

# Beaverton School District Vose Elementary School



## *Conditional Use & Design Review Applications*



Prepared by Angelo Planning Group

Submitted to City of Beaverton  
Community Development Department, Current Planning

**November 2015**



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**I. PROPOSAL SUMMARY INFORMATION**

**File No:** 007-049.5

**Applicant:** Beaverton School District  
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**Request:** Conditional Use, New Type 3  
Design Review Type 3

**Location:** 11350 SW Denney Road

**Legal Description:** Tax Map 1S1 22DB, Lot 2000

**Zoning Designation:** Standard Density Residential (R7)

**Site Size:** 8.83 acres

## II. PROJECT TEAM

### Owner Representative

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### III. PROJECT INTRODUCTION

#### A. Project Description

The Beaverton School District (District) is seeking approval from the City of Beaverton to replace Vose Elementary School, located at 11350 SW Denney Road in the Vose neighborhood. The proposed new school will be approximately 83,000 square feet and serve 750 students and 77 full time staff at full enrollment. The school program is based on the *Beaverton School District Educational Specifications for Elementary Schools* (2014) and will consist of the following areas:

- Kindergarten through 5th grade classrooms
- Media center/library
- Music room
- Specialized program space
- Physical education including indoor and outdoor space
- Administration offices
- Cafeteria and common space
- Custodial, restrooms and technologies space

The outdoor recreation facilities at the proposed school will include:

- One U12 soccer field
- Large, multi-purpose lawn area
- Covered play area
- Hard surface play area
- Soft surface play area

The school site will also include a staff parking area with 49 parking spaces and a visitor/staff parking area with 58 spaces. Primary access to the school for parent drop-off and pick-up will be taken from SW Denney Road at a new signalized intersection. Staff and bus access will also be taken from SW Denney Road from an existing access point near the western edge of the site. The Site Plan in Exhibit A, Sheet L2.0, shows the proposed site layout.

Funding for the proposed high school comes from a bond measure approved by voters in May 2014. The new Vose Elementary is anticipated to open in September 2017. See Section D below for detailed information about how the transition to the new Vose School will be conducted.

#### B. Background

The original Vose Elementary was built in 1960 and has a permanent capacity of 499 students. Historically, Vose has had one of the highest occupancy rates in the District because of its central location with the District boundaries. Growth in Beaverton has increased demand for capacity at Vose, requiring the addition of portable classrooms on the school property to accommodate more students. Currently, there are six portable buildings in use at Vose, bringing the total capacity of the school to approximately 690 students. The use of portable buildings is not an ideal solution and is used by the District only when more permanent options are not readily available. Per the District's educational specifications, elementary schools should have a permanent capacity of 750 students; the existing building at Vose falls well short of this goal.

Furthermore, the existing building at Vose is now over 50 years old; the facility is outdated and has a significant amount of physical deficiencies. The current layout of the site does not maximize efficiency of the property and results in traffic issues along SW Denney Road, particularly during the afternoon pick-up time. Furthermore, the layout of the school site does not allow adequate supervision of students, which has security implications.

For the above reasons, the District has determined that a complete tear-down and replacement of Vose Elementary is the most economical path to accomplish the following:

- Provide a contemporary school that meets the District's facility and programing standards.
- Accommodate existing and future students/staff in a permanent school building without the use of portables.
- Reconfigure the site layout and access points to maximize efficiency of land and address school-related traffic issues along SW Denney.

### **C. Existing Site Conditions**

The Vose Elementary site is located in an area that is mostly developed with single family homes and apartments at moderate densities. To the east of the site, there is a decorative rock business and to the west (directly adjacent) there is an apartment building. The two existing school buildings are situated toward the north end of the site, with parking areas between the school and SW Denney Road. The southern half of the site is comprised of portable classrooms and open field space. The site is generally sloping from west to east as well as from north to south. The lowest elevations on the site are at the southeast corner. See Figure 1 and the Existing Conditions Plan, L1.0 in Exhibit A for detailed views of current site conditions.

### **D. Transition to September 2017: *Vose at 118<sup>th</sup>***

The replacement of Vose Elementary will be the first of four schools the Beaverton School District will be removing and replacing with a new facility as a result of the successful Bond Program approved by voters in 2014. In June 2016, existing Vose Elementary will be demolished and work will immediately begin on the replacement school facility. For the school year September 2016 through June 2017, the approximately 700 current students at Vose Elementary will attend school at the newly opened school in the Timberland area of Cedar Mill. This new school in the Timberland area will ultimately operate as a Middle School – it transitions to a Middle School in 2020. However, prior to 2020 this school will operate as a “Swing School” and will house the students from the four schools programmed to be replaced. For the school year 2016/2017, this school will house students from Vose Elementary and will be referred to as Vose at 118th (the new school in the Timberland area is located on NW 118th).

The use of a Swing School obviously raises a number of operational and logistical questions for school administrators and especially for students and parents who will be without a neighborhood school for one school year. A Community Meeting was held at Vose Elementary on Thursday, October 15, 2015 to begin the discussion with parents on how the transition year will work. While many of the transition plans are in the formative stages, this meeting provided an opportunity to discuss known plans and to hear concerns and issues from parents. The following provides a list of topics and responses from the Community Meeting.

Transportation Services. Vose Elementary has a high percentage of students who walk to school. The District acknowledged this at the meeting. District staff indicated that during the 2016/17 school year, students will be bussed to Vose at 118th from the neighborhood. The District will establish bus routing patterns and identify locations for all student pick-up and drop-off to occur within the neighborhood. This information will be provided to parents prior to school starting in September 2016. Staff noted that parents will have the ability to drop-off and pick-up their children if they choose to drive to Vose at 118th.

Daycare Options. After-school daycare is currently available at Vose Elementary. After-school daycare will be offered at Vose at 118th. A question was raised at the Community Meeting about how a sick student would be accommodated at Vose at 118th since the school is quite a distance from the Vose neighborhood and many parents do not drive. The District acknowledged this issue and will develop a plan to provide transportation or otherwise accommodate the sick student.

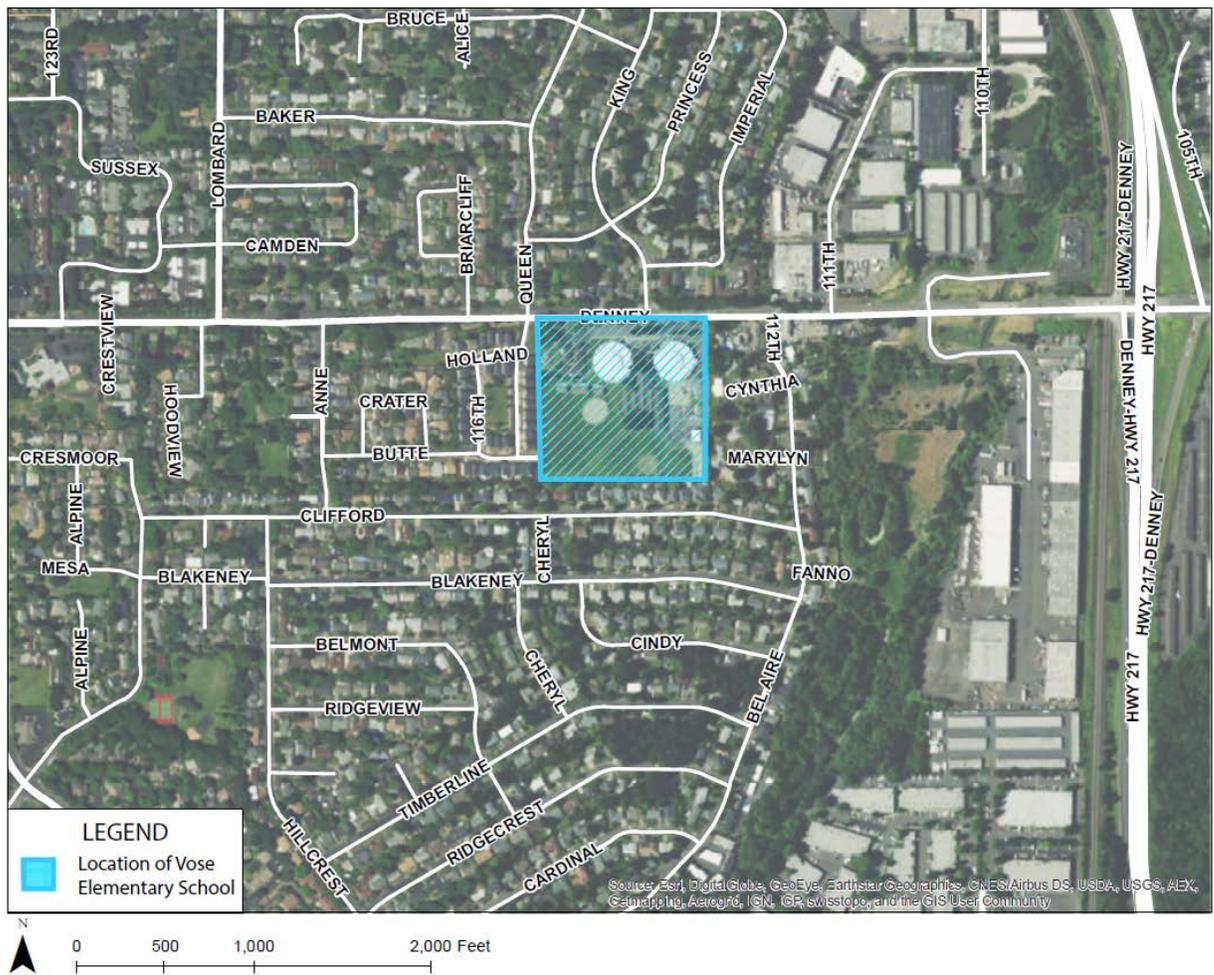
School Start and Finish Time. Expected to be 9:05am start and 3:40pm release.

After School Programs / Events (including Parent – Teach Conferences). No definitive plans yet for these events, however the District is developing a plan to insure that these opportunities are available and accessible to students and parents. The District is in discussion with community facilities nearby existing Vose to determine if space can be made available for some of these activities, again recognizing that many families walk to Vose Elementary events and may not have transportation available to attend events at Vose at 118th.

Volunteers. Will there be buses for volunteers without available transportation? As most schools do, Vose relies upon volunteers to fill a number of daily needs. The District will look into options to providing volunteer access to Vose at 118th during the 2016/17 school year.

Future Contacts. The Vose Elementary Principal was identified as the initial contact for questions and concerns from parents and neighbors. The District will be putting together information packets for students and parents throughout the current school year in order to provide up-to-date information and to continue to identify student/parent concerns about the 2016/17 transition year.

**Figure 1: Vose Elementary School Site Vicinity**



**E. Requested Approvals**

In order to receive the necessary land use permits to replace Vose Elementary, the District is requesting the following approvals:

- New Conditional Use, Type 3. Although this project is a replacement of the existing Vose School, the city has advised that the approval criteria for a new conditional use are more appropriate for this review (as compared with approval criterial for a Major Modification of a conditional use). The Pre-application Summary Notes in Exhibit B provide further explanation.
- Design Review 3 - the proposal meets the threshold for a Type 3 Design Review using design guidelines.

The above applications are being submitted with this application package and the District understands that they will be reviewed concurrently through a Type 3 review process. This narrative contains written responses to all applicable standards, requirements and approval criteria for each

application. Applicable provisions were identified during the pre-application conference with city staff held on September 16, 2015 (see Exhibit B).

**IV. CONFORMANCE WITH CITY OF BEAVERTON DEVELOPMENT CODE**

This section of the application contains responses that demonstrate how the proposed project conforms to the City of Beaverton Development Code (BDC). Only code text that contains applicable approval criteria or otherwise requires a response related to the requested land use actions have been included.

**A. Chapter 20 - Land Uses**

The site is zoned R7 Residential Urban Standard Density. Per Table 20.05.20 in the BDC, educational institutions are allowed in the R7 zone as a conditional use. The following table demonstrates that the proposed school replacement conforms to applicable site development standards for a school in the R7 zone. None of the use restrictions in Section 20.05.25 apply to this proposal.

*20.05.15 Site Development Standards*

<i>Standard</i>	<i>R7 Zone</i>	<i>Response</i>
Minimum land area	7,000 square feet	As shown on the Site Plans (Sheets L2.0 - L2.4) in Exhibit A, the proposed school meets these development standards.
Minimum lot width	65 feet, interior 70 feet, corner	
Minimum lot depth	90 feet, interior 80 feet, corner	
Minimum front setback	17 feet	
Minimum side setback	5 feet	
Minimum rear setback	25 feet	
Minimum between buildings	6 feet	
Maximum building height	35 feet	As shown on the Elevations in Exhibit A, the proposed replacement school will comply with this standard. The tallest point on the school building will be at the top of the clearstory windows, which will be 34 feet high.

**B. Chapter 40 - Applications and Approval Criteria**

*40.03. FACILITIES REVIEW COMMITTEE*

*1. All Conditional Use, Design Review Two, Design Review Three, and applicable Land Division applications:*

*A. All critical facilities and services related to the proposed development have, or can be improved to have, adequate capacity to serve the proposed development at the time of its completion.*

**Response:** BDC Chapter 90 defines critical facilities and services to include public water, public sanitary sewer, stormwater drainage and retention, transportation, and fire protection.

- Water, sewer, and stormwater – As stated in the Pre-Application Summary Notes provided in Exhibit B, the City will be the water, storm drainage and sanitary sewer provider for the subject site. The public 8-inch waterline in SW Butte Lane will be extended through the site to upgrade fire water service and connect to the public water system in SW Denney Road. The project team civil engineer has prepared plans for utility provisions and stormwater management (see Exhibit A). The project landscape architect and civil engineer have prepared plans for parking lot construction, site grading, and erosion control methods (see Exhibit A). This application also includes a stormwater report (Exhibit E) providing documentation of compliance with Clean Water Services (CWS) stormwater detention and treatment requirements. A Service Provider Letter from CWS is also included in this application (Exhibit C) indicating that water quality sensitive areas do not appear to exist on the site, or within 200 feet of the site.
- Transportation – A Traffic Impact Analysis (TIA) was prepared for this application and is provided in Exhibit D. The analysis forecasts that, at full capacity (750 students and 77 full time staff), the proposed new Vose School will generate a small increase in vehicle trips when compared with the existing school. The TIA estimates that the proposed project will generate an additional 37 trips during the peak morning hour and 20 trips during the peak afternoon hour. The majority of trips will be distributed along SW Denney Road, with a small percentage of trips along SW King Blvd. The analysis also provides key findings and recommendations for mitigation of anticipated impacts from the proposed school. Those mitigations include:
  - Adding a south leg to the intersection of SW Denney Road and King Blvd to create a new, fully signalized access point into the school site.
  - Restrict the existing eastern school access to right-out only to mitigate sight distance issues and relieve congestion at the Denney/King intersection.
  - Remove vegetation to provide clear sight distance at the west project access along SW Denney Road.
  - Provide signage along SW Denney Road to direct staff, buses and school visitors to the correct entrance/exit.
  - Provide half street improvements along the site’s frontage of SW Denney Road.
  - Provide two lanes on the south leg of the Denney/King intersection for at least 200 feet to provide adequate space for vehicle stacking on the site.
  - Request an Engineering Design Modification to the driveway spacing standards, since there are several driveways within the City’s access spacing standard of 180 feet on a collector roadway.

Additional mitigations are recommended - see the TIA in Exhibit D for more detail.

- Fire – In the Pre-Application Summary Notes provided in Exhibit B, Tualatin Valley Fire & Rescue (TVF&R) indicated that they endorse the proposed development predicated on compliance with criteria and conditions of approval related to fire apparatus access, firefighting water supplies, fire hydrants and building access and fire service features. The District will work with TVF&R to ensure all their criteria and conditions are met.

*B. Essential facilities and services related to the proposed development are available, or can be made available, with adequate capacity to serve the development prior to its occupancy. In lieu of providing essential facilities and services, a specific plan may be approved if it adequately demonstrates that essential facilities, services, or both will be provided to serve the proposed development within five (5) years of occupancy.*

**Response:** BDC Chapter 90 defines essential facilities and services to include schools, transit improvements, police protection, and pedestrian and bicycle facilities.

- Schools – The proposed development is a replacement of Vose Elementary School that is deemed necessary in the 2010 update of the Beaverton School District Facility Plan. Funding for the school was approved by voters in May 2014 as part of a District bond measure.
- Transit - TriMet bus number 76 has stops located near the intersection of SW Hall Blvd. and SW Denney Road, which is approximately 0.5 miles from the subject site. This bus provides weekday/weekend service between Beaverton and Tualatin. At this time, no specific plans for additional transit service in the area are known.
- Police – The City of Beaverton Police Department will provide service to the site. No comments or recommendations were submitted by the City Police Department or included in the Pre-Application Summary Notes regarding the proposed development.
- Pedestrian and bicycle facilities - This submittal includes Multimodal Circulation Diagrams (Sheet L7.0 in Exhibit A) that show the on-site bicycle and pedestrian circulation network for the proposed school and how it connects to the surrounding public right-of-ways. There are five primary access points for bicycles and pedestrians to enter/exit the site and connect to off-site sidewalks. The District will maintain the existing pedestrian connection at the southwest corner of the school site, and will provide new accesses along SW Denney Road. On site, the circulation network provides safe and direct access between the school entrances and the parking areas and athletic fields. The District will also provide 84 bicycle parking spaces located along the north edge of the school building, around the corner from the primary entrance plaza.

*C. The proposed development is consistent with all applicable provisions of Chapter 20 (Land Uses) unless the applicable provisions are modified by means of one or more applications which shall be already approved or which shall be considered concurrently with the subject application.*

**Response:** Consistency with applicable provisions of Chapter 20 is demonstrated in Section A of this narrative.

*D. The proposal is consistent with all applicable provisions of Chapter 60 (Special Requirements) and all improvements, dedications, or both, as required by the applicable provisions of Chapter 60 (Special Requirements), are provided or can be provided in rough proportion to the identified impact(s) of the proposed development.*

**Response:** Consistency with applicable provisions of Chapter 60 is demonstrated in Section C of this narrative.

*E. Adequate means are provided or can be provided to ensure continued periodic maintenance and necessary normal replacement of the following private common facilities and areas, as applicable: drainage facilities, roads and other improved rights-of-way, structures, recreation facilities, landscaping, fill and excavation areas, screening and fencing, ground cover, garbage and recycling storage areas and other facilities not subject to maintenance by the City or other public agency.*

**Response:** Beaverton School District is the property owner and developer and will be responsible for overseeing development and maintenance of the site. The District will provide continued maintenance

and necessary replacement of private common facilities and areas such as drainage facilities, sidewalks, the parking area, landscaping, screening, fencing, and garbage and recycling storage areas.

*F. There are safe and efficient vehicular and pedestrian circulation patterns within the boundaries of the development.*

**Response:** The plan set in Exhibit A includes Multimodal Circulation (Sheet L7.0) and Vehicle Maneuvering Diagrams (Sheet L7.2) that demonstrate how safe and efficient vehicular and pedestrian circulation will be achieved on the Vose site. Primary elements of that circulation pattern include:

- Bus traffic is separated from parent and visitor traffic through the use of separate access points and parking/loading areas.
- The parent/visitor accesses and parking lot are configured to minimize potential vehicle conflict on the site. Parents may enter the site at the primary school access along Denney Road and drive through the parking lot in one direction only. They may exit the site either at the right-out-only access on Denney Road or at the full signalized access.
- Students who are dropped off at the parent drop-off area will use the primary school entrance at the entry plaza in the northeast corner of the school building, or the south courtyard entrance. Students who are dropped off by a school bus can enter the school through the secondary entrance located adjacent to the bus loading area on the west edge of the building. Outside of drop-off and pick-up times, all visitors must enter the school through the primary entry plaza.
- Pedestrian walkways through the parking areas are minimized. Students will not need to walk through a parking area to reach a building entrance from either the bus or the parent loading area. Students can also walk to all the school facilities (soccer field, outdoor play, etc) without walking through a parking lot. Students may also access the surrounding sidewalk system in multiple places without crossing a parking lot. Pedestrian access from the north does not require crossing vehicle drive aisles or parking lots.

*G. The development's on-site vehicular and pedestrian circulation systems connect to the surrounding circulation system in a safe, efficient, and direct manner.*

**Response:** As noted previously, this submittal includes Multimodal Circulation and Vehicle Maneuvering Diagrams (Exhibit A) that show the on-site vehicle and pedestrian circulation network for the proposed school and how it connects to the surrounding public right-of-ways. There are five primary access points for bicycles and pedestrians to enter/exit the site and connect to off-site sidewalks. The District will maintain the two existing pedestrian connections at the southwest corner of the school site, and will provide new accesses along SW Denney Road. Buses and staff vehicles will access the site from the access point on Denney Road at the western corner of the site. Parents and visitors/staff will access the site from a new, signalized access on Denney Road across from SW King Blvd. This will be a full intersection, with both entrance and exit options. There will also be a right-out-only exit onto Denney Road at the eastern corner of the site.

The Vose site will have a total of approximately 1,100 feet of on-site queuing/drop-off area, which could accommodate as many as 44 vehicles on-site at once. It is anticipated that most queuing associated with student drop-off and pick-up will be accommodated on-site, thus minimizing

stacking along SW Denney Road. The signal timing of the SW King Boulevard/SW Denney Road traffic signal can be adjusted during school peaks to provide efficient access to and from the school during these periods.

The Traffic Impact Analysis in Exhibit D provides additional detail about how these proposed access points will function to provide safe, efficient and direct access for all users of the site.

*H. Structures and public facilities and services serving the development site are designed in accordance with adopted City codes and standards and provide adequate fire protection, including, but not limited to, fire flow.*

**Response:** As noted previously, Tualatin Valley Fire & Rescue (TVF&R) has indicated that the proposed development can be approved predicated on compliance with criteria and conditions of approval related to fire apparatus access, firefighting water supplies, fire hydrants and building access and fire service features. The District will work with TVF&R to ensure all their criteria and conditions are met.

*I. Structures and public facilities and services serving the site are designed in accordance with adopted City codes and standards and provide adequate protection from crime and accident, as well as protection from hazardous conditions due to inadequate, substandard or ill-designed development.*

**Response:** All structures and facilities and services serving the site will be designed in accordance with adopted City codes and standards. Compliance with vision clearance, lighting and glazing standards and guidelines will provide protection from crime and accidents. Fencing around the school site will provide additional security. Construction documents for building and site development permitting will be reviewed to ensure protection from hazardous conditions.

*J. Grading and contouring of the site is designed to accommodate the proposed use and to mitigate adverse effect(s) on neighboring properties, public right-of-way, surface drainage, water storage facilities, and the public storm drainage system.*

**Response:** Grading of the site has been designed to accommodate the proposed new school and no adverse impacts to the above elements are anticipated. The Grading Plan Sheets L4.0 - L4.4 in Exhibit A demonstrate that grading at the site perimeter will not increase drainage to existing properties, impact tree roots zone, or block sunlight. Water quality storage facilities and the public storm system will also not be impacted by proposed grading. Grading along the site's frontage with SW Denney Road is being proposed in order to construct the required half-street improvement and provide a new access into the school site.

*K. Access and facilities for physically handicapped people are incorporated into the development site and building design, with particular attention to providing continuous, uninterrupted access routes.*

**Response:** The proposed development will meet all applicable accessibility standards of the Oregon Structural Specialty Code (OSSC, 2010) and other standards as required by the American Disabilities Act (ADA). All publicly accessible parts of the proposed school building will be ADA accessible. The building will be equipped with power-assisted doors pursuant to District technical standards (Division 8, paragraph III.I.10). In terms of on-site walkways, paved unobstructed walkways at least five feet wide and less than 5% slope in the direction of travel and 2% cross-slope

are proposed for on-site pathways. ADA accessible access points onto the site are provided at the primary site access from the signalized intersection on SW Denney Road. Two marked and signed ADA accessible parking spaces are proposed in the staff parking area, and three marked and signed accessible parking spaces are proposed in the parent/staff parking area. Both sets of ADA parking spaces have access to a building entrance via walkways that are at least six-feet-wide and parking area crossings that are raised and marked concrete with tactile, detectable paving landings.

*L. The application includes all required submittal materials as specified in Section 50.25.1 of the Development Code.*

**Response:** This application package includes all required submittal materials as specified in Section 20.25.1. Required materials include:

1. Signed original application forms and application checklists
2. A written statement (narrative) demonstrating compliance with applicable criteria and regulations
3. Additional information identified in the Pre-Application Summary Notes
4. Materials from the required neighborhood meeting
5. A copy of the Pre-Application Summary Notes
6. Documentation from Clean Water Services
7. Application fees

## ***40.15. CONDITIONAL USE***

### ***40.15.15. Application.***

#### ***3. New Conditional Use.***

*A. Threshold. An application for a New Conditional Use shall be required when the following threshold applies:*

- 1. The proposed use is Conditionally permitted in the underlying zoning district and a prior Conditional Use approval for the proposed use is not already in effect.*

**Response:** Per Table 20.05.20 in the BDC, a new educational institution is allowed in the R7 zone as a conditional use. As noted in the Pre-Application Summary Notes (Exhibit B), no parent conditional use file for the existing school has been found. Therefore, the replacement school is being treated as a new conditional use for the purpose of this review.

*C. Approval Criteria. In order to approve a New Conditional Use application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:*

- 1. The proposal satisfies the threshold requirements for a Conditional Use application.*

**Response:** As demonstrated above, the proposed replacement school satisfies the threshold requirements for a Conditional Use application.

*2. All City application fees related to the application under consideration by the decision making authority have been submitted.*

**Response:** All applicable City application fees have been submitted as part of this application package.

*3. The proposal will comply with the applicable policies of the Comprehensive Plan.*

**Response:** Section V of this narrative demonstrates how this proposal complies with applicable policies of the Comprehensive Plan.

*4. The size, dimensions, configuration, and topography of the site and natural and man-made features on the site can reasonably accommodate the proposal.*

**Response:** The site is approximately 8.83 acres and is essentially rectangular in shape. Because the site is developed with an existing school and associated parking areas and fields there are no topographic constraints that prohibit the proposal. The site is generally sloping from west to east as well as from north to south. As shown on the site plan in Exhibit A, Sheet L2.0, the site can reasonably accommodate the proposed new school building and associated parking areas, circulation systems and athletic fields. All setbacks, site buffering requirements and other development standards can be met on the site and the school can meet all the District's specifications for a new elementary school in terms of capacity and programming.

*5. The location, size, and functional characteristics of the proposal are such that it can be made reasonably compatible with and have a minimal impact on livability and appropriate use and development of properties in the surrounding area of the subject site.*

**Response:** Uses surrounding the Vose site include primarily single-family residences and small commercial uses along SW Denney Road. In order to minimize potential impacts of the proposed new school on the surrounding properties, the site has been designed with the following elements:

- The school building is located centrally on the site and oriented toward SW Denney Road in order to provide adequate separation between the building and the established residences to the west, south and east of the school property. In addition, a 20-foot landscaped and fenced buffer will be provided around the perimeter of the site to provide screening where the site abuts residential neighbors.
- The outdoor soccer field and other outdoor recreation areas will not be lit and will therefore not cause any lighting or glare on surrounding properties.
- There will be no outdoor speaker system for the recreational facilities at the school, thereby minimizing noise impacts to surrounding properties.
- As demonstrated in the TIA in Exhibit D, the proposed school project will have minimal impacts to the surrounding roadways. The majority of trips generated by the proposed school will occur along SW Denney Road, which is a designated collector street. Half-street improvements along Denney will be completed as part of this project, including improvements to the signalized intersection of Denney and King Blvd. Intersection

operations surrounding the school site will continue to operate at acceptable levels and will not be degraded by the proposed project.

- An elementary school has existing on this site since 1960 and has not impacted the ability of surrounding properties to develop with appropriate uses or function as allowed.

*6. Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.*

**Response:** All applications and documents related to this request are being submitted to the City with this application package.

## ***40.20. DESIGN REVIEW***

### ***40.20.15. Application.***

#### ***3. Design Review Three.***

*A. Threshold. An application for Design Review Three shall be required when an application is subject to applicable design guidelines and one or more of the following thresholds describe the proposal:*

*2. New construction or addition of more than 30,000 gross square feet of non-residential floor area where the development abuts or is located within any Residential zoning district.*

**Response:** The proposed replacement of Vose is subject to applicable design guidelines and is greater than 30,000 gross square feet of non-residential floor area within the R7 zoning district. As such, it meets the threshold for Design Review 3.

*C. Approval Criteria. In order to approve a Design Review Three application, the decision making authority shall make findings of fact based on evidence provided by the applicant demonstrating that all the following criteria are satisfied:*

*1. The proposal satisfies the threshold requirements for a Design Review Three application.*

**Response:** As noted above, the proposed project satisfies the threshold requirements for Design Review 3 because it is new construction of more than 30,000 square feet of a non-residential use in the R7 zone.

*2. All City application fees related to the application under consideration by the decision making authority have been submitted.*

**Response:** All applicable City application fees have been submitted as part of this application package.

*3. For proposals meeting Design Review Three application thresholds numbers 1 through 6, the proposal is consistent with all applicable provisions of Sections 60.05.35 through 60.05.50 (Design Guidelines).*

**Response:** This proposal meets threshold number 2. A written statement to demonstrate consistency with all applicable Design Guidelines is provided in Section C of this narrative.

**Note:** Criteria 4-7 do not apply to the proposed project.

*8. Applications and documents related to the request, which will require further City approval, shall be submitted to the City in the proper sequence.*

**Response:** All applications and documents related to this request have been submitted to the City as required.

**C. Chapter 60 – Special Requirements**

Code Section/Standard	Response
<b>60.05. DESIGN REVIEW DESIGN PRINCIPLES, STANDARDS AND GUIDELINES</b>	
<b>60.5.35. Building Design and Orientation Guidelines.</b>	
1. <i>Building articulation and variety.</i>	
<i>A. Residential buildings should be of a limited length in order to avoid undifferentiated building elevations, reduce the mass of individual buildings, and create a scale of development that is pedestrian friendly and allow circulation between buildings by pedestrians. (Standard 60.05.15.1.A)</i>	The proposed school is not a residential building. Therefore, this guideline does not apply.
<i>B. Building elevations should be varied and articulated to provide visual interest to pedestrians. Within larger projects, variations in architectural elements such as: building elevations, roof levels, architectural features, and exterior finishes should be provided. (Standards 60.05.15.1.A and B)</i>	The building elevations respond to the local context and honor the surrounding neighborhood scale. The two story building massing is articulated into a base and a top, scaling the basic elements to create a pedestrian scale. The base is further articulated with punched openings in a textured concrete board-formed façade. A large courtyard is carved out of the plan to create visual interest and provide daylighting to educational spaces. The second floor massing is a composition of vertical glazing and profiled metal panel capped with a sloping roof profile. The undulating roof form responds to the neighborhood housing context and creates visual interest.
<i>C. To balance horizontal features on longer building elevations, vertical building elements, such as building entries, should be emphasized. (Standard 60.05.15.1.B)</i>	The building elevation is balanced with a base and top approach to the massing. The second floor extends past the first floor at the main entry with a large cantilever emphasizing the entry to the building and providing a strong sense of pedestrian scale.
<i>D. Buildings should promote and enhance a comfortable pedestrian scale and orientation. This guideline does not apply to buildings in Industrial districts where the principal use of the building is manufacturing, assembly, fabricating, processing, packing, storage, wholesale or distribution activities. (Standard 60.05.15.1.B)</i>	A comfortable pedestrian scale is created by several features. The second floor massing extends over the first floor providing a canopy to pedestrians and provide natural way-finding. A large courtyard enhances the building plan and provides scale as well as pedestrian amenities such as seating.
<i>E. Building elevations visible from and within 200 feet of an adjacent street or major parking area should be articulated with architectural features such as windows, dormers, off-setting walls, alcoves, balconies or</i>	The proposed new Vose school will be located within 200 feet of, and visible from, SW Denney Road. As shown on the north elevation on Sheet A5.1 (Exhibit A) the building elevation facing SW Denney Road

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<p><i>bays, or by other design features that reflect the building's structural system. Undifferentiated blank walls facing a street, common green, shared court, or major parking area should be avoided. (Standards 60.05.15.1.B, C, and D)</i></p>	<p>will be articulated with windows, metal paneling and a building overhang along the majority of the façade. The undulating patterning of windows and metal panels along the façade creates a visual "rollercoaster" of peaks and valleys, helping to break up the façade and provide visual interest. The base of the school building is further articulated with punched openings in a textured concrete board-formed façade.</p>
<p><i>F. Building elevations visible from and within 100 feet of an adjacent street where the principle use of the building is manufacturing, assembly, fabricating, processing, packing, storage and wholesale and distribution activities in an Industrial zoning district, should be articulated with architectural features such as windows, dormers, off-setting walls, alcoves, balconies or bays, or by other design features that reflect the building's structural system. Undifferentiated blank walls facing a street should be avoided. (Standards 60.05.15.1.B and C)</i></p>	<p>This guideline is not applicable to the proposed school building.</p>
<p><b>2. Roof forms.</b></p>	
<p><i>A. Roof forms should be distinctive and include variety and detail when viewed from the street. Sloped roofs should have a significant pitch and building focal points should be emphasized. (Standards 60.05.15.2.A and B)</i></p>	<p>The design incorporates low-sloped roofs that provide articulation along the façade in an appropriate scale for an elementary school. The succession of gabled forms is intended to provide visual interest, contextual design response, a welcoming and recognizable form, and a scale that responds to the users and use of the building.</p>
<p><i>B. Flat roofs should include distinctive cornice treatments. (Standard 60.05.15.2.C)</i></p>	<p>The design incorporates a frame or border around the upper articulated façade. This frame is intended to contain the vertical "random" pattern as well as provide a modern cornice detail.</p>
<p><b>3. Primary building entrances.</b></p>	
<p><i>A. The design of buildings should incorporate features such as arcades, roofs, porches, alcoves, porticoes, awnings, and canopies to protect pedestrians from the rain and sun. This guideline does not apply to buildings in Industrial districts where the principal use of the building is manufacturing, assembly, fabricating, processing, packing, storage, wholesale or distribution activities. (Standard 60.05.15.3)</i></p>	<p>The primary school entrance, located at the northeast corner of the proposed school building, will be emphasized by a large building overhang that provides shelter for people entering the school.</p>
<p><i>B. Special attention should be given to designing a primary building</i></p>	<p>As noted above, the primary school entrance will be emphasized by a</p>

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<p><i>entrance that is both attractive and functional. Primary entrances should incorporate changes in mass, surface, or finish to emphasize the entrance. (Standard 60.05.15.3)</i></p>	<p>large cantilever that provides shelter and visual interest at the entrance. The school entrance will also be emphasized by an entry plaza that will consist of decorative concrete paving, a landscaped area surrounded by seat walls, pedestrian scaled lighting, and stairs that lead up to the plaza from the parking area.</p>
<p><b>4. Exterior building materials.</b></p>	
<p><i>A. Exterior building materials and finishes should convey an impression of permanence and durability. Materials such as masonry, stone, wood, terra cotta, and tile are encouraged. Windows are also encouraged, where they allow views to interior activity areas or displays. (Standards 60.05.15.4.A and B)</i></p>	<p>Exterior building materials will consist of masonry or precast concrete at the first floor, and a combination of metal panel and aluminum panel or integral fiber cement panel on the second floor. The intent is to provide durable, "heavy" materials at the base of the building, and "lighter" materials on the second floor. The design also encourages glazing into the building where appropriate for the function of the school. Views outward from the reception area and associated offices are incorporated into the design for additional security. This allows for visual connection to people approaching the school. The design also has incorporated a major connection from the commons of the school to an interior courtyard.</p>
<p><i>B. Where masonry is used, decorative patterns (other than running bond pattern) should be provided, especially at entrances, building corners and at the pedestrian level. These decorative patterns may include multi-colored masonry units, such as brick, tile, stone, or cast stone, in a layered or geometric pattern, or multi-colored ceramic tile bands used in conjunction with materials such as concrete. This guideline does not apply to development in Industrial zones, where masonry is used for exterior finishes. (Standards 60.05.15.4.B and C)</i></p>	<p>The design intent is to employ a precast concrete panel that will incorporate a pattern in its form. The design team proposes board form pattern that will add significant texture and detail at the human scale. The pattern will be vertical in order to reduce the scale of the horizontal building.</p>
<p><i>5. Screening of equipment. All roof, surface, and wall-mounted mechanical, electrical, communications, and service equipment should be screened from view from adjacent public streets by the use of parapets, walls, fences, enclosures, dense evergreen foliage, or by other suitable means. (Standards 60.05.15.5.A through C)</i></p>	<p>A metal fence and evergreen hedge is proposed to screen outdoor service equipment, as shown on Sheet L2.1 in Exhibit A. Mechanical equipment on the roof will either be screened via high parapet walls, the roof line (see clerestory condition), or by being in mechanical penthouses. No equipment on site will be visible from adjacent public streets.</p>
<p><b>60.5.40. Circulation and Parking Design Guidelines.</b></p>	

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<p>1. <i>Connections to public street system. The on-site pedestrian, bicycle, and motor vehicle circulation system and the abutting street system should provide for efficient access and circulation, and should connect the project to abutting streets in accordance with connections identified in Tables 6.1 through 6.6 and Figures 6.1 through 6.23 of the Comprehensive Plan. (Standard 60.05.20.1)</i></p>	<p>As shown on the Site Plan and Multimodal Circulation Diagrams in Exhibit A, the on-site pedestrian, bicycle and vehicle circulation system provides safe and efficient connections to the public street/sidewalk system surrounding the site. Those connections are:</p> <ul style="list-style-type: none"> <li>▪ A bus and staff access point along SW Denney Road that provides access to staff parking and the bus loading area.</li> <li>▪ A new, full signalized access point at SW Denney Road and SW King that provides access for parents, visitors and staff to the parking lot and parent loading area.</li> <li>▪ A right-out-only exit on SW Denney Road that provides a second exit options for vehicles in the parent/staff parking and loading area.</li> <li>▪ Pedestrian access to the site is also provided at the two access points along SW Denney. Pedestrian connections are also provided at the southwest corner of the site to maintain an existing pathway that travels through this corner of the school property.</li> </ul> <p>The Traffic Impact Analysis explains in detail how these proposed access points will function to provide safe, efficient and direct access for all users of the site.</p>
<p>2. <i>Loading area, solid waste facilities, and similar improvements.</i></p>	
<p>A. <i>On-Site service, storage and similar activities should be designed and located so that these facilities are screened from an abutting public street. (Standard 60.05.20.2)</i></p>	<p>The on-site service and delivery loading area is located along the western edge of the school building, adjacent to the bus loading area. As shown in Exhibit A, Sheet L2.1, this area will be screened from view by landscaping and a decorative metal fence eight feet in height; it will not be visible from an abutting public street.</p>
<p>B. <i>Except in Industrial districts, loading areas should be designed and located so that these facilities are screened from an abutting public street, or are shown to be compatible with local business operations. (Standard 60.05.20.2)</i></p>	
<p>3. <i>Pedestrian circulation.</i></p>	
<p>A. <i>Pedestrian connections should be made between on-site buildings, parking areas, and open spaces. (Standard 60.05.20.3.A)</i></p>	<p>As shown on the Bike and Pedestrian Circulation diagram on Sheet L7.0 in Exhibit A, pedestrian connections will be provided on the</p>

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	school site to connect the building entrances, parking areas, and outdoor play areas, including the soccer field and the pedestrian path through the southwest corner of the site.
<i>B. Pedestrian connections should connect on-site facilities to abutting pedestrian facilities and streets unless separated by barriers such as natural features, topographical conditions, or structures. (Standard 60.05.20.3.A)</i>	As noted previously, this submittal includes Multimodal Circulation Diagrams (Sheet L7.0 in Exhibit A) that show the on-site pedestrian circulation network for the proposed school and how it connects to the surrounding public right-of-ways. There are four primary access points for bicycles and pedestrians to enter/exit the site and connect to public sidewalks. The District will maintain the existing pedestrian connections at the southwest corner of the school site, and will provide new connections along SW Denney Road. There are direct pedestrian connections that link the primary school entrances to the sidewalk along SW Denney Road as well as the pedestrian pathway that travels through the southwest corner of the site.
<i>C. Pedestrian connections should link building entrances to nearby streets and other pedestrian destinations. (Standard 60.05.20.3.B)</i>	
<i>D. Pedestrian connections to streets through parking areas should be evenly spaced and separated from vehicles (Standards 60.05.20.3.C through E)</i>	Generally, the Vose site has been designed so that pedestrian connections through parking areas are minimized. Where the pedestrian connections do travel through vehicle maneuvering areas, they will be raised and identified with striping or different paving materials.
<i>F. Pedestrian connections should be designed for safe pedestrian movement and constructed of hard durable surfaces. (Standards 60.05.20.3.F through G)</i>	All pedestrian connections will be designed for safe pedestrian movement and constructed of hard durable surface. Paint striping and tactile warning pavers will be used to identify safe pedestrian routes.
<i>4. Street frontages and parking areas. Landscape or other screening should be provided when surface parking areas are located along public streets. (Standard 60.05.20.4)</i>	There are no surface parking areas located along public streets on the Vose school site. Therefore, this standard is not applicable.
<i>5. Parking area landscaping. Landscape islands and a tree canopy should be provided to minimize the visual impact of large parking areas. (Standards 60.05.20.5.A through D)</i>	As shown on the landscape plans in Exhibit A (Sheets L5 - L5.4), both parking areas have been designed with landscaped islands to provide a tree canopy and break up the parking areas into smaller portions. The islands will be planted with deciduous trees as well as other vegetation and will be designed to provide on-site storm water detention.
<i>60.5.45. Landscape, Open Space and Natural Areas Design Guidelines. Unless otherwise noted, all guidelines apply in all zoning districts.</i>	

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<p>3. <i>Minimum landscaping for Conditional Uses in Residential zones and for developments in Commercial, Industrial, and Multiple Use zones.</i></p>	
<p><i>A. Landscaping should soften the edges of buildings and parking areas, add aesthetic interest, and generally increase the attractiveness of a development and its surroundings. (Standards 60.05.25.5.A, B, and D)</i></p>	<p>At parking lots and driveways, landscape plantings will be provided in the entire required perimeter buffer area. Interior parking lot islands and planting strips are proposed at the interior of both parking lots to provide aesthetic interest and storm water treatment. These plantings will soften the overall visual impact of the parking areas. New street trees and storm water treatment plantings will be provided along SW Denney Road. Lawn and stormwater landscapes are proposed between the road and the school building, creating an attractive public edge while still allowing the school to have a strong presence along SW Denney Road. Large lawn and play fields provide open space between the school building and neighbors to the south and west. Preserving the existing large oak tree provides a focal point for the site and softens the visual impact of the new construction.</p>
<p><i>B. Plazas and common areas designed for pedestrian traffic should be surfaced with a combination of landscape and decorative pavers or decorative concrete. (Standard 60.05.25.5.C)</i></p>	<p>The main entry plaza at the proposed new school has been designed with decorative concrete paving that extends around all sides of the school, linking other school entrances, the courtyard and outdoor recreation areas. Landscaped areas are dispersed throughout the common areas to provide visual interest, screening, and seating.</p>
<p><i>C. Use of native vegetation should be emphasized for compatibility with local and regional climatic conditions. (Standards 60.05.25.5.A and B)</i></p>	<p>As shown on the Landscape Schedule and Details Sheet L5.5 in Exhibit A, all proposed plant species will be native or native analog (climate adaptive).</p>
<p><i>D. Existing mature trees and vegetation should be retained and incorporated, when possible, into the site design of a development. (Standards 60.05.25.5.A and B)</i></p>	<p>In order to redevelop the Vose Elementary School and reconfigure the school site, a number of existing trees on the site will be removed. Tree removal is shown on the landscape plans in Exhibit A. Trees being removed are identified as Landscape Trees by the City of Beaverton and their removal will be mitigated per the requirements of Section 60.60.25. There is an existing large oak tree on the site that has been identified by the District as a community amenity. That oak will be preserved and protected during redevelopment of the site. The proposed school building has been designed to emphasize the oak tree</p>

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	as a central element on the site, as shown on the site plans and building elevations in Exhibit A.
<i>E. A diversity of tree and shrub species should be provided in required landscaped areas. (Standard 60.05.25.5)</i>	As shown on the plant schedule (Sheet L5.5, Exhibit A), a variety of trees, shrubs, grasses and groundcovers will be used to landscape the school site. Deciduous trees planted on site will include varieties of maple, ash, oak, and flowering dogwoods. Evergreen trees will include fir, cedar and hemlock. Over 20 different varieties of shrubs, grasses and groundcovers will also be used in landscaping the site.
<i>6. Retaining walls. Retaining walls over six (6) feet in height or greater than fifty (50) feet in length should be architecturally treated, incorporated into the overall landscape plan, or screened by landscape material. (Standard 60.05.25.8)</i>	There are two retaining walls proposed on the Vose site that will be over 50 feet in length. One will be located along the eastern edge of the visitor/staff parking area; the other will be along the northwest corner of the staff parking area. Both walls will be screened by landscape material, as shown on Sheet L7.1 Site Sections in Exhibit A.
<i>7. Fences and walls.</i>	
<i>A. Fences and walls should be constructed of attractive, durable materials. (Standard 60.05.25.9)</i>	The school site will be fenced around the perimeter (except along SW Denney Road) with a six-foot tall fence in accordance with the District's security protocols and the city's buffering requirements.
<i>B. Fences and walls constructed in front yards adjacent to public streets should provide the opportunity to view into the setback from the street unless high traffic volumes or other conflicts warrant greater security and protection. (Standard 60.05.25.9.E)</i>	No fences or walls are proposed within the front yard setback adjacent to SW Denney Road on the school site.
<i>8. Changes to existing on-site surface contours at residential property lines. The perimeters of properties should be graded in a manner to avoid conflicts with abutting residential properties such as drainage impacts, damage to tree root zones, and blocking sunlight. (Standard 60.05.25.10)</i>	The Grading Plans in Exhibit A, Sheets L4.0 - 4.4 show proposed on-site grading. Grading at the site perimeter will not increase drainage to abutting properties, impact tree root zones, or block sunlight. Grading for the proposed school project was designed to meet the standards in 60.05.25.10.
<i>9. Integrate water quality, quantity, or both facilities. Above-ground stormwater detention and treatment facilities should be integrated into the design of a development site and, if visible from a public street, should appear as a component of the landscape design. (Standard 60.05.25.11)</i>	As shown on the Landscape Plans in Exhibit A, Sheets L5.0 - 5.4, stormwater treatment facilities will be integrated into the landscaping throughout the school site. The Stormwater Management Plan provided in Exhibit E provides detail regarding how stormwater will be managed on the site.
<i>10. Natural areas. Natural features that are indigenous to a development</i>	There are no streams, wetlands or other such natural features located

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<p><i>site, such as streams, wetlands, and mature trees should be preserved, enhanced and integrated when reasonably possible into the development plan. (Standard 60.05.25.12)</i></p>	<p>on the Vose site. There are a number of existing trees on the site that will be removed in order to accommodate the school project. Those trees are generally located in the center of the site where the new school will be built. Tree removal will also be done along the site frontage on SW Denney Road where street improvements and new access drives will require removal. The Landscape Plan on Sheet L5.0 in Exhibit A shows the location of trees to be removed, along with a table listing tree species and size. Trees being removed are identified as Landscape Trees by the City of Beaverton and their removal will be mitigated in accordance with Section 60.60.25.</p> <p>The District is proposing to preserve and protect an existing large oak tree located centrally to the site (tree #21 on Sheet L5.0). The tree has been identified as a community asset and will be incorporated into the outdoor learning area for the new school.</p>
<p><i>11. Landscape buffering and screening.</i></p>	
<p><i>A. A landscape buffer should provide landscape screening, and horizontal separation between different zoning districts and between non-residential land uses and residential land uses. The buffer should not be applicable along property lines where existing natural features such as flood plains, wetlands, riparian zones and identified significant groves already provide a high degree of visual screening. (Standard 60.05.25.13)</i></p>	<p>The perimeter of the school site will be landscaped with a 20-foot buffer where it abuts a residential zone (south, east and west property lines). The buffer has been designed to meet the City of Beaverton's B3 High Screen Buffer standard, which is intended to provide a high degree of visual screening between zones. The buffer consists of a six-foot high, sight-obscuring fence that will be constructed along the property line. On the interior of the fence, the buffer will be planted with trees, shrubs, groundcover, and lawn in accordance with the B3 standard. Details are provided on the landscape plans in Exhibit A. There are no existing natural features on the site that already provide visual screening.</p>
<p><i>B. When potential impacts of a Conditional Use are determined, or when potential conflicts of use exist between adjacent zoning districts, such as industrial uses abutting residential uses, landscape screening should be dense, and the buffer width maximized. When potential conflicts of uses are not as great, such as a commercial use abutting an industrial use, less dense landscape screening and narrower buffer width is appropriate. (Standard 60.05.25.13)</i></p>	
<p><i>C. Landscape buffering should consist of a variety of trees, shrubs and ground covers designed to screen potential conflict areas and complement the overall visual character of the development and adjacent neighborhood. (Standard 60.05.25.13)</i></p>	<p>As shown on the Plant Schedule on Sheet L5.5 in Exhibit A, the landscaped buffer will consist of a variety of trees, shrubs and groundcover designed to provide an effective visual screen along the property line. Landscape materials used in the buffer area will be</p>

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	designed to complement the overall landscaping plan for the school site. Plant materials used will be species that are native to this area and commonly found throughout the community.
<i>D. When changes to buffer widths and buffer standards are proposed, the applicant should describe the physical site constraints or unique building or site characteristics that merit width reduction. (Standard 60.05.25.13.E).</i>	The buffer width is consistent (20 feet) along the south, west and eastern property lines where the school site abuts residential properties. No variations to the width are proposed.
<b>60.5.50. Lighting Design Guidelines.</b> <i>Unless otherwise noted, all guidelines apply in all zoning districts.</i>	
<i>1. Lighting should be utilized to maximize safety within a development through strategic placement of pole-mounted, non-pole mounted and bollard luminaires. (Standards 60.05.30.1 and 2)</i>	Outdoor lighting will be provided on the Vose site in the parking areas and throughout the primary pedestrian areas and entrances. In the parking areas, LED light poles will be used to provide safe levels of light for maneuvering around the parking lots. In other pedestrian areas of the site, lighting will be a mix of wall sconces, bollard lighting, and overhead recessed ceiling lights. Lighting has been designed to be appropriate to the pedestrian scale and blend in with the building and landscaping context. Additional detail, including lighting equipment types, is provided in Exhibit H.
<i>2. Pedestrian scale lighting should be an integral part of the design concept except for industrial projects. Poles and fixtures for pole-mounted lighting should be of a consistent type throughout the project. The design of wall-mounted lighting should be appropriate to the architectural design features of the building. (Standard 60.05.30.2)</i>	
<i>3. Lighting should minimize direct and indirect glare impacts to abutting and adjacent properties and streets by incorporating lens shields, shades or other measures to screen the view of light sources from residences and streets. (Standards 60.05.30.1 and 2)</i>	Lighting for Vose has been designed to minimize glare on abutting properties and streets, as shown on the Photometric Plan (Sheet E0.1P in Exhibit A). The lighting poles used in the parking areas will be shielded and angled to direct light into the parking areas and away from abutting properties.
<i>4. On-Site lighting should comply with the City's Technical Lighting Standards. (Standards 60.05.30.1 and 2). Where the proposal does not comply with Technical Lighting standards, the applicant should describe the unique circumstance attributed to the use or site where compliance with the standard is either infeasible or unnecessary.</i>	All on-site lighting will comply with the City's Technical Lighting Standards.

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<b>60.25. OFF-STREET LOADING REQUIREMENTS.</b>	
<p>60.25.05. <i>Applicability. No building or structure subject to the off-street loading requirements of this section shall be erected, nor shall any such existing building or structure be altered so as to increase its gross floor area to an amount exceeding 25% more than its existing gross floor area, without prior provisions for off-street loading space in conformance with the requirements of this section.</i></p>	<p>Per 60.25.20, the proposed Vose school is required to provide one Type B loading berth. As shown on the Site Plan Sheet L2.1, one loading berth (called Service &amp; Delivery Area) that meets the Type B dimensional requirements is provided for the proposed school. The loading berth will be screened by a decorative metal fence eight feet in height.</p>
<p>60.25.10. <i>Loading Berth Design. Required off-street loading space shall be provided in berths which conform to the following minimum specifications:</i></p>	
<p>1. <i>Type A berths shall be at least 60 feet long by 12 feet wide by 15 feet high, inside dimensions with a 60 foot maneuvering apron.</i></p>	
<p>2. <i>Type B berths shall be at least 30 feet long by 12 feet wide by 14 feet 6 inches high, inside dimensions with 30 feet maneuvering apron.</i></p>	
<p>60.25.15. <i>Number of Required Loading Spaces. The following numbers and types of berths shall be provided for the specified uses. The uses specified below shall include all structures designed, intended or arranged for such use. In the case of a use not specifically mentioned, the requirements for off-street loading facilities shall be the same as a use which is most similar.</i></p>	
<p>60.25.20. <i>Loading Facilities Location.</i></p>	
<p>1. <i>The off-street loading facilities required for the uses mentioned in this Code shall be in all cases on the same lot or parcel of land as the structure they are intended to serve. In no case shall the required off- street loading space be part of the area used to satisfy the off-street parking requirements.</i></p>	<p>The required Type B loading berth for the proposed school is located on the site.</p>
<p>2. <i>No space for loading or unloading vehicles shall be so located that a vehicle using such loading space projects into any public street. Loading space shall be provided with access to any alley, or if no alley adjoins the lot, with access to a street. Any required front, side or rear yard may be used for loading unless otherwise prohibited by this Code.</i></p>	<p>As shown on the Site Plan Sheet L2.0, the loading berth for the proposed school is located such that vehicles using the berth will not project into a public street. Vehicles using the loading berth will access the site from SW Denney Road using the bus and staff driveway.</p>

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<b>60.30. OFF-STREET PARKING.</b>	
<i>60.30.5. Off-Street Parking Requirements. Parking spaces shall be provided and satisfactorily maintained by the owner of the property for each building or use which is erected, enlarged, altered, or maintained in accordance with the requirements of Sections 60.30.05. to 60.30.20.</i>	As shown on the Site Plans in Exhibit A and demonstrated in the responses below, parking spaces will be provided on the school site and will be maintained by the District.
<i>1. Availability. Required parking spaces shall be available for parking operable passenger automobiles and bicycles of residents, customers, patrons and employees and shall not be used for storage of vehicles or materials or for parking of trucks used in conducting the business or use.</i>	Required parking spaces on the school site will be available for use by parents, staff and other school visitors and will not be used for storage or truck parking related to the school use.
<i>60.30.10. Number of Required Parking Spaces. Except as otherwise provided under Section 60.30.10.11., off-street vehicle, bicycle, or both parking spaces shall be provided as follows:</i>	<p>Per the parking requirements table in Section 60.30.10, the number of required parking spaces for an elementary school is one space per full time staff person, with a maximum of 1.5 spaces per full time staff person. At full capacity, the number of full time staff at Vose is anticipated to be 77. That means the minimum required number of parking spaces at Vose is 77 spaces and the maximum allowed is 116 spaces.</p> <p>As shown on the site plans in Exhibit A, the District is proposing 107 vehicle parking spaces for the Vose school site. The staff parking area will provide 49 parking spaces and the parent/staff parking area will provide 58 spaces.</p> <p>The parking analysis provided in the TIA (Exhibit D) finds that 107 parking spaces will be adequate to serve typical school demands. For occasional special events held at the school, additional parking can be accommodated on site by using the bus and student loading areas. As shown in Figure 9 of the TIA, the bus loading area can accommodate 17 vehicles and the student loading area can accommodate 22 vehicles. This provides a total of 39 additional parking spaces that would be available for special events. Signage will be used to direct visitors to the appropriate parking spaces.</p>

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<p><i>Minimum Required Bicycle Parking Spaces</i></p>	<p>Per the bicycle parking ratio table, the required minimum number of bicycle parking spaces that must be provided at the proposed Vose school is one space per 9 students. Bicycle parking spaces must be designed to be long term; no short term bicycle parking is required. At full capacity, enrollment at Vose will be 750 students. Therefore, the required number of long-term bicycle parking spaces is 84. As shown on the Site Plan Sheet L2.2, 84 bicycle parking spaces will be provided on the school site.</p> <p>Bicycle parking will be designed, located, and lighted to the standards of the Engineering Design Manual and Standard Drawings. The bicycle parking area is located centrally on the site at the north end of the school building. The main school entrance is nearby, as is the secondary school entrance (near the bus loading area).</p> <p>Additional detail regarding bicycle parking is provided in Exhibit F.</p> <p>School buildings are exempted from the requirement to cover long-term bicycle parking. However, 15 of the bicycle parking racks (so 30 bike parking spaces) will be covered. The remaining bicycle parking racks will not be covered.</p>
<p><i>10. Location of Vehicle Parking.</i></p>	
<p><i>A. All parking spaces provided shall be on the same lot upon which the use requiring the parking is located. Upon demonstration by the applicant that the required parking cannot be provided on the same lot upon which the use is located, the Director may permit the required parking spaces to be located on any lot within 200 feet of the lot upon which the use requiring the parking is located.</i></p>	<p>As shown on the Plan Sheet L2.0, all required vehicle parking will be provided on the school site.</p>
<p><i>B. Except for single-family and duplex dwellings, groups of more than two parking spaces shall be so located and served by an access that their use will require no backing movements or other maneuvering within a street or right-of-way other than an alley.</i></p>	<p>All required vehicle parking spaces on the school site are designed so that use of the spaces will not require backing movements or other maneuvering within a street right-of-way.</p>
<p><i>C. In R10, R7, R5 and R4 zones parking and loading spaces may be</i></p>	<p>The proposed parking areas and loading space at Vose are located to</p>

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<i>located in side and rear yards and may be located in the front yard of each dwelling unit only if located in the driveway area leading to its garage.</i>	either side of the school building and not within the front yard.
<i>D. Parking in the front yard is allowed for each dwelling unit in the driveway area leading to its garage. Also, one additional space shall be allowed in that area in front of the required side yard and closest to the driveway subject to the following conditions:</i>	This standard is not applicable because this proposal does not include any dwelling units.
<i>11. Reductions and Exceptions. [ORD 3358; March 1984] Reductions and exceptions to the required vehicle and bicycle parking standards as listed in Sections 60.30.10.5. and 60.30.10.6. may be granted in the following specific cases:</i>	The District is not requesting any reductions or exceptions to the vehicle and bicycle parking standards.
<i>12. Compact Cars. Compact car parking spaces may be allowed as follows:</i>	No compact car parking spaces are proposed for the Vose school site.
<i>13. Carpool</i>	
<i>A. In industrial, institution, and office developments, including government offices, with 50 or more employee parking spaces, at least three percent of the employee parking spaces shall be designated for carpool and/or vanpool parking. For the purposes of this section, carpool is defined as two or more persons per car, and vanpool is defined as five or more persons per van. The carpool/vanpool spaces shall be clearly marked and signed for reserved carpool and/or vanpool parking. The reserved carpool/vanpool parking time may be specified so that the reserved spaces may be used for general parking if the reserved spaces are not occupied after a specific time period, which shall be clearly posted on the sign.</i>	The proposed school will provide 77 parking spaces for school employees (staff). Per this standard, three staff parking spaces must be designated for carpool and/or vanpool parking. As shown on the Site Plan Sheet L2.2, three carpool spaces are provided in the visitor/staff parking lot, which meets the standard. These parking spaces will be clearly marked and signed for reserved use by carpool and vanpool vehicles only during school hours.
<i>B. Location. Designated carpool/vanpool spaces shall be the closest employee motor vehicle parking spaces to the building entrance normally used by employees, except for the motor vehicle parking spaces designated for persons with disabilities, which shall be the closest to the building entrance.</i>	As shown on Sheet L2.2 in Exhibit A, the designated carpool spaces will be located closest to the building entrance, but not closer than the designated ADA parking spaces.

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<i>60.30.15. Off-Street Parking Lot Design. All off-street parking lots shall be designed in accordance with City Standards for stalls and aisles as set forth in the following drawings and tables:</i>	As shown on Site Plan Sheets L2.1 - L2.4, all proposed parking spaces at the school are standard 90 degree parking stalls, with the exception of the larger handicapped accessible parking stalls. Parking stall dimensions are provided on the plan sheets and are consistent with the requirements in this section.
<i>60.30.20. Off-Street Parking Lot Construction. Every parcel of land hereafter developed for use as a parking area shall conform to the requirements of the Engineering Design Manual and Standard Drawings.</i>	Proposed parking on the school site will be done in accordance with the Engineering Design Manual and Standard Drawings, as required by this standard.
<b>60.40. SIGN REGULATIONS</b>	
<i>60.40.20. Signs Subject to Ordinance Regulation - Permit Required. The following signs are subject to all ordinance regulations and permits are required prior to on-site construction, installation or placement.</i>	No signs are proposed as part of this application. The District may opt to install a school sign at a later date and will comply with all applicable sign regulations at that time.
<b>TRANSPORTATION FACILITIES.</b>	
<b>60.55.10. General Provisions.</b>	
<i>1. All transportation facilities shall be designed and improved in accordance with the standards of this code and the Engineering Design Manual and Standard Drawings. In addition, when development abuts or impacts a transportation facility under the jurisdiction of one or more other governmental agencies, the City shall condition the development to obtain permits required by the other agencies.</i>	All transportation facilities will be designed and constructed in accordance with this code and the Engineering Design Manual and Standard Drawings. As noted in the TIA in Exhibit D, an Engineering Design Modification will be required to allow the driveway spacing along SW Denney Road since there are several driveways within 180 feet of the proposed new access. All roadways surrounding the Vose school site are under City of Beaverton jurisdiction.
<i>2. In order to protect the public from potentially adverse impacts of the proposal, to fulfill an identified need for public services related to the development, or both, development shall provide traffic capacity, traffic safety, and transportation improvements in rough proportion to the identified impacts of the development.</i>	The Traffic Impact Analysis (Exhibit D) provides an assessment of traffic impacts that are anticipated to result from the proposed Vose School project. Improvements to mitigate those impacts are recommended in the analysis.

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<p><i>3. For applications that meet the threshold criteria of section 60.55.15. (Traffic Management Plan) or of section 60.55.20. (Traffic Impact Analysis), these analyses or limited elements thereof may be required.</i></p>	<p>A Traffic Impact Analysis and Traffic Management Plan have been conducted and are provided as part of this application package in Exhibits D and G.</p>
<p><i>7. Intersection performance shall be determined using the Highway Capacity Manual 2000 published by the Transportation Research Board. The City Engineer may approve a different intersection analysis method prior to use when the different method can be justified. Terms used in this subsection are defined in the Highway Capacity Manual 2000. At a minimum, the impacts of development on a signalized intersection shall be mitigated to peak hour average control delay no greater than 65 seconds per vehicle using a signal cycle length not to exceed 120 seconds. The volume-to-capacity ratio for each lane group for each movement shall be identified and considered in the determination of intersection performance. The peak hour volume-to-capacity ratio for each lane group shall be no greater than 0.98. Signal progression shall also be considered. At a minimum, the impacts of development on a two-way or an all-way stop-controlled intersection shall be mitigated to a peak hour average control delay of no greater than 45 seconds per vehicle. If the existing control delay or volume-to-capacity ratio of an intersection is greater than the standards of this subsection, the impacts of development shall be mitigated to maintain or reduce the respective control delay or volume-to-capacity ratio.</i></p>	<p>As demonstrated in the Traffic Impact Analysis in Exhibit D, the Highway Capacity Manual 2000 was used to determine intersection performance. All impacts and mitigations identified in the Traffic Impact Analysis are in conformance with this standard.</p>
<p><i>60.55.15. Traffic Management Plan. Where development will add 20 or more trips in any hour on a residential street, a Traffic Management Plan acceptable to the City Engineer shall be submitted in order to complete the application. A residential street is any portion of a street classified as a Local Street or Neighborhood Route and having abutting property zoned R2, R4, R5, R7, or R10.</i></p>	<p>The proposed school project does not meet the threshold of 20 new trips on a local road. However, a Traffic Management Plan has been included with this submittal at the City's request (see Exhibit G). The Traffic Management Plan is intended primarily to address City staff questions regarding the operation of the daily student drop-off and pick-up activities.</p>
<p><b>60.55.20. Traffic Impact Analysis.</b> <i>For each development proposal that exceeds the Analysis Threshold of 60.55.20.2, the application for land use or design review approval shall include a Traffic Impact Analysis as</i></p>	<p>A Traffic Impact Analysis has been included with this submittal as Exhibit D.</p>

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<p><i>required by this code. The Traffic Impact Analysis shall be based on the type and intensity of the proposed land use change or development and its estimated level of impact to the existing and future local and regional transportation systems.</i></p>	
<p><i>1. Engineer Certification. The Traffic Impact Analysis shall be prepared and certified by a traffic engineer or civil engineer licensed in the State of Oregon.</i></p>	<p>The Traffic Impact Analysis was prepared and certified by a licensed traffic engineer with DKS Associates in Portland, Oregon.</p>
<p><i>2. Analysis Threshold.</i></p> <p><i>A. A Traffic Impact Analysis is required when the proposed land use change or development will generate 200 vehicles or more per day (vpd) in average weekday trips as determined by the City Engineer.</i></p>	<p>A Traffic Impact Analysis has been included with this submittal as Exhibit D.</p>
<p><i>3. Study Area. The Traffic Impact Analysis shall evaluate the Area of Influence of the proposed development and all segments of the surrounding transportation system where users are likely to experience a change in the quality of traffic flow. The City Engineer may identify additional locations for study if existing traffic operation, safety, or performance is marginal or substandard. Prior to report preparation, the applicant shall submit the proposed scope and analysis assumptions of the Traffic Impact Analysis. The City Engineer shall determine whether the scope and analysis assumptions are adequate.</i></p>	<p>The Traffic Impact Analysis (Exhibit D) evaluates an influence area determined per Beaverton guidelines. DKS Associates submitted the proposed scope to the City Engineer for approval prior to completing the report.</p>
<p><i>4. Contents of the Traffic Impact Analysis Report. The Traffic Impact Analysis report shall contain the following information organized in a logical format:</i></p>	<p>The Traffic Impact Analysis provided in Exhibit D contains all the elements required by this standard.</p>
<p><i>A. Executive Summary</i></p>	
<p><i>B. Description of Proposed Development</i></p>	
<p><i>C. Existing Conditions</i></p>	
<p><i>D. Traffic Forecasts</i></p>	
<p><i>E. Traffic Impacts</i></p>	
<p><i>F. Mitigation Identification</i></p>	
<p><i>G. Recommendations</i></p>	

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<p><b>60.55.25. Street and Bicycle and Pedestrian Connection Requirements.</b></p>	
<p>1. <i>All streets shall provide for safe and efficient circulation and access for motor vehicles, bicycles, pedestrians, and transit. Bicycle and pedestrian connections shall provide for safe and efficient circulation and access for bicycles and pedestrians.</i></p>	<p>The Traffic Impact Analysis provided in Exhibit D demonstrates how the surrounding streets can be improved to provide for safe and efficient access and circulation to and around the proposed Vose site. Recommended mitigations along SW Denney Road include a half-street improvement that will provide a sidewalk and bike lane (un-striped) along the site's frontage. The TIA also recommends improvements to the signalized intersection of SW Denney Road and King Blvd, which will serve as the primary staff and visitor entry into the school site. School buses will access the site from an alternate access point (west access) in order to minimize conflicts between bus traffic and staff/visitor traffic, especially during student drop-off and pick-up times. In addition, a third right-out-only exit will be provided (east access) for vehicles in the staff/visitor parking area who wish to exit the site and travel east.</p> <p>The Circulation Diagrams provided in Exhibit A show the on-site pedestrian circulation network for the proposed school, as well as emergency vehicle routes. As shown, there are direct pedestrian connections between the school entrances and the parking areas and outdoor recreation areas. Pedestrian crossings through parking areas and driveways are minimal; where they do exist they will be striped for high visibility.</p>
<p>2. <i>The Comprehensive Plan Transportation Element Figures 6.1 through 6.23 and Tables 6.1 through 6.6 shall be used to identify ultimate right-of-way width and future potential street, bicycle, and pedestrian connections in order to provide adequate multi-modal access to land uses, improve area circulation, and reduce out-of-direction travel.</i></p>	<p>All street improvements proposed as part of the Vose School project will be done in accordance with the right-of-way width and cross section identified for a collector street (for SW Denney Road), including sidewalks and a bike lane.</p>

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<p>4. <i>Streets and bicycle and pedestrian connections shall extend to the boundary of the parcel under development and shall be designed to connect the proposed development's streets, bicycle connections, and pedestrian connections to existing and future streets, bicycle connections, and pedestrian connections. A closed-end street, bicycle connection, or pedestrian connection may be approved with a temporary design.</i></p>	<p>Pedestrian/bicycle connections proposed for the Vose site extend to the boundary of the site and connect to the surrounding public network in several places.</p> <ul style="list-style-type: none"> <li>▪ The two access points along SW Denney connect the public sidewalk along Denney to the pedestrian pathways on the school site. The primary access will be at the signalized intersection of Denney and King Blvd and will provide pedestrian signals and striping to maximize pedestrian safety at this connection.</li> <li>▪ The pedestrian connection through the southwest corner of the site will be preserved and improved to allow continued use of that connection.</li> </ul>
<p>5. <i>Whenever existing streets and bicycle and pedestrian connections adjacent to or within a parcel of land are of inadequate width, additional right-of-way may be required by the decision-making authority.</i></p>	<p>Additional right-of-way will be provided where needed to accommodate the required half-street improvements along SW Denney Road.</p>
<p>6. <i>Where possible, bicycle and pedestrian connections shall converge with streets at traffic-controlled intersections for safe crossing.</i></p>	<p>The primary bicycle/pedestrian connection to SW Denney Road will occur at the fully signalized intersection of Denney and King Blvd.</p>
<p>7. <i>Bicycle and pedestrian connections shall connect the on-site circulation system to existing or proposed streets, to adjacent bicycle and pedestrian connections, and to driveways open to the public that abut the property. Connections may approach parking lots on adjoining properties if the adjoining property used for such connection is open to public pedestrian and bicycle use, is paved, and is unobstructed.</i></p>	<p>As shown on the Circulation Diagrams in Exhibit A, the on-site pedestrian and bicycle circulation system connects to SW Denney Road at three locations, and to the existing walkway connection at the southwest corner of the school site. There are no existing driveways or parking lots open to the public adjacent to the subject site.</p>
<p>8. <i>To preserve the ability to provide transportation capacity, safety, and improvements, a special setback line may be established by the City for existing and future streets, street widths, and bicycle and pedestrian connections for which an alignment, improvement, or standard has been defined by the City. The special setback area shall be recorded on the plat.</i></p>	<p>No special setback line has been established.</p>
<p>9. <i>Accessways are one or more connections that provide bicycle and pedestrian passage between streets or a street and a destination. Accessways shall be provided as required by this code and where full street connections are not possible due to the conditions described in Section 60.55.25.13. An</i></p>	<p>As demonstrated in the responses below, accessways will be provided as required here.</p>

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<i>accessway will not be required where the impacts from development, redevelopment, or both are low and do not provide reasonable justification for the estimated costs of such accessway.</i>	
<i>A. Accessways shall be provided as follows:</i>	
<i>1. In any block that is longer than 600 feet as measured from the near side right-of-way line of the subject street to the near side right-of-way line of the adjacent street, an accessway shall be required through and near the middle of the block.</i>	As noted in the Pre-application Summary notes from the City's transportation planner, an accessway or walkway into the school site should be provided for every 300 feet of street frontage. The site's frontage along SW Denney Road is approximately 500 feet long. As such, the proposed accessway/crossing provided at the improved intersection of Denney and King Blvd will be sufficient to meet this standard.
<i>2. If any of the conditions described in Section 60.55.25.13. result in block lengths longer than 1200 feet as measured from the near side right-of-way line of the subject street to the near side right-of-way line of the adjacent street, then two or more accessways may be required through the block.</i>	
<i>3. Where a street connection is not feasible due to conditions described in Section 60.55.25.13., one or more new accessways to any or all of the following shall be provided as a component of the development if the accessway is reasonably direct: an existing transit stop, a planned transit route as identified by TriMet and the City, a school, a shopping center, or a neighborhood park.</i>	This standard is not applicable; all required street connections will be provided and the conditions in 60.55.25.13 do not exist on the site.
<i>4. The City may require an accessway to connect from one cul-de-sac to an adjacent cul-de-sac or street.</i>	There are no cul-de-sacs on or adjacent to the site. Therefore, these criteria do not apply to the proposed development.
<i>5. In a proposed development or where redevelopment potential exists and a street connection is not proposed, one or more accessways may be required to connect a cul- de-sac to public streets, to other accessways, or to the project boundary to allow for future connections.</i>	
<i>B. Accessway Design Standards.</i>	
<i>1. Accessways shall be as short as possible and wherever practical, straight enough to allow one end of the path to be visible from the other.</i>	As shown in the Pedestrian Circulation Diagram in Exhibit A, proposed accessways through the Vose site have been designed to be as short and direct as possible, allowing visibility from one end of the path to the other whenever possible.
<i>2. Accessways shall be located to provide a reasonably direct</i>	As shown in the Pedestrian Circulation Diagram in Exhibit A,

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<i>connection between likely pedestrian and bicycle destinations.</i>	accessways through the Vose site have been designed to connect the primary destinations on site, including the main school building, parking areas, bike parking area, and outdoor recreation fields. The accessways will also provide direct connections to the established walkway that travels through the southwest corner of the site.
10. Pedestrian Circulation.	
<i>A. Walkways are required between parts of a development where the public is invited or allowed to walk.</i>	As shown in the Pedestrian Circulation Diagram in Exhibit A, on-site walkways are provided throughout the Vose site, connecting the primary areas where the public is allowed to walk. This includes the main building entrances, parking areas, bike parking, and outdoor recreation areas.
<i>B. A walkway into the development shall be provided for every 300 feet of street frontage. A walkway shall also be provided to any accessway abutting the development.</i>	The site's frontage along SW Denney Road is approximately 500 feet long. As such, the proposed accessway/crossing provided at the improved intersection of Denney and King Blvd will be sufficient to meet this standard. A walkway will also be provided on the Vose site to connect to the accessway at the southwest corner of the site.
<i>C. Walkways shall connect building entrances to one another and from building entrances to adjacent public streets and existing or planned transit stops. Walkways shall connect the development to walkways, sidewalks, bicycle facilities, alleyways and other bicycle or pedestrian connections on adjacent properties used or planned for commercial, multifamily, institution or park use. The City may require connections to be constructed and extended to the property line at the time of development.</i>	As shown in the Pedestrian Circulation Diagram in Exhibit A, walkways on the school site will be provided as required by this standard.
<i>D. Walkways shall be reasonably direct between pedestrian destinations and minimize crossings where vehicles operate.</i>	As shown in the Pedestrian Circulation Diagram in Exhibit A, walkways have been designed to be as direct as possible and to minimize crossings where vehicles operate. All pedestrian crossings at vehicular drives will be identified with striping.
<i>E. Walkways shall be paved and shall maintain at least four feet of unobstructed width. Walkways bordering parking spaces shall be at least seven feet wide unless concrete wheel stops, bollards, curbing, landscaping, or other similar improvements are provided which prevent</i>	All on-site walkways will be paved and maintain a width of at least four feet. Walkways bordering parking spaces will be at least seven feet wide except where curbing and landscaping are provided. Ramps will also be provided, consistent with City standards, where needed.

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<i>parked vehicles from obstructing the walkway. Stairs or ramps shall be provided where necessary to provide a reasonably direct route. The slope of walkways without stairs shall conform to City standards.</i>	
<i>F. The Americans with Disabilities Act (ADA) contains different and stricter standards for some walkways. The ADA applies to the walkway that is the principal building entrance and walkways that connect transit stops and parking areas to building entrances. Where the ADA applies to a walkway, the stricter standards of ADA shall apply.</i>	All applicable ADA standards will be met for the proposed school.
<i>G. On-site walkways shall be lighted to 0.5 foot-candle level at initial luminance. Lighting shall have cut-off fixtures so that illumination does not exceed 0.5 foot-candle more than five (5) feet beyond the property line.</i>	As shown on the Photometric Plan (Sheet E0.1P in Exhibit A) and the lighting details in Exhibit H, on-site walkways will be lit in accordance with this standard.
<i>11. Pedestrian Connections at Major Transit Stops. Commercial and institution buildings at or near major transit stops shall provide for pedestrian access to transit through the following measures:</i>	There are no major transit stops at or near the proposed school site. Therefore, these standards do not apply.
<i>12. Assessment, review, and mitigation measures (including best management practices adopted by local agencies) shall be completed for bicycle and pedestrian connections located within the following areas: wetlands, streams, areas noted as Significant Natural Resources Overlay Zones, Significant Wetlands and Wetlands of Special Protection, and Significant Riparian Corridors within Volume III of the Comprehensive Plan Stateline Planning Goal 5 Resource Inventory Documents and Significant Natural Resources Map, and areas identified in regional and/or intergovernmental resource protection programs...</i>	No bicycle or pedestrian connections are being proposed within any of the identified areas. Therefore, this standard does not apply.
<i>13. New construction of bicycle and pedestrian connections along residential rear lot lines is discouraged unless no comparable substitute alignment is possible in the effort to connect common trip origins and destinations or existing segment links.</i>	No bicycle/pedestrian connections are being proposed along residential rear lot lines.
<b>60.55.35. Access Standards.</b>	
<i>1. The development plan shall include street plans that demonstrate how safe access to and from the proposed development and the street system will be</i>	The Site Plan for the proposed Vose school project demonstrates how safe access to and from the school will be provided. The three access

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<p><i>provided. The applicant shall also show how public and private access to, from, and within the proposed development will be preserved</i></p>	<p>points along SW Denney Road have been designed to maximize safety for all users of the school, including parents, visitors, staff and buses. The TIA provided in Exhibit D identifies mitigation improvements that will be completed to ensure safe access to the school. Those mitigations include signage, improvements to the signalized intersection of SW Denney Road and King Blvd., limiting the east access to right-out only, and ensuring adequate sight distance at proposed access points.</p>
<p><i>3. Intersection Standards.</i></p>	
<p><i>A. Visibility at Intersections. All work adjacent to public streets and accessways shall comply with the standards of the Engineering Design Manual except in Regional and Town Centers.</i></p>	<p>All work adjacent to public streets and accessways will comply with the Engineering Design Manual.</p>
<p><i>2. The requirements specified in 60.55.35.3.A. may be lessened or waived by the decision-making authority if the project will not result in an unsafe traffic situation...</i></p>	<p>The applicant is not proposing modifications to the above requirement.</p>
<p><i>B. Intersection angles and alignment and intersection spacing along streets shall meet the standards of the Engineering Design Manual and Standard Drawings.</i></p>	<p>The proposed Vose project will require an Engineering Design Modification to access spacing standards because existing driveways are located within 180 feet of the proposed site access at the Denney/King intersection. All other standards of the Engineering Design Manual will be met.</p>
<p><i>1. Local street connections at intervals of no more than 330 feet should apply in areas planned for the highest density multiple use development.</i></p>	<p>The proposed school site is not located in an area planned for the highest density multiple use development.</p>
<p><i>2. When a highway interchange within the City is constructed or reconstructed, a park and ride lot shall be considered.</i></p>	<p>This proposal does not include a highway interchange.</p>
<p><i>C. Driveways.</i></p>	
<p><i>1. Corner Clearance for Driveways. Corner clearance at signalized intersections and stop-controlled intersections, and spacing between driveways shall meet the standards of the Engineering Design Manual and Standard Drawings.</i></p>	<p>Corner clearance at intersections has been designed in accordance with the Engineering Design Manual. The proposed Vose project will require an Engineering Design Modification to access spacing standards because existing driveways are located within 180 feet of the proposed site access at the Denney/King intersection.</p>
<p><i>2. Shared Driveway Access. Whenever practical, access to Arterials</i></p>	<p>Shared access with a school site is not practical for circulation, safety</p>

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<p><i>and Collectors shall serve more than one site through the use of driveways common to more than one development or to an on-site private circulation design that furthers this requirement. Consideration of shared access shall take into account at a minimum property ownership, surrounding land uses, and physical characteristics of the area. Where two or more lots share a common driveway, reciprocal access easements between adjacent lots may be required.</i></p>	<p>and security reasons.</p>
<p><i>3. No new driveways for detached dwellings shall be permitted to have direct access onto an Arterial or Collector street except in unusual circumstances where emergency access or an alternative access does not exist. Where detached dwelling access to a local residential street or Neighborhood Route is not practicable, the decision-making authority may approve access from a detached dwelling to an Arterial or Collector.</i></p>	<p>This proposal does not include a new driveway for a detached dwelling. Therefore, this standard is not applicable.</p>
<p><b>60.60 TREES AND VEGETATION.</b></p>	
<p><b>60.60.10. Types of Trees and Vegetation Regulated.</b> <i>Actions regarding trees and vegetation addressed by this section shall be performed in accordance with the regulations established herein and in Section 40.90. of this Code. The City finds that the following types of trees and vegetation are worthy of special protection:</i></p>	<p>Per discussions with City staff during the pre-application meeting, all existing trees located on the Vose site are considered Landscape Trees for the purpose of Section 60.60. In order to accommodate the proposed redevelopment of Vose School and reconfiguring of the site layout, the majority of existing trees will be removed. Tree removal is shown on Sheet L5.0 in Exhibit A.</p> <p>One large oak tree located in the center of the site will be preserved and protected and incorporated into the outdoor learning area of the new school.</p>
<p><i>1. Significant Individual Trees.</i></p>	
<p><i>2. Historic Tree.</i></p>	
<p><i>3. Trees within Significant Natural Resource Areas.</i></p>	
<p><i>4. Trees within Significant Groves.</i></p>	
<p><i>5. Landscape Trees.</i></p>	
<p><i>6. Community Trees.</i></p>	
<p><i>7. Mitigation Trees.</i></p>	
<p><b>60.60.15. Pruning, Removal, and Preservation Standards.</b></p>	<p>Proposed tree removal on the Vose site will be done in accordance with standards in this section. Removal of the designated Landscape</p>
<p><i>2. Removal and Preservation Standards.</i></p>	

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<p><i>A. All removal of Protected Trees shall be done in accordance with the standards set forth in this section.</i></p>	<p>Trees will be mitigated as required. Details about mitigation are provided in the response to Section 60.60.25 below.</p>
<p><i>B. Removal of Landscape Trees and Protected Trees shall be mitigated, as set forth in section 60.60.25.</i></p>	
<p><i>C. For SNRAs and Significant Groves, the following additional standards shall apply:</i></p>	
<p><b>60.60.20. Tree Protection Standards during Development.</b></p>	<p>As noted on Landscape Plan Sheet L5.0 (Note 7), the existing oak tree to remain on site will be protected according to the standards in this section. The required tree protection fence will be located five feet beyond the tree canopy.</p>
<p><i>1. Trees classified as Protected Trees under this Code shall be protected during development in compliance with the following:</i></p>	
<p><i>A. A construction fence must be placed around a tree or grove beyond the edge of the root zone. The fence shall be placed before physical development starts and remain in place until physical development is complete. The fence shall meet the following:</i></p>	
<p><i>1. The fence shall be a four foot (4') tall orange plastic or snow fence, secured to six foot (6') tall metal posts, driven two feet (2') into the ground. Heavy 12 gauge wire shall be strung between each post and attached to the top and midpoint of each post. Colored tree flagging indicating that this area is a tree protection zone is to be placed every five (5) linear feet on the fence to alert construction crews of the sensitive nature of the area.</i></p>	
<p><i>2. Other City approved protection measures that provide equal or greater protection may be permitted, and may be required as a condition of approval.</i></p>	
<p><i>B. Within the protected root zone of each tree, the following development shall not be permitted:</i></p>	<p>As noted on Landscape Plan Sheet L5.0 (Note 7), the existing oak tree to remain on site will be protected according to the standards in this section. No construction or other activities will be conducted within the protection zone.</p>
<p><i>1. Construction or placement of new buildings.</i></p>	
<p><i>2. Grade change or cut and fill, except where hand excavation is approved with the submittal of an arborist's report, as part of application approval.</i></p>	
<p><i>3. New impervious surfaces.</i></p>	
<p><i>4. Trenching for utilities, irrigation, or drainage.</i></p>	
<p><i>5. Staging or storage of any kind.</i></p>	
<p><i>6. Vehicle maneuvering or parking</i></p>	

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<p><b>60.60.25 Mitigation Requirements</b></p> <p>9. <i>The following standards apply to the replacement of a Landscape Tree:</i></p> <p>A. <i>A replacement tree shall be a substantially similar species or a tree approved by the City considering site characteristics.</i></p> <p>B. <i>If a replacement tree of the species of the tree removed or damaged is not reasonably available, the City may allow replacement with a different species.</i></p> <p>C. <i>Replacement of a Landscape Tree shall be based on total linear DBH calculations at a one-to-one ratio depending upon the capacity of the site to accommodate replacement tree or unless otherwise specified through development review. Replacement of tree on a one-to-one basis shall be as follows:</i></p> <ol style="list-style-type: none"> <li>1. <i>Calculate the sum of the total linear DBH measurement of the tree to be removed.</i></li> <li>2. <i>The total linear DBH measurement of the tree to be removed shall be replaced with tree at least 1.5 caliper inches in diameter. The total caliper inches of the replacement tree shall be at least equal to the sum total of the linear DBH measurement of the removed tree.</i></li> </ol>	<p>A total of 42 trees will be removed from the site in order to accommodate the proposed redevelopment of the Vose School. Total DBH of tree removal is 680 inches. As shown on the Landscape Plan in Exhibit A, a total of 109 replacement trees will be planted on the site, with a total of 218 DBH inches. The project cannot reasonably accommodate enough new trees to replace all 680 DBH inches being removed. As is demonstrated on the Landscape Plan, trees are being planted where it is reasonable and suitable to do so while still accommodating the new school building, parking and maneuvering areas, pedestrian walkways and plazas, and the outdoor recreational areas needed to meet the District's programming requirements.</p>
<p><b>60.65. UTILITY UNDERGROUNDING.</b></p>	
<p>60.65.10. <i>Authority. The provisions of private utility undergrounding shall pertain to all activities subject to Design Review (Section 40.20.), as well as Land Divisions (Section 40.45.).</i></p>	<p>This proposal is subject to Design Review and is therefore subject to the utility undergrounding requirements. As shown on the Utility Plan Sheet C2.0, all existing overhead utilities on site, and all new utilities will be placed underground in conformance with this standard.</p>
<p>60.65.15. <i>Regulation. All existing and proposed utility lines within and contiguous to the subject property, including, but not limited to, those required for electric, communication, and cable television services and related facilities shall be placed underground as specified herein. The utilities required to be placed underground shall be those existing overhead utilities which are impacted by the proposed development and those utilities that are required to be installed as a result of the proposed development.</i></p>	

Code Section/Standard	Response
<p><i>60.65.20. Information on Plans. The applicant for a development subject to design review, subdivision, partition, or site development permit approval shall show, on the proposed plan or in the explanatory information, the following:</i></p>	<p>The Utility Plan Sheet L2.0 provides the required information.</p>
<p><i>1. Easements for all public and private utility facilities;</i></p>	
<p><i>2. The location of all existing above ground and underground public and private utilities within 100 feet of the site;</i></p>	
<p><i>3. The proposed relocation of existing above ground utilities to underground; and</i></p>	
<p><i>4. That above ground public or private utility facilities do not obstruct vision clearance areas pursuant to Section 60.55.50. of this Code.</i></p>	<p>The applicant is not proposing any fee in lieu of undergrounding.</p>
<p><i>60.65.25. Optional Fee In Lieu of the Undergrounding Requirement. If any of the following criteria are met as determined by the City, after receiving a recommendation from the Facilities Review Committee, at the applicant's option, applicant shall either immediately place the private utilities underground or pay a fee to the City toward future undergrounding in lieu of immediately placing private utilities underground. ...</i></p>	

## V. CONFORMANCE WITH CITY OF BEAVERTON COMPREHENSIVE PLAN

This section of the application contains responses that demonstrate how the proposed Vose School redevelopment conforms to the City of Beaverton Comprehensive Plan policies.

*5.4.1.b On-site detention will be used as a storm water management tool to mitigate the impacts of increased storm water run-off associated with new land development.*

**Response:** Though drainage patterns and discharge locations will be maintained between existing and proposed conditions, water quality treatment and some water quantity mitigation will be required of post-development stormwater runoff. Stormwater runoff draining to the north will be treated through LIDA (Low Impact Development Approaches) water quality facilities located in onsite vegetated areas along Denney Road and along the eastern property boundary. Stormwater runoff draining toward the south will be treated by LIDA facilities located in parking lot landscaping, along the eastern property boundary, and at the southeast corner of the site. LIDA facilities located adjacent to or within parking areas will treat onsite parking lot and sidewalk runoff, and the facility located in the southeast corner of the site will treat roof runoff from the school and the covered play area, as well as the hard play area.

Runoff draining to the north will not receive detention prior to discharging into the Denney Road system, as flows are not expected to increase under proposed conditions. Flows in the southern basin are expected to increase under proposed conditions, and will receive detention in a combined water quality/detention facility located at the southeast corner before discharging into the existing public storm system within SW Clifford Street.

*5.4.1.c All new land development will be connected to a storm water drainage system. Each new development will be responsible for the construction or assurance of construction of their portion of the major storm water run-off facilities that are identified by the SWM program as being necessary to serve the new land development.*

**Response:** As noted in the Pre-Application Summary notes from the Site Development Division, the public storm drainage system is available to serve the proposed redevelopment of Vose School. As shown on the Utility Plan Sheet C2.0, the Vose site will be connected to the existing public storm drainage system at two locations, one at the northeast corner of the site adjacent to SW Denney Road and one at the southeast corner of the site.

*5.5.1.a All new land development (residential subdivisions, multiple family dwelling development, and industrial and commercial developments) shall be connected to a public water system.*

**Response:** The proposed new school will be connected to the City of Beaverton public water system. The project team civil engineer has prepared plans for utility provisions (Exhibit A, Sheet C1.0) that show proposed new water lines and how the site will connect to the public water system. The existing water line in SW Butte Lane will also be extended into the site to upgrade fire water service and connect to the water system in SW Denney Road.

*5.5.1.b All new development served by the Beaverton Water Division shall be reviewed by the City to determine that the pressure of water available to serve the proposed development meets City standards.*

**Response:** The materials provided with this application package will be forwarded to applicable service providers, including the Beaverton Water Division, for their review and comment. The City will determine that available water pressure is adequate to serve the proposed project.

*5.5.1.c The City shall encourage water conservation consistent with current intergovernmental agreements, to prolong existing supplies and to help postpone water system capacity improvements needed to supply expected future demands as a result of projected population increases.*

**Response:** The proposed landscape plan for Vose School utilizes climate-adaptive or native plant species which require less water than other plant species. In addition, the irrigation system for the school site will use water-saving equipment and will be designed to be zone-specific to maximize overall efficiency of the system. These landscape approaches will help reduce water consumption by the school site.

*5.6.1.a All new land development (residential subdivisions, and multiple family dwelling, industrial, and commercial developments) shall be connected to the City sewer system.*

**Response:** The proposed new Vose School will be connected to the City of Beaverton public sewer system. The Utility Plan Sheet C1.0 shows the location of proposed connections to the existing public sewer system, located at the northeast corner of the site.

*5.7.1.a The City shall encourage the School District to provide facilities that will adequately accommodate growth while recognizing the limited supply of buildable land in the city for such facilities.*

**Response:** The proposed Vose School project supports this policy by redeveloping the existing school site to increase student capacity without the need for additional land.

*5.7.1.b Schools should locate within or adjacent to residential districts for the convenience of those the facilities serve. However, public and private school proposals should be assessed for compatibility in order to assure that the stated purposes of the residential districts are not unnecessarily eroded.*

**Response:** The proposed project is located on an existing school site that has been serving the surrounding residential districts since 1960. Compatibility with the surrounding residences will be achieved in a variety of ways:

- The school site has been designed with a 20-foot landscaped buffer along all property lines that abut a residential property (south, east and west property lines). The buffer meets the City's standards for a B3 high-screen buffer, providing a high degree of visual screening between properties. It consists of a six-foot high wooden fence and a strip of landscaping that includes trees, shrubs and groundcover.
- The outdoor recreational fields will not be lit at night and will not utilize a speaker system, thereby minimizing the potential for noise or glare impacts on surrounding homes.

- Lighting used in the parking lots and along on-site walkways has been designed to avoid light spill onto surrounding properties. The buffer described above will also help reduce the impact of vehicle lights from the parking lots.
- Access to the school site is taken from several points along SW Denney Road, which is a collector street. Local streets will not be used for accessing the school.
- The existing path that connects through the southwest corner of the school site will be preserved and maintained so that it continues to serve as a safe and convenient pathway for pedestrians and bicyclists.

*5.7.1.c The City shall encourage the District to provide for schools throughout the City in locations that are easily accessible to those they are intended to serve.*

**Response:** This policy is not directly relevant because the proposed project is a redevelopment of the existing Vose School on the same site. A new location is not being proposed. Vose School is located in a high-growth area for the District and this project is the result of analysis that concluded more capacity is needed in this area to accommodate existing students and anticipated demand.

*5.7.1.g The City shall encourage the School District and the Tualatin Hills Park and Recreation District (THPRD) to continue their excellent level of cooperation in the joint acquisition, development and use of facilities for educational and recreational purposes.*

**Response:** The Vose site is located within the THPRD service boundary and the District will continue its history of collaboration with THPRD on the potential use of the fields proposed for the new school. Typically, elementary schools such as Vose do not have the types of outdoor fields that are suitable for a shared agreement between THPRD and the District. However, the District will coordinate with THPRD to determine if some kind of shared arrangement is desirable at Vose.

*6.2.1.e Protect neighborhoods from excessive through traffic and travel speeds while providing reasonable access to and from residential areas. Build streets to minimize speeding.*

**Response:** Access to the proposed Vose School redevelopment will be taken from SW Denney Road, a collector street. No local residential streets will be used to access the school, which will help to minimize traffic on surrounding local streets. As shown in the Traffic Impact Analysis (TIA) provided in Exhibit D, the proposed project at Vose is expected to add a total of 37 new trips (as compared with existing school trips) during the morning peak hour, and 20 trips during the evening peak hour. Figure 6 of the TIA indicates that these trips will be on SW Denney and SW King Blvd. Other local streets will not see a measurable increase in trips due to the school project. Improvements to SW Denney, including an improved signalized intersection at Denney Road and King Blvd., are proposed to mitigate potential impacts from the school project. The TIA also recommends signage be used at the school access points along SW Denney to ensure efficient and safe use of the accesses and on-site queuing areas.

*6.2.1.g Provide convenient direct pedestrian and bicycle facilities to promote the health and physical well-being of Beaverton residents, to reduce traffic congestion, to provide commuting and recreational alternatives to the motor vehicle, and to support local commerce.*

**Response:** As shown on the Pedestrian and Bike Circulation diagram provided on Sheet L7.0 in Exhibit A, direct and convenient bicycle and pedestrian paths will be provided throughout the Vose site to connect the school building, parking areas, outdoor recreation areas, and public sidewalks along Denney Road. Connections will also be provided to the existing pathway that travels through the southwest corner of the site.

All pedestrian connections will be designed for safe pedestrian movement and constructed of hard durable surface. Paint striping and tactile warning pavers will be used to identify safe pedestrian routes. Bicycle parking will also be provided on the school site in accordance with City requirements. Bicycle parking will be conveniently located and designed for safety and security.

*6.2.2.c Develop and provide a safe, complete, attractive, efficient, and accessible system of pedestrian ways and bicycle ways, including bike lanes, cycletracks, bike boulevards, shared roadways, multi-use paths, and sidewalks according to the pedestrian and bicycle system maps, and the Development Code and Engineering Design Manual requirements.*

**Response:** See the response above for details about the planned pedestrian and bicycle facilities that will be provided as part of the proposed Vose school development. In addition to those facilities, the project will include half street improvements to SW Denney Road along the site's frontage; those improvements will include a six-foot wide sidewalk and a five-foot bike lane in accordance with the City's collector street standards. The bike lane will not be striped as such since it will not connect to bike lanes east or west of the project frontage. The improved signalized intersection at Denney Road and King Blvd will include marked and signalized pedestrian crossings.

*6.2.2.d Design sidewalks and the pedestrian access systems to City standards to enhance walkability: complete the accessible pedestrian network, provide safe direct access to transit and activity centers, and provide safe crossings at intersections with pedestrian friendly design.*

**Response:** All proposed sidewalks and pedestrian access systems have been designed to City standards. The responses above describe how the pedestrian system provides safe and direct access through and around the school site. The project will also include improvements to the signalized intersection at Denney Road and King Blvd; those improvements will be designed to maximize pedestrian safety and convenience.

*6.2.2.e Provide connectivity to each area of the City for convenient multimodal access. Ensure pedestrian, bicycle, transit, and vehicle access to schools, parks, commercial, employment, and recreational areas, and destinations in station areas, regional and town centers by identifying and developing improvements that address connectivity needs.*

**Response:** The Multimodal Circulation Diagrams provided in Exhibit A demonstrate how pedestrian, bicycle and vehicle access to and around the school will function. The proposed project emphasizes safe and convenient access to the school site through multiple access points along SW Denney Road designed for all users. The pedestrian path that travels through the lower corner of the site, providing connections to areas south and west of the school, will be improved and

maintained as part of this project.

*6.2.2.f Develop neighborhood and local connections to provide convenient circulation into and out of neighborhoods. Work to prevent and eliminate pedestrian and bicycle “cul-de-sacs” that require substantial out-of-direction travel for pedestrians and bicyclists.*

**Response:** As noted previously, the existing path that travels through the lower corner of the site, providing connections to neighborhoods south and west of the school, will be improved and maintained as part of this project.

*6.2.3.d Designate safe walkway and bikeway routes from residential areas to schools, parks, transit, and other activity centers.*

**Response:** The proposed redevelopment of the Vose site will include multiple safe access points into the school for pedestrians and bicycles. Two access points along SW Denney Road will connect the public sidewalk to the on-site walkways, providing direct connections to the school building, parking areas and recreational areas. The site’s frontage along Denney will be improved with a six-foot sidewalk and five-foot bike lane (un-striped). The pedestrian and bicycle accesses at the southwest corner of the site will be improved and maintained to provide connections to the neighborhoods west and south of the school.

*6.2.3.g Maintain access management standards for streets consistent with City, County, and State requirements to reduce conflicts among vehicles, trucks, rail, bicycles, and pedestrians. Preserve the functional integrity of the road system by limiting access per City standards.*

**Response:** As noted in the TIA in Exhibit D, proposed access to the Vose site will be taken from three points along SW Denney Road. All applicable access management standards will be met for the proposed Vose site with the exception of access spacing along SW Denney Road. The project will require an Engineering Design Modification to the City’s access spacing standard for a collector street because existing driveways are located within 180 feet of the proposed site access at the Denney/King intersection. The TIA provides additional detail about how mitigation improvements on the Vose site will allow safe access to the site and reduce potential conflicts between users.

*6.2.3.h Ensure that adequate access for emergency services vehicles is provided throughout the City.*

**Response:** The Multimodal Circulation Diagrams provided in Exhibit A demonstrate how emergency vehicles will access and maneuver around the Vose site. Tualatin Valley Fire & Rescue provided comments regarding fire safety during the pre-application meeting; all required fire safety features will be provided on the school site. The District will continue to work with TVF&R as needed to ensure approval of the project fire-safety related elements.

*6.2.4.h Require land use approval of proposals for new or improved transportation facilities. The approval process shall consider the project’s identified impacts.*

**Response:** The proposed Vose School redevelopment will include half-street improvements to SW Denney Road along the site's frontage. Those improvements will be reviewed as part of this land use application. Anticipated impacts of the proposed project are identified in the TIA provided in Exhibit D, along with recommended improvements to mitigate those impacts.

*8.4.1.a Noise impacts shall be considered during development review processes.*

**Response:** Noise impacts were considered during design of the proposed school site, particularly regarding outdoor recreation areas and the parking lots. Potential noise impacts will be minimized through a variety of design and management aspects. The outdoor fields will not be lit for use after dark. As such, no potential outdoor noise-generating activities (a soccer game and associated cars in the parking lot, for example) will occur after daylight hours. The outdoor fields will not be equipped with a speaker system, which will greatly minimize potential noise impacts from sporting events taking place on the soccer field or multi-purpose lawn.

EXHIBIT A

PLAN SET

(Plans provided under separate cover)

EXHIBIT B  
PRE-APPLICATION SUMMARY NOTES



P.O. Box 4755, Beaverton, OR 97076 [www.beavertonoregon.gov](http://www.beavertonoregon.gov)

September 28, 2015

Frank Angelo, Serah Breakstone  
Angelo Planning Group  
921 SW Washington, Suite 468  
Portland, OR 97205

Megan Finch  
Beaverton School District  
16550 SW Merlo Road  
Beaverton OR 97006

Levi Patterson  
DLR Group  
421 SW Sixth Avenue, Suite 1212  
Portland, OR 97204

Subject: Pre-Application Summary Notes for Vose Elementary School Replacement

Dear Mr. Angelo, Ms. Breakstone, Ms. Finch and Mr. Patterson

Thank you for attending the Pre-Application Conference held on September 16, 2015. We are pleased to provide you with the following notes prepared in response to your proposal.

Comments prepared by staff are reflective of the proposal considered at the Pre-App. A copy of your proposal was also sent to other members of staff who did not attend the Pre-App but have provided written comments hereto. Please feel free to contact anyone who provided comments. Contact names, telephone numbers and e-mail addresses are listed herein.

Following every Pre-App, staff understands that there may be changes to the plan or use considered. If these changes effectively re-design the site plan or involve a change to a use not discussed, please be advised that such change could require different land use application(s) than were identified by staff at the Pre-App. It's also possible that different issues or concerns may arise from such change. In these cases, we encourage applicants to request a second Pre-App for staff to consider the change and provide revised comments accordingly.

In part, the Pre-App is intended to assist you in preparing plans and materials for staff to determine your application(s) to be "complete" as described in Section 50.25 of the City Development Code. For your application(s) to be deemed complete on the first review, you must provide everything required as identified on the Application Checklist(s) (provided at the Pre-App) in addition to any materials or special studies identified in the summary notes hereto. If you have questions as to the applicability of any item on the checklist(s) or within this summary, please contact me directly.

On behalf of the staff who attended the Pre-App, we thank you for sharing your proposal with us. If we can be of further assistance, please do not hesitate to call.

Sincerely,

  
Scott Whyte, AICP  
Senior Planner,  
(503) 526-2652

# PRE-APPLICATION CONFERENCE MEETING SUMMARY NOTES

Prepared for

Vose Elementary School Replacement  
PA 2015-0058, September 16, 2015

The following pre-application notes have been prepared pursuant to Section 50.20 of the Beaverton Development Code. All applicable standards, guidelines and policies from the City Development Code, Comprehensive Plan and Engineering Design Manual and Standard Drawings identified herein are available for review on the City's web site at: [www.beavertonoregon.gov](http://www.beavertonoregon.gov). Copies of the Development Code and Comprehensive Plan are also available for review at the City's Customer Service Kiosk located within the Community Development Department. Copies of these documents are also available for purchase.

The following is intended to identify applicable code sections, requirements and key issues for your proposed development application. Items checked are to be considered relevant to your proposed development.

---

**PRE-APPLICATION CONFERENCE DATE:** September 16, 2015

**PROJECT INFORMATION:**

Project Name: Vose Elementary School Replacement – Beaverton School District

Project Description: Remove existing elementary school building and all portable classrooms (with a total building floor area of approx. 60,506 square feet) and construct a new school building at approximately 83,040 square feet, designed for student capacity of 750 students and 70 staff. All entrance/exits from SW Denney Road.

Property/Deed Owners: Beaverton School District

Site Address: 11350 SW Denney Road

Tax Map and Lots: 1S1-22DB, Tax Lot 2000

Zoning: Standard Density Residential (R-7)

Comp Plan Designation: Standard Density

Site Size: Approximately 8.83 acres.

**APPLICANT INFORMATION:**

Applicant's Name: **Beaverton School District**  
16550 SW Merlo Road  
Beaverton OR 97006

Applicant's Rep: **Angelo Planning Group**

Address: 921 SW Washington, Suite 468  
Portland, OR 97205

Phone / E-mail: (503)227-3664 (Angelo Planning Group) fangelo@angeloplanning.com

**PREVIOUS LAND USE HISTORY:**

No parent Conditional Use file for the existing school building (primary). Case files available for review include: BSDR 44-79 (Addition); CUP14-84 (Portable); CUP 9-89/BDR38-89 (Parking Lot Addition); BDR13-90 (Landscape Add); BDR 52-90 (Landscape Change); CUP93-007 (Portable); BDR95-117 (Type 1 mod);

BDR1998-167 (Type 1 mod); BDR1999-0065 (Type 2 – access); CUP2000-0019 (Portable); CU2003-0013 (Portable) and DR2005-0076 (tree removal).

**SECTION 50.25 (APPLICATION COMPLETENESS):**

The completeness process is governed by Section 50.25 of the Development Code. The applicant is encouraged to contact staff to ask any questions or request clarification of any items found on the application checklists that were provided to the applicant at the time of the pre-application conference. In addition, the applicant should be aware that staff is not obligated to review any material submitted 14 days or later from the time the application has been deemed "complete" that is not accompanied with a continuance to provide staff the necessary time to review the new material.

**APPLICATION FEES:**

Based on the plans and materials provided, the identified application fees (**land use only**) are as follows:

<b>Design Review 3*</b>	\$4,075.00
<b>Conditional Use – New*</b>	\$2,939.00

\* See Key Issues/Considerations herein for description of applications and associated process. Application fees are subject to change on July 1, 2016. The fees in effect at the time a complete application is received will control.

**SECTION 50.15. CLASSIFICATION OF APPLICATIONS:**

Applications are subject to the procedure (Type) specified by the City Development Code. Per Section 50.15.2 of the Code, when an applicant submits more than one complete application for a given proposal, where each application addresses separate code requirements and the applications are subject to different procedure types, all of the applications are subject to the procedure type which requires the broadest notice and opportunity to participate.

**SECTION 50.30 (NEIGHBORHOOD REVIEW MEETING):**

Based on the information presented at the pre-application, a Neighborhood Review Meeting is required. Neighborhood Advisory Committee: (NAC): Vose. Contact Person: Penny Douglas (contact the Neighborhood Office for dates/contact information)

**CHAPTER 20 (LAND USES):**

Zoning: Subject property is zoned **Urban Standard Density Residential (R-7)** where *Educational Institutions* are permitted with Conditional Use approval (20.05.20.7). See also Development Standards of the R-7 zone in 20.50.15. Maximum building height in this zone is 35 feet.

Comments: See "Key Issues/Considerations" herein for additional notes on Chapter 20.

**CHAPTER 30 (NON-CONFORMING USES):**

Proposal subject to compliance to this chapter?  Yes  No

**CHAPTER 40 (PERMITS & APPLICATIONS):**

Facilities Review Committee review required?

Yes  No

**Please Note:** Applicant's written response to Section 40.03 (Facilities Review) should address each criterion. If response to criterion is "Not Applicable", please explain why the criterion is not applicable.

Applicable Application Type(s):

<u>Application Description</u>	<u>Code Reference</u>	<u>Application Type</u>			
<b>Design Review 3</b> (Threshold #2)	40.20.15.3	<input type="checkbox"/> Type 1	<input type="checkbox"/> Type 2	<input checked="" type="checkbox"/> Type 3	<input type="checkbox"/> Type 4
<b>Conditional Use - New</b> (Threshold #1)	40.15.15.3	<input type="checkbox"/> Type 1	<input type="checkbox"/> Type 2	<input checked="" type="checkbox"/> Type 3	<input type="checkbox"/> Type 4

**Comments:** In order for your applications to be deemed complete, a written statement is necessary, supported by substantial evidence for all applicable approval criteria. Your application narrative will need to explain how and why the proposed application will meet the approval criteria for the land use applications identified above. Approval criteria and development regulations in effect at the time an application is received will control. Approval criteria and development regulations are subject to change.

**CHAPTER 60 (SPECIAL REGULATIONS):**

The following special requirements when checked are applicable to your development. Please review special requirements in the preparation of written and plan information for a formal application:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> <b>Section 60.05 (Design Review Principles Standards and Guidelines)</b> | <input type="checkbox"/> Section 60.07 (Drive-Up Window Facilities)             |
| <input type="checkbox"/> Section 60.10 (Floodplain Regulations)  | <input type="checkbox"/> Section 60.15 (Land Division Standards)                |
| <input type="checkbox"/> Section 60.20 (Mobile & Manufactured Home Regulations)                              | <input checked="" type="checkbox"/> <b>Section 60.25 (Off-Street Loading)</b>   |
| <input checked="" type="checkbox"/> <b>Section 60.30 (Off-Street Parking)</b>                                | <input type="checkbox"/> Section 60.33 (Park and Recreation Facilities)         |
| <input type="checkbox"/> Section 60.35 (Planned Unit Development)  | <input type="checkbox"/> Section 60.40 (Sign Regulations)                       |
| <input type="checkbox"/> Section 60.45 (Solar Access Protection)   | <input type="checkbox"/> Section 60.50 (Special Use Regulations)                |
| <input checked="" type="checkbox"/> <b>Section 60.55 (Transportation Facilities)</b>                         | <input checked="" type="checkbox"/> <b>Section 60.60 (Trees and Vegetation)</b> |
| <input checked="" type="checkbox"/> <b>Section 60.65 (Utility Undergrounding)</b>                            | <input type="checkbox"/> Section 60.67 (Significant Natural Resources)          |
| <input type="checkbox"/> Section 60.70 (Wireless Communication)  |   |

**Comments:** In order for the application(s) listed above to be deemed complete, written analysis is to explain how the proposal meets all applicable provisions/requirements as checked above. Existing overhead utilities (poles and wires) that serve the school property are to be placed underground (60.65). Trees to remain on-site through

construction are subject to protection standards of 60.60.20 (where shown to be saved). For comments concerning 60.55 (Transportation Facilities) see attached summary notes prepared by Ken Rencher. See additional notes in "Key Issues/Considerations" herein for trees and parking. One Type B loading berth is necessary for loading.

**COMPREHENSIVE PLAN COMPLIANCE: Comprehensive Plan policy response is required for as part of the application for Conditional Use.**

The following Comprehensive Plan goals (as checked below) contain policies that could be applicable to your application for Conditional Use. Staff recommends review of these polices in preparation of written narrative response to the approval criteria. The applicant's written response to certain policies is expected in response to the approval criteria for Conditional Use. See Key Issues / Considerations herein.

**Chapter 3 (Land Use Element):**

- |  |  |
|--|--|
| <input type="checkbox"/> 3.6 (Regional Center Development)   | <input type="checkbox"/> 3.13 (Residential Neighborhood Development)                       |
| <input type="checkbox"/> 3.7 (Town Center Development)       | <input type="checkbox"/> 3.13.1 (Safe, Convenient, Attractive, & Healthful Places to Live) |
| <input type="checkbox"/> 3.8 (Station Community Development) | <input type="checkbox"/> 3.13.3 (Standard-Density Residential)                             |
| <input type="checkbox"/> 3.10 (Corridor Development)         | <input type="checkbox"/> 3.13.4 (Medium Density Residential)                               |
| <input type="checkbox"/> 3.11 (Employment Areas)             | <input type="checkbox"/> 3.13.5 (High-Density Residential)                                 |
| <input type="checkbox"/> 3.12 (Industrial Development)       |  |

**Note: R-7 zone is Standard Density (3.13.3) but no policies appear applicable in review of the proposal.**

**Chapter 4 (Housing Element):**

- 4.2.2.1 (Adequate Variety of Quality Housing)
- 4.2.3.1 (Retention of Existing Affordable Housing)
- 4.2.3.2 (Production of New Affordable Housing)

**Chapter 5 (Public Facilities and Services Element):**

- 5.4.1 (Adequate Stormwater Management)  
**See Policies - Facilities Review Criteria is more specific**
- 5.5.1 (Adequate Water Service)  
**See Policies - Facilities Review Criteria is more specific**
- 5.6.1 (Adequate Sewer Service)  
**See Policies - same note**
- 5.7.1 (Educational Facilities & Services)  
**See Key Issues below**
- 5.8.1 (Adequate Parks & Recreation Facilities)
- 5.10.1 (Adequate Fire & Emergency Medical Services)

**Comprehensive Plan Goals and Policies continued...**

**Chapter 6 (Transportation Element):**

- [X] 6.2.1 (Enhance Beaverton's Livability)  
**See Policies "d", "e" and "g"**
- [X] 6.2.2 (Balanced Transportation System)  
**See Policies "c" thru "f"**
- [X] 6.2.3 (Safe Transportation System)  
**See Policies "d" thru "h"**
- [X] 6.2.4 (Efficient Transportation System)  
**See Policy "h"**
- [ ] 6.2.5 (Accessible Transportation Facilities)
- [ ] 6.2.6 (Efficient Movement of Goods)
- [ ] 6.2.7 (Implement Transportation Plan)
- [ ] 6.2.8 (Flexible Financial Plan)

**Chapter 7 (Natural, Cultural, Historic, Scenic, Energy, & Groundwater Resources Element):**

- [ ] 7.2.2 (Historic Resources)
- [ ] 7.3.1 (Significant Natural Resources)
- [ ] 7.3.2 (Riparian Corridors)
- [ ] 7.3.3 (Significant Wetlands)
- [ ] 7.3.4 (Wildlife Habitat)
- [ ] 7.4.1 (Scenic Views and Sites)
- [ ] 7.5.1 (Energy)

**Chapter 8 (Environmental Quality & Safety Element):**

- [ ] 8.2 (Water Quality)
- [X] 8.4 (Noise) **See Policy "a" under 8.4.1**
- [ ] 8.6 (Geologic Hazards)
- [ ] 8.8 (Solid & Hazardous Wastes)
- [ ] 7.6.1 (Groundwater Resources)
- [ ] 8.3 (Air Quality)
- [ ] 8.5 (Seismic Hazards)
- [ ] 8.7 (Flood Hazards)

Comments: See "Key Issues/Considerations" herein for additional notes.

**OTHER DEPARTMENT/AGENCY CONTACTS:**

Your project may require review by other City departments and outside agencies. Please plan to contact the following staff persons at the City of Beaverton or other agencies when their name is checked. In some instances, some or all of these staff persons may submit written comments for the pre-application conference. These comments may be discussed at the pre-application conference and will be attached to this summary:

Recommended contact for further information if checked



**Clean Water Services**

(CWS not sent copy of Pre-Application materials)

The Clean Water Services (CWS) is the agency that regulates sanitary sewer, storm and surface water management within Washington County and the City of Beaverton. CWS Design and Construction Standards, adopted by Resolution & Order (R&O) 04-09, effective March 1, 2004, establish technical requirements for the design and construction of sanitary and surface water management systems built as part of residential or commercial development. Pursuant to City Development Code Section 50.25.1.F, in order for the application to be deemed complete the applicant is required to submit documentation from CWS stating that water quality will not be adversely affected by the proposal. For most development proposals, CWS typically issues a "Service Provider Letter". Alternatively, CWS may issue a statement indicating no water quality sensitive areas exist on or within 200 feet of the subject site. Development activity subject to CWS

review is defined in Section 1.02.14 of the CWS Design & Construction Standards. For more information contact: **Laurie Harris** (503) 681-3639.



**Jeremy Foster**, Tualatin Valley Fire & Rescue  
503 259-1414 / jeremy.foster@tvfr.com



Plan reviewed. Written comments attached hereto.



**Brad Roast**, Building, City of Beaverton  
(503) 526-2524 / broast@beavertonoregon.gov



Plan reviewed. Written comments attached hereto.



**Steve Brennen**, Operations, City of Beaverton  
(503) 526-2200 / sbrennen@beavertonoregon.gov



Plans reviewed. No comments.



**Sergey Dezhnyuk**, Site Development, City of Beaverton  
(503)526-2492 / sdezhnyuk@beavertonoregon.gov



Plan reviewed. Written comments attached hereto.



**Ken Rencher**, Transportation, City of Beaverton  
(503)536-2427 / krencher@beavertonoregon.gov



Plans reviewed. Written comments attached hereto.



**Seth Brumley**, Oregon Department of Transportation, Region 1  
(503) 731-8234 Seth.A.Brume@odot.state.or.us



Plan sent. No comments to date.



**Naomi Vogel**, Washington County Land Use and Transportation  
(503) 846-7639 [Naomi\\_Vogel@co.washington.or.us](mailto:Naomi_Vogel@co.washington.or.us)



Plan sent. No comments to date.

#### KEY ISSUES/CONSIDERATIONS:

Staff has identified the following key development issues, or design consideration or procedural issues that you should be aware of as you prepare your formal application for submittal. The identification of these issues or considerations here does not preclude the future identification of other key issues or considerations:

1. **Land Use Applications.** Design Review 3 application is required for new construction of more than 30,000 gross square feet of non-residential floor area where the development abuts or is located within any Residential District (see Threshold #2). For your Design Review application to be deemed complete by the city, the written narrative prepared in response to the approval criteria must also address applicable Design Guidelines. See attached Pre-Application Conference Worksheet for a list of potentially applicable Guidelines. See additional notes identifying the corresponding Design Standard to certain key Guidelines.

Conditional Use – New application is required in this case even though the school exists. Pre-App plans considered on September 16 show no element of the existing school intended to remain (other than trees). Comparatively, the application for Major Modification of a Conditional Use (described in Section 40.15.15.2 of the Development Code) contains approval criteria that speaks to how the proposal complies with existing/past approval and primarily the parent Conditional Use. Research of past records found no initial Conditional Use approval (Vose built in early 1960's). See additional notes below. In this case,

the Conditional Use – New application is expected to be submitted together with the Design Review 3 application for concurrent review (via the Type 3 process).

2. **Parking Analysis.** Off-street parking standards in 60.30.10.5 describe a minimum of one space per # of FTE staff (max at 1.5 per FTE). The applicant is also advised of a provision contained in Section 60.30.10.7 of the Development Code which states ***“More parking space for motor vehicles and bicycle parking may be required as a condition of Conditional Use...”*** If the number of parking spaces provided on-site is below or above the minimum/maximum off-street parking standards described in Section 60.30.10.5 (table) the applicant is to submit a Major Adjustment application (40.10.15.2 of the Development Code). With or without the Major Adjustment application, the parking analysis is expected that fully explains the parking need related to the proposed use. Parking analysis should also account for anticipated ancillary activities to occur on-site (e.g. public meetings, sporting events, recitals, etc...). Parking analysis can be shown in a table format (identifying events during a typical week, time, number of people, etc...). Seating capacity for any large auditorium to be created should be identified. Parking intended to meet the off-street parking standards of 60.30.10.5, must also meet design / dimensional standards described in Section 60.30.15. Parallel spaces are not identified as part of 60.30.15.
3. **Comprehensive Plan Policy response – for Conditional Use application.** As explained above, criteria of approval for Conditional Use require the applicant to demonstrate compliance with “applicable” policies of the Comprehensive Plan. Staff recommends review of certain polices (checked above) in preparation of a written narrative response to the approval criteria. Considered significant by staff are policies that describe potential impacts / mitigation of the proposed use. Staff recommends a written response to Policy “a” of 8.4.1 (Noise, Chapter 8) – identifying the potential impacts / mitigation. Staff also recommends written response to certain policies in Chapter 6 (Transportation) that describe potential impacts from increased vehicle trips (especially trips through existing local streets in the vicinity). In part, the applicant’s traffic engineer should respond to certain policies as part of the Traffic Impact Analysis. Policies under Chapter 5 (Public Facilities and Services) that speak to adequacy of water, sewer and storm can be addressed through the applicant’s written response provided to Facilities Review criteria (40.03). Policies specific to Schools (also under Chapter 5) under Goal 5.7.1 should be reviewed (response recommend). Policy “g” of Goal 5.7.1 refers to cooperation with THPRD and the applicant should explain whether proposed sport fields will have joint use (programed events through THPRD).
4. **Applicable Design Review Guidelines.** See attached Pre-Application Conference Worksheet for a list of potentially applicable Guidelines. Key Guidelines include:
  - a. 60.05.35.1.E - Avoid undifferentiated blank walls as seen from street.  
(see also corresponding standard in 60.05.15.4)
  - b. 60.05.45.7 – Site graded in a manner to avoid conflicts with abutting residential properties.  
(see also corresponding grade differential standards in 60.05.25.10)
  - c. 60.05.45.9.B – Landscape Buffering (for Conditional Uses)  
(see also the B-3 buffer standard at 20-feet for CUs as described in 60.05.25.13)
  - d. 60.05.50.3 – Lighting to avoid impact to abutting properties.  
(Guidelines specifically refer to compliance with technical lighting standards)
5. **Tree Protection Methods.** Trees identified for retention are to be protected with fencing and to the standards described in 60.60.20. Landscape plan submitted with Design Review application should include a protection plan. Proposed grading in proximity to the root zone of a tree (identified to be saved) is to be clearly shown. Arborist report recommended but not required.
6. **Preliminary Grading Plan.** A preliminary grading plan is to be submitted with Design Review / Conditional Use plan set. This plan is to identify proposed building finished grade and exiting grades of abutting properties. Also, grading plan is to identify areas where retaining walls will be constructed and the height of the wall (if proposed). Trees on abutting properties, where close to the site, are to be identified on the grading plan. Plan is to demonstrate compliance with grade differential standards under 60.15. of the Development Code (and Design Standards of 60.05).

7. **Traffic Impact Analysis and Traffic Management Plan.** See attached notes prepared by Ken Rencher, Transportation.
8. **On-site Queuing Analysis.** See attached notes prepared by Ken Rencher, Transportation. The applicant would prepare this analysis in response to the Facilities Review approval criteria (specifically item F of 40.03.1 ...*safe and efficient circulation*...). The number of buses anticipated to arrive at the site should be identified, together with parent and staff vehicles (and other vehicles – e.g. delivery trucks?).
9. **Pedestrian Circulation – to and within the school.** See notes prepared by Ken Rencher, Transportation. Plan will need to address pedestrian access to, from and within the school site. Plan details are expected to show the bus drop-off and pick-up area. Details are to identify pedestrian signs (as proposed) and improvements specific to pedestrian crossings (different pavement materials, landscape, paint, etc). Similarly, parking area intend for parent drop-off/pick-up should include the same.
10. **Pathway access to off-site connections.** See policies “d” and “g” of Goal 6.2.1 (Comprehensive Plan). Subdivisions to the west (Holland Park) and south (Ghiglietti Acres) provide pedestrian/bicycle pathways. Design Review / Conditional Use plans and materials submitted to the city are indicate a proposal to fence or gate these access points. A locked access to these pathways (if proposed) is to be explained.
11. **Street Access Spacing Standards.** See attached notes prepared by Ken Rencher, Transportation.
12. **Lighting Plan.** See Table 60.05-1 of the Development Code (Technical Lighting Standards) and Section 60.05.50 (Lighting Design Guidelines). Fixture type, location and specifications to be included. Height and location of all pole-mounted fixtures are to be identified to the plans for Design Review. Shielding methods are to be identified.
13. **Cross-Section Illustrations (Details).** Design Review / Conditional Use plan set is to include at least three cross-section elevations of the proposed finished grade of the school property and the existing grades of properties. One should be along the east boundary, one along the west and one along the south. The cross-section details are to include existing grade/site conditions (off-site). Cross-sectionals are to show the proposed grade difference between the finished grades associated with the school and existing grades of residential properties (e.g., show existing conditions at least 50-feet from the east property line). Cross-sections are to illustrate maximum height of retaining wall(s) (if proposed). Cross-sectionals are to include proposed landscape/fencing. If and where pole-mounted luminaires are proposed, the same cross-sectional is to illustrate the angle of light shed from the source. See Criterion No. 5 of Conditional Use approval. The cross-sectionals can be helpful for demonstrating how impacts of the proposed use (lights, noise) to abutting residential are mitigated.
14. **Fire Vehicle Access, Circulation, Hydrant & Fire Flow Calcs.** See attached notes provided by TVF&R.
15. **ADA accessible routes to be identified.** See attached notes provided by Brad Roast, City Building.
16. **Storm water treatment – redevelopment.** See attached notes provided by Sergey Dezhnyuk, Site Development regarding CWS standards for storm water quality based on proposals for redevelopment.
17. **Neighborhood Meeting.** Type 3 process requires a Neighborhood Meeting. The meeting is to occur before submitting the land use applications identified above. See Neighborhood contact information herein. Questions about the Neighborhood Meeting process should be directed to the planning staff.
18. **ODOT and Washington County Review.** Pre-App plans were forwarded to ODOT and Washington County representatives for comment. To date, no comments/concerns have been received. The TIA, when received, could be forwarded to ODOT and Washington County for review. Also, ODOT and Washington County staff may be interested in attending a TIA scoping meeting (see attached notes prepared by Ken Rencher).



# PRE APPLICATION CONFERENCE ATTENDANCE

PRE APP NO: PA2015-0058

DATE: 09/16/2015

PRE APP NAME: Vose Elementary Replacement

<u>NAME</u>	<u>Representing ADDRESS</u>	<u>PHONE</u>
Scott Whyte	City of Beaverton - Planning	(503) 526-2652
Frank Angelo	APG	503-227-3664
MEGAN FURCH	BSD	503-356-4318
Sarah Brakstone	APG	227.3674
Julie Sosnovske	DKS Associates	503-243-3500
Aaron Olsen	Cameron McCarthy Landscape Architects	541-485-7385
LEVI PATTERSON	DJR GROUP (ARCHITECT)	(503) 274-2675
SANDRA MORALES	City of Beaverton - PLANNING	503.526.3718
BRAD ROAST	COB	503 526 2524
SERGEY DEZHNYUK	COB	503-526-2492
Jabra Khasho	"	503-526-2221
Ken Rencher	" Transportation	503.526.2427
Jeremy Foster	TVEER	503-259-1414



## MEMORANDUM

### Community Development

**To:** Scott Whyte, Senior Planner

**From:** Ken Rencher, Associate Transportation Planner

**Date:** September 22, 2015

**Subject:** PA2015-0058 Vose Elementary Replacement, Pre-Application Review

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This memo includes important transportation-related items that should be addressed in the materials submitted for the proposal noted above. All comments provided here are based solely on the pre-application materials provided. Other issues, applications, or analysis may be identified and or required upon review of the application(s).

**General note:** The application should address all applicable transportation related criteria found in *Beaverton Development Code* (BDC) Sections 40.03 Facilities Review, 60.05.40 Circulation and Parking Design Guidelines, 60.25 Off-Street Loading Requirements, 60.30 Off-Street Parking, and 60.55 Transportation Facilities; and standards included in *Beaverton Engineering Design Manual* (EDM) Chapter II Streets, Chapter VII Bicycle and Pedestrian Facilities, and Chapter VIII Standard Drawings. System Development Charges, including the Transportation Development Tax, will apply.

#### **Summary of existing transportation infrastructure**

The site is bordered by SW Denney Rd., a 3-lane Collector Street under the operational and maintenance jurisdiction of the City of Beaverton.

This segment of SW Denney Rd. currently lacks the required bike lanes and has sidewalks and planter strips that appear to be too narrow to meet the applicable standards.

There is no public transit service to the site. The nearest TriMet bus stops are approximately ½ mile to the west at the intersection of SW Denney Rd. and SW Hall Blvd.

The intersection of SW Denney Rd. and SW King Blvd. is controlled by a traffic signal, with a marked crosswalk on the west and north sides of the intersection.

**PLEASE NOTE THE FOLLOWING:**

**In regard to BDC 40.03 Facilities Review Committee:**

40.03.1: This section requires transportation facilities related to the proposed development to be installed and available at the time of the development's completion. Transportation facilities are defined as critical facilities. On-site pedestrian and bicycle facilities, as well as transit facilities, are defined as essential facilities. Essential facilities are expected to be provided prior to occupancy of any new structure.

To ensure that the site has safe and efficient vehicular and pedestrian circulation patterns, the applicant will be required to analyze all of the existing and proposed driveways for safety and visibility. In addition, the on-site vehicle queuing will need to be studied, designed, and managed so that queues of waiting vehicles do not back into and block the public street. The access from SW King Blvd. will also have to be carefully designed for the safety of the students and parents exiting the school, minimizing the pedestrian and vehicular conflicts.

**In regard to BDC 60.05 Design Review Guidelines:**

60.05.40.1: Connections to the public street system: This section requires pedestrian, bicycle, and motor vehicle connections between the proposed development and the surrounding public circulation systems.

60.05.40.2: Loading area, solid waste facilities, and similar improvements: This section requires service and loading areas to be screened from the public right-of-way. Trash and recycling areas should also be screened.

60.20.05.3: Pedestrian Circulation: The proposed building is required to have a reasonably direct walkway connection to the public sidewalk system. Pedestrian walkways must have at least 5 feet of unobstructed width. Where walkways cross vehicle drive aisles, they are to be constructed of concrete or modular paving materials, and not just painted stripes on asphalt. Given the high numbers of students and parents that walk to Vose currently, extra care should be taken to ensure that the circulation systems are safe and efficient for pedestrians and bike riders.

60.05.40.4: Street frontages and parking areas: This section requires landscaping to be installed to block the glare from headlights when parking spaces are located along and facing public streets.

60.05.40.5: Parking area landscaping: This section requires landscape islands and tree canopy to be provided with parking areas.

60.05.40.8: Connect on-site buildings, parking, and other improvements with identifiable streets and drive aisles in Residential ... zones: This section requires vehicle circulation areas to be clearly differentiated from parking spaces and aisles through the use of curbs, sidewalks, and landscaping. The parking areas should also be designed and landscaped to minimize the visual impact of the parking.

**In regard to BDC 60.25 Off-Street Loading Requirements:**

60.25.15: Number of Required Loading Spaces: A school of this size will require 1 type B loading berth that is at least 30 feet long by 12 feet wide by 14.5 feet high, with a 30-foot maneuvering apron.

12.1.29

**In regard to BDC 60.30 Off-Street Parking Standards:**

60.30.10: Number of Required Parking Spaces: This section sets forth the minimum and maximum number of vehicle parking spaces and the minimum number of bicycle parking spaces, based on the size and type of the proposed development.

For an elementary school, the minimum parking requirement is one space per staff member and the maximum is 1.5 spaces per staff member. In determining the number of staff, full-time equivalent (FTE) should be used. However, if a significant portion of the staff works part-time and if the shifts overlap, the parking lot should be sized to accommodate the higher number of staff members.

The applicant should note, however, that Schools are Conditional Uses within the R7 zoning district and the Planning Commission has the authority to require additional parking spaces sufficient to mitigate the impact of spill-over parking in the neighborhood. The applicant should be prepared to justify the number of parking spaces proposed, and to demonstrate to staff and Planning Commissioners that the proposed supply will adequately accommodate the expected employee and visitor parking demands.

In addition, Section 60.30.10.13. requires institutional developments, such as schools, to provide carpool or vanpool parking when more than 50 employee parking spaces are proposed. At least 3% of the employee parking spaces are to be designated and marked for carpool or vanpool spaces. The reserved carpool or vanpool parking time may be specified so that the reserved spaces may be used for general parking if the reserved spaces are not occupied after a specific time period, as posted on the sign(s).

Long-term bicycle parking for Elementary Schools is required to be provided at a ratio of 1 space per 9 students. For a school with a capacity of 750 students, 84 bicycle parking spaces are required. To comply with the requirements in the Engineering Design Manual, these spaces are to be provided by way of inverted staple or U-shaped racks that are a minimum of 36 inches high and 30 inches wide. If the racks are centered within a 6-foot by 4-foot area, each rack can provide two bicycle parking spaces. (Each bicycle parking space is required to be at least 6 feet long by 18 inches wide, though 24 inches is the preferred width.) Long-term spaces for elementary schools are not required to be covered, but the Planning Commission has expressed a preference that at least some of these spaces be provided with weather protection.

60.30.15: Off-Street Parking Lot Design: Standard parking spaces are to be at least 8.5 feet wide by 18.5 feet long. The length of the stall includes the bumper overhang. However, the applicant should be aware that if the bumper overhang area overlaps a walkway, the walkway may need to be widened to ensure that the required unobstructed walkway width is provided. Two-way drive aisles are to be at least 24 feet wide. One-way drive aisles serving angled parking can be as narrow as 12 feet, unless emergency access requirements necessitate additional width. Up to 20% of the required parking spaces can be compact spaces, provided the requirements of Section 60.30.10.12 are met.

**In regard to BDC 60.55 Transportation Facilities:**

60.55.10 General Provisions: The existing school has a permanent capacity of 499 students, as stated in a Beaverton School District memo from 2014, and a capacity of 670 students, once the existing 9 portable classrooms are included. The new school is projected to have a permanent capacity of 750 students. The applicant's traffic

engineer should assume that only the permanent capacity has been studied in prior traffic analyses, if any have been done. In addition, the Planning Commission may ask that the applicant study the potential impact of portable classrooms in terms of additional traffic capacity and on-site queuing and parking. Therefore, staff recommend that the applicant's traffic analysis demonstrate that the surrounding street system and the on-site parking and circulation layouts accommodate the proposed number of students, as well as the additional students that could potentially attend the school if portable classrooms are installed. In addition to any Traffic Management Plan or Traffic Impact Analysis, required, the City Engineer and City Traffic Engineer have identified concerns about the design of the school's access points onto SW Denney Rd. As a result, the applicant's traffic engineer will need to evaluate all of the proposed and existing access points for safety, visibility, and viability. Traffic for the school will not be allowed to spill out onto the public street system and obstruct through movements on the Collector Street (as it currently does during the school's AM and PM peak periods).

60.55.15 Traffic Management Plan: If the applicant's traffic engineer determines that the new school will add more than 20 trips in any hour to a residential street (SW Denney Rd would not count, but SW King Blvd would), then a Traffic Management Plan will be required.

60.55.20 Traffic Impact Analysis: If the proposed development will generate 200 or more net new trips per day onto the surrounding street system, a Traffic Impact Analysis (TIA) will be required. The applicant should refer to Section 60.55.20.4 for the content requirements. Prior to commencement of work, as required by the Development Code, the applicant should submit a memo from a traffic engineer that describes the scope and assumptions of the TIA. After receiving the memo, staff will contact the applicant's traffic engineer to discuss any required modifications, request a revised scope, and subsequently approve commencement of work. Please note: the TIA will not be accepted without prior approval of the written scope of work.

60.55.25 Street and Bicycle and Pedestrian Connection Requirements: Whenever existing streets and bicycle and pedestrian connections adjacent to or within a parcel of land are of inadequate width, additional right-of-way may be required by the decision-making authority. Internal walkways are required to be at least 4 feet wide, with at least 5 feet preferred. Bicycle and pedestrian paths on the site should converge with the public sidewalk system at or near the intersection to minimize crossing a street at places other than the signalized crosswalk. All pedestrian and bicycle areas, including outdoor bike parking areas are to be lighted to the City's minimum lighting standard of 0.5 foot-candles.

The existing pedestrian connections to the west and south of the school property should be preserved with the redevelopment of the site. If the applicant proposes to alter the existing access points to install gates, the gates will be required to be unlocked and made available to the public to use outside of school hours, as a condition of approval.

Accessways or walkways into the site should be provided for every 300 feet of street frontage. As the existing frontage is approximately 500 feet, the single proposed walkway is sufficient. Where walkways cross vehicular travel paths, they are to be built of scored concrete or differentiated paving materials.

60.55.30 Minimum Street Widths: The proposal should show that SW Denney Rd. will have at least 37 feet of total right-of-way from centerline along the frontage of the subject property. If additional ROW is required, it will need to be dedicated at or prior to the development's completion. The minimum street improvements along the SW Denney Rd. frontage will include a 6-foot sidewalk and a 7.5-foot planter strip with street trees planted approximately every 30 feet on center. The applicant will also be conditioned to install a 5-foot bike lane along the frontage. With specific approval of an Engineering Design Modification by the City Engineer, the applicant may seek to have all or a portion of the sidewalk placed in an easement in lieu of dedicating additional right-of-way, if necessary. Any proposed deviations from the City's sidewalk and planter strip width requirements will require concurrent approval of a Sidewalk Design Modification application.

60.55.35 Access Standards: Visibility at intersections and driveways shall be evaluated by the applicant's traffic engineer to show compliance with the applicable standards in the Engineering Design Manual (specifically Sections 210.10 Intersection Sight Distance Policy, 210.11 Intersections, and 210.13 Driveways). The posted speed limit on SW Denney Rd. is 35 MPH, which means that driveways are to be spaced at least 180 feet apart. The applicant will need to apply for and receive approval of an Engineering Design Modification to the driveway spacing standard, based on the plans submitted for the Pre-Application Conference. In accordance with Section 145 of the Engineering Design Manual, all modification requests are to be submitted prior to or concurrent with the land use submittal package.

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## **SUPPLEMENTAL INFORMATION & RESOURCES**

### **System Development Charges, including the Transportation Tax, may apply:**

The Washington County Transportation Development Tax (TDT) may be due for this development prior to issuance of building permits, in addition to other System Development Charges (SDC). The SDC charges are not assessed or evaluated through the land use application review process.

The tax is based on Measure No. 34-164, which was approved by the citizens of Washington County in 2008. The TDT is based on the estimated traffic generated by each type of development. All revenue is dedicated to transportation capital improvements designed to accommodate growth. The TDT is collected prior to the issuance of a building permit; or in cases where no building permit is required (such as for golf courses or parks), prior to final approval of a development application. Options exist, however, for payment of the tax over time, or in certain cases, deferral of payment until occupancy.

To estimate the tax please use the TDT Self Calculation Form (see web address below). For more information please contact Jabra Khasho, City of Beaverton Transportation Engineer, at (503) 526-2221 or [jkhasho@BeavertonOregon.gov](mailto:jkhasho@BeavertonOregon.gov). For information regarding sanitary sewer, storm sewer, water, park, Metro construction excise, School District construction excise, and other applicable fees please see the Building Division web address below or contact Brad Roast, City of Beaverton Building Official, at (503) 526-2493 or [cddmail@BeavertonOregon.gov](mailto:cddmail@BeavertonOregon.gov).

**Online resources:**

- A. Beaverton Development Code: [www.BeavertonOregon.gov/dc](http://www.BeavertonOregon.gov/dc)
- B. Beaverton Engineering Design Manual: [www.BeavertonOregon.gov/edm](http://www.BeavertonOregon.gov/edm)
- C. SDC Fee Schedule: [www.BeavertonOregon.gov/Building](http://www.BeavertonOregon.gov/Building)  
<http://www.beavertonoregon.gov/DocumentCenter/Home/View/605>
- D. Washington County TDT: [www.co.washington.or.us/LUT/Divisions/LongRangePlanning/PlanningPrograms/TransportationPlanning/transportation-development-tax.cfm.gov/edm](http://www.co.washington.or.us/LUT/Divisions/LongRangePlanning/PlanningPrograms/TransportationPlanning/transportation-development-tax.cfm.gov/edm)

# PRE-APPLICATION CONFERENCE MEETING SUMMARY

## Development Engineering Issues

**CITY OF BEAVERTON**  
Public Works Department  
Site Development Division  
12725 SW Millikan Way, 4<sup>th</sup> Floor  
PO Box 4755  
Beaverton, OR 97076  
Tel: (503) 526-2552  
Fax: (503) 526-2550  
www.BeavertonOregon.gov



**PROJECT SITE OR NAME:** Vose Elementary Replacement (11350 SW Denney Rd.)  
**PRE-APPLICATION CONFERENCE NUMBER:** PA 2015-0058 **DATE:** 16 September 2015

Prepared by: Sergey Dezhnyuk, Engineering Associate – Site Development Public Works  
ph: 503.526.2492 sdezhnyuk@BeavertonOregon.gov fx:503.526.2550

For more detailed information regarding existing utilities, topography, and geographical information, necessary for preparation of various applications call **503.526.2342** or submit a request on line at: <http://apps.beavertonoregon.gov/forms/ABSubmit.aspx>

Public utilities (water, sanitary sewer, storm drainage) must be brought to, through, and along all public street frontages to serve this site upon development and to facilitate future adjacent development. REFERENCE CITY OF BEAVERTON ENGINEERING DESIGN MANUAL AND STANDARD DRAWINGS (Ordinance 4417) AND CLEAN WATER SERVICES STANDARDS (CWS R&O 2007-020).

**GENERAL NOTES:** City utilities (water, sanitary sewer, storm drainage) are in the vicinity of the site. Off-site public 8" waterline in SW Butte Ln. is required to be extended through the site for upgrading the fire water service and connect to the water system in SW Denney Rd. Local utility provision issues must be addressed with a land use application to demonstrate service feasibility for the proposed development including a storm water report prepared by a professional civil engineer. Provide detention/retention to the pre-development conditions. The storm water report will need to specifically document compliance with CWS Resolution and Order 2007-020 in regard to storm water treatment (quality) and for detention (quantity), per Section 330, of City Ordinance 4417. LIDA (low impact development approaches) for storm water management are encouraged. LIDA is covered in Section 4.07 of the CWS standards and within the CWS LIDA Handbook. Contech Inc., or Oldcastle Storm Filter installations appear to be an option for the site constraints of this proposal. While proprietary products, they are the only approved non-surface, non-vegetated storm water treatment systems. Another option in-lieu of onsite treatment, is to improve the offsite swale near intersection of SW Denney Rd and SW Denney Frtg; (this site is contaminated, an environmental review may be necessary). Please note that any private sewer (sanitary and storm) plumbing cannot cross property lines nor can private sewer lines be located on any lot other than the lot being served. All power and communication service wires into the site must be placed underground. A Clean Water Services Service Provider letter is required (see contact information on next page).

<b>CITY PERMITS required for work as proposed or likely to be needed:</b>	<input checked="" type="checkbox"/> CITY SITE DEVELOPMENT PERMIT Contact: Sheila at 503.526.3724 <input type="checkbox"/> Floodplain, floodway, or wetland modification	<input type="checkbox"/> CITY RIGHT OF WAY PERMIT Contact: Bonnie at 503.526.2552 <input type="checkbox"/> STREET CUT MORATORIUM
	<input type="checkbox"/> CITY SITE EROSION CONTROL PERMIT Contact: Sheila at 503.526.3724	<input checked="" type="checkbox"/> BUILDING PERMIT w/Erosion Control <input checked="" type="checkbox"/> Site Plumbing Permit for private utilities Contact: Bldg. Counter at 503.526.2401
<b>WATER SERVICE AREA AND ISSUES</b>	<input checked="" type="checkbox"/> CITY OF BEAVERTON SYSTEM Contact: David Winship at 503.526.2434 <input checked="" type="checkbox"/> 410 HGL <input type="checkbox"/> 525 HGL <input type="checkbox"/> Other zone/split zone	<input type="checkbox"/> WEST SLOPE WATER DISTRICT Contact: Mike Grimm at 503.292.2777

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**SITE ENGINEERING ISSUES**

Prepared by **Sergey Dezhnyuk, Engineering Associate**

<p><b>OTHER PERMITS and approvals required for work as proposed or likely to be needed:</b></p>	<input type="checkbox"/> <b>WASHINGTON COUNTY</b> For work within, access, or construction access to the site from _____. NOTE: Storm and sanitary sewers in County roads inside City limits are City-owned and maintained. Some street lights on County roads are City-owned.	<input type="checkbox"/> Facilities and Access Permits Contact DLUT Staff: 503.846.8761 <input type="checkbox"/> Right of Way Permits Contact Operations Staff: 503.846.7620 <input type="checkbox"/> Utilities Permits Contact Operations Staff: 503.846.7623
	<input type="checkbox"/> <b>OREGON D.O.T. (Dist.2B Sylvan Office)</b> For work within, access, or construction access to _____. Contact: Steve Schalk at (971) 673-1343	<input type="checkbox"/> <b>OREGON D.O.T. (Salem Office)</b> Rail / Street Crossings Contact: Dave Lanning at 503.986.4267 Drainage Contact: Jim Nelson at (971) 673-2942
	<input type="checkbox"/> <b>OREGON DEPARTMENT OF STATE LANDS</b> Contact: Russ Klassen at 503.986.5244	<input type="checkbox"/> <b>U.S. ARMY CORPS OF ENGINEERS</b> Contact: Michael LaDouceur at 503.808.4337
	<input checked="" type="checkbox"/> <b>CLEAN WATER SERVICES DISTRICT</b> <input checked="" type="checkbox"/> Site Assessments/Service Provider Letters Wetlands/Creeks/Springs/Connection Permits Contact: Laurie Harris at 503.681.3639 <a href="mailto:SPLReview@cleanwaterservices.org">SPLReview@cleanwaterservices.org</a>	<input type="checkbox"/> Connection to CWS Trunk Sewer (>21"dia.) Contact: Permit Staff 503-681-5100 <input type="checkbox"/> Source Control Permit (all non-residential) Contact: Clayton Brown at 503.681.5129
	<input checked="" type="checkbox"/> <b>DEQ 1200-C EROSION CONTROL PERMIT</b> Contact: Bonnie Collins at 503.526.2552 (Permit application to City for CWS & DEQ) <b>FOR DISTURBANCE OF OVER 5 ACRES</b>	<input type="checkbox"/> <b>DEQ Letter of "No Further Action"(NFA) or other documentation concerning soil and/or groundwater contamination on this property and clearance allowing new construction.</b> Contact applicable Oregon DEQ staff.
	<input checked="" type="checkbox"/> <b>MUST UNDERGROUND EXISTING OVERHEAD UTILITIES ON-SITE AND NEW SERVICES.</b> <input type="checkbox"/> May be eligible for fee-in-lieu of undergrounding – see Dev. Code, Section 60.65.20-25	
<p><b>SITE SOIL, SURFACE &amp; STORM WATER ISSUES</b></p>	<input type="checkbox"/> <b>MAPPED FEMA FLOODPLAIN</b> <input type="checkbox"/> Map Number <b>4102400_---_D</b> (Feb. 18, 2005) <input type="checkbox"/> Level of 100 Year Flood in vicinity of the site: Base Flood Elevation (NGVD-29) Per <b>NEW FEMA Map 40167C_---_E</b> (Dec. 4, 2009) <input type="checkbox"/> Cut and fill grading balance required. <input type="checkbox"/> Must flood proof* non-residential buildings OR <input type="checkbox"/> Certified minimum finish floor required: <input type="checkbox"/> 1 foot <input type="checkbox"/> 2 feet above base flood elevation. <input type="checkbox"/> SEPARATE FLOODPLAIN MODIFICATION PUBLIC NOTICE REQUIRED PRIOR TO SITE DEVELOPMENT PERMIT and BUILDING PERMIT ISSUANCE with a 10-DAY APPEAL PERIOD. *ASCE/SEI 24-05, 2011 OSSC (2009 IBC) Appendix G (Flood-resistant Construction)	<input type="checkbox"/> <b>UNMAPPED FLOOD HAZARD AREA</b> A flood study is a required part of any development application.
	<input checked="" type="checkbox"/> <b>STORM WATER FACILITIES REQUIRED</b> <input checked="" type="checkbox"/> Winter Storm Detention (quantity) <input checked="" type="checkbox"/> Summer Storm Treatment (quality)	<input type="checkbox"/> <b>POSSIBLE FEE-IN-LIEU OF:</b> <input type="checkbox"/> Detention (quantity) <input type="checkbox"/> Treatment (quality) - must justify using CWS criteria in DR/Land Div. application submittals.
	<input checked="" type="checkbox"/> <b>REQUIRES IMPERVIOUS SURFACE INVENTORY</b>	

18.A.29



# Tualatin Valley Fire & Rescue

September 16, 2015

Scott Whyte  
Senior Planner  
City of Beaverton  
12725 SW Millikan Way  
Beaverton, OR 97076

**RE: PA2015-0058 VOSE ELEMENTARY REPLACEMENT**

Dear Scott Whyte,

Thank you for the opportunity to review the proposed site plan surrounding the above named development project. Tualatin Valley Fire & Rescue endorses this proposal predicated on the following criteria and conditions of approval:

## **FIRE APPARATUS ACCESS:**

1. **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDING AND TURNAROUNDS:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. (OFC 503.1.1) ***The rear (south side) of the building may be in excess of this distance.***
2. **AERIAL FIRE APPARATUS ROADS:** Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement. (OFC D105.1, D105.2) ***If the building is in excess of 30 feet in height these provisions apply.***
3. **AERIAL APPARATUS OPERATIONS:** At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the fire code official. Overhead utility and power lines shall not be located over the aerial access road or between the aerial access road and the building. (D105.3, D105.4) ***If the building is in excess of 30 feet in height these provisions apply.***

19 of 29

4. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. The fire district will approve access roads of 12 feet for up to three dwelling units and accessory buildings. (OFC 503.2.1 & D103.1)
5. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked "NO PARKING FIRE LANE" at 25 foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3) ***Painted curbing will be required to clearly delineate the fire lanes.***
6. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)
7. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested. (OFC 503.2.3) ***All fire lanes must meet this requirement.***
8. **TURNING RADIUS:** The inside turning radius and outside turning radius shall be not less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3) ***All fire lanes must meet this requirement.***

## **FIREFIGHTING WATER SUPPLIES:**

9. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration for buildings other than one- and two-family dwellings shall be determined in accordance with residual pressure (OFC Appendix B Table B105.2). The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi. ***Provide fire flow calculations.***
10. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B) ***Provide fire flow calculations.***

## FIRE HYDRANTS:

11. **FIRE HYDRANTS – COMMERCIAL BUILDINGS:** Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. (OFC 507.5.1)
12. This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
13. The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.
14. **FIRE HYDRANT NUMBER AND DISTRIBUTION:** The minimum number and distribution of fire hydrants available to a building shall not be less than that listed in (OFC Table C105.1)
15. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)  
Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
16. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. Exception: Private fire hydrants within the City of Tualatin shall be yellow in color. (OFC 507)
17. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the fire code official. (OFC C102.1)
18. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly. (OFC 507)
19. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)
20. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3 foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)
21. **FIRE DEPARTMENT CONNECTIONS:** A fire hydrant shall be located within 100 feet of a fire department connection (FDC) or as approved. Fire hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle. (OFC 912 & NFPA 13)  
Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved. FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants (as diagramed below).

## BUILDING ACCESS AND FIRE SERVICE FEATURES

22. **KNOX BOX**: A Knox Box for building access is required for this building. Please contact the Fire Marshal's Office for an order form and instructions regarding installation and placement. (OFC 506.1) ***A Knox Box will be required for this building.***
  
23. **EMERGENCY RESPONDER RADIO COVERAGE SYSTEM**: ***This building will be required to be tested to identify any deficient radio coverage areas. All areas of the building that are deficient must be provided with an ERRC system in accordance with OFC Section 510. Testing is typically done at 80% completion of the building. It is recommended to provide appropriate conduits shaft, wiring etc. during construction to accommodate for the system. Additionally, make sure you budget and appropriate time for the installation of this system.***
  
24. **FIRE SERVICE PLAN**: ***Provide a specific fire service plan(s) that show compliance with the above noted items for review and approval. (OFC 105.4.2)***

If you have questions or need further clarification, please feel free to contact me at (503) 259-1414.

Sincerely,

*Jeremy Foster*

Jeremy Foster  
Deputy Fire Marshal II

## Scott Whyte

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**From:** Brad Roast  
**Sent:** Friday, September 18, 2015 3:37 PM  
**To:** Scott Whyte  
**Subject:** Preapp Notes: PA2015-0058 Vose Elementary School Replacement

The proposed project shall comply with the State of Oregon Building Code in effect as of date of application for the building permit. This currently includes the following: The 2012 edition of the International Building Code as published by the International Code Conference and amended by the State of Oregon (OSSC); The 2009 edition of the International Residential Code as published by the International Code Conference and amended by the State of Oregon (ORSC); 2012 International Mechanical Code as published by the International Code Council and amended by the State of Oregon (OMSC); the 2012 edition of the Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials and amended by the State of Oregon (OPSC); the 2014 edition of the National Electrical Code as published by the National Fire Protection Association and amended by the State of Oregon; and the 2012 International Fire Code as published by the International Code Council and amended by Tualatin Valley Fire and Rescue (IFC).

A group E occupancy with an occupant load greater than 250 individuals falls into "Special occupancy structure" and requires a seismic site hazard investigation. The completed seismic site hazard investigation must also be (peer) reviewed by person(s) of qualifications equivalent to those who prepared the report. A copy of both reports must be submitted with the building permit application as well as to the Department of Geology and Mineral Industries (DOGAMI). ORS 455.447(1), OSSC Sections 1803.1, 1803.3.2, 1803.8 and 1803.9.

Please note our plan review turnaround times are typically:

- New/Additions for Commercial/Multi-family Buildings - six weeks from the date the complete application is received until the plan review begins. Plan reviews take on average one to three weeks, depending on the complexity of the project. After completion of the review, a plan review letter is provided with any items needing additional information/clarification or change. Once a response to the plan review is received, it takes one-two weeks for a review of the responses. If the responses are complete and the plan review items are correct, the plans and permit can be approved\*.

\*The building permit cannot be issued until applicable approvals (Planning, Site Development, etc...) have been received and the Site Development permit has been issued.

- All of the plan review time estimates can change with the volume of plan/permit activity, especially during peak construction months.

A demolition permit is required for the removal of the existing building(s). A plumbing permit is required for removal, abandonment and capping of a septic tank or sewer line. If a septic tank exists, it shall be pumped out and filled in with sand or gravel or completely removed. An inspection shall be obtained from the plumbing inspector after the tank is filled or removed. A copy of the receipt from the pumping company shall be provided. If the building is connected to the public sanitary sewer system, the building's sewer shall be capped off at the property line and inspected by the plumbing inspector. (BC 8.02.035, Section 105, OSSC; Section 722, OPSC) The removal of existing buildings on the property may provide credits towards some system development (SDC) fees such as water, sanitary sewer, impervious surface, and traffic.

Applications for plan review must include the information outlined in the Tri-County Commercial Application Checklist. This form is available at the Building Division counter or may be printed from the Forms/Fee Center at <http://www.beavertonoregon.gov/PermitFormsFees>. Incomplete applications will not be accepted. (City policy)

The City offers phased permits, for foundation/slabs, structural frame, shell and interior build-out (TI). An applicant desiring to phase any portion of the project must complete the Tri-County Commercial Phased Project Matrix or each phased portion. This form is available at the Building Division counter or may be printed from the Forms/Fee Center at <http://www.beavertonoregon.gov/PermitFormsFees>. Note: Except private site utilities (potable water, sanitary and storm sewer lines), Excavation and Shoring, Site Utilities and Grading are not permits issued by the Building Division and therefore area not part of part of the City's phased permit process.

Plan submittals may be deferred as outlined in the Tri-County Deferred Submittals list. Each deferred submittal shall be identified on the building plans. This list is available at the Building Division counter or may be printed from the Forms/Fee Center at <http://www.beavertonoregon.gov/PermitFormsFees>. Permit applicants are responsible for ensuring that deferred plan review items listed on the plans are submitted for approval well in advance of the need to begin work on that portion of the project (anticipate a minimum of three weeks plan review turnaround time for tenant improvement and six weeks plan review turnaround for new construction projects). No work on any of the deferred items shall begin prior to the plans being submitted, reviewed and approved.

Unless they are identified as a deferred submittal on the plans, building permits will not be issued until all related plans and permits have been reviewed, approved, and issued (i.e., mechanical, plumbing, electrical, fire sprinkler systems, fire alarm systems, etc. (City policy)

Projects involving new buildings and additions are subject to System Development fees. A list of the applicable fees is available at the Building Division counter or may be printed from the Forms/Fee Center at <http://www.beavertonoregon.gov/PermitFormsFees>.

The building code plans review can run concurrent with the Design Review (DR) and site development review.

Any businesses related to food preparation are required to have a grease trap/interceptor. The type and size are determined by the State Plumbing Code. Please contact the Fats/Oil/Grease (FOG) specialist for maintenance requirements (503) 526-3701.

The proposed building(s) shall be accessible to persons with disabilities. (Chapter 11, OSSC)

An accessible route shall be provided to persons with disabilities throughout the site. (Section 1104, OSSC)

An accessible route shall be provided to persons with disabilities from the building to a public way. (Section 1104, OSSC)

The applicant should be aware that food service operations are required to be reviewed and approved by the Washington County Health Department for applicable health regulations. For more information, contact the Washington County Health Department at (503) 846-8722.

Because of the nature and size of the building, an Emergency Responder Radio Coverage (ERRC) may be required. It is incumbent on the project owner to plan for the possibility that such a system may need to be installed. This would include installing chases, conduit, raceways, or similar accesses within the building for such a system. It does not mean that each of these building types will need an EERC system (typically a bi-directional amplifier with passive distributed antennae system). The code requires that the regulated building types be tested for coverage prior to occupancy (typically after all partitions, windows and siding is installed). If the testing reveals radio coverage is impacted in areas of the building, then those areas would require the installation of an ERRC system. "A test by a Federal Communications Commission (FCC) licensed technician will be required after all partitions, windows, doors

roofing and siding are installed to determine if an ERRC system will be required. For further information, contact DFM Jeremy Foster with Tualatin Valley Fire and Rescue at (503) 259-1414." OSSC Section 915.1"

Sincerely,

**Brad Roast**

Building Official | Building Division

City of Beaverton | 12725 SW Millikan Way, 4<sup>th</sup> Floor | Beaverton OR 97005

p: 503-526-2524 | f: 503-526-2550 | [www.BeavertonOregon.gov](http://www.BeavertonOregon.gov)

25<sup>3</sup> . 29

# Pre-Application Conference Worksheet for Design Review Guidelines

for PA 2015-0058 held on 9/16/15

Title Jose Elementary Replacement

In review of the plans and materials submitted for Pre-Application consideration, staff have determined your project is subject to **Design Review Type 3** due to the following Threshold(s): #2 New const. or addition of more than 30,000 sq. ft. ... next to residential (per Section 40.20.15.3.A of the City Development Code). For your application to be deemed complete on the first review, your written response to the Design Review 3 approval criteria, must address applicable Design Guidelines. In review of the plans and materials submitted for Pre-Application Conference consideration, staff has identified certain Design Guidelines (below) that appear "applicable". Generally speaking, applicable Design Guidelines include those pertaining to:

- A:  Permitted  Conditional use
- Within a:  Residential  Commercial  Industrial  Multiple Use zone N/A
- For a:  Multi-Family Residential  Commercial  Industrial  Multiple Use building type.
- That  does  does not abut a "Major Pedestrian Route" Class:

A highlighted copy of Section 60.05 is provided to applicant at the Pre-Application meeting. In summary, the applicable Design Guidelines appear to include the following:

- 60.05.35 (Building Design and Orientation Guidelines)
  1. Building Articulation and Variety - A  B  C  D  E  F
  2. Roof Forms - A  B  C
  3. Primary Building Entrances - A  B
  4. Exterior Building Materials - A  B
  5. Roof-mounted equipment -
  6. Building location/orientation along street in Multiple Use and Commercial zoning districts - A  B  C
  7. Building Scale along Major Pedestrian Routes - A  B
  8. Ground floor elevations on commercial and multiple use buildings - A  B
  9. Design of residential uses fronting shared courts & common greens - A  B
- 60.05.40 (Circulation and Parking Design Guidelines)
  1. Connections to the public street system
  2. Loading areas, solid waste facilities and similar improvements - A  B
  3. Pedestrian circulation - A  B  C  D  E  F
  4. Street frontages and parking areas -
  5. Parking area landscaping -
  6. Off-Street parking frontages in Multiple-Use Districts - A  B
  7. Sidewalks along streets/primary building elevations in Multiple-Use and Commercial zones - A  B
  8. Connect on-site buildings, parking, and other improvements with identifiable streets and drive aisles in Residential, Multiple-Use and Commercial Districts - A  B
  9. Ground floor uses in parking structures -
- 60.05.45 (Landscape, Open Space and Natural Areas Design Guidelines)
  1. Minimum Common Open Space Requirements for Multi-Family Development Consisting of 10 or more units. - A  B  C  D
  2. Minimum Landscaping Requirements for Required Front Yards and Required Common Open Space in Multiple Family Residential Zones - A  B
  3. Minimum Landscaping Requirements for Conditional Uses in Residential Districts and for Developments in Multiple-Use, Commercial and Industrial Districts - A  B  C  D  E  *Describes Existing Mature Trees*
  4. - 5. Design of "Common Greens" and "Shared Courts" in Multiple Use Districts
  6. Retaining Walls  *Applicable if proposed - 6' high or greater than 50'*
  7. Fences and Walls - A  B
  8. Minimize significant changes to existing surface contours at residential property lines -  *see corresponding stand.*
  9. Integrate water quality, quantity, or both facilities -  *applies to above goal.*
  10. Natural Areas  *compare w/ stand.*
  11. Landscape Buffer Requirements - A  B  C  D  *compare w/ stand.*
- 60.05.50 (Lighting Design Guidelines)
  - 1  2  3  4

*that calls for B-3 @ 20' in width see Note #7 of Table 60.05-2*

# Pre-Application Conference Worksheet for Design Review Standards

for PA 2015-0058 held on 9/16/15

Title Vose Elementary Replacement

*For ref. only*

In review of the plans and material submitted for Pre-Application consideration, staff have determined your project is subject to Design Review  Compliance Letter  Type 2 provided that the plans and graphic exhibits submitted for consideration illustrate compliance with "applicable" Design Review Standards identified under Sections 60.05.15 through 60.05.30 of the City Development Code. If your proposal does not meet applicable design standards, your proposal is subject to Design Review Type 3 (per application Thresholds 7 or 8 of Section 40.20.15.3.A). In review of the plans and materials submitted for Pre-Application Conference consideration, staff has identified certain Design Standards (below) that appear "applicable". Generally speaking, applicable Design Standards include those pertaining to:

- A:  Permitted  Conditional use
- Within a(n):  Residential  Commercial  Industrial  Multiple Use zone N/A
- For a(n):  Multi-Family Residential  Commercial  Industrial  Multiple Use building type N/A
- That  does  does not about a "Major Pedestrian Route" Class: \_\_\_\_\_

In summary, the applicable design standards appear to include the following:

- 60.05.15 (Building Design and Orientation Standards)
  1. Building Articulation and Variety - A  B  C  D
  2. Roof Forms - A  B  C  D  E
  3. Primary Building Entrances
  4. Exterior Building Materials - A  B  C
  5. Roof-mounted equipment - A  B  C
  6. Building location/orientation along street in Multiple Use and Commercial zoning districts - A  B  C  D  E  F
  7. Building Scale along Major Pedestrian Routes - A  B  C
  8. Ground floor elevations on commercial and multiple use buildings - A  B
  9. Residential units fronting common greens & shared courts in multiple use zones A through G \_\_\_\_\_
- 60.05.20 (Circulation and Parking Design Standards)
  1. Connections to the public street system -
  2. Loading areas, solid waste facilities and similar improvements - A  B  C  D  E
  3. Pedestrian circulation - A  B  C  D  E  F
  4. Street frontages and parking areas - A
  5. Parking area landscaping - A  B  C  D
  6. Off-Street parking frontages in Multiple-Use Districts - A  B  C
  7. Sidewalks along streets/primary building elevations in Multiple-Use and Commercial zones - A  B
  8. Connect on-site buildings, parking, and other improvements with identifiable streets and drive aisles in Residential, Multiple-Use and Commercial Districts - A  B  Unlikely to apply
  9. Ground floor uses in parking structures -
- 60.05.25 (Landscape, Open Space and Natural Areas Design Standards)
  1. - 3. Minimum Landscape Requirements for Duplexes and Attached Dwellings in R-3.5, R-2 and R-1 zones - based number of units proposed N/A
  4. Minimum Landscaping Requirements for Required Front Yards and Required Common Open Space in Multiple Family Residential Zones - A  B  C  D  E  F
  5. Minimum Landscaping Requirements for Conditional Uses in Residential Districts, and for Developments in Multiple-Use, Commercial and Industrial Districts A  B  C  D
  6. - 7. Standards for "Common Greens" and "Shared Courts" in Multiple-Use Zones
  7. Standards for "Common Greens" and "Shared Courts" in Multiple-Use Zones
  8. Retaining Walls -  ? only applies for walls 6' in height of longer than 50'
  9. Fences and Walls A  B  C  D  E
  10. Minimize significant changes to existing surface contours at residential property lines A  B  C
  11. Integrate water quality, quantity, or both facilities -  - Non vaulted new see standards
  12. Natural Areas  N/A but see corresponding guidelines - ref. to mature trees.
  13. Landscape Buffer Requirements A  B(B-1)  C(B-2)  D(B-3)  E  F  G
- 60.05.30 (Lighting Design Standards)
  1. Adequate on-site lighting and minimize glare on adjoining properties A  B  C  D  E
  2. Pedestrian-scale on-site lighting A  B  C  See stand.

# HOLLAND PARK

HARRIS-McMONGLE ASSOCIATES, INC.  
ENGINEERS-SURVEYORS  
12345 S.W. HALL BLVD.  
PORTLAND, OREGON 97201  
PHONE: (503) 551-3425  
FAX: (503) 551-1232

RECORDED AS DOCUMENT NO. 2025021613

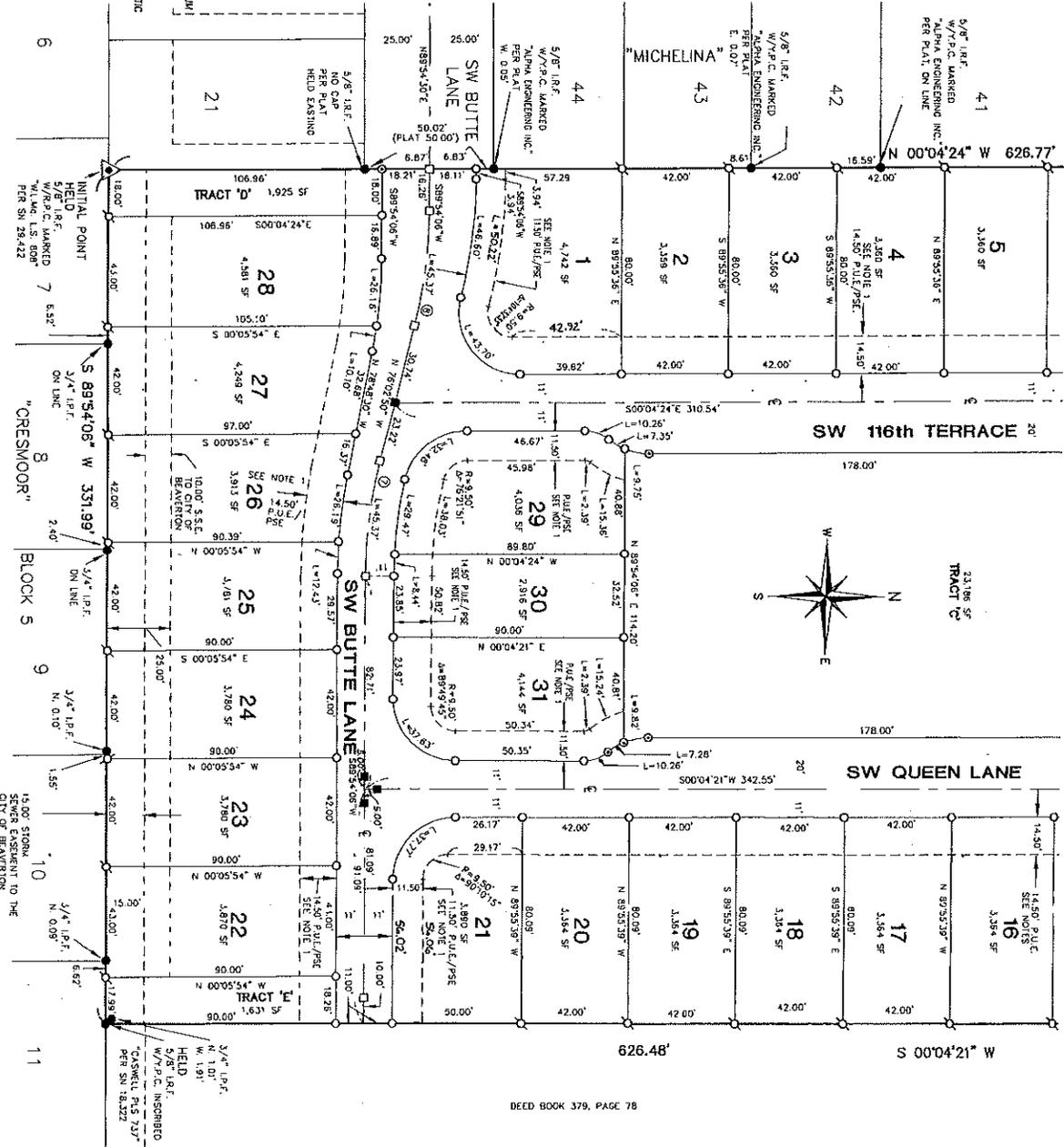
SITuated IN THE SW 1/4 OF SECTION 22,  
TOWNSHIP 1 SOUTH, RANGE 1 WEST  
OF THE WILLAMETTE MERIDIAN, CITY OF BEAVERTON  
WASHINGTON COUNTY, OREGON  
DATED: JUNE 22, 2004  
JOB No. 03-14  
SCALE: 1" = 30'

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR  
WILLIAM L. McMONAGLE  
No. 12345  
EXPIRES 12-31-2004

I HEREBY CERTIFY THAT THIS  
TRACING IS AN EXACT COPY OF  
THE ORIGINAL PLAT  
WILLIAM L. McMONAGLE

LOT/TRACT	DELTA	BEARING	LENGTH	CHORD	CHORD BEARING
1	142°12'0"	S 85°55'39" E	185.00	45.37	N 82°55'14" W
2	164°22'37"	S 85°55'39" E	24.00	37.92	S 82°05'11" W
21	90°00'15"	S 85°55'39" E	24.00	37.92	N 45°00'47" E
25	338°05"	S 85°55'39" E	185.00	45.37	S 86°15'50" E
26	07°38'15"	S 85°55'39" E	185.00	45.37	S 82°38'10" E
27	07°08'41"	S 85°55'39" E	184.00	45.10	S 80°22'57" E
28	08°08'41"	S 85°55'39" E	184.00	45.15	S 85°01'33" E
29	08°42'15"	S 85°55'39" E	184.00	45.17	S 82°22'57" W
30	27°22'28"	S 85°55'39" E	24.00	32.46	N 82°22'57" W
32	39°11'42"	S 85°55'39" E	19.00	25.08	N 80°50'37" E
33	39°11'42"	S 85°55'39" E	19.00	25.08	N 80°51'28" E
34	18°50'51"	S 85°55'39" E	25.00	31.22	N 80°41'31" E
35	02°46'48"	S 85°55'39" E	174.00	43.44	N 88°42'28" W
36	18°46'48"	S 85°55'39" E	25.00	7.28	S 30°45'57" E
37	39°11'41"	S 85°55'39" E	15.00	10.26	S 19°31'30" E
38	39°11'41"	S 85°55'39" E	15.00	10.26	S 44°59'14" W
39	22°30'55"	S 85°55'39" E	25.00	9.82	S 11°10'07" E
40	22°30'55"	S 85°55'39" E	25.00	9.75	N 00°04'24" W

- LEGEND:**
- SWIMMER MONUMENT FOUND AS NOTED
  - DENOTES POINT SET 5/8" X 30" IRON ROD WITH RED PLASTIC CAP STAMPED "W.L.M.G. L.S.808", SET ON 11-23-04
  - DENOTES POINT TO BE SET-REMAINING CORNER MONUMENTATION PER O.R.S. 92.070 5/8" X 30" IRON ROD WITH RED PLASTIC CAP STAMPED "W.L.M.G. L.S.808", SET ON 11-23-04
  - DENOTES POINT TO BE SET-REMAINING CORNER MONUMENTATION PER O.R.S. 92.070 5/8" X 30" IRON ROD WITH RED PLASTIC CAP STAMPED "W.L.M.G. L.S.808" IN MONUMENT BOX ON CENTERLINE OF RIGHT OF WAY, SET ON 11-23-04
  - DENOTES POINT TO BE SET-REMAINING CORNER MONUMENTATION PER O.R.S. 92.070 5/8" X 30" IRON ROD WITH 1 1/2" DIA. ALUMINUM CAP STAMPED "W.L.M.G. L.S.808" ON CENTERLINE OF RIGHT OF WAY, SET ON 11-23-04
  - △ DENOTES NAIL POINT 5/8" X 30" IRON ROD FOUND WITH RED PLASTIC CAP STAMPED "W.L.M.G. L.S.808"
  - 1/8" I.P.F. IRON PIPE FOUND
  - 1/4" I.P.F. IRON ROD FOUND
  - R.P.C. RED PLASTIC CAP
  - Y.P.C. YELLOW PLASTIC CAP
  - SW SWIMMER
  - CENTERLINE
  - DOCUMENT NUMBER
  - DOC. NO. STORM SEWER EASEMENT
  - S.S.E. PUBLIC UTILITY EASEMENT
  - P.U.E. PUBLIC UTILITY EASEMENT
  - PSE PUBLIC UTILITY EASEMENT
  - △ DELTA DENOTES ANGLE
  - BEARS SCREWDRIVER 3/4" WISSENER "LS808"



28 R 29

# GHIGLIETTI ACRES

PLAT BOOK NO. 72 PAGE 13

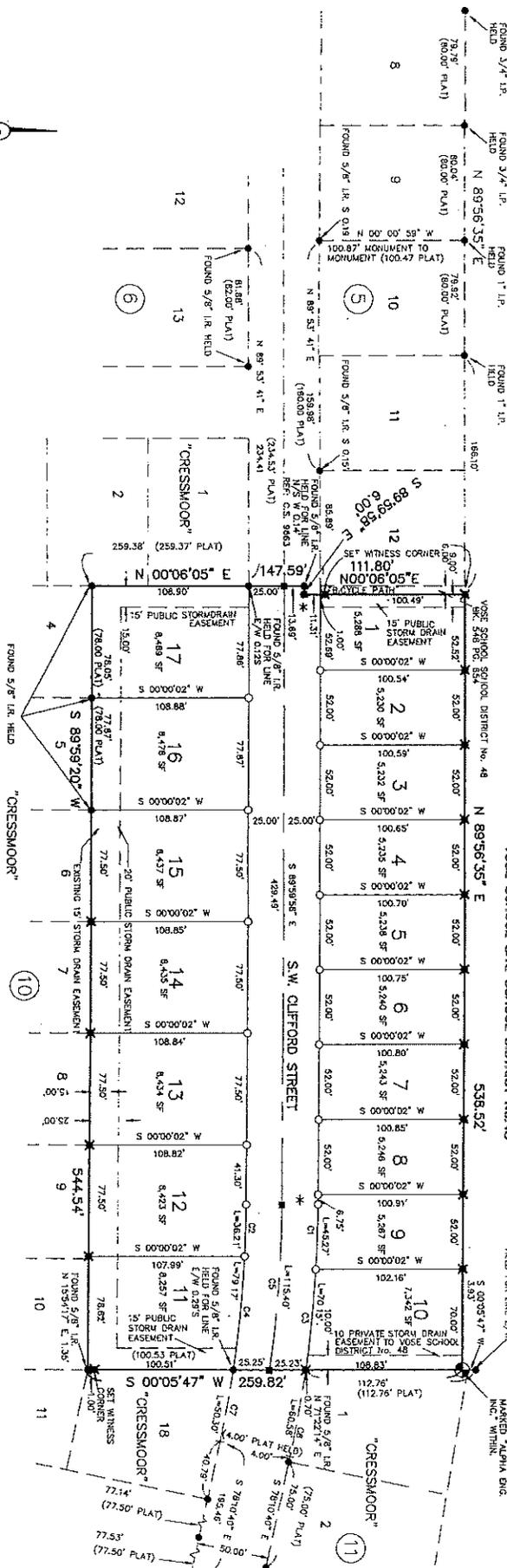
SHEET 1 OF 2

SITUATED IN THE S.E. 1/4, SECTION 22, T. 1 S., R. 1 W., W.M.  
CITY OF BEAVERTON, WASHINGTON COUNTY, OREGON

SURVEYED: MARCH 19TH, 1991

ALPHA ENGINEERING, INC.  
1726 S.W. SPOKANE BLVD., SUITE 19  
PORTLAND, OREGON 97221

\* AMENDED BY 91/59900



### LEGEND

- ✕ DENOTES SET 5/8" x 30" IRON ROD WITH YELLOW PLASTIC CAP - MEMBERS ALPHA ENG., INC.
- DENOTES FOUND 5/8" IRON ROD UNLESS OTHERWISE NOTED.
- DENOTES 5/8" x 30" IRON ROD WITH ALUMINUM CAP IN STREET, ALPHA ENG., INC. TO BE POST MONUMENTED
- DENOTES 5/8" x 30" IRON ROD WITH PLASTIC CAP - MEMBERS ALPHA ENG., INC. TO BE SET WITHIN THE SET IN O.S. 9883 TO ESTABLISH THE WEST LINE

### NARRATIVE:

- BASIS OF BEARINGS IS THE NORTH LINE OF BLOCK 10, PLAT OF "CRESSMOOR" OR MONUMENTS FOUND ALONG THE NORTH LINE OF BLOCK 5 OF "CRESSMOOR" TO ESTABLISH THE NORTH LINE OF "CRESSMOOR" TO ESTABLISH THE SOUTH LINE.
1. HELD FOR LINE THE 3/4" IRON PIPE AT THE NORTHWEST CORNER OF LOT 10 ON THE WEST LINE OF LOT 10 TO ESTABLISH EAST LINE.
  2. HELD 5/8" IRON ROD AT THE NORTHWEST CORNER OF LOT 4, BLOCK 10 OF "CRESSMOOR" AND 5/8" IRON ROD FOR LINE AT THE NORTHEAST SET IN O.S. 9883 TO ESTABLISH THE WEST LINE.

### PLAT RESTRICTIONS:

1. ALL 8.00 FOOT WIDE PUBLIC UTILITY EASEMENT SHALL EXIST ALONG ALL LOT LINES ADJACENT PUBLIC STREETS.
2. A 5.00 FOOT WIDE PUBLIC UTILITY EASEMENT SHALL EXIST ALONG ALL SIDE AND REAR LOT LINES.
3. 15 FOOT REAR YARD BUILDING SETBACKS APPROVED FOR LOTS 7 THROUGH 9
4. ALL LOTS MUST MEET SQUARE STANDARDS.
5. SUBJECT TO COUNTY'S ZONING AND RESTRICTIONS AS RECORDED IN NOTES.
6. THIS SURVEY IS THE PROPERTY OF WASHINGTON COUNTY BEED RESOURCES.
7. THERE IS NO KNOWN GEODETIC CONTROL MONUMENT WITHIN ONE-HALF MILE OF THE BOUNDARY OF THIS PLAT.

### CURVES

CURVE	BEARING	CHORD	BEARING	CHORD
C1	N 89° 59' 20" W	50.29	N 89° 59' 20" W	50.29
C2	N 89° 59' 20" W	50.29	N 89° 59' 20" W	50.29
C3	N 89° 59' 20" W	50.29	N 89° 59' 20" W	50.29
C4	N 89° 59' 20" W	50.29	N 89° 59' 20" W	50.29
C5	N 89° 59' 20" W	50.29	N 89° 59' 20" W	50.29
C6	N 89° 59' 20" W	50.29	N 89° 59' 20" W	50.29
C7	N 89° 59' 20" W	50.29	N 89° 59' 20" W	50.29

SCALE: 1 INCH = 50 FEET

I HEREBY CERTIFY THAT THIS READING IS A TRUE AND EXACT COPY OF THE PLAT OF GHIGLIETTI ACRES.

Michael R. Gates  
PL.S. 2449

REGISTERED PROFESSIONAL LAND SURVEYOR  
Michael R. Gates  
ALPHA ENG. INC.  
MICHAEL R. GATES  
2449

29 + 29

EXHIBIT C  
CLEAN WATER SERVICES PROVIDER LETTER

## Sensitive Area Pre-Screening Site Assessment

1. Jurisdiction: Beaverton

2. Property Information (example 1S234AB01400)

Tax lot ID(s): 1S1 22DB Lot 2000

**OR Site Address:** 11350 SW Denney Road

City, State, Zip: Beaverton

Nearest Cross Street: SW Queen Lane

3. Owner Information

Name: Beaverton School District

Company: c/o Aaron Boyle

Address: 16550 SW Merlo Road

City, State, Zip: Beaverton, OR 97006

Phone/Fax: 503-356-4381

E-Mail: Aaron\_Boyle@beaverton.k12.or.us

4. Development Activity (check all that apply)

- Addition to Single Family Residence (rooms, deck, garage)
- Lot Line Adjustment       Minor Land Partition
- Residential Condominium       Commercial Condominium
- Residential Subdivision       Commercial Subdivision
- Single Lot Commercial       Multi Lot Commercial
- Other Replacement of an existing elementary school (Vose Elementary)

5. Applicant Information

Name: Serah Breakstone

Company: Angelo Planning Group

Address: 921 SW Washington Street, Suite 468

City, State, Zip: Portland, OR 97205

Phone/Fax: 503.227.3674

E-Mail: sbreakstone@angeloplanning.com

6. Will the project involve any off-site work?  Yes  No  Unknown

Location and description of off-site work Street frontage improvements along SW Denney

7. Additional comments or information that may be needed to understand your project \_\_\_\_\_

This project will involve a complete tear-down and rebuild of the Vose Elementary School

**This application does NOT replace Grading and Erosion Control Permits, Connection Permits, Building Permits, Site Development Permits, DEQ 1200-C Permit or other permits as issued by the Department of Environmental Quality, Department of State Lands and/or Department of the Army COE. All required permits and approvals must be obtained and completed under applicable local, state, and federal law.**

By signing this form, the Owner or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site. I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Print/Type Name \_\_\_\_\_ Print/Type Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

### FOR DISTRICT USE ONLY

Sensitive areas potentially exist on site or within 200' of the site. **THE APPLICANT MUST PERFORM A SITE ASSESSMENT PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER.** If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resources Assessment Report may also be required.

Based on review of the submitted materials and best available information Sensitive areas do not appear to exist on site or within 200' of the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider letter as required by Resolution and Order 07-20, Section 3.02.1. All required permits and approvals must be obtained and completed under applicable local, State, and federal law.

Based on review of the submitted materials and best available information the above referenced project will not significantly impact the existing or potentially sensitive area(s) found near the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect additional water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider letter as required by Resolution and Order 07-20, Section 3.02.1. All required permits and approvals must be obtained and completed under applicable local, state and federal law.

**This Service Provider Letter is not valid unless \_\_\_\_\_ CWS approved site plan(s) are attached.**

The proposed activity does not meet the definition of development or the lot was platted after 9/9/95 ORS 92.040(2). NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.

Reviewed by Laurie Harris Date 10/06/15

Once complete, email to: [SPLReview@cleanwaterservices.org](mailto:SPLReview@cleanwaterservices.org) • Fax: (503) 681-4439  
OR mail to: SPL Review, Clean Water Services, 2550 SW Hillsboro Highway, Hillsboro, Oregon 97123

EXHIBIT D  
TRAFFIC IMPACT ANALYSIS  
(Provided under separate cover)

EXHIBIT E  
STORMWATER REPORT

# Technical Memorandum



HanmiGlobal Partner

808 SW Third Avenue  
Suite 300  
Portland, OR 97225  
Phone (503) 287-OTAK  
Fax (503) 415-2304

**To:** City of Beaverton  
Schematic Design Review

**From:** Ashley Cantlon, PE

**Copies:** Levi Patterson, Architect - DLR Group  
Project File

**Date:** November 13, 2015

**Subject:** Vose Elementary School  
Preliminary Drainage Report

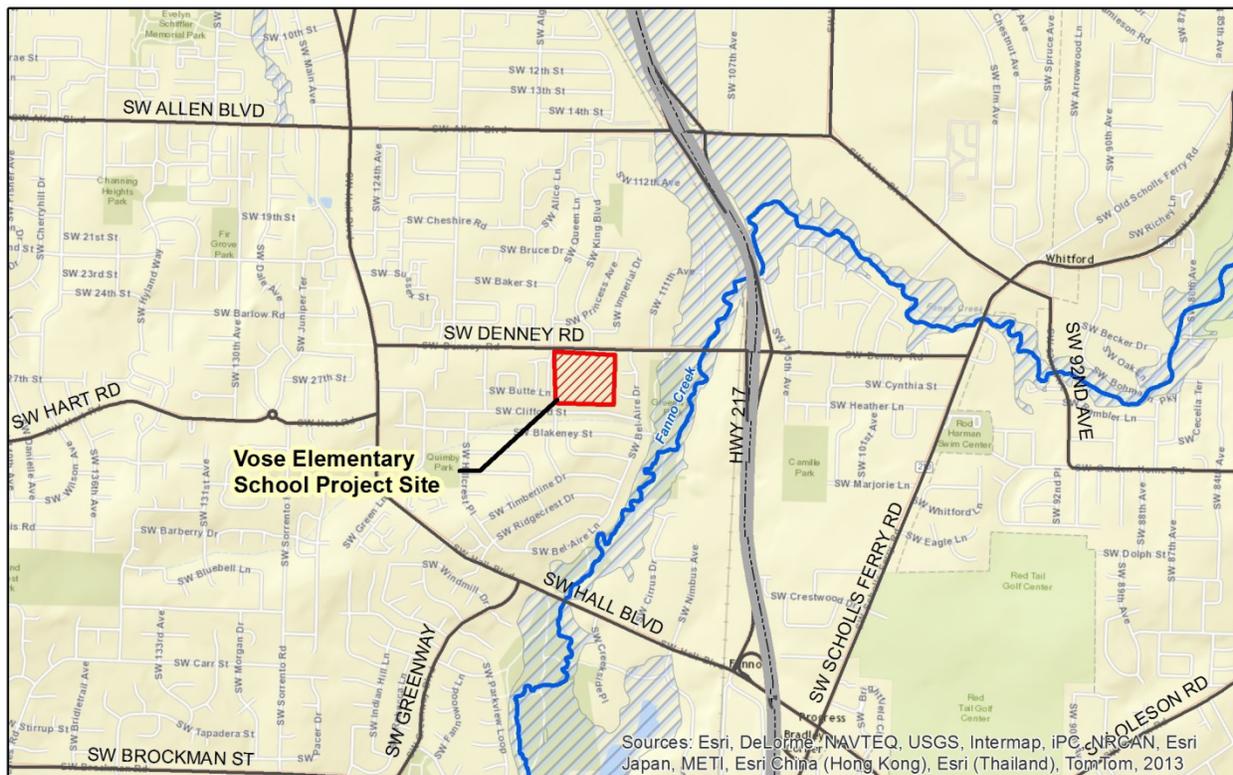
**Project No.:** 17622 (Otak)

## Introduction

This preliminary drainage report documents the preliminary stormwater management design concept for Vose Elementary School, using Clean Water Services (CWS) and City of Beaverton design criteria. Included are the onsite stormwater analysis and a discussion of proposed regional stormwater treatment and detention facilities. The 9.1 acre site will replace 4.02 acres of impervious area with 5.0 acres of impervious area in the Fanno Creek watershed.

## Site Description

Vose Elementary School is located in the City of Beaverton on SW Denney Road approximately 0.3 miles west of Highway 217 (see below) and has been selected to be redeveloped. SW Denney Road abuts the property along the northern edge, and local neighborhood housing surrounds the remaining perimeter. The school was originally constructed in 1959. Aside from the school building, the property is comprised of paved parking, play areas, and open grassy fields with slopes generally ranging from 2 percent to 6 percent with terracing ranging from 10 to 18 percent in some areas.



### Vicinity Map

### Soils

The Natural Resource Conservation Service (NRCS) Soil Survey for Washington County, Oregon online soil survey was referenced to determine hydrologic soil types for the project location. A majority of soils onsite were identified as Woodburn silt loam, categorized by the NRCS as hydrologic soil group type C, which characteristically have very low infiltration rates. A soil survey map of the proposed site and the soil hydrologic group table are provided in Attachment A.

### Receiving Waters

Both drainage basins ultimately drain into Fanno Creek. Fanno Creek has listed Total Maximum Daily Loads (TMDL's) for the following parameters: Ammonia, Dissolved Oxygen, E Coli, Phosphorous, and Temperature.

### Basins and Hydrology

#### Existing Conditions

Existing drainage on the Vose Elementary School property is divided into two basins, hereafter

referred to as Basin 1 and Basin 2. Basin 1 directs runoff from approximately 1.86 acres of the site (mainly impervious) to the north into the SW Denney Road conveyance system, while Basin 2 collects runoff in a series of pipes and directs flow from approximately 7.24 acres (mainly grass fields and play areas) to an outlet location located at the southeast corner of the (see Figure 1).

Though not identified in survey data, as-built information shows that runoff draining southeast is detained by an underground 48 detention pipe. Flows are shown to exit this detention pipe into a local roadway drainage system located within SW Clifford Street right of way. Stormwater is conveyed to an outfall into nearby Fanno Creek, which is located approximately 0.2 miles east of the property. Stormwater runoff draining to SW Denney Road does not currently receive treatment or detention before leaving the site.

Runoff exiting the Vose Elementary Property is not shown to receive treatment prior to discharging into public stormwater systems.

### **Proposed Conditions**

Proposed redevelopment will consist of replacing the two existing school buildings with one larger building having a footprint area of approximately 51,000 square feet, walkways and driveways with bus loading areas, a parking lot, and open recreational space. It will also incorporate Low Impact Development Approach (LIDA) facilities for stormwater treatment and may also utilize proprietary treatment devices that are not included in this plan. Improvements within the public right-of-way on SW Denney Road, including a total of approximately 0.1 ac. of impervious area, will utilize LIDA facilities to treat offsite drainage.

For this preliminary analysis the proposed development was divided to maintain two drainage basins, as under existing conditions (Basin 1 drains to the north and Basin 2 to the south, see Figure 2). These basins were further subdivided into contributing pervious and impervious areas within each basin. Onsite areas representing runoff from rooftops, sidewalks, driveway and parking areas are considered to be impervious areas, while remaining area, including landscaped areas and LIDA facilities, are considered to be pervious surfaces. The breakdown of the impervious and pervious areas in each basin can be found in Attachment B.

Preliminary assumptions were made with respect to grading and the drainage basin divide between Basin 1 and Basin 2. The north portion of the site within Basin 1 was graded to drain an impervious area less than the impervious area that is currently draining to the SW Denney Road system. Table 1 compares impervious and pervious areas within each drainage basin under existing and proposed conditions based on a preliminary schematic design layout.

Table I – Onsite Basin Area Comparison				
Basin	Existing Conditions		Proposed Conditions	
	Impervious Area (ac)	Pervious Area (ac)	Impervious Area (ac)	Pervious Area (ac)
1	1.41	0.45	1.39	0.57
2	2.61	4.62	3.62	3.47
Total	4.02	5.07	5.0	4.04

### Downstream Conditions

Stormwater runoff from both Basin 1 and Basin 2 will ultimately discharge into existing offsite conveyance systems. Basin 1 currently discharges into the SW Denney Road conveyance system, which is sized to convey flows from the Vose Elementary School property under existing conditions. The existing conveyance system collects runoff from the Vose Elementary School property and SW Denney Road, as well as portions of the local neighborhood, and directs flows to an outfall in a ditch between SW Denney Road and the Tualatin Hills Parks and Recreation District property adjacent to Fanno Creek. Flows travel through a series of ditches and culverts before discharging ultimately into Fanno Creek. No deficiencies have been brought to Otak’s attention for the piped system, so it is assumed that the flows are able to be accommodated under proposed conditions based on the assumed drainage basin divide.

Basin 2 discharges at the southeast corner of the site into an existing piped conveyance system, where runoff is detained by a 48-inch detention pipe before discharging into the conveyance system in SW Clifford Street. Based on as-built information, the main conveyance line in SW Clifford Street directs stormwater south via a storm easement to a pipe aligned along the back of residential properties between SW Clifford Street and SW Blakeney Street. This run of pipe crosses beneath SW Bel-Aire Drive and along SW Fanno Street before discharging through an existing outfall into Fanno Creek. No deficiencies within this offsite conveyance alignment have been brought to Otak’s attention, so it is assumed that existing conditions flows are appropriate as the baseline comparison for detention sizing within Basin 2. Detention is necessary in Basin 2 due to an increase of 1.33 acres of impervious area and a runoff rate greater than the allowable threshold.

### Design Criteria

The proposed stormwater system will meet the following design criteria:

- *City of Beaverton Engineering Design Manual and Standard Drawings* (COB, 2007)
- *Design and Construction Standards for Sanitary Sewer and Surface Water Management* (CWS, 2007)

The City of Beaverton has adopted the CWS *Design and Construction Standards for Sanitary Sewer and Surface Water Management*. All City standards in the *Engineering Design Manual* meet or exceed the CWS stormwater requirements.

## Hydrology

The stormwater system for the Vose Elementary School property was modeled using the Santa Barbara Urban Hydrograph (SBUH) method in HydroCAD v10.0.

### Rainfall Depth

Rainfall depths for the storm events of interest, obtained from the COB *Engineering Design Manual* and listed in Table 2, were applied to the Natural Resource Conservation Service (NRCS) Type 1A rainfall distribution in HydroCAD. These precipitation depths are slightly higher, and therefore more conservative, values than those required by Clean Water Services.

Table 2: COB Precipitation Depths for 24-Hour Duration Storm Events	
Recurrence Interval	Precipitation Depth (in)
2-year	2.50
10-year	3.50
25-year	4.00
100-year	4.50

### Curve Number

Runoff Curve Numbers (CN) for impervious and pervious areas during existing and proposed conditions were selected using Table 2-2a – Runoff Curve Numbers for Urban Areas from *Technical Release 55: Urban Hydrology for Small Watersheds* (SCS, 1986) (see Appendix A). A summary of the runoff curve numbers under existing and proposed conditions is provided in Table 3.

Table 3: Runoff Curve Numbers			
Category	Cover Type	Hydrologic Soil Group	Curve Number
Impervious Area	Pavement, roofs, sidewalks	C	98
Existing Pervious Area	Grass Cover, Fair Condition	C	79
Proposed Pervious Area	Grass Cover, Fair Condition	C	79

## Time of Concentration

The time of concentration represents the maximum time needed for all areas of a given basin to be contributing to the outflow hydrograph. Time of concentration values for each contributing drainage basin during existing and proposed conditions were calculated using the method provided by the SCS Technical Release 55 (SCS, 1986). The minimum allowable time of concentration for any drainage basin is five minutes. Table 4 lists the time of concentration values input into the hydrologic calculations in HydroCAD.

Table 4: Time of Concentration			
Basin		Impervious Area Tc (minutes)	Pervious Area Tc (minutes)
1	Existing Conditions	5.0	12.6
	Proposed Conditions	5.0	12.6
2	Existing Conditions	N/A	31.8
	Proposed Conditions	5.0	31.8

## Water Quality Treatment

The proposed design assumes that runoff from the Vose Elementary School property generated during the water quality storm event will be treated onsite with Low Impact Development Approaches (LIDA) which include vegetated filtration facilities, such as stormwater planters or raingardens. As the design becomes more developed, incorporation of proprietary treatment technology may also become integrated due to increasing site constraints and maintenance capabilities. One regional extended dry basin was also incorporated into the design to treat runoff from approximately 2.33 acres within Basin 2, as well as provide detention for all of Basin 2 high flow runoff.

The City of Beaverton has adopted CWS water quality standards for designing stormwater facilities, therefore a simplified approach was used to calculate approximate LIDA facility areas needed to provide water quality treatment for most onsite drainage sub-basins. This simplified method assumes that a treatment facility will require a footprint area equal to six percent of the contributing impervious area, per Clean Water Services standards.

It was assumed that building roof drains will direct runoff into pipes that will be conveyed to vegetated treatment facilities. Overflow structures within each LIDA facility will direct flows from storm events larger than the water quality event into the main conveyance system. A schematic of the proposed LIDA facilities for the Vose Elementary School improvements is included in Figure 3. Using the simplified approach method for facility sizing, the proposed onsite impervious areas will

require approximately 7,700 square feet of total LIDA area to meet CWS water quality treatment requirements. A summary of sizing for each LIDA facility proposed for the Vose Elementary School property is included in Attachment C. Basin 2 will be required to provide mitigation for water quantity due to the increase in impervious area in the proposed condition. Design of an extended dry basin facility will incorporate water quality treatment of sub-basins not routed to LIDA facilities, as well as detention for Basin 2 runoff to account for these mitigation efforts.

## **Conveyance**

Schematic layouts were developed for the Vose Elementary School site to represent a potential drainage system alignment. Inlets, manholes, and pipes were located based on assumed contributing impervious areas, locations of LIDA facilities, and the tie-ins to offsite systems. At this stage of design, pipe sizes were not calculated and vertical components (i.e., slopes, rim elevations, and invert elevations) were not established. During final design, conveyance pipes will be sized to convey the 25-year storm event with 1 foot of freeboard.

## **Detention**

Stormwater detention is required for increased runoff flows generated by adding impervious area to a site. Basin 1 will contain 14,700 square feet less impervious area compared to existing conditions, so it is assumed that Basin 1 will not need to provide stormwater quantity mitigation in this concept design. Runoff generated by Basin 2 will be detained onsite in an extended dry basin, hereafter referred to as B2-Pond, which is proposed to be located in the southeast corner of the site. Clean Water Services and the City of Beaverton require post-developed peak runoff rates to match pre-developed peak runoff rates for the 2-year, 10-year, and 25-year, 24-hour storm events, and the City of Beaverton requires the proposed conditions runoff rate to be less than or equal to “one half (0.5) cubic feet per second per acre in the 25-year event.” The stormwater management system must also safely convey the 100-year, 24-hour storm event. A HydroCAD analysis was performed using the SBUH runoff method and a Type IA 24-hr storm rainfall distribution, which is a typical representation of the Pacific maritime climate. Based on matching pre-developed to proposed condition runoff rates, the HydroCAD model was used to calculate the necessary size of the B2-Pond. The results of this model can be found in Attachment C.

Because the existing drainage within Basin 2 is detained underground in a 48-inch detention pipe, per as-built information prior to leaving the site, it is assumed that the existing condition for this 7.24 acre basin includes a pre-developed, grass-covered drainage basin rather than a developed basin under current conditions. Flow rate targets for Basin 2 were calculated for pre-developed conditions, and were used for matching flow rates based on City of Beaverton detention standards. The proposed extended dry basin will release mitigated flows from the proposed 7.41 acre basin through a pipe that is proposed to connect into the existing system in SW Clifford Street, as it does under

current conditions.

As design moves forward, it may be possible to obtain survey data for the existing detention pipe to more accurately model the current detained flow rates, and if this facility can continue to be used, the proposed extended dry basin shown within Basin 2 may be minimized. Table 5 lists the peak runoff rates for the site under existing and proposed conditions using an extended dry basin to provide detention.

Table 5: Basin 2 Peak Runoff Rates				
Basin	Peak Runoff Rate (cfs)			
	2-year	10-year	25-year	100-year
Existing Conditions	0.72	1.65	2.18	2.74
Proposed Conditions	2.55	3.93	4.64	5.37
Mitigated Conditions	0.72	1.60	2.17	2.76

Runoff rates for each storm event during existing and proposed conditions are included in the output tables from HydroCAD (see Appendix C).

## Conclusion

The stormwater management system for the Vose Elementary School property will include standard inlets, LIDA facilities (e.g. flow-through planters or rain gardens), conveyance pipes, and manholes to convey runoff through the site. Sizing and placement of LIDA water quality facilities were determined using the simplified approach method, allowing for a LIDA footprint equal to six percent of the contributing impervious area. Basin 1 runoff will be conveyed into six private facilities located to the north of the site to receive treatment before discharging into the existing conveyance system in SW Denney Road. Improvements to the public right-of-way and associated stormwater treatment will also be included into the scope of work on SW Denney Road during future design efforts. Runoff from Basin 2 will be conveyed into separate treatment facilities for water quality before draining into the extended dry basin in the southeast corner of the site, which will provide water quality treatment for 2.33 acres of impervious area within Basin 2, as well as detention for the entire 7.41 acre basin. Runoff exiting the extended dry basin facility will discharge into the piped system in SW Clifford Street.

Detention requirements will be met in Basin 1 by implementing a grading plan that locates the basin divide in a position that will not increase flows with respect to current conditions for the specified design storms to the SW Denney Road conveyance system. Requirements will be met in Basin 2 by an onsite extended dry basin located in the southeast corner. Post-development peak release rates will match pre-development peak runoff rates during the 2-year, and 10-year storm events, and the

post developed peak 25-year, 24-hour flow rate will not exceed 0.5 cfs per acre. The pond was sized using area assumptions provided in the conceptual site plan, and will be re-sized as the site design is refined. If data can be collected for the existing detention pipe, it may be possible to make use of the pipe capacity and supplement detention with a smaller extended dry basin.

## **References**

COB, 2007. *City of Beaverton Engineering Design Manual and Standard Drawings*, City of Beaverton, January 2007.

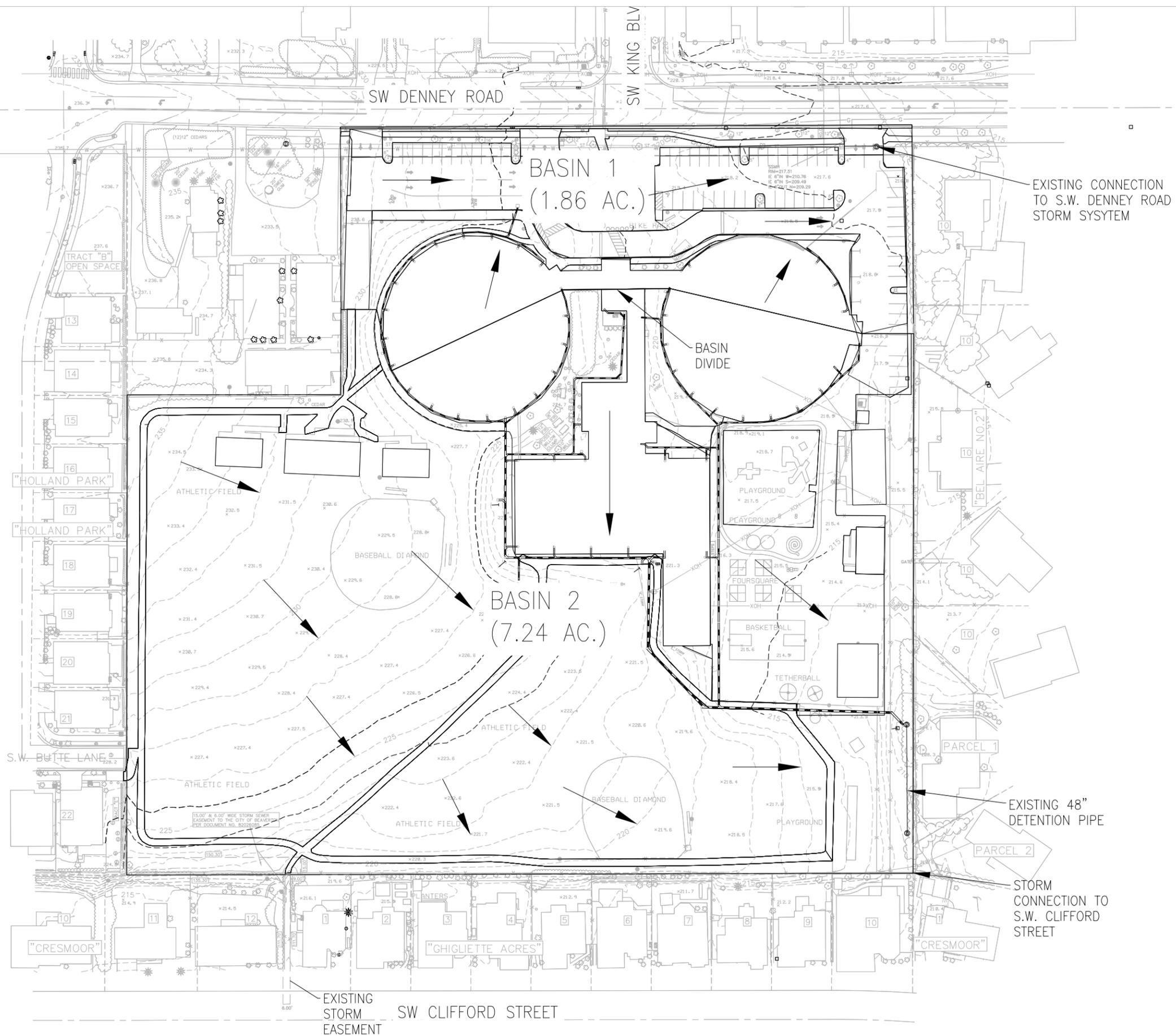
CWS, 2007. *Design and Construction Standards for Sanitary Sewer and Surface Water Management*, Clean Water Services, June 2007.

SCS, 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*, United States Department of Agriculture Soil Conservation Service, June 1986.



## Figures





**LEGEND**

-  EXISTING IMPERVIOUS AREA
-  FLOW DIRECTION
-  EXISTING STORM PIPE

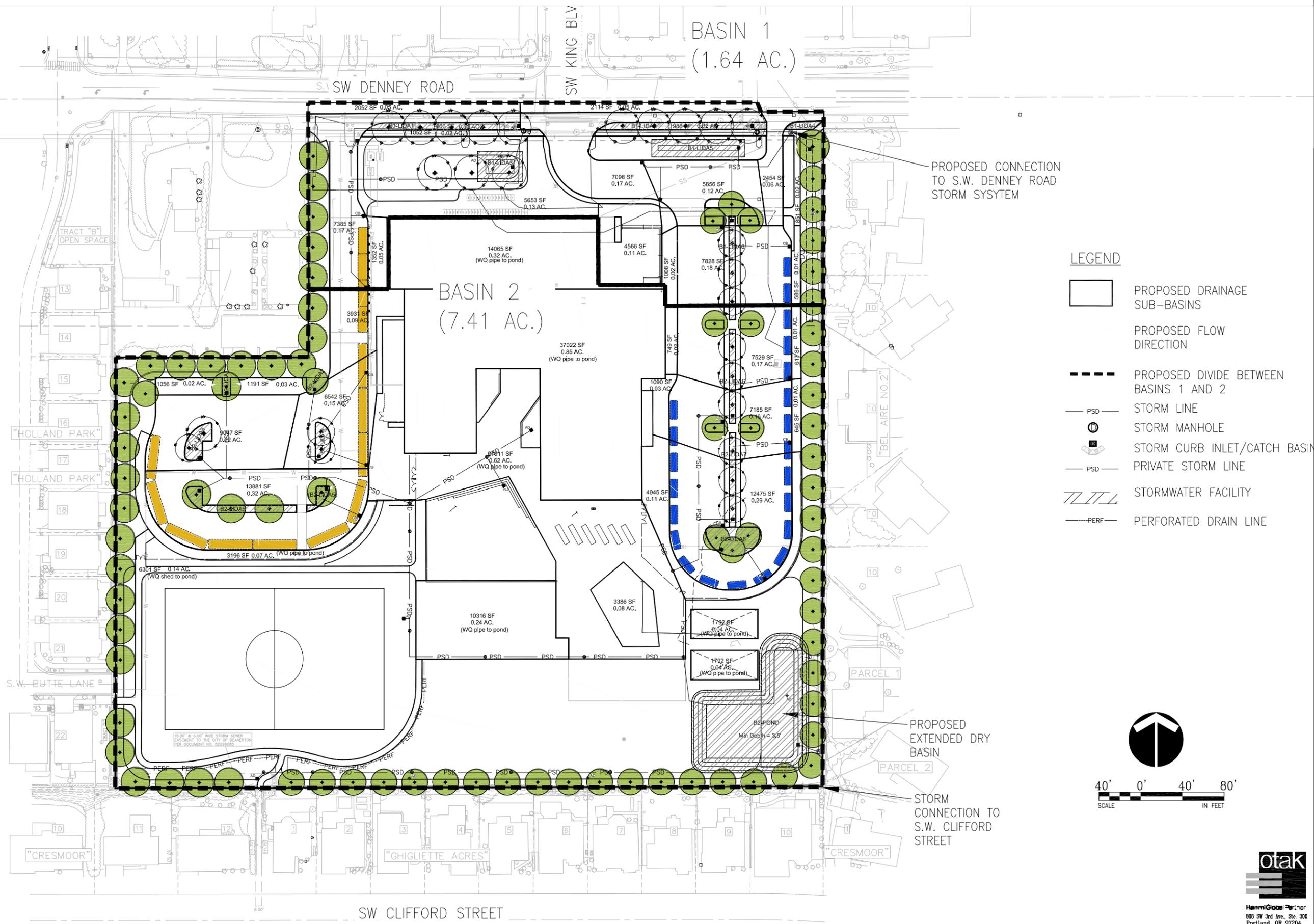


40' 0' 40' 80'  
SCALE IN FEET

**otak**

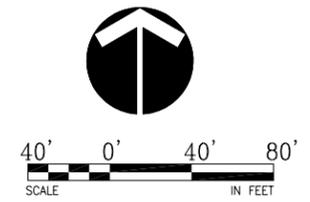
**HammiGee Partner**  
806 SW 3rd Ave, Ste. 300  
Portland, OR 97204  
Phone: (503) 287-6825  
FAX: (503) 415-2304  
www.otak.com





PROPOSED CONNECTION TO S.W. DENNEY ROAD STORM SYSTEM

- LEGEND**
- PROPOSED DRAINAGE SUB-BASINS
  - PROPOSED FLOW DIRECTION
  - PROPOSED DIVIDE BETWEEN BASINS 1 AND 2
  - STORM LINE
  - STORM MANHOLE
  - STORM CURB INLET/CATCH BASIN
  - PRIVATE STORM LINE
  - STORMWATER FACILITY
  - PERFORATED DRAIN LINE



PROPOSED EXTENDED DRY BASIN

STORM CONNECTION TO S.W. CLIFFORD STREET

**otak**  
 HammiGee Partner  
 806 SW 3rd Ave, Ste. 300  
 Portland, OR 97204  
 Phone: (503) 287-6825  
 FAX: (503) 415-2304  
 www.otak.com







Attachment A — Hydrologic Soil Group Map





Sw Denney Rd

Sw Marilyn

Sw Elnora

Denney

45B

1

Sw Denney Rd

200 ft



## Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

## Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff—Washington County, Oregon			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
1—Aloha silt loam			
Aloha	90	—	C/D

Hydrologic Soil Group and Surface Runoff--Washington County, Oregon			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
45B--Woodburn silt loam, 3 to 7 percent slopes			
Woodburn	85	— C	

## Data Source Information

Soil Survey Area: Washington County, Oregon

Survey Area Data: Version 12, Sep 19, 2014

Attachment B – Water Quality Preliminary  
Design



**Existing Conditions***17622 Vose Elementary School*

	Sidewalk (sf)	Roadway (sf)	Roof (sf)	Total Impervious (sf)	Total Impervious (ac)	Total Pervious (sf)	Total Pervious (ac)	Total Area (sf)	Total Area (ac)
Basin 1	7072.6548	34036.562	20,246	61,355	1.41	19,525	0.45	80,880	1.86
Basin 2	30848.196	28710.13	54,252	113,811	2.61	201,354	4.62	315164	7.24
<b>TOTAL ACRE</b>					4.0		5.07		9.09

**Proposed Conditions**

17622 Vose Elementary School

Exist Impervious

61,355

Prop Imp Increase

14,709 sf

	Sidewalk (sf)	Roadway (sf)	Roof (sf)	Total Impervious (sf)	Total Impervious (ac)	Total Pervious (sf)	Total Pervious (ac)	Total Area (sf)	Total Area (ac)
Basin 1	16344.83	30301.66	0	46,646	1.07	24,995	0.57	71,642	1.64
Basin 2	45720.55	61044.83	64,988	171,754	3.94	151,183	3.47	322937	7.41
<b>TOTAL ACRE</b>					5.0		4.04	394578.93	9.06

Attachment C – Water Quantity Preliminary  
Design



## Water Quality Calculations and Orifice Calculations

### North Bethany Creek Development

Water Quality Event 0.36 inches in 4 hours with a 96 hour return period

C 0.62

H 1.50 ft

Basin	Imperivous Area (sf)	Imperivous Area (ac)	Water Quality Volume (cf)	Water Quality Flow (cfs)	Storm Facility (sf)	6% Imperivous (af)	6% met?
<b>Basin 1</b>	<b>50,781</b>	<b>1.17</b>	<b>1,241</b>	<b>0.086</b>	<b>4479.900</b>	<b>3046.865</b>	<b>YES</b>
B1-LIDA 1	3,044	0.070	91	0.006	992.19	183	YES
B1-LIDA2	3,100	0.071	93	0.006	1087.67	186	YES
B1-LIDA 3	14,390	0.330	432	0.030	1000	863	YES
B1-LIDA4	3,306	0.076	99	0.007	200.04	198	YES
B1-LIDA5	17,520	0.402	526	0.037	1200	1,051	YES
B1-LIDA6	9,421	0.216	283	0.020	593.990	565	YES
		* B1-LIDA1 AND B2-LIDA2 MANAGE PUBLIC RIGHT OF WAY DRAINAGE (0.1 AC)					
<b>Basin 2</b>	<b>70,885</b>	<b>1.63</b>	<b>2,127</b>	<b>0.148</b>	<b>4714.180</b>	<b>4253.072</b>	<b>YES</b>
B2-LIDA1	2,247	0.052	67	0.005	142.7	135	YES
B2-LIDA2	3,931	0.090	118	0.008	236.2	236	YES
B2-LIDA3	9,047	0.208	271	0.019	601.8	543	YES
B2-LIDA4	6,542	0.150	196	0.014	418.4	393	YES
B2-LIDA5	13,882	0.319	416	0.029	1079.6	833	YES
B2-LIDA6	8,895	0.204	267	0.019	540.0	534	YES
B2-LIDA7	8,920	0.205	268	0.019	540.0	535	YES
B2-LIDA8	17,420	0.400	523	0.036	1155.5	1045	YES
	<b>Imperivous Area (sf)</b>	<b>Imperivous Area (ac)</b>	<b>Water Quality Volume (cf)</b>	<b>Water Quality Flow (cfs)</b>	<b>Orifice Flow (cfs)</b>	<b>Orifice Diameter (in)</b>	<b>Orifice Area (sf)</b>
<b>B2 Pond</b>	<b>101,497</b>	<b>2.330</b>	<b>3,045</b>	<b>0.211</b>	<b>0.018</b>	<b>0.73</b>	<b>0.0029</b>
Building	51,087	1.173	1,533	0.106			
Plaza	27,011	0.620	810	0.056			
Path	6,301	0.145	189	0.013			
Hard Play Area	10,316	0.237	309	0.021			
Portable	1,792	0.041	54	0.004			
Portable	1,792	0.041	54	0.004			
Walk	3,198	0.073	96	0.007			

**Existing Targets**



E-Basin2 Pervious

2-year: 0.72 cfs

10-year: 1.65 cfs

***Pre-Developed  
Conditions***

25 year: 2.18 cfs



P-Basin 2 Pervious



P-Basin2 Impervious



Extended Dry Basin

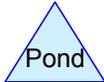
**Proposed Flows**

2-year: 0.72 cfs

10-year: 1.60 cfs

**Partial Basin 2 WQ  
(w/LIDA)**

25 year: 2.17 cfs



# 17622\_Detention\_WQ\_updated2015\_1010

Prepared by Otak, Inc.

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## Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.700	79	50-75% Grass cover, Fair, HSG C (157S, 185S)
3.940	98	Paved parking, HSG C (186S)
<b>14.640</b>	<b>84</b>	<b>TOTAL AREA</b>

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 157S: E-Basin2 Pervious** Runoff Area=7.230 ac 0.00% Impervious Runoff Depth=0.84"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=0.72 cfs 0.505 af

**Subcatchment 185S: P-Basin 2 Pervious** Runoff Area=3.470 ac 0.00% Impervious Runoff Depth=0.84"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=0.35 cfs 0.242 af

**Subcatchment 186S: P-Basin2 Impervious** Runoff Area=3.940 ac 100.00% Impervious Runoff Depth=2.27"  
Tc=5.0 min CN=0/98 Runoff=2.27 cfs 0.746 af

**Pond 178P: Extended Dry Basin** Peak Elev=101.85' Storage=0.290 af Inflow=2.55 cfs 0.988 af  
Outflow=0.72 cfs 0.911 af

**Total Runoff Area = 14.640 ac Runoff Volume = 1.492 af Average Runoff Depth = 1.22"**  
**73.09% Pervious = 10.700 ac 26.91% Impervious = 3.940 ac**

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 157S: E-Basin2 Pervious** Runoff Area=7.230 ac 0.00% Impervious Runoff Depth=1.57"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=1.65 cfs 0.944 af

**Subcatchment 185S: P-Basin 2 Pervious** Runoff Area=3.470 ac 0.00% Impervious Runoff Depth=1.57"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=0.79 cfs 0.453 af

**Subcatchment 186S: P-Basin2 Impervious** Runoff Area=3.940 ac 100.00% Impervious Runoff Depth=3.27"  
Tc=5.0 min CN=0/98 Runoff=3.23 cfs 1.072 af

**Pond 178P: Extended Dry Basin** Peak Elev=102.35' Storage=0.391 af Inflow=3.93 cfs 1.525 af  
Outflow=1.60 cfs 1.446 af

**Total Runoff Area = 14.640 ac Runoff Volume = 2.469 af Average Runoff Depth = 2.02"**  
**73.09% Pervious = 10.700 ac 26.91% Impervious = 3.940 ac**

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 157S: E-Basin2 Pervious** Runoff Area=7.230 ac 0.00% Impervious Runoff Depth=1.96"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=2.18 cfs 1.183 af

**Subcatchment 185S: P-Basin 2 Pervious** Runoff Area=3.470 ac 0.00% Impervious Runoff Depth=1.96"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=1.05 cfs 0.568 af

**Subcatchment 186S: P-Basin2 Impervious** Runoff Area=3.940 ac 100.00% Impervious Runoff Depth=3.77"  
Tc=5.0 min CN=0/98 Runoff=3.71 cfs 1.236 af

**Pond 178P: Extended Dry Basin** Peak Elev=102.53' Storage=0.428 af Inflow=4.64 cfs 1.804 af  
Outflow=2.17 cfs 1.724 af

**Total Runoff Area = 14.640 ac Runoff Volume = 2.987 af Average Runoff Depth = 2.45"**  
**73.09% Pervious = 10.700 ac 26.91% Impervious = 3.940 ac**

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 157S: E-Basin2 Pervious** Runoff Area=7.230 ac 0.00% Impervious Runoff Depth=0.00"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=0.00 cfs 0.000 af

**Subcatchment 185S: P-Basin 2 Pervious** Runoff Area=3.470 ac 0.00% Impervious Runoff Depth=0.00"  
Flow Length=807' Tc=31.8 min CN=79/0 Runoff=0.00 cfs 0.000 af

**Subcatchment 186S: P-Basin2 Impervious** Runoff Area=3.940 ac 100.00% Impervious Runoff Depth=0.35"  
Tc=5.0 min CN=0/98 Runoff=0.35 cfs 0.116 af

**Pond 178P: Extended Dry Basin** Peak Elev=100.66' Storage=0.088 af Inflow=0.35 cfs 0.116 af  
Outflow=0.02 cfs 0.067 af

**Total Runoff Area = 14.640 ac Runoff Volume = 0.116 af Average Runoff Depth = 0.10"**  
**73.09% Pervious = 10.700 ac 26.91% Impervious = 3.940 ac**



**Summary for Pond 178P: Extended Dry Basin**

Inflow Area = 7.410 ac, 53.17% Impervious, Inflow Depth = 1.60" for 2-year Storm event  
 Inflow = 2.55 cfs @ 7.93 hrs, Volume= 0.988 af  
 Outflow = 0.72 cfs @ 10.01 hrs, Volume= 0.911 af, Atten= 72%, Lag= 125.2 min  
 Primary = 0.72 cfs @ 10.01 hrs, Volume= 0.911 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 101.85' @ 10.01 hrs Surf.Area= 0.191 ac Storage= 0.290 af

Plug-Flow detention time= 301.2 min calculated for 0.911 af (92% of inflow)  
 Center-of-Mass det. time= 247.1 min ( 971.9 - 724.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.656 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
100.00	0.122	0.000	0.000
103.00	0.234	0.534	0.534
103.50	0.255	0.122	0.656

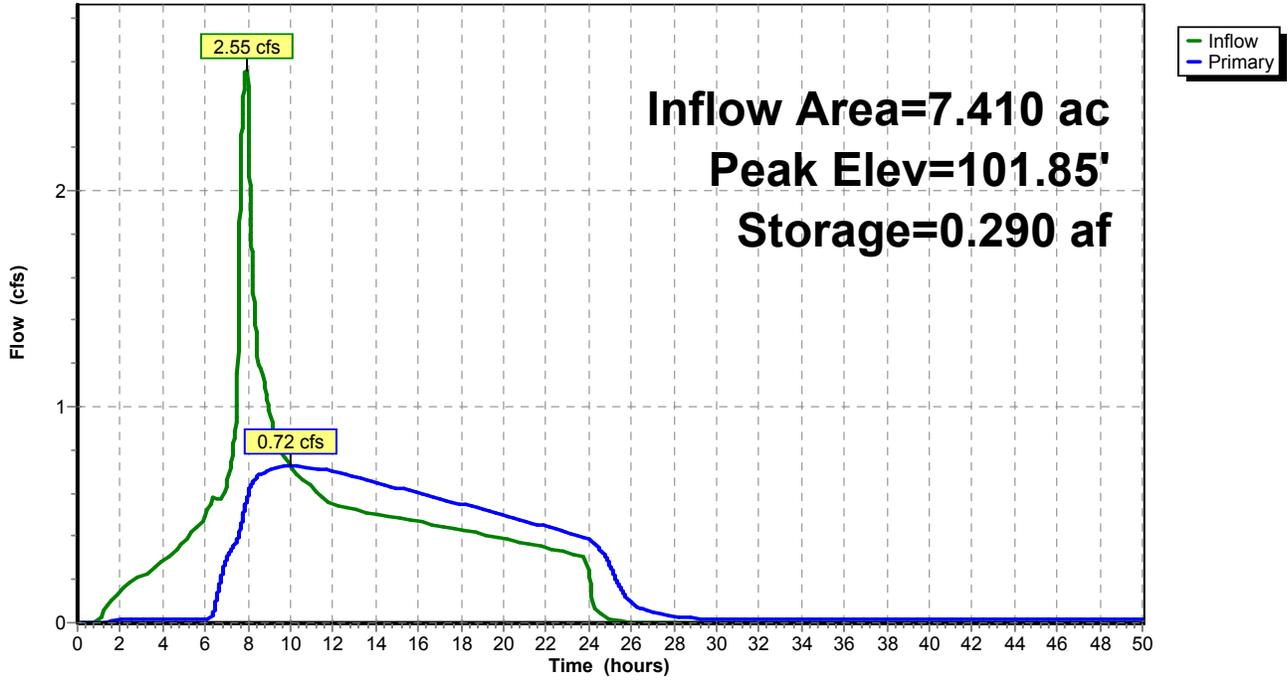
Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	<b>12.0" Round Outlet Pipe</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 96.70' S= 0.0180 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	103.00'	<b>5.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#3	Device 1	101.90'	<b>10.5" Vert. 25-yr Orifice</b> C= 0.600
#4	Device 1	100.80'	<b>5.1" Horiz. 2-yr Orifice</b> C= 0.600 Limited to weir flow at low heads
#5	Device 1	96.50'	<b>0.7" Vert. WQ Orifice</b> C= 0.600
#6	Device 5	100.00'	<b>2.1' long Ditch Inlet</b> 2 End Contraction(s)

**Primary OutFlow** Max=0.72 cfs @ 10.01 hrs HW=101.85' (Free Discharge)

- ↑ 1=Outlet Pipe (Passes 0.72 cfs of 6.39 cfs potential flow)
- ↑ 2=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)
- ↑ 3=25-yr Orifice ( Controls 0.00 cfs)
- ↑ 4=2-yr Orifice (Orifice Controls 0.70 cfs @ 4.94 fps)
- ↑ 5=WQ Orifice (Orifice Controls 0.02 cfs @ 8.82 fps)
- ↑ 6=Ditch Inlet (Passes 0.02 cfs of 14.26 cfs potential flow)

### Pond 178P: Extended Dry Basin

Hydrograph



**Summary for Pond 178P: Extended Dry Basin**

Inflow Area = 7.410 ac, 53.17% Impervious, Inflow Depth = 2.47" for 10-year Storm event  
 Inflow = 3.93 cfs @ 7.94 hrs, Volume= 1.525 af  
 Outflow = 1.60 cfs @ 8.97 hrs, Volume= 1.446 af, Atten= 59%, Lag= 61.7 min  
 Primary = 1.60 cfs @ 8.97 hrs, Volume= 1.446 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 102.35' @ 8.97 hrs Surf.Area= 0.210 ac Storage= 0.391 af

Plug-Flow detention time= 263.4 min calculated for 1.446 af (95% of inflow)  
 Center-of-Mass det. time= 226.1 min ( 942.9 - 716.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.656 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
100.00	0.122	0.000	0.000
103.00	0.234	0.534	0.534
103.50	0.255	0.122	0.656

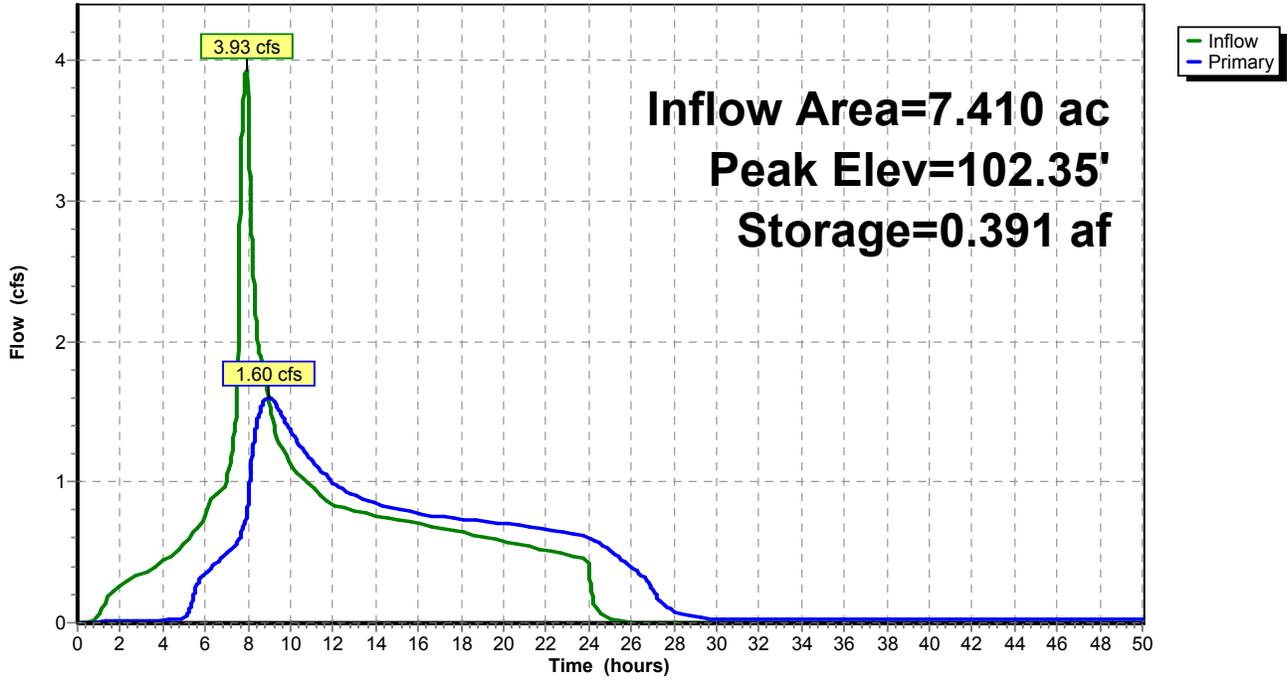
Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	<b>12.0" Round Outlet Pipe</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 96.70' S= 0.0180 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	103.00'	<b>5.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#3	Device 1	101.90'	<b>10.5" Vert. 25-yr Orifice</b> C= 0.600
#4	Device 1	100.80'	<b>5.1" Horiz. 2-yr Orifice</b> C= 0.600 Limited to weir flow at low heads
#5	Device 1	96.50'	<b>0.7" Vert. WQ Orifice</b> C= 0.600
#6	Device 5	100.00'	<b>2.1' long Ditch Inlet</b> 2 End Contraction(s)

**Primary OutFlow** Max=1.60 cfs @ 8.97 hrs HW=102.35' (Free Discharge)

- ↑ 1=Outlet Pipe (Passes 1.60 cfs of 6.93 cfs potential flow)
- ↑ 2=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)
- ↑ 3=25-yr Orifice (Orifice Controls 0.72 cfs @ 2.29 fps)
- ↑ 4=2-yr Orifice (Orifice Controls 0.85 cfs @ 6.00 fps)
- ↑ 5=WQ Orifice (Orifice Controls 0.03 cfs @ 9.45 fps)
- ↑ 6=Ditch Inlet (Passes 0.03 cfs of 19.24 cfs potential flow)

### Pond 178P: Extended Dry Basin

Hydrograph



**Summary for Pond 178P: Extended Dry Basin**

Inflow Area = 7.410 ac, 53.17% Impervious, Inflow Depth = 2.92" for 25-year Storm event  
 Inflow = 4.64 cfs @ 7.94 hrs, Volume= 1.804 af  
 Outflow = 2.17 cfs @ 8.72 hrs, Volume= 1.724 af, Atten= 53%, Lag= 46.4 min  
 Primary = 2.17 cfs @ 8.72 hrs, Volume= 1.724 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 102.53' @ 8.72 hrs Surf.Area= 0.216 ac Storage= 0.428 af

Plug-Flow detention time= 242.2 min calculated for 1.724 af (96% of inflow)  
 Center-of-Mass det. time= 210.0 min ( 923.3 - 713.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.656 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
100.00	0.122	0.000	0.000
103.00	0.234	0.534	0.534
103.50	0.255	0.122	0.656

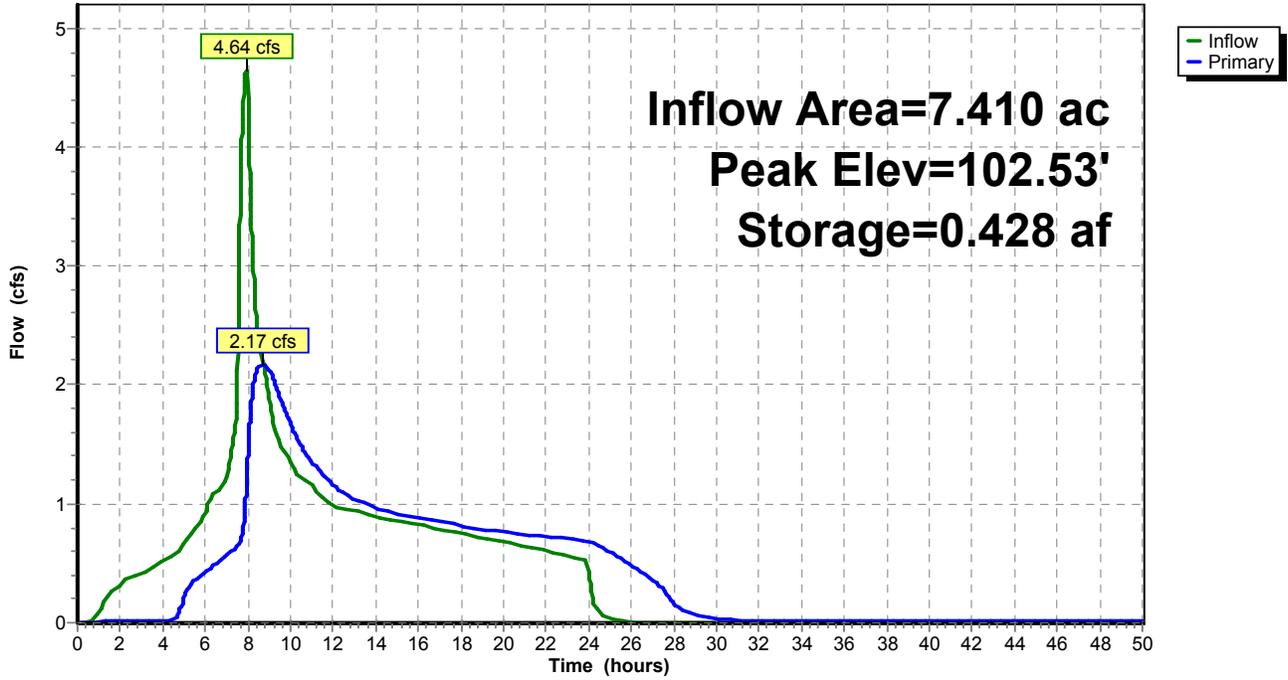
Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	<b>12.0" Round Outlet Pipe</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 96.70' S= 0.0180 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	103.00'	<b>5.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#3	Device 1	101.90'	<b>10.5" Vert. 25-yr Orifice</b> C= 0.600
#4	Device 1	100.80'	<b>5.1" Horiz. 2-yr Orifice</b> C= 0.600 Limited to weir flow at low heads
#5	Device 1	96.50'	<b>0.7" Vert. WQ Orifice</b> C= 0.600
#6	Device 5	100.00'	<b>2.1' long Ditch Inlet</b> 2 End Contraction(s)

**Primary OutFlow** Max=2.17 cfs @ 8.72 hrs HW=102.53' (Free Discharge)

- ↑ 1=Outlet Pipe (Passes 2.17 cfs of 7.10 cfs potential flow)
- ↑ 2=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)
- ↑ 3=25-yr Orifice (Orifice Controls 1.25 cfs @ 2.70 fps)
- ↑ 4=2-yr Orifice (Orifice Controls 0.90 cfs @ 6.33 fps)
- ↑ 5=WQ Orifice (Orifice Controls 0.03 cfs @ 9.67 fps)
- ↑ 6=Ditch Inlet (Passes 0.03 cfs of 20.97 cfs potential flow)

### Pond 178P: Extended Dry Basin

Hydrograph



**Summary for Pond 178P: Extended Dry Basin**

Inflow Area = 7.410 ac, 53.17% Impervious, Inflow Depth = 3.38" for 100-year Storm event  
 Inflow = 5.37 cfs @ 7.94 hrs, Volume= 2.087 af  
 Outflow = 2.76 cfs @ 8.47 hrs, Volume= 2.006 af, Atten= 49%, Lag= 31.3 min  
 Primary = 2.76 cfs @ 8.47 hrs, Volume= 2.006 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 102.71' @ 8.47 hrs Surf.Area= 0.223 ac Storage= 0.468 af

Plug-Flow detention time= 223.2 min calculated for 2.006 af (96% of inflow)  
 Center-of-Mass det. time= 194.8 min ( 905.0 - 710.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.656 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
100.00	0.122	0.000	0.000
103.00	0.234	0.534	0.534
103.50	0.255	0.122	0.656

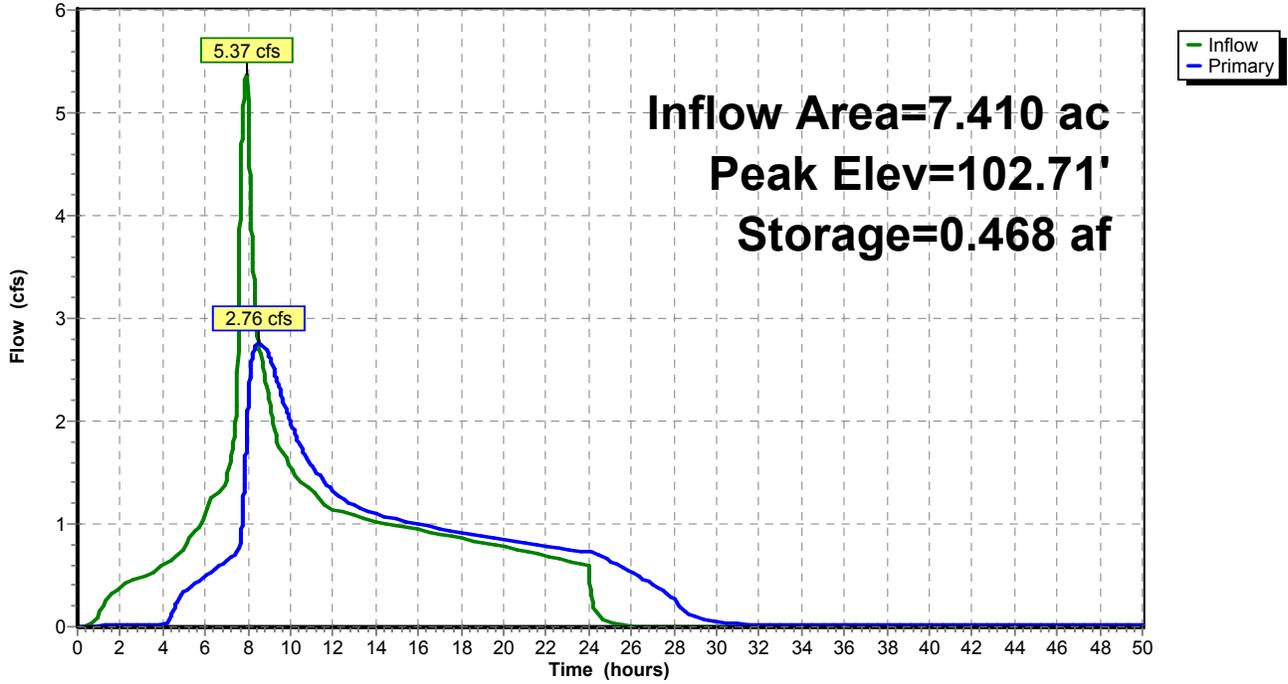
Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	<b>12.0" Round Outlet Pipe</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 96.70' S= 0.0180 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	103.00'	<b>5.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#3	Device 1	101.90'	<b>10.5" Vert. 25-yr Orifice</b> C= 0.600
#4	Device 1	100.80'	<b>5.1" Horiz. 2-yr Orifice</b> C= 0.600 Limited to weir flow at low heads
#5	Device 1	96.50'	<b>0.7" Vert. WQ Orifice</b> C= 0.600
#6	Device 5	100.00'	<b>2.1' long Ditch Inlet</b> 2 End Contraction(s)

**Primary OutFlow** Max=2.76 cfs @ 8.47 hrs HW=102.71' (Free Discharge)

- ↑ 1=Outlet Pipe (Passes 2.76 cfs of 7.29 cfs potential flow)
- ↑ 2=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)
- ↑ 3=25-yr Orifice (Orifice Controls 1.79 cfs @ 3.07 fps)
- ↑ 4=2-yr Orifice (Orifice Controls 0.94 cfs @ 6.66 fps)
- ↑ 5=WQ Orifice (Orifice Controls 0.03 cfs @ 9.88 fps)
- ↑ 6=Ditch Inlet (Passes 0.03 cfs of 22.75 cfs potential flow)

### Pond 178P: Extended Dry Basin

Hydrograph



**Summary for Pond 178P: Extended Dry Basin**

Inflow Area = 7.410 ac, 53.17% Impervious, Inflow Depth = 0.19" for WQ Storm event  
 Inflow = 0.35 cfs @ 7.93 hrs, Volume= 0.116 af  
 Outflow = 0.02 cfs @ 24.06 hrs, Volume= 0.067 af, Atten= 95%, Lag= 968.0 min  
 Primary = 0.02 cfs @ 24.06 hrs, Volume= 0.067 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs  
 Peak Elev= 100.66' @ 24.06 hrs Surf.Area= 0.146 ac Storage= 0.088 af

Plug-Flow detention time= 1,138.4 min calculated for 0.067 af (58% of inflow)  
 Center-of-Mass det. time= 905.5 min ( 1,659.0 - 753.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	0.656 af	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
100.00	0.122	0.000	0.000
103.00	0.234	0.534	0.534
103.50	0.255	0.122	0.656

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	<b>12.0" Round Outlet Pipe</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 96.70' S= 0.0180 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	103.00'	<b>5.0' long Sharp-Crested Rectangular Weir</b> 2 End Contraction(s)
#3	Device 1	101.90'	<b>10.5" Vert. 25-yr Orifice</b> C= 0.600
#4	Device 1	100.80'	<b>5.1" Horiz. 2-yr Orifice</b> C= 0.600 Limited to weir flow at low heads
#5	Device 1	96.50'	<b>0.7" Vert. WQ Orifice</b> C= 0.600
#6	Device 5	100.00'	<b>2.1' long Ditch Inlet</b> 2 End Contraction(s)

**Primary OutFlow** Max=0.02 cfs @ 24.06 hrs HW=100.66' (Free Discharge)

- ↑ 1=Outlet Pipe (Passes 0.02 cfs of 4.87 cfs potential flow)
- ↑ 2=Sharp-Crested Rectangular Weir ( Controls 0.00 cfs)
- ↑ 3=25-yr Orifice ( Controls 0.00 cfs)
- ↑ 4=2-yr Orifice ( Controls 0.00 cfs)
- ↑ 5=WQ Orifice (Orifice Controls 0.02 cfs @ 7.07 fps)
- ↑ 6=Ditch Inlet (Passes 0.02 cfs of 3.42 cfs potential flow)

### Pond 178P: Extended Dry Basin

Hydrograph

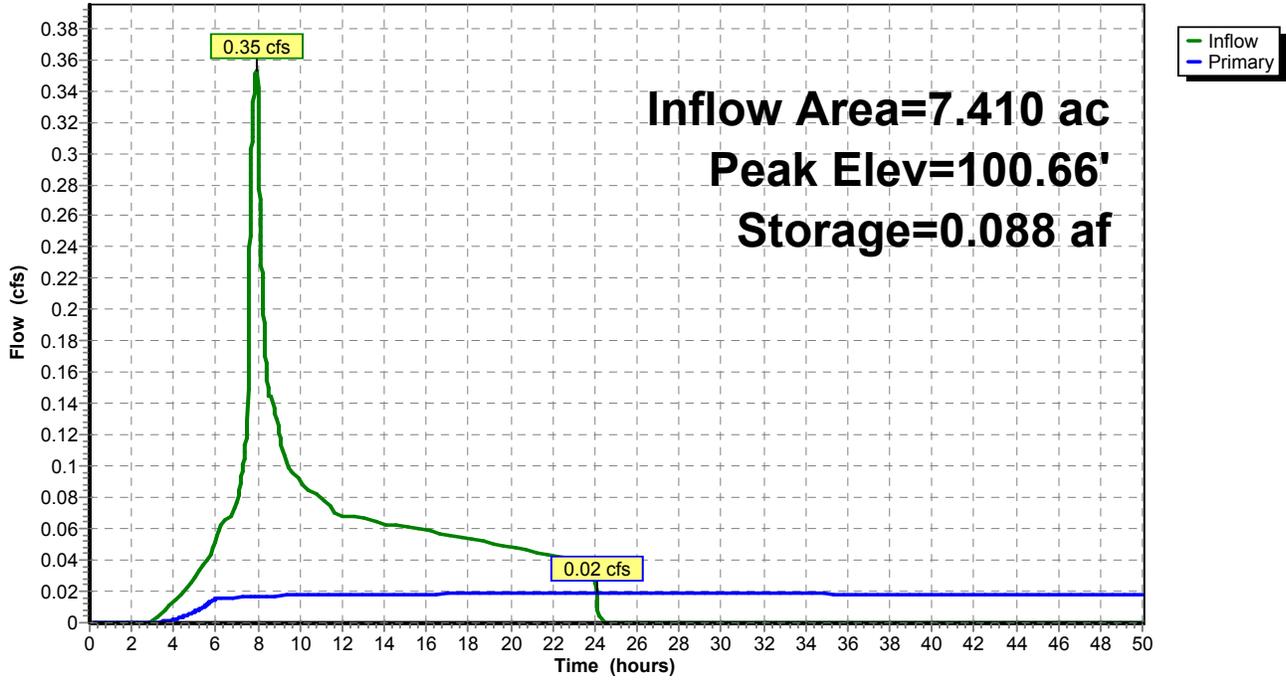
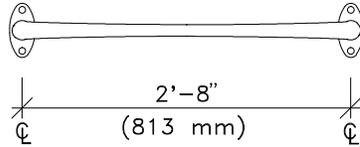
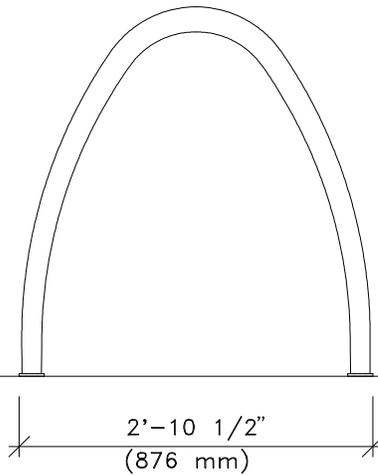


EXHIBIT F  
BICYCLE PARKING SPECIFICATIONS



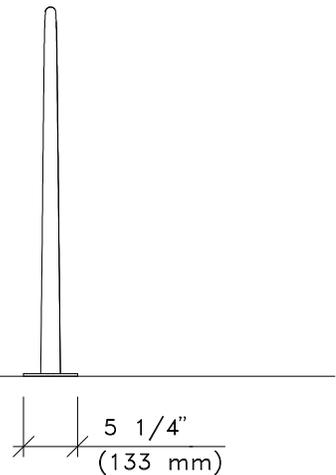
TOP VIEW

3'-0"  
(914 mm)

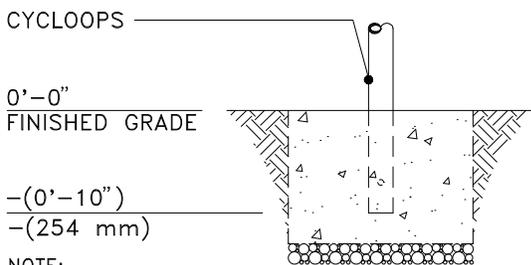


0'-0"  
FINISHED  
GRADE

FRONT VIEW

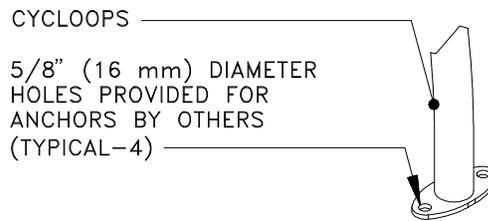


SIDE VIEW



NOTE:  
CONCRETE FOOTING AND NO. 4  
REBAR (BY OTHERS) PER LOCAL  
SOIL CONDITIONS. CONSULT  
PROJECT ENGINEER FOR EXACT  
REQUIREMENTS.

2178-84-E (EMBEDMENT)



2178-84-SM (SURFACE MOUNT)

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Drawing No.  
W-2178-84

Sheet  
1 of 1



Scale  
3/4" = 1'-0"

Drawn by: CL 09-10-11  
Ck'd by:

EXHIBIT G  
TRANSPORTATION MANAGEMENT PLAN

# BEAVERTON SCHOOL DISTRICT VOSE ELEMENTARY SCHOOL TRAFFIC MANAGEMENT PLAN

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## **BEAVERTON SCHOOL DISTRICT**

Beaverton School District (BSD) is the third-largest school district in the State of Oregon and educates nearly 40,000 students in 51 schools.

## **BSD TRANSPORTATION SAFETY GOALS**

BSD places a priority on student safety and is committed to providing safe, reliable and efficient transportation options for students while minimizing the impact traffic can have on the surrounding community. Due to the uniqueness of each site, every school has an individualized plan that outlines best transportation management practices.

## **NEW VOSE ELEMENTARY SCHOOL**

The proposed new Vose Elementary School is located on the south side of SW Denney Road and proposes to provide primary visitor and staff access from a new south leg of the SW King Boulevard/SW Denney Road intersection in Beaverton, Oregon

## **Background**

The attached Transportation Management Plan (TMP) has been developed in response to questions raised by City staff regarding the operation of the daily student drop-off and pick-up activities. The draft TMP has been developed with the objectives of efficiently managing traffic flow during these short periods and minimizing the potential for traffic conflicts and queuing on SW Denney Road. The District will work with the administration at the New Vose Elementary School to implement the steps presented in the TMP.

The District has monitored drop-off and pick-up activities at other District elementary schools and has found that, while minor traffic impacts can occur, with supervision and monitoring these activities can operate safely and efficiently. We believe the attached TMP will accomplish this and are submitting this document to be included as a part of the New Vose Elementary School land use approval.

## **Street System**

SW Denney Road is classified by the City of Beaverton as a collector roadway and has a posted speed of 35 mph. There are currently sidewalks, but no bike lanes along the project frontage on SW Denney Road. There is a posted school zone speed limit in front of the school, at 20 mph.

SW Denney Road is proposed to consist of a 3-lane collector cross-section, including bike lanes, in the future.

## **Traffic Circulation**

### *School Buses*

BSD Student Transportation currently provides bus service before and after school and will do so with the proposed new school. It is anticipated that up to 10 full-sized school buses (40 feet in length) and four special needs buses (24 feet in length) will transport students to and from the new school during normal school hours. All buses will enter and exit the school site via the proposed west site access.

As illustrated on the draft site plan<sup>1</sup> (see Figure 1), all bus loading and unloading is to occur on site. The new bus loading area includes approximately 550 feet of curb space in the circulating aisle, which is sufficient to accommodate all of the 15 buses at once. Sidewalks will be provided between the loading and unloading bus area and both the main school entrance as well as a secondary courtyard entrance in order to ensure safe access.

#### *Private Vehicles*

The site plan provides a designated student drop-off area within the site. Access to this area would be provided via the SW King Boulevard/SW Denney Road signalized intersection. Vehicles would circulate counter-clockwise around the proposed visitor/staff parking. The student drop-off area includes approximately 550 feet of curb space in the circulating aisle, which is sufficient to easily accommodate 22 vehicles at once (based on average vehicle length of 25 feet). A sidewalk is proposed which would provide direct access from the drop off area to both the primary school entrance and the secondary courtyard entrance.

#### *Public Transit*

The Beaverton School District provides bus service for students before and after school. The study area is serviced by TriMet, however, the nearest bus routes are approximately a half mile away (routes 76 – Beaverton/Tualatin & 78 – Beaverton/Lake Oswego, both traveling north-south on Hall Boulevard) and over three-quarters of a mile away (routes 56 – Scholls Ferry Road & 92 – South Beaverton Express, both traveling north-south on Scholls Ferry Road).

#### *Pedestrian and Bicycle Traffic*

Existing peak period (7-9 a.m., 2-6 p.m.) traffic counts at nearby intersections show that very few bicyclists travel along SW Denney Road during the afternoon school peak hour (2:30-3:30 p.m), typically fewer than five. Similar numbers of bicyclists were counted along SW Denney Road during the morning and evening peak hour<sup>2</sup>. Bike lanes are currently only provided along SW Denney Road adjacent to more recent developments. Pedestrian activity along the collector roadway is much higher, particularly near the school site. The intersection of SW Denney Road/SW King Boulevard experienced the most pedestrian activity, primarily associated with the existing Vose Elementary School, with a peak of about 330 pedestrians crossing the intersection during the school peak hour.

Sidewalks are available along both sides of SW Denney Road. The intersection of SW King Boulevard/SW Denney Road is signalized and will be reconstructed as part of the proposed reconstruction of Vose Elementary to include a south leg of the intersection. The intersection will feature new ADA ramps on the south side and controlled pedestrian crossings with pushbuttons and pedestrian countdown timers across the north, west, and south legs. The pedestrian crossing along the east leg is closed.

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<sup>1</sup> Beaverton School District Vose Elementary School Site Plan, November 5, 2015, DLR Group and Cameron McCarthy.

<sup>2</sup> Intersection turn movement counts collected at study intersections on May 13, 14 & 19, and October 13-15, 2015 between 7-9 a.m., 2-4 p.m. and 4-6 p.m.

# Transportation Management Plan

## 1. Provide safe pedestrian and bicycle access to the school

### *Pedestrian/Bicycle Routes*

The site plan shows adequate pedestrian and bicycle facilities on the site, sufficient bicycle parking will be provided and all sidewalks will be constructed to meet ADA requirements.<sup>3</sup> The plan shows sidewalks along the entire school frontage along SW Denney Road. The plan also provides pedestrian connections to adjacent neighborhoods along the southern and western edge of the school. The Beaverton Transportation System Plan<sup>4</sup> shows a proposed community multi-use path along the north side of SW Denney Road between the existing Fanno Creek Trail crossing, near SW 111<sup>th</sup> Street, and SW King Boulevard.

### *Street Crossings*

The proposed traffic signal modification at SW King Boulevard/SW Denney Road at the school access continues to provide a protected pedestrian crossing across the collector roadway. This allows access to the residential developments to the north. Protected pedestrian crossings are proposed along the north, south and west approaches. The pedestrian crossing across the east leg is closed and most students accessing the school come on the west approach, which leads directly to the front entrance to the school. Since morning access to the school is proposed via the courtyard entrance to the south, students and visitors accessing the site can follow the sidewalk along the east side of the school, adjacent to the visitor/staff parking lot.

## 2. Provide convenient and efficient traffic circulation

### *Private Vehicles*

School administration will provide educational information to students and parents noting that drop-off and pick-up of students should be in the designated drop off area that circulates around the proposed east parking lot accessed via the SW King Boulevard/SW Denney Road intersection. Some staff will be asked to park in the proposed west parking lot that is accessed via the west school driveway on SW Denney Road.

Designated school staff will guide parents arriving in the designated drop-off area to proceed as far south as possible before dropping of their student(s). It is anticipated that approximately 10-12 vehicles can drop students off simultaneously. Vehicles can pull out to exit the parking lot as soon as their students have exited their vehicle and school staff will guide queued vehicles to the empty spaces, waving them as far forward as possible. Once students have been dropped off, there is available stacking for about 16-18 vehicles before leaving the site. Vehicles exiting east on Denney Road can use the right-out only egress, exiting as quickly as gaps in the traffic stream allow and vehicles headed north or west out of the site will exit at the traffic signal.

### *Buses*

All buses will enter the school site from the west site access on SW Denney Road. As illustrated on the site plan, all bus loading and unloading is to occur on site. The new bus loading area includes approximately 550 feet of curb space in the circulating aisle, which is sufficient to accommodate 15 buses (10 full size and 4 SPED) at once. Alternately, this area could also accommodate approximately 22 typical motor vehicles for events after school hours.

## 3. Provide adequate bicycle commuting amenities

City of Beaverton Development Code (60.30.10.5.B.) requires that elementary schools provide one long-term bicycle parking space per 9 students. With a maximum capacity of 750 students for

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<sup>3</sup> *ADA Accessibility Guidelines for Buildings and Facilities*, Federal Highway Administration, May 2012.

<sup>4</sup> *South Cooper Mountain Concept Plan*, City of Beaverton, September 2014.

the new elementary school, this equates to a minimum of 84 bicycle parking spaces. Long-term spaces are designed to accommodate persons that can be expected to leave their bicycle parked longer than two hours. School buildings are exempt from the City's requirement to provide cover or shelter for long term parking spaces.

#### **4. Transportation Coordinator**

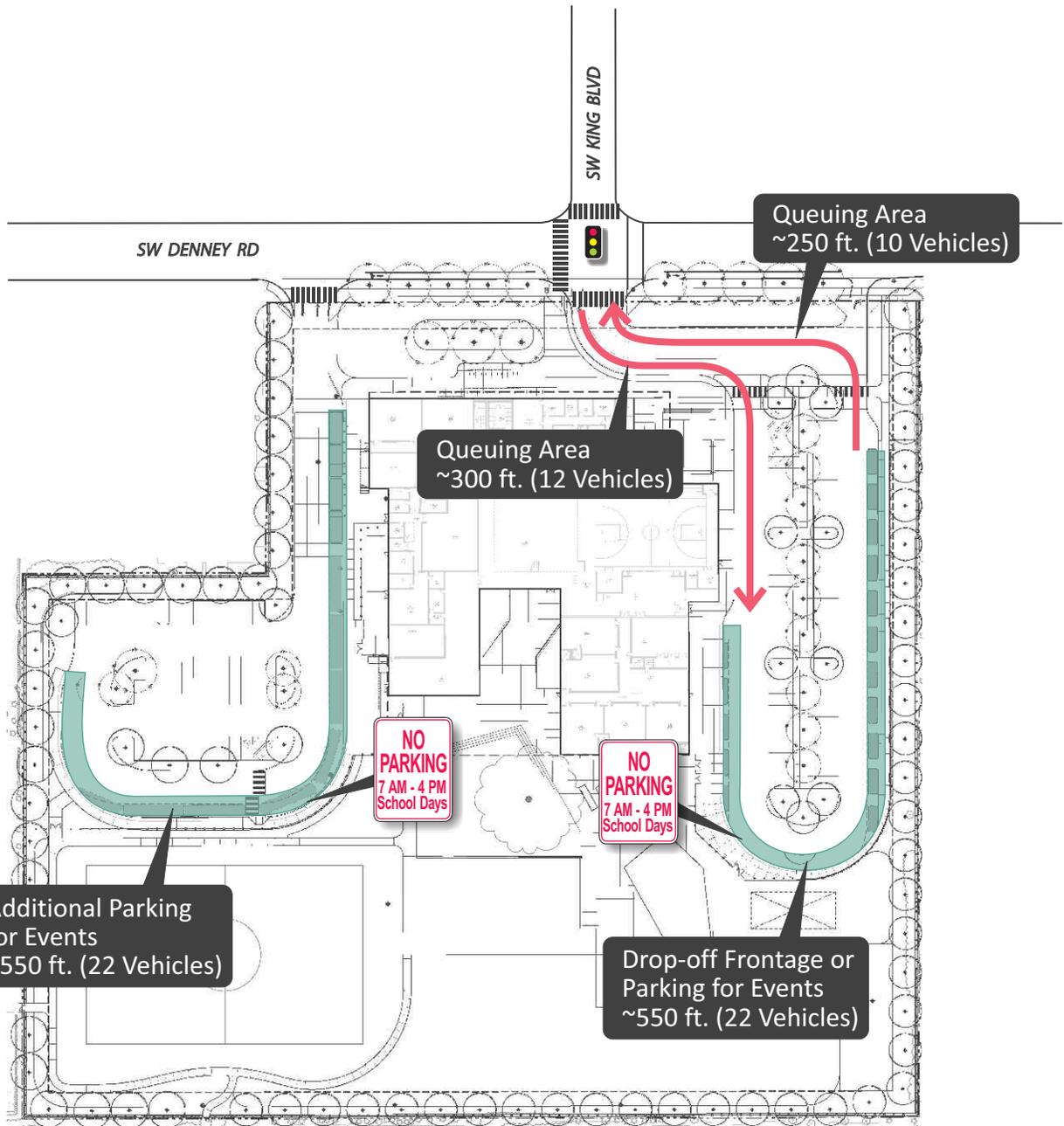
The proposed new elementary school will annually designate a Transportation Coordinator (which would likely be the school principal or a staff member). The Transportation Coordinator will be the primary contact person for neighbors who have traffic or transportation concerns; will develop traffic management procedures for large events and coordinate staff and parent cooperation in these procedures; and will provide transit and rideshare information, including BSD transit incentives. The Transportation Coordinator will also communicate with parents and students about the effects excessive noise and littering have on the surrounding community and will be responsible for sending information regarding drop-off and pick-up procedures to parents and guardians as noted below.

#### **5. Identify good neighbor contacts and processes**

The reconstructed elementary school will be a valued asset in the neighborhood. The district and the school are committed to being a good neighbor and promoting safe and appropriate transportation management. The Transportation Coordinator will provide educational information to school staff, parents and neighbors identifying appropriate circulation and parking practices, pick-up and drop-off procedures, and pedestrian/bicycle route maps. These materials will identify a School contact name and number that neighbors may contact if any questions or concerns may arise. These materials will be sent to parents and guardians at least two weeks prior to the beginning of classes in the fall of every year.

#### **6. Parking Management**

107 on-site parking spaces are proposed. This allows 77 spaces to be dedicated to staff, with the remaining 30 spaces for parent and visitor parking. To accommodate parking needs for events, it is recommended that the 44 additional spaces (22 in the west lot and 22 in the east lot) be provided on-site by utilizing internal drop-off areas during events for a net total of up to 151 parking spaces (shown on the preliminary site plan). The drop-off area will be signed to allow vehicle parking after school hours, as shown in the attached figure.



**LEGEND**

 - Traffic Signal

**DKS**



No Scale

**Figure 1**

**PROPOSED SITE PLAN  
ON-SITE VEHICLE CAPACITY**

Source: DLR Group and Cameron McCarthy

EXHIBIT H  
LIGHTING DETAILS

