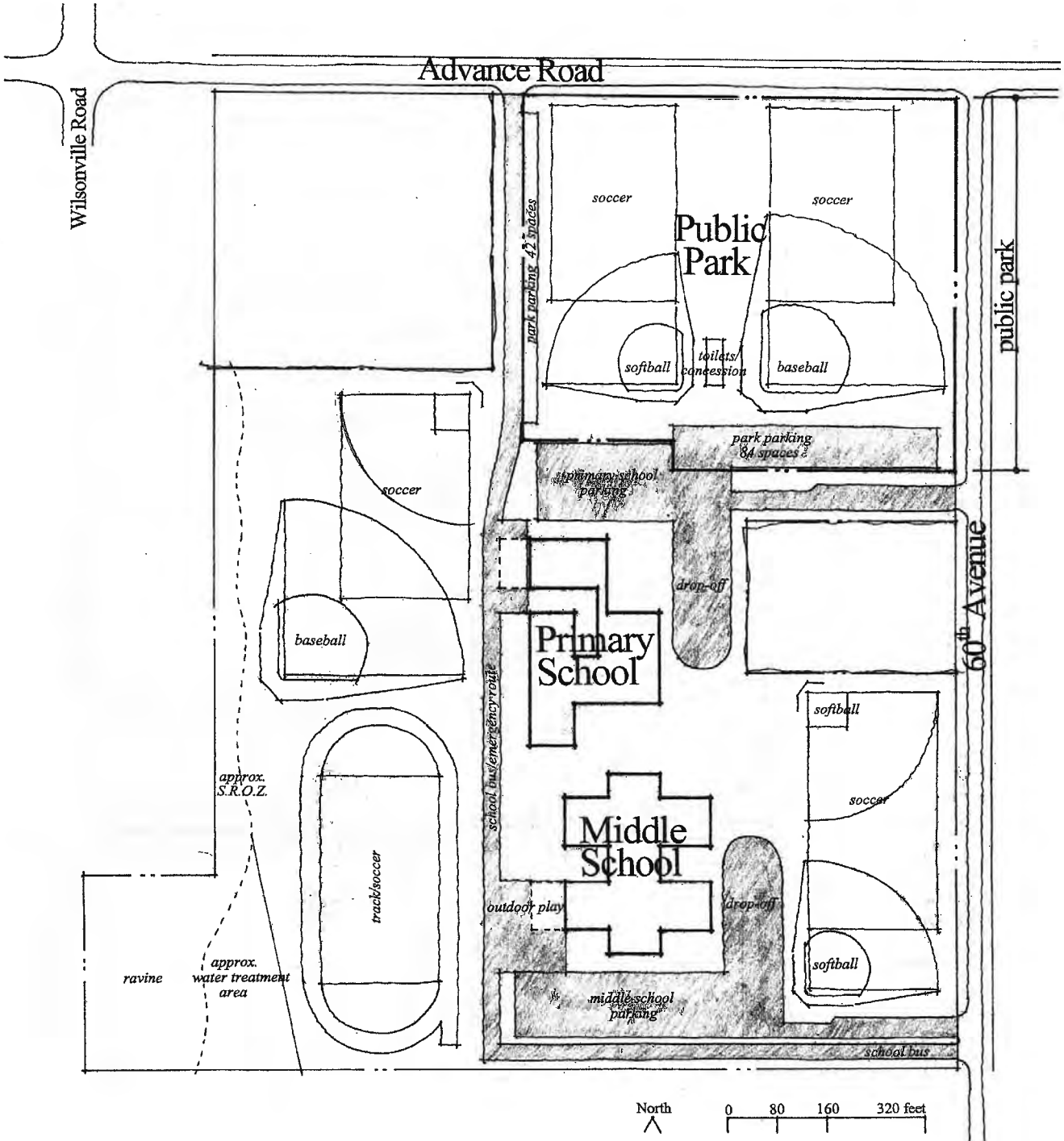
HCM Analysis – Existing 2010

HCM Analysis – 2014

HCM Analysis – 2014 (Mitigated)

Peak Signal and Turn Lane Warrants

Conceptual Site Plans

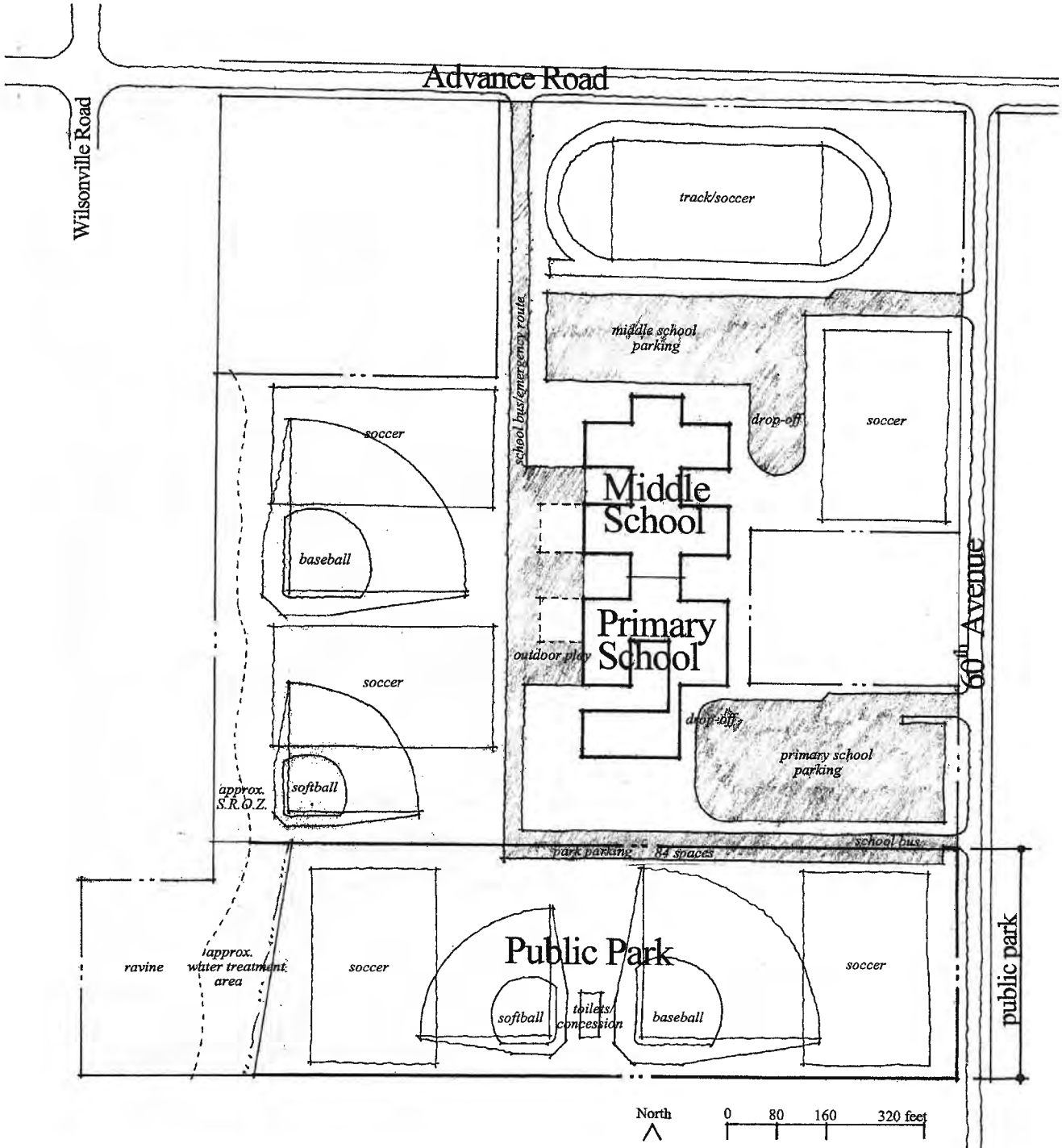


Option 1
Public Park at North

Kruse Road

Advance Road School/Park Site Master Plan
West Linn -Wilsonville School District
City of Wilsonville

Dull Olson Weekes Architects 03 November 2009



Option 2
Public Park
at south

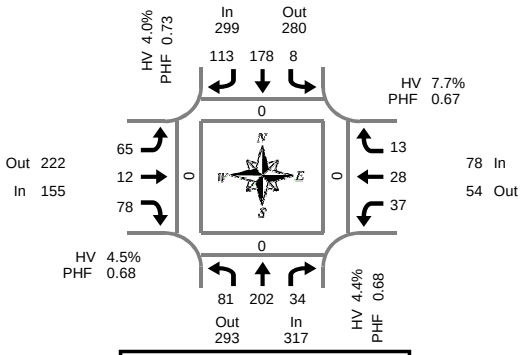
Advance Road School/Park Site Master Plan
West Linn -Wilsonville School District
City of Wilsonville

Dull Olson Weekes Architects 03 November 2009

Traffic Counts

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:30 AM to 8:30 AM

SW Stafford Rd & SW Advance Rd

Tuesday, February 23, 2010
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	1	8	2	0	0	3	6	0	3	0	2	0	3	1	2	0	31	0	0	0	0
7:05 AM	4	9	0	0	0	3	5	0	7	0	4	0	1	2	1	0	36	0	0	0	0
7:10 AM	3	18	1	0	0	6	4	0	6	0	3	0	1	0	1	0	43	0	0	0	0
7:15 AM	5	19	2	0	0	4	7	0	2	0	2	0	2	2	2	0	47	0	0	0	0
7:20 AM	1	23	1	0	0	15	3	0	3	0	3	0	2	2	0	0	53	0	0	0	0
7:25 AM	4	18	0	0	0	10	12	0	5	1	2	0	2	1	0	0	55	0	0	0	0
7:30 AM	7	17	1	0	0	16	7	0	5	1	5	0	0	2	0	0	61	0	0	0	0
7:35 AM	4	21	6	0	2	15	9	0	9	0	1	0	5	1	0	0	73	0	0	0	0
7:40 AM	4	23	1	0	0	8	2	0	10	1	2	0	0	3	1	0	55	0	0	0	0
7:45 AM	1	11	2	0	1	10	10	0	7	2	1	0	2	3	1	0	51	0	0	0	0
7:50 AM	2	11	3	0	1	8	16	0	1	0	4	0	0	4	1	0	51	0	0	0	0
7:55 AM	5	7	4	0	0	10	8	0	3	1	3	0	3	4	0	0	48	0	0	0	0
8:00 AM	8	12	4	0	1	9	9	0	4	0	9	0	2	5	2	0	65	0	0	0	0
8:05 AM	4	14	1	0	0	22	8	0	7	3	10	0	5	0	1	0	75	0	0	0	0
8:10 AM	14	13	1	1	0	21	13	0	3	1	11	0	6	1	4	0	88	0	0	0	0
8:15 AM	9	17	6	0	1	26	12	0	3	1	18	0	9	2	0	0	104	0	0	0	0
8:20 AM	15	25	3	0	0	22	8	0	4	2	7	0	5	1	1	0	93	0	0	0	0
8:25 AM	8	31	2	0	2	11	11	0	9	0	7	0	0	2	2	0	85	0	0	0	0
8:30 AM	7	22	0	0	2	7	6	0	2	1	2	0	2	5	1	0	57	0	0	0	0
8:35 AM	0	13	2	0	4	10	10	0	5	1	3	0	2	3	2	0	55	0	0	0	0
8:40 AM	3	8	0	0	0	10	8	0	6	1	1	0	2	1	4	0	44	0	1	0	0
8:45 AM	7	13	1	0	1	5	6	0	8	0	3	0	2	2	0	0	48	0	0	0	0
8:50 AM	4	10	1	0	0	17	12	0	4	2	2	0	3	5	1	0	61	0	0	0	0
8:55 AM	3	7	4	1	0	9	4	0	5	1	0	0	2	2	0	0	37	0	0	0	0
Total Survey	123	370	48	2	15	277	196	0	121	19	105	0	61	54	27	0	1,416	0	1	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	8	35	3	0	0	12	15	0	16	0	9	0	5	3	4	0	110	0	0	0	0
7:15 AM	10	60	3	0	0	29	22	0	10	1	7	0	6	5	2	0	155	0	0	0	0
7:30 AM	15	61	8	0	2	39	18	0	24	2	8	0	5	6	1	0	189	0	0	0	0
7:45 AM	8	29	9	0	2	28	34	0	11	3	8	0	5	11	2	0	150	0	0	0	0
8:00 AM	26	39	6	1	1	52	30	0	14	4	30	0	13	6	7	0	228	0	0	0	0
8:15 AM	32	73	11	0	3	59	31	0	16	3	32	0	14	5	3	0	282	0	0	0	0
8:30 AM	10	43	2	0	6	27	24	0	13	3	6	0	6	9	7	0	156	0	1	0	0
8:45 AM	14	30	6	1	1	31	22	0	17	3	5	0	7	9	1	0	146	0	0	0	0
Total Survey	123	370	48	2	15	277	196	0	121	19	105	0	61	54	27	0	1,416	0	1	0	0

Peak Hour Summary
7:30 AM to 8:30 AM

By Approach	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	317	293	610	1	299	280	579	0	155	222	377	0	78	54	132	0	849	0	0	0	0
%HV	4.4%				4.0%				4.5%				7.7%				4.6%				
PHF	0.68				0.73				0.68				0.67				0.74				

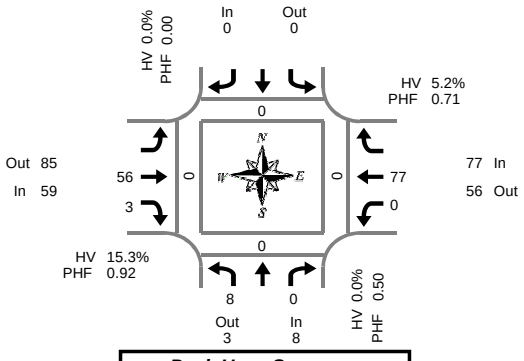
By Movement	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	81	202	34	317	8	178	113	299	65	12	78	155	37	28	13	78	849
%HV	4.9%	4.0%	5.9%	4.4%	37.5%	2.2%	4.4%	4.0%	4.6%	8.3%	3.8%	4.5%	10.8%	3.6%	7.7%	7.7%	4.6%
PHF	0.53	0.69	0.77	0.68	0.67	0.64	0.83	0.73	0.63	0.60	0.50	0.68	0.46	0.54	0.46	0.67	0.74

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	41	185	23	0	4	108	89	0	61	6	32	0	21	25	9	0	604	0	0	0	0
7:15 AM	59	189	26	1	5	148	104	0	59	10	53	0	29	28	12	0	722	0	0	0	0
7:30 AM	81	202	34	1	8	178	113	0	65	12	78	0	37	28	13	0	849	0	0	0	0
7:45 AM	76	184	28	1	12	166	119	0	54	13	76	0	38	31	19	0	816	0	1	0	0
8:00 AM	82	185	25	2	11	169	107	0	60	13	73	0	40	29	18	0	812	0	1	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:35 AM to 8:35 AM

SW 60th Ave & SW Advance Rd

Tuesday, February 23, 2010
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
7:00 AM	0		0	0				0	2	0	0	0	6		0	8		0	0	0	0
7:05 AM	0		0	0				0	0	0	0	0	4		0	4		0	0	0	0
7:10 AM	0		0	0				0	0	1	0	0	2		0	3		0	0	0	0
7:15 AM	1		0	0				0	2	0	0	0	3		0	6		0	0	0	0
7:20 AM	2		0	0				0	1	0	0	0	5		0	8		0	0	0	0
7:25 AM	0		0	0				0	1	0	0	0	0		0	1		0	0	0	0
7:30 AM	0		0	0				0	2	0	0	0	2		0	4		0	0	0	0
7:35 AM	0		0	0				0	9	0	0	0	8		0	17		0	0	0	0
7:40 AM	0		0	0				0	2	0	0	0	3		0	5		0	0	0	0
7:45 AM	0		0	0				0	4	1	0	0	5		0	10		0	0	0	0
7:50 AM	0		0	0				0	4	0	0	0	3		0	7		0	0	0	0
7:55 AM	1		0	0				0	6	0	0	0	9		0	16		0	0	0	0
8:00 AM	0		0	0				0	5	0	0	0	7		0	12		0	0	0	0
8:05 AM	1		0	0				0	4	0	0	0	8		0	13		0	0	0	0
8:10 AM	2		0	0				0	3	0	0	0	8		0	13		0	0	0	0
8:15 AM	1		0	0				0	5	1	0	0	11		0	18		0	0	0	0
8:20 AM	1		0	0				0	5	0	0	0	4		0	10		0	0	0	0
8:25 AM	0		0	0				0	3	1	0	0	3		0	7		0	0	0	0
8:30 AM	2		0	0				0	6	0	0	0	8		0	16		0	0	0	0
8:35 AM	2		0	0				0	3	1	0	0	5		0	11		0	0	0	0
8:40 AM	1		0	0				0	1	0	0	0	6		0	8		0	0	0	0
8:45 AM	0		0	0				0	2	0	0	0	3		0	5		0	0	0	0
8:50 AM	2		0	0				0	3	0	0	0	7		0	12		0	0	0	0
8:55 AM	0		0	0				0	5	0	0	0	3		0	8		0	0	0	0
Total Survey	16		0	0				0	78	5	0	0	123		0	222		0	0	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
7:00 AM	0		0	0				0	2	1	0	0	12		0	15		0	0	0	0
7:15 AM	3		0	0				0	4	0	0	0	8		0	15		0	0	0	0
7:30 AM	0		0	0				0	13	0	0	0	13		0	26		0	0	0	0
7:45 AM	1		0	0				0	14	1	0	0	17		0	33		0	0	0	0
8:00 AM	3		0	0				0	12	0	0	0	23		0	38		0	0	0	0
8:15 AM	2		0	0				0	13	2	0	0	18		0	35		0	0	0	0
8:30 AM	5		0	0				0	10	1	0	0	19		0	35		0	0	0	0
8:45 AM	2		0	0				0	10	0	0	0	13		0	25		0	0	0	0
Total Survey	16		0	0				0	78	5	0	0	123		0	222		0	0	0	0

Peak Hour Summary
7:35 AM to 8:35 AM

By Approach	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	8	3	11	0	0	0	0	0	59	85	144	0	77	56	133	0	144	0	0	0	0
%HV	0.0%				0.0%				15.3%				5.2%				9.0%				
PHF	0.50				0.00				0.92				0.71				0.82				

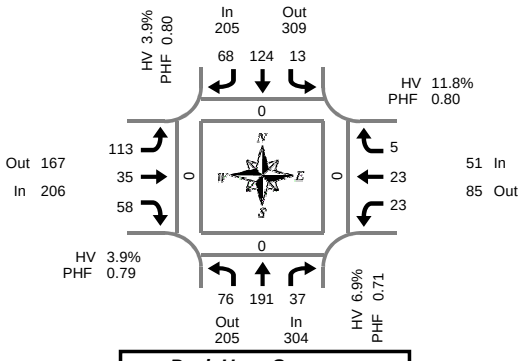
By Movement	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	8		0	8				0		56	3	59	0	77		77	144
%HV	0.0%	NA	0.0%	0.0%	NA	NA	NA	0.0%	NA	14.3%	33.3%	15.3%	0.0%	5.2%	NA	5.2%	9.0%
PHF	0.50		0.00	0.50				0.00		0.93	0.38	0.92	0.00	0.71		0.71	0.82

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
7:00 AM	4		0	0				0	33	2	0	0	50		0	89		0	0	0	0
7:15 AM	7		0	0				0	43	1	0	0	61		0	112		0	0	0	0
7:30 AM	6		0	0				0	52	3	0	0	71		0	132		0	0	0	0
7:45 AM	11		0	0				0	49	4	0	0	77		0	141		0	0	0	0
8:00 AM	12		0	0				0	45	3	0	0	73		0	133		0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
2:55 PM to 3:55 PM

SW Stafford Rd & SW Advance Rd

Tuesday, February 23, 2010
2:00 PM to 4:00 PM

5-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	1	7	4	0	2	9	3	0	7	0	6	0	1	2	0	0	42	0	0	0	0
2:05 PM	6	13	6	0	1	7	5	0	5	3	4	0	0	1	2	0	53	0	0	0	0
2:10 PM	0	8	1	1	1	13	3	0	4	2	5	0	0	1	0	0	38	0	0	0	0
2:15 PM	2	11	2	0	1	10	2	0	3	0	4	0	1	1	3	0	40	0	0	0	0
2:20 PM	3	6	1	0	3	9	9	0	3	1	10	0	1	1	0	0	47	0	0	0	0
2:25 PM	5	4	1	0	1	15	8	0	5	1	3	0	1	3	1	0	48	0	0	0	0
2:30 PM	1	3	2	0	1	8	6	0	10	1	5	0	3	2	0	0	42	0	0	0	0
2:35 PM	2	10	1	0	2	9	6	0	9	2	2	0	0	2	1	0	46	0	0	0	0
2:40 PM	4	11	1	0	1	10	3	0	10	4	8	0	0	3	1	0	56	0	0	0	0
2:45 PM	6	3	1	0	1	13	2	0	5	2	3	0	7	2	1	1	46	0	0	0	0
2:50 PM	11	9	1	1	1	9	8	0	1	2	3	0	3	0	4	0	52	0	0	1	0
2:55 PM	7	9	6	0	1	13	4	0	6	4	4	0	0	2	0	0	56	0	0	0	0
3:00 PM	12	12	2	0	4	6	6	0	10	2	4	0	2	2	1	0	63	0	0	0	0
3:05 PM	8	26	3	0	0	15	4	0	2	3	8	0	2	1	1	0	73	0	0	0	0
3:10 PM	8	25	5	0	1	11	7	0	7	4	6	0	2	4	0	0	80	0	0	0	0
3:15 PM	10	16	6	0	1	11	6	1	9	2	4	0	2	0	0	0	67	0	0	0	0
3:20 PM	6	16	2	0	2	13	5	0	8	4	4	0	1	2	0	0	63	0	0	0	0
3:25 PM	3	9	1	0	1	9	8	0	10	4	6	0	5	1	0	0	57	0	0	0	0
3:30 PM	1	14	2	0	1	16	9	0	12	0	5	0	3	0	2	0	65	0	0	0	0
3:35 PM	6	20	3	0	1	10	3	0	16	3	9	0	1	1	0	0	73	0	0	0	0
3:40 PM	3	15	1	0	0	11	3	0	11	4	2	0	0	4	0	0	54	0	0	0	0
3:45 PM	7	16	0	0	1	4	6	0	9	3	4	0	3	3	0	0	56	0	0	0	0
3:50 PM	5	13	6	0	0	5	7	0	13	2	2	0	2	3	1	0	59	0	0	0	0
3:55 PM	3	11	3	0	1	9	1	0	11	2	6	0	4	3	0	0	54	0	0	0	0
Total Survey	120	287	61	2	29	245	124	1	186	55	117	0	44	44	18	1	1,330	0	0	1	0

15-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	7	28	11	1	4	29	11	0	16	5	15	0	1	4	2	0	133	0	0	0	0
2:15 PM	10	21	4	0	5	34	19	0	11	2	17	0	3	5	4	0	135	0	0	0	0
2:30 PM	7	24	4	0	4	27	15	0	29	7	15	0	3	7	2	0	144	0	0	0	0
2:45 PM	24	21	8	1	3	35	14	0	12	8	10	0	10	4	5	1	154	0	0	1	0
3:00 PM	28	63	10	0	5	32	17	0	19	9	18	0	6	7	2	0	216	0	0	0	0
3:15 PM	19	41	9	0	4	33	19	1	27	10	14	0	8	3	0	0	187	0	0	0	0
3:30 PM	10	49	6	0	2	37	15	0	39	7	16	0	4	5	2	0	192	0	0	0	0
3:45 PM	15	40	9	0	2	18	14	0	33	7	12	0	9	9	1	0	169	0	0	0	0
Total Survey	120	287	61	2	29	245	124	1	186	55	117	0	44	44	18	1	1,330	0	0	1	0

Peak Hour Summary
2:55 PM to 3:55 PM

By Approach	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	304	205	509	0	205	309	514	1	206	167	373	0	51	85	136	0	766	0	0	0	0
%HV	6.9%				3.9%				3.9%				11.8%				5.6%				
PHF	0.71				0.80				0.79				0.80				0.87				

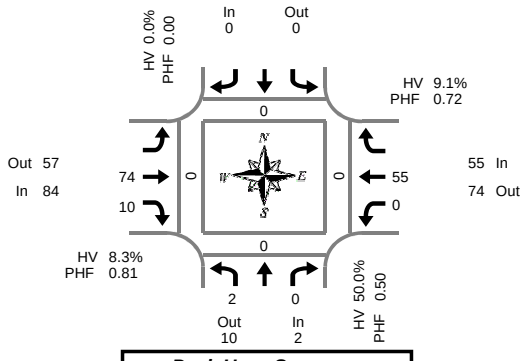
By Movement	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	76	191	37	304	13	124	68	205	113	35	58	206	23	23	5	51	766
%HV	9.2%	3.7%	18.9%	6.9%	0.0%	2.4%	7.4%	3.9%	4.4%	0.0%	5.2%	3.9%	21.7%	4.3%	0.0%	11.8%	5.6%
PHF	0.68	0.71	0.66	0.71	0.65	0.82	0.77	0.80	0.72	0.88	0.73	0.79	0.64	0.58	0.63	0.80	0.87

Rolling Hour Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	48	94	27	2	16	125	59	0	68	22	57	0	17	20	13	1	566	0	0	1	0
2:15 PM	69	129	26	1	17	128	65	0	71	26	60	0	22	23	13	1	649	0	0	1	0
2:30 PM	78	149	31	1	16	127	65	1	87	34	57	0	27	21	9	1	701	0	0	1	0
2:45 PM	81	174	33	1	14	137	65	1	97	34	58	0	28	19	9	1	749	0	0	1	0
3:00 PM	72	193	34	0	13	120	65	1	118	33	60	0	27	24	5	0	764	0	0	0	0

Total Vehicle Summary

Clay Carney
(503) 833-2740



SW 60th Ave & SW Advance Rd

Tuesday, February 23, 2010
2:00 PM to 4:00 PM

Peak Hour Summary
2:55 PM to 3:55 PM

5-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
2:00 PM	1		0	0				0	6	0	0	0	2		0	9		0	0	0	0
2:05 PM	1		0	0				0	8	1	0	0	1		0	11		0	0	0	0
2:10 PM	0		0	0				0	5	0	0	0	2		0	7		0	0	0	0
2:15 PM	0		0	0				0	1	2	0	0	5		0	8		0	0	0	0
2:20 PM	0		0	0				0	5	1	0	0	1		0	7		0	0	0	0
2:25 PM	0		0	0				0	2	0	0	0	4		0	6		0	0	0	0
2:30 PM	0		0	0				0	4	0	0	0	5		0	9		0	0	0	0
2:35 PM	0		0	0				0	3	1	0	0	4		0	8		0	0	0	0
2:40 PM	0		0	0				0	7	0	0	0	2		0	9		0	0	0	0
2:45 PM	1		0	0				0	2	0	0	0	10		1	13		0	0	0	0
2:50 PM	0		0	0				0	4	0	0	0	7		0	11		0	0	0	0
2:55 PM	0		0	0				0	8	3	0	0	5		0	16		0	0	0	0
3:00 PM	0		0	0				0	6	1	0	0	5		0	12		0	0	0	0
3:05 PM	0		0	0				0	6	0	0	0	5		0	11		0	0	0	0
3:10 PM	1		0	0				0	8	1	0	0	4		0	14		0	0	0	0
3:15 PM	0		0	0				0	8	1	0	0	0		0	9		0	0	0	0
3:20 PM	0		0	0				0	8	0	0	0	3		0	11		0	0	0	0
3:25 PM	0		0	0				0	4	1	0	0	8		0	13		0	0	0	0
3:30 PM	0		0	0				0	3	0	0	0	3		0	6		0	0	0	0
3:35 PM	0		0	0				0	7	1	0	0	3		0	11		0	0	0	0
3:40 PM	1		0	0				0	5	0	0	0	5		0	11		0	0	0	0
3:45 PM	0		0	0				0	4	0	0	0	8		0	12		0	0	0	0
3:50 PM	0		0	0				0	7	2	0	0	6		0	15		0	0	0	0
3:55 PM	0		0	0				0	8	1	0	0	2		0	11		0	0	0	0
Total Survey	5		0	0				0	129	16	0	0	100		1	250		0	0	0	0

15-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
2:00 PM	2		0	0				0	19	1	0	0	5		0	27		0	0	0	0
2:15 PM	0		0	0				0	8	3	0	0	10		0	21		0	0	0	0
2:30 PM	0		0	0				0	14	1	0	0	11		0	26		0	0	0	0
2:45 PM	1		0	0				0	14	3	0	0	22		1	40		0	0	0	0
3:00 PM	1		0	0				0	20	2	0	0	14		0	37		0	0	0	0
3:15 PM	0		0	0				0	20	2	0	0	11		0	33		0	0	0	0
3:30 PM	1		0	0				0	15	1	0	0	11		0	28		0	0	0	0
3:45 PM	0		0	0				0	19	3	0	0	16		0	38		0	0	0	0
Total Survey	5		0	0				0	129	16	0	0	100		1	250		0	0	0	0

Peak Hour Summary
2:55 PM to 3:55 PM

By Approach	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2	10	12	0	0	0	0	0	84	57	141	0	55	74	129	0	141	0	0	0	0
%HV	50.0%				0.0%				8.3%				9.1%				9.2%				
PHF	0.50				0.00				0.81				0.72				0.90				

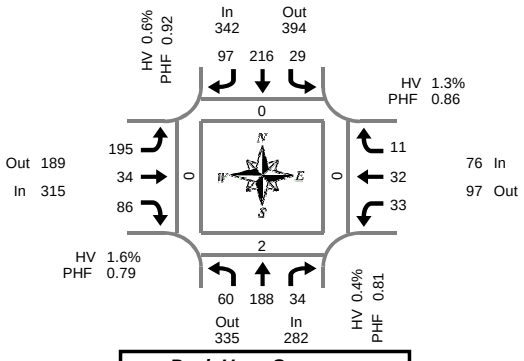
By Movement	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	2		0	2				0		74	10	84	0	55		55	141
%HV	50.0%	NA	0.0%	50.0%	NA	NA	NA	0.0%	NA	8.1%	10.0%	8.3%	0.0%	9.1%	NA	9.1%	9.2%
PHF	0.50		0.00	0.50				0.00		0.77	0.63	0.81	0.00	0.72		0.72	0.90

Rolling Hour Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
2:00 PM	3		0	0				0	55	8	0	0	48		1	114		0	0	0	0
2:15 PM	2		0	0				0	56	9	0	0	57		1	124		0	0	0	0
2:30 PM	2		0	0				0	68	8	0	0	58		1	136		0	0	0	0
2:45 PM	3		0	0				0	69	8	0	0	58		1	138		0	0	0	0
3:00 PM	2		0	0				0	74	8	0	0	52		0	136		0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:45 PM to 5:45 PM

SW Stafford Rd & SW Advance Rd

Tuesday, February 23, 2010
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	9	2	0	1	17	5	0	8	1	3	0	2	2	2	0	57	0	0	0	0
4:05 PM	3	11	4	0	3	15	5	0	12	2	1	0	3	1	1	0	61	0	0	3	0
4:10 PM	5	12	2	0	1	13	7	0	19	4	4	0	3	0	0	0	70	0	0	0	0
4:15 PM	4	12	3	0	2	13	9	0	7	2	4	0	0	0	0	0	56	0	0	0	0
4:20 PM	6	14	3	0	1	12	7	0	10	3	4	0	4	4	1	0	69	0	0	0	0
4:25 PM	1	18	2	0	0	14	8	0	9	2	2	0	2	1	1	0	60	0	0	0	0
4:30 PM	0	14	1	0	1	19	11	0	11	3	3	0	1	2	2	0	68	0	0	0	0
4:35 PM	1	15	2	0	1	13	7	1	15	1	5	0	2	3	1	0	66	0	0	0	0
4:40 PM	3	14	3	0	0	25	5	0	11	1	1	0	0	1	0	0	64	0	0	0	0
4:45 PM	0	16	3	0	1	12	9	0	17	3	2	0	3	7	1	0	74	0	0	0	0
4:50 PM	2	9	2	0	6	21	12	0	12	1	5	0	1	3	0	0	74	0	0	0	0
4:55 PM	2	13	4	0	2	17	6	0	12	3	11	0	2	4	0	0	76	0	0	0	0
5:00 PM	6	13	1	1	2	19	4	0	19	5	7	0	1	2	0	0	79	0	0	0	0
5:05 PM	6	16	3	0	1	10	8	0	21	2	7	0	3	0	2	0	79	0	0	0	0
5:10 PM	6	13	2	0	3	19	6	0	25	6	8	0	5	1	4	0	98	0	0	0	0
5:15 PM	4	23	6	0	3	20	13	0	17	2	12	0	0	5	0	0	105	0	0	0	0
5:20 PM	8	22	3	0	2	16	6	0	16	1	5	0	2	4	0	0	85	0	0	0	0
5:25 PM	6	10	1	0	3	22	6	0	17	2	11	0	3	0	1	0	82	0	0	0	0
5:30 PM	5	19	2	0	4	21	7	0	16	3	5	0	5	4	0	0	91	0	0	0	0
5:35 PM	7	19	4	0	2	16	10	0	12	3	4	0	4	1	3	0	85	0	2	0	0
5:40 PM	8	15	3	0	0	23	10	0	11	3	9	0	4	1	0	0	87	0	0	0	0
5:45 PM	4	16	0	0	0	18	8	0	5	2	5	0	3	2	1	0	64	0	0	0	0
5:50 PM	4	12	1	0	2	13	1	0	9	2	2	0	2	0	0	0	48	0	0	0	0
5:55 PM	3	21	3	0	0	16	3	0	9	6	8	0	1	2	0	0	72	0	1	0	0
Total Survey	99	356	60	1	41	404	173	1	320	63	128	0	56	50	20	0	1,770	0	3	3	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	13	32	8	0	5	45	17	0	39	7	8	0	8	3	3	0	188	0	0	3	0
4:15 PM	11	44	8	0	3	39	24	0	26	7	10	0	6	5	2	0	185	0	0	0	0
4:30 PM	4	43	6	0	2	57	23	1	37	5	9	0	3	6	3	0	198	0	0	0	0
4:45 PM	4	38	9	0	9	50	27	0	41	7	18	0	6	14	1	0	224	0	0	0	0
5:00 PM	18	42	6	1	6	48	18	0	65	13	22	0	9	3	6	0	256	0	0	0	0
5:15 PM	18	55	10	0	8	58	25	0	50	5	28	0	5	9	1	0	272	0	0	0	0
5:30 PM	20	53	9	0	6	60	27	0	39	9	18	0	13	6	3	0	263	0	2	0	0
5:45 PM	11	49	4	0	2	47	12	0	23	10	15	0	6	4	1	0	184	0	1	0	0
Total Survey	99	356	60	1	41	404	173	1	320	63	128	0	56	50	20	0	1,770	0	3	3	0

Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	282	335	617	1	342	394	736	0	315	189	504	0	76	97	173	0	1,015	0	2	0	0
%HV	0.4%				0.6%				1.6%				1.3%				0.9%				
PHF	0.81				0.92				0.79				0.86				0.88				

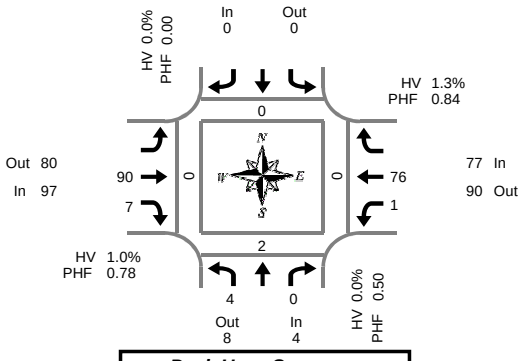
By Movement	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	60	188	34	282	29	216	97	342	195	34	86	315	33	32	11	76	1,015
%HV	1.7%	0.0%	0.0%	0.4%	3.4%	0.0%	1.0%	0.6%	1.5%	2.9%	1.2%	1.6%	0.0%	0.0%	9.1%	1.3%	0.9%
PHF	0.75	0.81	0.77	0.81	0.73	0.90	0.90	0.92	0.75	0.65	0.77	0.79	0.63	0.57	0.46	0.86	0.88

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	32	157	31	0	19	191	91	1	143	26	45	0	23	28	9	0	795	0	0	3	0
4:15 PM	37	167	29	1	20	194	92	1	169	32	59	0	24	28	12	0	863	0	0	0	0
4:30 PM	44	178	31	1	25	213	93	1	193	30	77	0	23	32	11	0	950	0	0	0	0
4:45 PM	60	188	34	1	29	216	97	0	195	34	86	0	33	32	11	0	1,015	0	2	0	0
5:00 PM	67	199	29	1	22	213	82	0	177	37	83	0	33	22	11	0	975	0	3	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:45 PM to 5:45 PM

SW 60th Ave & SW Advance Rd

Tuesday, February 23, 2010
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes		North	South	East	West
4:00 PM	2		0	0				0	4	1	0	0	7		0	14	0	0	0	0
4:05 PM	1		0	0				0	8	0	0	0	4		0	13	0	0	0	0
4:10 PM	0		0	0				0	6	0	0	0	2		0	8	0	0	0	0
4:15 PM	1		0	0				0	4	1	0	0	2		0	8	0	0	0	0
4:20 PM	2		0	0				0	6	0	0	0	4		0	12	0	0	0	0
4:25 PM	0		0	0				0	4	0	0	0	5		0	9	0	0	0	0
4:30 PM	1		0	0				0	4	1	0	0	3		0	9	0	0	0	0
4:35 PM	0		0	0				0	4	0	0	0	7		0	11	0	0	0	0
4:40 PM	0		0	0				0	4	0	0	0	0		0	4	0	0	0	0
4:45 PM	1		0	0				0	8	1	0	0	10		0	20	0	0	0	0
4:50 PM	0		0	0				0	6	2	0	0	5		0	13	0	0	0	0
4:55 PM	0		0	0				0	6	1	0	0	8		0	15	0	0	0	0
5:00 PM	0		0	0				0	7	0	0	0	2		0	9	0	0	0	0
5:05 PM	1		0	0				0	8	0	0	0	5		0	14	0	0	0	0
5:10 PM	0		0	0				0	12	0	0	1	7		0	20	0	0	0	0
5:15 PM	0		0	0				0	11	0	0	0	5		0	16	0	0	0	0
5:20 PM	0		0	0				0	5	0	0	0	8		0	13	0	0	0	0
5:25 PM	0		0	0				0	7	0	0	0	6		0	13	0	0	0	0
5:30 PM	0		0	0				0	7	1	0	0	8		0	16	0	2	0	0
5:35 PM	2		0	0				0	8	2	0	0	7		0	19	0	0	0	0
5:40 PM	0		0	0				0	5	0	0	0	5		0	10	0	0	0	0
5:45 PM	1		0	0				0	3	0	0	0	2		0	6	0	0	0	0
5:50 PM	0		0	0				0	7	0	0	0	4		0	11	0	0	0	0
5:55 PM	0		0	0				0	5	2	0	0	1		0	8	0	0	0	0
Total Survey	12		0	0				0	149	12	0	1	117		0	291	0	2	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes		North	South	East	West
4:00 PM	3		0	0				0	18	1	0	0	13		0	35	0	0	0	0
4:15 PM	3		0	0				0	14	1	0	0	11		0	29	0	0	0	0
4:30 PM	1		0	0				0	12	1	0	0	10		0	24	0	0	0	0
4:45 PM	1		0	0				0	20	4	0	0	23		0	48	0	0	0	0
5:00 PM	1		0	0				0	27	0	0	1	14		0	43	0	0	0	0
5:15 PM	0		0	0				0	23	0	0	0	19		0	42	0	0	0	0
5:30 PM	2		0	0				0	20	3	0	0	20		0	45	0	2	0	0
5:45 PM	1		0	0				0	15	2	0	0	7		0	25	0	0	0	0
Total Survey	12		0	0				0	149	12	0	1	117		0	291	0	2	0	0

Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	4	8	12	0	0	0	0	0	97	80	177	0	77	90	167	0	178	0	2	0	0
%HV	0.0%				0.0%				1.0%				1.3%				1.1%				
PHF	0.50				0.00				0.78				0.84				0.89				

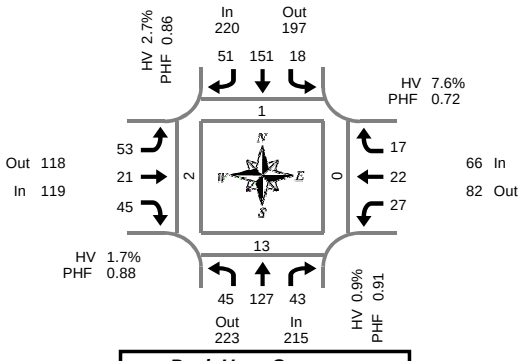
By Movement	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	4		0	4				0		90	7	97	1	76		77	178
%HV	0.0%	NA	0.0%	0.0%	NA	NA	NA	0.0%	NA	1.1%	0.0%	1.0%	0.0%	1.3%	NA	1.3%	1.1%
PHF	0.50		0.00	0.50				0.00		0.73	0.44	0.78	0.25	0.83		0.84	0.89

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes		North	South	East	West
4:00 PM	8		0	0				0	64	7	0	0	57		0	136	0	0	0	0
4:15 PM	6		0	0				0	73	6	0	1	58		0	144	0	0	0	0
4:30 PM	3		0	0				0	82	5	0	1	66		0	157	0	0	0	0
4:45 PM	4		0	0				0	90	7	0	1	76		0	178	0	2	0	0
5:00 PM	4		0	0				0	85	5	0	1	60		0	155	0	2	0	0

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
11:55 AM to 12:55 PM

SW Stafford Rd & SW Advance Rd

Saturday, March 06, 2010
11:00 AM to 1:00 PM

5-Minute Interval Summary
11:00 AM to 1:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
11:00 AM	2	12	2	0	0	5	2	0	7	3	1	0	1	1	0	0	36	0	0	1	0
11:05 AM	4	6	4	2	1	7	4	0	4	1	3	0	2	2	0	0	38	0	3	0	0
11:10 AM	1	7	6	0	0	9	3	0	5	5	3	0	0	2	0	0	41	0	0	1	0
11:15 AM	3	11	0	1	2	8	2	0	3	1	2	0	0	2	1	0	35	0	1	0	0
11:20 AM	3	8	4	0	1	8	3	1	5	1	3	0	3	0	1	0	40	0	0	0	0
11:25 AM	5	12	1	0	3	8	6	0	7	2	6	1	13	3	2	0	68	0	0	0	0
11:30 AM	5	11	1	0	3	11	6	0	2	1	1	0	1	1	2	0	45	1	0	0	0
11:35 AM	1	11	3	0	0	11	5	0	9	5	0	0	3	3	2	0	53	0	0	0	0
11:40 AM	2	13	3	1	1	8	3	0	1	2	3	0	4	1	3	0	44	1	2	0	0
11:45 AM	7	7	2	3	3	11	3	0	3	0	3	0	8	5	3	1	55	0	3	1	0
11:50 AM	5	9	0	0	2	5	4	0	1	2	2	1	3	2	2	0	37	0	0	0	0
11:55 AM	9	5	3	1	1	15	1	0	3	4	2	0	3	1	2	1	49	1	1	0	0
12:00 PM	4	8	2	0	0	19	4	0	3	5	4	0	0	3	0	0	52	0	0	0	0
12:05 PM	4	11	5	7	2	16	6	0	6	2	5	0	1	0	1	0	59	0	7	0	0
12:10 PM	4	12	4	0	2	10	2	0	3	1	4	0	4	1	4	0	51	0	0	0	0
12:15 PM	4	13	2	0	2	12	6	0	3	1	3	0	5	0	1	0	52	0	0	0	1
12:20 PM	0	10	4	0	3	6	4	0	3	0	7	0	2	1	3	0	43	0	0	0	1
12:25 PM	1	15	4	0	2	16	7	1	10	3	4	0	0	1	0	0	63	0	0	0	0
12:30 PM	1	7	9	1	2	15	2	0	2	3	1	0	1	2	0	0	45	0	2	0	0
12:35 PM	2	11	2	0	1	11	7	0	3	0	4	0	1	5	2	0	49	0	0	0	0
12:40 PM	8	7	1	1	2	5	5	0	5	1	1	1	3	4	1	0	43	0	1	0	0
12:45 PM	5	18	3	2	1	15	5	1	9	0	8	0	4	2	1	1	71	0	2	0	0
12:50 PM	3	10	4	0	0	11	2	0	3	1	2	0	3	2	2	0	43	0	0	0	0
12:55 PM	5	7	4	1	1	7	7	0	5	3	2	0	4	1	1	0	47	0	1	0	0
Total Survey	88	241	73	20	35	249	99	3	105	47	74	3	69	45	34	3	1,159	3	23	3	2

15-Minute Interval Summary
11:00 AM to 1:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
11:00 AM	7	25	12	2	1	21	9	0	16	9	7	0	3	5	0	0	115	0	3	2	0
11:15 AM	11	31	5	1	6	24	11	1	15	4	11	1	16	5	4	0	143	0	1	0	0
11:30 AM	8	35	7	1	4	30	14	0	12	8	4	0	8	5	7	0	142	2	2	0	0
11:45 AM	21	21	5	4	6	31	8	0	7	6	7	1	14	8	7	2	141	1	4	1	0
12:00 PM	12	31	11	7	4	45	12	0	12	8	13	0	5	4	5	0	162	0	7	0	0
12:15 PM	5	38	10	0	7	34	17	1	16	4	14	0	7	2	4	0	158	0	0	0	2
12:30 PM	11	25	12	2	5	31	14	0	10	4	6	1	5	11	3	0	137	0	3	0	0
12:45 PM	13	35	11	3	2	33	14	1	17	4	12	0	11	5	4	1	161	0	3	0	0
Total Survey	88	241	73	20	35	249	99	3	105	47	74	3	69	45	34	3	1,159	3	23	3	2

Peak Hour Summary
11:55 AM to 12:55 PM

By Approach	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	215	223	438	12	220	197	417	2	119	118	237	1	66	82	148	2	620	1	13	0	2
%HV	0.9%				2.7%				1.7%				7.6%				2.4%				
PHF	0.91				0.86				0.88				0.72				0.95				

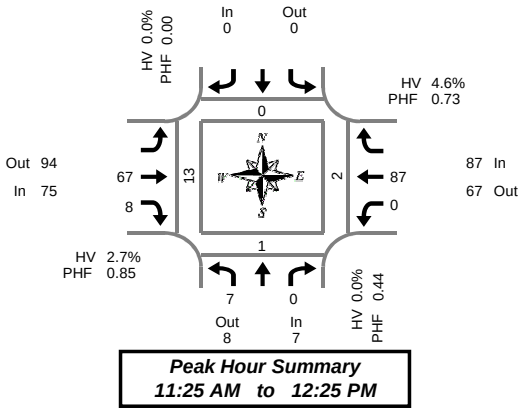
By Movement	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	45	127	43	215	18	151	51	220	53	21	45	119	27	22	17	66	620
%HV	0.0%	0.8%	2.3%	0.9%	0.0%	3.3%	2.0%	2.7%	0.0%	4.8%	2.2%	1.7%	7.4%	4.5%	11.8%	7.6%	2.4%
PHF	0.66	0.84	0.63	0.91	0.64	0.76	0.75	0.86	0.78	0.48	0.80	0.88	0.61	0.50	0.53	0.72	0.95

Rolling Hour Summary
11:00 AM to 1:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
11:00 AM	47	112	29	8	17	106	42	1	50	27	29	2	41	23	18	2	541	3	10	3	0
11:15 AM	52	118	28	13	20	130	45	1	46	26	35	2	43	22	23	2	588	3	14	1	0
11:30 AM	46	125	33	12	21	140	51	1	47	26	38	1	34	19	23	2	603	3	13	1	2
11:45 AM	49	115	38	13	22	141	51	1	45	22	40	2	31	25	19	2	598	1	14	1	2
12:00 PM	41	129	44	12	18	143	57	2	55	20	45	1	28	22	16	1	618	0	13	0	2

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
11:25 AM to 12:25 PM

SW 60th Ave & SW Advance Rd

Saturday, March 06, 2010
11:00 AM to 1:00 PM

5-Minute Interval Summary
11:00 AM to 1:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
11:00 AM	0		0	0				0	2	2	0	0	2		0	6		0	1	0	3
11:05 AM	0		0	0				0	5	0	0	0	5		0	10		0	0	0	1
11:10 AM	0		0	0				0	13	0	0	0	1		0	14		0	0	0	0
11:15 AM	1		0	0				0	2	1	0	0	3		0	7		0	1	0	2
11:20 AM	0		0	0				0	6	0	0	0	4		0	10		0	0	0	0
11:25 AM	1		0	0				0	5	0	0	0	17		0	23		0	0	0	0
11:30 AM	1		0	0				0	5	1	0	0	4		0	11		0	0	0	0
11:35 AM	2		0	0				0	6	1	0	0	5		0	14		0	0	0	0
11:40 AM	1		0	0				0	7	0	0	0	8		0	16		0	0	1	1
11:45 AM	0		0	0				0	4	1	0	0	15		0	20		0	1	0	0
11:50 AM	0		0	0				0	4	0	0	0	7		0	11		0	0	0	3
11:55 AM	0		0	0				0	6	2	0	0	5		0	13		0	0	1	2
12:00 PM	0		0	0				0	6	0	0	0	4		0	10		0	0	0	0
12:05 PM	1		0	0				0	7	1	0	0	3		0	12		0	0	0	0
12:10 PM	0		0	0				0	6	1	0	0	7		0	14		0	0	0	7
12:15 PM	1		0	0				0	6	0	0	0	5		0	12		0	0	0	0
12:20 PM	0		0	0				0	5	1	0	0	7		0	13		0	0	0	0
12:25 PM	0		0	0				0	8	1	0	0	2		0	11		0	0	0	0
12:30 PM	0		0	0				0	13	0	0	0	2		0	15		0	1	0	2
12:35 PM	1		0	0				0	4	0	0	0	7		0	12		0	0	0	0
12:40 PM	2		0	0				0	4	0	0	0	8		0	14		0	0	0	0
12:45 PM	0		1	0				0	3	0	0	0	5		0	9		0	0	0	3
12:50 PM	1		1	0				0	5	0	0	0	6		0	13		0	0	0	0
12:55 PM	0		0	0				0	8	0	0	0	6		0	14		0	0	0	0
Total Survey	12		2	0				0	140	12	0	0	138		0	304		0	4	2	24

15-Minute Interval Summary
11:00 AM to 1:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
11:00 AM	0		0	0				0	20	2	0	0	8		0	30		0	1	0	4
11:15 AM	2		0	0				0	13	1	0	0	24		0	40		0	1	0	2
11:30 AM	4		0	0				0	18	2	0	0	17		0	41		0	0	1	1
11:45 AM	0		0	0				0	14	3	0	0	27		0	44		0	1	1	5
12:00 PM	1		0	0				0	19	2	0	0	14		0	36		0	0	0	7
12:15 PM	1		0	0				0	19	2	0	0	14		0	36		0	0	0	0
12:30 PM	3		0	0				0	21	0	0	0	17		0	41		0	1	0	2
12:45 PM	1		2	0				0	16	0	0	0	17		0	36		0	0	0	3
Total Survey	12		2	0				0	140	12	0	0	138		0	304		0	4	2	24

Peak Hour Summary
11:25 AM to 12:25 PM

By Approach	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	7	8	15	0	0	0	0	0	75	94	169	0	87	67	154	0	169	0	1	2	13
%HV	0.0%				0.0%				2.7%				4.6%				3.6%				
PHF	0.44				0.00				0.85				0.73				0.85				

By Movement	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	7		0	7				0		67	8	75	0	87		87	169
%HV	0.0%	NA	0.0%	0.0%	NA	NA	NA	0.0%	NA	3.0%	0.0%	2.7%	0.0%	4.6%	NA	4.6%	3.6%
PHF	0.44		0.00	0.44				0.00		0.88	0.67	0.85	0.00	0.73		0.73	0.85

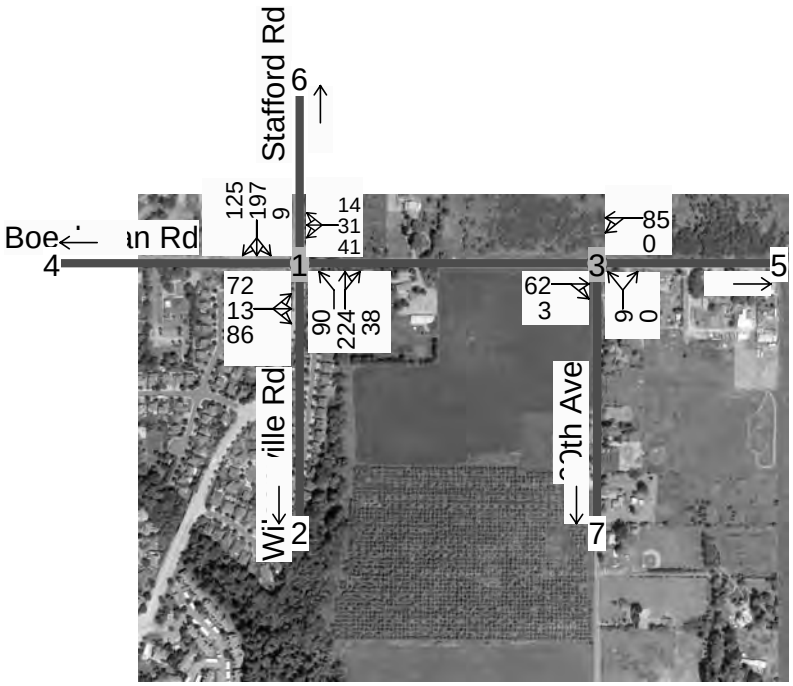
Rolling Hour Summary
11:00 AM to 1:00 PM

Interval Start Time	Northbound SW 60th Ave				Southbound SW 60th Ave				Eastbound SW Advance Rd				Westbound SW Advance Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
11:00 AM	6		0	0				0	65	8	0	0	76		0	155		0	3	2	12
11:15 AM	7		0	0				0	64	8	0	0	82		0	161		0	2	2	15
11:30 AM	6		0	0				0	70	9	0	0	72		0	157		0	1	2	13
11:45 AM	5		0	0				0	73	7	0	0	72		0	157		0	2	1	14
12:00 PM	6		2	0				0	75	4	0	0	62		0	149		0	1	0	12

Intersection Analysis Volumes – 2014

Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Background - A.M. Peak Hr

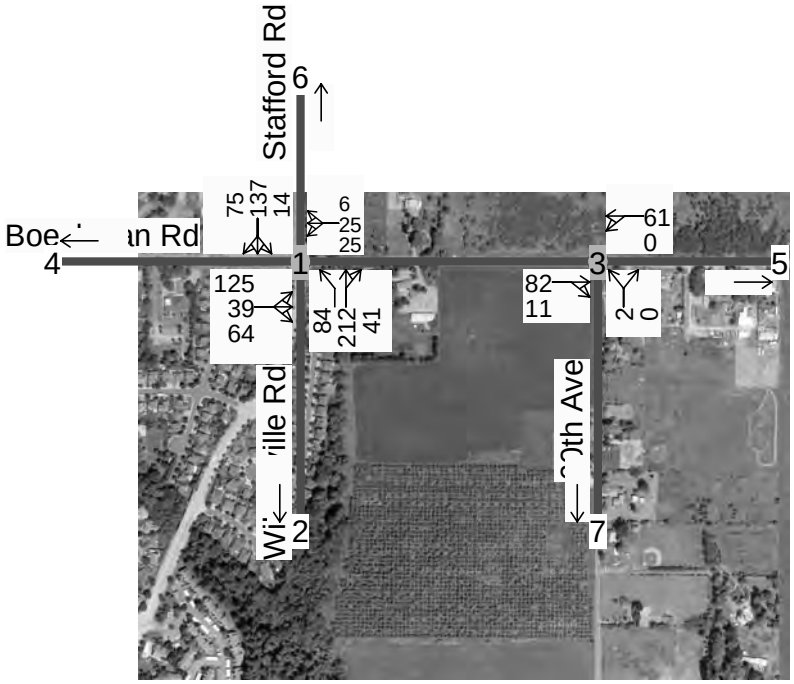


BBC

3/16/2010

Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Background - Midday Peak Hr



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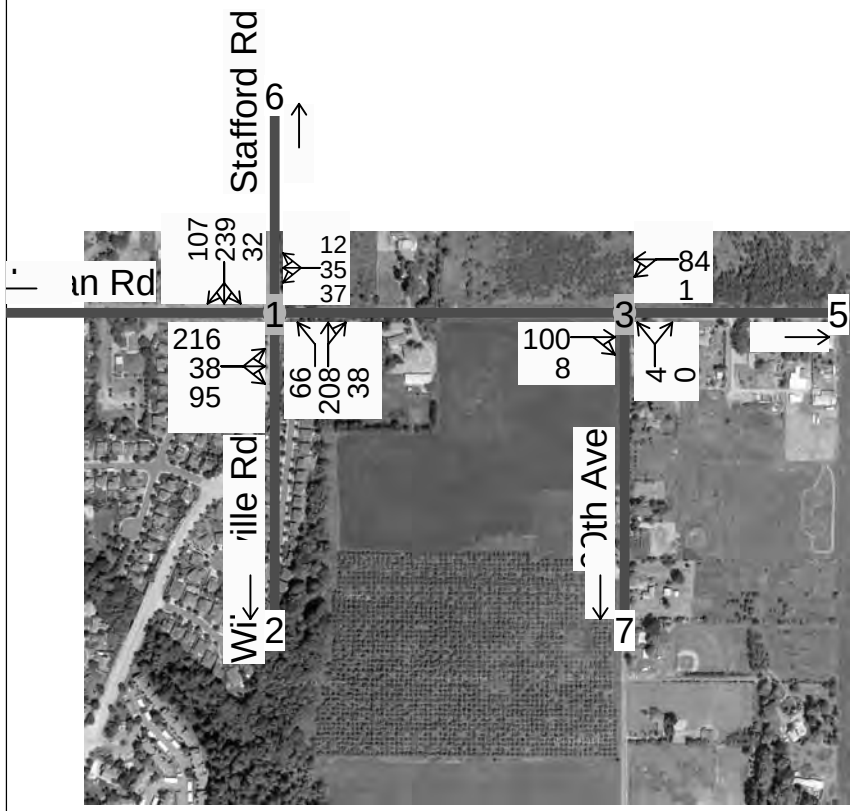
Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Background - P.M. Peak Hr

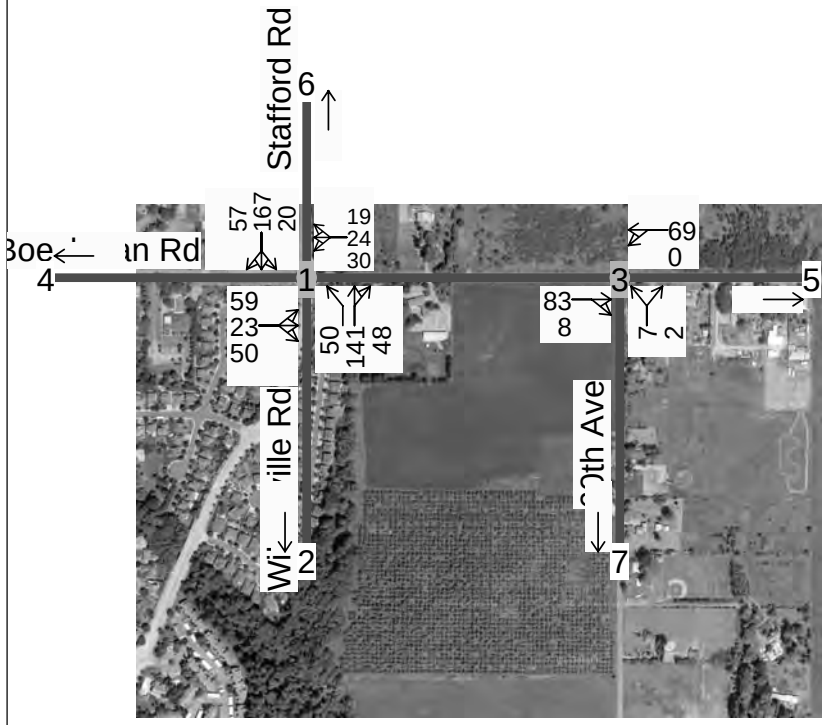


BBC

3/16/2010

Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Background - Saturday Peak Hr

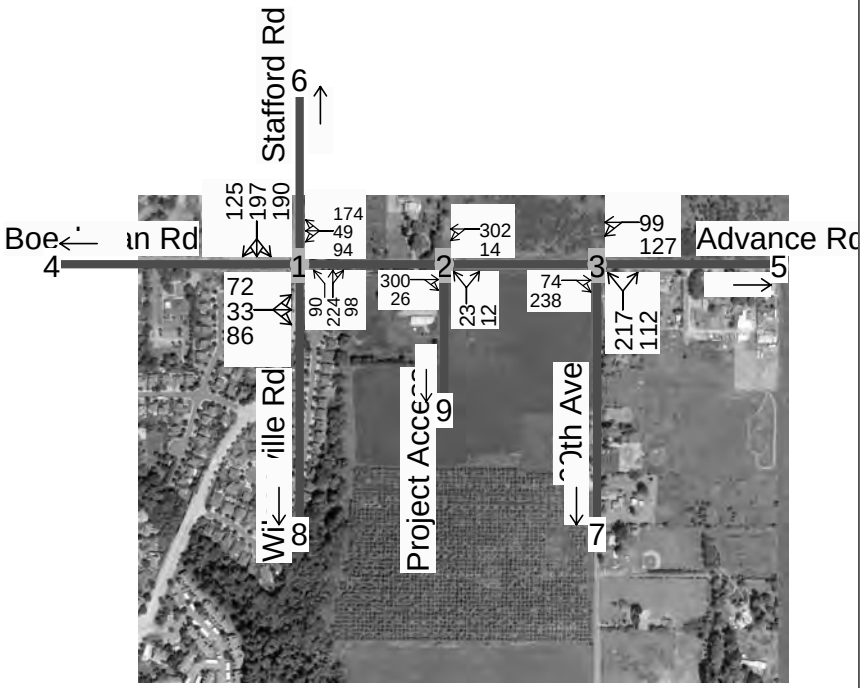


BBC

3/16/2010

Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Total - A.M. Peak Hr

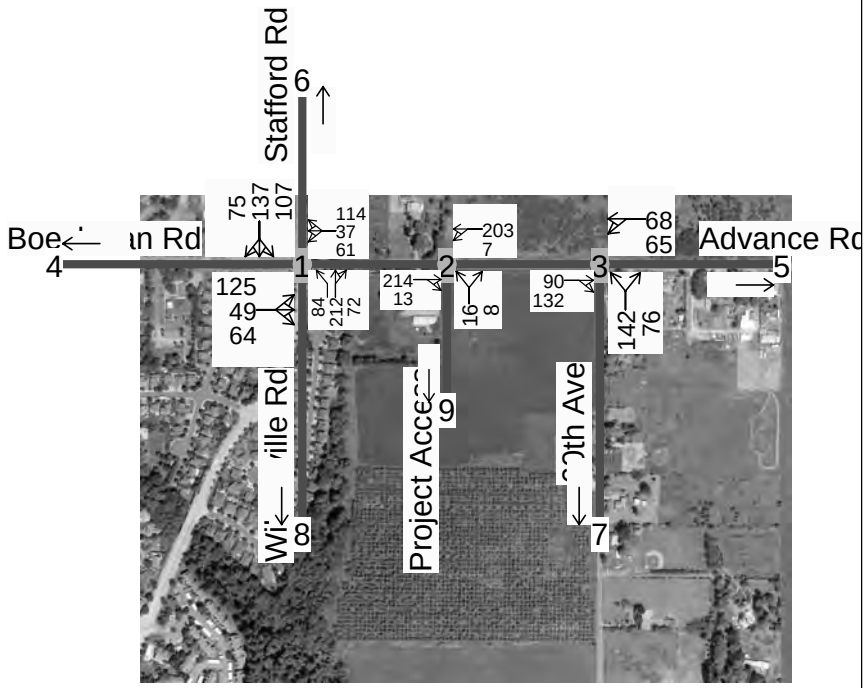


BBC

3/16/2010

Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Total - Midday Peak Hr

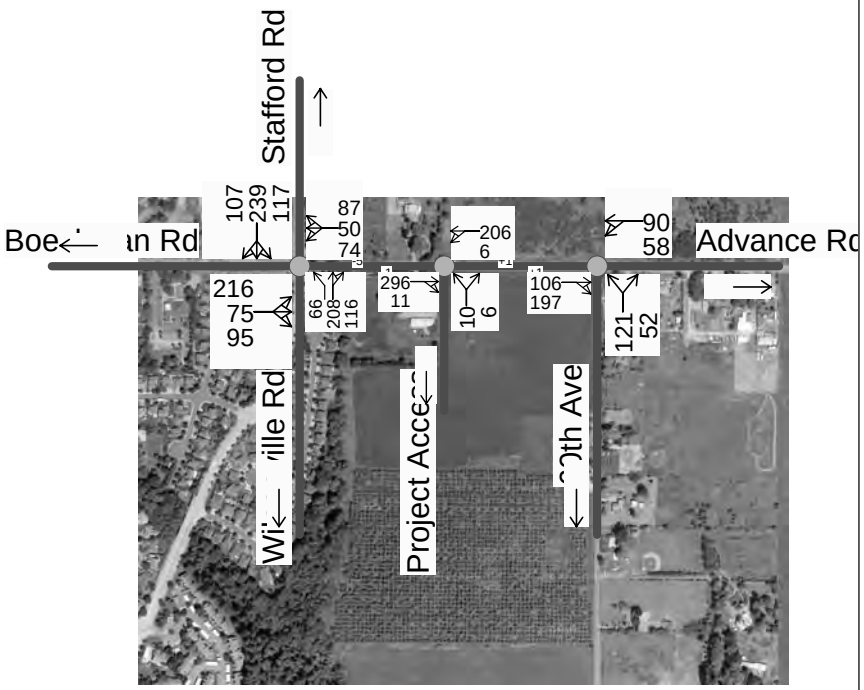


BBC

3/16/2010

Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Total - P.M. Peak Hr

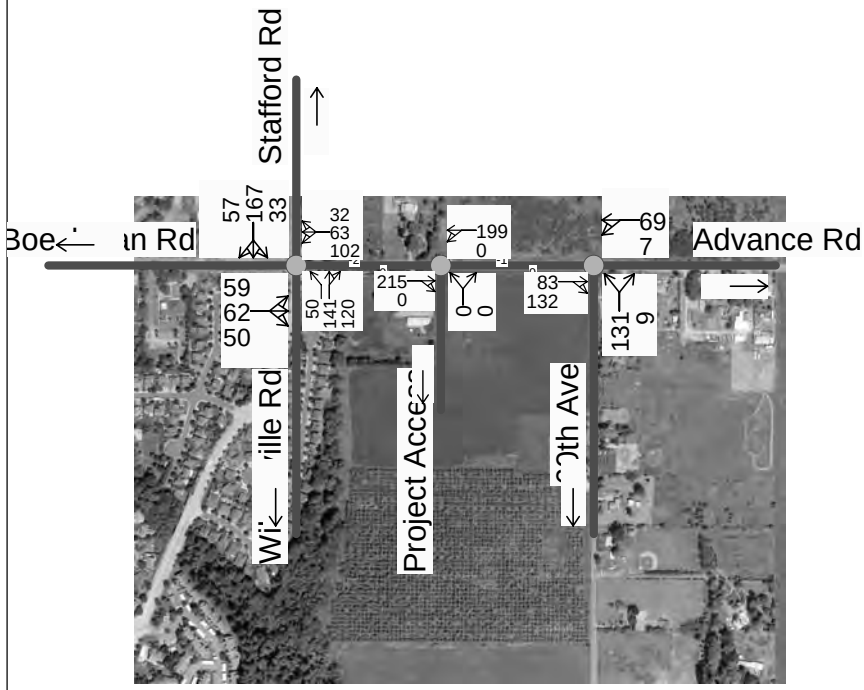


BBC

3/16/2010

Map - Advance Rd School/Park Transpo. Analysis
Traffic Volumes

Advance Rd School/Park Transpo. Analysis
2014 Total - Saturday Peak Hr



BBC

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Level of Service Descriptions

TRAFFIC LEVELS OF SERVICE

Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, but by itself indicates neither the ability of the street network to carry additional traffic nor the quality of service afforded by the street facilities. For this, the concept of *level of service* has been developed to subjectively describe traffic performance. Level of service can be measured at intersections and along key roadway segments.

Level of service categories are similar to report card ratings for traffic performance. Intersections are typically the controlling bottlenecks of traffic flow and the ability of a roadway system to carry traffic efficiently is generally diminished in their vicinities. Levels of Service A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. Level of service D and E are progressively worse peak hour operating conditions and F conditions represent where demand exceeds the capacity of an intersection. Most urban communities set level of service D as the minimum acceptable level of service for peak hour operation and plan for level of service C or better for all other times of the day. The *Highway Capacity Manual* provides level of service calculation methodology for both intersections and arterials.[1] The following two sections provide interpretations of the analysis approaches.

[1] *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2000, Chapters 16 and 17.

UNSIGNALIZED INTERSECTIONS (Two-Way Stop Controlled)

Unsignalized intersection level of service is reported for the major street and minor street (generally, left turn movements). The method assesses available and critical gaps in the traffic stream which make it possible for side street traffic to enter the main street flow. The *2000 Highway Capacity Manual* describes the detailed methodology. It is not unusual for an intersection to experience level of service E or F conditions for the minor street left turn movement. It should be understood that, often, a poor level of service is experienced by only a few vehicles and the intersection as a whole operates acceptably.

Unsignalized intersection levels of service are described in the following table.

Level of Service	Expected Delay	(Sec/Veh)
A	Little or no delay	0-10.0
B	Short traffic delay	>10.1-15.0
C	Average traffic delays	>15.1-25.0
D	Long traffic delays	>25.1-35.0
E	Very long traffic delays	>35.1-50.0
F	Extreme delays potentially affecting other traffic movements in the intersection	> 50

Source: 2000 *Highway Capacity Manual*, Transportation Research Board Washington, D.C.

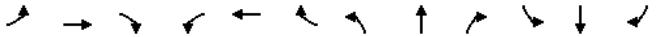
SIGNALIZED INTERSECTIONS

For signalized intersections, level of service is evaluated based upon average vehicle delay experienced by vehicles entering an intersection. Control delay (or signal delay) includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In previous versions of this chapter of the HCM (1994 and earlier), delay included only stopped delay. As delay increases, the level of service decreases. Calculations for signalized and unsignalized intersections are different due to the variation in traffic control. The *2000 Highway Capacity Manual* provides the basis for these calculations.

Level of Service	Delay (secs.)	Description
A	≤10.00	**Free Flow/Insignificant Delays:** No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Most vehicles do not stop at all. Progression is extremely favorable and most vehicles arrive during the green phase.
B	10.1-20.0	**Stable Operation/Minimal Delays:** An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. This level generally occurs with good progression, short cycle lengths, or both.
C	20.1-35.0	**Stable Operation/Acceptable Delays:** Major approach phases fully utilized. Most drivers feel somewhat restricted. Higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, and the number of vehicles stopping is significant.
D	35.1-55.0	**Approaching Unstable/Tolerable Delays:** The influence of congestion becomes more noticeable. Drivers may have to wait through more than one red signal indication. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. The proportion of vehicles not stopping declines, and individual cycle failures are noticeable.
E	55.1-80.0	**Unstable Operation/Significant Delays:** Volumes at or near capacity. Vehicles may wait though several signal cycles. Long queues form upstream from intersection. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
F	≥80.0	**Forced Flow/Excessive Delays:** Represents jammed conditions. Queues may block upstream intersections. This level occurs when arrival flow rates exceed intersection capacity, and is considered to be unacceptable to most drivers. Poor progression, long cycle lengths, and v/c ratios approaching 1.0 may contribute to these high delay levels.

Source: *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C.

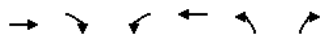
HCM Analysis – Existing 2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	65	12	78	37	28	13	81	202	34	8	178	113
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	88	16	105	50	38	18	109	273	46	11	241	153

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	209	105	109	319	404
Volume Left (vph)	88	50	109	0	11
Volume Right (vph)	105	18	0	46	153
Hadj (s)	-0.14	0.13	0.59	-0.03	-0.16
Departure Headway (s)	6.3	6.8	6.7	6.1	5.6
Degree Utilization, x	0.36	0.20	0.21	0.54	0.63
Capacity (veh/h)	509	442	512	556	618
Control Delay (s)	12.8	11.5	10.3	14.9	17.6
Approach Delay (s)	12.8	11.5	13.7		17.6
Approach LOS	B	B	B		C

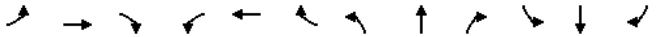
Intersection Summary				
Delay		14.7		
HCM Level of Service		B		
Intersection Capacity Utilization		50.3%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	56	3	0	77	8	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	68	4	0	94	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			72		164	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		164	70
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1541		831	998

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	72	94	10
Volume Left	0	0	10
Volume Right	4	0	0
cSH	1700	1541	831
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

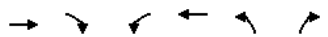
Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		14.1%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	113	35	58	23	23	5	76	191	37	13	124	68
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	130	40	67	26	26	6	87	220	43	15	143	78

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	237	59	87	262	236
Volume Left (vph)	130	26	87	0	15
Volume Right (vph)	67	6	0	43	78
Hadj (s)	0.00	0.23	0.65	0.00	-0.13
Departure Headway (s)	5.5	6.1	6.3	5.7	5.3
Degree Utilization, x	0.36	0.10	0.15	0.41	0.35
Capacity (veh/h)	604	515	545	608	641
Control Delay (s)	11.6	9.8	9.3	11.4	11.0
Approach Delay (s)	11.6	9.8	10.9		11.0
Approach LOS	B	A	B		B

Intersection Summary				
Delay		11.0		
HCM Level of Service		B		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	74	10	0	55	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	11	0	61	2	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			93		149	88
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			93		149	88
tC, single (s)			4.1		6.9	6.2
tC, 2 stage (s)						
tF (s)			2.2		4.0	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1514		743	976

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	93	61	2
Volume Left	0	0	2
Volume Right	11	0	0
cSH	1700	1514	743
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.9
Approach LOS			A

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	14.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	195	34	86	33	32	11	60	188	34	29	216	97
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	222	39	98	38	36	12	68	214	39	33	245	110

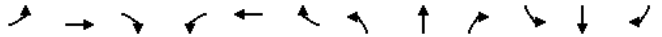
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	358	86	68	252	389
Volume Left (vph)	222	38	68	0	33
Volume Right (vph)	98	13	0	39	110
Hadj (s)	-0.01	0.02	0.53	-0.11	-0.14
Departure Headway (s)	6.2	7.0	7.2	6.6	6.0
Degree Utilization, x	0.61	0.17	0.14	0.46	0.64
Capacity (veh/h)	542	422	467	505	565
Control Delay (s)	18.5	11.4	10.2	13.8	19.2
Approach Delay (s)	18.5	11.4	13.0		19.2
Approach LOS	C	B	B		C

Intersection Summary				
Delay		16.7		
HCM Level of Service		C		
Intersection Capacity Utilization		65.4%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	90	7	1	76	4	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	101	8	1	85	4	0
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			111		195	107
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			111		195	107
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1489		797	951

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	109	87	4
Volume Left	0	1	4
Volume Right	8	0	0
cSH	1700	1489	797
Volume to Capacity	0.06	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.1	9.5
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.5
Approach LOS			A

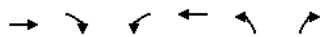
Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		15.7%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	53	21	45	27	22	17	45	127	43	18	151	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	56	22	47	28	23	18	47	134	45	19	159	54

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	125	69	47	179	232
Volume Left (vph)	56	28	47	0	19
Volume Right (vph)	47	18	0	45	54
Hadj (s)	-0.11	0.06	0.50	-0.16	-0.08
Departure Headway (s)	5.0	5.2	5.7	5.1	4.7
Degree Utilization, x	0.17	0.10	0.08	0.25	0.30
Capacity (veh/h)	656	617	599	676	724
Control Delay (s)	9.0	8.8	8.0	8.6	9.8
Approach Delay (s)	9.0	8.8	8.5		9.8
Approach LOS	A	A	A		A

Intersection Summary				
Delay		9.1		
HCM Level of Service		A		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A	
Analysis Period (min)	15			

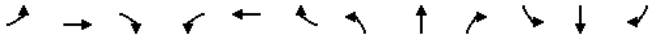


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	75	7	0	62	6	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	82	8	0	68	7	2
Pedestrians				12	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			91		155	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			91		155	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1515		840	952

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	90	68	9
Volume Left	0	0	7
Volume Right	8	0	2
cSH	1700	1515	865
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization	18.0%	ICU Level of Service		A
Analysis Period (min)	15			

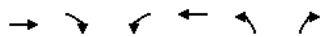
HCM Analysis – 2014



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	72	13	86	41	31	14	90	224	38	9	197	125
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	97	18	116	55	42	19	122	303	51	12	266	169

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	231	116	122	354	447
Volume Left (vph)	97	55	122	0	12
Volume Right (vph)	116	19	0	51	169
Hadj (s)	-0.14	0.13	0.59	-0.03	-0.16
Departure Headway (s)	6.6	7.3	7.1	6.4	5.9
Degree Utilization, x	0.43	0.24	0.24	0.63	0.74
Capacity (veh/h)	481	424	489	533	582
Control Delay (s)	14.5	12.5	11.1	18.8	23.6
Approach Delay (s)	14.5	12.5	16.8		23.6
Approach LOS	B	B	C		C

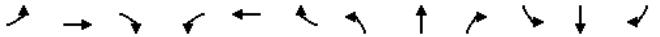
Intersection Summary				
Delay	18.4			
HCM Level of Service	C			
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	62	3	0	85	9	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	76	4	0	104	11	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			79		181	77
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			79		181	77
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1532		813	989

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	79	104	11
Volume Left	0	0	11
Volume Right	4	0	0
cSH	1700	1532	813
Volume to Capacity	0.05	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

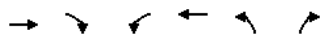
Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	14.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	125	39	64	25	25	6	84	212	41	14	137	75
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	144	45	74	29	29	7	97	244	47	16	157	86

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	262	64	97	291	260
Volume Left (vph)	144	29	97	0	16
Volume Right (vph)	74	7	0	47	86
Hadj (s)	0.00	0.22	0.65	0.00	-0.13
Departure Headway (s)	5.7	6.4	6.5	5.9	5.5
Degree Utilization, x	0.42	0.11	0.17	0.47	0.40
Capacity (veh/h)	583	485	528	588	616
Control Delay (s)	12.8	10.2	9.7	12.8	12.0
Approach Delay (s)	12.8	10.2	12.0		12.0
Approach LOS	B	B	B		B

Intersection Summary				
Delay		12.1		
HCM Level of Service		B		
Intersection Capacity Utilization		54.1%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	82	11	0	61	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	91	12	0	68	2	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			103		165	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			103		165	97
tC, single (s)			4.1		6.9	6.2
tC, 2 stage (s)						
tF (s)			2.2		4.0	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1501		726	964

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	103	68	2
Volume Left	0	0	2
Volume Right	12	0	0
cSH	1700	1501	726
Volume to Capacity	0.06	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	10.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	10.0
Approach LOS			A

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		15.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	216	38	95	37	35	12	66	208	38	32	239	107
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	245	43	108	42	40	14	75	236	43	36	272	122

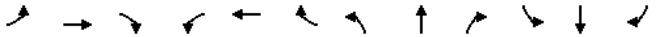
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	397	95	75	280	430
Volume Left (vph)	245	42	75	0	36
Volume Right (vph)	108	14	0	43	122
Hadj (s)	-0.01	0.02	0.53	-0.11	-0.14
Departure Headway (s)	6.6	7.6	7.7	7.0	6.4
Degree Utilization, x	0.72	0.20	0.16	0.55	0.76
Capacity (veh/h)	518	390	439	475	535
Control Delay (s)	24.9	12.5	10.9	16.9	27.0
Approach Delay (s)	24.9	12.5	15.6		27.0
Approach LOS	C	B	C		D

Intersection Summary				
Delay	22.1			
HCM Level of Service	C			
Intersection Capacity Utilization	70.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	100	8	1	84	4	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	112	9	1	94	4	0
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			123		215	119
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			123		215	119
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1474		775	937

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	121	96	4
Volume Left	0	1	4
Volume Right	9	0	0
cSH	1700	1474	775
Volume to Capacity	0.07	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.1	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.7
Approach LOS			A

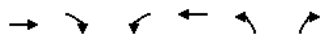
Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	16.3%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	59	23	50	30	24	19	50	141	48	20	167	57
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	62	24	53	32	25	20	53	148	51	21	176	60

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	139	77	53	199	257
Volume Left (vph)	62	32	53	0	21
Volume Right (vph)	53	20	0	51	60
Hadj (s)	-0.11	0.06	0.50	-0.16	-0.08
Departure Headway (s)	5.1	5.4	5.9	5.2	4.8
Degree Utilization, x	0.20	0.12	0.09	0.29	0.35
Capacity (veh/h)	633	592	587	661	706
Control Delay (s)	9.4	9.1	8.2	9.1	10.4
Approach Delay (s)	9.4	9.1	8.9		10.4
Approach LOS	A	A	A		B

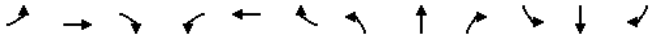
Intersection Summary				
Delay		9.5		
HCM Level of Service		A		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	83	8	0	69	7	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	91	9	0	76	8	2
Pedestrians				12	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			101		172	109
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			101		172	109
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1503		822	940

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	100	76	10
Volume Left	0	0	8
Volume Right	9	0	2
cSH	1700	1503	845
Volume to Capacity	0.06	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

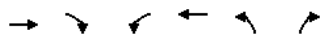
Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization	18.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	72	33	86	94	49	174	90	224	98	190	197	125
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	97	45	116	127	66	235	122	303	132	257	266	169

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	258	428	122	435	692
Volume Left (vph)	97	127	122	0	257
Volume Right (vph)	116	235	0	132	169
Hadj (s)	-0.11	-0.13	0.59	-0.13	0.20
Departure Headway (s)	9.4	8.6	9.6	8.8	9.0
Degree Utilization, x	0.68	1.02	0.32	1.07	1.73
Capacity (veh/h)	374	415	372	414	405
Control Delay (s)	29.9	78.7	15.9	93.5	359.5
Approach Delay (s)	29.9	78.7	76.5		359.5
Approach LOS	D	F	F		F

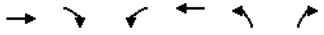
Intersection Summary				
Delay		172.0		
HCM Level of Service		F		
Intersection Capacity Utilization		78.5%	ICU Level of Service	D
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	300	26	14	302	23	12
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	366	32	17	368	28	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			398		784	382
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			398		784	382
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		92	98
cM capacity (veh/h)			1172		359	670

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	398	385	43
Volume Left	0	17	28
Volume Right	32	0	15
cSH	1700	1172	427
Volume to Capacity	0.23	0.01	0.10
Queue Length 95th (ft)	0	1	8
Control Delay (s)	0.0	0.5	14.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	14.4
Approach LOS			B

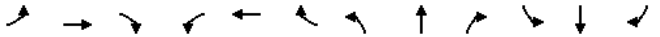
Intersection Summary				
Average Delay		1.0		
Intersection Capacity Utilization		37.3%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	74	238	127	99	217	112
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	90	290	155	121	265	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			380		666	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			380		666	235
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		29	83
cM capacity (veh/h)			1189		372	809

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	380	276	401
Volume Left	0	155	265
Volume Right	290	0	137
cSH	1700	1189	456
Volume to Capacity	0.22	0.13	0.88
Queue Length 95th (ft)	0	11	233
Control Delay (s)	0.0	5.3	48.0
Lane LOS		A	E
Approach Delay (s)	0.0	5.3	48.0
Approach LOS			E

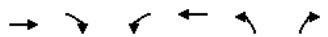
Intersection Summary			
Average Delay	19.6		
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	125	49	64	61	37	114	84	212	72	107	137	75
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	144	56	74	70	43	131	97	244	83	123	157	86

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	274	244	97	326	367
Volume Left (vph)	144	70	97	0	123
Volume Right (vph)	74	131	0	83	86
Hadj (s)	0.00	-0.15	0.65	-0.04	-0.03
Departure Headway (s)	7.2	7.2	8.0	7.2	6.9
Degree Utilization, x	0.55	0.49	0.21	0.66	0.71
Capacity (veh/h)	448	440	429	470	491
Control Delay (s)	18.8	16.9	11.9	21.8	24.8
Approach Delay (s)	18.8	16.9	19.5		24.8
Approach LOS	C	C	C		C

Intersection Summary				
Delay		20.4		
HCM Level of Service		C		
Intersection Capacity Utilization		67.0%	ICU Level of Service	C
Analysis Period (min)		15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	214	13	7	203	16	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	238	14	8	226	18	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			252		486	245
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			252		486	245
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	99
cM capacity (veh/h)			1325		541	799

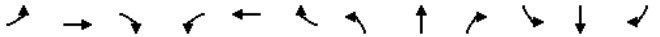
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	252	233	27
Volume Left	0	8	18
Volume Right	14	0	9
cSH	1700	1325	606
Volume to Capacity	0.15	0.01	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.3	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.3	11.2
Approach LOS			B

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		26.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	90	132	65	68	142	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	100	147	72	76	158	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			247		393	173
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			247		393	173
tC, single (s)			4.1		6.9	6.2
tC, 2 stage (s)						
tF (s)			2.2		4.0	3.3
p0 queue free %			95		68	90
cM capacity (veh/h)			1331		499	875

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	247	148	242
Volume Left	0	72	158
Volume Right	147	0	84
cSH	1700	1331	587
Volume to Capacity	0.15	0.05	0.41
Queue Length 95th (ft)	0	4	50
Control Delay (s)	0.0	4.1	15.4
Lane LOS		A	C
Approach Delay (s)	0.0	4.1	15.4
Approach LOS			C

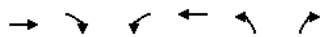
Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	216	75	95	74	50	87	66	208	116	117	239	107
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	245	85	108	84	57	99	75	236	132	133	272	122

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	439	240	75	368	526
Volume Left (vph)	245	84	75	0	133
Volume Right (vph)	108	99	0	132	122
Hadj (s)	0.00	-0.11	0.53	-0.25	-0.07
Departure Headway (s)	8.3	9.1	9.4	8.6	8.3
Degree Utilization, x	1.01	0.61	0.20	0.88	1.22
Capacity (veh/h)	439	380	378	405	436
Control Delay (s)	75.9	25.4	13.4	47.7	144.6
Approach Delay (s)	75.9	25.4	41.9		144.6
Approach LOS	F	D	E		F

Intersection Summary				
Delay		81.3		
HCM Level of Service		F		
Intersection Capacity Utilization	88.9%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	296	11	6	206	10	6
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	333	12	7	231	11	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			345		584	339
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			345		584	339
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			1225		475	708

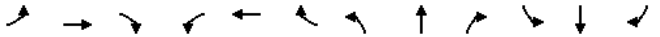
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	345	238	18
Volume Left	0	7	11
Volume Right	12	0	7
cSH	1700	1225	542
Volume to Capacity	0.20	0.01	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.3	11.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.3	11.9
Approach LOS			B

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization	26.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	106	197	58	90	121	52
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	119	221	65	101	136	58
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			342		463	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			342		463	232
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		74	93
cM capacity (veh/h)			1226		530	811

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	340	166	194
Volume Left	0	65	136
Volume Right	221	0	58
cSH	1700	1226	592
Volume to Capacity	0.20	0.05	0.33
Queue Length 95th (ft)	0	4	36
Control Delay (s)	0.0	3.5	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	3.5	14.0
Approach LOS			B

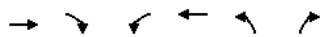
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	59	62	50	102	63	32	50	141	120	33	167	57
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	62	65	53	107	66	34	53	148	126	35	176	60

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	180	207	53	275	271
Volume Left (vph)	62	107	53	0	35
Volume Right (vph)	53	34	0	126	60
Hadj (s)	-0.07	0.13	0.50	-0.30	-0.07
Departure Headway (s)	5.9	6.1	6.6	5.8	5.7
Degree Utilization, x	0.30	0.35	0.10	0.44	0.43
Capacity (veh/h)	540	537	512	583	588
Control Delay (s)	11.4	12.3	9.1	12.2	12.9
Approach Delay (s)	11.4	12.3	11.7		12.9
Approach LOS	B	B	B		B

Intersection Summary				
Delay	12.1			
HCM Level of Service	B			
Intersection Capacity Utilization	56.1%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	0	0	199	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	236	0	0	219	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			236		455	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			236		455	236
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1343		567	808

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	236	219	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1343	1700
Volume to Capacity	0.14	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	14.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	83	132	7	69	131	9
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	91	145	8	76	144	10
Pedestrians				12	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			237		256	177
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			237		256	177
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		80	99
cM capacity (veh/h)			1341		732	862

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	236	84	154
Volume Left	0	8	144
Volume Right	145	0	10
cSH	1700	1341	739
Volume to Capacity	0.14	0.01	0.21
Queue Length 95th (ft)	0	0	19
Control Delay (s)	0.0	0.8	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Analysis – 2014 (Mitigated)

HCM Signalized Intersection Capacity Analysis
1: Boeckman Rd & Stafford Rd

Advance Rd School/Park Transpo. Analysis
2014 Total - A.M. Peak Hr (Mitigated - Traffic Signal)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.88		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1612		1626	1566		1719	1723		1308	1741	
Flt Permitted	0.43	1.00		0.66	1.00		0.48	1.00		0.48	1.00	
Satd. Flow (perm)	778	1612		1121	1566		872	1723		664	1741	
Volume (vph)	72	33	86	94	49	174	90	224	98	190	197	125
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	97	45	116	127	66	235	122	303	132	257	266	169
RTOR Reduction (vph)	0	92	0	0	187	0	0	24	0	0	35	0
Lane Group Flow (vph)	97	69	0	127	114	0	122	411	0	257	400	0
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	5%	8%	4%	11%	4%	8%	5%	4%	6%	38%	2%	4%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.3	9.3		9.3	9.3		27.8	27.8		27.8	27.8	
Effective Green, g (s)	9.3	9.3		9.3	9.3		27.8	27.8		27.8	27.8	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.62	0.62		0.62	0.62	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	332		231	323		538	1062		409	1073	
v/s Ratio Prot		0.04			0.07			0.24			0.23	
v/s Ratio Perm	c0.12			0.11			0.14			c0.39		
v/c Ratio	0.61	0.21		0.55	0.35		0.23	0.39		0.63	0.37	
Uniform Delay, d1	16.2	14.8		16.0	15.3		3.9	4.4		5.4	4.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.4	0.3		2.7	0.7		0.2	0.2		3.0	0.2	
Delay (s)	22.6	15.2		18.7	16.0		4.1	4.6		8.4	4.5	
Level of Service	C	B		B	B		A	A		A	A	
Approach Delay (s)		18.0			16.8			4.5			6.0	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM Average Control Delay	9.5	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	58.9%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
1: Boeckman Rd & Stafford Rd

Advance Rd School/Park Transpo. Analysis
2014 Total - P.M. Peak Hr (Mitigated - Traffic Signal)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.90		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1687		1802	1626		1770	1784		1752	1806	
Flt Permitted	0.66	1.00		0.64	1.00		0.50	1.00		0.52	1.00	
Satd. Flow (perm)	1226	1687		1207	1626		922	1784		962	1806	
Volume (vph)	216	75	95	74	50	87	66	208	116	117	239	107
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	245	85	108	84	57	99	75	236	132	133	272	122
RTOR Reduction (vph)	0	76	0	0	70	0	0	45	0	0	36	0
Lane Group Flow (vph)	245	117	0	84	86	0	75	323	0	133	358	0
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	2%	3%	1%	0%	0%	9%	2%	0%	0%	3%	0%	1%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.9	9.9		9.9	9.9		15.7	15.7		15.7	15.7	
Effective Green, g (s)	9.9	9.9		9.9	9.9		15.7	15.7		15.7	15.7	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.47	0.47		0.47	0.47	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	361	497		356	479		431	834		450	844	
v/s Ratio Prot		0.07			0.05			0.18			c0.20	
v/s Ratio Perm	c0.20			0.07			0.08			0.14		
v/c Ratio	0.68	0.24		0.24	0.18		0.17	0.39		0.30	0.42	
Uniform Delay, d1	10.4	9.0		9.0	8.8		5.2	5.8		5.5	5.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.0	0.2		0.3	0.2		0.2	0.3		0.4	0.3	
Delay (s)	15.5	9.2		9.3	9.0		5.4	6.1		5.9	6.3	
Level of Service	B	A		A	A		A	A		A	A	
Approach Delay (s)		12.7			9.1			6.0			6.2	
Approach LOS		B			A			A			A	

Intersection Summary				
HCM Average Control Delay	8.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	33.6	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	57.8%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	74	238	127	99	217	112
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	90	290	155	121	265	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			380		666	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			380		666	235
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		29	83
cM capacity (veh/h)			1189		372	809

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	380	276	265	137
Volume Left	0	155	265	0
Volume Right	290	0	0	137
cSH	1700	1189	372	809
Volume to Capacity	0.22	0.13	0.71	0.17
Queue Length 95th (ft)	0	11	133	15
Control Delay (s)	0.0	5.3	35.3	10.4
Lane LOS		A	E	B
Approach Delay (s)	0.0	5.3	26.8	
Approach LOS			D	

Intersection Summary				
Average Delay			11.5	
Intersection Capacity Utilization			52.8%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	106	197	58	90	121	52
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	119	221	65	101	136	58
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			342		463	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			342		463	232
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		74	93
cM capacity (veh/h)			1226		530	811

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	340	166	136	58
Volume Left	0	65	136	0
Volume Right	221	0	0	58
cSH	1700	1226	530	811
Volume to Capacity	0.20	0.05	0.26	0.07
Queue Length 95th (ft)	0	4	25	6
Control Delay (s)	0.0	3.5	14.1	9.8
Lane LOS		A	B	A
Approach Delay (s)	0.0	3.5	12.8	
Approach LOS			B	

Intersection Summary				
Average Delay			4.4	
Intersection Capacity Utilization			42.5%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	74	238	127	99	217	112
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	90	290	155	121	265	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			380		521	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			380		521	90
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		41	86
cM capacity (veh/h)			1189		452	973

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	90	290	276	401
Volume Left	0	0	155	265
Volume Right	0	290	0	137
cSH	1700	1700	1189	553
Volume to Capacity	0.05	0.17	0.13	0.73
Queue Length 95th (ft)	0	0	11	151
Control Delay (s)	0.0	0.0	5.3	26.9
Lane LOS			A	D
Approach Delay (s)	0.0		5.3	26.9
Approach LOS				D

Intersection Summary			
Average Delay	11.6		
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	106	197	58	90	121	52
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	119	221	65	101	136	58
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			342		353	121
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			342		353	121
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		78	94
cM capacity (veh/h)			1226		614	934

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	119	221	166	194
Volume Left	0	0	65	136
Volume Right	0	221	0	58
cSH	1700	1700	1226	684
Volume to Capacity	0.07	0.13	0.05	0.28
Queue Length 95th (ft)	0	0	4	29
Control Delay (s)	0.0	0.0	3.5	12.3
Lane LOS			A	B
Approach Delay (s)	0.0		3.5	12.3
Approach LOS				B

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

Peak Signal and Turn Lane Warrants

Right-Turn Lane Warrant Analysis

Project: Advance Rd Schools/Park
Scenario(s): 2014 Total Conditions

A.M. Peak Hour

Intersection	Approach (NB,SB, EB,WB)	2-lane or Multi-lane Highway	Volume Advancing (Va)	RT Vol	NCHRP RT Volume	Taper Warrant	RT Lane Warrant	NCHRP Taper?	NCHRP RT Lane?
Advance Rd/Project Access	EB	2-lane	326	26	26	38	77.3	No	No
SW 60th Ave & SW Advance Rd	EB	2-lane	312	238	238	39	78.7	Yes	**Yes**

Midday Peak Hour

Intersection	Approach (NB,SB, EB,WB)	2-lane or Multi-lane Highway	Volume Advancing (Va)	RT Vol	NCHRP RT Volume	Taper Warrant	RT Lane Warrant	NCHRP Taper?	NCHRP RT Lane?
Advance Rd/Project Access	EB	2-lane	227	13	13	48	90.7	No	No
SW 60th Ave & SW Advance Rd	EB	2-lane	222	132	92	48	90.7	Yes	**Yes**

P.M. Peak Hour

Intersection	Approach (NB,SB, EB,WB)	2-lane or Multi-lane Highway	Volume Advancing (Va)	RT Vol	NCHRP RT Volume	Taper Warrant	RT Lane Warrant	NCHRP Taper?	NCHRP RT Lane?
Advance Rd/Project Access	EB	2-lane	307	11	11	40	80.0	No	No
SW 60th Ave & SW Advance Rd	EB	2-lane	303	197	197	40	80.0	Yes	**Yes**

Saturday Peak Hour

Intersection	Approach (NB,SB, EB,WB)	2-lane or Multi-lane Highway	Volume Advancing (Va)	RT Vol	NCHRP RT Volume	Taper Warrant	RT Lane Warrant	NCHRP Taper?	NCHRP RT Lane?
Advance Rd/Project Access	EB	2-lane	215	0	0	49	92.0	No	No
SW 60th Ave & SW Advance Rd	EB	2-lane	215	132	92	49	92.0	Yes	No

Left Turn Lane Warrant Analysis

Project: **Advance Rd Schools/Park**
Scenario(s): **2014 Total Conditions**

A.M. Peak Hour

Intersection	Approach (NB,SB, EB,WB)	Number of Advancing Lanes	Number of Opposing Lanes	Volume Advancing (Va)	LT Vol	LT %	Volume Opposing (Vo)	Warrant Factor	5% Warrant Va	Va Warrant Threshold	HRB Warrant Met?	Max. Est. Queue	Storage Length (ft)
Advance Rd/Project Access	WB	1	1	316	14	4%	326	1.06	475	503	No	2	
SW 60th Ave & SW Advance Rd	WB	1	1	226	127	56%	312	0.44	483	212	**Yes**	5	125

Midday Peak Hour

Intersection	Approach (NB,SB, EB,WB)	Number of Advancing Lanes	Number of Opposing Lanes	Volume Advancing (Va)	LT Vol	LT %	Volume Opposing (Vo)	Warrant Factor	5% Warrant Va	Va Warrant Threshold	HRB Warrant Met?	Max. Est. Queue	Storage Length (ft)
Advance Rd/Project Access	WB	1	1	210	7	3%	227	1.21	532	646	No	1	
SW 60th Ave & SW Advance Rd	WB	1	1	133	65	49%	222	0.44	535	233	No	3	75

P.M. Peak Hour

Intersection	Approach (NB,SB, EB,WB)	Number of Advancing Lanes	Number of Opposing Lanes	Volume Advancing (Va)	LT Vol	LT %	Volume Opposing (Vo)	Warrant Factor	5% Warrant Va	Va Warrant Threshold	HRB Warrant Met?	Max. Est. Queue	Storage Length (ft)
Advance Rd/Project Access	WB	1	1	212	6	3%	307	1.31	486	639	No	0	
SW 60th Ave & SW Advance Rd	WB	1	1	148	58	39%	303	0.45	489	218	No	3	75

Saturday Peak Hour

Intersection	Approach (NB,SB, EB,WB)	Number of Advancing Lanes	Number of Opposing Lanes	Volume Advancing (Va)	LT Vol	LT %	Volume Opposing (Vo)	Warrant Factor	5% Warrant Va	Va Warrant Threshold	HRB Warrant Met?	Max. Est. Queue	Storage Length (ft)
Advance Rd/Project Access	WB	1	1	199	0	0%	215	N/A	538	N/A	N/A	#NUM!	
SW 60th Ave & SW Advance Rd	WB	1	1	76	7	9%	215	0.75	538	406	No	1	

ODOT LEFT TURN CRITERIA IS BASED ON THE **8-13-03** LEFT TURN CRITERIA

Peak Hour Traffic Signal Warrant Analysis

Project: Advance Rd Schools/Park
Scenario(s): 2014 Total Conditions

A.M. Peak Hour

Intersection	Major (N-S, E-W)	Minor (N,S, E,W)	Urban (1) or Rural (2)*	Major Street Lanes (1 or 2)	Minor Street Lanes (1 or 2)	Major Volume	Minor TH and LT Volume	Minor RT Volume	RT Reduction	Minor Volume	Warrant Volume	Warrant Met?
SW Stafford Rd & SW Advance Rd	E-W	N	2	1	1	508	314	98	1.00	314	225	Yes
SW Stafford Rd & SW Advance Rd	E-W	S	2	1	1	508	387	125	1.00	387	225	Yes

Midday Peak Hour

Intersection	Major (N-S, E-W)	Minor (N,S, E,W)	Urban (1) or Rural (2)*	Major Street Lanes (1 or 2)	Minor Street Lanes (1 or 2)	Major Volume	Minor TH and LT Volume	Minor RT Volume	RT Reduction	Minor Volume	Warrant Volume	Warrant Met?
SW Stafford Rd & SW Advance Rd	E-W	N	2	1	1	450	296	72	1.00	296	249	Yes
SW Stafford Rd & SW Advance Rd	E-W	S	2	1	1	450	244	75	1.00	244	249	No

P.M. Peak Hour

Intersection	Major (N-S, E-W)	Minor (N,S, E,W)	Urban (1) or Rural (2)*	Major Street Lanes (1 or 2)	Minor Street Lanes (1 or 2)	Major Volume	Minor TH and LT Volume	Minor RT Volume	RT Reduction	Minor Volume	Warrant Volume	Warrant Met?
SW Stafford Rd & SW Advance Rd	E-W	N	2	1	1	597	274	116	1.00	274	185	Yes
SW Stafford Rd & SW Advance Rd	E-W	S	2	1	1	597	356	107	1.00	356	185	Yes

Saturday Peak Hour

Intersection	Major (N-S, E-W)	Minor (N,S, E,W)	Urban (1) or Rural (2)*	Major Street Lanes (1 or 2)	Minor Street Lanes (1 or 2)	Major Volume	Minor TH and LT Volume	Minor RT Volume	RT Reduction	Minor Volume	Warrant Volume	Warrant Met?
SW Stafford Rd & SW Advance Rd	E-W	N	2	1	1	368	191	120	1.00	191	295	No
SW Stafford Rd & SW Advance Rd	E-W	S	2	1	1	368	200	57	1.00	200	295	No

Major = sum of both approaches
Minor = highest approach

Parking and Vehicle Trip Generation for Soccer Fields and Elementary Schools

By: Ransford S. McCourt, PE, PTOE
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Many communities in the west continue building sports fields for recreational and competitive youth sports programs. Many times the fields are located at elementary school sites. Little actual data exists regarding parking associated with these uses and their influence on elementary school trip generation. Particularly with the advent of multi-field soccer or baseball fields, the complexity and variation in parking demand has not been well documented with surveys and actual observations. Over the past three year as I have attended many of these events and worked on projects in the Pacific Northwest to build a pool of data for parking and trip generation. Three key factors have emerged that should be considered in the design and planning for sports field projects.

- **Parking demand varies depending on the type of sports event.** Soccer fields are used for practice, routine league games, tournaments and regional qualifying tournaments. These events can have different parking demand rates per field.
- **When sports fields are combined on a school site (elementary for example), the demand for the sports field may generate the larger parking demand.** Parking for ordinary school use can be a less significant influence on design than sports field demand when multi-field sites are combined with school uses.
- **The PM peak hour vehicle trip generation for an elementary school site is significantly higher for sites that have active sports fields.** Practice and scheduled league games generates a significant increase in vehicle trip generation at elementary school sites (which by themselves have little PM peak hour vehicle trip activity). This is common in the spring and fall seasons when the outdoor sports activities are routinely scheduled.

Parking Demand for Soccer Fields

Observations at over a dozen soccer field events were made between 2006 and 2009. It should be noted that the observations span the time in which gasoline prices nearly doubled and sites that charged for parking, yet the demand for parking is not substantially different. Table 1 summarized the findings for these sites. Key observations include:

- Practice activities generate the least parking demand. Parents commonly drop off their children and come back to pick them up. Most times only one team is on a field typically at a time and the types of overlaps that occur are very brief when teams leave and arrive (different than with games). Additionally, many parents schedule routine carpools for dropping children off at practice. Design of access for fields used for practice need to consider drop-off/pick-up circulation needs (typically curb space for 2 to 3 vehicles per field). ***Overall parking demand for practice was observed at about 15 vehicles per field.***
- Game activities generate higher parking demand. With games, two teams are on one field at a time. Games also attract more spectators (grandparents and other

family members). Depending upon if the schedule has games one right after the other, the impact of "overlaps" increases the demand. An overlap is a condition where one pair of teams and their parents are on the field and a second pair (and even a third pair depending upon schedule format) of teams and their parents arrive 30 to 60 minutes in advance of the subsequent game. Based upon observations at games that did not have overlaps, parking demand is substantially less (nearly 50%) compared to sites where games are scheduled back to back. Tournament games were observed to have similar parking demand that regular season games had with back to back (overlap) schedules. The only key difference was at soccer fields where games were scheduled without staggered start times or without back to back games. ***Parking demand of about 60 vehicles per field were observed where games were scheduled back-to-back and with varieties of schedules.*** It should be noted that an adult recreational soccer tournament was also observed and found to have similar demand to youth tournaments.

- Unique regional qualifying tournaments can have the highest event parking demand. These are commonly only held once a year and attract demand similar to tournament activity; however, when the events are located at sites where the majority of teams are not local (players and families must travel over an hour to the site) parking demand can be significantly higher. These events can have unique formats where game times are not staggered and teams play numerous games, rapidly. Shorter game times (20 minute halves) and uniform start times can result in two conditions that impact parking demand – "triple" overlap where three sets of teams are at the field at the same time (teams that complete their game, next game teams and arrival of subsequent teams to warm up). In these conditions many times teams and families commonly may not leave the event site. ***Parking demand of about 70-90 vehicles per field have been observed.***

- The planning for soccer events should consider the use of soccer fields in anticipating parking demand. However, because a site may be host to remote qualifying tournament that may generate as many as 70 to 90 vehicles per field does not mean the facility should build with this much parking or be required by code or conditions to pave for every space. This amount of parking has significant impacts (storm water, inefficient land use, higher costs for little use, heat sink). Qualifying tournaments occur once or twice per year for most sites. Normal games and tournaments can commonly occurs on weekends and a few weekdays for six to eight months a year (or more in some fair weather locations). Practices can occur nearly every other day that regular league play is not occurring. The need to accommodate parking demand for league play, local tournaments and practice which can occur on over 100 days a year is different that accommodating parking demand that occurs on 2 to 5 days a year. Every parking strategy – building parking, sharing parking or managing parking – comes with a cost. The most effective solution is one that balances the needs of the specific site (physical space, environmental, costs, convenience) with the efficient use of land for fields and parking. The most pragmatic planning would approach parking demand in the following ways:

- Parks commonly have a low base parking demand (below 45 vehicles per field). Planning for parking supply below soccer tournament demand can be appropriate in circumstances where management strategies are applied such as:
    - shared parking with adjacent uses (such as industrial parks, churches, schools, park-and-ride lots where tournament peak needs occur when routine land use demand is low)
    - on-street parking; and/or
    - temporary lots (playgrounds, fields or gravel areas chalked in for parking)
- Consider use of venues (such as high schools or sites adjacent to industrial parks) where parking supply may be greater for other land use needs (for example a high school site where parking is sized to address student drivers and varsity sports events as compared to an elementary school or park site which may not be sized for larger activities). Planning soccer demand to be during off-peak times better utilizes existing parking resources.
- Staggering start times (at 15 or 30 minute intervals rather than at common times). This single management approach to soccer tournaments can reduce the peak 70-90 vehicle per field demands back to more typical 60 vehicles per field.
- When fewer than 60 spaces are provided for sites with games/tournaments, site design should emphasize drop-off/pick-up curb space near pedestrian entry points to the fields.

Sports Fields Can Dictate Parking at Elementary Schools

The ITE Parking Generation Informational Report indicates that an elementary school generates peak parking demand of about 0.28 vehicles per student. This may not be adequate to address the number of sports fields that are included in the site plan. For example, an elementary school of 600 students with four soccer fields would generate demand for 168 vehicles for the school but 240 vehicles if the fields were used for games or tournament play (at 60 vehicles per field, see Table 1). Site design would need to consider these conditions and develop a management plan to address the range of possible parking demands. This might include slightly increasing the parking supply – but more importantly, reviewing opportunities for management solutions such as overflow parking (on-street, temporary use of field or playground areas, shared parking and/or remote off-site parking). While eliminating back to back scheduling would reduce parking generation, the demand for field space to accommodate the recreational needs of leagues and teams is pre-eminent in most communities. The cost of added field space to allow the same number of games without overlaps is much greater than the cost of additional parking. Each case is unique and the solutions should reflect the proper balance of routine parking demand with the peak or special event needs. Table 2 provides a comparison of the potential parking demand for several combinations of schools and sports fields. The parking demand for school and park use is below the parking demand for sports fields in several cases. In doing elementary school, middle school or park site planning, the parking needs of both the school and the sports fields should be computed in determining the appropriate parking supply.

Table 1
Parking Demand at Soccer Field Sites

Site	Date	Observed Vehicles	Active Fields	Vehicles Per Field
Tournaments and Games with Overlapping Schedules				
OYSA State Cup – Gresham High School, OR	4/19/09	57	1	57
Portland Community College – Rock Creek, Hillsboro, OR	9/13/08	130	2	65
Lions Club Benton County Adult Soccer Tournament, Corvallis, OR	8/10/08	62	1	62
Oswego Nike Cup – Lakeridge HS, Lake Oswego, OR	7/26/08	180	3	60
Crossfire Tournament – Sixty Acre Park, Redmond, WA*	7/12/08	1002	16	63
OYSA Tournament (local)– Hillsboro High School	8/12/07	242	4	61
Crossfire Tournament – Sixty Acre Park, Redmond, WA*	7/27/07	913	16	57
Cascade Cup – Clackamas High School, OR	7/21/07	180	3	60
Cascade Cup – Happy Valley Park, OR	7/20/07	168	3	56
Cascade Cup – Happy Valley Park, OR	7/21/07	221	4	55
League Game – Sunset High School, Beaverton, OR	10/29/06	59	1	59
Practice				
Powerlines Park, Hillsboro, OR	10/23/06	53	4	13
PCC Rock Creek, Beaverton, OR	3/31/09	58	4	15
158th/Walker Rec Center, Beaverton, OR	3/31/09	35	2	17
PCC Rock Creek, Beaverton, OR	4/9/09	97	6	16
PCC Rock Creek, Beaverton, OR	4/29/09	77	5	15
Regional Qualifying Tournament				
OYSA U-14 Regional Qualifying Tournament, Crystal Springs Park, Corvallis, OR (uniform start times)	8/8/08	708	10	71
Oswego Nike Cup – Athey Creek MS, West Linn, OR (uniform start times)	7/26/08	370	5	74
OYSA Regional Qualifying Tournament, all ages (non-local) Woodburn Middle School, OR	8/13/06	281	3	94
Games Without or Partial Overlapping Schedules				
League Games – (3 of 4 games had overlaps) Powerlines Park, Hillsboro, OR	9/30/06	180	4	45
League Games – (2 of 4 games had overlaps) Powerlines Park, Hillsboro, OR	9/23/06	160	4	40
League Game (no overlap) Mark Twain Middle School, Silverton, OR	10/1/06	34	1	34
Mixed Soccer & Baseball Games (some overlapping schedules				
Delta Park, Portland, OR	7/9/05	672	9 soccer 7 baseball	42

* - Note that this tournament charged for parking: $5 per vehicle in 2007 and $100 per team in 2008

Table 2
Comparison of Peak Parking Demand for Schools/Parks vs Soccer Fields

ITE Code	Land Use	Average Site Size	Average Peak Parking Ratio	Vehicles for School use	Vehicles for 4 Soccer Fields
520	Elementary School	520 students	0.28/student	145	240
522	Middle School	840 students	0.14/student*	118	240
**	Private School (K-8)	900 students	0.26/student	234	240
530	High School	1,300 students	0.26/student	338	240
411	Park	25 acres	5.1/acre*	128	240

* - Note: this is based upon one survey
** - Note: this is based upon surveys from DKS Associates
SOURCE: Parking Generation Informational Report, 3rd Edition, Institute of Transportation Engineers, 2004.

PM Peak Hour Trip Generation For Elementary Schools Can Be Higher When Combined With Sports Fields

ITE Trip Generation provides data for elementary schools during the traditional PM peak hour street peak period but does not distinguish if the sites had active sports fields (ITE data does not provide this information). Since this is a time period when capacity can be constrained, understanding peak effects can mean the difference between no mitigation and significant transportation improvement costs. Based upon 12 elementary school site observations it was found that vehicle trip generation can vary for elementary school sites depending upon if they have active sports fields. Traditionally, elementary school vehicle traffic is highest in the morning and afternoon peaks were children arrive and depart school. The amount of vehicle trip generation in the evening peak period (4-6 PM) is significantly less or minor in most cases. However, if the school site includes sports fields, vehicle trip activity can increase (particularly in the spring and fall) with recreational youth sports activities (practices and games) which are commonly scheduled during the traditional PM peak period (4-6 PM). Table 3 provides a summary of schools sites without fields and when sports programs were not active as compared to sites with active athletic fields in the spring and fall (accommodating youth soccer and baseball leagues). While the AM and afternoon rates are not significantly different than ITE Trip Generation, there is a clear increase in the PM peak hour trip generation for sites with active sports fields (about three times the rate for conditions where sites did not have active sports fields). Even the afternoon peak hour is greater (by about 33%) when sports fields are active after school. The range of increase can depend upon the number of fields relative to the size of the school site. For site planning, understanding the functions that are to be part of the school site are important to best understand the potential transportation circulation needs and impacts (vehicle trips, pick-up/drop-off, parking, pedestrian/bicycle access). For example, designing left turn storage needs in the PM peak for schools that have sports fields are different than those without these facilities. For analysts performing trip generation surveys of elementary schools in the PM hours, it is important to identify the number of sports fields and whether they are active on the count date. The same situation can exist for middle schools but unlikely for high schools which have sports activity throughout the school year.

Table 3
Peak Hour Trip Generation at Elementary Schools With and Without Sports Fields

Surveys with Active Sports Fields	**AM**	**Afternoon**	**PM**	**Date**	**Fields**	**Students**
Linwood Elementary, Milwaukie, OR	0.60	0.42	0.21	9/18/2007	2	335
Aloha Park Elementary, Beaverton, OR	0.59	0.34	0.31	5/19/2004	1	622
Clear Lake Elementary, Keizer, OR	0.45		0.24	5/6/1999	1	540
Scott Elementary, Salem, OR	0.61		0.37	5/12/1999	1	536
Keizer Elementary, Salem, OR	0.42		0.20	5/5/1999	1	770
Boeckman Creek Elementary, Wilsonville, OR			0.35	9/12/2002	3	543
AVERAGE	**0.53**	**0.38**	**0.28**			

Surveys with No Use of Sports Fields	**AM**	**Afternoon**	**PM**	**Date**	**Fields**	**Students**
Beaver Acres Elementary, Beaverton, OR	0.48	0.29	0.06	1/17/2006	2	770
Hazeldale Elementary, Beaverton, OR	0.54	0.26	0.12	2006	1	599
Kinnaman Elementary, Beaverton, OR	0.65	0.28	0.05	12/17/2006	1	481
Boeckman Creek Elementary, Wilsonville, OR	0.27		0.11	2/11/1994	3	455
Boones Ferry Elementary, Wilsonville, OR			0.19	9/18/2002	1	675
Barnes Elementary, Beaverton, OR	0.57	0.27	0.05	3/16/2006	1	732
Durham Elementary, Tigard, OR	0.60	0.23	0.08	2/22/2006	2	521
AVERAGE	**0.52**	**0.27**	**0.09**			

ITE Trip Generation, 8th Edition, average rate	**0.45**	**0.28**	**0.15**	20-50 studies	n/a	**650**

Note: Trip rates shown above are vehicle trips per student

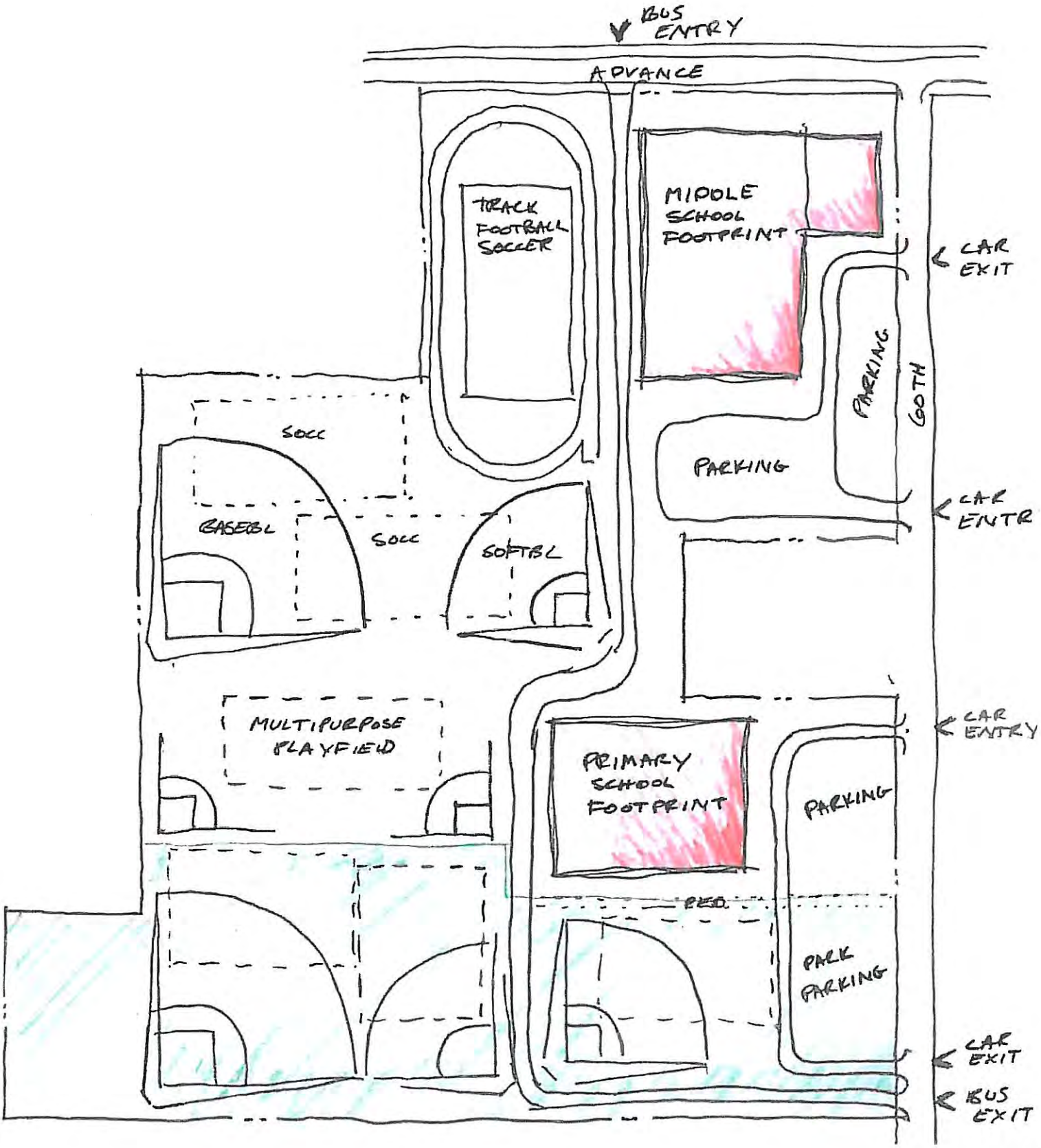
Conclusions

Sport fields design has had little data regarding parking needs to back up the provision of parking. This study provides research and data to help guide parking planning for sports fields, with the following findings:

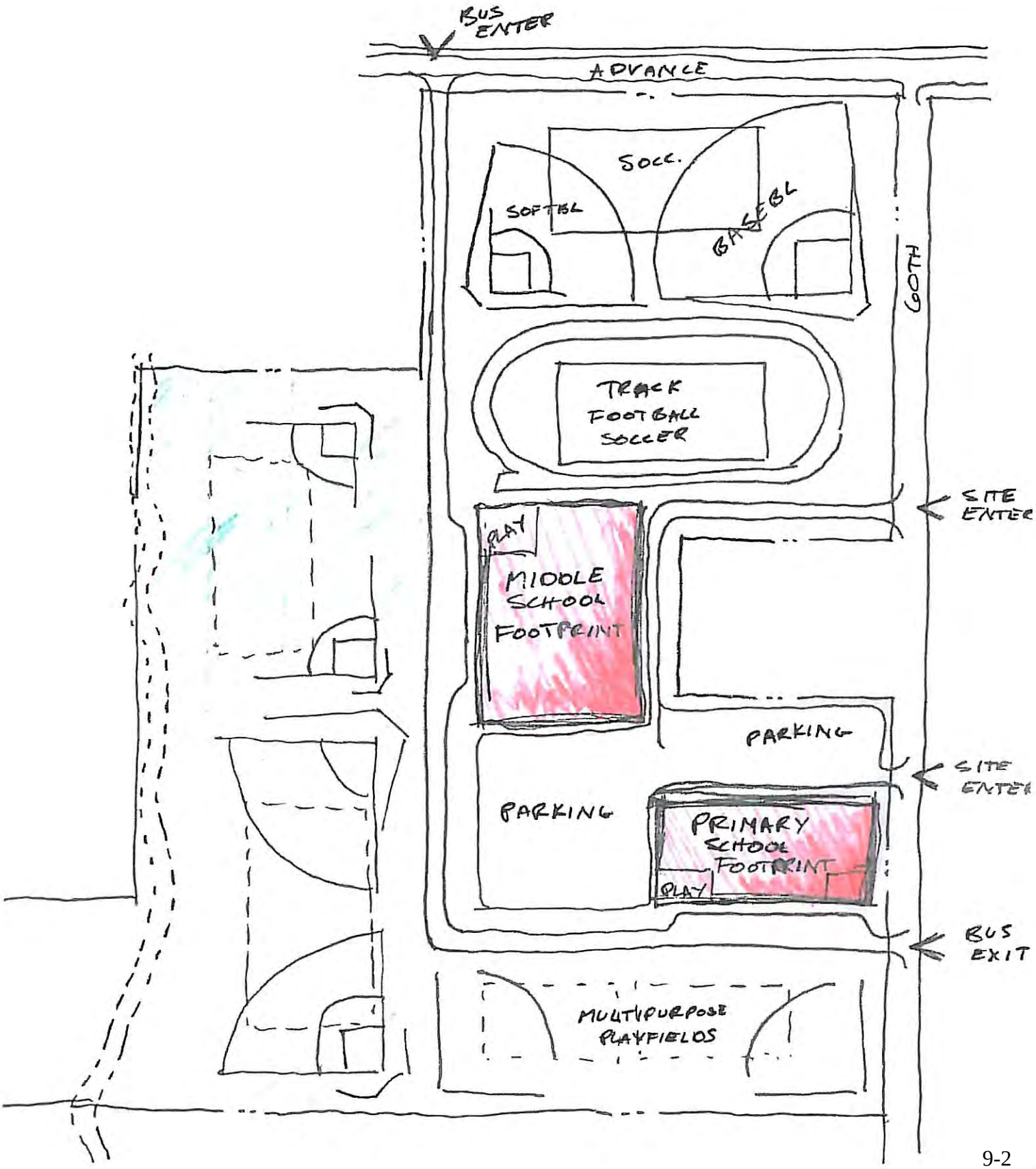
- Soccer field parking can be grouped into three functions that have different parking demands: Practice – parking demand of about 15 vehicles per field, games/tournaments – parking demand of about 60 vehicles per field and regional qualifying tournaments (with non-local teams) – parking demand of about 70 to 90 vehicles per field;
- Building parking facilities for soccer fields does not have to simply be for the largest potential demand. Parking management strategies can be used to address peak soccer parking demand, including issues of shared parking, scheduling event start times and overlapping events. Most important for sites where parking management strategies are considered, adequate drop-off and pick-up curb space should be provided near the fields;
- Many times soccer fields are locates at elementary school sites. When soccer fields are provided at elementary school sites, the parking demand of the sports events (and other after-school hour events) may determine a higher provision of parking; and
- While ITE Trip Generation provides a single number for vehicle trip generation at elementary schools, it appears that the presence of sports fields affects trip generation in the PM peak hour. Trip generation of elementary schools in the evening peak hour (4-6 PM) is greater for sites that have active sports fields (nearly two to three times greater). This should be considered in the site design parameters for access and circulation for elementary schools.

Option A

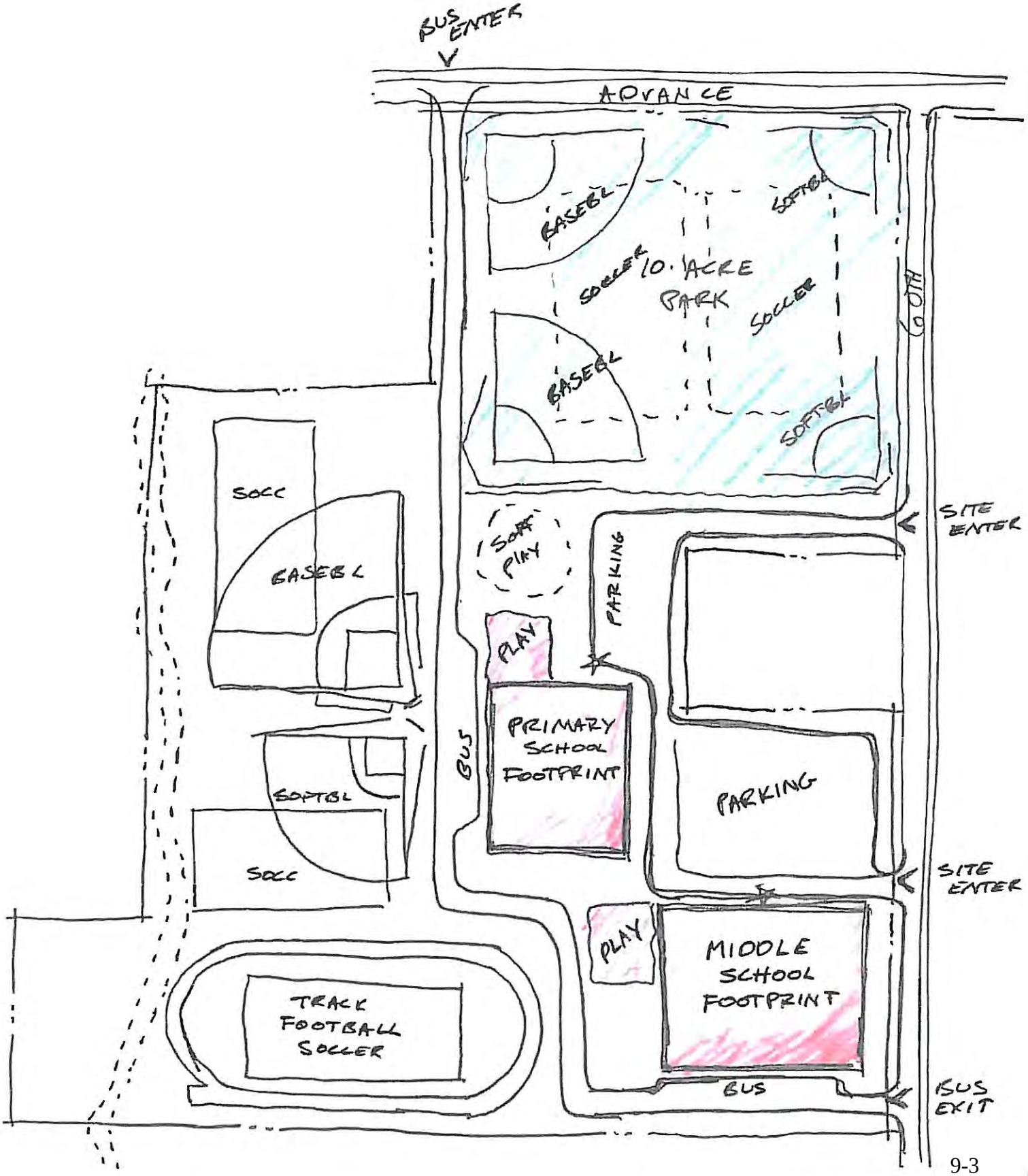
9-10-09



Option B
9-10-09



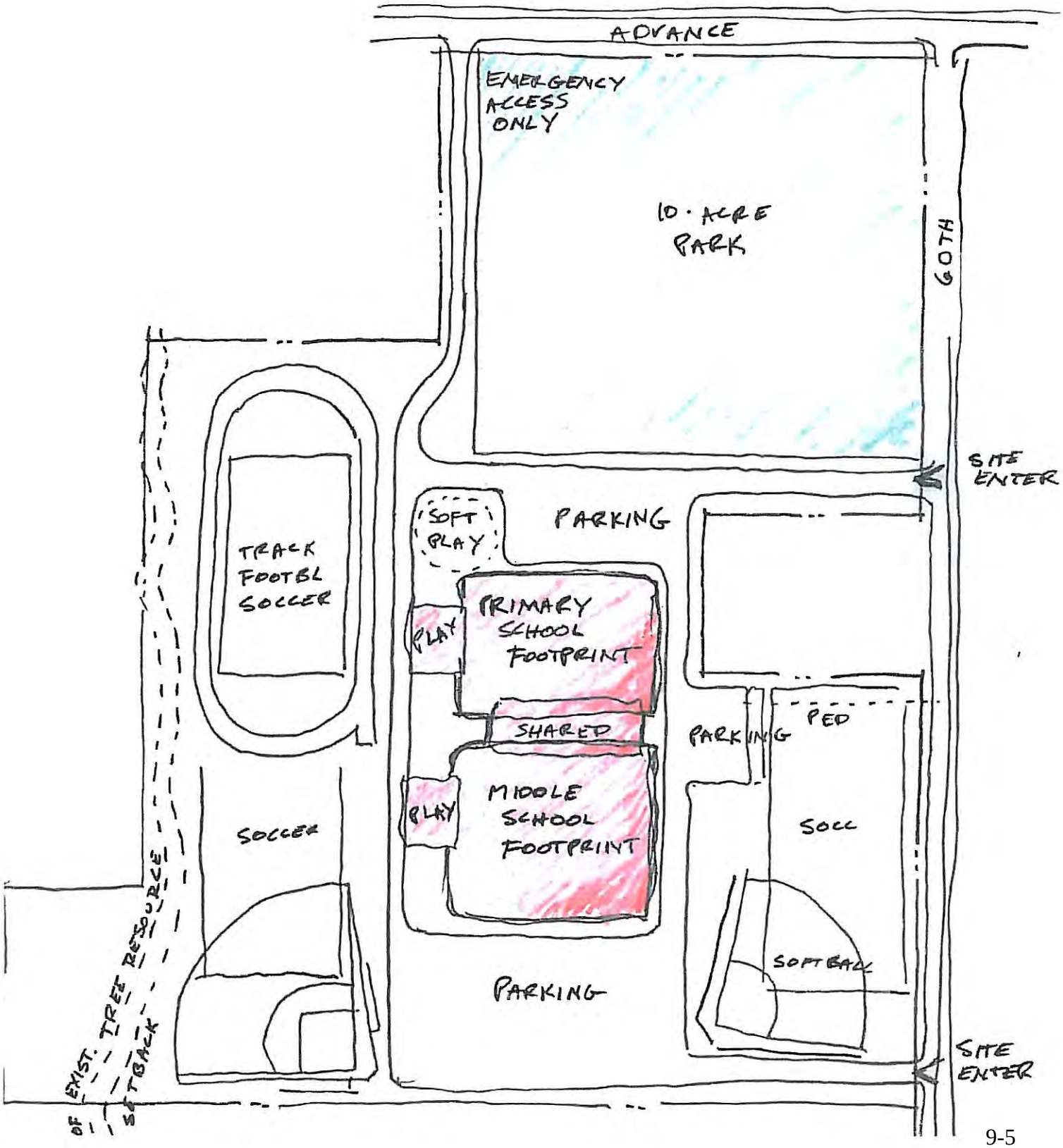
Option C
9-10-09



Option D
9-10-09

Option E

9-10-09



Attachment 11

This map was prepared for assessment purpose only.

SECTION 18 T.3S. R.1E. W.M.
CLACKAMAS COUNTY

D.L.C.
HEIRS OF D.S. MINKLER NO. 48

3 1E 18

1"= 400'

TL | ADD
900 | 5353
901 | 5425
1000 | 5401

SEE MAP 3 1E 7

1/16 Cor. | 1/4 Cor.

C. R. X - 24 ROAD

2100 4.84 Ac. 6360
2000 19.44 Ac.
LOT 43.78
2001 2.00 Ac. 28335
2300 3.60 Ac.
2400 9.56 Ac.
2500 6.64 Ac.
2600 6.52 Ac.
2700 25.81 Ac. 28901
LOT 43.82
2800 10.56 Ac. 29051
2900 67.91 Ac. 29701
3000 59.48 Ac.
3080 5.00 Ac.
3100 38.50 Ac. 5442 5444
3200 4.45 Ac. 5438 5440
3300 17.54 Ac.
3301 13.67 Ac. 5300
3302 21.18 Ac.
3303 15.50 Ac.
3400 2.00 Ac. 29000
3501 4.79 Ac.
3500 21.82 Ac. 29250
3600 24.73 Ac. 29500
3601 8.13 Ac. 29800

700A1
700 19.15 Ac. 28121
600 19.25 Ac.
800 19.74 Ac. 28428
500 19.84 Ac.
1100 2.09 Ac. 5565
901 1.01 Ac.
900 1.64
400 5.14 Ac. 5191 28850
102 19.20 Ac. 4780
100 19.20 Ac. 4684
302 13.59 Ac.
201 2.98 Ac. 28521
202 1.41 Ac.
300 19.42 Ac. 4500
301 1.94 Ac.

SEE MAP 3 1W 13AA
SEE MAP 3 1W 13
SEE MAP 3 1W 24A
SEE MAP 3 1E 18B
SEE MAP 3 1E 19
SEE MAP 3 1E 17
SEE MAP 3 1E 7

3-29
3-28
3-05

EFU
EFU/HL

CANCELLED
902
1200
1300
1400
1401
1500
1600
1700
1800
1801
1900 thru 1911
3090
101
200
2200

28000
29000
30000

CR 2359 60th AVE.
53RD AVE.
KRUSE ROAD CR 2359
BRUCK LN.
PUBLIC ROAD 60TH AVE.
EAST LINE DLC NO. 48
W. LINE DLC NO. 48
WILSONVILLE CITY LIMITS
WILLAMETTE MERIDIAN

N.E.Cor. DLC No44
N.W. Cor. DLC No.48
NE Cor. D.L.C 48
SE COR. DLC NO44
SW COR MINKLER DLC NO.48
SE COR DLC 48
SW COR. ARRAPIGER DLC
1/4 Cor.

DIVISION LINE - N½S½ of W½ EVANS DLC

WILLAMETTE RIVER
GLO MEANDER LINE

GREENWAY
SEE MAPS 4-3, 5-3
F.H.D.

3 1E 18
BOOK 27

APPENDIX C

5-Year Projections by "Residence" for West Linn-Wilsonville School District

5-Year Projections by "Residence" for the West Linn-Wilsonville School District

(Based on Fall 2012/2013 K-12 Student Data)

The West Linn-Wilsonville School District (WLWSD, or the District) has requested Davis Demographics & Planning, Inc. (DDP) to assist in preparing a District-wide enrollment forecast based upon student residence. The projected student enrollments generated by DDP cover a five-year period that are based upon the actual Fall 2012 student enrollment figures. The projections conducted by DDP were calculated at the smallest level possible, the Study Area. The WLWSD has been broken up into 176 individual "study areas." No study area straddles two District attendance areas. Therefore, the projected number of students in each of the District's current attendance areas are derived by the simple addition of all of the study areas that comprise that particular region. The District-wide projections is the summary of all 176 study areas.

The concept of running projections at the "study area" level is ideal for a school district that plans on re-adjusting its current attendance areas. This then gives the District the ability to determine a variety of new attendance area scenarios and know approximately what the future number of students will be living in the proposed areas.

A variety of factors go into the calculation of the "study area" projections. These components include the following: (1) examining the current and planned residential development over the next seven years; (2) calculating Student Yield Factors to apply to this new development; (3) determining birth factors for this District area; and (4) calculating Mobility Factors, which examine the in/out migration of students within existing housing units (this factor, for example, takes the "resale" of units into account).

SOURCES OF DATA

Historical Enrollment:	Obtained verified K-12 student data files downloaded by the District to DDP for each October from Fall 2009 to Fall 2012.
Housing Information:	Obtained by DDP through information provided by District staff. In addition to data provided by city and county planning departments, various site visists were made and certain developers were contacted. The use of aerial imagery and county parcel data in a GIS format were also used in this process.
Birth Data: (used for estimating incoming Kindergarten)	Live birth counts for the West Linn-Wisonville area (by zipcode) were obtained from the State of Oregon, Center for Health Statistics Department.

METHODOLOGY

1. Graduate 12th grade: move up other grades.

2. New residential development information was gathered by District staff by contacting city and county planners, site visits and individual developers. A listing of all residential development (by Study Area) used in these projections can be found in the enclosed Residential Development Summary Report. The use of aerial imagery and county parcel data in a GIS format were also used in this process.

3. Student Yield Factors were calculated for by geographically linking assessor parcel data with student data. These rates were organized by using the District's predominant grade configurations (K-5, 6-8 and 9-12). The Student Yield Factors used in these projections were a result of a large sampling of residential units built within the District's boundaries over the past six years (2007-2012). The use of aerial imagery and county parcel data in a GIS format were also used in this process.

STUDENT YIELD FACTORS USED IN THE FALL 2012 PROJECTIONS
(from a large sampling of units built between 2007-2012)

Single-Family Detached (SFD) Units [724 units built]				
Grade Ranges	K-5	6-8	9-12	K-12
Student Yield Factor	0.291	0.123	0.130	0.544

Multi-Family Units [475 units built] **[apartments, condos, townhouses, etc.]**				
Grade Ranges	K-5	6-8	9-12	K-12
Student Yield Factor	0.091	0.048	0.053	0.192

4. Incoming Kindergarten estimates were calculated by gathering live birth counts by the District's three main zipcodes (97062, 97068 and 97070) and annual comparisons were made to the Fall 2012 Kindergarten class as the base year.

District-Wide Birth Factors

2013 K = 100.0% of 2012 K
2014 K = 97.4% of 2012 K
2015 K = 87.6% of 2012 K
2016 K = 85.7% of 2012 K
2017 K = 90.0% of 2012 K

5. Modify enrollment further by using student Mobility Factors as follows:

   Mobility refers to the in-out migration of students from existing housing. This variable reflects the percentage of students progressing through the grade ranges. The Mobility Factors help account for the following trends occurring throughout the District: existing housing resales, foreclosures, apartment migration and high school dropout rates. Student counts for each study area are available for the last four school years (Fall 2009 through Fall 2012). A sample of 110 study areas (from a total of 176) were chosen within the District's boundaries that had no new residential development over the last five years. The Mobility Factors were conducted at the current primary school attendance boundary level. There was a total of 16 study areas were chosen from the Boeckman Creek Primary attendance area; 5 study areas from the Bolton Primary attendance area; 13 from the Boones Ferry Primary area; 4 study areas from Cedar Oak Primary's area; 8 from the Lowrie Primary area; 22 from the Stafford Primary area; 7 from the Sunset Primary boundary;

17 from Trillium Creek Primary area; 12 from the Willamette Primary Attendance Area and 6 study areas in the Stafford/Boeckman Option area were chosen for this study. The Mobility Factors that show no net increases or decreases (zero change in the number of students) over time is represented by a factor of 1.00 (blue). A net student loss is represented by a factor less than 1.00 (red) and a net gain by a factor greater than 1.00 (green).

When the data is available, the typical method that DDP uses to calculate Mobility Factors is using four consecutive years of mapped student data which results in three years of change and then average it out to even out any anomalies. A comparison was made for the Fall 2009 K student population to the Fall 2010 1st grade students within a specific study area. This comparison was also conducted for the following pairings: Fall 2010 & Fall 2011 and the Fall 2011 & Fall 2012 school-years. In addition, middle school and high school grades were also looked at in this manner (all transitions from Kindergarten through 12th grade).

Student Mobility Factors

(used in the Fall 2012 Projections)

"3 Years of Change" (Using Fall 2009 through Fall 2012 students)

West Linn-Wilsonville SD Mobility (Using Fall 2009 through Fall 2012 Student Data)

(Excluding Study Areas that Have Had Development and Ones that Contain Low Students Counts)

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	City
Boeckman Creek Primary	1.059	0.906	1.027	0.964	1.065	0.957	0.937	1.035	1.019	0.974	1.014	0.986	W
Bolton Primary	1.089	1.149	1.019	1.045	1.088	1.033	1.092	1.072	0.947	1.000	1.000	0.983	WL
Boones Ferry Primary	1.038	1.053	1.023	0.939	1.034	1.059	1.021	1.000	0.984	1.030	0.970	1.024	W
Cedaroak Primary	1.057	1.000	1.150	0.904	1.015	0.952	0.947	0.964	1.000	0.855	0.810	1.265	WL
Lowrie Primary	1.011	1.053	1.121	1.087	0.987	0.975	0.907	0.899	1.031	0.971	0.972	1.095	W
Stafford/Boeckman Choice*	1.150	0.870	1.087	0.960	1.000	1.036	1.161	1.000	0.903	1.000	0.903	0.944	W
Stafford Primary	1.104	1.088	0.944	1.046	1.026	1.035	0.983	0.946	1.072	0.901	1.000	0.951	WL
Sunset Primary	1.278	1.103	1.049	0.979	1.056	0.958	1.009	0.955	1.048	0.975	0.894	1.020	WL
Trillium Creek Primary	1.194	1.055	1.107	0.974	0.959	1.047	0.996	0.991	1.000	1.027	0.961	1.038	WL
Willamette Primary	1.246	1.013	1.032	1.006	1.041	0.936	1.067	1.022	0.944	1.013	0.951	0.939	WL

** The Boeckman Creek Primary Mobility Factors were used for the Choice area due to too small a sample size*

6. Each of the 176 Study Areas are then projected out over the next five years (Fall 2013 through Fall 2017). From these study areas, individual Attendance Area reports are generated (see enclosed Attendance Area and Study Area Projections). Please refer to the attached map (11" X 17") to see the individual study area locations as well as determining the study areas that comprise each Attendance Area.

These projections are based on where the students live and where they should be attending school. DDP uses the actual location of where the students reside, as opposed to their school of enrollment, in order to provide the most accurate depiction of where future schools (if necessary) should be located. The concept of running projections at the "study area" level is ideal for a school district that plans on re-adjusting its current attendance areas. The best way to plan for future schools is to know where the next group of students will be coming from, not necessarily which school they are currently attending.

FIVE-YEAR RESIDENTIAL DEVELOPMENT SUMMARY REPORT

Total SFD = 1,179 **Total MFA = 455** **Total APT = 288** **Total All Units = 1,922**

	YEAR 1			YEAR 2			YEAR 3			YEAR 4			YEAR 5				
Study	10/15/2012 - 10/14/2013			10/15/2013 - 10/14/2014			10/15/2014 - 10/14/2015			10/15/2015 - 10/14/2016			10/15/2016 - 10/14/2017			**Study**	All Units/Types
Area	SFD	MFA	APT	SFD	MFA	APT	SFD	MFA	APT	SFD	MFA	APT	SFD	MFA	APT	**Area**	Years 1 - 5
119	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**119**	5
130	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**130**	18
136B	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**136B**	5
155	15	0	0	6	0	0	4	0	0	0	0	0	0	0	0	**155**	25
332	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**332**	7
426	10	0	0	16	0	0	0	0	0	0	0	0	0	0	0	**426**	26
430	22	0	0	60	0	0	60	0	0	25	0	0	50	0	0	**430**	217
432	15	0	0	70	0	0	63	0	0	115	0	0	145	0	0	**432**	408
436	52	0	0	40	0	0	28	0	0	0	0	0	0	0	0	**436**	120
437	0	50	0	0	105	0	0	100	0	0	100	0	0	100	0	**437**	455
438	30	0	0	36	0	0	40	0	0	40	0	0	0	0	0	**438**	146
444	12	0	0	18	0	0	0	0	0	0	0	0	0	0	0	**444**	30
446	12	0	288	30	0	0	30	0	0	20	0	0	0	0	0	**446**	380
454	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**454**	5
468	0	0	0	0	0	0	15	0	0	30	0	0	30	0	0	**468**	75
Units	208	50	288	276	105	0	240	100	0	230	100	0	225	100	0	Units	1,922
Types	SFD	MFA	APT	SFD	MFA	APT	SFD	MFA	APT	SFD	MFA	APT	SFD	MFA	APT	Types	
Totals	**2012/2013 =**		**546**	**2013/2014 =**		**381**	**2014/2015 =**		**340**	**2015/2016 =**		**330**	**2016/2017 =**		**325**	**Totals**	All Units (1-5)

Elementary	Middle	High
Trillium Creek Primary	Rosemont Ridge Middle	West Linn High
Sunset Primary	Rosemont Ridge Middle	West Linn High
Sunset Primary	Rosemont Ridge Middle	West Linn High
Trillium Creek Primary	Rosemont Ridge Middle	West Linn High
Stafford/Boeckman Choice Zone	Inza R Wood Middle	Wilsonville High
Lowrie Primary	Inza R Wood Middle	Wilsonville High
Lowrie Primary	Inza R Wood Middle	Wilsonville High
Lowrie Primary	Inza R Wood Middle	Wilsonville High
Lowrie Primary	Inza R Wood Middle	Wilsonville High
Lowrie Primary	Inza R Wood Middle	Wilsonville High
Lowrie Primary	Inza R Wood Middle	Wilsonville High
Boones Ferry Primary	Inza R Wood Middle	Wilsonville High
Lowrie Primary	Inza R Wood Middle	Wilsonville High
Boeckman Creek Primary	Inza R Wood Middle	Wilsonville High
Boones Ferry Primary	Inza R Wood Middle	Wilsonville High

Last updated December 2012

Notes about this summary report:

1. The phasing schedules on this page are based upon estimated dates of occupancy.
2. Includes Approved and Tentative maps plus proposed and potential development.
3. Summary only includes units that may be occupied in the five year timeframe of the projections.
4. Based upon data gathered from September 2012-December 2012 and may not reflect recent changes.
5. The information for this summary was gathered by conversations with individual developers, sales offices, district staff and city and county officials.

Contact/Owner/ Developer	**Project/Area**	**Study Areas**	**Total Units**	**Type Units**	**Left to Build**	**Comments**
CONTACT DISTRICT	ROSEMONT CROSSING	119	22	SFD	5	17 of 22 units are occupied / Project almost complete
RENNAISSANCE	ROSEMONT POINTE	130	78	SFD	18	60 of 78 units are occupied / Units built faster than previous years
CONTACT DISTRICT	PARKER CREST	136B	70	SFD	5	65 of 70 units are occupied / Project almost complete
JT SMITH/CRANDALL	THE VINEYARD	155	29	SFD	21	8 of 29 units are occupied / part of "Street of Dreams", will be built quickly
CONTACT DISTRICT	EASTGATE DR & NEWLAND RD	332	17	SFD	7	Large homes on large lots / 10 occupied / all completed by Fall 2013
SPECTRUM DEVELOPMENT	COPPER CREEK	426	26	SFD	ALL	Streets completed / Models will be constructed soon / done over next 2 yrs?
CONTACT DISTRICT	SAP N	430	225	SFD	ALL	Original developer went bankrupt / High end SFD / To begin in 2016?
POLYGON HOMES/CITY	TONQUIN WOODS 2	430	142	SFD	ALL	Streets completed / Models will be constructed soon
POLYGON HOMES/CITY	VILLEBOIS	432	225	SFD	ALL	Inactive for now /Developed in next 3 to 5 years? / New school site included
WELLS FARGO BANK	VILLEBOIS	432	87	SFD	ALL	Looking to sell off large lots / Polygon Homes may purchase
POLYGON HOMES/CITY	VILLEBOIS	432	205	SFD	ALL	Recent approvale / To start in 2013? / Developer may move aggressively
POLYGON HOMES/CITY	VILLEBOIS	432	93	SFD	ALL	Recent approvale / To start in 2013? / Developer may move aggressively
ARBOR - SAP S / LENNAR	VILLEBOIS	436	375	SFD	108	267 of 375 units are now occupied / Should be completed in 3 to 4 yrs
POLYGON HOMES/CITY	TONQUIN WOODS 1	436	27	SFD	12	15 of 27 units are now occupied / Developer moved quickly
ARBOR SOLD TO POLYGON?	VILLEBOIS	437	600	MFA	541	59 of 600 built as of Dec. 2012 / May be a mix of condos and apartments
LENNAR FINISH UP	MIRAVAL @ VILLEBOIS	437	127	MFA	67	60 of 127 Built / DDP Best guiess estimate on phasing
LEGEND @ VILLEBOIS (MATRIX)	SAP E PDP1	438	190	SFD	146	44 of 190 are occupied / Matrix still owns, new construction on hold
HOLLAND PARTNER GROUP	JORY TRAILS @ THE GROVE	444	39	SFD	ALL	Phase II under construction / Senior units to follow this project
HOLLAND PARTNER GROUP	JORY TRAILS @ THE GROVE	446	288	APT	ALL	Senior housing excluded units from project
HOLLAND PARTNER GROUP	JORY TRAILS @ THE GROVE	446	161	SFD	ALL	Infrastructure uc / Homes to begin in early 2013 / Phasing excludes SR housing
RENAISSANCE HOMES	CROSSCREEK	454	13	SFD	5	8 of 13 units are built and occupied / Building faster than expected
UNKNOWN	FORMER LIVING ENRICHMENT CTR	468	160	SFD	ALL	At least 3 years out / Will know more in 2013 / 140 to 160 potential units

West Linn-Wilsonville School District

Study Areas & Primary Attendance Areas (Current - as of Fall 2012/13)

N

Cedaroak Primary

Stafford Primary

Trillium Creek Primary

Bolton Primary

Sunset Primary

Willamette Primary

Lowrie Primary

Boeckman Creek Primary

Boones Ferry Primary

Schools
Streets
Study Areas

Primary School Attendance Areas

- Boeckman Creek Primary
- Bolton Primary
- Boones Ferry Primary
- Cedaroak Primary
- Lowrie Primary
- Stafford/Boeckman Choice Zone
- Stafford Primary
- Sunset Primary
- Trillium Creek Primary
- Willamette Primary

1 0.5 0 1 Miles

1 inch = 0.82 miles

Davis Demographics & Planning, Inc.

Prepared on
January 3, 2013
by Davis Demographics and Planning, Inc.

APPENDIX D

Service Provider Comments

City of WILSONVILLE OREGON

29799 SW Town Center Loop East
Wilsonville, OR 97070
Phone 503-682-0411
Fax 503-682-1015
TDD 503-682-0843
Web www.ci.wilsonville.or.us

March 15, 2013

Ms. Martha Bennett, Chief Operating Officer
Metro
600 NE Grand Ave.
Portland, OR 97232

RE: **Letter of Support for Advance School District UGB Expansion Application**

Dear Ms. Bennett,

The City of Wilsonville supports the West Linn / Wilsonville School District application to expand the Metro Urban Growth Boundary (UGB) to facilitate siting two schools and a public park.

The District and the City have a history of close and productive partnership on planning for school facilities and residential development. Wilsonville is a growing community, and both agencies recognize the importance of coordinating housing development with development of new schools to serve the new neighborhoods. Siting schools on the District's property in the Advance Road area will support the needs of both Wilsonville's existing population as well as the City's long-range plans for residential growth. Additionally, this minor UGB expansion fits with the City's long-term plans in that the Wilsonville City Council advocated for adding the Advance Road Urban Reserve into the UGB in 2011.

Sincerely,

Bryan Cosgrove

Bryan Cosgrove

Wilsonville City Manager

Cc:
Chris Neamtzu, Planning Director
Tim Woodley, West Linn/ Wilsonville School District
Keith Liden

CLACKAMAS COUNTY

BOARD OF COUNTY COMMISSIONERS

PUBLIC SERVICES BUILDING
2051 KAEN ROAD | OREGON CITY, OR 97045

March 12, 2013

Metro Planning Staff
c/o Keith Liden
319 SW Washington, Suite 914
Portland, OR 97204

RE: Letter in Support of West Linn-Wilsonville School District Application for Major Modification to the UGB

To Whom It May Concern:

Clackamas County's Board of Commissioners would like to express their support for the proposed expansion of the Metro urban growth boundary (UGB) to include approximately 40 acres of land that will ultimately be annexed into the City of Wilsonville and developed with a new middle school, primary school and city park.

These 40 acres are owned by the School District, but are currently under Clackamas County's jurisdiction. All of this land is zoned for exclusive farm use (EFU), which does not allow for the development of the proposed school and park facilities.

We urge you to approve the proposed UGB expansion to include these properties so that the School District and the City can provide their citizens with the needed school and park facilities and can provide the appropriate services to these facilities.

Sincerely,

John Ludlow, Chair
On Behalf of the Clackamas County Board of Commissioners

cc: Mike McCallister, Planning Director, Clackamas County (via email)

Tualatin Valley Fire & Rescue

www.tvfr.com

March 14, 2013

Keith Linden
Dull Olson Weekes Architects
708 SW Third Avenue, Suite 400
Portland, OR 97204

Subject: Advance Road UGB Amendment Request

Dear Keith:

Tualatin Valley Fire & Rescue appreciates the opportunity to comment on the Urban Growth Boundary major amendment submitted by the West Linn-Wilsonville School District. We are supportive of the request and confident in our ability to serve the proposed schools and sport fields. We appreciate the efforts made by both the school district and the City of Wilsonville to involve the community in concept planning for the site. Presuming a favorable decision from Metro, we look forward to again working collaboratively with both entities to ensure that more detailed planning takes emergency access and other life safety factors into account.

Respectfully,

W. Peck

Walter C. Peck
Planning Chief

Cc: Mike Duyck, Fire Chief
Brian Sherrard, Division Chief, South Operating Center

REQUEST FOR COMMENT FROM SERVICE PROVIDER

(Part I to be completed by applicant and submitted to each service provider. Part II to be completed by the service provider and returned to the applicant to be included in the application package.)

PART I

To: CITY OF WILSONVILLE

Name of Service Provider

From: WEST LINN - WILSONVILLE SCHOOL DISTRICT

Name of Applicant

Attached is a copy of an application for an amendment to the Metro Urban Growth Boundary (UGB). Please review this application and return your comments on it to the applicant as soon as possible, but **NO LATER THAN** _____.

In general, land placed inside the UGB will develop to an average residential density of ten or more units per net buildable acre or for urban commercial or industrial use, as determined by local zoning. Land outside the UGB cannot be served by sewer, and generally, cannot be developed at more than one unit to the net acre. In reviewing this petition, please consider: (1) whether its approval would make it more efficient (less expensive) or less efficient (more expensive) to serve other, adjacent areas for which service is planned or expected; and (2) whether there would be an orderly and economic way to extend your service to the area included in the petition if the petition were approved.

Thank you for your help. Please contact _____ at _____ regarding any specific questions on the application. Please call the Regional Planning Department at Metro, 503-797-1839, if you have any general questions on the UGB amendment process.

PART II

I have reviewed the attached application for an amendment to Metro's UGB. In reviewing the application, I have reached the following conclusions (mark an "X" in the appropriate space and indicate your reasons):

1. Approval of the application would make it __ more efficient (less expensive on a per unit basis), __ less efficient (more expensive on a per unit basis), or X would have no efficiency impact (same expense on a per unit basis) to serve other adjacent areas inside the UGB for which service is planned and expected, for the following reasons:

THE CITY HAS SUFFICIENT CAPACITY IN BOTH OUR WATER SYSTEM AND OUR SANITARY SYSTEM TO PROVIDE SERVICE TO THE PROPOSED 40 ACRE SITE.

2. If the application were approved, the area X could, or __ could not be served by us in an orderly and economic fashion, for the following reasons:

THE CITY HAS A 12" WATER MAIN AND 8" SEWER MAIN THAT COULD BE EXTENDED TO SERVICE THE PROPOSED 40 ACRE SITE.

3. My position on the application is:

X I Support Approval

_____ I Oppose Approval

_____ I am Neutral

_____ I Support with Conditions

Comments and explanation (explain any conditions):

Signed _____ Date 3/12/2013

Title DEPUTY CITY ENGINEER

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08/11/06

WILSONVILLE
AREA CHAMBER OF COMMERCE
A South Metro Business Advocate

March 15, 2013

Ms. Martha Bennett, Chief Operating Officer
Metro
600 NE Grand Ave. Portland,
OR 97232

RE: Letter of Support for Advance School District UGB Expansion Application

Dear Ms. Bennett,

The Wilsonville Area Chamber of Commerce supports the West Linn / Wilsonville School District application to expand the Metro Urban Growth Boundary (UGB) to facilitate siting two schools and a public park.

There have been multiple media reports recently about how Wilsonville continues to grow with business and industry. One of the most important pieces to supporting new business is education and a qualified work force. In Wilsonville, we are always working toward a balanced community, where people can live, work and play close to where they work.

We are fortunate to have many jobs, however many of the people who have those jobs live outside of the city. The chamber and city continue to partner to help make Wilsonville a great community, and by allowing this UGB expansion, we believe it will meet the needs of our community for years to come.

As a chamber we supported this minor UBG expansion in 2011 and we continue to support it today as a critical piece to master plan the growth of a city that is outpacing other cities in the Metro area, even during challenging economic times.

Sincerely,

Ray Phelps
President
Wilsonville Area Chamber of Commerce

Cc:

Tom Hughes, Metro Council President
Craig Dirksen, Metro Council
Carlotta Collette, Metro Council

METRO UGB MAJOR AMENDMENT APPLICATION
Advance Road Site
for
West Linn-Wilsonville School District
Supplemental Information and Findings
4.19.13

INTRODUCTION

Following the completeness review of the Advance Road UGB amendment application, the Metro staff suggested that the information and findings related to Metro Code Section 3.07.1425(C) should be supplemented to better address other Urban Reserve areas that could potentially be available to meet the West Linn-Wilsonville School District's needs.

This supplement includes the following two sections:

- Urban Reserve Areas within the School District
- Supplemental Findings – Metro Code Section 3.07.1425(C)

URBAN RESERVE AREAS WITHIN THE SCHOOL DISTRICT

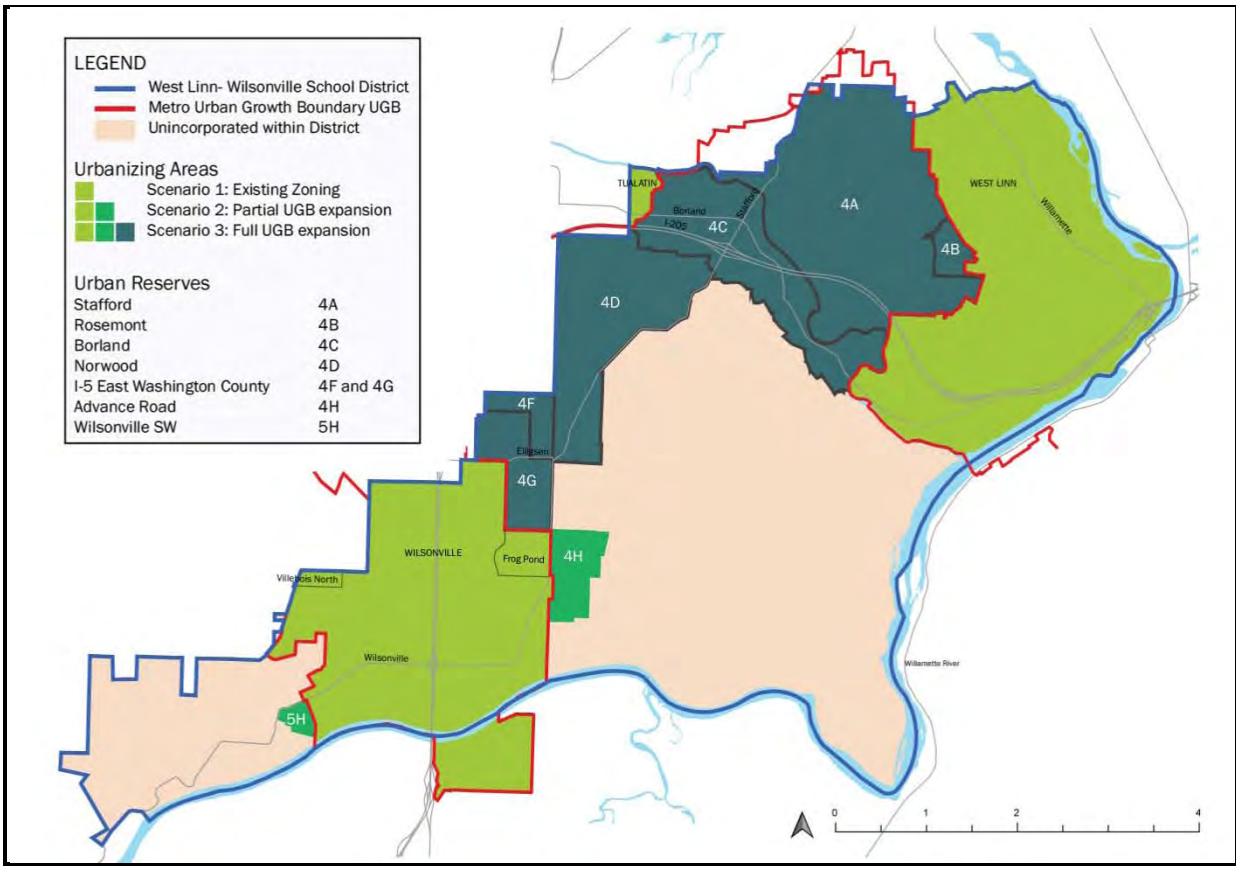
In addition to UR 4H Advance Road, there are seven other Urban Reserve areas, which are completely or partially within the West Linn-Wilsonville School District boundary. Figure 1-S shows the location of these Urban Reserve areas. Metro recently finalized its regional growth forecast for Urban Reserve areas in the region. Of the eight Urban Reserve areas in the district, 4H Advance Road and 5H Wilsonville Southwest are assumed in the Metro growth forecast to have urban infrastructure by 2025-2030. As described in the application, urban services and facilities are available to serve the 40-acre Advance Road site today. This infrastructure availability for UR 4H and 5H is well ahead of the remaining six Urban Reserve areas, which are expected to have urban infrastructure after 2035 (Appendix A-S for Metro Map "Urban Reserves Capacity and Infrastructure Timing").

The district used the Metro growth forecast In the West Linn-Wilsonville School District Long Range Plan (Appendix A) to estimate the rate and location of future residential development and enrollment. The Long Range Plan considers three scenarios, which are based upon the likely phasing of urbanization:

- ***Scenario 1 –*** Existing Zoning within Existing UGB
- ***Scenario 2 –*** Scenario 1, Plus Partial Urban Reserve Urbanization within 5-10 Years
- ***Scenario 3 –*** Scenario 2, Plus Urbanization of all Urban Reserve Areas

Understanding that urban facilities and services are a prerequisite for establishing a new school, the district has naturally focused its property acquisition attention in areas with the potential to be served in the near-term. Because of the extremely long lead times for properties in Urban Reserve areas 4A Stafford, 4B Rosemont, 4C Borland, 4D Norwood, and 4F and 4G East Washington County, the district has not seriously considered properties in these areas. In addition to availability, the district always strives to locate schools in areas that will be proximate to the students they will serve.

Figure 1-S – Urban Reserve Areas



SUPPLEMENTAL FINDINGS – METRO CODE SECTION 3.07.1425(C)

Metro Code Section 3.07.1425(C) was originally addressed in the application. Section (C) states:

C. If the Council determines there is a need to amend the UGB, the Council shall evaluate areas designated urban reserve for possible addition to the UGB and shall determine which areas better meet the need considering the following factors:

Metro staff determined that the findings in the application did not fully evaluate other designated Urban Reserve areas within the district. As noted above, there are eight Urban Reserve areas within the district. The 4H Advance Road site is compared with the other seven Urban Reserve areas in Table 1-S using the nine factors in Section 3.07.1425(C). Summary findings are provided following the table.

Table 1-S
Site Evaluation and Comparison

METRO CODE	URBAN RESERVE AREAS WITHIN WEST LINN-WILSONVILLE SCHOOL DISTRICT*				
SECTION 3.07.1425(C) FACTORS	**4A STAFFORD, 4B ROSEMONT, 4C BORLAND, AND 4D NORWOOD**	**4F/G E. WASHINGTON CO.**	**4H ADVANCE**	**5H WILSONVILLE SW**	**GENERAL COMMENTS**
1. Efficient accommodation of identified land needs.	These Urban Reserve areas are not located near the major enrollment growth areas in Wilsonville and two middle schools (Rosemont Ridge next to UR 4B and Athey Cr. located in UR 4C) already serve these areas.	Although enrollment growth may be expected as these and nearby URs develop in 20+ years, there is little existing enrollment demand because nearby urban land in Wilsonville is primarily designated for commercial and industrial use.	This is an efficient location to serve enrollment growth areas and complement the location of Wood Middle School on the west side of the city.	This is not an efficient location because of its close proximity to Wood Middle School on the north side of Wilsonville Road.	Of the eligible Urban Reserve areas only the Advance Road site is in a location that will efficiently provide school facilities needed in the short-term by district residents.
2. Orderly and economic provision of public facilities and services; (Includes: water, waste water, storm water, transportation, police/public safety, fire, parks, schools).	Metro estimates urban infrastructure will be available around 2045. These areas have not had any detailed planning/engineering analysis regarding urban infrastructure by the cities of Wilsonville, Tualatin, or West Linn. In some cases, the potential service providers have not yet been identified. Extending urban infrastructure and providing urban services to any of these areas in the near-term would be cost-prohibitive, even if service delivery and governance issues could be resolved. Locating a middle school in the near-term in any of these areas would not represent "orderly" provision of educational services because Athey Cr. and Rosemont Ridge middle schools currently serve these areas. The educational and recreational needs in Wilsonville would not be addressed.	Metro estimates urban infrastructure will be available around 2035 to 2040. The city of Wilsonville has not done any detailed infrastructure analysis or design. Water and sanitary sewer would need to come from the south through Frog Pond, which does not have a concept plan.	Metro estimates urban infrastructure will be available around 2025 to 2030. While utility capacity is not sufficient to serve all of this area (especially north of Advance Road), adequate infrastructure capacities for the 40-acre site are available today.	Metro estimates urban infrastructure will be available around 2025 to 2030. This site will require a lift station to provide sanitary sewer. This location near Wood Middle School would create overlapping attendance areas and a poor service for the eastern portion of Wilsonville.	This factor is the key reason why UR 4A – 4D and 4F and 4G will not work for providing timely school capacity for growing enrollment. They will be in no position to provide urban infrastructure for at least two decades. In addition, the rural road system, which services these areas, would be inadequate to accommodate additional traffic associated with a middle and primary school campus.
3. Comparative environmental, energy, economic and social consequences.	Specific properties have not been evaluated, but it is assumed that sites could be assembled and developed with minimal adverse impacts to sensitive lands. Negative environmental, energy, economic and social impacts would be anticipated due to longer bussing and driving distances associated with having three middle schools (Athey Cr., Rosemont & new school) close together and relatively distant from the areas with the highest existing and future enrollment demand in Wilsonville. The middle school would also not function as a community center in these relatively remote locations.	Specific properties have not been evaluated, but it is assumed that sites could be assembled and developed with minimal adverse impacts to sensitive lands. These areas are well served by Athey Cr. Middle School. Similar to UR 4A-4D, these areas would have similar adverse environmental, energy, economic, and social impacts.	As noted in the application, the only environmentally sensitive land on the site is along the extreme western edge, and it can be avoided/enhanced as the site is developed. With normal street frontage and other transportation improvements, noted in the application, this site will be capable of accommodating multi-modal access to the schools and park. Because less bussing/driving will be necessary, this site will have the most positive outcomes related to this factor.	Although this site has not been fully analyzed, it appears that the wooded and potentially sensitive lands could be avoided and the site appropriately developed. Because it would not be located near the students it needs to serve, a school at this site would have similar negative impacts to UR 4A-4D and 5F and 5G.	Environmentally, all of the Urban Reserve areas either have, or are assumed to have sites that can be appropriately developed for school use. However, the alternative Urban Reserves to Advance Road would require more bussing/driving. The relative remoteness would translate into greater air quality degradation, more energy use, and higher operational cost (esp. bussing) for the district, employees, and the public (driving). Socially, remote locations would not be able to function effectively as community centers for residential neighborhoods.
4. Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on land outside the UGB designated for agriculture or forestry pursuant to a statewide planning goal.	If a school site could be developed, it would likely involve converting EFU land and/or land adjacent to agricultural activities. A school campus would represent an island of urban development and activity that could be potentially disruptive to nearby agricultural uses. Additional traffic and school-related activities are generally regarded to have adverse impacts on the viability of agricultural activity.	Same as 4A-4D to the left.	As noted in the application, development of the Advance Road site, bordered by the city limit and roads on three sides and limited agricultural use in the vicinity, would well buffered from agricultural and forestry lands.	This site, which borders the city limit and Wilsonville Road, would provide similar opportunities to the Advance Road site to buffer urban uses from resource lands. However, this site and the land to the west are actively farmed.	The Advance Road site is more consistent with this factor than the alternative Urban Reserve areas, because it will be the farthest removed from existing agricultural uses and Rural Reserves designated for long-term agricultural activity.
5. Equitable and efficient distribution of housing and employment opportunities throughout the region.	This factor is not really applicable because a school site does not involve sufficient acreage to significantly affect housing and employment opportunities.	Same as 4A-4D to the left.	Same as 4A-4D to the left.	Same as 4A-4D to the left.	The location of a middle and primary school campus and community park will not require enough land to affect the overall distribution of housing and employment opportunities.

METRO CODE	URBAN RESERVE AREAS WITHIN WEST LINN-WILSONVILLE SCHOOL DISTRICT*				
SECTION 3.07.1425(C) FACTORS	4A STAFFORD, 4B ROSEMONT, 4C BORLAND, AND 4D NORWOOD	4F/G E. WASHINGTON CO.	4H ADVANCE	5H WILSONVILLE SW	GENERAL COMMENTS
6. Contribution to the purposes of Centers and Corridors.	None of these Urban Reserve areas area located near a center or corridor. All possible locations within these areas would be over one mile from town centers in Wilsonville, Tualatin, Lake Grove, Lake Oswego, and West Linn. The only corridor remotely close to these areas is along I-5 in Wilsonville. A school located in any of these areas would not support these town centers or corridors.	The Wilsonville I-5 corridor would be within a mile of these areas, but the nearby land in the city is intended for commercial and industrial use, and schools are not needed to support these types of land uses.	This site is approximately one mile east of the Wilsonville town center. So although it is somewhat distant, having a primary/middle school campus and community park within a reasonable distance will help support the viability of this town center by making it more attractive for residential use.	This site is more distant from the Wilsonville town center compared to Advance Road. It could have a very modest supportive influence on the town center if developed for schools and a park.	The Advance Road site is the closest of the Urban Reserve areas to a town center. The proposed school campus and community park will help contribute to the ultimate success of the Wilsonville town center by providing quality educational and recreational facilities within a short distance of town center households.
7. Protection of farmland that is most important for the continuation of commercial agriculture in the region.	This comparison and evaluation involves Urban Reserves, and by virtue of this designation, it is only a question of when – not if – they will be converted from rural and resource use to urban use. The most important farmland in the region is designated as Rural Reserve. Therefore, locating a school campus and/or community park in these Urban Reserve areas would not conflict with this factor.	Same as 4A-4D to the left.	As noted in the application, there is virtually no active agricultural activity in the immediate vicinity of the proposed school park site. In addition, this site is surrounded by land in UR 4H or the city of Wilsonville, meaning that it will remain distant from Rural Reserve land earmarked for long-term protection.	This UR area includes land that is actively farmed and the nearby land to the west is designated in the Metro 2040 Growth Concept as park and Rural Reserve. It appears that a suitable buffer could be provided between future urban use and the Rural Reserve land to the west.	The Advance Road site, located adjacent to the city and a significant distance from any Rural Reserves, will enable complete protection of commercial agricultural activities over the long-term. In addition to separating the school use from agricultural activity, this site will generally have less bussing and driving through farming areas, compared to other areas, due to its close proximity to the students in Wilsonville.
8. Avoidance of conflict with regionally significant fish and wildlife habitat.	Specific properties have not been evaluated, but it is assumed that sites could be assembled and developed with minimal adverse impacts on fish and wildlife habitat.	Same as 4A-4D to the left.	As noted above, the extreme western edge of this site contains important habitat that should be preserved. This can be done effectively as demonstrated in the concept plan for the property.	Same as the response for UR 4A-4D.	The Advance Road site will clearly be able to accommodate the schools and community park. The other Urban Reserve areas will probably be able to accomplish this also for schools. With the possible exception of UR 5H, the other Urban Reserves would not be in the appropriate location or jurisdiction to support a Wilsonville community park.
9. Clear transition between urban and rural lands, using natural and built features to mark the transition.	For UR 4A and 4B, Rosemont Road provides the general delineation between the urban development in West Linn and the rural and agricultural uses in the Stafford Basin. Development of a school site on the west side of the road would encroach upon existing rural and agricultural uses, at least until UR 4A and 4B urbanize. For UR 4C and 4D, boundaries between urban and rural uses are typically not as distinct. Providing a clear transition between a school campus and nearby rural uses in these areas would be much more difficult to achieve. Potentially this could be done by locating adjacent to the existing UGB, but that would place the school campus on the edge of the district, and significant distances from the students to be served to the south.	There isn't a distinct road boundary between urban and rural uses, and it is likely that a school site would be amongst rural and agricultural uses in a similar fashion to 4A-4D. As noted previously, locations adjacent to the existing UGB would not be near the students to be served.	Initially, the boundary between urban use (the schools and park) and rural uses will be Advance Road and 60th Avenue. As UR 4H urbanizes, the proposed school park site will be located within an urban neighborhood, well separated from Rural Reserve areas intended to long-term agricultural use.	This site is similar to the Advance Road site in that it is adjacent to distinct boundaries on three sides - the city to the east and Wilsonville Road to the north. It would be expected that a reasonable transition could be provided from the Rural Reserve areas to the west.	As noted above regarding farm land protection, the Advance Road site is superior to the alternatives, being surrounded by UR 4H and the city of Wilsonville and to ultimately be situated in the middle of an urban neighborhood that will be well separated from designated Rural Reserve areas.

* See Figure 1-S

SUPPLEMENTAL FINDINGS – METRO CODE SECTION 3.07.1425(C)

The findings below include the identical findings presented in the primary application plus supplemental findings pertaining to the alternative urban reserve locations in the district.

C. If the Council determines there is a need to amend the UGB, the Council shall evaluate areas designated urban reserve for possible addition to the UGB and shall determine which areas better meet the need considering the following factors:

1. Efficient accommodation of identified land needs;

Response: The district and city have identified needs for additional school and park capacity to accommodate current residents and anticipated population growth. The West Linn-Wilsonville School District Long Range Plan in Appendix A documents this growing middle school capacity deficit. Relative to the existing school facilities in the Wilsonville area, the Advance Road site represents an efficient location because:

- The other middle school in Wilsonville (Wood) is located on the west side of I-5, and a second middle school located in the eastern portion of the city will facilitate convenient access for students in Wilsonville and unincorporated Clackamas County to the east.
- City utilities are available to serve this site, which is adjacent to the city limit and only a short distance from utility lines that have sufficient capacity to accommodate a school campus/community park.
- Direct and efficient access will be available via major streets, which are intended to accommodate significant motor vehicle, pedestrian, bicycle, and transit needs. In addition, the Wilsonville TSP and Parks and Recreation Master Plan call for a pathway connection between Wilsonville Road and this site.
- It is in an optimal location to serve future development in UR 4H, Frog Pond, and other designated Urban Reserve areas (Norwood and I-5 East Washington County) to the north.
- Utilizing a 40-acre site to ultimately accommodate two schools and a community park will allow much greater efficiency than locating each use on a separate site. The proposed site will allow for shared parking and access, more efficient programming for school physical education and school/community sports, and reduced operations and maintenance costs. The district and city have a long history of partnering to maximize public funding of educational and community programs.

Relative to other Urban Reserve areas, which are potentially available, the Advance Road site is superior primarily due to location and timing. As noted in Table 1-S, UR 4A Stafford, 4B Rosemont, 4C Borland, and 4D Norwood are all appropriately served by two middle schools – Athey Creek (located in 4C) and Rosemont Ridge (located immediately south of 4B). The provision of urban services is over 20 years away, and waiting that long is simply not an option for the district given the current and forecast enrollment pressures.

UR 4F and 4G East Washington County are well served by Athey Creek Middle School. Perhaps more important, the north end of Wilsonville (and this portion of the district) is largely dedicated to commercial and industrial use, meaning there are few students to serve in this vicinity. With the eventual concept planning and urbanization of these Urban Reserve areas, this could change, but not for an estimated 20 years or more. UR 5H Wilsonville Southwest is in an area served by Wood Middle

School, which is located nearby on the north side of Wilsonville Road. Another middle school in this location would not efficiently serve the students in the eastern portion of Wilsonville.

2. *Orderly and economic provision of public facilities and services; (Includes: water, waste water, storm water, transportation, police/public safety, fire, parks, schools)*

Response: As noted in Section III, sufficient capacity is available to provide urban facilities and services:

- Water and sanitary sewer facilities currently have adequate capacity to serve the site.
- Storm water capacity will be provided by on-site facilities releasing storm water into Meridian Creek according to city standards.
- Transportation facilities have adequate capacity to serve the site. As noted above and in the appendices, improvements will need to be made as the site is developed.
- Police/public safety services can be provided by the city and county.
- Fire/emergency services are available from TVFR.
- Park and recreation capacity will be greatly enhanced to address the significant population growth, which has occurred and will continue.
- School capacity is currently deficient at the middle school level, and additional pressure will be felt by the district at the primary and middle school level in the coming years. Securing and developing this site will address these short- and long-term issues.

The Advance Road site fully satisfies this factor because urban facilities and services can be appropriately provided today. This is generally true of UR 5H Wilsonville Southwest, however, an expensive lift station would be required. Public facilities and services are a minimum of 20 years away for the remaining six Urban Reserve areas. Concept planning has not been initiated for these areas, and the cities in a position to provide urban facilities and services are not ready to plan these areas yet, let alone serve them.

3. *Comparative environmental, energy, economic and social consequences.*

Response: The consequences of bringing this site into the UGB compares favorably with the other candidate sites reviewed in Figure 13 and Table 4.

- Environmental Consequences. Other than the Meridian Creek corridor located on the extreme west edge of the site, it is devoid of any environmental constraints. Because of its location adjacent to the city, facilities and services can be efficiently provided, and the site is located to enable efficient transportation to and from the site for students and park users alike. The shared use of the site for schools and a community park allow for efficient use of land and reduced impervious surfaces – especially with shared access and parking.
- Energy Consequences. As noted above, the site is well-served by transportation facilities. With the development of the site additional improvements will be made to facilitate multi-modal access to the site, including street improvements, pathway improvements, and potential SMART bus service extension. As the remainder of UR 4H urbanizes, the site will be centrally located within a pedestrian- and bicycle-friendly neighborhood, reducing the need for motorized access to the school campus and the community park.
- Economic Consequences. The cost to develop this property, with its relatively flat topography, access to utilities, and the ability to share common facilities between two schools and a

community park, make this site significantly more economical than any of the other potential sites. The cost of providing urban facilities and services will be comparable to providing similar levels of service within the existing UGB. As noted in Section III, facilities and services are readily available to the site.

- Social Consequences. Quality education and recreational opportunities are essential elements for building and maintaining successful communities. The proposed UGB expansion site represents a location that can provide equitable access to quality educational and recreational facilities through the district and city of Wilsonville.

The Advance Road site will be capable of providing positive consequences related to this factor. As explained in Table 1-S, the primary reason for this is the other Urban Reserve sites are removed from the areas where school capacity is needed. The northern Urban Reserve areas (4A-4D and 5F and 5G) are currently well-served by two middle schools in the vicinity. UR 5H is located in the southwestern portion of the district, within ½ mile of Wood Middle School and Boones Ferry Primary School. Similar to the other alternative Urban Reserve areas, UR 5H would fail to provide school capacity near the students to be served in the eastern portion of Wilsonville.

This school location/student disconnect, which characterizes all of the Urban Reserve alternatives to the Advance Road site, would lead to comparatively greater air quality/green house gas impacts due to the increased bussing and driving necessary to connect students, faculty, and parents from their homes to the school. The social benefits of having an easily accessible community center and park will not be fulfilled in the more distant Urban Reserve areas. Located adjacent to current students and future residential growth areas, the Advance Road site is superior to the alternative Urban Reserve locations.

4. *Compatibility of proposed urban uses with nearby agricultural and forest activities occurring on land outside the UGB designated for agriculture or forestry pursuant to a statewide planning goal.*

Response: As noted in Section III, the surrounding uses within UR 4H do not include significant active farming activity. This relative absence of agricultural value and activity along with proximity to the city of Wilsonville led to its designation as an Urban Reserve rather than a Rural Reserve. The larger parcels typically have grass fields and single family residences. Several of the smaller acreages have limited agricultural use, such as nursery stock and Christmas trees. Other farm crops or livestock are not evident on any of the properties surrounding the subject site. As UR 4H is urbanized, the site will be within an urban neighborhood and not on the edge of a more permanent boundary between urban and agricultural activities.

As described in Table 1-S, the Advance Road site is not near any active farm or forest activities on the surrounding remainder of UR 4H. Ultimately, urban development will surround the site. UR 5H is similarly buffered by urban and park/open space areas, but it will be immediately east of land designated as Rural Reserve. The remaining Urban Reserve areas (4A-4D and 5F and 5G) will generally not afford as many opportunities to separate a school from surrounding rural uses. Like the Advance Road site, these areas will eventually urbanize, but over a significantly long timeframe.

5. *Equitable and efficient distribution of housing and employment opportunities throughout the region;*

Response: This criterion is not directly relevant to the location of school and park facilities. However, the location of schools and a community park on the Advance Road site will provide equitable and efficient distribution of school and park facilities to serve existing and future residential neighborhoods. As explained in Table 1-S, this equitable and efficient distribution would not be possible by locating in one of the alternative Urban Reserve areas.

6. *Contribution to the purposes of Centers and Corridors;*

Response: The site is not within a Center or Corridor but it is near the Wilsonville Town Center, which is zoned to accommodate mixed use development. As a relatively low intensity use, this proposed school campus and community park is well located to support the more intensive uses that are more appropriately situated within the Town Center. The alternative Urban Reserve areas are all situated farther from a town center and would not be expected make any meaningful contribution to their development.

7. *Protection of farmland that is most important for the continuation of commercial agriculture in the region;*

Response: With the designation of the Advance Road area as an Urban Reserve area, Metro and Clackamas County have determined that this area is clearly not critical for the continuation of commercial agriculture in the region. As noted in this application, there is very little agricultural activity occurring on the properties surrounding the site. Bringing this site into the UGB before the remainder of UR 4H will have no impact upon the future or viability of agriculture in the county or the region.

By virtue of their designation, all of the Urban Reserve areas in the district are not regarded as being important farmland in the long-term. So from this viewpoint, the Advance Road site offers a similar degree of protection for commercial agricultural uses as a location in the other Urban Reserve areas. The Advance Road site will clearly provide both a short-term separation from agricultural uses in UR 4H, and it will ultimately be within an urban neighborhood and far removed from Rural Reserve areas and the farmland they contain.

8. *Avoidance of conflict with regionally significant fish and wildlife habitat; and*

Response: As noted in this application, the property is well-suited for development because it is relatively flat with a minor drainage and environmentally sensitive area along the western edge of the site. The size and shape of the property will allow for development of school facilities, athletic fields, and a community park while keeping all of the identified sensitive areas intact.

As noted in this supplement, the district has not evaluated any potential school sites in the other Urban Reserve areas. For the purpose of these findings, it would be fair to assume that sites could be found in any of these areas that would also allow for appropriate habitat protection and enhancement.

9. *Clear transition between urban and rural lands, using natural and built features to mark the transition.*

Response: With its location adjacent to the Wilsonville city limit and its northern and eastern boundary largely defined by public roads, the site will have built features, which will provide a buffer and transition between an urban school campus/community park and nearby rural uses (Figure 2). Because UR 4H extends beyond the site, the significance of such a buffer will disappear as the remainder of this Urban Reserve area is transformed from rural to urban uses.

As noted in Table 1-S, retaining a clear distinction between urban and rural land will be more problematic in the alternative Urban Reserve areas. Establishing a school site in UR 4A and 4B will necessitate crossing the Rosemont Road "dividing line" into the rural area. Distinct boundaries, such as a road, tend to absent in UR 4C, 4D, 5F, and 5G, and therefore, a logical way to create an acceptable transition (also from the standpoint of urban facilities) would be to locate a school adjacent to the existing UGB. However, such locations would be far removed from the students who need to be served by the new educational facilities. Also, all of these northern Urban Reserve alternatives could not be used by Wilsonville to help satisfy demand for parks and recreational opportunities. A school in UR 5H could potentially provide a similar transition between urban and rural, but as indicated above, it would not be a good location for serving students.

APPENDIX A-S

Urban Reserves Capacity and Infrastructure Timing – Metro

Disclaimer:

This map is for research purposes only, and does not reflect policy decisions by any jurisdictional authority.

DRAFT

Code	Cap SFR	Cap MFR	Cap Total
1C	2,800	5,000	7,800
1D	0	0	0
1F	0	0	0
2A	4,100	7,200	11,300
3B	700	1,800	2,500
3C	700	1,600	2,300
3D	1,100	2,600	3,700
3F	700	1,700	2,400
3G	500	1,200	1,700
4A	5,600	12,300	17,900
4B	300	900	1,200
4C	1,800	4,400	6,200
4D	2,900	7,100	10,000
4E	2,100	5,300	7,400
4F	700	1,700	2,400
4G	1,600	4,100	5,700
4H	900	1,500	2,400
5A	200	600	800
5B	4,400	7,800	12,200
5D	1,200	2,200	3,400
5F	0	0	0
5G	400	1,000	1,400
5H	200	400	600
6A	5,900	10,000	15,900
6B	4,000	7,000	11,000
6C	1,700	3,600	5,300
6D	1,300	2,500	3,800
7A	800	1,600	2,400
7B	0	0	0
7C	500	800	1,300
7D	900	1,600	2,500
7E	0	0	0
8A	3,100	1,300	4,400
8B	0	0	0
8C	700	1,200	1,900
Total	51,800	100,000	151,800

Infrastructure Available

Phase 1 (2025,2030)	40,600 DU
Phase 2 (2035,2040)	45,500 DU
Phase 3 (2045)	65,600 DU
	151,700 DU

Industrial Only

Urban Reserves Capacity and Infrastructure Timing

MetroScope Jurisdiction Reviewed TAZ 'Gamma' Forecast

Urban Growth Boundary

Employment Zones

Note: the standard MetroScope employment zone boundaries have been adjusted to align with TAZs.

Metro Economic and Land Use Forecasting

City of WILSONVILLE in OREGON
Planning Division
29799 SW Town Center Lp. E
Wilsonville, OR 97070
503-682-4960

June 19, 2013

Ms. Martha Bennett, Chief Operating Officer
Metro
600 NE Grand Avenue
Portland, Oregon 97232

RE: Letter of Support for the West Linn-Wilsonville School District UGB Expansion Application

Dear Ms. Bennett,

The City of Wilsonville Planning Commission supports the West Linn-Wilsonville School District's request to expand the Urban Growth Boundary (UGB) to include the 40-acre Advance Road School and Community Park site.

As the City's long-range planning legislative advisory body, the Planning Commission has spent considerable time thoughtfully planning the future of the community, including the Advance Road site. The Planning Commission has spent years engaging the community and working on plans for future neighborhoods and recognizes the importance of the Advance Road School and Community Park as anchors of good planning. With upcoming projects to concept plan the Frog Pond and Advance Road area, the presence of a site in the UGB for schools and parks will provide an opportunity to deliver livable neighborhoods with important amenities consistent with community expectations for new neighborhoods.

Proactively planning for future schools will allow the School District to more adequately accommodate Wilsonville's growing student population and will greatly assist with campaigns to fund improvements to existing overcrowded schools. The future park site will allow the City to stay ahead of growing recreational demand by providing sites for active sports fields and recreational areas around the future schools. Both of these complimentary uses will benefit the creation of future neighborhoods.

Sincerely,

The Wilsonville Planning Commission

Ben Altman, Chair	Eric Postma, Vice-Chair	Ray Phelps	Marta McGuire
Al Levit	Peter Hurley	Phyllis Millan	

cc: Mayor Knapp and City Council
Bryan Cosgrove, City Manager
Tim Woodley, West Linn-Wilsonville School District

West Linn – Wilsonville School District

ADVANCE ROAD PROPERTY
Major UGB Amendment

Metro Hearings Officer

June 27, 2013

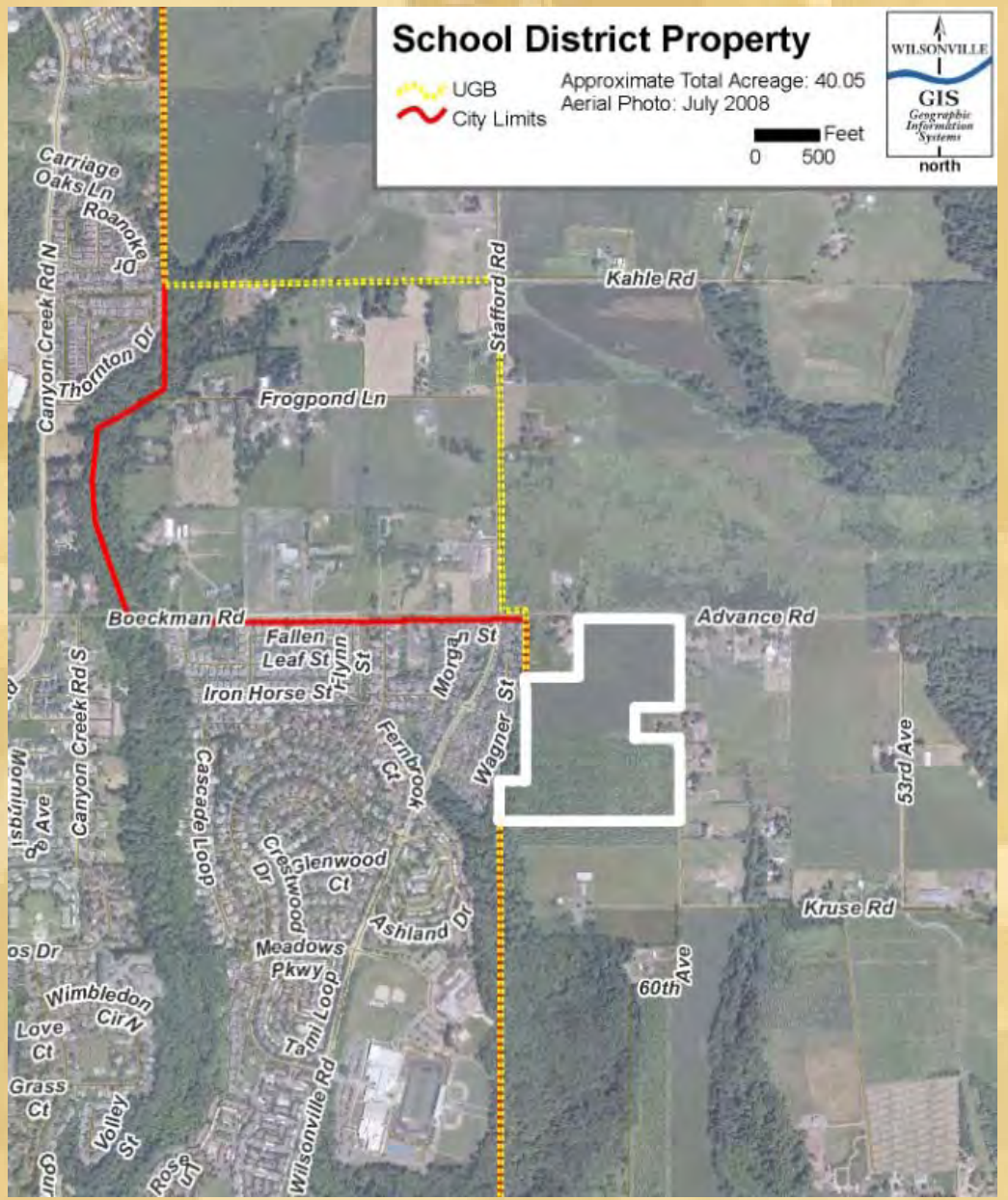
APPLICATION SUMMARY

Case	Major UGB Amendment
Petitioner	West Linn-Wilsonville School District
Proposal	To bring 40 acres into the UGB
Location	Advance Road, between city limit and 60th Avenue

VICINITY MAP

Advance Road Property:

- Immediately east of current UGB and city limit
- South of Advance Road
- East of 60th Avenue



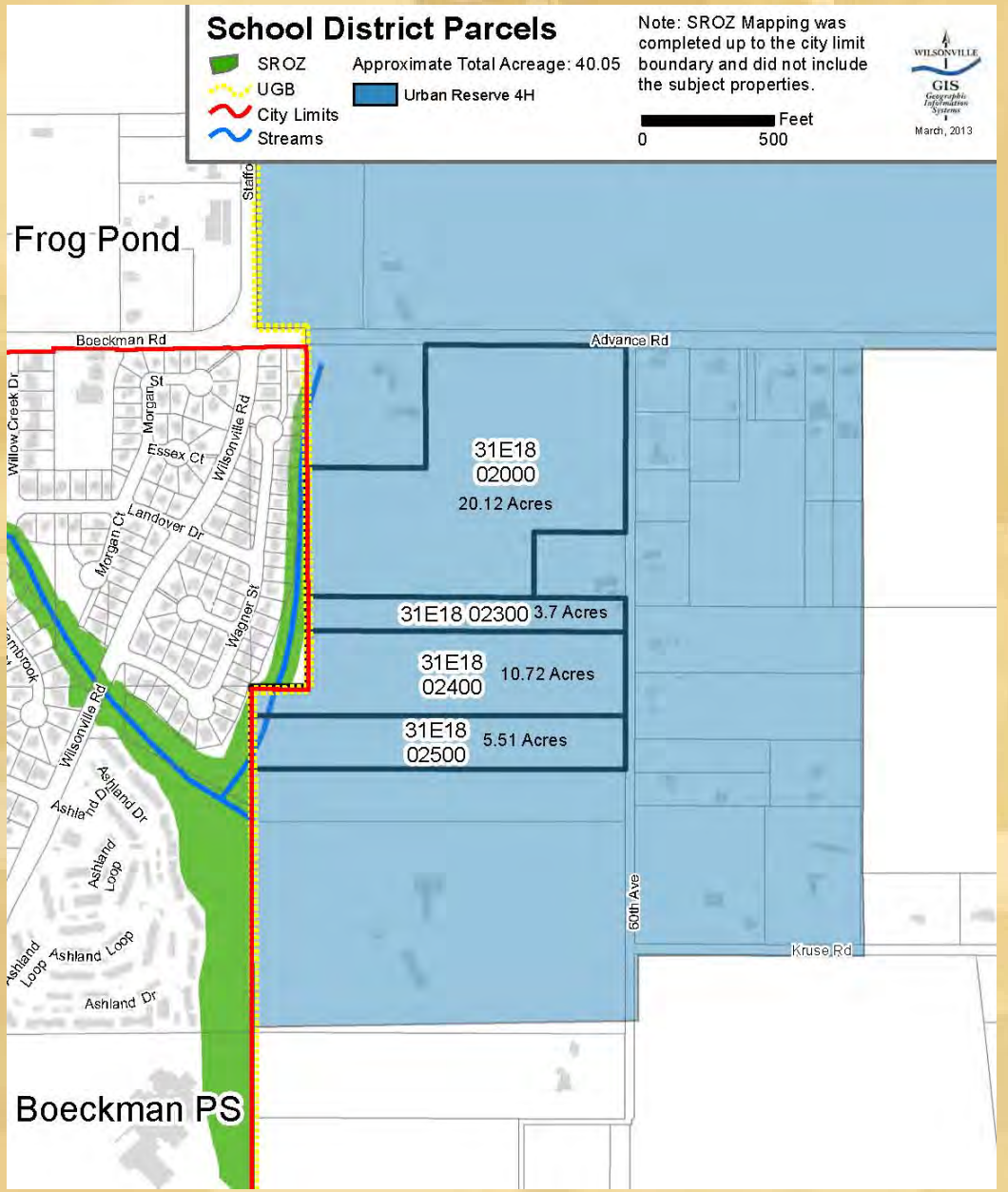
PROPOSAL DESCRIPTION

Primary & Middle School Campus	To accommodate forecast enrollment growth
Community Park	To meet rising recreational demand
Phased Development	School & park facilities to be built incrementally

SITE MAP

Advance Road Property:

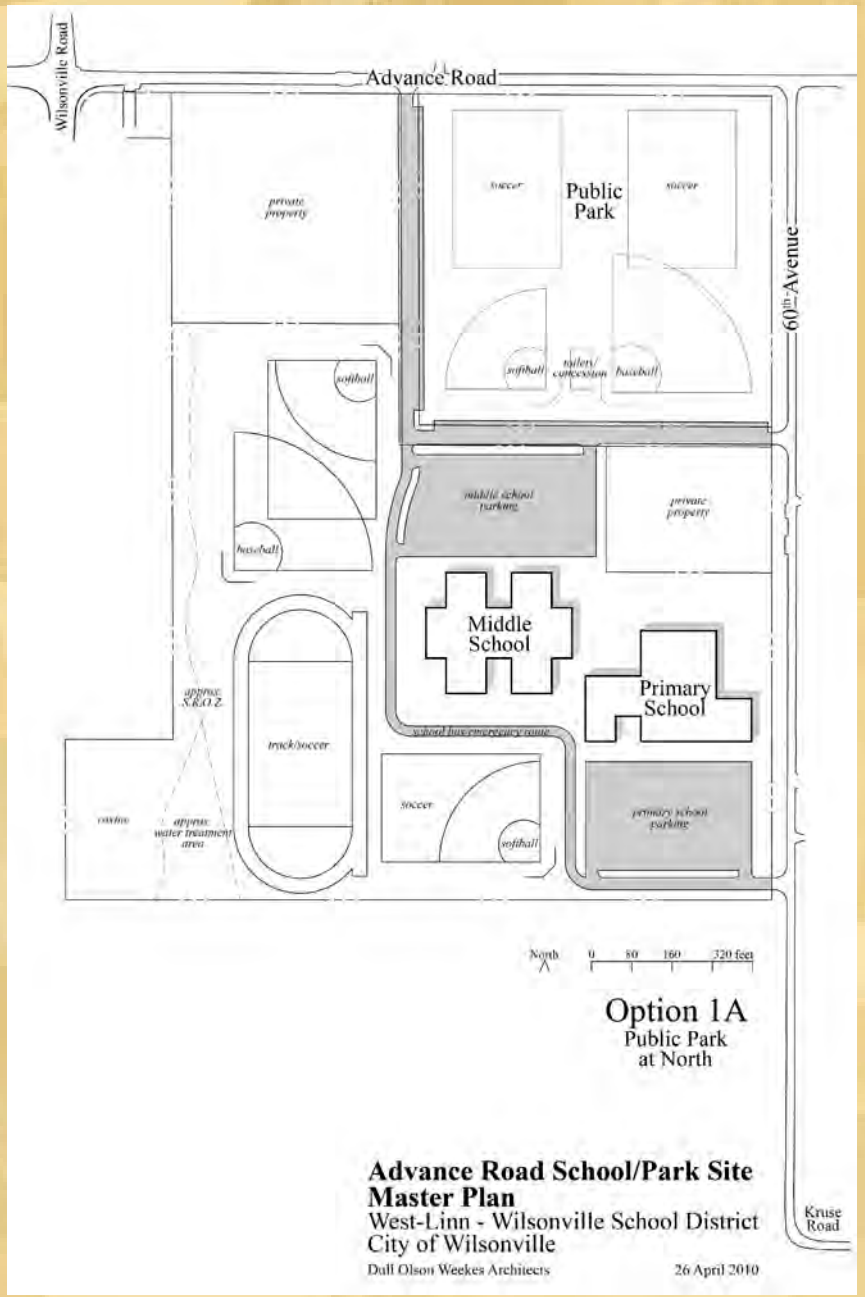
- 4 tax lots
- 40 acres
- Within Advance Road Urban Reserve 4H



CONCEPT PLAN

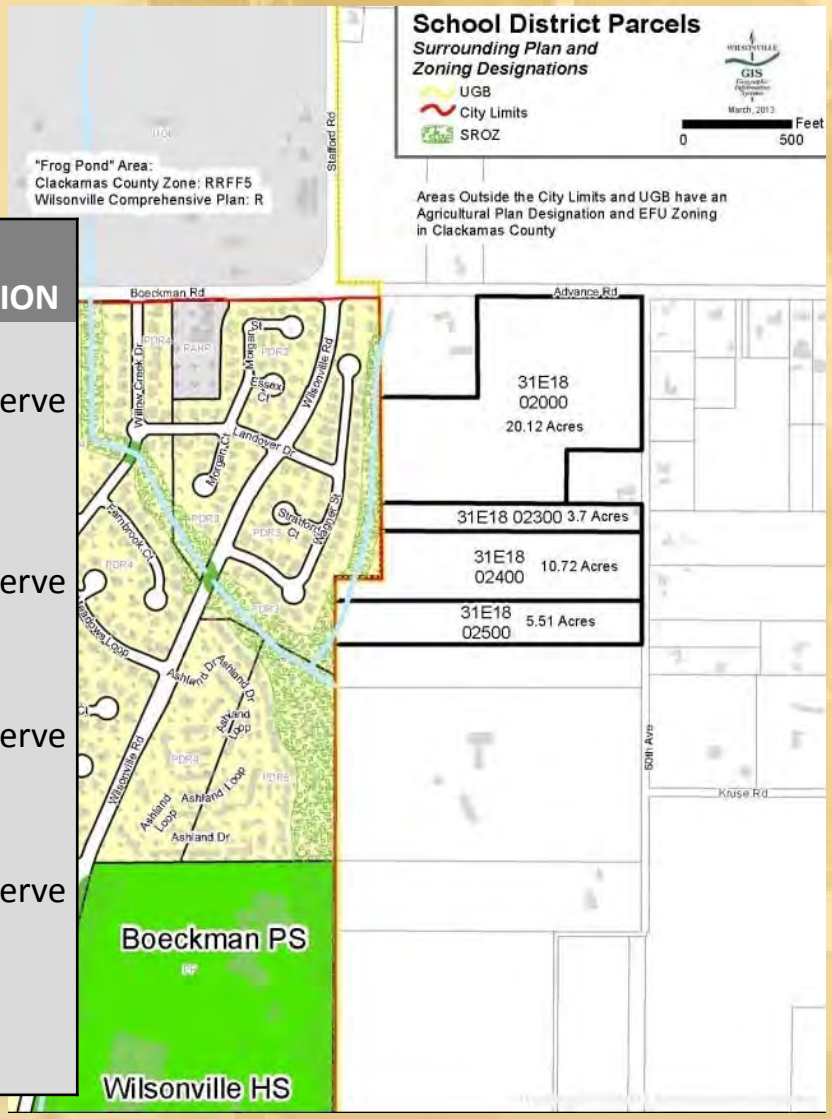
Joint District/City Plan:

- Primary & middle school campus (30 ac.)
- City community park (10 ac.)
- Promotes efficiency with shared parking/athletic fields
- Phased development



ZONING & LAND USE

PARCELS	ZONE DESIGNATION	LAND USE	METRO DESIGNATION
Subject Property	Clackamas Co. EFU	Open field and riparian area on extreme western edge	Urban Reserve Area 4H
North	Clackamas Co. EFU	Unfarmed land and rural residences	Urban Reserve Area 4H
East	Clackamas Co. EFU	Rural residences and minor agricultural use	Urban Reserve Area 4H
South	Clackamas Co. EFU	Rural residences and minor agricultural use	Urban Reserve Area 4H
West	Wilsonville PDR-3*	Single family residential	-

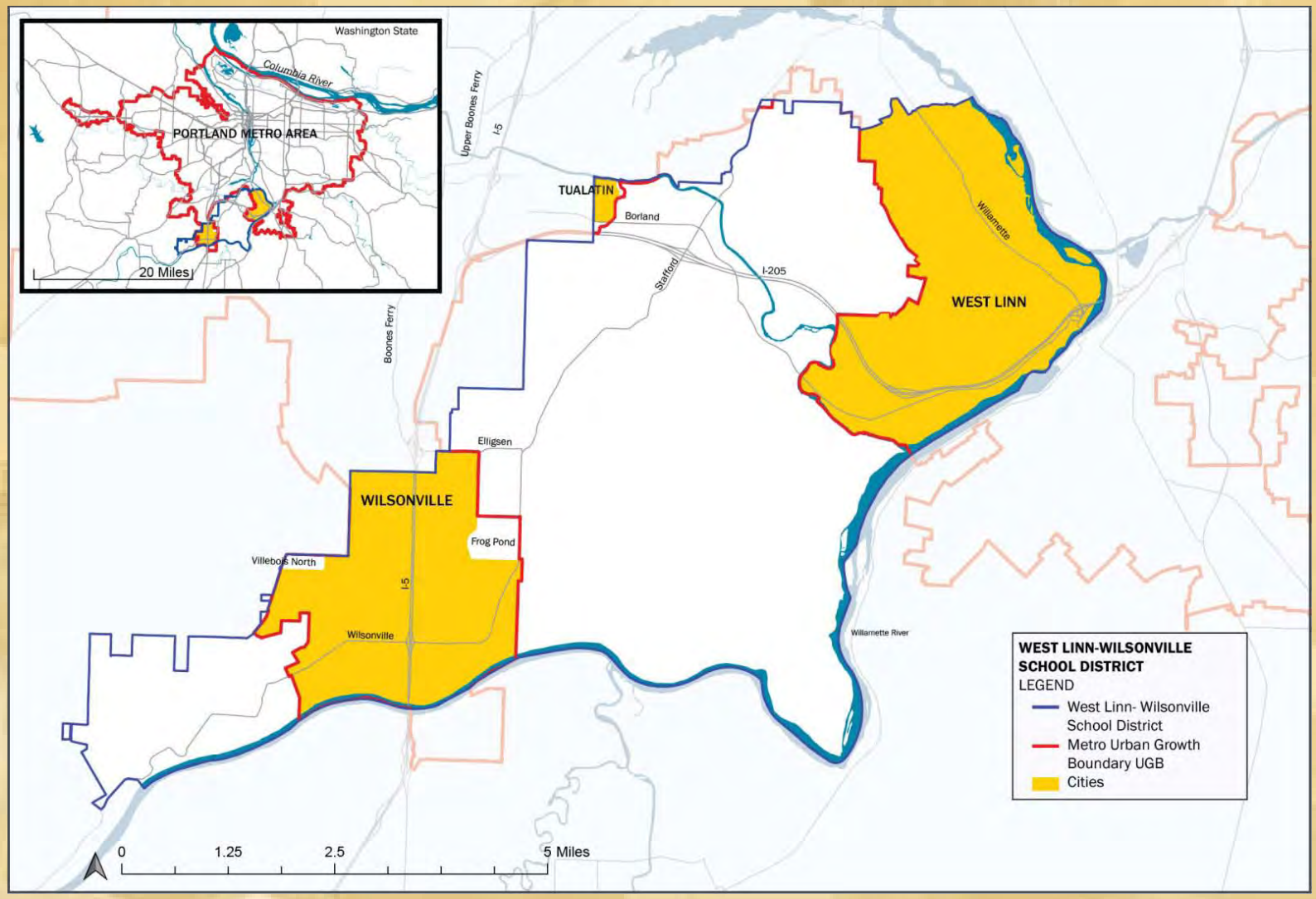


*PDR-3: Planned Development Residential 3 (avg. lot size of 7,000 sq. ft.)

PUBLIC FACILITIES & SERVICES

- Water
- Sanitary Sewer
- Storm Water
- Transportation
  - Major Streets
  - Pedestrian/Bicycle
  - Transit
- Fire Protection & Emergency Services
- Police
- Parks & Recreation

PURPOSE AND NEED



WEST LINN-WILSONVILLE SCHOOL DISTRICT

- 2013 enrollment – 8,660
- Schools – 9 primary, 3 middle & 2 high schools
- Capacity available at primary/high school levels
- Middle schools
  - Over capacity by 100 students district-wide
  - 129 students over capacity at Wood MS
- Future enrollment growth centered in Wilsonville

Middle Schools

Locations & attendance areas:

- Inza Wood
- Athey Creek
- Rosemont Ridge

LONG RANGE PLAN

Commitment to planning:

- 1st plan edition in 1996
- Multiple updates including 2013
- 3 parts –
  - Education philosophy & programs
  - School facilities
  - Capital improvements
- Anticipating facility needs is critical component

ENROLLMENT & CAPACITY

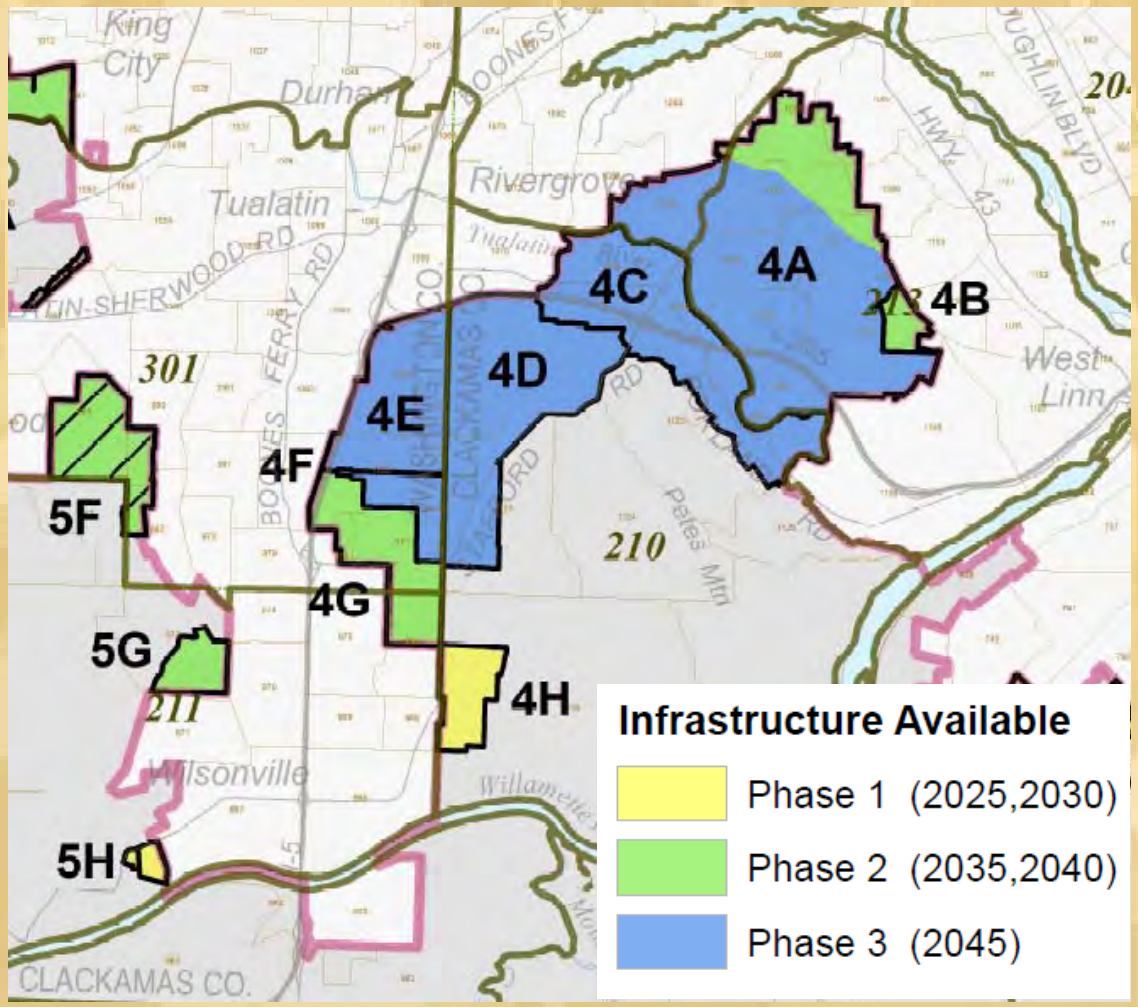
Long-term enrollment	Forecasts based upon Metro and local plans
Short-term forecasts	Evaluation of type & location of residential development
School capacity	Based on educational programs for each school

FUTURE GROWTH ASSUMPTIONS

Metro UGB Expansion Areas

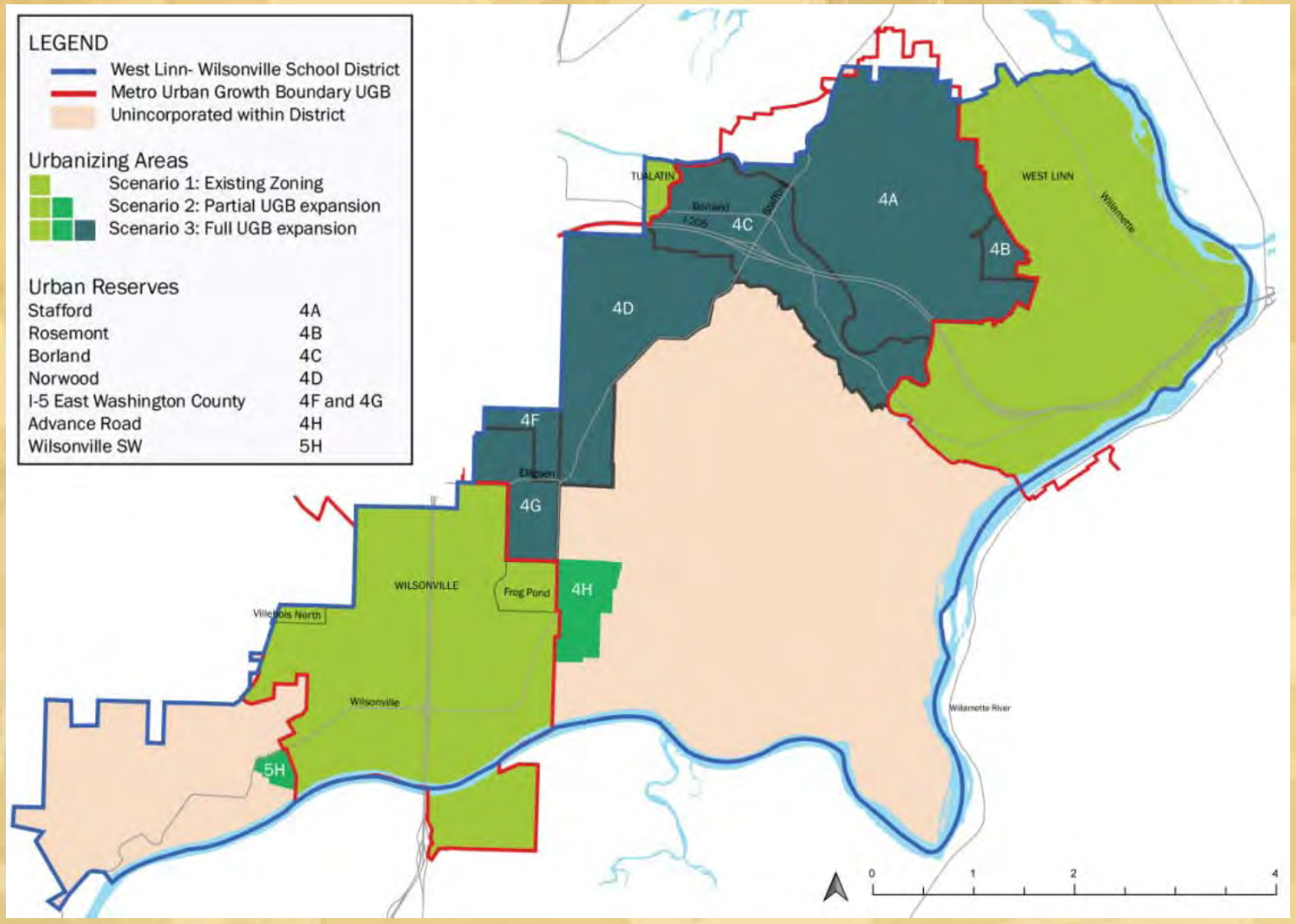
Urban Reserves:

- **4A** – Stafford
- **4B** – Rosemont
- **4C** – Borland
- **4D** – Norwood
- **4F/G** – E. Washington Co.
- **4H** – Advance Road
- **5H** – Wilsonville SW



FUTURE GROWTH ASSUMPTIONS

Future Enrollment Growth within the District



POTENTIAL SCHOOL SITES

SCHOOL TYPE	BUILDING FOOTPRINT	PARKING AND ACCESS	ATHLETIC FIELDS PLAYGROUNDS	TOTAL ACRES*	ENROLLMENT
Primary	1.5 – 2	2.5 – 3	6 -10	**10-15**	**450-550 (800 campus**)**
Middle	2-3	3-4	12-14	**17-21**	**600-800**

* Approximate usable acreage

** A primary school campus is an alternative design that would have land needs similar to a middle school. Boones Ferry Primary School is an example of this type of facility.

ENROLLMENT & CAPACITY

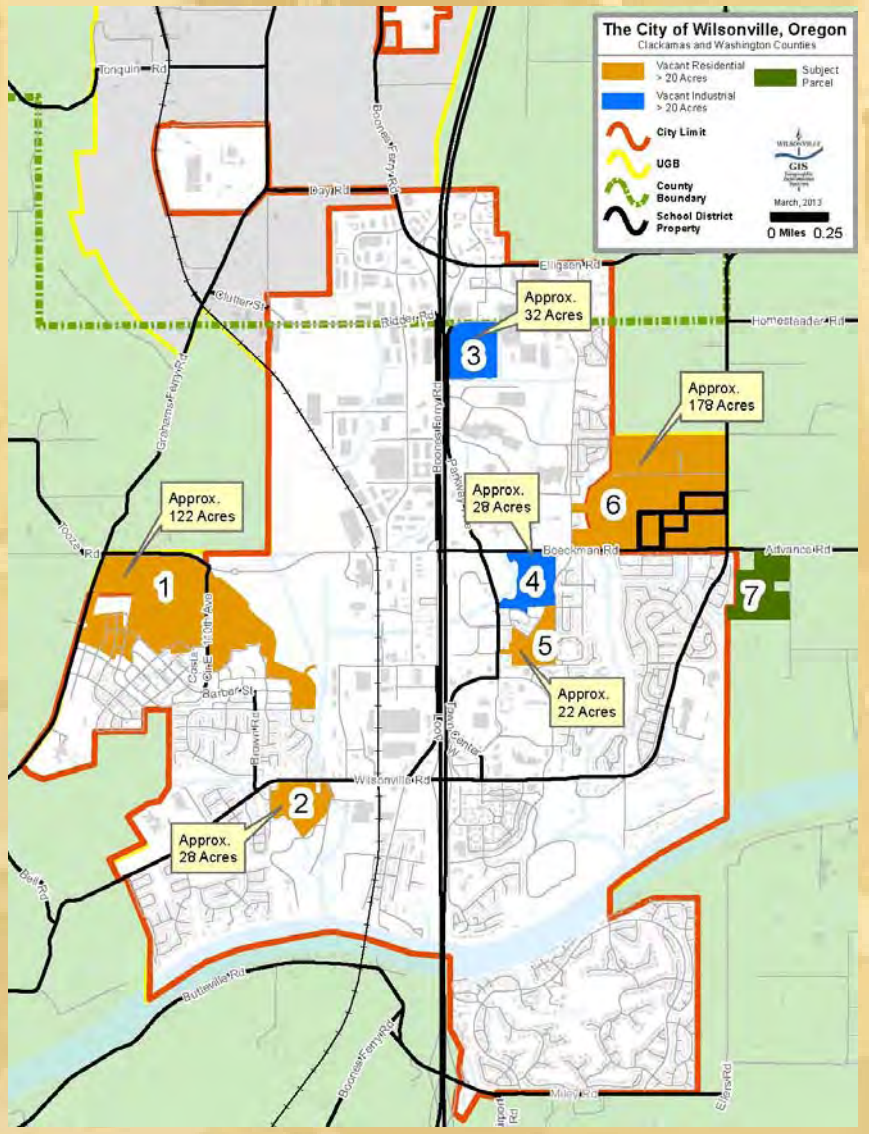
SCHOOL	CAPACITY	ENROLLMENT			PROJECTIONS*				
		2010	2011	2012	2013	2014	2015	2016	2017
MIDDLE									
Wood		**697**	**706**	**737**	**769**	**818**	**868**	**943**	**990**
Avail. Capacity	**640**			**-97**	**-129**	**-178**	**-228**	**-303**	**-350**
Athey Creek		566	602	607	534	515	481	495	485
Avail. Capacity	624			17	90	109	143	129	139
Rosemont Ridge		695	692	684	732	729	719	721	716
Avail. Capacity	668			-16	-64	-61	-51	-53	-48
Subtotal		1,958	2,000	2,028	2,034	2,062	2,068	2,159	2,191
Total Available Capacity (6-8)	**1,932**			**-96**	**-102**	**-130**	**-136**	**-227**	**-259**

* Projections assume that current school attendance areas remain unchanged.

POTENTIAL SCHOOL SITES

Wilsonville area:

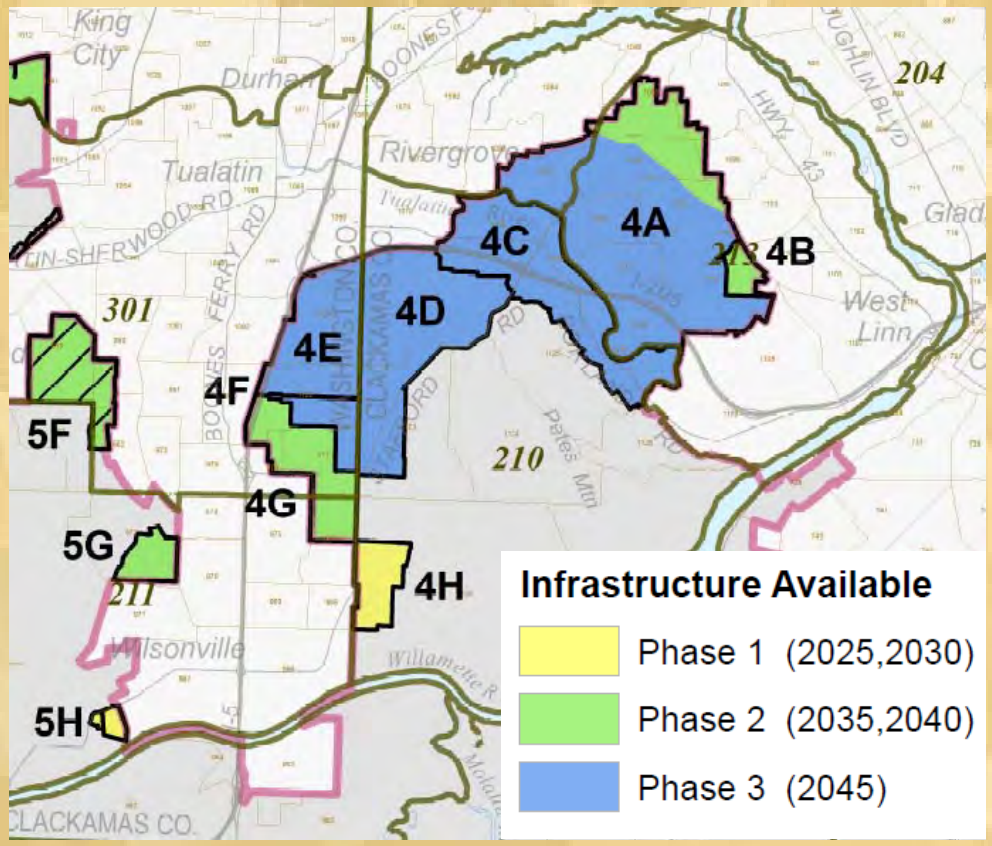
- Future enrollment growth concentrated in Wilsonville
- 20-acre minimum
- Primary considerations
  - Plan designations
  - Availability
  - Site character
  - Location
  - Urban facilities, services & transportation
- 7 potential sites evaluated
- *Advance Road site clearly the best*



POTENTIAL SCHOOL SITES

Urban Reserves in the District:

- **5H** too close to Wood MS
- Availability is major *issue* for other Urban Reserves
- **4A – 4D** too close to Athey Creek & Rosemont MS
- **4E – 4G** higher employment component
- *Advance Road site clearly the best*



APPLICABLE REVIEW CRITERIA
Metro Code Title 14

- **Need**
  - Acute middle school need, especially by 2017
  - Multi-year lead time to provide new school
  - Establishing a buildable site is essential 1st step
  - No viable sites within current UGB
- **Compatibility**
  - Adjacent to city limit
  - Roads & setbacks for buffering
  - Adjacent to other 4H land to be urbanized
  - Negligible impact on resource lands

Metro Code Title 14

- **Suitability**
  - Best available within UGB & Urban Reserve areas
  - Near areas of enrollment growth
  - Complementary to other middle school locations
  - Advance Road site size is appropriate for schools & park
  - Urban facilities & services can be efficiently provided
- **Environmental, energy, economic & social consequences**
  - Sensitive lands easily avoided during development
  - Close to students with multi-modal transportation
  - Less costly to develop & serve
  - Easily integrated with the community

CONCLUSION

Advance Road site is best alternative:

- Urban facilities & services available
- School & park near existing & future residents
- Opportunities for community integration

Cannot wait for legislative UGB process:

- Uncertain outcome
- Completion in 2016 will not accommodate current & short-term capacity needs

City of
WILSONVILLE
OREGON

29799 SW Town Center Loop East
Wilsonville, OR 97070
Phone 503-682-0411
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Web www.ci.wilsonville.or.us

June 27, 2013

Testimony of Wilsonville City Council President Scott Starr Before Metro Hearings Officer in Support of the West Linn-Wilsonville School District's Application for the "Advance Road" Urban Growth Boundary Expansion Area UGB Case No. 13-01

Good day Hearings Officer Stamp:

My name is Scott Starr, and I serve as the City Council President for the City of Wilsonville. I am here today before you to express the robust support of the City of Wilsonville for the West Linn-Wilsonville School District's application for the "Advance Road" Urban Growth Boundary Expansion Area, UGB Case No. 13-01.

Strong Local & Regional Support for "Advance Road" UGB Expansion Area

The proposed Advance Road UGB addition has enjoyed considerable local support for a number of years. While the school district's application for an urban growth boundary amendment is for only 40 acres of the larger 316-acre Advance Road area, the proposed site for elementary and middle schools and parks form the backbone of the future expansion of the Wilsonville community.

In addition to recent letters of support from the City and the City's Planning Commission, prior support for inclusion of the Advance Road urban-expansion area in 2011 also includes the Board of County Commissioners for Clackamas County; the Clackamas County Coordinating Committee ("C-4") Metro Subcommittee, including representatives of the cities of Happy Valley, Lake Oswego, Milwaukie, Oregon City, West Linn and Wilsonville; the City of Tualatin separately; the Clackamas County Business Alliance (CCBA); the Wilsonville Chamber of Commerce; and the West Linn-Wilsonville School District. Please see Exhibits A–H.

Over time, the City has conducted considerable public outreach during our land-use planning processes to engage community members. Wilsonville's "20-Year Look" process, completed in 2007, was conducted as part of Metro's urban-reserve process to provide proactive recommendations for potential UGB inclusions. The "20-Year Look" was an extensive, pro-active public process vetted through the Planning Commission and City Council that resulted in community-supported recommendations for residential expansion. Through that process, the residential development of the Advance Road area emerged as a top priority for the community. Even for this hearing tonight, the City advertised the school district's UGB application in the City's *Boones Ferry Messenger* newsletter, which has a circulation of over 11,000; please see Exhibit I.

Rapidly Growing Community Needs to Add Schools and Related Amenities

For over a decade, the City of Wilsonville has grown at a faster rate than either the state or the greater Portland metro area. The City's "20-Year Look" predicted a Wilsonville 2010 population of 19,019 residents, based on the medium-growth scenario. The 2010 PSU/Census-update count identified Wilsonville's population as 19,535, which exceeded high-growth projections.

Even during the "Great Recession," the City of Wilsonville added over 1,000 new residents in the past two years, increasing our community's population by five percent to 20,515 as of July 1, 2012. For 2012, the City issued 10% of all the building permits in the entire State of Oregon. Please see Exhibit J.

The growing pace of Wilsonville's development has been noted by the Metro Auditor in the "Metro Annual Construction Excise Tax Report for FY 2010-11," dated August 22, 2011, in which Wilsonville is ranked #2 in the region on a per-capita basis, or four-times greater than the metro area average per-capita amount. Please see Exhibit K, p. 11.

In a similar fashion, the Metro-produced "Second Quarter Construction Excise Tax Report: CET Collections for FY 2012-13," dated February 12, 2013, shows that Wilsonville has been the fourth-highest jurisdiction of 22 total contributing CET funds during this timeframe. Please see Exhibit L.

As a reflection of Wilsonville's on-going population growth, the number of school children in Wilsonville has increased eight percent or 246 students over the past four years 2010-13. The opening in 2012 of a new primary school in the Villebois neighborhood relieved over-crowding at other primary schools in the community. The City's only middle school is currently over capacity by nearly 100 students or 13%, and at the projected rate of growth, will be over capacity in 2017 by 350 students or 35%; please see Exhibits M and N.

Complete Community Aspirations

The City of Wilsonville continues to experience new residential, commercial and industrial development and to support policies favoring approaches to complete community planning. With community input and the City's partnership with the West Linn-Wilsonville School District, a conceptual plan has been developed for both a primary and a middle school on approximately 30 acres of the site, along with 10 acres for associated youth-sports/recreation fields to serve the schools and eastern area of Wilsonville. Schools and parks are core elements that can ensure development of a more complete community.

On behalf of the Wilsonville City Council, I thank you for your time today and welcome any questions that you may have.

Exhibits

A. **City of Wilsonville Planning Commission**: "Letter of Support for Advance School District UGB Expansion Application," June 19, 2013.

B. **City of Wilsonville City Manager**: Letter of Support for Advance School District UGB Expansion Application, March 15, 2013.

C. **City of Wilsonville**: Resolution No. 2320, entitled "A Resolution of the City of Wilsonville in Support of Adding 316 Acres of Land Known as the „Advance Road Area" (Metro UGB Analysis Area 4H) to the Regional Urban Growth Boundary for Residential Uses," September 7, 2011; and staff report, "Metro Advance Road (Area 4H) UGB Expansion," August 31, 2011.

D. **Board of County Commissioners for Clackamas County**: Letter of support for "Metro UGB Analysis Areas 4H - Advance Road," September 27, 2011.

E. **Clackamas County Coordinating Committee ("C-4") Metro Subcommittee**: "Resolution in Support of the „Advance" Urban-Expansion Area (Metro UGB Analysis Area 4H) To Be Incorporated into Proposed Metro Ordinance No. 11-1264, „For the Purpose of Expanding the Urban Growth Boundary to Provide Capacity for Housing and Employment to the Year 2030 and Amending the Metro Code to Conform," October 6, 2011.

F. **City of Tualatin**: Letter of support for "Metro UGB Analysis Area 4H – Advance Road," September 28, 2011.

G. **Clackamas County Business Alliance (CCBA)**: "Letter of support for Wilsonville Advance Area to be included in UGB expansion," September 14, 2011.

H. **West Linn-Wilsonville School District:** Resolution No. 2011-05, entitled "A Resolution in Support of the Inclusion of the Advance Road Property Inside the UGB (Urban Growth Boundary)," September 13, 2010.

I. **City of Wilsonville, *The Boones Ferry Messenger,*** "School District Seeks Urban Growth Boundary Amendment for New Schools, City Park," June 2013, page 4.

J. **U.S. Census Bureau and Portland State University Population Research Center**, "Wilsonville Continues Growing" and "Wilsonville Building Permits," Demographic data reports, 2010, 2011, 2012.

K. **City of Wilsonville:** "„Advance" Urban-Expansion Area (Metro UGB Analysis Area 4H)," booklet report presented to MPAC on September 14, 2011.

L. **Metro**, data excerpted from the "Second Quarter Construction Excise Tax Report: CET Collections for FY 2012-13," February 12, 2013.

M. **Oregon Dept. of Education**: "Student Enrollment Comparison, West Linn-Wilsonville SD 3J," Database Initiative Project - r0062Select.asp, June 26, 2013

N. **West Linn-Wilsonville School District**, Enrollment and Capacity, Metro Hearing UGB Case No. 13-01, June 27, 2013

My name is William Ciz. I live at 28300 SW 60th Avenue, Wilsonville, 97070, in the Advance Urban Reserve Area 4H. My property is located on the eastside of 60th Avenue opposite the West Linn-Wilsonville School District (WLWSD) and the Lowrie properties. I do not support WLWSD the Urban Growth Boundary Major Amendment. I do not believe that WLWSD the Urban Growth Boundary Major Amendment application and staff report in its current form meets the required Metro Code sections listed below.

Metro Code section 3.07.1425 (B)(3) A demonstration that any need shown under paragraphs (1) and (2) of this subsection cannot be accommodated on land already inside the UGB.

William Ciz Response: I do not agree with the logic put forth in both the petitioners application and the Metro staff report regarding the sixth site, the WLWSD property located within the Wilsonville UGB in the Frog Pond Area. The WLWSD Frog Pond property is available to serve the middle school need and a portion of the park need presented in this application. I do not believe that inaction on the part of the WLWSD in site planning their 25 acre Frog Pond property and inaction by the City of Wilsonville over the past 10 years on completion of a Metro required Concept Plan for the Frog Pond Area is a reason to bring additional property into the UGB to serve the same purpose. I do not believe this criterion is met.

In 2002, the Frog Pond Area was added to the UGB. One of the prime reasons that supported its addition into the Wilsonvlle UGB was the need to build a school on the WLWSD property within the Frog Pond Area. Over the past 10 years the City with participation of the WLWSD could have put together a method to fund and complete the Frog Pond Concept Plan and the WLWSD could have worked to use their property inside the UGB for a middle school but instead focused on developing land outside the UGB. The need for additional middle school capacity has been known for well over 6 years. The WLWSD added portable classrooms to Wood Middle School more than 6 years ago.,

The WLWSD purchased the Advance Road 40 acres site, in 2003 with the intent to use it for school purposes and to abandon use of their Frog Pond property within the UGB for school purposes and sell it to local developers as urban development in Wilsonville continued. The WLWSD entered into a land purchase agreement with one of the local developers for the Frog Pond property but the land purchase agreement was never completed because of the 2008 housing downturn.

In 2009 the WLWSD started a site planning study on the Advance Road 40 acres site instead of pursing a site plan for their Frog Pond property and working with the City to fund and complete a Frog Pond Concept Plan. The plan for the Advance Road 40 acres site is an attachment to the petitioners application. The planning effort included co-location of city park facilities to accommodate a land swap for 10 acres of City parkland on the west side of Wilsonville to build Lowrie Elementary School. The plan for Advance Road 40 acres site was completed in September of 2010 and used as a prime reason to bring the Advance Urban Reserve Area 4H into the Metro Urban Reserve and propose the area for UGB expansion. Urban Reserve Area 4H was designated as an Urban Reserve but the Metro Council chose not to bring it into the UGB in 2011. After this action by the Metro Council the WLWSD did not begin planning to use their Frog Pond property within the Wilsonville UGB for a much needed middle school site which would require completion of a Frog Pond Concept Plan. Instead, after the 2011 Metro decision the WLWSD and the City have done nothing but to ask Metro for planning funds to complete the Concept plan. The WLWSD and the City are focused on developing property outside the UGB for their school and park needs. I cannot logically see how inaction on using WLWSD property within the

UGB for the needed middle school and action on planning to develop a site outside the UGB would support meeting this criterion.

The Frog Pond area is 183 acres of which the WLWSD owns 25 acres. That leaves the task to prepare a Concept Plan for 158 acres for mainly residential purposes, urban services, and open space. The City along with the School District could immediately begin the Concept Planning effort for the Frog Pond Area with a goal of the completing the plan by the end of 2014. This would allow the WLWSD to meet their schedule for completion of a new middle school if at same time the WLWSD begins site planning to locate a middle school on their 25 acres within the Wilsonville UGB. While the configuration of the site may present some challenges the site planning process could produce some creative solutions and set the tone for development of the Frog Pond Concept Plan around the school site. Any remaining City of Wilsonville park and land swap needs and the elementary school site could be planned as part of the concept planning work for the Advance Road Urban Reserve Area 4H as that process moves forward.

Metro Code section 3.07.1440 (B)(1) The proposed uses of the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land.

William Ciz Response: Development of schools and parks within the Advance Road Urban Reserve Area 4H prior to the entire urban reserve area becoming part of the Wilsonville UGB will change the character of the portion of the urban reserve south of Advance Road. The schools and a park will bring additional traffic, noise, and lighting into this rural area which do not exist today. This will change the character of the area. I do not believe the **"the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land"** without changes or additional conditions placed on approval of this application.

Metro's practice is to include adjoining roads into the UGB as part of a UGB expansion. This would mean that the portions of Advance Road and 60th Avenue would become part of the Wilsonville UGB and eventually part of the city limits of Wilsonville and be subject City of Wilsonville land use review and street design standards. The WLWSD Advance Road 40 acres site does not include all properties south of Advance Road and west of 60th Avenue. There is a 5 acre property along Advance Road and a 2 acre property along 60th Avenue that would not be in the UGB. These properties would remain in their current uses and part of Clackamas Co. This would mean that Advance Road and 60th Avenue would not totally be inside the Wilsonville UGB if this UGB Amendment is approved. The right-of-way for Advance Road is 60 feet with a current pavement width of about 25 feet and the right-of-way width for 60th Avenue is 40 feet with a current pavement width of about 18 feet with no gravel or dirt shoulders. 60th Avenue is currently a low volume road used by local residents and farm vehicles serving properties east of 60 Avenue and south of the Advance Road Urban Reserve Area 4H.

The preferred site master plan for the development of the schools and park included in the application does attempt to locate school buildings and some sport fields away from adjoining properties east and south of 60th Avenue. This could help mitigate lighting and noise impacts. But the preferred site master plan shows one driveway access to and from the WLWSD property onto Advance Road and two driveway access points from the WLWSD property onto 60th Avenue. Adding additional school and park vehicle, delivery truck, and school bus traffic from the school and park site onto 60th Avenue will change substancally change the character of the remaining area south of Advance Road and east of 60th Avenue within the Advance Urban Reserve Area 4H. The additional traffic generated by the school and park site onto 60th Avenue is not compatible with the uses rural residential and farm uses on adjacent land east and south of 60th Avenue. 60th Avenue with its current pavement width of about 18 feet cannot safely handle the additional school and park vehicle, delivery truck, and school bus traffic. It would be difficult

for a school bus traveling southbound on 60th Avenue to pass a school bus traveling northbound within the existing 18 foot pavement width. There are no dirt or gravel shoulders on 60th Avenue. The additional traffic will cause local residents delays at certain times of day, depending on school and park activities, to access 60th Avenue and at the intersection of Advance Road and 60th Avenue.

In order to safely handle the additional travel demand from the school and park site on 60th Avenue the road would likely have to be improved and widened to an urban road standard. Widening of the 60th within the 40 foot right of way to an urban standard would be very difficult. Widening 60th would directly impact properties on the eastside of 60th Avenue with changes in grade of the roadway affecting driveway locations and possible right-of way acquisition. Additional right of way from the WLWSD property would be needed to meet City of Wilsonville urban road standards. But since ownership by the WLWSD is not continuous along 60th Avenue because of the 2 acres property along 60th Avenue that is not owned by the WLWSD and the property is outside the UGB, widening the road would be a problem. Widening and improvements to 60th Avenue are not compatible with the rural residential and farm uses on adjacent land east and south of 60th Avenue because it changes the rural character and feel of the area.

The only way to make **"the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land"** would be to not allow the school and park site traffic to access 60th Avenue and leave it in its current configuration. This would allow rural residential and farm uses on adjacent land east of 60th Avenue and south of the Advance Road Urban Reserve Area 4H to retain the rural character and feel of the area and not create traffic congestion or safety problems on 60th Avenue for existing users. The school and park site would rely on the driveway to and from Advance Road for access. This access configuration would be identical to two other WLWSD middle school sites. Wood and Athey Creek Middle Schools. Access to these middle schools and sports fields is provided by a single driveway from Wilsonville Road for Wood Middle School and from Borland Road for Athey Creek Middle School . Attachment 1 is a Google Earth screen print of the Wood Middle School and Attachment 2 is a Google Earth screen print of Athey Creek Middle School site depicting the road and driveway configuration.

I would propose the following conditions be added if the WLWSD Urban Growth Boundary Major Amendment is approved:

1. 60th Avenue will not be included within the UGB as part of the approval of the WLWSD Urban Growth Boundary Major Amendment.
2. Access to and from the WLWSD school and park site onto 60th Avenue will not be permitted until the properties east of 60th Avenue and south of Advance Road are included into the UGB.

Thank you for the opportunity to provide input.

William Ciz
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Attachment 1

Google earth

miles 100
km 200

Wood Middle School driveway access from Wilsonvill Road

Attachment 2

Google earth

miles 200
km 400

Athey Creek Middle School driveway access from Borland Road

METRO UGB MAJOR AMENDMENT APPLICATION
Advance Road Site
for
West Linn-Wilsonville School District
Supplemental Information and Findings
7.11.13

INTRODUCTION

At the conclusion of the Metro hearing on June 27, 2013 regarding the Advance Road UGB amendment application, the Hearings Officer kept the record open until July 11, 2013 to give interested parties the opportunity to submit additional information. The applicant, West Linn-Wilsonville School District, is providing the supplemental information below in support of the application. It is intended to address comments made by the Hearings Officer and others who testified at the hearing.

This supplement includes the following information:

- West Linn-Wilsonville School District Long Range Plan, April 24, 2013 update.
- Additional analysis of alternative Wilsonville area school sites in the current UGB.
- Supplemental findings for Metro Code Section 3.07.1425 B.3.

WEST LINN-WILSONVILLE SCHOOL DISTRICT LONG RANGE PLAN UPDATE

As noted during the hearing, the district's long range plan was updated after the UGB amendment application was submitted. The April 24, 2013 amendments to the plan focused on an update of the school capacities by revisiting educational programs and associated space needs. This evaluation concluded that the capacity at the primary school level was slightly reduced (see Table 2 in Part B) and it would be reduced further in 2015 with the introduction of full-day kindergarten. The capacities for middle and high schools remain unchanged. The student enrollment forecasts for all grades also remain constant. The updated version of Part B (found in Appendix A of the application) is provided in Appendix A-S.

ADDITIONAL ANALYSIS OF WILSONVILLE AREA SITES WITHIN THE CURRENT UGB

During the course of the June 27th hearing, the Hearings Officer appeared to be satisfied that the district had submitted sufficient evidence to show that:

- Locating a second middle school in the Wilsonville area near the existing Wood Middle School would not be a logical way to serve students and families in the district; and
- Other Urban Reserve areas within the district would not provide a suitable location to serve present and future students.

The Hearings Officer suggested that additional information and analysis of the alternative sites within the existing UGB and east of I-5 would be beneficial. This section supplements the original application narrative in:

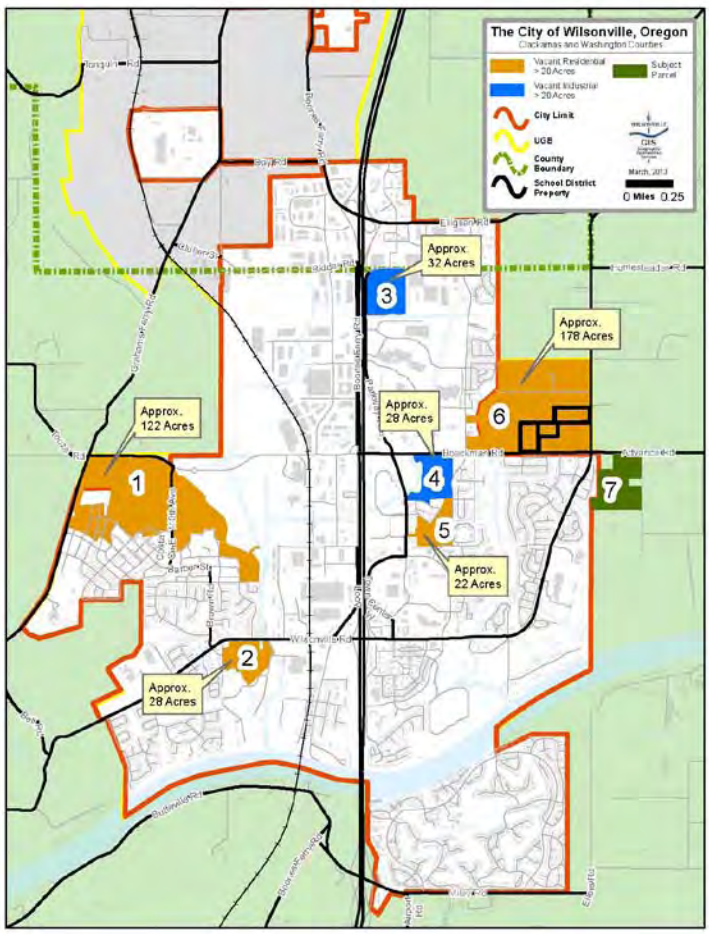
- Section IV: Purpose and Need, Analysis of Potential Sites (pp. 21-24); and
- The response to Metro Code Section 3.07.1425 B.3. (p.29).

Potential Sites in Wilsonville

Six potential middle school sites (minimum 20 acres in size) were identified in the Wilsonville area in addition to the Advance Road site. The sites were evaluated on pages 21-24 of the application. This information and analysis was presented primarily to address Metro Code Section 3.07.1425 B. 3. In order to demonstrate that a middle school "cannot reasonably be accommodated on land already inside the UGB," the sites were compared in Table 4 (p. 24) using five "considerations." As noted at the hearing, they are used by the district to define what constitutes a suitable school site.

Of the six alternative sites to Advance Road, Sites 1 and 2 (see Figure 13 and Table 4) were not found to be viable middle school sites for a variety of reasons. The most significant reason was their close proximity to the existing Wood Middle School and distance from existing and future student concentrations on the east side of I-5. The remaining four sites, which are located on the east side of I-5, were evaluated further to supplement the information and conclusions presented in Table 4. The analysis of the four sites, presented on the following pages, takes a closer look at three of the five considerations:

- Availability;
- Site character; and
- Urban facilities, services, and transportation.



Reduced copy of Figure 13 in the application

Site 3 – North Wilsonville

Figure 1-S – North Wilsonville Site

Table 1-S
North Wilsonville Site Analysis

SITE CONSIDERATIONS	COMMENTS
Availability	Same comment as Table 4.
Site Character	As shown in Figure 1-S, the site is flat and developable. The 32-acre size would be sufficient for a primary school campus, but not including a 10-acre community park. The site is surrounded by non-residential development including I-5, industrial uses to the south and east, and commercial uses (Argyle Square) to the north.
Urban Facilities, Services & Transportation	Urban facilities and services are available.
Overall Suitability	As noted in the previous analysis in Table 4, this site is unsuitable because it is surrounded by non-residential uses, it is a significant distance from existing and planned residential development located to the east and south, and a 10-acre community park could not be accommodated.

Site 4 – Mentor Graphics

Figure 2-S – Mentor Graphics Site

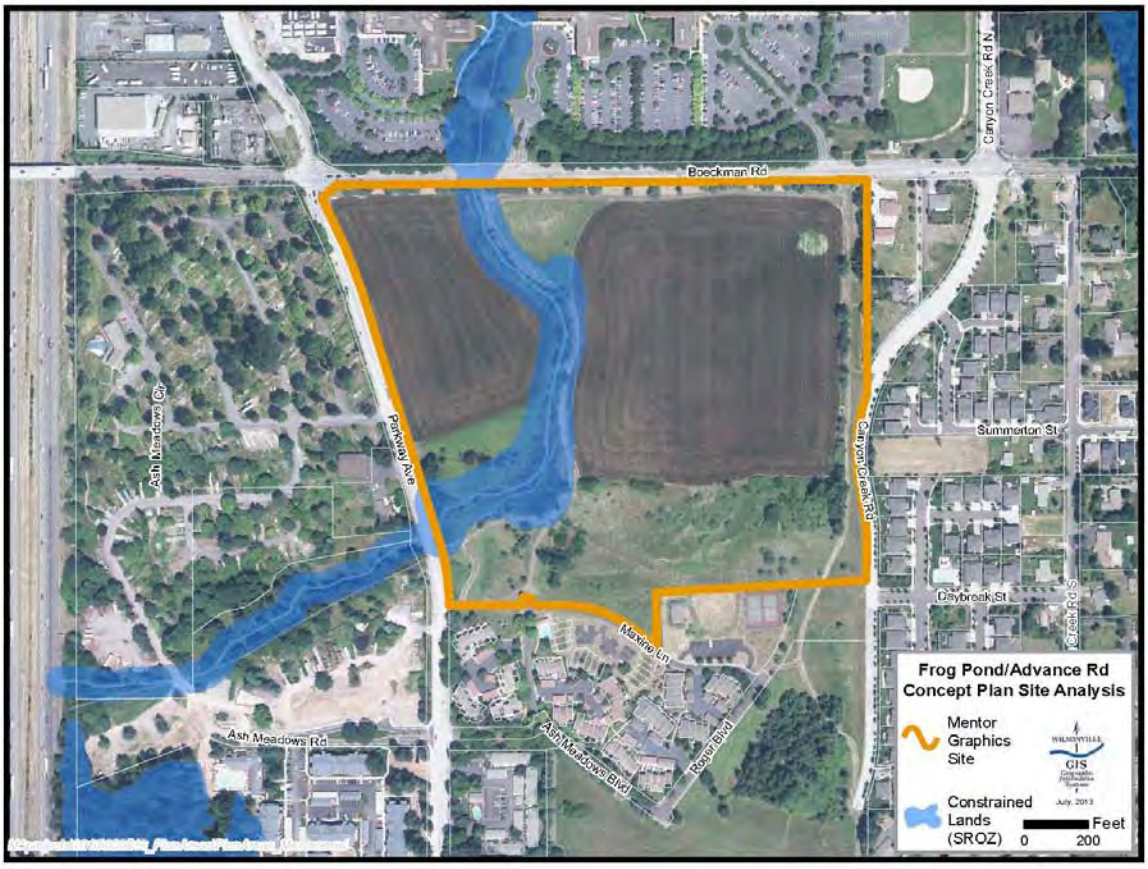


Table 2-S
Mentor Graphics Site Analysis

SITE CONSIDERATIONS	COMMENTS
Availability	Same comment as Table 4.
Site Character	As shown in Figure 2-S, much of the site is flat and developable. However, this 29-acre site is constrained by a drainage course and corresponding SROZ (Significant Resource Overlay Zone) designation. This designation reduces the buildable area and would limit the ability to establish pedestrian and/or vehicular crossings to better integrate school activities and facilities on the site. The site has industrial and office uses to the north and residential development to the west, south, and east.
Urban Facilities, Services & Transportation	Urban facilities and services are available. A planned completion of Canyon Creek Road along the east side of the property will further reduce the buildable area available.
Overall Suitability	As noted in the previous analysis in Table 4, this site is not as accessible to residential neighborhoods as the Advance Road or Frog Pond sites due to its location near I-5 and industrial/office development on the north side of Boeckman Road.

Site 5 – Mentor Graphics

Figure 3-S – Mentor Graphics Site

Table 3-S
Mentor Graphics Site Analysis

SITE CONSIDERATIONS	COMMENTS
Availability	Same comment as Table 4.
Site Character	As shown in Figure 3-S, the site is reasonably flat and developable. However, the irregular 22-acre parcel would only be sufficient for a middle school. A primary school or 10-acre community park would not be possible. The site is adjacent to residential development on the east, west, and most of the northern property boundary. Commercial development and Vlahos Drive lie along the southern property boundary.
Urban Facilities, Services & Transportation	Urban facilities and services are available. Canyon Creek Road is planned to extend south through the property to Vlahos Drive. While not required, local street connections – Roger Road to the north and Ash Meadows Boulevard to the Canyon Creek Road extension – would clearly enhance local street connectivity in the area. At a minimum, the city would expect pedestrian connections through the site.
Overall Suitability	As noted in the previous analysis in Table 4, this site is unsuitable because it can only support a middle school – not a school campus and community park. In addition, the future transportation improvements will act to reduce the buildable area and potentially make the site unworkable for a middle school.

Site 6 – Frog Pond

Figure 4-S – Frog Pond Site

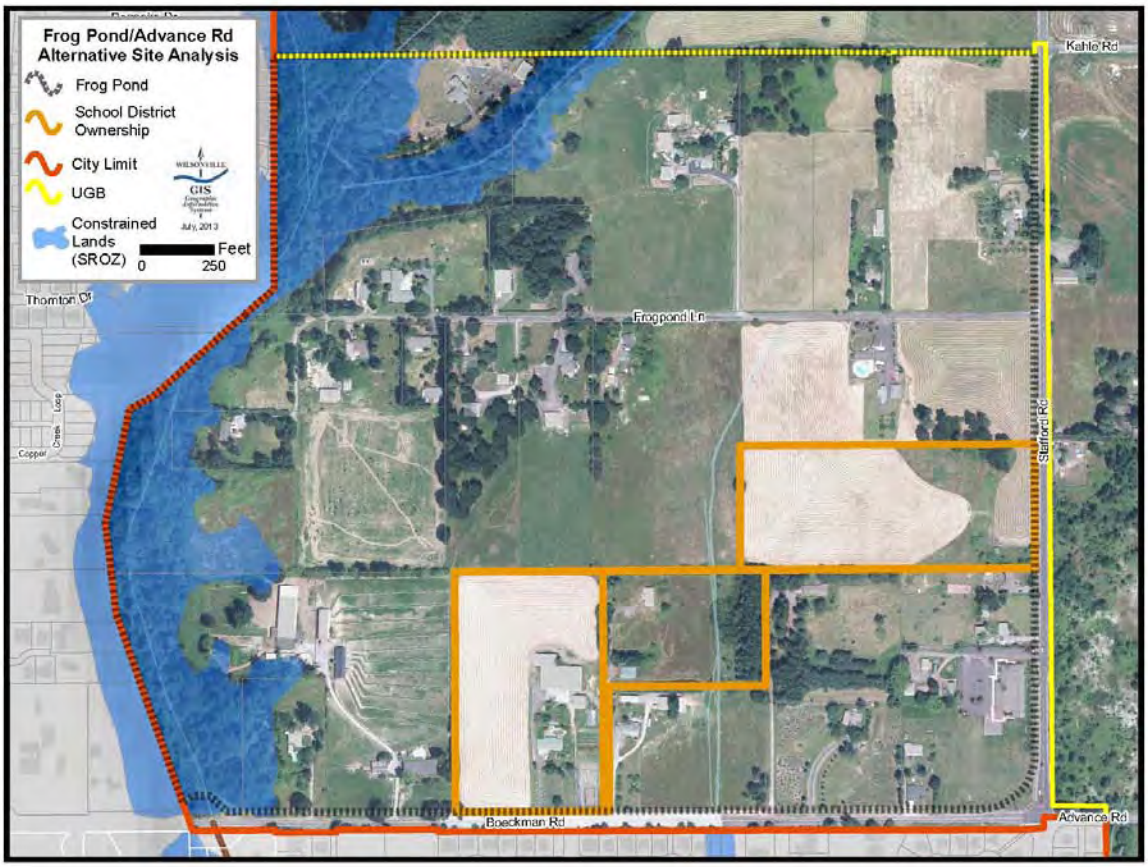


Table 4-S
Frog Pond Site Analysis

SITE CONSIDERATIONS	COMMENTS
Availability	As indicated in Table 4 and the at the hearing, the availability of any of the properties in the Frog Pond area (including the district property) is subject to a planning schedule, which has a high degree of uncertainty. The city planning staff has provided a memorandum (see Appendix B-S), which outlines the planning steps and the different timelines this work would take depending upon receiving a proposed Metro CET grant, the city's financial abilities to conduct the planning, and the ability of a private party or parties to assemble parcels for actual rezoning and development. As shown in the timeline graphic in the memorandum, the best case schedule shows possible annexation, rezoning, and ability to issue development permits in 2016. Without the Metro grant, this timeline will slip by an undetermined amount. Because the district would ideally like to have a middle school completed by 2017, the development application and review process would need to begin by around 2015.

SITE CONSIDERATIONS	COMMENTS
Availability (continued)	The district purchased the property over 10 years ago when the housing boom was in full swing and potential school sites were quickly disappearing. The district purchased the three parcels understanding that the configuration was not ideal and that it needed to modify and enlarge the site. It was assumed that land trading and/or purchase would occur later. A concept plan was initiated for Frog Pond (funded by developers), but when the housing bubble burst, all progress in Frog Pond ceased. The timing of urbanization in Frog Pond has been a big question mark ever since.
Site Character	As shown in Figure 4-S, the Frog Pond site is generally flat and developable. The 25-acres (3 parcels) currently owned by the district are shown. The district property would theoretically have sufficient size for a middle school. However, its configuration would make it virtually impossible to develop a functional middle school facility. Additional property could be acquired and/or traded to create a functional site, however without a concept plan and master plan it is premature to know what shape a modified school site should take.
Urban Facilities, Services & Transportation	Urban facilities and services are not currently available. At the hearing, the city staff indicated that providing sanitary sewer to the Frog Pond area was believed to include overcoming significant system capacity limitations. The staff also indicated the sanitary sewer system was being analyzed by a consultant. Preliminary information made available by the consultant after the hearing suggests the capacity limitations are not as significant as initially believed (see Appendix C-S).
Overall Suitability	As noted in the previous analysis in Table 4, the primary issues are related to property size/configuration and timing. To utilize its property in Frog Pond, the district would need to trade and/or purchase additional property to create a viable middle school site or primary/middle school campus. But without a concept plan or master plan illustrating the shape of future urban development, the district and other Frog Pond property owners do not know which properties to acquire and for what purpose. This uncertainty and the deficient configuration of the site prompted the district to acquire the Advance Road site and work with the city toward the goal of creating a primary/middle school campus and community park.

Supplemental Findings - Metro Code Section 3.07.1425 B.3.

Section 3.07.1425 B.3. states if the Metro Council finds that a need exists, the following must also be satisfied:

3. *A demonstration that any need shown under paragraphs 1 and 2 of this subsection cannot reasonably be accommodated on land already inside the UGB.*

Response: The application (pp. 21-24 and Table 4) and this supplement have identified the potentially available Wilsonville sites within the current UGB and provided a comparative evaluation of their relative suitability to meet the district's needs. As described in Section IV and summarized in Figure 13 and Table 4 of the application, there are very limited possibilities for locating a middle school within the current UGB to serve the district's target student population. A GIS search for potential sites of 20+ acres consisting one or multiple parcels yielded a total of seven possible school sites, including Advance Road.

Sites 1 and 2 (see Figure 13/Table 4) are deemed to be inappropriate for a middle school primarily due to their close proximity to the existing Wood Middle School located in far the west side of Wilsonville. Site 3 – North Wilsonville (see Figure 13/Table 4 and p. 3 above) is not suitable primarily because of its remote location from the existing and future residential neighborhoods it would serve. Site 4 – Mentor

Graphics (see Figure 13/Table 4 and p. 4 above) is not suitable primarily due to a location that is not central to the neighborhoods the proposed middle and primary schools would serve. It also would not have sufficient size to support a 10-acre community park. In addition, the SROZ area traversing the property (Figure 2-S) will make it much more difficult to properly integrate school facilities including buildings, play fields, and parking on the site. Site 5 – Mentor Graphics (see Figure 13/Table 4 and p. 5 above) site at 22 acres is potentially large enough for only a middle school. A primary school and community park would not be possible. Also, planned and desirable street connections would reduce the buildable site size and potentially create a site divided by streets and/or public pedestrian connections. This site is much better suited for residential development.

Site 5 – Frog Pond (see Figure 13/Table 4 and p. 6 above) is not suitable due to 1) property size and configuration and 2) timing. As noted above, sanitary sewer appears not to be as significant an issue as originally believed. However, the schedule to complete the necessary planning, annex and rezone the property, and partner with developers/property owners to actually create a viable school site, and construct a primary/middle school campus remains fluid and unreliable. If the district is forced to rely on the Frog Pond site, it is vulnerable to serious delays in meeting the education capacity needs of its middle school students. Reliable short-term enrollment estimates (see Appendix A-S herein and Appendix C in the application) show that the district middle school capacity deficit in 2017 will equal approximately ½ of a middle school, and will continue to grow beyond 2017. Every year of delay will translate into increased overcrowding in its three middle schools.

The Advance Road site is the only site available, which has adequate land area that can be served with urban facilities and services in a timely and reliable manner. In addition, it is centrally located within an urban reserve area, and the proposed school campus and community park will be superbly located to serve future city residents as the UGB and city limit expand. Advance Road makes good planning sense in both the short- and long-term.

APPENDICES

APPENDIX A-S

West Linn-Wilsonville School District

Long Range Plan – Part B

April 24, 2013

WEST LINN-WILSONVILLE SCHOOL DISTRICT

LONG RANGE PLAN

APRIL 24, 2013

ACKNOWLEDGEMENTS

WEST LINN-WILSONVILLE SCHOOL BOARD

Dale Hoogestraat, Board Chair
Keith Steele, Vice-Chair
Kristen Keswick
Betty Reynolds
Cheri Zimmerman

Dr. William Rhoades, Superintendent

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Tim Woodley, Director of Operations

PREPARED BY

Keith Liden, Planning Consultant
Parsons Brinckerhoff

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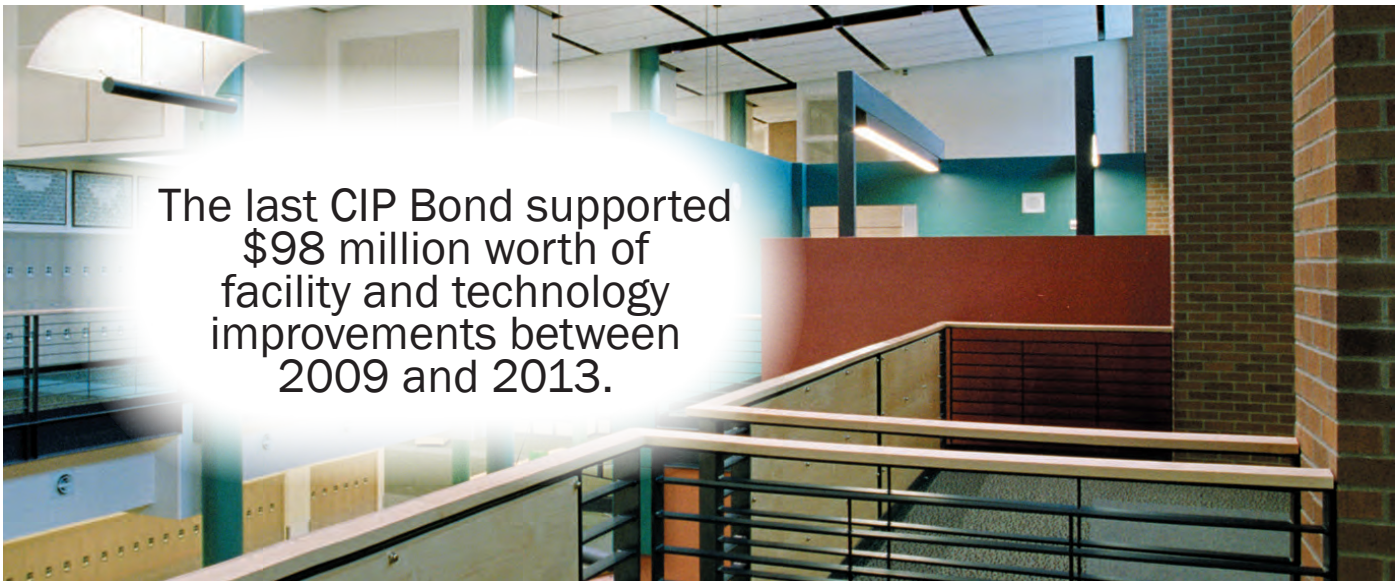
TABLE OF CONTENTS continued

B

School Facilities



INTRODUCTION

This section, School Facilities, provides the framework for facilities planning, defines the issues facing the District, and identifies future facility needs and improvements. It is the second of three parts that collectively provide the framework for school facility needs are:

- Part A: Framework for Educational Excellence – Describes the values, themes and educational needs and approaches that are the basis of facility planning and maintenance decisions.
- Part B: School Facilities – Identifies the existing school capacity, potential growth, and educational trends and factors that could impact future facility needs, and future facility needs.
- Part C: Capital Improvements – Outlines the capital improvement planning process and identifies future capital improvement projects.

SNAPSHOT OF TODAY

EXISTING DEVELOPMENT AND ENROLLMENT

The 2010 Census shows there are approximately 19,033 residences within the District with a total enrollment that same year of 8,400 students. The majority of residences and development is located within the cities, with the city of West Linn accounting for the largest share. For planning purposes, the District is divided into four geographic sub-areas (Figure 1). Table 1 summarizes the number of residential units (single and multi-family) and students by sub-area.

To evaluate enrollment information at the neighborhood level, the District has developed a GIS (Geographic Information System) mapping framework for tracking existing development and enrollment, location of students, and anticipating future enrollment. The mapping system is based upon 175 "study areas" that include discrete neighborhoods (Figure 1). These study areas are the building blocks for the attendance areas for primary, middle, and high schools.

Figure 1
STUDY CELLS AND SUB-AREAS

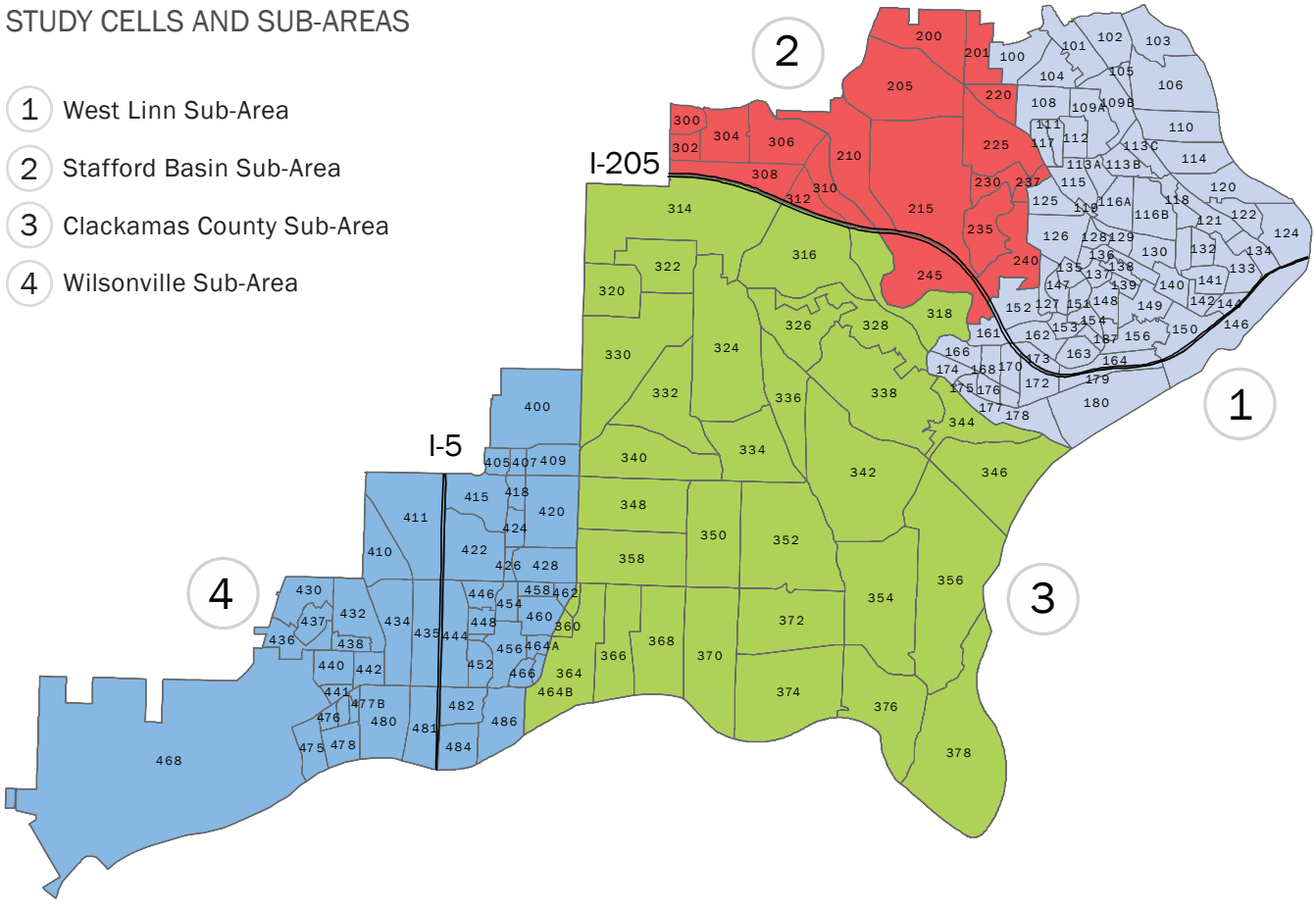


Table 1
ESTIMATED HOUSING UNITS AND ENROLLMENT BY JURISDICTION - 2010

Area	Housing Units	Enrollment
1 West Linn Area*	9,976	4,651
2 Stafford Basin Area (north of I-205)	921	361
3 Clackamas County (south of I-205)	1,995	714
4 Wilsonville Area	6,141	2,674
TOTAL	19,033	8,400
TOTAL excluding Three Rivers Charter School		8,298

** The West Linn area is not exactly the same as the incorporated city. The city of West Linn counted 10,217 housing units within its city limit in 2010.*

The District collects quarterly enrollment data for each of the schools. On September 30, 2012, the District had a total enrollment of 8,599 students in kindergarten through 12th grade. Enrollment has steadily increased across the District with some of the highest growth rates occurring in the 1990's. Enrollment for September 2012 is shown in Table 2.

EXISTING FACILITIES

There are currently nine primary schools, three middle schools, three high schools, and one charter school operated by the District. Of the nine primary schools, two schools, Lowrie and Trillium Creek primary schools, are new facilities that opened in the fall of 2012. To better define the true educational capacity of each school, an evaluation of the facilities and programs was conducted

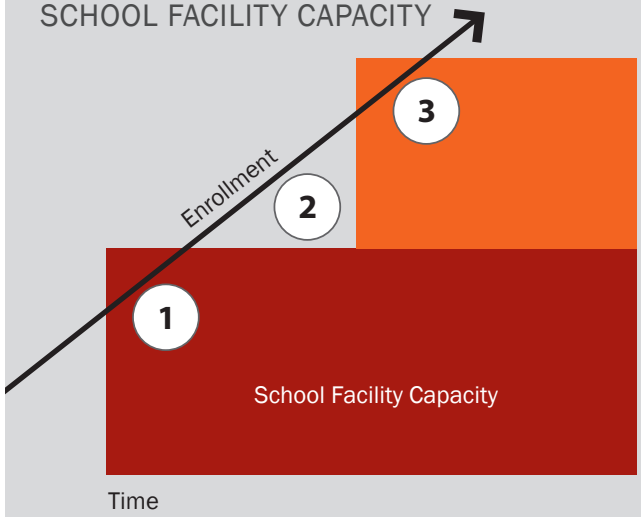
Table 2
2012 SCHOOL CAPACITY & ENROLLMENT

SCHOOL	CAPACITY (2013)	ENROLLMENT 9/30/12	AVAILABLE CAPACITY
PRIMARY			
Boeckman	479	555	-76
Boones Ferry	689	531	158
Lowrie	476	407	69
Wilsonville Subtotal	1,644	1,493	151
Bolton	363	278	85
Cedaroak	407	318	89
Stafford	501	450	51
Sunset	432	285	147
Willamette	501	510	-9
Trillium Creek	498	458	40
West Linn Subtotal	2,702	2,299	403
Primary Subtotal	4,346	3,792	554
MIDDLE			
Wood	640	737	-97
Athey Creek	624	607	17
Rosemont Ridge	668	684	-16
Middle Subtotal	1,932	2,028	-96
HIGH			
Wilsonville	1,472	1,121	351
West Linn	1,748	1,553	195
Art Tech	86	105	-19
High School Subtotal	3,306	2,779	527
TOTAL	9,584	8,599	985
*Three Rivers Charter**	*100*	*103*	*-3*

* Not included as part of the District enrollment.

in 2001, 2006, and 2013. to derive an accurate capacity figure for each school. Educational capacities of the schools are updated as existing schools are expanded, remodeled, or as curriculum and special education programs change. Primary school capacities will change in 2015 when all kindergarten students will attend full-day classes. The current school capacities are shown in Table 2. For the 2012-13 school year, the primary schools are operating under capacity, and middle schools are operating slightly over capacity. The high schools have room for additional enrollment growth. The opening of Lowrie and Trillium Creek primary schools for the 2012-13 school year, capacity of 974 students, alleviated the capacity shortfall at the primary level. Portable classrooms at Wood Middle School will remain to address the middle school capacity issue until permanent facilities are funded and constructed.

Figure 2
SCHOOL FACILITY CAPACITY

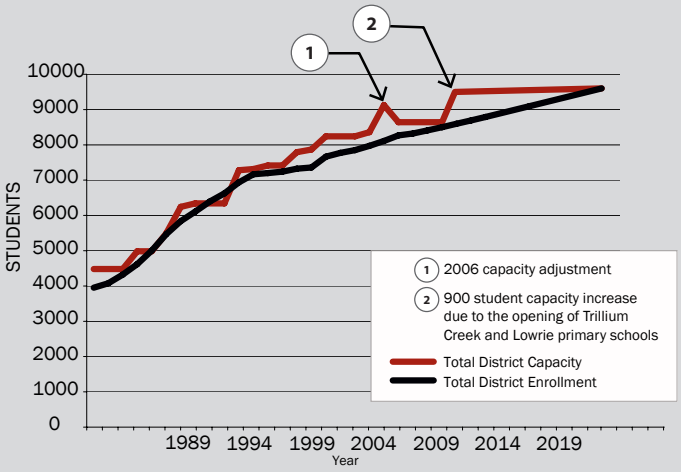


1. As enrollment exceeds capacity, the District constructs one or more facilities to increase capacity. There is excess capacity following construction, but because of associated operating expenses, to be financially efficient, this extra capacity should not be too large.

2. After completion, the enrollment continues to increase and the capacity remains static. Eventually the extra capacity is absorbed, and the District is over capacity. Portable classrooms, larger class sizes, and other measures are used to accomodate students during this period.

3. Periodic capacity deficits are considered necessary, however, they soon need to be addressed with another increment of new capacity or serious overcrowding will result.

Figure 3
TOTAL ENROLLMENT VERSUS CAPACITY



PLANNING FOR THE FUTURE

EFFICIENT PROVISION OF SCHOOL FACILITIES

As noted earlier, the District has experienced a steady increase in enrollment over the past 20 years. To provide adequate school facilities for primary, middle, and high school students, the District received voter approval of school bond measures during this same period to construct new facilities and upgrade and maintain existing assets.

The District is committed to providing educational facilities in the most financially prudent manner possible. The key is to balance efficiency with maintaining quality educational environments. The District must balance steady enrollment growth with capacity, which must occur in distinct increments because new facilities, such as a new school or school addition, must be constructed at once, not incrementally. The graph in Figure 2 demonstrates the balance the District must maintain between enrollment growth and capacity.

POTENTIAL CAPACITY IMPACTS OF SCHOOL PROGRAMS

In addition to the size of the facilities, school capacity is directly influenced by educational programs, such as early childhood education, all-day kindergarten, alternative education, personalized special needs education, and team teaching as described in Part A: Framework for Educational Excellence. The implementation of these programs has effectively changed the District's capacity because many of them have building space ramifications. For example, with half-day kindergarten, two classes can be accommodated using one classroom, but all-day kindergarten requires two classrooms to accommodate the same number of students. Improving educational programs may reduce school capacity. However, modest declines in capacity are outweighed by the improved educational results created by these programs.

Figure 3 illustrates how the enrollment has grown steadily and capacity has increased in increments when new schools or school expansions were completed. The capacity adjustment to accommodate educational programs decreased capacity in 2006. The capacity increase related to the addition of Lowrie and Trillium Creek primary schools is shown in 2012.

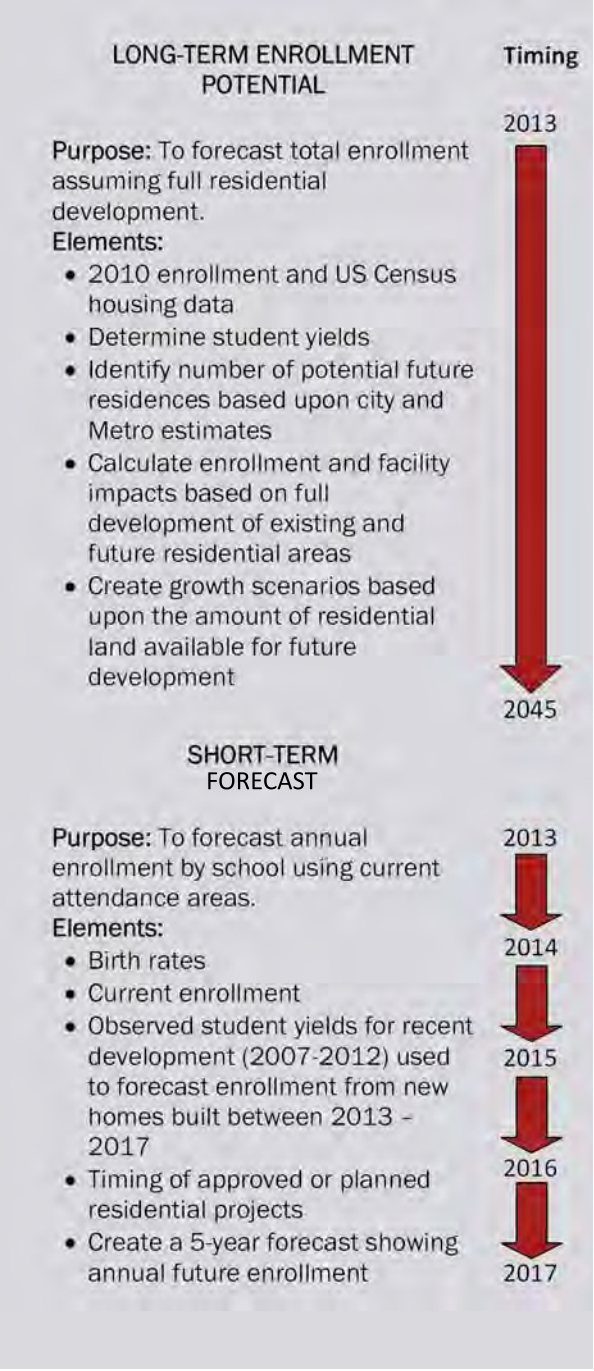
ACCOMMODATING FUTURE ENROLLMENT GROWTH

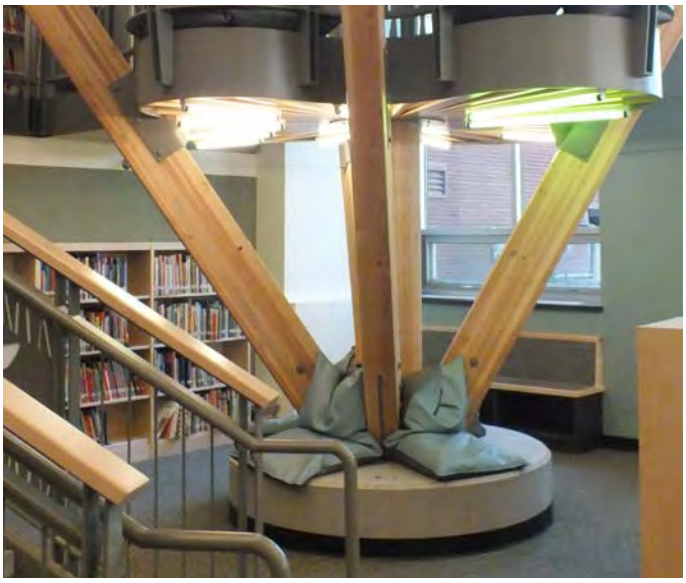
Creating and maintaining a quality educational environment is constantly challenged by enrollment growth, which has increased by approximately 50% from 5,644 students in 1990 to 8,599 students in 2012. In addition to providing the capacity to give each and every student a superior education, the District must also maintain and upgrade existing facilities and constantly look for ways to improve educational programs and techniques.

The District periodically evaluates demographic and land development trends assessing how they may affect enrollment and the ability of the schools to have the appropriate capacity to serve the students. These efforts involve understanding the potential enrollment impacts associated with full development of existing residential land within city limits and the Metro Urban Growth Boundary (UGB) as well as planned future expansion of the UGB and city limits. In addition to this long-term view of potential enrollment and associated facility needs, the District must also conduct short-term enrollment forecasts based upon the rate and location of new residential development for the next five years to respond to imminent enrollments demands. A summary of the purpose, elements, and timing associated with forecasts for long-term enrollment potential and short-term enrollment growth is provided in Figure 4.

The long- and short-term evaluations are explained in the following sections: Long-Term Enrollment Potential and Short-Term Enrollment Forecasts.

Figure 4
ENROLLMENT FORECASTS





LONG TERM ENROLLMENT POTENTIAL

Long-term enrollment forecasts are used by the District to estimate facility needs. They rely on existing regional and local plans to understand what the District enrollment could be once defined areas for future residential development are fully developed. This planning analysis enables the District to anticipate future facility demands and secure necessary school sites and/or financing to continue to provide additional school capacity in a timely manner. Because the rate of development and enrollment change is very difficult to predict more than a few years ahead, the long-term forecast is focused primarily on three elements: number of students per residence; number of potential future residences; and general timing for new residential development.

Understanding the number of students coming from all residences throughout the District is a key ingredient to estimating the impact of future residential development. Data from 2010 is used because it is the most recent year where US Census data for the number of housing units (single and multiple family) and District enrollment are available. This data is summarized in Table 1.

To create an estimate of students per household, or "student yield", the 2010 District enrollment US Census housing count in Table 1 were compared to calculate student yields. The student yields for 2010 are assumed to remain constant for the purposes of estimating future enrollment as more residences are built within the District. The student yields for the four sub-areas in the District are summarized in Table 3.

The potential for new residential development within the current UGB and city limits is the second critical element to forecasting future development potential and enrollment. Areas within the UGB, including the cities of West Linn, Wilsonville, and Tualatin are planned for urban development. To provide a greater level of certainty regarding which areas may be eligible for future UGB expansion, Metro completed a process with local governments in 2010 to designate "urban reserves." These lands identify the locations where future UGB expansions can (urban reserves) and cannot (rural reserves) occur. Metro, in coordination with local governments, developed and adopted estimates in November 2012 for the residential development potential of these UGB expansion areas – several of which are located within the District. Any land brought into the UGB will come from areas designated as urban reserves. The estimated enrollment impact of the portions of the urban reserve areas within the District is summarized in Figure 5.

Table 3
STUDENT YIELD FACTORS - 2010 ALL UNITS BY SUB-AREA

Grade Ranges	K-5	6-8	9-12	K-12
West Linn Sub-Area				
	0.21	0.11	0.15	0.47
Stafford Basin Sub-Area				
	0.17	0.10	0.12	0.39
Clackamas County Sub-Area				
	0.15	0.09	0.12	0.36
Wilsonville Sub-Area				
	0.20	0.10	0.13	0.44
District-wide Average				
	0.20	0.10	0.14	0.44

The third element considered is the general timing for expanding the UGB for urbanization. Following designation of urban and rural reserve areas in 2010, Metro considered potential expansion of the UGB. In 2011, Metro completed this review process, and no land in the West Linn-Wilsonville School District was added to the UGB. The next residential UGB evaluation for potential expansion, which is sponsored by Metro, is scheduled to occur in 2014-2016. In 2012, Metro reviewed the timing of when all designated urban reserves will likely be brought into the UGB based on the availability of public infrastructure and anticipated growth rates for the region. The time period considered extends to 2045. The Metro timing estimates for UGB expansion are used to form the District's long-term enrollment forecast and the growth scenarios described in the following section.

GROWTH SCENARIOS

Three long-term scenarios for future growth are considered. They are based upon adopted comprehensive plans and supporting information provided by the cities of West Linn, Wilsonville and Tualatin, Clackamas County, and Metro. The 2010 US Census was used to determine the number and general distribution of existing housing units. These scenarios provide a snapshot of how the District might change as additional development and redevelopment occurs within the current UGB and as urban reserve areas are brought into the UGB and fully urbanized.

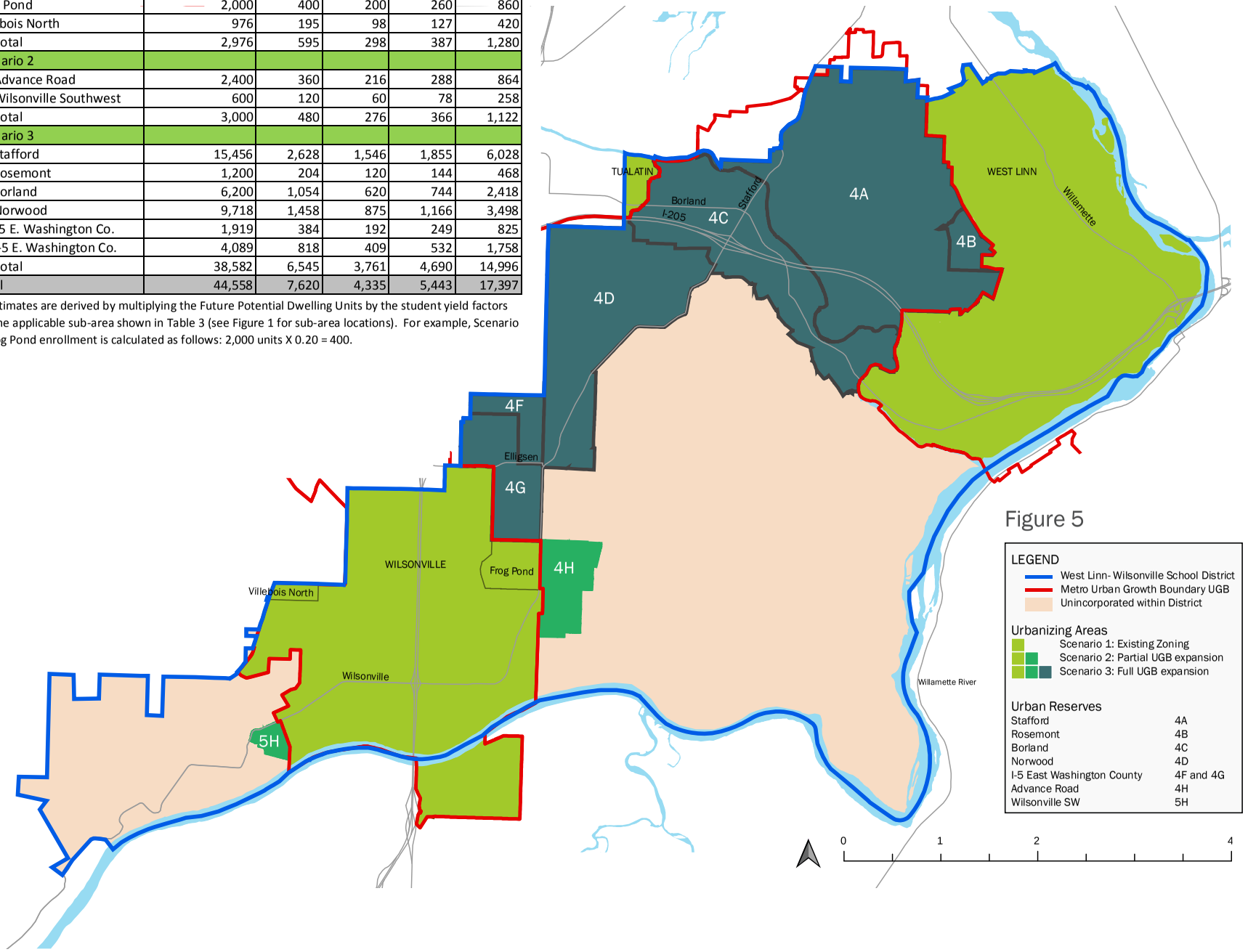
Three scenarios are based on the following assumptions:

- The remaining undeveloped residential land within the existing UGB will develop to the maximum current density allowable.
- Primary school capcities will change in 2015 with full-day classes for all kindergarten students.
- The capacity for existing middle and high schools will remain constant. Existing guidelines for future new school sizes will also remain constant. The guidelines for new school sizes are: primary school - 450 to 550 students (or up to 800 with a campus design); middle school - 600 to 800 students; and high school 1,200 to 1,500± students.
- The ratio of school age children per residence will be consistent with 2010 student yield ratios calculated for all housing units by comparing the 2010 US Census for residential units with the 2010 enrollment (Tables 1 and 3). Considering all residences provides a good indicator of how many students to expect in the long-term across the District.
- The urban reserve areas brought into the UGB will be developed at densities assumed by Metro (typically 10 to 15 units per acre).

POTENTIAL ENROLLMENT OF FUTURE URBANIZED AREAS

Future Annexation of Urban Reserve Areas	Future Potential Dwelling Units	Future Enrollment Estimates*			
		Primary	Middle	High	Total
Scenario 1					
Frog Pond	2,000	400	200	260	860
Villebois North	976	195	98	127	420
Subtotal	2,976	595	298	387	1,280
Scenario 2					
4H Advance Road	2,400	360	216	288	864
5H Wilsonville Southwest	600	120	60	78	258
Subtotal	3,000	480	276	366	1,122
Scenario 3					
4A Stafford	15,456	2,628	1,546	1,855	6,028
4B Rosemont	1,200	204	120	144	468
4C Borland	6,200	1,054	620	744	2,418
4D Norwood	9,718	1,458	875	1,166	3,498
4F I-5 E. Washington Co.	1,919	384	192	249	825
4G I-5 E. Washington Co.	4,089	818	409	532	1,758
Subtotal	38,582	6,545	3,761	4,690	14,996
Total	44,558	7,620	4,335	5,443	17,397

* Estimates are derived by multiplying the Future Potential Dwelling Units by the student yield factors for the applicable sub-area shown in Table 3 (see Figure 1 for sub-area locations). For example, Scenario 1 Frog Pond enrollment is calculated as follows: 2,000 units X 0.20 = 400.



GROWTH SCENARIOS

SCENARIO 1 - EXISTING ZONING WITHIN EXISTING UGB

existing zoning within existing UGB

Scenario 1 assumes no additional land is brought into the UGB, and all existing urban zoning designations remain in place (Figure 6). The student enrollment anticipated in the 2017 residential development (Table 4) is assumed to be within a few key areas within the Wilsonville city limit including Villebois Village and Brenchley Estates North and South. The remainder will be smaller redevelopment and infill projects. West Linn contains several smaller residential developments.

Two notable additions to these new units would be the Frog Pond area on the northwest corner of Boeckman Road and Stafford Road along with the northern portion of Villebois Village. Both of these areas are within the UGB, but have not been annexed. The northern portion of Villebois Village is part of the overall 2,300-unit master plan, and is simply awaiting annexation which will be initiated once development is imminent. Frog Pond is also within the UGB, but the city of Wilsonville must complete a concept plan before it may be annexed and developed. The city plans to initiate a concept planning process within the next two years. Preliminary city estimates suggest approximately 2,000 units once Frog Pond is fully redeveloped. All 2,300 residential units in Villebois Village are assumed to be built as part of Scenario 1.

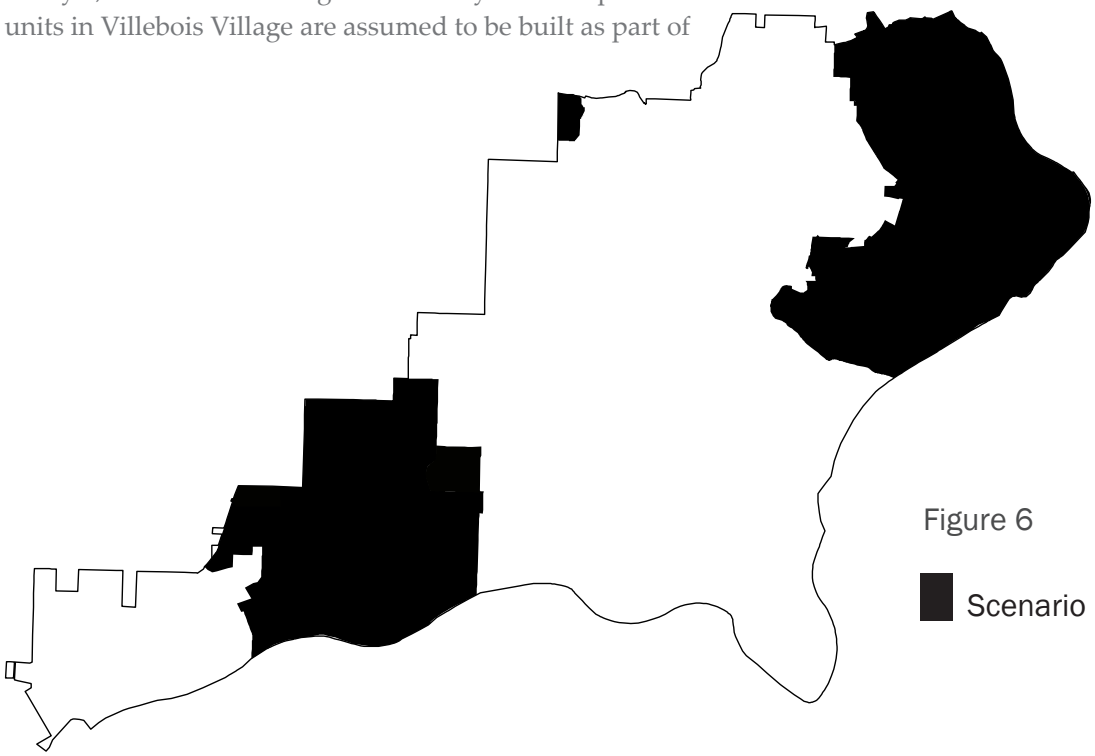


Figure 6

Scenario 1

GROWTH SCENARIOS

SCENARIO 2 - EXISTING ZONING WITH EXISTING UGB, PLUS URBAN RESERVES MOST LIKELY TO COME INTO THE UGB WITHIN THE NEXT 5 TO 10 YEARS DEVELOPED AT URBAN DENSITIES

existing zoning within existing UGB + urban reserves most likely to come into the UGB within the next 5 years developed at urban densities

Scenario 2 includes the development estimated in Scenario 1, and adds the assumption that the urban reserves identified by Metro as having infrastructure available in the short-term will also be developed at urban densities (Figure 7). Only the Advance Road and Wilsonville Southwest urban reserve areas in Wilsonville have been identified as likely sites to be ready within the next five to ten years. Advance Road includes a 40-acre site adjacent to the Wilsonville city limit, which has been jointly planned by the City and District for a community park, primary school, and middle school. These two areas are estimated to accommodate approximately 3,000 new housing units. Other than limited infill development and redevelopment, the change in residential units in West Linn is assumed to be minor.

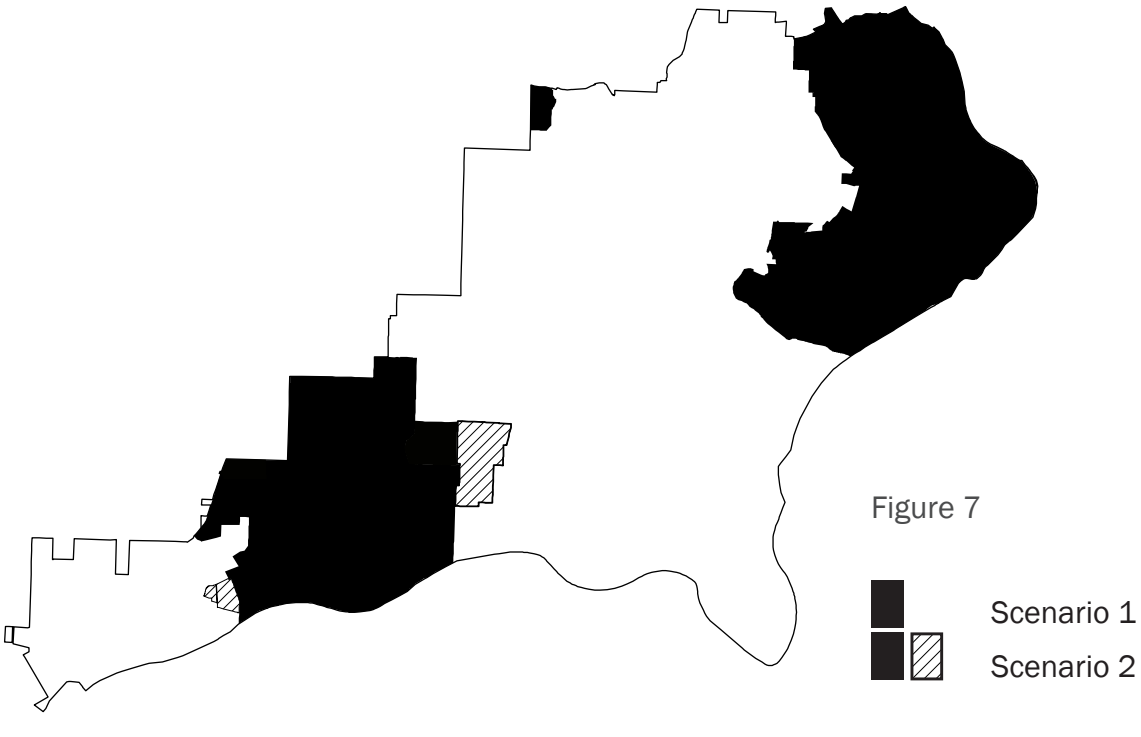


Figure 7

GROWTH SCENARIOS

SCENARIO 3 - EXISTING ZONING WITH EXISTING UGB, PLUS ALL URBAN RESERVES WITHIN THE DISTRICT BOUNDARIES DEVELOPED AT URBAN DENSITIES

existing zoning within existing UGB + urban reserves most likely to come into the UGB within the next 5 years developed at urban densities + all urban reserves within the District boundaries developed at urban densities

Scenario 3 includes the development estimates in Scenario 2 and assumes that all remaining urban reserves are developed at urban densities (Figure 8). This includes land located in the north-central portion of the District with Stafford Basin/Borland Road representing the major areas involved. Several of the urban reserve areas are only partially within the District. All of these areas are estimated to yield almost 34,000 residential units. Metro anticipates that development in these urban reserve areas will not occur until around 2045. This amount of development would clearly have an enormous impact on enrollment. The challenges will encompass much more than school facilities, including governance and providing a wide range of urban services and facilities. The issues related to urbanization of these areas will continue to be evaluated by Metro and local government. Subsequent updates of this plan will need to revisit the magnitude and timing of residential development in Scenario 3.

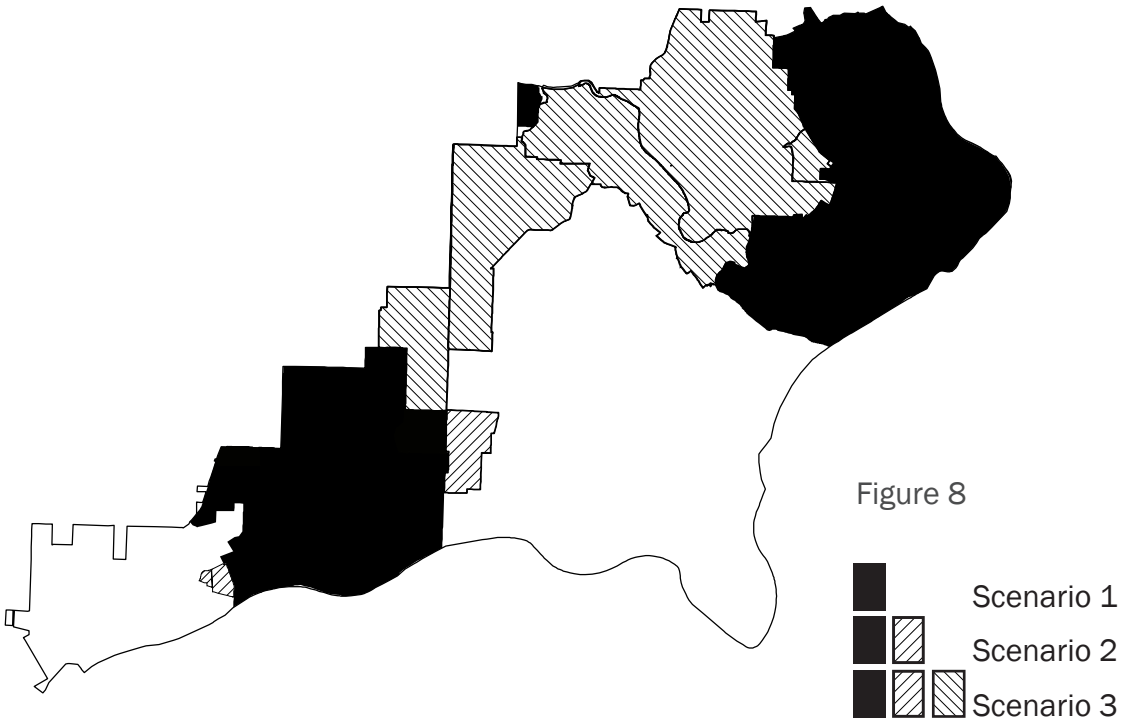


Figure 8

FUTURE SCHOOL NEEDS

Translating Residential Development into Enrollment Impact

The future development scenarios must be interpreted to estimate the enrollment impacts associated with each scenario. The number of estimated residential units is multiplied by the district-wide student yield factors presented in Table 3. Table 4 summarizes the district-wide future potential enrollment impact by school type. This information is then used to help identify the related school facilities necessary to accommodate future enrollment.

Table 4

FUTURE POTENTIAL SCHOOL FACILITY NEEDS SUMMARY

	Primary	Middle	High	Total
Existing Conditions				
2015 Educational Capacity*	4,082	1,932	3,306	9,320
2010 Enrollment (9/30/10)	3,763	1,958	2,674	8,395
Remaining Capacity	319	-26	632	925
Schools	9	3	3	15
Scenario 1: Existing Zoning & UGB				
Enrollment in addition to existing conditions	1,714	864	1,098	3,676
Total enrollment district-wide	5,477	2,822	3,772	12,071
Additional educational capacity needed once remaining capacity is utilized	1,395	890	466	2,751
Schools required in addition to existing conditions	2.8	1.3	0.3	4.4
Total schools required district-wide	11.8	4.3	3.3	19.4
Scenario 2: Existing Zoning & Expanded UGB (Advance Road)				
Enrollment in addition to Scenario 1	480	276	366	1,122
Total enrollment district-wide	5,957	3,098	4,138	13,193
Schools required in addition to Scenario 1	1.0	0.4	0.2	1.6
Total schools required district-wide	12.8	4.7	3.6	21.0
Scenario 3: Existing Zoning & UGB				
Enrollment in addition to Scenario 2	6,545	3,761	4,690	14,996
Total enrollment district-wide	12,502	6,859	8,828	28,189
Schools required in addition to Scenario 2	13.1	5.4	3.1	21.6
Total schools required district-wide	25.8	10.0	6.7	42.6

* Educational capacity changes only for primary schools due to full-day kindergarten.

Enrollment Impact across the District

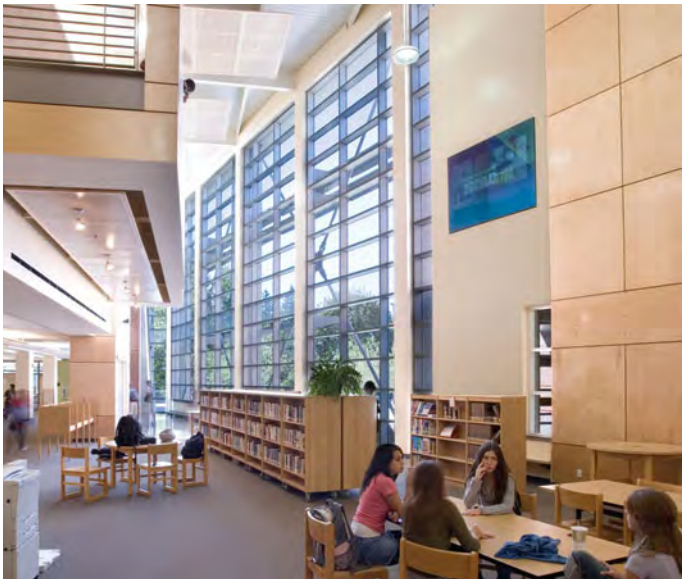
The student enrollment across the District for the three scenarios is not evenly distributed, and the concentration of students is expected to vary widely between sub-areas. In Scenario 1, the majority of the enrollment growth is forecast for the Wilsonville area with approximately 3,000 new students. West Linn is expected to see moderate growth with almost 500 new students, and the Stafford Basin and Clackamas sub-areas are anticipated to have insignificant enrollment gains.

For Scenario 2, enrollment growth is expected to be the strongest in the Wilsonville and Clackamas sub-areas with the development of the Advance Road and Wilsonville Southwest urban reserve areas, accounting for a potential of approximately 1,100 new students.

Scenario 3 would produce unprecedented enrollment growth totaling over 15,000 new potential students. Because of the uncertainty over the fate of the urban reserve areas and the distant horizon for their development, the potential enrollment and school facility impacts of Scenario 3 are not considered in the following evaluation of school facility needs. Scenario 3 should be revisited in future updates of the Long Range Plan.

SHORT-TERM ENROLLMENT FORECASTS

Short-term forecasts are designed to help the District anticipate enrollment looking out five years into the future. Forecasts are based on recent demographic trends, existing residences, and approved residential developments. A short-term forecast was prepared in January 2013 by Davis Demographics and Planning. The development data was created by interviewing city staff regarding approved residential developments and the timing for their completion, and the types of residences involved. As part of this analysis, a large sample of new housing units, built within the last five years, was taken to estimate the average number of students generated by new (built between 2007-2012) single family detached, multi-family attached (e.g., townhouses, condos, and apartments). These student yield factors shown in Table 5 were used in the projections. It shows that single family, detached residences typically generate approximately one student for every two homes while four or more multi-family attached or apartment units produce one student. The student yield factors were applied to the number and types of anticipated new homes to forecast future enrollment. The short-term projection anticipates modest enrollment growth from 8,599 students in September 2012 to 8,956 students in 2017. Table 6 summarizes the results of the short-term forecast.



With the opening of Lowrie and Trillium Creek primary schools in September 2012, the primary school capacity is 4,346 students with approximately 3,800+ students to accommodate. Similarly, the high schools, with a capacity of 3,306 and an enrollment of approximately 2,800, will continue to be adequate. The primary problem will be the increasing enrollment pressure on middle schools, which is estimated to be over capacity by approximately 260 students in 2017.

Table 5
STUDENT YIELD FACTORS (students per household)
FALL 2012 PROJECTIONS

Grade Ranges	K-5	6-8	9-12	K-12
Single Family Detached Units (724 built*)				
Student Yield Factor	0.29	0.12	0.13	0.54
Multi-family Attached Units (475 built*)				
Student Yield Factor	0.09	0.05	0.05	0.19
Average				
Student Yield Factor	0.21	0.09	0.10	0.40

* From a sample of units built between 2007-2012

Table 6
2012 SCHOOL CAPACITY & ENROLLMENT FORECAST

SCHOOL	CAPACITY		ENROLLMENT			PROJECTIONS*				
	2013	2015	2010	2011	2012	2013	2014	2015	2016	2017
PRIMARY										
Boeckman	479	457	640	631	555	549	532	511	496	493
Boones Ferry	689	645	805	823	531	587	607	601	613	626
Lowrie	476	432	0	0	407	496	598	665	716	743
Wilsonville Subtotal			1,445	1,454	1,493	1,633	1,738	1,777	1,824	1,863
WV Available Capacity	1,644	1,534			151	11	-94	-243	-290	-329
Bolton	363	341	332	269	278	256	250	232	214	202
Cedaroak	407	385	415	413	318	284	283	275	270	257
Stafford	501	479	543	525	450	358	366	366	364	370
Sunset	432	410	427	409	285	394	375	368	346	343
Willamette	501	479	601	609	510	542	542	550	532	528
Trillium Creek	498	454	0	0	458	433	445	450	441	446
West Linn Subtotal			2,318	2,225	2,299	2,266	2,260	2,239	2,167	2,145
WL Available Capacity	2,702	2,548			403	436	442	309	381	403
Subtotal			3,763	3,679	3,792	3,899	3,997	4,016	3,992	4,008
Total Available Capacity (K-5)**	**4,346**	**4,082**			**554**	**447**	**349**	**66**	**90**	**74**
MIDDLE										
Wood			697	706	737	769	818	868	943	990
Avail. Capacity	640	640			-97	-129	-178	-228	-303	-350
Athey Creek			566	602	607	534	515	481	495	485
Avail. Capacity	624	624			17	90	109	143	129	139
Rosemont Ridge			695	692	684	732	729	719	721	716
Avail. Capacity	668	668			-16	-64	-61	-51	-53	-48
Subtotal			1,958	2,000	2,028	2,034	2,062	2,068	2,159	2,191
Total Available Capacity (6-8)	**1,932**	**1,932**			**-96**	**-102**	**-130**	**-136**	**-227**	**-259**
HIGH										
Wilsonville	1,472	1,472	1,049	1,084	1,121	1,123	1,133	1,182	1,164	1,203
West Linn	1,748	1,748	1,548	1,506	1,553	1,499	1,472	1,509	1,471	1,449
Art Tech	86	86	77	86	105	105	105	105	105	105
Subtotal			2,674	2,676	2,779	2,727	2,710	2,795	2,740	2,756
Total Available Capacity (9-12)	**3,306**	**3,306**			**527**	**579**	**596**	**511**	**566**	**550**
TOTAL			8,395	8,355	8,599	8,660	8,770	8,880	8,891	8,956
Total Available Capacity (K-12)	**9,584**	**9,320**			**985**	**924**	**814**	**704**	**694**	**628**

* Projections assume that current school attendance areas remain unchanged.

** Assumes full-day kindergarten beginning in 2015.

DISTRICT PROPERTIES

In anticipation of future school needs, the District has acquired several properties, which could potentially be used to accommodate new school facilities. The scenarios assume the District will use these available sites. Additional sites will need to be acquired, especially in Scenario 2. The properties owned by the District are shown in Table 7.

All of the District properties are available for future school use. As the enrollment and attendance area picture changes with future expansion of the UGB, the District may need to sell a property holding in favor of another more suitable location. However, the appropriateness of using any of the sites should be subject to a detailed review of the site selection criteria prior to committing a specific site for school use. The availability of school sites between 10 to 50 acres is very limited due to development that has occurred and the UGB, which prevents urban growth, including schools, on rural and resource lands. The constrained number of possible sites will often make it impractical for the District to construct new schools on or near an "ideal" location. In addition, future expansions of the UGB may cause significant shifts in future attendance areas and ideal school locations. Because of this uncertain future, it will be critical for the District to evaluate its land holdings for their value as future school sites. The District will work closely with local governments and property owners in the planning and development of these areas.

Table 7
SCHOOL DISTRICT PROPERTIES

Property	Total Acreage	Location
Dollar Street	23 acres	Between Dollar Street and Willamette Falls Drive
Oppenlander	15.6 acres	North side of Rosemont Road
Wilsonville - Frog Pond	25 acres	NW of Stafford and Boeckman Roads
Advance Road	30 acres	South side of Advance Road, immediately east of Wilsonville city limit

ACCOMMODATING SCHOOL FACILITY NEEDS

SHORT-TERM: SCHOOL FACILITY NEEDS

The short-term enrollment forecast in Table 6 illustrates what the District should expect over the next five years. As noted above, the most acute capacity problems will be associated with middle schools, which are currently operating slightly above capacity. However, this forecast also indicates that primary school enrollment will probably need to be redistributed between schools to allow all primary schools to operate within their capacity limits.

LONG-TERM: SCENARIO 1

Looking beyond the next five years, the majority of the Scenario 1 enrollment growth (3,000 + students) is expected from the Wilsonville sub-area. West Linn will contribute almost another 500 students. Very little enrollment growth is expected from the other sub-areas.

Based on communication with Metro and local governments, full development of this scenario, which includes the enrollment growth estimated in the short-term forecast, could be anticipated between 2020 and 2030. Assuming that existing capacity is fully utilized

Table 8
SCENARIO 1 FUTURE POTENTIAL SCHOOL FACILITY NEEDS

	2015 Capacity	Additional Capacity Needed	New Schools	Location and Approximate Timing
Primary Schools	4,082	1,395	3.8	Replace Sunset - 2016 Frog Pond - 2020-2025 Advance Road - 2020-2025 Portables may be needed when Scenario 1 approaches full development.
Middle Schools	1,932	890	1.3	Advance Road - 2016 Portables may be needed when Scenario 1 approaches full development (2020-2025).
High Schools	3,306	466	0.3	Establish a new location for Arts and Technology High School - 2016 Portables may be needed when Scenario 1 approaches full development (2020-2025).
Total	9,320	2,751	5.4	

before building new school capacity, a total of four new schools will be necessary. In addition, Sunset Primary School is ending its useful life and must ultimately be replaced for a total of five new schools. The need for new schools will occur gradually over this time period. The most pressing need will be to construct the planned middle school site is on the Advance Road property and to replace Sunset Primary with a new school on the same site. The Advance Road urban reserve area is not planned to be included in the UGB for some time. The District will need to work with Metro and the city of Wilsonville to determine if the school site could be brought into the UGB at an earlier date. The Arts and Technology High School is operating in a leased building, and a new facility must be found within the next several years. A summary of the primary, middle, and high school needs for Scenario 1 is provided in Table 8.

LONG-TERM: SCENARIO 2

The majority of the enrollment growth (over 1,100 students) is expected from the Clackamas County sub-area near Wilsonville on the Advance Road site. The Wilsonville sub-area will also see growth due primarily to the Wilsonville Southwest urban reserve area. West Linn and Stafford Basin sub-areas will contribute very little additional enrollment.

Based on communication with Metro and local governments, full development of this scenario could be anticipated between 2025 and 2040. Assuming that existing capacity is fully utilized before building new school capacity, a total of 1.6 new schools will be necessary. Perhaps most significant will be the probable need for a third high school. Scenario 1 is expected to exceed the capacity of the three existing high schools (including the Arts and Technology High School), but probably not enough to justify building a fourth school. However, the additional enrollment expected from Scenario 2 should create the need for a new facility. A summary of the primary, middle, and high school needs for Scenario 2 is provided in Table 9.

NEXT STEPS

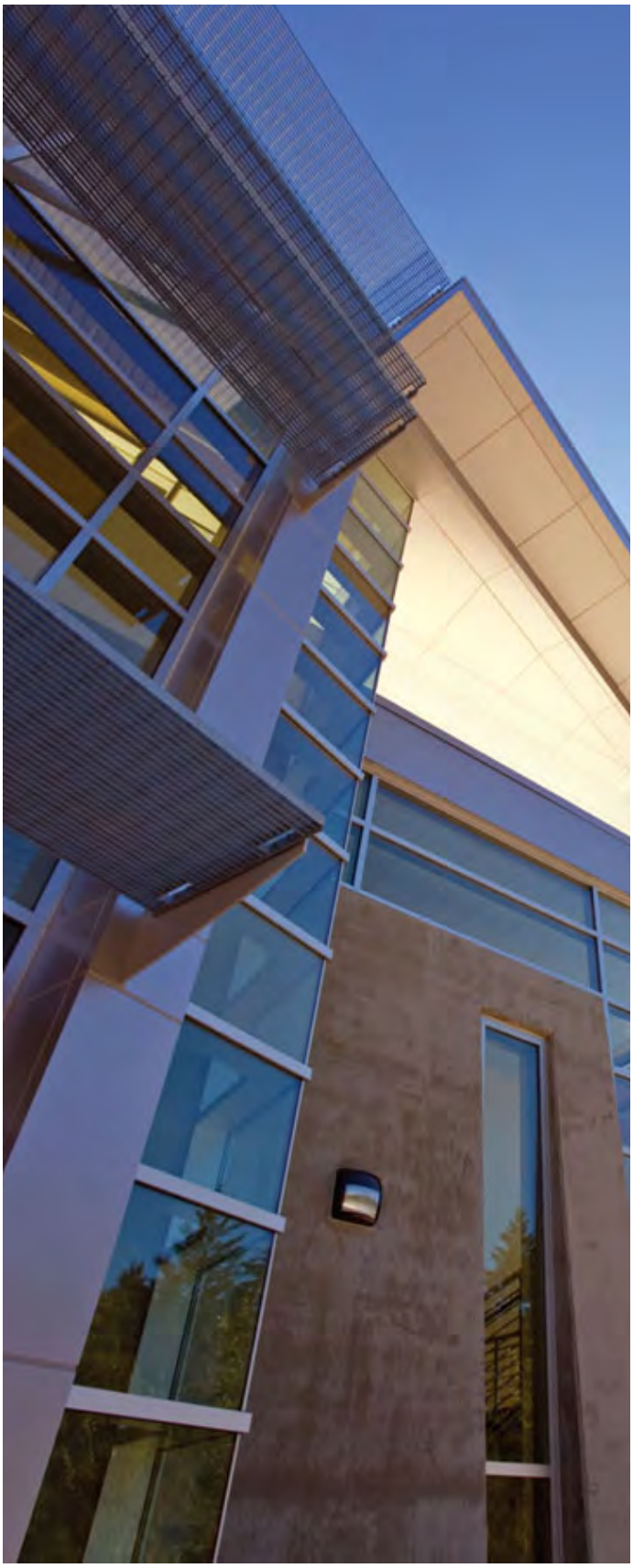
The short-term enrollment forecast coupled with a longer-term evaluation of what potential lies ahead are essential for proactive planning and being prepared for future district needs. Our understanding of current enrollment, capacity, and short-term enrollment growth highlight the immediate needs for additional middle school capacity, replacement of Sunset Primary School, and finding a permanent home for the Arts and Technology High School. The long-term estimates, by their very nature, are not as clearly defined, and the timing for new facilities is only generally understood. Future influences, such as the economy, household demographics, and evolving educational programs, will influence the ultimate timing of these long-term facility needs.

Table 9
SCENARIO 2 FUTURE POTENTIAL SCHOOL FACILITY NEEDS

	Additional Capacity Needed	New Schools	Location and Approximate Timing
Primary Schools	480	1.0	New facility to accommodate over capacity situation with full development of Scenario 1 (2030).
Middle Schools	276	0.4	New facility to accommodate over capacity situation with full development of Scenario 1 (2030).
High Schools	366	0.2	New facility to accommodate over capacity situation with full development of Scenario 1 (2025).
Total	1,122	1.6	

The District must continuously monitor future facility needs. Several "next steps" should be followed between now and the next update of the Long Range Plan: Monitor the effect of open enrollment on facility capacity and needs. This program will begin in September 2012, and it will take some time to understand how it will impact the District. Evaluate the potential impact of all-day kindergarten on primary school capacity as it shifts from an optional to a standard program. Prepare a 5-year short-term enrollment forecast annually to enable the District to proactively anticipate future enrollment and related capacity issues. Continue coordination with the City of Wilsonville regarding the planning and development for Frog Pond and north Villebois. Monitor the urban reserves planning being conducted by Metro in coordination with local governments.

- Monitor the effect of open enrollment on facility capacity and needs. This program will begin in September 2012, and it will take some time to understand how it will impact the District.
- Evaluate the potential impact of all-day kindergarten on primary school capacity as it shifts from an optional to a standard program.
- Prepare a 5-year short-term enrollment forecast annually to enable the District to proactively anticipate future enrollment and related capacity issues.
- Continue coordination with the City of Wilsonville regarding the planning and development for Frog Pond and north Villebois.
- Monitor the urban reserves planning being conducted by Metro in coordination with local governments.



APPENDIX B-S

Frog Pond Planning Schedule Memorandum

Memorandum

To: Keith Liden, Planning Consultant

CC: Tim Woodley Director of Operations, West Linn / Wilsonville School District; Chris Neamtzu, Planning Director

From: Katie Mangle, City of Wilsonville Long Range Planning Manager

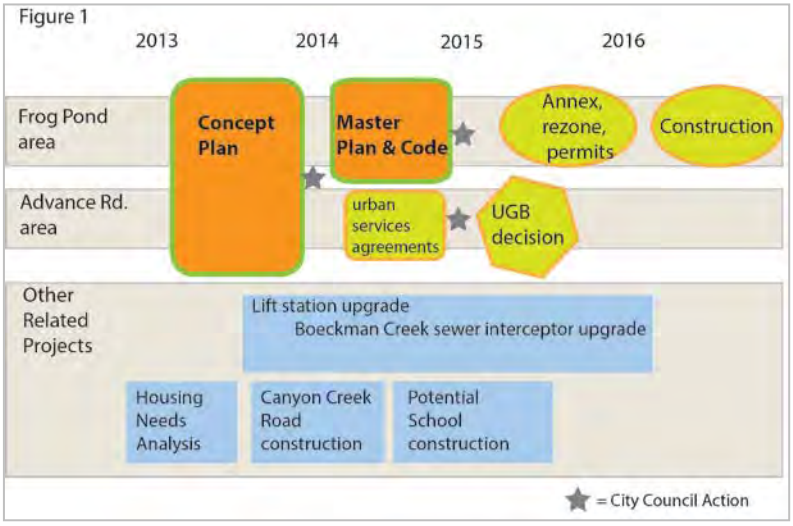
Date: July 10, 2013

Re: **Schedule for Planning of Frog Pond and Advance Road areas**

Planning for the development of the Frog Pond and Advance Road areas is a high priority for the Wilsonville City Council. Metro's deadline for the City to complete a concept plan for Frog Pond is December 2014. The City is currently awaiting the decision of a grant application for Metro Construction Excise Tax funding of the project to plan for both areas.

The proposed project would create one Concept Plan for the Frog Pond and Advance Road areas, and a Master Plan with implementing ordinances for the Frog Pond area. The two project phases are illustrated in Figure 1, which shows the grant-funded project in orange, within the context of other related projects and future implementation.

Figure 1



Preparing a concept plan for both areas will be most cost-effective and most likely to lead to great outcomes. Preparing a master plan for the Frog Pond area immediately following the concept plan is the best way to expedite private investment and on-the-ground construction.

If the City does not receive the grant, the City would most likely focus on developing a concept plan for the Frog Pond area only, in order to meet the Metro deadline for this work. The City would seek other funding sources to enable this planning effort to move forward, and without the grant this may happen in a more piecemeal fashion. At a minimum, the budget identified by the City as a match for the grant would be dedicated to the planning and

engineering analysis. The funding source, scope, and schedule for a locally-funded master plan for Frog Pond is to be determined, but would likely take much longer than it would if funded by the CET grant.

In either scenario, the City-led planning process will make important determinations about the vision, function, cost, and objectives of development in the Frog Pond area. An unknown variable in the implementation of such a plan will be the ability of a private party to assemble parcels for actual rezoning and development.

APPENDIX C-S

Frog Pond Utilities Memorandum

City of
WILSONVILLE
OREGON

Community Development
29799 SW Town Center Loop East
Wilsonville, OR 97070
Phone 503-682-4960
Fax 503-682-7025
TDD 503-682-0843
Web www.ci.wilsonville.or.us

MEMORANDUM

To: Keith Lydon, Planning Consultant
From: Nancy J.T. Kraushaar, PE, Community Development Director
Copy: Tim Woodley Director of Operations, West Linn/Wilsonville School District; Chris Neamtzu, Planning Director
Date: July 11, 2013
Re: Sanitary Sewer Infrastructure Availability for Frog Pond and Advance Road areas

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The Wilsonville West Linn School District is seeking urban growth boundary (UGB) expansion for a 40-acre area located south of Advance Road and east of Wilsonville Road adjacent to the City of Wilsonville in Clackamas County. The area will be used for a new elementary school and middle school to meet the district's student population needs.

I am submitting this letter in response to questions that arose during the June 27, 2013 public hearing about whether the district could achieve its objectives on properties they own in the 2002 Frog Pond urban growth boundary expansion area (Frog Pond). Over the next 18 months, the City will engage in developing a concept plan for both this area as well as the entire Advance Road Urban Reserve expansion area (not limited to the School District's site).

To plan for both city-wide needs as well as urbanization of the Frog Pond and the Advance Road Urban Reserve expansion areas, the Community Development department initiated a Wastewater Collection System Master Plan Update in October 2012. The modeling, condition assessment, and recommendations for infrastructure improvements to the collection system (gravity pipes and pump stations) will update previous recommendations from the City's 2001 Sanitary Sewer Master Plan and December 2008 Master Plan Addendum specific to the Memorial Park Pump Station capacity.

Using a new wastewater flow model for the master plan update has allowed the City to refine its understanding of the condition and capacity of the existing infrastructure. The new master plan model is based on recent flow monitoring data, water consumption data, and updated inflow and infiltration (I&I) assumptions.

Initial model results indicate greater capacity in the existing downstream collection system than was documented by the 2008 Master Plan Addendum. Initial findings indicate the two new schools can be served by public sanitary sewer at either the Advance Road or Frog Pond location.

Capacity needed to serve build out of the entire Frog Pond area is being further analyzed. Specifically, Memorial Park Pump Station upgrades (including age and relocation out of the 100-year flood plain) and upsizing sections of the Wilsonville Road and Boeckman Creek trunk lines are being evaluated in more detail.

Please feel free to contact me at 503.570.1562 or kraushaar@ci.wilsonville.or.us if you have questions.

Additional Testimony, July 11, 2013

My name is William Ciz. I live at 28300 SW 60th Avenue, Wilsonville, 97070, in the Advance Urban Reserve Area 4H. Below I have included some additional testimony based on information presented at the June 27, 2013 public hearing. My additional testimony is organized to address the Metro Code sections listed below.

Metro Code section 3.07.1425 (B)(3) A demonstration that any need shown under paragraphs (1) and (2) of this subsection cannot be accommodated on land already inside the UGB.

William Ciz Additional Testimony: In my oral testimony I stated that the WLWSD analysis of available sites, within the Wilsonville UGB, treats all six sites with the same level of information and analysis. The WLWSD acknowledges that they own site #6, 25 acres within the Frog Pond area and conclude that configuration of the site "does not allow a cohesive arrangement of school improvements and access. In addition a community park would not be possible on this property." It seems to me the standard and level of analysis of examining possible school sites within the UGB is higher for property the WLWSD owns within the UGB than other vacant parcels. The WLWSD needs to show at a higher level of detail why their Frog pond property within the UGB cannot meet their middle school need.

The WLWSD did not provide any additional information on actions that have been taken to make their Frog Pond property able to accommodate their school need. Information such as site plans that have been prepared and examined or attempts to purchase additional adjacent property to increase the size or viability of the Frog Pond site for a school and park are not addressed in the application. They just say it is too small and configured poorly so we need to build the school and park on property outside the UGB. And they also point out that if they had to use the Frog Pond site, a school could not be in place by 2017, when it is needed, because the Frog Pond area cannot be brought into the City of Wilsonville until it has met Metro's Concept Planning requirement. And the concept planning process would delay opening of the middle school.

The WLWSD has owned the Frog Pond property for over 12 years. The need for additional middle school capacity has been known for well over 6 years. It appears to me that inaction in planning to use the Frog Pond site inside the UGB, by the WLWSD, has created a self-imposed hardship that they contend can only be satisfied with land outside of the UGB, which is less than 1/3 of a mile away from the Frog Pond Site. In action on planning to use WLWSD property within the UGB does not, in my judgment, meet this criterion.

Metro Code section 3.07.1440 (B)(1) The proposed uses of the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land.

William Ciz Additional Testimony: The WLWSD indicated in their rebuttal testimony at the hearing the first phase of development of the Advance Road 40 acres site would be building the middle school, followed by the city park (baseball and soccer fields), and last an elementary school. The WLWSD also responded to my testimony that both Athey Creek and Wood Middle schools had a single driveway access when each school was opened. The WLWSD responded that both sites had multiple access points when they opened.

As I pointed out in my written and oral testimony traffic impacts from the Advance Road 40 acres site are not compatible with 60th Avenue and rural residential and farm properties adjacent to 60th Avenue. There will be traffic safety and congestion impacts if 60th Avenue is used for school and park traffic in its current configuration. And if 60th Avenue is widened and improved there will be impacts to adjacent properties and driveways with grade and location changes for the new road. This will cause relocation of existing driveways and require right of way acquisition from properties adjacent to 60th Avenue. The best way to make the WLWSD Advance Road 40 acres site compatible with adjacent land is to not allow traffic to and from the site to use 60th Avenue. Excluding 60th Avenue from the proposed UGB expansion is the only way to make the WLWSD Advance Road 40 acres site compatible with adjacent land.

In my written and oral testimony I asked that two conditions to be imposed if the WLWSD Urban Growth Boundary Major Amendment is approved to ensure that "**The proposed uses of the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land.**"
The conditions are:

- 60th Avenue will not be included within the UGB as part of the approval of the WLWSD Urban Growth Boundary Major Amendment.
- Access to and from the WLWSD school and park site onto 60th Avenue will not be permitted until the properties east of 60th Avenue and south of Advance Road are included into the UGB.

These conditions align with development of the first and second phase of the Advance Road 40 acres site because the middle school and city park baseball and soccer fields can be accessed from a single driveway from Advance Road. The school and park facilities will be used at different times of the day and different days of the week. The school facilities are used weekdays between 8am to 3:30 or 4pm and city park baseball and soccer fields are used typically after 4pm on weekdays and on weekends. Therefore the driveway from Advance Road and the parking facilities can be shared by both uses.

As I stated in my original written and oral testimony, both Athey Creek and Wood Middle schools had a single driveway that provided access to the schools and sport fields when each school was opened. As additional phases or development of these sites occurred additional access driveways were added to each school site to accommodate the new use.

Attached are 1995 and 2009 aerial photographs of the Athey Creek and Wood Middle school sites. These aerial photographs were copied from the website Oregon Imagery Explorer: http://imagery.oregonexplorer.info/. They are the 1995 NAIP (B&W) and the Best of 2009 Pictometry (Color) aerial photographs. Note on the 1995 NAIP (B&W) of the Wood Middle School site (See Attachment A) that access to the middle school is provided by one driveway on Wilsonville Road. Wood Middle School was built and in operation prior to 1985. Only later after construction of Boones Ferry Elementary School, sometime between 2002 and 2005, was an additional driveway access to both Wood Middle School and Boones Ferry Elementary School provided (See Attachment B, 2009 Pictometry (Color)).Also note on the 1995 NAIP (B&W) of the Athey Creek Middle School site (See Attachment C) that access is provided by one driveway on Borland Road. Only later after construction of WLWSD Operation Offices was an additional driveway access to Athey Creek Middle School on Borland Road provided. (See Attachment D, 2009 Pictometry (Color)).

These examples show how phased development of both the Wood and Athey Creek Middle Schools occurred, and show that access to and from the Advance Road 40 acres site could be handled with a single driveway access onto Advance Road for construction the first phase, the middle school and construction the second phase the city park baseball and soccer fields. Providing access to and from the Advance Road 40 acres site only onto Advance Road would improve the compatibility of the subject

property with adjacent rural residential and farm properties by eliminating traffic, safety, potential right of way acquisition and road construction impacts on 60th Avenue. Excluding 60th Avenue from the UGB would also save the WLWSD money by eliminating the need for off-site road improvements on 60th Avenue.

The first condition that I proposed is that 60th Avenue not be included within the UGB as part of the approval of the WLWSD Urban Growth Boundary Major Amendment. This would keep 60th Avenue as a rural country road outside of the UGB and not allow it to be used for urban purposes.

The second condition that I proposed is that access to and from the WLWSD middle school and park site onto 60th Avenue not be permitted until the properties east of 60th Avenue and south of Advance Road are added into the UGB. According to Metro's projections the remainder of the Advance Road Urban Reserve Area 4H will be added into the UGB sometime between 2025 and 2030. Considering that the Middle School is projected to be open in 2017, followed by the city park baseball and soccer fields, if the remainder of the Advance Road Urban Reserve Area 4H came into the UGB in 2025 the timing would be about right for construction of the third phase, the elementary school. The concept planning process for Advance Road Urban Reserve Area 4H would consider and coordinate the best locations for access onto 60th Avenue to serve the WLWSD site and adjacent properties.

If 60th avenue is included into the UGB and becomes part of the City of Wilsonville rural residential and farm properties east of 60th will not have a voice other than the City of Wilsonville land use and development review processes in how their road is used. We will not be part of the City, we do not vote for City elected officials, and we do not participate on city planning commission or development review boards. If 60th Avenue becomes part of the UGB and the City of Wilsonville, current local residents will lose control of our road and only be able to provide testimony or appeals in the City of Wilsonville land use process.

To ensure that **"Metro Code section 3.07.1440 (B)(1) The proposed uses of the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land"** is addressed I request the following conditions be added to the WLWSD Urban Growth Boundary Major Amendment if it is approved:

- 60th Avenue will not be included within the UGB as part of the approval of the WLWSD Urban Growth Boundary Major Amendment. It will remain within its current Clackamas County zoning and within the Advance Road Urban Reserve Area 4H.
- Access to and from the WLWSD middle school and park site onto 60th Avenue will not be permitted until the properties east of 60th Avenue and south of Advance Road are included into the UGB. Planning for additional access to the WLWSD middle school and park site will be part of the Advance Road Urban Reserve Area 4H Concept plan. Funds for the Advance Road Urban Reserve Area 4H Concept plan have been requested from Metro.This will ensure that future urban development on adjacent land east of 60th Avenue and access to and from the WLWSD school and park site onto 60th Avenue are coordinated and in the best location to serve all properties and uses.

Thank you for the opportunity to provide input.

William Ciz
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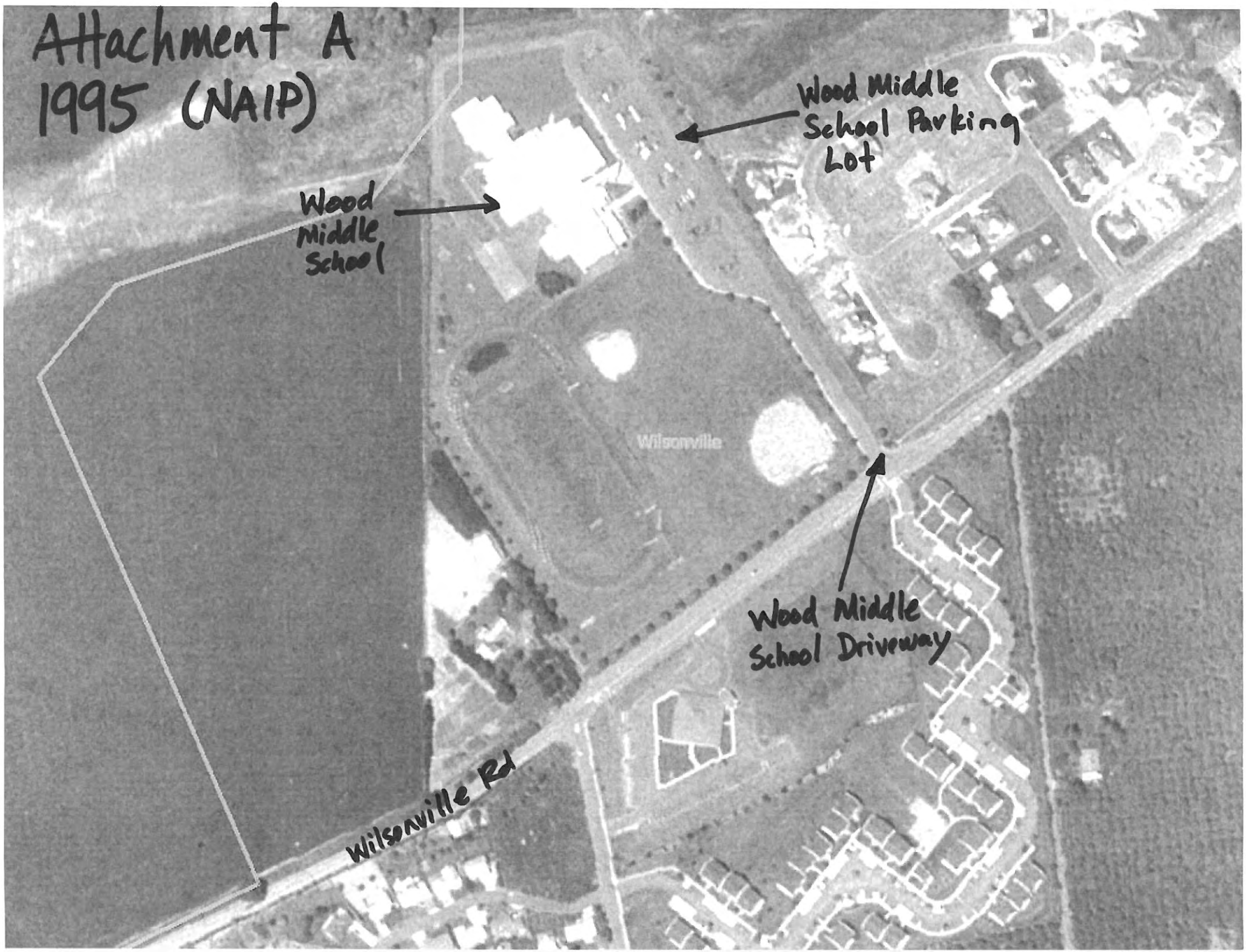
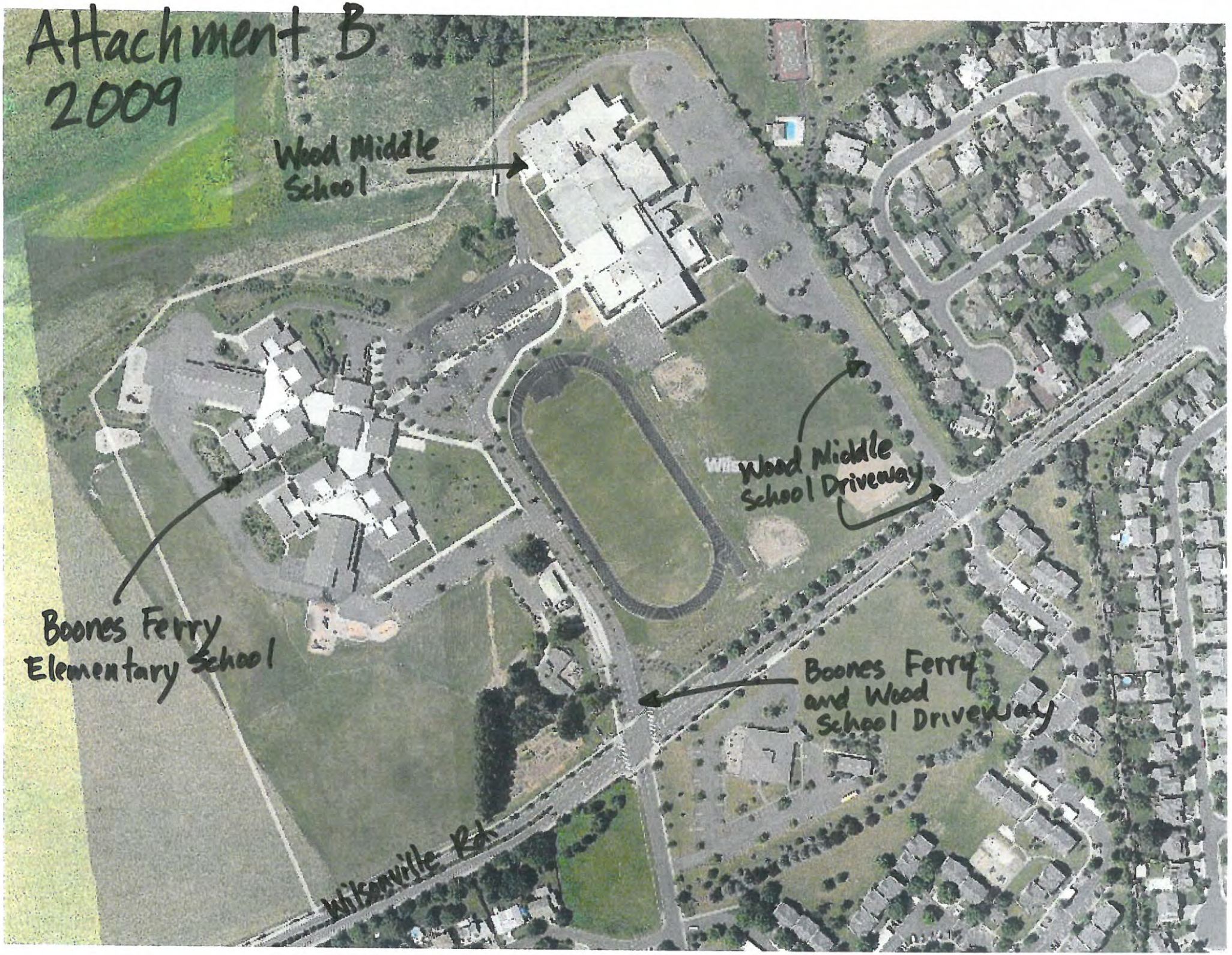
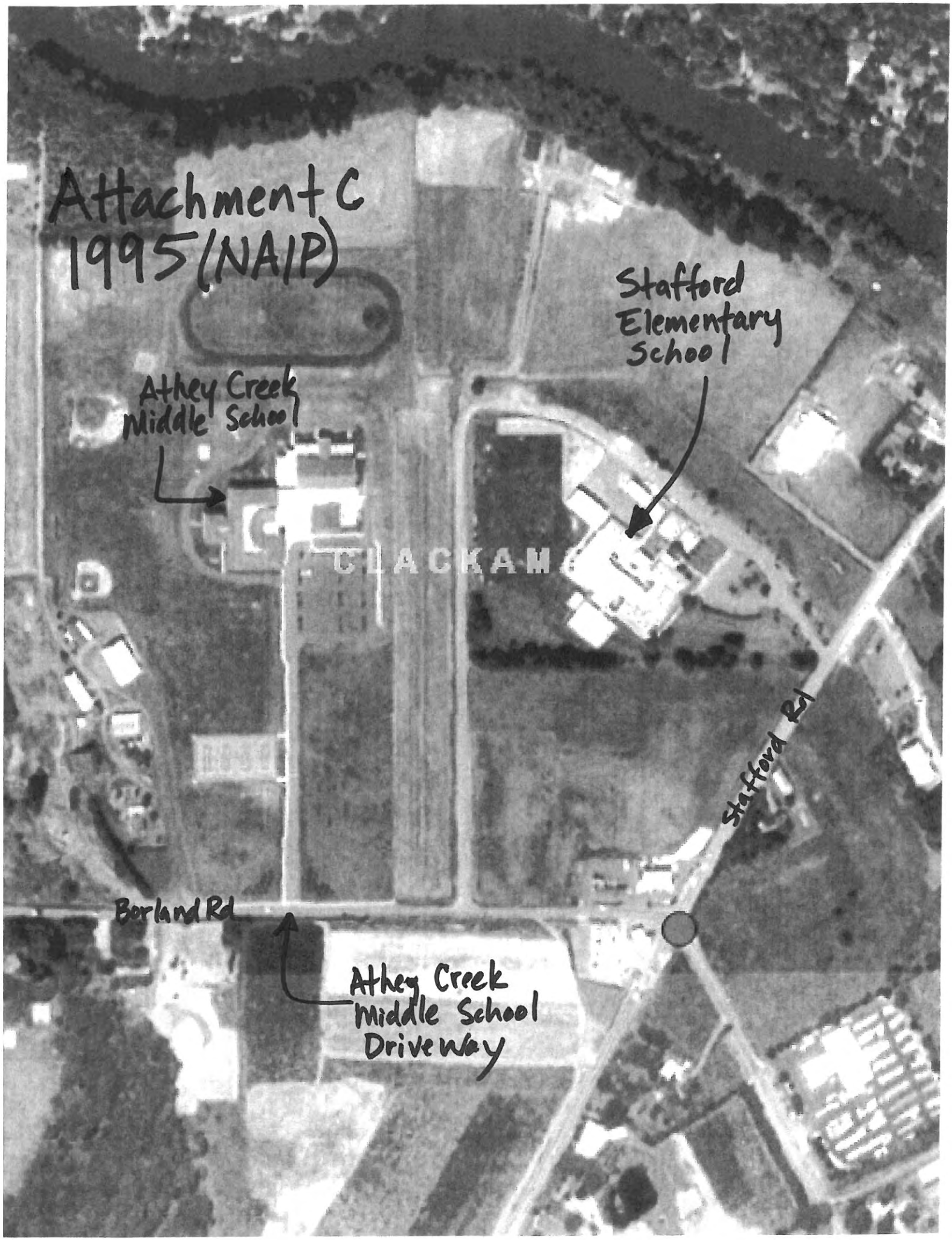
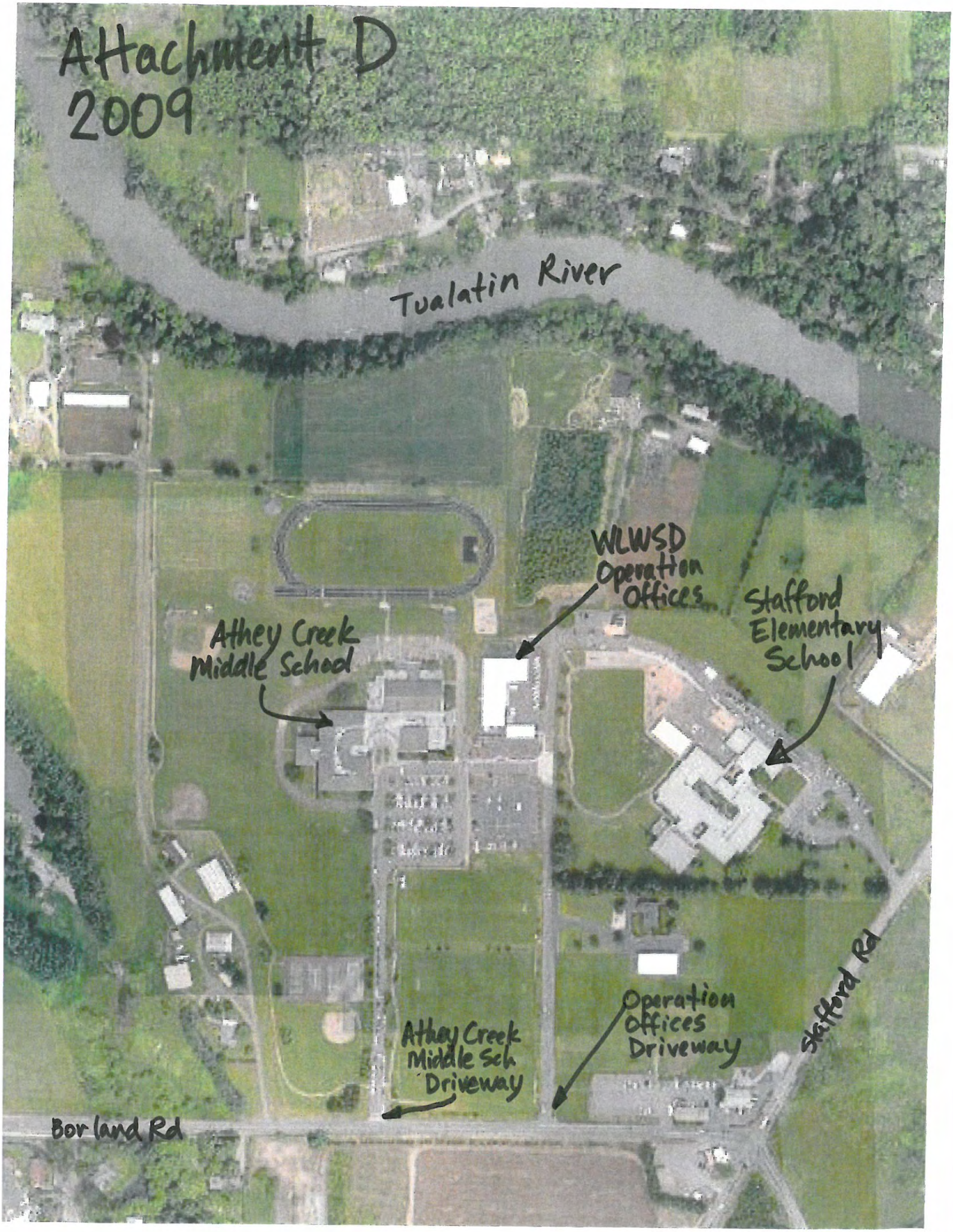
Wilsonville, OR 97070(503) 682-3468
lizciz@frontier.com


Attachment A
1995 (NAIP)
Wood Middle School Parking Lot
Wood Middle School
Wilsonville
Wood Middle School Driveway
Wilsonville Rd


Attachment B
2009
Wood Middle School
Wood Middle School Driveway
Boones Ferry Elementary School
Boones Ferry and Wood School Driveway
Wilsonville Rd


Attachment C
1995 (NAIP)
Stafford Elementary School
Athey Creek Middle School
Stafford Rd
Borland Rd
Athey Creek Middle School Driveway


Attachment D
2009
Tualatin River
WLWSD
Operation
Offices
Stafford
Elementary
School
Athey Creek
Middle School
Athey Creek
Middle Sch
Driveway
Operation
Offices
Driveway
Stafford Rd
Borland Rd

600 NE Grand Ave.
Portland, OR 97232-2736
503-797-1700
503-797-1804 TDD
503-797-1797 fax

www.oregonmetro.gov

Metro | *Memo*

Date: Thursday, July 11, 2013

To: Andrew Stamp, Hearings Officer

From: Tim O'Brien, Principal Regional Planner

Re: Requested Information on New Urban Area Planning for Frog Pond

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The Frog Pond area was included in the Metro Urban Growth Boundary (UGB) in 2002 through the adoption of Metro Ordinance 02-969B. Exhibit M to Ordinance 02-969B - Conditions on Addition of Land to UGB (attached) directs the city or county with land use planning responsibility for the areas included in the UGB to complete the planning required by Urban Growth Management Functional Plan (Functional Plan) Title 11: Planning for New Urban Areas for the area. Exhibit M also contains conditions for specific areas; the conditions for Frog Pond (Area 45) are found on page 3 of Exhibit M. Wilsonville has planning responsibility for the Frog Pond/Area 45.

As noted above Functional Plan Title 11: Planning for New Urban Areas is the Metro Code section that outlines the required planning components for areas brought into the UGB. Please see attached Code Section 3.07.1120 for the requirements.

As you can see, these requirements reference comprehensive planning for the expansion areas and are intended to look at urban form and development of the entire area that is included in the UGB, including street layout, density and financing of local public facilities and services. These requirements cannot be completed for individual tax lots or small groups of tax lots. Page nine of the Metro staff report references these requirements. The other local jurisdictions that had planning responsibility for areas added to the UGB in 2002 as well those areas added in 2004/2005 have completed the required new urban area planning requirements for their entire expansion area prior to development occurring, consistent with the conditions of approval and Metro Code Section 3.07.1120. Metro believes that allowing the new urban area planning to be completed for the school district only property in the Frog Pond area is inconsistent with the code requirements and is not good planning practice.

Additional Testimony, July 18, 2013

My name is William Ciz. I live at 28300 SW 60th Avenue, Wilsonville, 97070, in the Advance Urban Reserve Area 4H. My additional comments are organized to address the Metro Code sections listed below.

Metro Code section 3.07.1425 (B)(3) A demonstration that any need shown under paragraphs (1) and (2) of this subsection cannot be accommodated on land already inside the UGB.

William Ciz Additional Comments: I have reviewed the following supplemental information submitted by the WLWSD and Metro:

1. July 11, 2013 Metro Memo from Tim O'Brien
2. July 11, 2013 City of Wilsonville Memorandum from Nancy J.T. Kraushaar
3. July 11, 2013 Supplemental Information and Findings from the WLWSD

Each of the documents contains some interesting information that I would like to highlight and comment on. First the July 11, 2013, Metro Memo from Tim O'Brien implies that all other or most local jurisdictions that had planning responsibilities for areas added to the UGB in 2002 and 2004/2005 have completed their Metro concept planning requirement.

The July 11, 2013, City of Wilsonville Memorandum from Nancy J.T. Kraushaar states that over the next 18 months the City will be developing concept plans for both the Frog Pond and Advance Road Urban Reserve area. The memorandum also states that existing public sanitary sewer system can serve either of the two school sites, the Frog Pond site within the UGB or the Advance Roads site outside the UGB.

The July 11, 2013, Supplemental Information and Findings from the WLWSD continues to emphasis that the Metro concept planning process will delay the schedule for opening a new middle school. The supplemental information also states that it was always assumed that the WLWSD would have to add additional land to enlarge the Frog Pond site to make it work for a school site. The supplemental information seem to also contend that the WLWSD could not determine how to site plan their property in the Frog Pond area or determine which additional parcels would be needed because the concept planning process was not complete.

When I review this information I draw the following conclusions:

- Both the Frog Pond WLWSD site and the Advance Road WLWSD site can be served by public sanitary sewer.
- Both the Frog Pond area inside the UGB and the Advance Road Urban Reserve area outside the UGB will be concept planned over the next 18 months.

I do not understand how the WLWSD can conclude that the Frog Pond site inside the UGB cannot be used to meet their middle school need which has been known for a least the last six years. The WLWSD application materials discuss that the school site planning, property, and construction of a middle school will set the tone and context for the Advance Road Urban Reserve area Concept Plan outside the UGB. But in the Frog Pond area within the UGB, the WLWSD property and school site planning can only occur after the concept planning process has concluded. This does not make sense. Sometime over the past 10 years the WLWSD could have developed a site plan for the Frog Pond site that would determine the configuration of a middle school, the park, and elementary school, and which additional properties were

needed. This would have set the tone and context for the Frog Pond Concept Plan and perhaps moved the concept planning process forward.

Both areas will be concept planned at the same time so I do not understand how the WLWSD can draw different conclusions about the impact of their sites on the concept planning process. I do not believe the WLWSD has demonstrated that their need for school and park facilities cannot be accommodated on land already inside the UGB.

One solution to the Metro concept planning process delaying the schedule for opening a new middle school in the Frog Pond area is for Metro to eliminate concept planning requirement for the Frog Pond school site and any additional adjacent properties needed. The WLWSD site planning process would set the tone and context for the Frog Pond Concept Plan and both planning efforts could move forward at the same time. The Frog Pond school site currently occupies much of the southeast corner of the Frog Pond area and would not inhibit concept planning of the remainder of the Frog Pond area.

Metro Code section 3.07.1440 (B)(1) The proposed uses of the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land.

William Ciz Additional Testimony: There is one more piece of additional testimony that I would like to add on this criterion. I am sure the WLWSD will add in their rebuttal that driveway access to and from the Advance Road school site onto 60th Avenue is required to provide alternate access for emergency services providers such as fire and ambulance. I believed this was stated at the June 27th public hearing and therefore the conditions I proposed, elimination of 60th Avenue from the UGB expansion and no access onto 60th from the Advance Road school site until the remainder of the properties east and south of Advance Road are in the UGB are not possible.

My response would be that both Wood and Athey Creek Middle were built with single driveway access that met emergency services access requirements. This issue could be handled during design of the school site by increasing the width of the driveway so that emergency service vehicles could pass entering or existing traffic easily or by providing an additional emergency services driveway on Advance Road. The emergency services driveway could be gated or designed so that only fire, police, or ambulance services could use it.

Thank you for the opportunity to provide input.

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METRO UGB MAJOR AMENDMENT APPLICATION
Advance Road Site
for
West Linn-Wilsonville School District
Final Rebuttal
7.25.13

INTRODUCTION

At the conclusion of the Metro hearing on June 27, 2013 regarding the Advance Road UGB amendment application, the Hearings Officer kept the record open until July 11, 2013 to give interested parties the opportunity to submit additional information. Supplemental information was provided by West Linn-Wilsonville School District and a local resident opposed to the application, William Ciz. The district is providing final rebuttal below in support of the application.

The rebuttal comments are in response to the following testimony submitted by Mr. Ciz:

- The oral testimony at the June 27th hearing.
- Additional Testimony, July 11, 2013.
- Additional Testimony, July 18, 2013.

His objections to the application are related to two sections in the Metro Code:

- *3.07.1425 B. 3. A demonstration that any need shown under paragraphs 1 and 2 of this subsection cannot be accommodated on land already inside the UGB.*
- *3.07.1440 B. 1. The proposed uses of the subject land would be compatible, or through measures can be made compatible, with uses of adjacent land.*

SECTION 3.07.1425 B. 3. NEED TO USE LAND OUTSIDE THE UGB

Objections

Related to this section, Mr. Ciz raises the following objections:

1. The Frog Pond site should have been subject a more rigorous level of site suitability analysis and the district has not demonstrated that the site is unsuitable.
2. The district has created a self-imposed hardship regarding the Frog Pond site because it did not purchase additional property and/or did not conduct the concept and site planning necessary to make the property available for development.
3. Both the Frog Pond and Advance Road sites, which are owned by the district, can be served by public sanitary sewer.
4. Both the Frog Pond area within the UGB and Advance Road UR 4H will be concept planned over the next 18 months.

Response

1. Regarding the rigor of the site analysis, the district provided supplemental information on July 11th comparing the available sites within the current UGB. In addition to the timing issue (see response 4 below), the site configuration and size are inadequate to create a functional school facility, as demonstrated in the application materials. The property is irregularly shaped with a narrow connection of less than 80 feet between the eastern 10 acres and the western 15 acres of the property. In addition, the property extends approximately 2,000 feet in an east-west direction with a distance of one-third to one-half mile between the northeast and southwest corners of the property. This elongated configuration makes it virtually impossible to create an efficient school facility where activity areas are closely integrated. In contrast, the proposed Advance Road site, as well as the existing middle schools in the district, feature sites that are more square-shaped allowing much closer proximity between buildings, playgrounds, athletic fields, parking, and access resulting in more efficient operations.

   As the district testified at the hearing, primary and middle school campuses offer a variety of efficiencies in terms of capital and operating costs. A key reason is the ability to have shared, rather than stand-alone, facilities such as common areas (e.g., auditoriums, cafeterias, libraries) athletic fields, access, and parking. However, with the configuration of the Frog Pond site, the resulting distances between facilities occupying a property over 2,000 long (equivalent to 8-9 downtown Portland blocks) would eliminate many opportunities to share facilities. The facilities shown on the Advance Road concept plan (Figure 3 of the application) would need to be arranged in a linear fashion creating significant distances between activity areas.

2. Prior to Frog Pond coming into the UGB, the district approached property owners and found three willing sellers and the ability to at least begin to assemble a school site. Once the property came into the UGB, the housing market was hot and land prices in Frog Pond immediately increased significantly reducing the district's buying power. In this environment, it becomes especially difficult to find willing sellers because property owners tend to be more interested in maximizing financial gain by letting prices rise than sell to the school district.

   Regarding the initiation of a concept plan, Mr. Ciz does not appear to appreciate that the school district does not have the authority or financial ability to unilaterally initiate a concept plan for the larger Frog Pond area. The district could create a development concept for its property, but for this to be coordinated with the remaining 25+ properties in Frog Pond, it must be created as part of a larger concept plan for the entire area. This area-wide concept planning must be done by the city of Wilsonville or an entity with an interest in all of the land. Obtaining the funding to do the concept planning for the Frog Pond area has been problematic for the city and the reason for its pending CET grant application to Metro.

   In addition to the funding issue for planning, the preliminary engineering analysis conducted for the city indicated that significant sanitary sewer system improvements would be necessary before Frog Pond could be developed. Based on the cost of the improvements believed to be necessary, the school district reasonably concluded it would not have the financial resources to resolve these problems on its own. It would need to wait for further evaluation and the completion of the concept plan for all of Frog Pond.

3. The new information indicating that both the Frog Pond and Advance Road properties owned by the district may currently be served by sanitary sewer was not available to the district or the city until after the June 27th hearing. This may potentially remove one obstacle that was believed by the city and the district to exist. However, the capacity of the sanitary sewer system continues to be evaluated as noted in the memorandum from the city Community Development Director (Appendix C-S).

4. Mr. Ciz appears to contend that once the concept planning is done in 18 months, the district's Frog Pond property would be available for development. It is true the city is required by an agreement with Metro to have the concept planning completed by the end of 2014. However, as shown in the timeline graphic in the city memorandum ("Schedule for Planning of Frog Pond and Advance Road Areas", Appendix B-S), completion of the concept plan for Frog Pond is only the first of three steps necessary to make the area, including the district property, available for development.

   The creation of a more specific master plan (perhaps comparable to the process the city used for Villebois Village) would be the second step. After the master plan, the city will rely upon a developer(s) to assemble parcels and create a development proposal(s) as a prerequisite to annexation and rezoning. The city is committed to completing the concept planning by the end of 2014 (Step 1), but the pace of the master planning (Step 2) and land assembly/development proposal/annexation/rezoning (Step 3) will be contingent on a variety of factors that are outside of the district's control. Funding is a key issue, and without the CET grant, the city memorandum (Appendix B-S) notes that "(T)the funding source, scope, and schedule for a locally-funded master plan for Frog Pond is to be determined, but would likely take much longer than it would if funded by the CET grant."

   Assuming the city does receive adequate funding to proceed with the concept and master planning of Frog Pond, the master planning is tentatively scheduled for completion around the end of 2015. The timing of the final land assembly/annexation/rezoning step will be driven by the market and property owner/developer interests – not the city or the district. With the best case scenario illustrated in the city memorandum, Frog Pond is not likely to be ready for development until sometime around 2016-2017. This amount of time, plus the uncertain schedule, makes the Frog Pond site a very poor option for the district with growing middle school enrollment pressure that will become acute over the next 4 to 5 years.

SECTION 3.07.1440 B. 1. COMPATIBILITY WITH SURROUNDING LAND USES

Objections

Related to this section, Mr. Ciz makes the following points:

1. Until the UGB is amended to include properties on the east side of 60th Avenue, this street should not be included in the UGB and it should not be made available for access (emergency only access could be acceptable) to the school property.
2. The school can be served by one driveway on Advance Road as other schools in the district.

Response

1. Because Urban Reserve 4H advance Road will ultimately be in the city of Wilsonville, application of city, rather than county, improvement standards would be the most practical approach. Urban development should have urban infrastructure provided at the time of development, not at some unknown future date. If the UGB does not include Advance Road and/or 60th Avenue, the city will probably ask Clackamas County to enter into an intergovernmental agreement to apply city street standards. Even if the roads remain outside of the UGB, street right-of-way dedication and improvements are likely to be a county requirement at the time of development.

2. Using aerial photos in his July 11th testimony, Mr. Ciz shows that Wood and Athey Creek middle schools where initially developed with one driveway. The photos also show that both school sites evolved to have multiple interconnected driveways. The purpose of having more than one driveway is to create more efficient access and egress for school buses, staff, parents, and visitors. Also, alternative routes for emergency access are very important. Tualatin Valley Fire and Rescue always desires multiple access points, and it is expected to require more than one driveway in this case. Athey Creek and Wood middle schools were originally built in accordance with the regulations in place at that time, but requirements change. For example, Athey Creek Middle School and Stafford Primary School (adjacent to Athey Creek) could not be built where they are today due to changes in Clackamas County land use policy.

CLOSING COMMENTS

Like any developer, the key issue for the district is certainty. And in this way, the Frog Pond and Advance Road sites are fundamentally different. Frog Pond consists of approximately 30 properties, including the three owned by the district. Two of the three district properties have street frontage on Stafford or Boeckman roads, but an internal street system will need to be planned in coordination with the other property owners. With east-west and north-south dimensions of approximately 2,000 and 1,200 feet respectively, and desired maximum block lengths in the 500-foot range, public street access through the district property is expected. However, the street alignments must be determined as part of the concept and master planning process for all of Frog Pond. Site planning for the district property is integrally linked with the surrounding properties in a planning process with a best case completion date of 2016-2017.

In contrast, Advance Road is adjacent to the city with direct access to utilities and city services. Because of its location adjacent to established streets (Advance Road and 60th Avenue) and developed city property and sensitive lands to the west, additional streets through the property will not be feasible or desired. The site may be planned independently without affecting the development options and potential of surrounding land within Urban Reserve 4H.

The district appreciates Mr. Ciz's concerns about increased traffic and urban development on the west side of 60th Avenue. As it has done consistently with all of its new and remodeled schools, the district will work closely with its neighbors before, during, and after the development review process to address compatibility issues. The issues regarding access, improvements to 60th Avenue, and compatibility can be reviewed and addressed most appropriately during the Wilsonville development review process.

The West Linn-Wilsonville School District and city of Wilsonville have a long history of cooperation and coordination. Both have consistently acted in good faith and in the public interest. Looking back in 2013 and judging what the district or city should have done 5 to 15 years prior fails to acknowledge that decisions had to be made based on what was known and being experienced at the time – without the luxury of hindsight. Advance Road is clearly the best and most dependable school site option for the West Linn-Wilsonville School District.