Drive-thru Coffee Shop
29702 SW Town Center Loop

Owner/Applicant
Douglas Fry
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Authorized Representative:
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December 18, 2019

BACKGROUND INFORMATION

Site Address:
29702 SW Town Center Loop
Wilsonville, Oregon 97070

Taxlot ID:
31W13CC00500

RNO:
1450600

County:
Clackamas County

Lot Size:
0.52 Acres

Comprehensive Plan:
Commercial – Town Center

Zone:
Planned Development Commercial Town Center (PDC-TC)

Overlays:
Interchange Area Management Plan (IAMP)
Lighting Overlay Zone 3 (LZ 3)

Application Types:
Stage I
Stage II
Site Design Review
Sign Permit

Table of Contents

SUMMARY OF PROPOSAL

The project proposes the construction of a single story structure, detached trash enclosure, and drive-through aisle for the use of a coffee shop kiosk.

The site is located on the SE corner of Town Center Loop W and Park Pl. The easterly and southerly lot lines of the lot are bounded by private property. As such, vehicular access to the lot is available via easements associated with the adjacent private property located at 8229 SW Wilsonville Rd, commonly known as the Wilsonville Town Center.

The single story structure is 509 SF and positioned in the SE corner of the lot. The design utilizes a large canopy that provides environmental protection for pedestrian patrons, as well as partial coverage for vehicular patrons.

The site layout has been designed to maximize the vehicular queue while conforming to the developmental standards of Wilsonville. This has been achieved by providing ample distance between the drive-through ingress and the intersection of the public Right-Of-Way accessed via the neighboring property.

The development proposes reuse of the existing conditions as much as physically possible. This includes the reuse of: sidewalks, curbs, parking stalls, landscaping, paving, etc.

DISCUSSION ITEMS

RESPONSE FINDINGS TO CODE CRITERIA

4.001 DEFINITIONS		
Code	Requirement	Response
	List of definitions as defined by the Development Code	No Response required.

4.116 STANDARDS APPLYING TO COMMERCIAL DEVELOPMENTS IN ANY ZONE		
Code	Requirement	Response
(.01)	Commercial developments shall be planned in the form of centers or complexes as provided in the City's Comprehensive Plan. As noted in the Comprehensive Plan, Wilsonville's focus on centers or complexes is intended to limit strip commercial development.	Commercial Development aligns with Town Center Master Plan.
(.02)	Where the land use map of Wilsonville's Comprehensive Plan calls for "Office Commercial" development...	Not Applicable. Comprehensive plan calls for "Commercial – Town Center".
(.03)	Where the land use map of Wilsonville's Comprehensive Plan calls for "Commercial/Industrial mixed use"...	Not Applicable. Comprehensive plan calls for "Commercial – Town Center".
(.04)	Where the land use map of Wilsonville's Comprehensive Plan calls for "Residential/Commercial mixed use"...	Not Applicable. Comprehensive plan calls for "Commercial – Town Center".
(.05)	All businesses, service or processing, shall be conducted wholly within a completely enclosed building; except for Outdoor seating areas associated with food and drink establishments on private property, or on public easements, provided the area and activities conform to ADA standards and do not interfere with public uses, safety, access or circulation.	Project use includes outdoor seating areas associated with food and drink. It meets the accessibility standards, and does not interfere with public uses, safety, access or circulation.
(.06)	In any Commercial Development directly across the street from any Residential District...	Not Applicable. No residential zones in the vicinity.
(.07)	Uses shall be limited to those which will meet the performance standards specified in Section 4.135(.05).	4.135(.05): References Industrial uses and their inadvertent byproducts. The proposed use is a coffee shop kiosk, and the neighboring Town Center properties will not be impacted by industrial byproducts.
(.08)	Corner lots shall conform to the vision clearance standards set forth in Section 4.177	See response under 4.177.

(.09)	Trailer, trailer houses, mobile coaches, or any altered variation thereof shall not be used for the purpose of conducting a trade or calling or for storage of material unless approved for such purpose as a temporary use.	Not Applicable. No trailer, trailer house, mobile coach, or variant thereof proposed.
(.10)A	No structure shall be erected closer than the right-of-way line then existing or the officially planned right-of-way of any public, county, or state road.	Proposed design is contained within the boundaries of the property.
(.10)B	Minimum Front Yard Setback: None	No response needed
(.10)C	Minimum Rear Yard Setback: None	No response needed
(.10)D	Minimum Side Yard Setback: None	No response needed
(.10)E	Maximum Building Height: 35'0”	Proposed structure height is 19'2”
(.10)F	Minimum Lot Size: None	No response needed
(.10)G	Maximum Lot Coverage: None	No response needed
(.10)H	Minimum Street Frontage: None	No response needed
(.11)	Hotels or Motels	Not Applicable. Use not a Hotel or Motel.
(.12)	Off-Street Parking is to be as specified in Section 4.155	See response under 4.155
(.13)	Signs are subject to the standards of Sections 4.156.01 through 4.156.11	See response under 4.156
(.14)	Prohibited Uses include: trailer, trailer house, or mobile coach as a residence is prohibited and any use that violates the performance standards of Section 4.135(.05)	No trailer, trailer house, or mobile coach proposed. No industrial use proposed.

4.118 STANDARDS APPLYING TO ALL PLANNED DEVELOPMENT ZONES

Code	Requirement	Response
(.01)	Height Guidelines: In “S” overlay zones...	Not Applicable. Lot not in an “S” zone.
(.02)	Underground Utilities shall be governed by Sections 4.300 to 4.320. All utilities above ground shall be located so as to minimize adverse impacts on the site and neighboring properties.	No utilities proposed above ground.
(.03)	Development board	C.1 Waiver requested for maximum number of parking spaces. Site is located in Town Center and parking spaces on property are already built and in use by entire center. Proposal looks to mitigate site disruption.

(.04)	The Planning Director and Development Review Board shall, in making their determination of compliance in attaching conditions, consider the effects of this action on availability and cost.	Minimum requirements of the Comprehensive Plan and Code is being met.
(.05)	The Planning Director, Development Review Board, or on appeal, the City Council, may as a condition of approval for any development for which an application is submitted, require that portions of the tract or tracts under consideration be set aside, improved, conveyed or dedicated for the following uses:	No response required.
(.06)	Nothing in this Code shall prevent the owner of a site that is less than two (2) acres in size from filing an application to rezone and develop the site as a Planned Development.	No new Planned Development proposed.
(.07)	Density Transfers...	No Density Transfers proposed
(.08)	Wetland Mitigation and other mitigation for lost or damaged resources...	No wetlands within the vicinity
(.09)	Minimizing grading, removal of native vegetation, disturbance and removal of native soils, and impervious area; Minimizing adverse hydrological impacts on water resources; minimizing impacts on wildlife corridors	Site is relatively flat and no significant grading proposed. Where existing trees are located, are planned to remain. Site is located in the Wilsonville Town Center and no Significant Resource Overlay Zone in the vicinity.

4.131 PDC - PLANNED DEVELOPMENT COMMERCIAL ZONE

Code	Requirement	Response
(.01)	Uses that are typically permitted: 1. Retail business, goods and sales	Proposed use is a coffee shop kiosk
(.02)	Prohibited uses. ..	Proposed use is not prohibited
(.03)1	The Development Review Board shall determine appropriate conditions of approval...	Town Center Master Plan is already developed and built with complete circulation systems. Proposed design connects to the existing systems without obstructing any existing circulation.
(.03)2-3	Code references residential developments	Not Applicable. Proposed use does not include residential.

4.131.05 PDC-TC (TOWN CENTER COMMERCIAL) ZONE

Code	Requirement	Response
(.01)	The purpose of this zoning is to permit ….	No response required.

(.02)	Examples of uses that are typically permitted: B. Planned development permitted commercial uses, including department stores and shopping centers.	Proposed use is a coffee shop kiosk
(.03)	Examples of uses that are typically recommended: D. Fast Food Service	Proposed use is a coffee shop kiosk
(.04)	Accessory uses that are typically permitted: A. Any accessory use and structure not otherwise prohibited customarily accessory and incidental to any permitted principal use. B. Temporary buildings and uses incidental to the development of principal facilities, such temporary structures to be removed upon completion of the work or abandonment of the project. In no case shall such buildings remain on the premises longer than ten (10) days after the receipt of a Certificate of Occupancy or the expiration of construction permits.	No accessory use or temporary structure proposed.
(.05)	The procedures, regulations and restrictions applicable to the Town Center District shall conform to those set forth in Section 4.140 of this Code as the Development Review Board may deem necessary to achieve the purposes of the zone	See response under 4.140
(.06)	The Town Center District consists of all those certain lands ….	Site is located within the Town Center District.
(.07)	The PDC-TC shall be subject to the same block and access standards as the remainder of the PDC zone.	See response under 4.131

4.133 WILSONVILLE ROAD INTERCHANGE AREA MANAGEMENT PLAN (IAMP) OVERLAY ZONE		
Code	Requirement	Response
.01	The purpose of the IAMP Overlay Zone...	No response required.
.02	The provisions of this Section shall apply to land use applications subject to Section 4.004, Development Permit Required, for parcels wholly or partially within the IAMP Overlay Zone	Site is located within IAMP Overlay Zone
.03	Uses allowed in the underlying zoning districts are allowed subject to other applicable provisions in the Code and this Section.	Proposed use is a coffee shop kiosk
.04(01)	Development or redevelopment proposals for parcels two (2) acres or less that are subject to	Parcel is less than 2 acres and falls under requirements of Section 4.004

	the requirements of Section 4.004 Development Permit	
.04(02)	Planned Development applications, pursuant to Section 4.140, as part of Preliminary Approval (Stage One)	See response under 4.140
.04(03)	Final Approval (Stage Two) Planned Development applications, pursuant to Section 4.140, to the extent that subsequent phases of development differ from the approved preliminary development plan, or where one or more of the following elements are not identified for subsequent phases: A. Land uses. B. Building location. C. Building size. D. Internal circulation.	See response under 4.140
.04(04)	A. Access to public streets within the IAMP Overlay Zone shall be reviewed for consistency with the IAMP Access Management Plan. B. Approval of access to City streets within the IAMP Overlay Zone shall be granted only after joint review by the City and the Oregon Department of Transportation (ODOT). Coordination of this review will occur pursuant to Section 4.133.05(.02). C. Access approval is a Class II decision, pursuant to Section 4.030, and is based on the standards contained in this Section, the provisions in Section 4.177 and Section 4.237 of this Code, and the Access Management Plan in the Wilsonville Road Interchange Area Management Plan. 1. Where the recommendations of the Access Management Plan conflict with other access and spacing requirements in Section 4.177 of this Code, the IAMP Access Management Plan shall govern. 2. Where development proposals are inconsistent with the Access Management Plan, modifications to the Access Management Plan are required pursuant to (.03) in this Section.	Proposed site access utilizes access easements previously established with neighboring property. No changes to public streets, nor access to them, are being proposed.
.04(05)	Prior to approving access for tax lots that are identified in the Access Management Plan (see Table 3 and Figure 5 in the Wilsonville Road Interchange Area Management Plan), the City shall require that:	Access to Public right-of-ways and contiguous properties as outlined in the IAMP, are already established thru the Town Center Master Plan. Proposal does not modify access routes.

	1. The applicant demonstrate how cross access can be accomplished for sites contiguous to the subject property or properties, consistent with the circulation and planned local street network shown in the Interchange Area Management Plan; 2. If access across an adjacent parcel or parcels is necessary for the development of the subject site, a signed cross-access agreement is submitted with the application; and, 3. For applications reviewed as part of a subdivision approval process, necessary cross-access easements are shown and recorded on the final plat. Access widths shall consistent with City Public Works standards unless based on a Transportation Impact Analysis, developed pursuant to Section 4.133.05(.01) and approved by the City Engineer.	
.04(06)	Recommended actions in the Access Management Plan are based on property configurations development application approvals and ownership existing at the time of the Wilsonville Road Interchange Area Management Plan's adoption. Lot consolidation and other land use actions may necessitate an amendment to the Access Management Plan.	Proposed design utilizes existing lots of record, established easements, and access to public Right-of-way. No changes proposed.
.05(.01)	Traffic Impact Analysis purpose, when required, requirements of the Traffic Impact Analysis, the approval criteria, and conditions of approval.	The Traffic Impact Analysis has been performed in accordance with City criteria.
.05(.02)	Upon City deeming application complete, which includes traffic study, regulation states City procedures and policies regarding ODOT coordination	The Traffic Impact Analysis has been performed in accordance with City criteria.
.06	If the proposed land use is inconsistent with the current Comprehensive Plan Map or Zoning Map...	Use is not inconsistent with the current maps.

4.140 PLANNED DEVELOPMENT REGULATIONS

Code	Requirement	Response
(.01)	Purpose	No response required.
(.02)	Lot Qualification. A. Planned Development may be established on lots which are suitable for and of a size to be planned and developed in a manner consistent with the purposes and objectives of Section	Site is located within existing PDC-TC zone.

	4.140. B. Any site designated for development in the Comprehensive Plan may be developed as a Planned Development, provided that it is zoned "PD." All sites which are greater than two (2) acres in size, and designated in the Comprehensive Plan for commercial, residential, or industrial use shall be developed as Planned Developments, unless approved for other uses permitted by the Development Code. Smaller sites may also be developed through the City's PD procedures, provided that the location, size, lot configuration, topography, open space and natural vegetation of the site warrant such development.	
(.03)	Ownership. A. The tract or tracts of land included in a proposed Planned Development must be in one (1) ownership or control or the subject of a joint application by the owners of all the property included. The holder of a written option to purchase, with written authorization by the owner to make applications, shall be deemed the owner of such land for the purposes of Section 4.140.	Ownership/control of the property is in one ownership.
(.04)	Professional Design The applicant for all proposed Planned Developments shall certify that the professional services of the appropriate professionals have been utilized in the planning process for development.	Licensed professionals have been retained including, architect, landscape architect and registered engineers. Casey McGuirl of McGuirl Designs & Architecture, will be designated responsible for conferring with planning staff and will be the professional coordinator of the design team.
(.05)	Planned Development Permit Process outlining City requirements and processes.	Proposed development has incurred a Pre-application conference and has submitted for Stage I and Stage II Development Review applications.
(.06)	Staff Report A. The planning staff shall prepare a report of its findings and conclusions as to whether the use contemplated is consistent with the land use designated on the Comprehensive Plan. If there is a disagreement as to whether the use contemplated is consistent, the applicant, by request, or the staff, may take the preliminary information provided to the Development Review Board for a use interpretation. B. The applicant may proceed to apply for Stage	To the best of our knowledge, no report has been provided to the applicant or design team regarding the City's findings and conclusions. However, through the numerous correspondences that have occurred, it is in our opinion that staff has no objections to the proposal and the Stage I application has been submitted.

	I - Preliminary Approval – upon determination by either staff or the Development Review Board that the use contemplated is consistent with the Comprehensive Plan.	
(.07)A	Preliminary Approval (Stage One) : Applications shall be made by the owner. Be filed on a form provided by and with the City. Set forth the professional coordinator and professional design team State whether the development will include mixed land uses The application shall include: A boundary survey Topographic information Tabulation of the Land Area to be devoted to various uses Stage development schedule A commitment by the applicant to provide a performance bond for the capital improvements if required A schedule of proposed phases Statement of anticipated waivers from any applicable site development standards.	Included with this package is the said form filled out accordingly with the City. The professional coordinator is Casey McGuirl with McGuirl Designs & Architecture. No mixed use has been proposed Attached in the package is a boundary survey See civil plans for topographic information See architectural plans for Tabulation of Land Area Owner is committed to provide performance bonds as will be outlined in the conditions of approval.
(.07)B	The application shall include: 1. A boundary survey or a certified boundary description by a registered engineer or licensed surveyor. 2. Topographic information as set forth in Section 4.035 3. A tabulation of the land area to be devoted to various uses, and a calculation of the average residential density per net acre. 4. A stage development schedule demonstrating that the developer intends receive Stage II approval within two (2) years of receiving Stage I approval, and to commence construction within two (2) years after the approval of the final development plan, and will proceed diligently to completion; unless a phased development schedule has been approved; in which case adherence to that schedule shall be considered to constitute diligent pursuit of project completion. 5. A commitment by the applicant to provide in the Final Approval (Stage II) a performance bond or other acceptable security for the capital improvements required by the project. 6. If it is proposed that the final development	1. Boundary survey provided 2. The topographic information is located on the Civil site plan 3. The tabulation of land area is located on the architectural site plan 4. Both Stage I and Stage II applications have been submitted. 5. Owner acknowledges that any required performance bonds would be associated with the project's conditions of approval. 6. The project does not have any planned phases. 7. The project does not have any planned waivers

	plan will be executed in stages, a schedule thereof shall be provided. 7. Statement of anticipated waivers from any of the applicable site development standards.	
(.07)C	Stage I approval shall be considered by the Development Review Board as follows: Public hearing to determine if proposal has met the requirements of the this code.	No response required.
(.08)	Not stated	No response required.
(.09)A	Unless an extension has been granted by the Development Review Board, within two (2) years after the approval or modified approval of a preliminary development plan (Stage I)...	Stage II being filed simultaneously with Stage I
(.09)B	After such hearing, the Development Review Board ...	No response required.
(.09)C	The final plan shall conform in all major respects with the approved preliminary development plan, and shall include all information included in the preliminary plan plus the following: 1. The location of water, sewerage and drainage facilities; 2. Preliminary building and landscaping plans and elevations, sufficient to indicate the general character of the development; 3. The general type and location of signs; 4. Topographic information as set forth in Section 4.035; 5. A map indicating the types and locations of all proposed uses; and 6. A grading plan.	1. See Civil Plan for location of water, sewer, and drainage. 2. See Architectural Plan for building and elevations 3. See Architectural Plan for sign types and locations. Refer to Sign package for additional details 4. See Civil Plan for topographic information 5. See Architectural plan identifies structure locations and uses. 6. See Civil Plan for grading plan.
(.09)D	The final plan shall be sufficiently detailed to indicate fully the ultimate operation and appearance of the development or phase of development. However, Site Design Review is a separate and more detailed review of proposed design features, subject to the standards of Section 4.400	Site Design Review is being submitted concurrently. Please see response under 4.400.
(.09)E	Copies of legal documents required by the Development Review Board for dedication or reservation of public facilities, or for the creation of a non-profit homeowner's association, shall also be submitted	See attached Legal Documents
(.09)F	Within thirty (30) days after the filing of the final development plan, the Planning staff shall forward such development plan and the	No response required.

	original application to the Tualatin Valley Fire and Rescue District, if applicable, and other agencies involved for review of public improvements, including streets, sewers and drainage.	
(.09)G	Upon receipt of the final development plan, the Development Review Board shall conduct a public hearing and examine such plan and determine	No response required.
(.09)H	If the Development Review Board permits the applicant to revise the plan, it shall be resubmitted as a final development plan within sixty (60) days	No response required.
(.09)I	All Stage II Site Development plan approvals shall expire two years after their approval date...	No response required.
(.09)J	A planned development permit may be granted by the Development Review Board...	No response required.
(.09)K	Whenever a Planned Development permit has been granted, and so long as the permit is in effect, the boundary of the Planned Development shall be indicated on the Zoning Map of the City of Wilsonville as the appropriate "PD" Zone.	No response required.
(.09)L	The applicant shall agree in writing to be bound, for her/himself and her/his successors in interest, by the conditions prescribed for approval of a development.	No response required.
(.09)M	In the event of a failure to comply with the approved plan or any prescribed condition of approval, including failure to comply with the stage development schedule, the Development Review Board may, after notice and hearing, revoke a Planned Development permit.	No response required.
(.10)	Applicants with Stage I or Master Plan approvals occurring after June 2, 2003 may apply to vest the right to use available transportation capacity at the intersections of Wilsonville Road with Boone's Ferry Road and with Town Center Loop West, and/or the I-5 interchange.	Not Applicable

4.154 On-site Pedestrian Access and Circulation

Code	Requirement	Response

(.01)A	The purpose of this section is to...	No response required.
(.01)B.1	Continuous Pathway System. A pedestrian pathway system shall extend throughout the development site and connect to adjacent sidewalks, and to all future phases of the development, as applicable.	Pedestrian pathways exists along SW Town Center Loop W and SW Park Place. Proposed plan will keep these pathways and add a new connection from SW Park Place to the proposed coffee shop and adjacent outdoor gathering plaza.
(.01)B.2	Pathways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas/playgrounds, and public rights-of-way and crosswalks	The pathways are free from hazards and provide a reasonably smooth and consistent surface. The pathway is reasonably direct. The pathway connects to all primary building entrances and meets ADA requirements. Parking lot is less than 3 acres and does not require an internal pathway.
(.01)B.3	Except as required for crosswalks, per subsection 4, below, where a pathway abuts a driveway or street it shall be vertically or horizontally separated from the vehicular lane.	Pathways are vertically separated by 6”
(.01)B.4	Where a pathway crosses a parking area or driveway, it shall be clearly marked with contrasting paint or paving materials	The pathway is clearly marked with contrasting paint.
(.01)B.5	Pathway Width and Surface. Primary pathways shall be constructed of concrete, asphalt, brick/masonry pavers, or other durable surface, and not less than five (5) feet wide	The pathway is constructed of concrete except at crosswalks, where it uses asphalt and has a width of no less than 5ft.
(.01)B.6	All pathways shall be clearly marked with appropriate standard signs.	No signs for pathways proposed, unless required as a condition of approval.

4.155 General Regulations - Parking, Loading and Bicycle Parking		
Code	Requirement	Response
(.01)	Purpose....	No response required.
(.02)A	The provision and maintenance of off-street parking spaces is a continuing obligation of the property owner. The standards set forth herein shall be considered by the Development Review Board as minimum criteria. 1. The Board shall have the authority to grant variances or planned development waivers to these standards in keeping with the purposes and objectives set forth in the Comprehensive Plan and this Code. 2. Waivers to the parking, loading, or bicycle parking standards shall only be issued upon a	Proposal utilizes an existing parking lot, previously approved, and does not anticipate any waivers.

	findings that the resulting development will have no significant adverse impact on the surrounding neighborhood, and the community, and that the development considered as a whole meets the purposes of this section.	
(.02)B	No area shall be considered a parking space unless it can be shown that the area is accessible and usable for that purpose, and has maneuvering area for the vehicles, as determined by the Planning Director.	Proposal utilizes an existing parking lot, previously approved, modified spaces due to new work, are in line with the standards set.
(.02)C	In cases of enlargement of a building or a change of use from that existing on the effective date of this Code, the number of parking spaces required shall be based on the additional floor area of the enlarged or additional building, or changed use, as set forth in this Section. Current development standards, including parking area landscaping and screening, shall apply only to the additional approved parking area.	Proposal is a change in use from the existing Certificate of Occupancy for the parcel. The required minimum parking spaces are being provided and the parking area is not increasing in area.
(.02)D	In the event several uses occupy a single structure or parcel of land...	Not Applicable. Proposal is a single use
(.02)E	Owners of two (2) or more uses, structures, or parcels of land may utilize jointly...	Not Applicable. Proposal is a single use with ownership in one parcel.
(.02)F	Off-street parking spaces existing prior to the effective date of this Code may be included in the amount necessary to meet the requirements in case of subsequent enlargement of the building or use to which such spaces are necessary.	Existing off-street parking meets the requirements of proposal which is 5 stalls. (9.9/1000SF)
(.02)G	Except for single-family dwellings, the vehicle parking spaces required by this Chapter may be located on another parcel of land ...	Not Applicable. Proposal has the required parking
(.02)H	The conducting of any business activity shall not be permitted on the required parking spaces	No business activity being proposed in required parking spaces.
(.02)I	Where the boundary of a parking lot adjoins or is within a residential district...	Not Applicable. No residential zones in the vicinity.
(.02)J	Parking spaces along the boundaries of a parking lot shall be provided with a sturdy bumper guard or curb at least six (6) inches high and located far enough within the boundary to prevent any portion of a car within the lot from extending over the property line or interfering with required screening or	Majority of parking lot utilizes previously approved design. New spaces next to walkway, utilize concrete bumpers to prevent walkway interference.

	sidewalks.	
(.02)K	All areas used for parking and maneuvering of cars shall be surfaced with asphalt, concrete, or other surface.	Proposal utilizes parking lot previously approved. Additional maneuvering spaces proposed material is asphalt and concrete.
(.02)L	Artificial lighting which may be provided shall be so limited or deflected as not to shine into adjoining structures or into the eyes of passers-by	Parking lot lighting is existing, and proposal plans to reuse existing parking lot.
(.02)M	Off-street parking requirements for types of uses and structures not specifically listed in this Code...	Not Applicable. Use is specified in Code
(.02)N	Up to forty percent (40%) of the off-street spaces may be compact car spaces.	No compact spaces proposed.
(.02)O	Where off-street parking areas are designed for motor vehicles to overhang beyond curbs, planting areas adjacent to said curbs shall be increased to a minimum of seven (7) feet in depth. This standard shall apply to a double row of parking, the net effect of which shall be to create a planted area that is a minimum of seven (7) feet in depth.	Proposal utilizes parking lot previously approved.
(.03)A	Parking and loading or delivery areas shall be designed with access and maneuvering area...	No designated loading/delivery areas proposed. See response 4.155(.05)
(.03)B.1	Landscaping of at least ten percent (10%) of the parking area designed to be screened from view from the public right-of-way and adjacent properties. This landscaping shall be considered to be part of the fifteen percent (15%) total landscaping required in Section 4.176.03 for the site development	Site plan meet the required 10% of landscaped areas to parking area and 15% of total landscaped area. See Site Plan. The parking area is 11,891 SF, requiring 1,189 SF of landscaping. The site area is 22,822 SF and requires 3,423 SF. Proposal has 6,323 SF of landscaping.
(.03)B.2	Landscape tree planting areas shall be a minimum of eight (8) feet in width and length and spaced every eight (8) parking spaces or an equivalent aggregated amount	Proposal utilizes parking lot previously approved. Total parking stalls on site 19 with 10 existing trees.
(.03)B.3	Due to their large amount of impervious surface, new development with parking areas of more than two hundred (200) spaces that are located in any zone...	Not Applicable. Site has less than 200 stalls.
(.03)C	Off Street Parking shall be designed for safe and convenient access that meets ADA and ODOT standards. All parking areas which contain ten (10) or more parking spaces, shall for every fifty (50) standard spaces., provide one ADA accessible parking space that is constructed to building code standards,	One standard ADA stall and one van ADA stall provided.

	Wilsonville Code 9.000	
(.03)D	Where possible, parking areas shall be designed to connect with parking areas on adjacent sites so as to eliminate the necessity for any mode of travel of utilizing the public street for multiple accesses or cross movements. In addition, on-site parking shall be designed for efficient on-site circulation and parking	Proposal utilizes parking lot previously approved.
(.03)E	In all multi-family dwelling developments...	Not Applicable. Proposal does not have multi-family use
(.03)F	On-street parking spaces...	Not Applicable. Proposal does not have have on-street parking spaces
(.03)G	Tables 5 shall be used to determine the minimum and maximum parking standards for various land uses.	Requirements for Fast food (with drive-thru) Minimum: 9.9/1000SF (5 stalls) Maximum: 14.9/1000SF (7 stalls) Provided 19 stalls. Please note that proposal does not increase parking lot size, is part of Town Center and stalls are part of larger contiguous parking lot.
(.03)H	Electrical Vehicle Charging Stations...	Not Applicable. Proposal does not have have electrical vehicle charging stations
(.03)I	Motorcycle Parking	Not Applicable. Proposal does not have have motorcycle parking.
(.04)A	The required minimum number of bicycle parking spaces for each use category is shown in Table 5, Parking Standards	Requirements for Fast food (with drive-thru) is minimum 4 stalls. 4 stall provided
(.04)B	1.Each space must be at least 2 feet by 6 feet in area and be accessible without moving another bicycle 2. An aisle at least 5 feet wide shall be maintained behind all required bicycle parking to allow room for bicycle maneuvering. Where the bicycle parking is adjacent to a sidewalk, the maneuvering area may extend into the right-ofway. 3. When bicycle parking is provided in racks, there must be enough space between the rack and any obstructions to use the space properly. 4. Bicycle lockers or racks, when provided, shall be securely anchored. 5. Bicycle parking shall be located within 30 feet of the main entrance to the building or inside a building, in a location that is easily accessible for bicycles. For multi-tenant	1. Each stall is 2FT x 6FT in area. 2. A 5FT aisle has been provided 3. The racks are positioned so that they do not interfere with building use 4. Racks are securely anchored into concrete base 5. Stalls are located approximately 28'-6” from employee entrance

	developments, with multiple business entrances, bicycle parking may be distributed on-site among more than one main entrance.	
(.04)C	For a proposed multi-family residential, retail, office, or institutional development, or for a park and ride or transit center, where six (6) or more bicycle parking spaces are required pursuant to Table 5, 50% of the bicycle parking shall be developed as long-term...	Not Applicable. Proposal provides 4 stalls
(.05)	Restaurants, office buildings, hotels, motels, hospitals and institutions, schools and colleges, public buildings, recreation or entertainment facilities, and any similar use which has a gross floor area of 30,000 square feet or more, shall provide off-street truck loading.	Not Applicable. Proposal is 500 SF restaurant.
(.06)	Carpool and vanpool parking spaces shall be identified for the following uses: 1. New commercial and industrial developments with seventy-five (75) or more parking spaces, 2. New institutional or public assembly uses, and 3. Transit park-and-ride facilities with fifty (50) or more parking spaces	Not Applicable. Proposal has less than 75 parking stalls, is not institutional or public assembly, and is not a transit park-and-ride facility.
(.07)	The number of parking spaces may be reduced by up to 10% of the minimum required parking spaces...	Not Applicable. Minimum parking spaces required has been proposed.

4.156 SIGN REGULATIONS PURPOSE AND OBJECTIVES

Code	Requirement	Response
.01(.01)	Purpose...	To provide a clean and legible sign package
.01(A)	Well-designed and aesthetically pleasing signs sufficiently visible and comprehensible from streets and rights-of-way that abut a site as to aid in wayfinding, identification and provide other needed information.	This is exactly what we strive for.
.01(.B)	Sign design and placement that is compatible with and complementary to the overall design and architecture of a site, along with adjoining properties, surrounding areas, and the zoning district.	The signs have been designed specifically with this building style in mind. The surrounding areas have similar sign types as the most common type of sign so this proposal will compliment most shops in the area.
.01(C)	A consistent and streamlined sign review process that maintains the quality of sign	No response required

	development and ensures due process.	
.01(.D)	Consistent and equitable application and enforcement of sign regulations.	No response required
.01(E)	All signs are designed, constructed, installed, and maintained so that public safety, particularly traffic safety, are not compromised.	They are.
.01(F)	Sign regulations are content neutral.	OK
.02(.01)	Unless exempt under Section 4.156.05, no sign, permanent or temporary, shall be displayed or installed without a sign permit	Sign Permit Class III has been submitted
.02(.02)	Many properties in the City have signs pre-approved through a Master Sign Plan. For the majority of applications where a Master Sign Plan has been approved the applicant need not consult the sign requirements for the zone	Master sign plan is not required per section 4.156.02(.03)
.02(.03)	The City has three classes of sign permits for permanent signs: Class I, Class II, and Class III. Non-residential developments with three or more tenants. Class I is outlined in Subsection 4.030(.01)(A.). Class II is outlined in Subsection 4.030 (.01)(B.). Class III permits and master plan are outlined in Section 4.031	Sign Permit Class III has been submitted
.02(.04)A	Sign permit requests shall be processed as a Class I Sign Permit when the requested sign or signs conform to a Master Sign Plan or other previous sign approval...	Sign Permit Class III has been submitted
02(.04)B	Class I Sign Permit Review Criteria: The sign or signs conform with the applicable master sign plan or other previous sign approvals, and applicable code requirements...No response required	Sign Permit Class III has been submitted
02(.04)C	Notwithstanding approved Master Sign Plans or other previous sign approvals, as part of a Class I Sign Permit Minor Adjustments may be approved as described in 1. and 2. below. Minor Adjustments are valid only for the Sign Permit with which they are associated and do not carry over to future sign permits or copy changes...	Sign Permit Class III has been submitted
02(.04)C.1	Adjustment of not more than ten (10) percent from the sign height (not height from ground) and/or length may be approved for the reasons listed in a. through d. below, unless otherwise specifically prohibited in the Master Sign Plan.	Sign Permit Class III has been submitted

	Minor adjustments to sign height and length shall not cause the sign to cross the edge of any fascia, architectural element or area of a building facade identified as a sign band. The area of the sign exceeding the height or length as part of a minor adjustment shall not count against the sign area indicated in a Master Sign Plan or other previous sign approval.	
02(.04)C.1 A	To accommodate the descender on the lower case letters “q, y, p g, or j”, not otherwise accommodated by the measurement method used, where the letter matches the font of other letters in the sign, the descender is no more than 1/2 the cap height of the font, and the descender is no wider than the main body of the letter	The descender in this case is a lower case f and has been accounted for.
02(.04)C.1 B	To accommodate stylized fonts where bowls, shoulders, or serifs of the stylized letters extend beyond the cap height	No response required
02(.04)C.1 C	To accommodate an arching or other non-straight baseline	We used this for the “Coffee” logo and cut off the bottom of the “F”.
02(.04)C.1 D	To accommodate a federally registered trademark logo where compliance with the defined maximum sign height would result in the cap height of the text in the logo being ninety (90) percent or less of the cap height for letters otherwise allowed. (i.e. if a Master Sign Plan allowed 24” letters and 24” total sign height, and a 24” logo would result in the cap height of the text within the logo being less than 21.6”, the total height of the logo could be increased to 26.4”)	Logo and letter proportions exceed the requirements of the code.
02(.04)C.2	Lateral adjustment of a building sign location identified in drawings or plans for a Master Sign Plan or other sign approval when all of the following are met...	No response required
02(.04)C.2 A	The lateral distance being moved does not exceed fifty (50) percent of the sign length or ten (10) feet, whichever is greater	We are within these conformance standards.
02(.04)C.2 B	The exact location is not specifically supported or required by written findings or a condition of approval	Correct.
02(.04)C.2 C	The sign remains within the same architectural feature and sign band, except if the location is on a pillar, column, or similar narrow architectural support feature, the sign may be	OK

	moved to a sign band on the architecture feature which it supports if no other sign is already placed in that sign band for the tenant space	
02(.04)C.2 D	The placement maintains any spacing from the edge of an architectural feature, building, or tenant space specifically identified in the Master Sign plan or other sign approval or if no spacing is identified, maintains a definable space between the sign and the edge of architectural features, the tenant space, and building.	Correct.
.02(.05)	Class II sign permit is required when a sign does not conform with the master sign plan or previous sign approvals...	Not Applicable
.02(.06)	Class III permit required when a permit requests is associated with a waiver or involves with one or more freestanding or ground mounted signs greater than 8 feet in height in a new location.	Sign Permit Class III has been submitted
.02(.07)	A Master sign plan is required for non-residential developments with 3 or more tenants.	Sign Permit Class III has been submitted
.02(.08)A	No waivers granted to signs that exceed 35 feet in height. Waivers can be granted for height of the sign, number of signs, and electronic signs. Granted for improved sign design for aesthetics, functionality and/or complementary to the overall design of the site and adjacent properties. Granted to signs that do not negatively impact public and traffic safety. Sign content is not considered when determining a waiver.	OK
.02(.08)B	Variance shall only be approved where the variance does not exceed twenty percent (20%) of area, height, or setback requirements.	OK
.02(.09)	Temporary sign permits shall be reviewed as 30 days and less with a Class I permit. Shall be reviewed 31 days up to 120 days with a Class II permit. Two copies of sign drawings or deceptions showing all materials, sign area and dimensions used to calculate areas, number of signs, location and placement of signs, also including other details to show full scale of the sign design along with all applicable code requirements.	OK

.02(.10)	If the required information is already available to the city or where the information is contained in an otherwise required document is not necessary to review the application.	OK
.03.(.01)	Signs that are enclosed by a cabinet, frame, background and lighted surface otherwise not part of the architecture shall be the area of a shape drawn around the outer dimension of the cabinet, frame or background...	No signs of this type proposed. 32sf allowed; 30.46sf proposed. See drawing with area calculations 29642A.
.03(.02)	The height above ground of a freestanding or ground mounted sign is measured from the average grade directly below the sign to the highest point of the sign...	OK – 8' in this case.
.03(.03)	Vertical sign height is the distance between the lowest and highest points of the sign. Length of the sign is the horizontal distance between the left and right points of the sign.6' for this application.	6' for this application.
.03(.04)	The Planning Director shall be responsible for determining the area, height above ground and height and length of a sign, subject to appeal as specified in Section 4.022. Applicants for sign plans and permits shall provide the dimensions needed to calculate the area, height above ground, height, and length.	OK
.04(.01)	Non-conforming signs, which may be non-conforming structures or non-conforming uses, are subject to the standards for non-conforming uses and non-conforming structures delineated in Sections 4.189 through 4.190...	OK
.05(.01)	The following signs are exempt from the permit requirements of this code and do not require sign permits. Unless otherwise specified, the area of the exempted signs shall not be included in the calculations of sign area permitted on a given site...	OK
.05(.02)	No sign permit is necessary before placing, constructing or erecting the following signs. However, in all other particulars such signs shall conform to the requirements of applicable Building and Electrical Codes, as well as this Code.	OK
.05(.02)A	Signs inside building except for prohibited signs in section 4.156.06.	OK
.05(.02)B	Name plates and Announcements not	OK

	exceeding 3 square feet and be fixed to the building. Announcements (no smoking, no parking, rules of conduct, etc.) are permitted to be located as needed but not intended to be read off-site and shall not be considered to be part of the sign allotment for the property.	
.05(.02)C	Designed for non-changing messages. Directional signs facilitate the safe movement of the traveling public.	OK
.05(.02)D	Changes of Copy Only, where the graphics contained on an existing sign are changed, but the sign itself is not structurally altered, and no building or electrical permit is required.	OK
.05(.02)E	Signs not visible from any off-site location.	Directional signs not visible from other location
.05(.02)F	Holiday lights and decorations, in place between November 15 and January 15.	OK
.05(.02)G	Signs on scoreboards or ballfields located on public property.	OK
.05(.02)H	One small decorative banner per dwelling unit placed on site, in residential zones.	Project not located within residential zone
.05(.02)I	Lawn Signs meeting the standards of Table S-1 and the following conditions: 1. Such signs shall not be intentionally illuminated and shall not display movement. 2. Such signs shall not obscure sight lines of the motoring public, obscure traffic or other government signs, or create a nuisance to the use or occupancy of any property. 3. Lawn signs associated with temporary events may be posted no longer than sixty (60) days before the beginning of an event and must be removed at the event's completion. 4. Lawn signs not associated with temporary events may be posted for one period of up to sixty (60) days in a calendar year. 5. Such signs may be up to six (6) feet in height. 6. Such signs may be one (1) or two (2) sided.	Not Applicable
.05(.02)J	Rigid Signs meeting the standards of Table S-1 and the following conditions...	Not Applicable
.05(.02)K	Signs allowed in Subsections 6.150 (1) and (2) Wilsonville Code for special events	Not Applicable
.06(.01)	The following signs are prohibited and shall not be placed within the City...	Not Applicable
.07(.01)	One ground mounted sign, not exceeding eighteen (18) square feet in area and six (6)	OK

	feet in height above ground, shall be permitted for each residential subdivision or for any multi-family development.	
.07(.02)	Public or private parks or other similar outdoor recreational areas on separate lots than dwelling units are allowed one (1) ground mounted sign of eighteen (18) square feet or less in area and six (6) feet or less in height above ground.	Not Applicable
.07(.03)	Uses, other than residential and outdoor recreation, shall be subject to the sign regulations for PDC, PDI, and Public Facility zones.	See section 4.156.08
.08(.01)A	One freestanding or ground mounted sign is allowed for the first two-hundred (200) linear feet of site frontage. One additional freestanding or ground mounted sign may be added for through and corner lots having at least two-hundred (200) feet of frontage on one street or right-of-way and one-hundred (100) feet on the other street or right-of-way. OK – we do not meet this requirement.	OK – we do not meet this requirement.
.08(.01)B	The allowed height above ground of a freestanding or ground mounted sign is twenty (20) feet except as noted in 1-2 below...The allowed height above ground for signs in the PDC-TC Zone, Old Town Overlay Zone, and PDI Zone is eight (8) feet, except those signs along the frontage of Interstate 5 and parallel contiguous portions of streets identified in Figure S-4	Sign is designed at 8’ overall height and has a 6’ tall cup; 32sf allowed; 30.46sf proposed. Per 4.156.08(.01)C.1.a.: The sign area allowed for signs pertaining to a single Tenant: Less than 11,000 sq. ft. = 32sf maximum allowance. This is what we are allowed per code.
.08(.02)A	Building signs are allowed on a facade of a tenant space or single tenant building when one or more of the following criteria are met: 1. The facade has one or more entrances open to the general public. 2. The facade faces a lot line with frontage on a street or private drive with a cross section similar to a public street, and no other buildings on the same lot obstruct the view of the building facade from the street or private drive. 3. The facade is adjacent to the primary parking area for the building or tenant.	North: Faces a street and has a walk-up window. South: does not meet the criteria. East: faces a primary parking area and private drive within the shopping center. West: faces a street
.08(.02)B	Less than 16' = Area equal to linear length 16'-0" - 24'-0" = 24 SF Greater than 24' - 32'-0" = 32 SF	North: 31’ = 32sf allowed; 12.36 proposed. South: Does not meet criteria. East: 16’8” = 24sf allowed; 20.22sf proposed.

	Greater than 32' - 72'-0" = 36 SF	West: 16’8” = 24sf allowed; 5.1sf proposed
.08(.03)	Notwithstanding the signs allowed based on the site in (.01) and (.02) the following signs may be permitted, subject to standards and conditions in this Code...	OK
.08(.03)A	To exempt directional signs allowed under Subsection 4.156.05 (.02) C. freestanding or ground mounted directional signs six (6) square feet or less in area and four (4) feet or less in height. 1. The signs shall be designed to match or complement the architectural design of buildings on the site . 2. The signs shall only be placed at the intersection of internal circulation drives. 3. No more than one (1) sign shall be placed per intersection corner with no more than two (2) signs per intersection.	We have requested (1) of these such signs. It is 3.1sf and 3’9” overall height. It is painted to match the building. It is placed within the internal circulation drives and not by the roadway. For directional purposes only.
.08(.03)B	Planned Development Signs. Up to thirty (32) square feet of the allowed sign area for freestanding signs in a planned development may be used for a separate on-site monument sign or off-site monument sign on an adjacent parcel identifying the Planned Development project.	N/A
.08(.03)C	To aid in pedestrian wayfinding, one (1) blade sign, not to exceed six (6) square feet, per facade eligible for building signs. Blade signs over pedestrian accessible areas shall provide a minimum of eight (8) feet of clearance from the ground.	N/A
.08(.03)D	In addition to the freestanding or ground mounted signs allowed, changeable copy signs shall be allowed for the purpose of advertising fuel prices...	N/A
.09	Temporary signs may be permitted in addition to the permanent signs allowed in different zones and exempt temporary signs unless specifically prohibited in a master sign plan or other sign approval	N/A
.09(.01)	Except as noted in subsection (.02) below up to two (2) temporary signs not exceeding a combined total of twenty four (24) square feet may be permitted per lot or non-residential tenant. Such signs may be banners, rigid signs, lawn signs, portable signs, or other signs of similar construction.	N/A

.09(.02)	A banner corresponding with the opening of a new business or housing development may be permitted...	N/A
.09(.03)	Annual event signs -up to ten (10) lawn signs may be permitted to be located in the public right-of-way for up to fourteen (14) days	N/A
.09(.04)	Inflatable signs may be permitted for a maximum of fifteen (15) days of display use in any calendar year	N/A
.10(.01)	City property is defined as physical sites, City rights-of-way, and rights-of-way over which the City has jurisdiction...N/A	N/A
.10(.01)A	The following signs may be placed on City property and/or City rights-of-way and right-of-ways over which the City has jurisdiction under the following conditions...	OK
.10(.02)	Consistent with the Laws and Administrative Rules of the State of Oregon, all signs of any kind are prohibited within right-of–way of the Oregon Department of Transportation (ODOT), except those signs that are specifically determined by ODOT to be necessary for the public's health, safety, or welfare. The City may assist the State in the removal of signs that are illegally placed within ODOT right-of-way...	OK
.11(.01)	Any person who places a sign that requires a permit under this section, and who fails to obtain a permit before installing the sign, shall be subject to penalties and fines as established in Wilsonville Code 4.025.	We will obtain a sign permit.
.11(.02)	Any sign placed on public property in violation of the provisions of this Code shall be immediately removed by the City. As soon thereafter as reasonable, the City shall notify the owner or the owner's representative that the sign has been removed, and that if the sign is not claimed within ten (10) days, the sign will be deemed abandoned and subject to disposal by the City...	OK
.11(.03)	Any sign which is intentionally placed in violation of the provisions of this code after the owner of the sign has been notified of the initial sign removal and reason for its removal, shall subject the owner to a civil violation not to exceed $100.00 as and for a civil fine for each day that a violation continues to exist.	OK

.11(.04)	The remedies described herein are not exclusive and may be used in addition to those prescribed elsewhere in the Wilsonville Code, including Sections 1.012 and 1.013, Violations, and 6.200 through 6.620, Nuisances. The City Attorney may use any enforcement process available at law or equity, including but not limited to, seeking injunctive relief, equitable relief, damages, or fines for violations.	OK

4.171 General Regulations - Protection of Natural Features and Other Resources

Code	Requirement	Response
(.01)	It is the purpose of this Section to prescribe standards and procedures for the use and development of land to assure the protection of valued natural features and cultural resources...	No response required
(.02)	General Terrain Preparation; development to be planned, designed, constructed and maintained with maximum regard to natural terrain.	Site is located in Town Center and bounded on all sided by already developed areas. Site is relatively flat.
(.03)	Developments on a slope greater than 25% are limited to and be incorporated into the plans are; an engineering geologic study, slope stabilization & re-vegetation, buildings shall be clustered, no mass pad grading or successive padding or terracing buildings. Maintenance for re-vegetation through Oct. 1 are to be the responsibility of the developer. Erosion and sediment control permit is required...	Not Applicable, site does not have slope greater than 25%
(.04)	Trees and wooded areas are to incorporate into the plans are; existing vegetation are not disturbed, injured or removed. Vegetation including clumps/groves of trees with a diameter at breast height of six inches or greater need to be incorporated into the development. Healthy trees that are located in the right-of-way are to be preserved. Vegetation shall be protected during site preparation which can include but not limited to a special maintenance management program and/or a registered arborist/horticulturist expert before and after site preparation.	Existing site has no vegetation that is required to be preserved
(.05)A	Due to the restrictions placed on these lands,	Not Applicable, project is not located within

	no residential structures shall be allowed within high voltage power line easements and rights of way and petroleum pipeline easements, and any development, particularly residential, adjacent to high voltage power line easements and rights of way and petroleum pipeline easements shall be carefully reviewed.	said easements.
(.05)B	Any proposed non-residential development within high voltage powerline easements and rights of way and petroleum pipeline easements shall be coordinated with and approved by the Bonneville Power Administration, Portland General Electric Company or other appropriate utility, depending on the easement or right of way ownership.	Not Applicable, project is not located within said easements.
(.06)	Hazards to Safety Purpose: A. To protect lives and property from natural or human-induced geologic or hydrologic hazards and disasters. B. To protect lives and property from damage due to soil hazards. C. To protect lives and property from forest and brush fires. D. To avoid financial loss resulting from development in hazard areas.	(A) Site is flat within boundaries of developed Town Center (B) Site is flat within boundaries of developed Town Center (C)Site does not contain forest or significant brushes. (D) Site is not in hazard area
(.07)A	Standards for Earth Movement Hazard Areas - No development or grading shall be allowed in areas of land movement, slump or earth flow, and mud or debris flow...	Not Applicable, site is flat an bounded by existing developed ROWs
(.07)B	Vegetative cover shall be maintained or established for stability and erosion control purposes	Site is flat and vegetative cover will be maintained outside of immediate construction area
(.07)C	Diversion of storm water into these areas shall be prohibited.	No stormwater diversion is being proposed
(.07)D	The principal source of information for determining earth movement hazards is the State Department of Geology and Mineral Industries (DOGAMI) Bulletin 99 and any subsequent bulletins and accompanying maps. Approved site specific engineering geologic studies shall be used to identify the extent and severity of the hazardous conditions on the site, and to update the earth movement hazards database.	No response required
(.08)A	Appropriate siting and design safeguards shall insure structural stability and proper drainage	Provided geotechnical report specifies the design safeguards in which the structural

	of foundation and crawl space areas for development on land with any of the following soil conditions: wet or high water table; high shrinkswell capability; compressible or organic; and shallow depth-to-bedrock.	engineer will use for designing structures.
(.08)B	The principal source of information for determining soil hazards is the State DOGAMI Bulletin 99 and any subsequent bulletins and accompanying maps. Approved site-specific soil studies shall be used to identify the extent and severity of the hazardous conditions on the site, and to update the soil hazards database accordingly.	No response required
(.09)	Historic Protection	Not Applicable, the existing conditions is an empty lot
(.10)A	Demolition or alteration of any structure, or any change in any site or object which has been designated as a cultural resource is prohibited...	Not Applicable, site is an empty lot
(.11)	A cultural resource may be designated and placed on the Cultural Resources Inventory...	Not Applicable, site is an empty lot

4.175 PUBLIC SAFETY AND CRIME PREVENTION		
Code	Requirement	Response
(.01)	All developments shall be designed to deter crime and insure public safety	Proposal has located walkways reasonably to parking lot and building. Building windows are in direct path of vehicular areas.
(.02)	Addressing and directional signing shall be designed to assure identification of all buildings and structures by emergency response personnel, as well as the general public.	Entry and exit signs have been provided. See site plan. Exiting site has existing vehicular directional signs provided in town center.
(.03)	Areas vulnerable to crime shall be designed to allow surveillance. Parking and loading areas shall be designed for access by police in the course of routine patrol duties	Proposal is a relatively rectangular building with a rectangular garbage enclosure which should allow for surveillance from the public right-of-way as well as from the private drive aisles of the parking lot.
(.04)	Exterior lighting shall be designed and oriented to discourage crime.	See response in section 4.155.02.L

4.176 LANDSCAPING, SCREENING, AND BUFFERING		
Code	Requirement	Response

(.01)	Purpose. This Section consists of landscaping and screening standards and regulations for use throughout the City...	The proposed design incorporates native and adaptive plantings. The design takes into account sub sections A-K of code .01 by creating a healthy native and adaptive landscape for the public.
(.02)A	The locations where the landscaping and screening are required and the depth of the landscaping and screening is stated in various places in the Code.	These standards have been met by the existing and new trees and by having adjacent zoning of the same designation requiring only general landscaping.
(.02)B	All landscaping and screening required by this Code must comply with all of the provisions of this Section, unless specifically waived or granted a Variance as otherwise provided in the Code.	All landscaping screening requirements have been met with low evergreen screening plants.
(.02)C.1	The General Landscaping Standard is a landscape treatment for areas that are generally open. It is intended to be applied in situations where distance is used as the principal means of separating uses or developments and landscaping is required to enhance the intervening space. Landscaping may include a mixture of ground cover, evergreen and deciduous shrubs, and coniferous and deciduous trees.	See Landscape Plan. These standards have been met by the existing and new trees and by having adjacent zoning of the same designation requiring only general landscaping.
(.02)C.2	Shrubs and trees, other than street trees, may be grouped. Ground cover plants must fully cover the remainder of the landscaped area. The General Landscaping Standard has two different requirements for trees and shrubs.	All landscape is less than 30’ depth so subsection A was used.
(.02)D.1	The Low Screen Landscaping Standard is a landscape treatment that uses a combination of distance and low screening to separate uses or developments. It is intended to be applied in situations where low screening is adequate to soften the impact of one use or development on another, or where visibility between areas is more important than a total visual screen. The Low Screen Landscaping Standard is usually applied along street lot lines or in the area separating parking lots from street rights-of-way.	All parking and the drive thru have been screened to meet the low screening requirements with evergreen plants that reach a minimum height of 3 feet and provide a continuous hedge of screening.
(.02)D.2	The Low Screen Landscaping Standard requires sufficient low shrubs to form a continuous screen three (3) feet high and 95% opaque, year-round. In addition, one tree is required for every 30 linear feet of landscaped area, or as	All parking and the drive thru have been screened to meet the low screening requirements with evergreen plants that reach a minimum height of 3 feet and provide a continuous hedge of screening that is 95%

	otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area. A three (3) foot high masonry wall or a berm may be substituted for the shrubs, but the trees and ground cover plants are still required. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscaped area.	opaque year-round.
(.02)E.1	The High Screen Landscaping Standard is a landscape treatment that relies primarily on screening to separate uses or developments. It is intended to be applied in situations where visual separation is required.	Due to the adjacent zoning being the same designation this section does not apply.
(.02)E.2	The High Screen Landscaping Standard requires sufficient high shrubs to form a continuous screen at least six (6) feet high and 95% opaque, year-round. In addition, one tree is required for every 30 linear feet of landscaped area, or as otherwise required to provide a tree canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area. A six (6) foot high masonry wall or a berm may be substituted for the shrubs, but the trees and ground cover plants are still required. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscaped area.	Due to the adjacent zoning being the same designation this section does not apply.
(.02)F.1	The High Wall Standard is intended to be applied in situations where extensive screening to reduce both visual and noise impacts is needed to protect abutting uses or developments from one-another...	Not Applicable
(.02)F.2	The High Wall Standard requires a masonry wall at least six (6) feet high along the interior side of the landscaped area..	Not Applicable
(.02)G.1	The High Berm Standard is intended to be applied in situations where extensive screening to reduce both visual and noise impacts is needed to protect abutting uses or developments from one-another...	Not Applicable
(.02)G.2	The High Berm Standard requires a berm at least four (4) feet high along the interior side of the landscaped area...	Not Applicable
(.02)H.1	The Partially Sight-Obscuring Fence Standard is intended to provide a tall, but not totally blocked, visual separation. The standard is	See Site Plan See Landscaped Plan

	applied where a low level of screening is adequate to soften the impact of one use or development on another, and where some visibility between abutting areas is preferred over a total visual screen. It can be applied in conjunction with landscape plantings or applied in areas where landscape plantings are not necessary and where nonresidential uses are involved.	
(.02)H.2	Partially Sight-Obscuring Fence Standard are to be at least six (6) feet high and at least 50% sight-obscuring. Fences may be made of wood (other than plywood or particle-board), metal, bricks, masonry or other permanent materials	See Site Plan See Landscaped Plan
(.02)I.1	The Fully Sight-Obscuring Fence Standard is intended to provide a totally blocked visual separation.	Not Applicable
(.02)I.2	Fully sight-obscuring fences are to be at least six (6) feet high and 100% sight-obscuring.	Not Applicable
(.03)	Landscape areas not less than fifteen percent (15%) of the total lot area, shall be landscaped with vegetative plant materials. The ten percent parking area landscaping required by section 4.155.03(B)(1) is included in the fifteen percent (15%) total lot landscaping requirement. Landscaping shall be located in at least three separate and distinct areas of the lot, one of which must be in the contiguous frontage area	See response in section 4.155.03.B.1. See Planting plan, we are providing roughly 27.7% of landscape areas which well exceeds the 15% minimum.
(.04)	Additional to the standards of this subsection, the requirements of the Section 4.137.5 (Screening and Buffering Overlay Zone) shall also be applied, where applicable.	None of the additional standards set forth in section .04 apply to this project.
(.04)A	All intensive or higher density developments shall be screened and buffered from less intense or lower density developments.	
(.04)B	Activity areas on commercial and industrial sites shall be buffered and screened from adjacent residential areas. Multi-family developments shall be screened and buffered from single-family areas.	Not Applicable
(.04)C	All exterior, roof and ground mounted, mechanical and utility equipment shall be screened from ground level off-site view from adjacent streets or properties.	See Roof Plan See Elevations. The roof top equipment is screened.
(.04)D	All outdoor storage areas shall be screened	Not Applicable

	from public view, unless visible storage has been approved...	
(.04)E	In all cases other than for industrial uses in industrial zones, landscaping shall be designed to screen loading areas and docks, and truck parking.	Not Applicable
(.04)F	In any zone any fence over six (6) feet high measured from soil surface at the outside of fenceline shall require Development Review Board approval.	See architectural elevations.
(.05)	The use for which a sight-obscuring fence or planting is required shall not begin operation until the fence or planting is erected or in place and approved by the City...	Not Applicable
(.06)A.1	All shrubs shall be well branched and typical of their type as described in current AAN Standards and shall be equal to or better than 2- gallon containers and 10” to 12” spread. 2. Ground cover. Shall be equal to or better.	All shrubs on the planting plan meet this criterion.
(.06)A.2	Shall be equal to or better than the following depending on the type of plant materials used: gallon containers spaced at 4 feet on center minimum, 4" pot spaced 2 feet on center minimum, 2-1/4" pots spaced at 18 inch on center minimum...	All groundcover is in 1-gallon container and have a max spacing of 18”.
(.06)A.3	Turf or lawn in non-residential developments. Shall not be used to cover more than ten percent (10%) of the landscaped area, unless specifically approved based on a finding that, due to site conditions and availability of water, a larger percentage of turf or lawn area is appropriate. Use of lawn fertilizer shall be discouraged. Irrigation drainage runoff from lawns shall be retained within lawn areas.	Due to the project’s location and the theme of the surrounding businesses we have opted to increase the percent of lawn to fit in with the surrounding properties. We also feel that the lawn will be an amenity for the clientele of Dutch Brothers along with reducing the maintenance for the property management. We are using efficient irrigation heads to reduce the amount of water irrigated on site and eliminate over watering.
(.06)A.4	Appropriate plant materials shall be installed beneath the canopies of trees and large shrubs to avoid the appearance of bare ground in those locations.	Groundcover and shrubs have been appropriately placed to avoid the appearance of bare ground under trees and large shrubs.
(.06)A.5	Integrate compost-amended topsoil in all areas to be landscaped, including lawns, to help detain runoff, reduce irrigation and fertilizer needs, and create a sustainable, low-maintenance landscape.	Proper soils with integrated compost have been specified for all landscape areas.
(.06)B	All trees shall be well-branched and typical of their type as described in current American	All trees shall be well branched and meet all AAN standards, see planting plan for details.

	Association of Nurserymen (AAN) Standards and shall be balled and burlapped...	
(.06)C	Where a proposed development includes buildings larger than twenty-four (24) feet in height or greater than 50,000 square feet in footprint area, the Development Review Board may require larger or more mature plant materials...	Not Applicable
(.06)D	Development Review Board may require a mix of street trees throughout a development...	All street trees are existing trees to be protected.
(.06)E.1	Existing landscaping or native vegetation may be used to meet these standards, if protected and maintained during the construction phase of the development and if the plant species do not include any that have been listed by the City as prohibited. The existing native and non-native vegetation to be incorporated into the landscaping shall be identified.	The existing trees have been identified in the tree table on the planting plan.
(.06)E.2	Landscape materials shall be selected and sited to produce hardy and drought-tolerant landscaping...	All landscape material is either native or adaptive plant materials that have been picked based on their soil characteristics, maintenance requirements, exposure to sun and wind, slope and contours of the site, and compatibility with other vegetation that will remain on the site.
(.06)E.3	The City may establish a list of plants that are prohibited in landscaped areas	None of the plants listed in our plant legend are on the cities prohibited plant list or marked as invasive in the state of Oregon.
(.06)F	Existing trees that are in good health as certified by an arborist and are not disturbed during construction may count for landscaping tree credit	We are counting the existing trees on site towards tree credit. They are all in good health and well away from the construction site allowing them to be easily protected.
(.06)G	Landscape materials that exceed the minimum standards of this Section are encouraged, provided that height and vision clearance requirements are met.	Vision clearance areas were taken into account when picking materials in sight line triangles for this project.
(.06)H	The burden of proof is on the applicant to show that proposed landscaping materials will comply with the purposes and standards of this Section.	See Planting Plan for proof that these standards have been met.
(.07)A	Plant materials shall be installed to current industry standards and shall be properly staked to assure survival...	Plant material shall be installed to current industry standards and all trees shall be staked to assure survival of the trees. See planting plan and Specifications for details.
(.07)B	Maintenance of landscaped areas is the on-going responsibility of the property owner...	The property owner is aware of this.

(.07)C.1	A permanent, built-in, irrigation system with an automatic controller. Either a spray or drip irrigation system, or a combination of the two, may be specified.	A permanent spray irrigation system is being installed on the property see irrigation plan for details.
(.07)C.2	A permanent or temporary system designed by a landscape architect licensed to practice in the State of Oregon, sufficient to assure that the plants will become established and drought-tolerant	Not Applicable due to the fact that a permanent irrigation system designed by a licensed landscape architect in the state of Oregon is being installed, see Irrigation plan for details.
(.07)C.3	Other irrigation system specified by a licensed professional in the field of landscape architecture or irrigation system design.	Not Applicable due to the fact that a permanent irrigation system designed by a licensed landscape architect in the state of Oregon is being installed, see Irrigation plan for details.
(.07)C.4	A temporary permit issued for a period of one year, after which an inspection shall be conducted to assure that the plants have become established. Any plants that have died, or that appear to the Planning Director to not be thriving, shall be appropriately replaced within one growing season.	Not Applicable due to the fact that a permanent irrigation system designed by a licensed landscape architect in the state of Oregon is being installed, see Irrigation plan for details.
(.07)D	All required landscape areas, including all trees and shrubs, shall be protected from potential damage by conflicting uses or activities including vehicle parking and the storage of materials...	All landscape areas shall be protected from by conflicting uses or activities including vehicle parking and the storage of materials
(.08)	All landscaping on corner lots shall meet the vision clearance standards of Section 4.177. If high screening would ordinarily be required by this Code, low screening shall be substituted within vision clearance areas. Taller screening may be required outside of the vision clearance area to mitigate for the reduced height within it.	All plant material within the sight line triangles meet the height restrictions set forth in section 4.177.
(.09)	Landscape plans shall be submitted showing all existing and proposed landscape areas. Plans must be drawn to scale and show the type, installation size, number and placement of materials...	All landscape plans meet these standards. See Planting plan for additional information.
(.09)A	High water usage areas (+/- two (2) inches per week): small convoluted lawns, lawns under existing trees, annual and perennial flower beds, and temperamental shrubs	The irrigation plans have been divided up separating the lawn zones from the shrub zones.
(.09)B	Moderate water usage areas (+/- one (1) inch per week): large lawn areas, average water-using shrubs, and trees	The irrigation plans have been divided up between lawn zones and shrub/tree zones to minimize water usage.

(.09)C	Low water usage areas (Less than one (1) inch per week, or gallons per hour): seeded fieldgrass, swales, native plantings, drought-tolerant shrubs, and ornamental grasses or drip irrigated areas.	The Shrub areas consist of native and adaptive plants that will be cut back to less then 1" per week once they have been established.
(.09)D	Interim or unique water usage areas: areas with temporary seeding, aquatic plants, erosion control areas, areas with temporary irrigation systems, and areas with special water–saving features or water harvesting irrigation capabilities.	Not Applicable
(.10)	Completion of Landscaping. The installation of plant materials may be deferred for a period of time specified by the Board or Planning Director acting on an application, in order to avoid hot summer or cold winter periods, or in response to water shortages. In these cases, a temporary permit shall be issued, following the same procedures specified in subsection (.07) (C)(3), above, regarding temporary irrigation systems. No final Certificate of Occupancy shall be granted until an adequate bond or other security is posted for the completion of the landscaping, and the City is given written authorization to enter the property and install the required landscaping, in the event that the required landscaping has not been installed. The form of such written authorization shall be submitted to the City Attorney for review.	We have a general note on our Planting plan stating that plantings shall be done between February 1st and may1st or between October 1st and November 15th. If they have to get an extension in order to plant during these times they will do so.
(.11)	Street Trees Not Typically Part of Site Landscaping. Street trees are not subject to the requirements of this Section and are not counted toward the required standards of this Section. Except, however, that the Development Review Board may, by granting a waiver or variance, allow for special landscaping within the right-of-way to compensate for a lack of appropriate on-site locations for landscaping. See subsection (.06), above, regarding street trees.	All street trees are existing and being protected so this does not apply.
(.12)	Mitigation and Restoration Plantings. A mitigation plan is to be approved by the City's Development Review Board before the destruction, damage, or removal of any existing native plants. Plantings intended to mitigate the loss of native vegetation are subject to the following standards. Where these standards conflict with other requirements of this Code,	Not Applicable

	the standards of this Section shall take precedence. The desired effect of this section is to preserve existing native vegetation.	
(.12)A	Plant Sources. Plant materials are to be native and are subject to approval by the City. They are to be non-clonal in origin; seed source is to be as local as possible, and plants must be nursery propagated or taken from a pre-approved transplantation area. All of these requirements are to be addressed in any proposed mitigation plan.	Not Applicable
(.12)B	Plant Materials. The mitigation plan shall specify the types and installation sizes of plant materials to be used for restoration. Practices such as the use of pesticides, fungicides, and fertilizers shall not be employed in mitigation areas unless specifically authorized and approved.	Not Applicable
(.12)C	Installation. Install native plants in suitable soil conditions. Plant materials are to be supported only when necessary because of extreme winds at the site. Where support is necessary, all stakes, guy wires or other measures are to be removed as soon as the plants can support themselves. Protect from animal and fowl predation and foraging until establishment.	Not Applicable
(.12)D	Irrigation. Permanent irrigation systems are generally not appropriate in restoration situations, and manual or temporary watering of new plantings is often necessary. The mitigation plan shall specify the method and frequency of manual watering, including any that may be necessary after the first growing season.	Not Applicable
(.12)E	Monitoring and Reporting. Monitoring of native landscape areas is the on-going responsibility of the property owner. Plants that die are to be replaced in kind and quantity within one year. Written proof of the survival of all plants shall be required to be submitted to the City's Planning Department one year after the planting is completed.	Not Applicable

4.177 Street Improvement Standards		
Code	Requirement	Response

(.01)	Development and related public facility improvements shall comply with the Wilsonville Public Works Standards, and the Transportation System Plan, in rough proportion to the potential impacts of the development. Such improvements shall be constructed at the time of development or as provided by Section 4.140, except as modified or waived by the City Engineer for reasons of safety or traffic operations	Proposed development does not include public facility improvements, only private property. See site plan.
(.02)E	A clear vision area which mean the Public Works Standards require that each corner of property at the intersection of any two streets are not sight obstructed.	No trees or other significant site improvements effect the clear vision area on the corner of Town Center Loop W. and Park Place
(.03)	Sidewalks shall be provided on the public street frontage of all development. Sidewalks shall generally be constructed within the dedicated public right-of-way, but may be located outside of the right-of-way within a public easement with the approval of the City Engineer.	Existing public sidewalks remain on the North and West side of the property. Site Improvements include additional walkways. See site plan.
(.04)	Bicycle facilities shall be provided to implement the Transportation System Plan, and may include on-street and off-street bike lanes, shared lanes, bike boulevards, and cycle tracks. The design of on-street bicycle facilities will vary according to the functional classification and the average daily traffic of the facility.	Not applicable

4.179 MIXED SOLID WASTE AND RECYCLABLES STORAGE

Code	Requirement	Response
(.01)	All site plans for multi-unit residential and non-residential buildings submitted to the Review Board for approval shall include adequate storage space for mixed solid waste and source separated recyclables.	See site plan for location of trash receptacle. Trash area is 336SF for a coffee shop kiosk.
(.02)	The floor area of an interior or exterior storage area shall be excluded from the calculation of building floor area for purposes of determining minimum storage requirements.	Not Applicable
(.03)	The storage area requirement shall be based on the predominant use(s) of the building. If a building has more than one of the uses listed herein and that use occupies 20 percent or less of the floor area of the building...	Predominant use of the building is restaurant/fast food.

(.04)	Storage areas for multiple uses on a single site may be combined and shared.	Not Applicable
(.05)	The specific requirements are based on an assumed storage height of four feet for solid waste/recyclables. Vertical storage higher than four feet but no higher than seven feet may be used to accommodate the same volume of storage in a reduced floor space. Where vertical or stacked storage is proposed, the site plan shall include drawings to illustrate the layout of the storage area and dimensions for the containers.	No vertical storage proposed and has a 6ft screening wall. See architectural drawings.
(.06)	The specific requirements for storage area are as follows: A Multi-unit residential buildings... B. Non-residential buildings shall provide a minimum storage area of ten square feet, plus: 1. Office: Four square feet per 1,000 square feet gross floor area (GFA); 2. Retail: Ten square feet per 1,000 square feet GFA; 3. Wholesale / Warehouse / Manufacturing: Six square feet per 1,000 square feet GFA; and 4. Other: Four square feet per 1,000 square feet GFA.	Building area is approximately 500 SF. Requiring 12SF of storage. Proposal has 336SF.
(.07)	The applicant shall work with the City's franchised garbage hauler to ensure that site plans provide adequate access for the hauler's equipment and that storage area is adequate for the anticipated volumes, level of service and any other special circumstances which may result in the storage area exceeding its capacity. The 2015 Development Code hauler shall notify the City by letter of their review of site plans and make recommendations for changes in those plans pursuant to the other provisions of this section.	Republic Services provided direction on the garbage area. An approval letter has been submitted for reference.
(.08)	Existing multi-unit residential and...	Not applicable

4.199 OUTDOOR LIGHTING		
Code	Requirement	Response
.10(.01)	Outdoor lighting regulations include: nighttime safety, utility, security, productivity, enjoyment and commerce; energy conservation...	No Response required

10(.02)	Declaration of purpose statements are guidelines and not approval criteria in the application of WC Section 4.199	No Response required
.20(.01)	Installation of new exterior or existing exterior additions/modifications lighting systems for projects with common areas.	No Response required
.20(.02)	Lighting systems exempt from the requirements: Interior lighting, internally/externally illuminated signs, temporary signs for performance areas, water features, exit path lighting required by building code and other code required signs, stairs and ramp lighting, seasonal lighting when individual lamps are 10 watts or less, City regulated lights or otherwise regulated by other governed facilities, single-family lighting, American flag, landscaped lighting, lights approved through permit process, public street lights, ATM security, and any exceptions listed in the "Exterior Lighting Power Allowance in the Oregon Energy Efficiency Specialty Code.	No Response required
.30(.01)	The designated Lighting Zone as indicated on the Lighting Overlay Zone Map for a commercial, industrial, multi-family or public facility parcel or project shall determine the limitations for lighting systems and fixtures as specified in this Ordinance	No Response required
.30(.02)	Per the Overlay Zone Map, property is within LZ 3: Medium to high-density suburban neighborhoods and districts, major shopping and commercial districts as depicted on the Lighting Overlay Zone Map.	No Response required
.30(.03)	Modification of Lighting Zones...	None requested
.40(.01)	All outdoor lighting shall comply with either the Prescriptive Option or the Performance Option below	Project to utilize prescriptive option.
.40(.01)B	If the lighting is to comply with this Prescriptive Option, the installed lighting shall meet all of the following requirements according to the designated Lighting Zone. 1. The maximum luminaire lamp wattage and shielding shall comply with Table 7 2. Except for those exemptions listed in Section 4.199.20(.02), the exterior lighting for the site shall comply with the Oregon Energy Efficiency	1. See Table 7 below. The attached cut sheets have identified the wattage. 2. See attached energy code calculations 3. See Table 8 below. The exterior lighting plan identifies all lighting mounting heights... 4. Surrounding properties are LZ3 and no setback required for lighting.

	Specialty Code, Exterior Lighting 3. The maximum pole or mounting height shall be consistent with Table 8 4. Each luminaire shall be set back from all property lines at least 3 times the mounting height of the luminaire: a. Exception 1: If the subject property abuts a property with the same base and lighting zone, no setback from the common lot lines is required.	
.40(.01)D	Curfew. All prescriptive or performance based exterior lighting systems shall be controlled by automatic device(s) or system(s) that:	No Response Required
(.01)D.1	Initiate operation at dusk and either extinguish lighting one hour after close or at the curfew times according to Table 10; or	See (.01)D.2
(.01)D.2	Reduce lighting intensity one hour after close or at the curfew time to not more than 50% of the requirements set forth in the Oregon Energy Efficiency Specialty Code unless waived by the DRB due to special circumstances; and	Sunday-Thursday 5am – 10pm Friday & Saturday 5am – 11pm Exterior lighting to be on timers set to reduce lighting levels per OEESC and meet the LZ3 curfew times.
(.01)D.3	Extinguish or reduce lighting consistent with 1. and 2. above on Holidays. The following are exceptions to curfew: a. Exception 1: Building Code required lighting. b. Exception 2: Lighting for pedestrian ramps, steps and stairs. c. Exception 3: Businesses that operate continuously or periodically after curfew.	No Response Required.

Table 7: Maximum Wattage And Required Shielding

Lighting Zone	Fully Shielded	Shielded	Partly Shielded	Unshielded
LZ 3	250	100	70	Landscape and facade lighting 100 watts or less; ornamental lighting on private drives of 39 watts and less

Table 8: Maximum Lighting Mounting Height In Feet

Lighting Zone	Lighting for private drives, driveways, parking, bus stops and other transit facilities	Lighting for walkways, bikeways, plazas and other pedestrian areas	All other lighting
LZ 3	40	18	16

Table 10: Curfew	
Lighting Zone	Curfew Time
LZ 3	Midnight (2400 Hours)
LZ 4	
Hours of Operation	Sunday-Thursday 5am – 10pm Friday & Saturday 5am – 11pm

4.300 UNDERGROUND UTILITIES

Code	Requirement	Response
(.01)	Deemed reasonable and necessary in order to accomplish the orderly and desirable development of land within the corporate limits of the City, to require the underground installation of utilities in all new developments.	The developer is proposing underground connections for all utilities.
(.02)	The approval of any development of land within the City will be upon the express condition that all new utility lines, including but not limited to those required for power, communication, street lighting, gas, cable television services and related facilities, shall be placed underground.	The developer is proposing underground connections for all utilities.
(.03)	The construction of underground utilities shall be subject to the City's Public Works Standards and shall meet applicable requirements for erosion control and other environmental protection.	The developer is proposing underground connections for all utilities.
.310(.04)	**Exceptions** This Code shall not apply to surface-mounted transformers, surface-mounted connection boxes, wireless communication facilities, and meter cabinets and other appurtenances which are reasonably necessary to be placed above ground, or to temporary utility service facilities during construction, or to high capacity electric and communication feeder lines, or to utility transmission lines operating at 50,000 volts or more.	No exception is being requested.

4.320 Requirements		
Code	Requirement	Response
.320(.01)	The developer or subdivider shall be responsible for and make all necessary arrangements with the serving utility to provide the underground services (including cost of rearranging any existing overhead facilities).	The developer is proposing underground connections for all utilities.
.320(.02)	The location of the buried facilities shall conform to standards supplied to the subdivider by the City. The City also reserves the right to approve location of all surface-mounted transformers.	NA – No subdivision is being proposed.
.320(.03)	Interior easements (back lot lines) will only be used for storm or sanitary sewers, and front easements will be used for other utilities unless different locations are approved by the City Engineer. Easements satisfactory to the serving utilities shall be provided by the developer and shall be set forth on the plat.	Existing easements exist on the property for the public utilities. Proposed private utilities do not need easements. See plans.

4.400 SITE DESIGN REVIEW		
Code	Requirement	Response
.400(.01)	Excessive uniformity, inappropriateness or poor design of the exterior appearance of structures and signs and the lack of proper attention to site development and landscaping in the business, commercial, industrial and certain residential areas of the City hinders the harmonious development of the City, impairs the desirability of residence, investment or occupation in the City, limits the opportunity to attain the optimum use in value and improvements, adversely affects the stability and value of property, produces degeneration of property in such areas and with attendant deterioration of conditions affecting the peace, health and welfare, and destroys a proper relationship between the taxable value of property and the cost of municipal services therefor.	No Response Required.
EQ.400(.02)	The City Council declares that the purposes and objectives of site development requirements and the site design review procedure are to...	No Response Required.

(.02)A	Assure that Site Development Plans are designed in a manner that insures proper functioning of the site and maintains a high quality visual environment.	Site design re-uses existing vehicular circulation, improves on pedestrian circulation, provides abundant landscaping, and orients building as it relates to these elements
(.02)B	Encourage originality, flexibility and innovation in site planning and development, including the architecture, landscaping and graphic design of said development;	Coffee kiosk design is original to the company branding.
(.02)C	Discourage monotonous, drab, unsightly, dreary and inharmonious developments	Coffee kiosk is relatively small and utilizes many materials, with abundant landscaping
(.02)D	Conserve the City's natural beauty and visual character and charm by assuring that structures, signs and other improvements are properly related to their sites, and to surrounding sites and structures, with due regard to the aesthetic qualities of the natural terrain and landscaping, and that proper attention is given to exterior appearances of structures, signs and other improvements	Coffee kiosk aligns with other businesses in the area and conserves the intent of the surrounding environment.
(.02)E	Protect and enhance the City's appeal and thus support and stimulate business and industry and promote the desirability of investment and occupancy in business, commercial and industrial purposes	Coffee kiosk should stimulate business and industry.
(.02)F	Stabilize and improve property values and prevent blighted areas and, thus, increase tax revenues	Property is currently an empty lot, coffee kiosk should improve property value
(.02)G	Insure that adequate public facilities are available to serve development as it occurs and that proper attention is given to site planning and development so as to not adversely impact the orderly, efficient and economic provision of public facilities and services	Public facilities are available per the civil drawings and have been coordinated with site plan
(.02)H	Achieve the beneficial influence of pleasant environments for living and working on behavioral patterns and, thus, decrease the cost of governmental services and reduce opportunities for crime through careful consideration of physical design and site layout under defensible space guidelines that clearly define all areas as either public, semi-private, or private, provide clear identity of structures and opportunities for easy surveillance of the site that maximize resident control of behavior -- particularly crime	Site design has been oriented to allow for ease of surveillance, and is clearly identified as either private, semi-private, or public.
(.02)I	Foster civic pride and community spirit so as to	Coffee kiosk should foster civic pride and

	improve the quality and quantity of citizen participation in local government and in community growth, change and improvements	community spirit. Adequate outdoor areas have been provided to encourage gathering.
(.02)J	Sustain the comfort, health, tranquility and contentment of residents and attract new residents by reason of the City's favorable environment and, thus, to promote and protect the peace, health and welfare of the City	Coffee kiosk is a neighborhood amenity and should promote desirability to attract residents.
.420(.01)	Application of Section. Except for single-family or two-family dwellings in any residential zoning district, and in the Village zone, row houses or apartments, no Building Permit shall be issued for a new building or major exterior remodeling of an existing building, and no Sign Permit, except as permitted in Sections 4.156.02 and 4.156.05, shall be issued for the erection or construction of a sign relating to such new building or major remodeling, until the plans, drawings, sketches and other documents required for a Sign Permit application have been reviewed and approved by the Board.	No Response Required
.420(.02)	Development in Accord with Plans. Construction, site development and landscaping shall be carried out in substantial accord with the plans, drawings, sketches and other documents approved by the Board, unless altered with Board approval. Nothing in this subsection shall be construed to prevent ordinary repair, maintenance and replacement of any part of the building or landscaping which does not involve a substantial change from the purpose of Section 4.400. If the Board objects to such proposed changes, they shall be subject to the procedures and requirements of the site design review process applicable to new proposals.	No Response Required
.420(.03)	Variances. The Board may authorize variances from the site development requirements, based upon the procedures, standards and criteria listed in Section 4.196. Variances shall be considered in conjunction with the site design review process.	No Response Required
.421(.01)	The following standards shall be utilized by the Board in reviewing the plans, drawings, sketches and other documents required for Site Design Review. These standards are intended to provide a frame of reference for the applicant	No Response Required

	in the development of site and building plans as well as a method of review for the Board. These standards shall not be regarded as inflexible requirements. They are not intended to discourage creativity, invention and innovation. The specifications of one or more particular architectural styles is not included in these standards. (Even in the Boones Ferry Overlay Zone, a range of architectural styles will be encouraged.)	
.421(.01)A	Preservation of Landscape. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing tree and soils removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas.	Site design has minimized disturbance of existing landscaped areas
.421(.01)B	Relation of Proposed Buildings to Environment. Proposed structures shall be located and designed to assure harmony with the natural environment, including protection of steep slopes, vegetation and other naturally sensitive areas for wildlife habitat and shall provide proper buffering from less intensive uses in accordance with Sections 4.171 and 4.139 and 4.139.5. The achievement of such relationship may include the enclosure of space in conjunction with other existing buildings or other proposed buildings and the creation of focal points with respect to avenues of approach, street access or relationships to natural features such as vegetation or topography.	Building location has been oriented towards the existing vehicular aisle, allowing for maximum landscaping along Town Center Loop W
.421(.01)C	Drives, Parking and Circulation. With respect to vehicular and pedestrian circulation, including walkways, interior drives and parking, special attention shall be given to location and number of access points, general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient and, insofar as practicable, do not detract from the design of proposed buildings and structures and the neighboring properties.	Site design utilizes existing drive aisles, and parking stalls. The pedestrian circulation has been extended into existing pathways. New drive thru aisle has been located so that it provides enough distance from the curb cut onto Park Pl.
.421(.01)D	Surface Water Drainage. Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties of the public storm drainage system.	See civil drawings for on-site surface drainage systems. Utilizes existing systems

.421(.01)E	Utility Service. Any utility installations above ground shall be located so as to have a harmonious relation to neighboring properties and site. The proposed method of sanitary and storm sewage disposal from all buildings shall be indicated.	Utilities to be underground. The methods of sanitary and storm sewage is shown on the civil drawings.
.421(.01)F	Advertising Features. In addition to the requirements of the City's sign regulations, the following criteria should be included: the size, location, design, color, texture, lighting and materials of all exterior signs and outdoor advertising structures or features shall not detract from the design of proposed buildings and structures and the surrounding properties.	See Sign drawings. Signs do not detract from the proposed building nor the surrounding buildings.
421(.01)G	Special Features. Exposed storage areas, exposed machinery installations, surface areas, truck loading areas, utility buildings and structures and similar accessory areas and structures shall be subject to such setbacks, screen plantings or other screening methods as shall be required to prevent their being incongruous with the existing or contemplated environment and its surrounding properties. Standards for screening and buffering are contained in Section 4.176.	The exterior trash area is enclosed by a 6ft tall masonry wall, located within the existing parking lot.
.421(.02)	The standards of review outlined in Sections (a) through (g) above shall also apply to all accessory buildings, structures, exterior signs and other site features, however related to the major buildings or structures.	No Response Required
.421(.03)	The Board shall also be guided by the purpose of Section 4.400, and such objectives shall serve as additional criteria and standards.	No Response Required
.421(.04)	Conditional application. The Planning Director, Planning Commission, Development Review Board or City Council may, as a Condition of Approval for a zone change, subdivision, land partition, variance, conditional use, or other land use action, require conformance to the site development standards set forth in this Section.	No Response Required
.421(.05)	The Board may attach certain development or use conditions in granting an approval that are determined necessary to insure the proper and efficient functioning of the development, consistent with the intent of the Comprehensive Plan, allowed densities and the	No Response Required

	requirements of this Code. In making this determination of compliance and attaching conditions, the Board shall, however, consider the effects of this action on the availability and cost of needed housing. The provisions of this section shall not be used in such a manner that additional conditions either singularly or accumulatively have the effect of unnecessarily increasing the cost of housing or effectively excluding a needed housing type.	
.421(.06)	The Board or Planning Director may require that certain paints or colors of materials be used in approving applications. Such requirements shall only be applied when site development or other land use applications are being reviewed by the City.	No Response Required
.421(.06)A	Where the conditions of approval for a development permit specify that certain paints or colors of materials be used, the use of those paints or colors shall be binding upon the applicant. No Certificate of Occupancy shall be granted until compliance with such conditions has been verified.	No Response Required
.421(.06)B	Subsequent changes to the color of a structure shall not be subject to City review unless the conditions of approval under which the original colors were set included a condition requiring a subsequent review before the colors could be changed.	No Response Required
.430(.01)	The following locations, design and access standards for mixed solid waste and recycling storage areas shall be applicable to the requirements of Section 4.179 of the Wilsonville City Code.	See narrative section 4.179 for response. Trash area coordinated with service provider
.430(.02)	Location Standards...	
.430(.02)A	To encourage its use, the storage area for source separated recyclables shall be co-located with the storage area for residual mixed solid waste.	Storage area is adequately sized to allow for source separated recyclables to be collected
.430(.02)B	Indoor and outdoor storage areas shall comply with Uniform Building and Fire Code requirements.	No Response Required.
.430(.02)C	Storage area space requirements can be satisfied with a single location or multiple locations and can combine with both interior and exterior locations.	Storage area is in a single outdoor space.

.430(.02)D	Exterior storage areas can be located within interior side yard or rear yard areas. Minimum setback shall be three (3) feet. Exterior storage areas shall not be located within a required front yard setback, including double frontage lots.	Exterior storage space not located within a front yard setback and is setback in excess of 3 ft from the side and rear yards.
.430(.02)E	Exterior storage areas shall be located in central and visible locations on a site to enhance security for users.	Exterior storage is centrally located and highly visible for security measures.
.430(.02)F	Exterior storage areas can be located in a parking area if the proposed use provides at least the minimum number of parking spaces required for the use after deducting the area used for storage. Storage areas shall be appropriately screened according to the provisions of Section 4.430 (.03), below.	Exterior storage is located in parking area and the minimum number of parking spaces are still met.
430(.02)G	The storage area shall be accessible for collection vehicles and located so that the storage area will not obstruct pedestrian or vehicle traffic movement on the site or on public streets adjacent to the site.	Exterior storage is located in parking area and does not obstruct the flow of traffic.
.430(.03)	Design Standards	
(.03)A	The dimensions of the storage area shall accommodate containers consistent with current methods of local collection.	Size and location of storage area has been coordinated with service provider.
(.03)B	Storage containers shall meet Uniform Fire Code standards and be made of or covered with waterproof materials or situated in a covered area.	Storage containers to have a covered waterproof material. Trash area is not covered
(.03)C	Exterior storage areas shall be enclosed by a sight obscuring fence, wall or hedge at least six (6) feet in height. Gate openings for haulers shall be a minimum of ten (10) feet wide and shall be capable of being secured in a closed or open position. In no case shall exterior storage areas be located in conflict with the vision clearance requirements of Section 4.177.	Storage area is enclosed by six ft wall. Gate openings are 12ft in width. Storage area located outside of the vision clearance requirements of public streets. See response under Section 4.177.
(.03)D	Storage area(s) and containers shall be clearly labeled to indicate the type of materials accepted.	No Response Required. Applicant to agree with any conditions of approval to ensure standards are met.
.430(.04)	Access Standards	
.430(.04)A	Access to storage areas can be limited for security reasons. However, the storage area shall be accessible to users at convenient times of the day and to collect service personnel on	Storage location coordinated with service provider. Applicant to agree with any conditions of approval to ensure standards are met.

	the day and approximate time they are scheduled to provide collection service.	
.430(.04)B	Storage areas shall be designed to be easily accessible to collection trucks and equipment, considering paving, grade and vehicle access. A minimum of ten (10) feet horizontal clearance and eight feet of vertical clearance is required if the storage area is covered.	Storage location and size coordinated with service provider.
.430(.04)C	Storage areas shall be accessible to collection vehicles without requiring backing out of a driveway onto a public street. If only a single access point is available to the storage area, adequate turning radius shall be provided to allow collection vehicles to safely exit the site in a forward motion. (Added by Ordinance #426, April 4, 1994.)	Storage location and size coordinated with service provider. No public street nearby area, nor is any backing out required. Location of storage area within existing parking area of Town Center development.
.440(.01)	Submission of Documents. A prospective applicant for a building or other permit who is subject to site design review shall submit to the Planning Department, in addition to the requirements of Section 4.035, the following	No Response Required.
.440(.01)A	A site plan, drawn to scale, showing the proposed layout of all structures and other improvements including, where appropriate, driveways, pedestrian walks, landscaped areas, fences, walls, off-street parking and loading areas, and railroad tracks. The site plan shall indicate the location of entrances and exits and direction of traffic flow into and out of off-street parking and loading areas, the location of each parking space and each loading berth and areas of turning and maneuvering vehicles. The site plan shall indicate how utility service and drainage are to be provided.	Site plan provided.
.440(.01)B	A Landscape Plan, drawn to scale, showing the location and design of landscaped areas, the variety and sizes of trees and plant materials to be planted on the site, the location and design of landscaped areas, the varieties, by scientific and common name, and sizes of trees and plant materials to be retained or planted on the site, other pertinent landscape features, and irrigation systems required to maintain trees and plant materials. An inventory, drawn at the same scale as the Site Plan, of existing trees of 4" caliper or more is required. However, when large areas of trees are proposed to be retained undisturbed, only a survey identifying the	Landscape plan provided

	location and size of all perimeter trees in the mass in necessary.	
.440(.01)C	Architectural drawings or sketches, drawn to scale, including floor plans, in sufficient detail to permit computation of yard requirements and showing all elevations of the proposed structures and other improvements as they will appear on completion of construction. Floor plans shall also be provided in sufficient detail to permit computation of yard requirements based on the relationship of indoor versus outdoor living area, and to evaluate the floor plan's effect on the exterior design of the building through the placement and configuration of windows and doors.	Architectural plans provided
.440(.01)D	A Color Board displaying specifications as to type, color, and texture of exterior surfaces of proposed structures. Also, a phased development schedule if the development is constructed in stages.	Color board provided
.440(.01)E	A sign Plan, drawn to scale, showing the location, size, design, material, color and methods of illumination of all exterior signs.	Sign Plan provided
.440(.01)F	The required application fee.	Application fee provided
.440(.02)	As soon as possible after the preparation of a staff report, a public hearing shall be scheduled before the Development Review Board. In accordance with the procedures set forth in Section 4.010(2) and 4.012, the Development Review Board shall review and approve, approve with conditions, or deny the proposed architectural, site development, landscaping or sign plans of the applicant. If the Board finds that additional information or time are necessary to render a decision, the matter may be continued to a date certain. The applicant shall be immediately notified in writing of any such continuation or delay together with the scheduled date of review.	No Response Required
.441	Effective Date of Decisions: A decision of the Board shall become effective fourteen (14) calendar days after the date of the decision, unless the decision is appealed to, or called up by, the Council. If the decision of the Board is appealed to, or called up by, the City Council, the decision of the Council shall become effective immediately.	No Response Required

.442	Time Limit on Approval: Site design review approval shall be void after two (2) years unless a building permit has been issued and substantial development pursuant thereto has taken place; or an extension is granted by motion of the Board	No Response Required
.443	Preliminary Consideration: An applicant may request preliminary consideration by the Board of general plans prior to seeking a building permit. When seeking preliminary consideration, the applicant shall submit a site plan showing the proposed structures, improvements and parking, together with a general description of the plans. The Board shall approve or reject all or part of the applicant's general plan within the normal time requirements of a formal application. Preliminary approval shall be deemed to be approval of the final plan to the extent that the final design contains the characteristics of the preliminary design.	No Response Required
.450(.01)	Installation of Landscaping: All landscaping required by this section and approved by the Board shall be installed prior to issuance of occupancy permits, unless security equal to one hundred and ten percent (110%) of the cost of the landscaping as determined by the Planning Director is filed with the City assuring such installation within six (6) months of occupancy. "Security" is cash, certified check, time certificates of deposit, assignment of a savings account or such other assurance of completion as shall meet with the approval of the City Attorney. In such cases the developer shall also provide written authorization, to the satisfaction of the City Attorney, for the City or its designees to enter the property and complete the landscaping as approved. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the Board, the security may be used by the City to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the City shall be returned to the applicant.	No Response Required
.450(.02)	Action by the City approving a proposed landscape plan shall be binding upon the	No Response Required

	applicant. Substitution of plant materials, irrigation systems, or other aspects of an approved landscape plan shall not be made without official action of the Planning Director or Development Review Board, as specified in this Code.	
.450(.03)	All landscaping shall be continually maintained, including necessary watering, weeding, pruning, and replacing, in a substantially similar manner as originally approved by the Board, unless altered with Board approval.	No Response Required
.450(.04)	If a property owner wishes to add landscaping for an existing development, in an effort to beautify the property, the Landscape Standards set forth in Section 4.176 shall not apply and no Plan approval or permit shall be required. If the owner wishes to modify or remove landscaping that has been accepted or approved through the City's development review process, that removal or modification must first be approved through the procedures of Section 4.010.	No Response Required

RESPONSE TO MASTER PLANS

TRANSPORTATION MASTER PLAN 2013

Per the 2013 Transportation Master Plan, the site is affected by the identified work of RW-08. The recommendation is to widen the sidewalk along Town Center Loop West to 10ft-12ft wide to accommodate a "Shared-Use Path". The project has proposed a widened sidewalk to obtain a 10ft wide pathway.

WATER SYSTEM MASTER PLAN

System deficiencies are covered in chapter 3.0 – System Analysis – Section 3.5 Distribution System Evaluation. In this chapter several maps are presented that show areas of the city that have known issues with fire flow, pressure and hydrant coverage. This proposed location does not fall into any of those maps. Therefore, the site does not have any know water system deficiencies.

In addition, we are utilizing an existing water system connection that was run to the site. No new connection proposed.

STORMWATER MASTER PLAN– 2012 URS

System deficiencies are covered in the Executive Summary chapter. In this chapter several maps are presented that show areas of the city that have known issues and identified associated capital improvement projects. See figure ES-1. This site does not have any CIP's shown, therefore the site does not have any know storm water deficiencies.

In addition, due to the fact that the proposed development will not create more than 5,000 SF of impervious surface, storm water detention and water quality are not required. The proposed development will use the existing storm sewer system onsite, not requiring any change to the existing system.

TRANSIT MASTER PLAN

Site is located on existing Transit line. Site proposes pedestrian circulation directed towards connecting to Park Pl, where transit stations are located.

PARKS AND RECREATION MASTER PLAN - 2007

Parks and Recreation Master Plan does not have any designations for this site.

BICYCLE AND PEDESTRIAN MASTER PLAN - 2006

Town Center Loop West sidewalk is being widened to meet the "shared-use pathway" standard as identified under "G" of Chapter 6 Key Challenges and Opportunities. No other "opportunities" for bicycle and pedestrian improvements have been identified in the master plan for this location

PUBLIC WORKS STANDARDS

Per 1018.14, Public Utility Easements are required along all street facing property lines. Proposed development does not encroach into specified areas. Any additional easement requirements will be assumed to be included in the conditions of approval.

Regarding the definitions and public works standards, the site layout/design meets the Public Works standards, any additional requirements are assumed to be included in the conditions of approval.

101.2.01 Intent of Public Works Standards - These standards for constructing public facilities in the City of Wilsonville are intended to protect the public health, safety, and welfare…

Water – using existing water service. Meets 501.2.07 – individual water service required.

Storm – exempt due to less than 5,000 SF. See 301.1.02a - All development that results in 5,000 square feet of new or replaced impervious surface, cumulative over a 5-year period, is subject to the requirements of these standards. Development includes new development, redevelopment, and/or partial redevelopment
Sewer – using existing sanitary sewer lateral that exists in an easement to the south of the subject property per building code. Meets 401.2.02 2: Public sanitary sewers shall be 8 inches in diameter or larger, unless otherwise specified by the City's authorized representative. Sewer laterals for residential service shall be 4-inch inside diameter. All other sewer laterals shall be sized to accommodate the anticipated flow, but no less than a 4-inch inside diameter.
Since fixture count for DB is less than a typical home, a 6" sewer lateral is a conservative design. PVC 3034 SDR 35 pipe specified. Detail No. S-2175 is incorporated into the drawing set.

PLAN SET

See attached documents

Drawing Number	Drawing Name
Architectural Drawings	
A061	SITE PLAN
A062	SITE PLAN - LIGHTING AND AREA CALCS
A101	BUILDING FLOOR PLAN
A201	BUILDING ELEVATIONS I
A301	BUILDING SECTION
A800	BUILDING RENDERINGS
Civil Drawings	
C1	COVER SHEET
C2	EXISTING CONDITIONS
C3	SITE PLAN
C4	UTILITY PLAN
C5	DETAILS
C6	DETAILS
Landscape Drawings	
L0.1	SPECIFICATIONS
L0.2	SPECIFICATIONS
L0.3	SPECIFICATIONS
L2.1	IRRIGATION PLAN
L3.1	PLANTING PLAN
	ALTA Survey – Sheet 1 of 2
	ALTA Survey – Sheet 2 of 2

OTHER REPORTS AND DOCUMENTS

See attached documents:

- Exhibit 01: Impervious Area Threshold Determination Form
- Exhibit 02: Exterior Lighting Comcheck Form
- Exhibit 03: Signage Package (as a separate package)
- Exhibit 04: Outdoor Furniture Specs
- Exhibit 05: Republic Services Approval Letter
- Exhibit 06: Geotechnical Report
- Exhibit 07: Exterior Light Fixture Specs
- Exhibit 08: Planned Business Community Declaration of Easements, Covenants, Conditions and Restriction for Wilsonville Town Center Property
- Exhibit 09: DKS Traffic Study

EXHIBIT 01

IMPERVIOUS AREA THRESHOLD DETERMINATION FORM

1. TOTAL NEW AND REPLACED IMPERVIOUS AREA, SF: Box 1 | 5,544

2. APPLY IMPERVIOUS REDUCTION METHODS:

2a. Pervious Pavement, SF: Box 2a | 558

2b. Green Roof, SF: Box 2b | ϕ

2c. Tree Credit - Applies to NON single family residential developments only. NOTE: Maximum total tree credit allowed is 10% of the Impervious Area in BOX 1:

New Trees

To receive credit, trees must be planted in excess of Planning Division (landscaping) requirements. New evergreen trees must be at least 6 feet tall at the time of planting and new deciduous trees must be at least 2-inch caliper (diameter at 4 feet high). Trees must be planted within 25-feet of ground-level impervious surfaces. New trees cannot be credited against rooftop surfaces or pervious pavement. New trees must be selected from tree species included in Appendix A unless otherwise approved.

Number of new trees meeting criteria x 100 sf each, SF: Box 2c | ϕ

2d. Existing Tree Canopy

To receive credit, existing tree canopy must be preserved during and after construction (recorded on property deed). Existing trees cannot be credited against rooftop surfaces or pervious pavement. Minimum tree size to receive credit is 6-inch caliper. No credit will be given for existing trees located in vegetative buffers or other requirements of the Planning Division. Tree canopy is measured as the area under the tree drip-line and that is within 25 feet of ground-level impervious surfaces.

SF of existing tree canopy that meets criteria: Box 2d | ϕ

2e. Total Tree Credit (Box 2c + 2d), OR 10% of Box 1, whichever is SMALLER: Box 2e | ϕ

3. TOTAL IMPERVIOUS AREA REDUCTION, (Sum of Boxes 2a, 2b, and 2e), SF: Box 3 | 558

4. PROPOSED IMPERVIOUS AREA, (Box 1 minus Box 3), SF (compare to thresholds): Box 4 | 4,986

Impervious Area Threshold Determination Form		
DRAWING NUMBER: ST-6000	DRAWN BY: SR	SCALE: N.T.S.
FILE NAME: ST-6000.DWG	APPROVED BY: NK	DATE: 10/10/14

CITY OF WILSONVILLE

PUBLIC WORKS STANDARDS

EXHIBIT 02

COM*check* Software Version 4.1.1.0

Exterior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: **2014 Oregon Energy Efficiency Specialty Code**
Project Title:
Project Type: New Construction
Exterior Lighting Zone: 4 (High activity metropolitan commercial district)

Construction Site:
Wilsonville, OR

Owner/Agent:

Designer/Contractor:
J.Casey McGuirl
McGuirl Designs and Architecture
107 SE Washington St
#310
Portland, OR 97214
info@mcguirldesigns.com

Section 2: Exterior Lighting Area/Surface Power Calculation

A Exterior Area/Surface	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B x C)	F Proposed Watts
Walkway towards Park Pl (Walkway < 10 feet wide)	68 ft of walkway length	1	Yes	68	28
Drive Up Window - Southside (Drive-up windows/doors)	1 windows or doors	400	No	400	36
Pedestrian Entry Canopy (Entry canopy)	530 ft2	0.4	Yes	212	136
Drive Aisle Pathway (Walkway < 10 feet wide)	113 ft of walkway length	1	Yes	113	50
Garbage Area (Special feature area)	300 ft2	0.2	Yes	60	25
			Total Tradable Watts* =	453	240
			Total Allowed Watts =	853	
			Total Allowed Supplemental Watts** =	1300	

* Wattage tradeoffs are only allowed between tradable areas/surfaces.

** A supplemental allowance equal to 1300 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Section 3: Exterior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Walkway towards Park Pl (Walkway < 10 feet wide 68 ft of walkway length): Tradable Wattage				
Lithonia - Bollard: Other:	1	1	28	28
Drive Up Window - Southside (Drive-up windows/doors 1 windows or doors): Non-tradable Wattage				
DMF - Downlight: Other:	1	4	9	36
Pedestrian Entry Canopy (Entry canopy 530 ft2): Tradable Wattage				
DMF - Downlight: Other:	1	11	9	99
VEX - Wall Sconce: Other:	1	2	18.7	37.4
Drive Aisle Pathway (Walkway < 10 feet wide 113 ft of walkway length): Tradable Wattage				
Hydrel - Bollard: Other:	1	9	5.7	50.9
Garbage Area (Special feature area 300 ft2): Tradable Wattage				
Lithonia - Floodlight: Other:	2	1	25	25
			Total Tradable Proposed Watts =	240

Section 4: Requirements Checklist

In the following requirements, blank checkboxes identify requirements that the applicant has not acknowledged as being met. Checkmarks identify requirements that the applicant acknowledges are met or excepted from compliance. 'Plans reference page/section' identifies where in the plans/specs the requirement can be verified as being satisfied.

Controls, Switching, and Wiring:

❑ 1. Lighting designated to operate more than 2000 hours per year for Uncovered Parking Areas shall be equipped with motion sensors that will reduce the luminaire power by thirty-three percent or turn off one-third the luminaires when no activity is detected.

Plans reference page/section: _____

Exterior Lighting Restrictions and Exceptions:

❑ 2. Mercury vapor and incandescent lighting is not permitted for use as exterior lighting.
Exception(s):

- ❑ Incandescent lighting controlled by motion sensors and having total power less than 150 watts.
- ❑ Incandescent lighting used in or around swimming pools, water features, or other locations subject to the requirements of Article 680 of the National Electric Code.

❑ 3. Exempt lighting fixtures are equipped with a control device independent of the control of the nonexempt lighting and are identified in Section 3 table above.

Plans reference page/section: _____

Exterior Lighting PASSES: Design 86% better than code.

Section 5: Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2014 Oregon Energy Efficiency Specialty Code requirements in COM*check* Version 4.1.1.0 and to comply with the mandatory requirements in the Requirements Checklist.

J.Casey McGuirl - Architect		09/26/2019
Name - Title	Signature	Date

EXHIBIT 04

Dutch Bros Coffee: Outdoor Furniture Options

Model:	Description:	Dimensions:	Finish:	Product Link:
H-2126	46" Square	80 x 80 x 30 1/2"	Blue	https://www.uline.com/BL_8773/Metal-Picnic-Tables
H-2127	46" Round	81 x 81 x 30 1/2"	Blue	https://www.uline.com/BL_8773/Metal-Picnic-Tables
H-2671	46" ADA Square	80 x 80 x 30 1/2"	Blue	https://www.uline.com/BL_8773/Metal-Picnic-Tables
H-2672	46" ADA Round	81 x 81 x 30 1/2"	Blue	https://www.uline.com/BL_8773/Metal-Picnic-Tables
H-2300	46" Mounting Hardware	NA	NA	https://www.uline.com/BL_8773/Metal-Picnic-Tables
H-3500	4' Bench with Back	48 x 12 x 31"	Blue	https://www.uline.com/BL_8776/Metal-Benches
H-2294	6' Bench with Back	72 x 12 x 31"	Blue	https://www.uline.com/BL_8776/Metal-Benches
H-3502	8' Bench with Back	96 x 12 x 31"	Blue	https://www.uline.com/BL_8776/Metal-Benches
H-2301	4', 6' and 8' Mounting Hardware	NA	NA	https://www.uline.com/BL_8776/Metal-Benches

Metal ADA Picnic Table - 46" Square, Blue

More Images & Video

Uline loves these! Attractive, rugged and built to last. Give your corporate office patio an upscale look.

- Thermoplastic coating withstands heat, cold and all weather elements. Rust free.
- High gloss, smooth surface allows for easy spray paint and graffiti removal.
- 9 gauge expanded metal with 2" black steel frame.
- Rounded corners for added safety.
- Wheelchair access with shorter benches.
- Mounting Hardware sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-2671BLU	46" ADA Square	80 x 80 x 30 1/2"	180	$700	$650	1 ADD

DROP SHIPS IN 1 DAY FROM NC UNASSEMBLED VIA MOTOR FREIGHT

Additional Info | Parts | Shopping Lists | Request a Catalog

DIMENSIONS:
- Tabletop: 58 1/2 x 46" (L x W)
- Umbrella Hole: 1 3/4"
- Seat: 38 1/2 x 11 3/4" (L x W)

MATERIAL:
- Frame: Black powder coated galvanized steel
- Legs: Black powder coated
- Tabletop and Seats: Coated with Thermoplastic

CAPACITY:
- Each Seat: 300 lbs

MOUNTING HARDWARE: (Sold Separately from Tables)
- Includes:
  - (8) Concrete screws
  - (4) Brackets
  - (1) Drill bit

SPECIFICATIONS:
- Coating contains UV protection.

PACKAGING:
- Assembly hardware located in a separate white box.

Ships Via Motor Freight

Availability: Drop Ship
Unit Weight: 233 lbs.

Instructions

Email Item

Country of Origin: USA

Metal Bench with Back - 4', Blue

More Images & Video

Striking, attractive UV coated benches will last forever. Recommended for cities, parks, schools and teams.

- Thermoplastic coating withstands heat, cold and all weather elements.
- High gloss, smooth surface allows easy spray paint and graffiti removal.
- Black, powder-coated, galvanized, tubular steel legs.
- Comfortable 12" wide seat.
- Mounting Hardware sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-3500BLU	4' Bench With Back	48 x 12 x 31"	80	$340	$320	1 ADD

DROP SHIPS IN 1 DAY FROM NC UNASSEMBLED VIA MOTOR FREIGHT

Additional Info | Parts | Shopping Lists | Request a Catalog

CAPACITY:
- Weight: 1,000 lbs

PACKAGING:
- Assembly hardware is attached to leg braces.

Ships Via Motor Freight

Availability: Drop Ship
Unit Weight: 144 lbs.

Instructions

Catalog Page 393

Email Item

Country of Origin: USA

Metal Bench with Back - 6', Blue

More Images & Video

Striking, attractive UV coated benches will last forever. Recommended for cities, parks, schools and teams.

- Thermoplastic coating withstands heat, cold and all weather elements.
- High gloss, smooth surface allows easy spray paint and graffiti removal.
- Black, powder-coated, galvanized, tubular steel legs.
- Comfortable 12" wide seat.
- Mounting Hardware sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-2294BLU-P	6' Bench With Back	72 x 12 x 31"	100	$370	$350	1 ADD

DROP SHIPS IN 1 DAY FROM NC UNASSEMBLED VIA MOTOR FREIGHT

Additional Info | Parts | Shopping Lists | Request a Catalog

CAPACITY:
- Weight: 1,000 lbs

PACKAGING:
- Assembly hardware is attached to leg braces.

Ships Via Motor Freight

Availability: Drop Ship
Unit Weight: 150 lbs.

Instructions

Catalog Page 393

Email Item

Country of Origin: USA

Metal Bench with Back - 8', Blue

More Images & Video

Striking, attractive UV coated benches will last forever. Recommended for cities, parks, schools and teams.

- Thermoplastic coating withstands heat, cold and all weather elements.
- High gloss, smooth surface allows easy spray paint and graffiti removal.
- Black, powder-coated, galvanized, tubular steel legs.
- Comfortable 12" wide seat.
- Mounting Hardware sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-3502BLU	8' Bench With Back	96 x 12 x 31"	120	$450	$430	1 ADD

DROP SHIPS IN 1 DAY FROM NC UNASSEMBLED VIA MOTOR FREIGHT

Additional Info | Parts | Shopping Lists | Request a Catalog

CAPACITY:
- Weight: 1,000 lbs

PACKAGING:
- Assembly hardware is attached to leg braces.

Ships Via Motor Freight

Availability: Drop Ship
Unit Weight: 180 lbs.

Instructions

Catalog Page 393

Email Item

Country of Origin: USA

Metal Picnic Table - 46" Round, Blue

More Images & Video

Uline loves these! Attractive, rugged and built to last. Give your corporate office patio an upscale look.

- Thermoplastic coating withstands heat, cold and all weather elements. Rust free.
- High gloss, smooth surface allows for easy spray paint and graffiti removal.
- 9 gauge expanded metal with 2" black steel frame.
- Rounded corners for added safety.
- Mounting Hardware sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-2127BLU	46" Round	81 x 81 x 30 1/2"	175	$740	$690	1 ADD

DROP SHIPS IN 1 DAY FROM NC UNASSEMBLED VIA MOTOR FREIGHT

Additional Info | Parts | Shopping Lists | Request a Catalog

DIMENSIONS:
- Umbrella Hole: 1 3/4"
- Seat: 39 x 12" (L x W)

MATERIAL:
- Frame: Black powder coated galvanized steel
- Legs: Black powder coated
- Tabletop and Seats: Coated with Thermoplastic

CAPACITY:
- Each Seat: 300 lbs

MOUNTING HARDWARE: (Sold Separately from Tables)
- Includes:
  - (8) Concrete screws
  - (4) Brackets
  - (1) Drill bit

SPECIFICATIONS:
- Coating contains UV protection.

PACKAGING:
- Assembly hardware located in a separate white box.

Ships Via Motor Freight

Availability: Drop Ship
Unit Weight: 250 lbs.

Instructions

Catalog Page 393

Email Item

Country of Origin: USA

Metal Picnic Table - 46" Square, Blue

More Images & Video

Uline loves these! Attractive, rugged and built to last. Give your corporate office patio an upscale look.

- Thermoplastic coating withstands heat, cold and all weather elements. Rust free.
- High gloss, smooth surface allows for easy spray paint and graffiti removal.
- 9 gauge expanded metal with 2" black steel frame.
- Rounded corners for added safety.
- Mounting Hardware sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-2126BLU	46" Square	80 x 80 x 30 1/2"	185	$720	$670	1 ADD

DROP SHIPS IN 1 DAY FROM NC UNASSEMBLED VIA MOTOR FREIGHT

Additional Info | Parts | Shopping Lists | Request a Catalog

DIMENSIONS:
- Umbrella Hole: 1 3/4"
- Seat: 38 1/2 x 11 3/4" (L x W)

MATERIAL:
- Frame: Black powder coated galvanized steel
- Legs: Black powder coated
- Tabletop and Seats: Coated with Thermoplastic

CAPACITY:
- Each Seat: 300 lbs

MOUNTING HARDWARE: (Sold Separately from Tables)
- Includes:
  - (8) Concrete screws
  - (4) Brackets
  - (1) Drill bit

SPECIFICATIONS:
- Coating contains UV protection.

PACKAGING:
- Assembly hardware located in a separate white box.

Ships Via Motor Freight

Availability: Drop Ship
Unit Weight: 242 lbs.

Instructions

Catalog Page 393

Email Item

Country of Origin: USA

Metal Rectangle Table and Bench Mounting Hardware

Enlarge & Video

Permanently anchor to solid surfaces.

- Prevents theft and keeps Metal Picnic Tables and Benches from tipping over.
- Includes 8 screws, 4 brackets and 1 drill bit for concrete.

MODEL NO.	DESCRIPTION	FITS	PRICE EACH	ADD TO CART
H-2301	Mounting Hardware	Rectangle Tables and Benches	$35	1 ADD

DROP SHIPS IN 1 DAY FROM NC

Additional Info | Shopping Lists | Request a Catalog

Availability: Drop Ship
Unit Weight: 0.66 lbs.

Email Item

Country of Origin: USA

Metal Round and Square Table Mounting Hardware

Enlarge & Video

Permanently anchor to solid surfaces.

- Prevents theft and keeps Metal Picnic Tables from tipping over.

MODEL NO.	DESCRIPTION	FITS	PRICE EACH	ADD TO CART
H-2300	Mounting Hardware	Square and Round Tables	$30	1 ADD

DROP SHIPS IN 1 DAY FROM NC

Additional Info | Shopping Lists | Request a Catalog

INCLUDES:
- (8) Concrete screws
- (4) Brackets
- (1) Concrete drill bit

Availability: Drop Ship
Unit Weight: 0.44 lbs.

Email Item

Country of Origin: USA

Metal ADA Picnic Table - 46" Round, Blue

More Images & Video

Uline loves these! Attractive, rugged and built to last. Give your corporate office patio an upscale look.

- Thermoplastic coating withstands heat, cold and all weather elements. Rust free.
- High gloss, smooth surface allows for easy spray paint and graffiti removal.
- 9 gauge expanded metal with 2" black steel frame.
- Rounded corners for added safety.
- Wheelchair access with shorter benches.
- Mounting Hardware sold separately.

MODEL NO.	DESCRIPTION	SIZE L x W x H	WT. (LBS.)	PRICE EACH 1	PRICE EACH 3+	ADD TO CART
H-2672BLU	46" ADA Round	81 x 81 x 30 1/2"	160	$720	$670	1 ADD

DROP SHIPS IN 1 DAY FROM NC UNASSEMBLED VIA MOTOR FREIGHT

Additional Info | Parts | Shopping Lists | Request a Catalog

DIMENSIONS:
- Seat: 39 x 12" (L x W)
- Umbrella Hole: 1 3/4"

MATERIAL:
- Frame: Black powder coated galvanized steel
- Legs: Black powder coated
- Tabletop and Seats: Coated with Thermoplastic

CAPACITY:
- Each Seat: 300 lbs

MOUNTING HARDWARE: (Sold Separately from Tables)
- Includes:
  - (8) Concrete screws
  - (4) Brackets
  - (1) Drill bit

SPECIFICATIONS:
- Coating contains UV protection.

PACKAGING:
- Assembly hardware located in a separate white box.

Ships Via Motor Freight

Availability: Drop Ship
Unit Weight: 220 lbs.

Instructions

Catalog Page 393

Email Item

Country of Origin: USA

EXHIBIT 05

July 10, 2019

Alicia Jameson
McGuirl Designs

Re: Dutch Brothers- New Construction
17290 SW Town Center Loop
Wilsonville, OR 97070

Dear Alicia,

Thank you, for sending us the final design plans for this proposed construction in Wilsonville.

My Company: Republic Services of Clackamas and Washington Counties has the franchise agreement to service this area with the City of Wilsonville. We will provide complete commercial waste removal and recycling services as needed on a weekly basis for this location.

The design plans & location of the trash and recycle enclosure positioned at the East end of the property will allow access for our trucks.

Thanks Alicia for your help and concerns for our services prior to this project being developed.

Sincerely,

Karl Bischoff
Operations Supervisor
Republic Services Inc.

Carlson Geotechnical

A Division of Carlson Testing, Inc.
Phone: (503) 601-8250
Fax: (503) 601-8254

Bend Office	**(541) 330-9155**
Eugene Office	**(541) 345-0289**
Salem Office	**(503) 589-1252**
Tigard Office	**(503) 684-3460**

Report of
Geotechnical Investigation
Dutch Brothers Wilsonville
29702 Town Center Loop W
Wilsonville, Oregon

CGT Project Number G1905110

Prepared for

Douglas Fry
18187 Siena Drive
Lake Oswego, Oregon, 97034

August 23, 2019

Carlson Geotechnical

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Phone: (503) 601-8250
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18187 Siena Drive
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Report of
Geotechnical Investigation
Dutch Brothers Wilsonville
29702 Town Center Loop W
Wilsonville, Oregon

CGT Project Number G1905110

Dear Mr. Fry:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation for the proposed Dutch Brothers Wilsonville project. The site is located at 29702 Town Center Loop W in Wilsonville, Oregon. We performed our work in general accordance with CGT Proposal GP8563, dated July 22, 2019. Written authorization for our services was received on July 23, 2019.

We appreciate the opportunity to work with you on this project. Please contact us at 503.601.8250 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL

Melissa L. Lehman, GIT
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TABLE OF CONTENTS

ATTACHMENTS

1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation for the proposed Dutch Brothers Wilsonville project. The site is located at 29702 Town Center Loop W in Wilsonville, Oregon, as shown on the attached Site Location, Figure 1.

1.1 Project Information

CGT developed an understanding of the proposed project based on our correspondence with you and a preliminary project plan prepared by McGuirl Designs & Architecture, dated July 9, 2019. Based on our review, we understand the project will include:

- Construction of a new approximately 450 square-foot coffee kiosk. For the purposes of this proposal, we have assumed maximum column, continuous wall, and uniform floor slab loads will be on the order of 25 kips, 2 kips per lineal foot (klf), and 150 pounds per square foot (psf), respectively.
- Construction of a paved, drive thru around the kiosk. We anticipate the pavements will consist of asphalt and Portland cement concrete.
- Replacement of a small section of the parking lot east of the proposed kiosk to construct a trash enclosure (concrete pad).
- We anticipate stormwater collected from new impervious areas of the site will be collected and routed to the nearest storm drain or other suitable discharge point.
- Although no grading plans have been provided, we anticipate permanent grade changes will include cuts and fills up to about 3 feet relative to existing grades.

1.2 Scope of Services

Our scope of work included the following:

- Contact the Oregon Utilities Notification Center to mark the locations of public utilities within a 20-foot radius of our explorations at the site. CGT also subcontracted a private utility locator service to mark the locations of detectable private utilities within the same radius.
- Explore subsurface conditions at the site by excavating three test pits to depths of up to about 10¼ feet below ground surface (bgs). Details of the subsurface investigation are presented in Appendix A.
- Classify the materials encountered in the explorations in general accordance with American Society for Testing and Materials (ASTM) D2488 (Visual-Manual Procedure).
- Provide a technical narrative describing surface and subsurface deposits and local geology of the site based on the results of our explorations and published geologic mapping.
- Provide recommendations for the Seismic Site Class, mapped maximum considered earthquake spectral response accelerations, and site seismic coefficients.
- Provide a qualitative evaluation of seismic hazards at the site, including earthquake-induced liquefaction, landsliding, and surface rupture due to faulting or lateral spread.
- Provide geotechnical recommendations for site preparation and earthwork.
- Provide geotechnical engineering recommendations for use in design and construction of shallow foundations, floor slabs, and pavements.

- Provide this written report summarizing the results of our geotechnical investigation and recommendations for the project.

2.0 SITE DESCRIPTION

2.1 Site Geology

Based on available geologic mapping of the area, the site is underlain by Pleistocene catastrophic flood deposits[1,] originating from glacial outburst floods of Lake Missoula. The flood deposits were produced by the periodic failure of glacial ice dams that impounded Lake Missoula in present day Montana between 18,000 to 15,000 years ago[2]. Floodwaters raged through Idaho, eastern Washington, and through the Columbia River Gorge. Near Rainier, Oregon, the river channel was restricted, causing floodwaters to back up the Willamette Valley as far south as Eugene. Floodwaters in the Portland area were as much as 400 feet deep, leaving only the tops of the tallest hills dry. The flood deposits are typically split into three different facies: the coarse-grained facies, the fine-grained facies, and the channel facies. Coarse-grained Missoula flood deposits are mapped in the vicinity of the site, which consist of overlapping sheets of gravel that extend from the mouth of the Columbia River Gorge at Troutdale west to the Willamette River and south up the Willamette Valley to the Lake Oswego-Tualatin-Canby-Wilsonville area. The thickness of these deposits is typically up to about 50 feet in the vicinity of the site[3].

The catastrophic flood deposits are underlain by Troutdale Formation. The Troutdale Formation generally consists of gray to brown silt and clay with yellow and red-brown, fine-grained silty sand and some gravel- to cobble-sized conglomerate beds. This unit is up to about 200 feet thick in the vicinity of the site.

2.2 Site Surface Conditions

The site consists of a single tax lot that totals approximately 0.52 acres in size. The parcel was primarily triangular in shape and was bordered to the southwest by Town Center Loop West, to the northwest by Park Place, to the south by commercial development, and to the east by a paved parking area. The relatively level site was covered in short grass. Site layout and surface conditions at the time of our field investigation are shown on the attached Site Plan (Figure 2) and Site Photographs (Figure 3).

2.3 Subsurface Conditions

2.3.1 Subsurface Investigation & Laboratory Testing

Our subsurface investigation consisted of three test pits (TP-1 through TP-3) completed on August 8, 2019. The approximate exploration locations are shown on the Site Plan, attached as Figure 2. In summary, the test pits were excavated to depths ranging from about 9¼ to 10¼ feet bgs. Details regarding the subsurface investigation, logs of the explorations, and results of laboratory testing are presented in Appendix A. Subsurface conditions encountered during our investigation are summarized below.

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1 Ma, Madin, Duplantis, and Williams, 2012, Lidar-based Surficial Geologic Map and Database of the Greater Portland, Oregon, Area, Clackamas, Columbia, Marion, Multnomah, Washington, and Yamhill Counties, Oregon, and Clark County, Washington Oregon Department of Geology and Mineral Industries Open-File Report O-12-02.

2 Allen, John Eliot, Burns, Marjorie, and Burns, Scott, 2009. Cataclysms on the Columbia, The Great Missoula Floods, Revised Second Edition: Ooligan Press, Portland State University.

3 Schlicker, H.G., and Deacon, R.J., 1967, Engineering geology of the Tualatin Valley region: Oregon Department of Geology and Mineral Industries, Bulletin 60, scale 1:48,000.

2.3.2 Subsurface Materials

Logs of the explorations are presented in Appendix A. The following describes each of the subsurface materials encountered at the site.

Undocumented Organic Soil Fill (OL Fill)
Undocumented organic soil fill was encountered at the surface of all three test pits, TP-1 through TP-3. Undocumented fill refers to materials placed without (available) records of subgrade conditions or evaluation of compaction. The organic soil fill was typically brown, dry to moist, exhibited low plasticity, and included trace subangular gravel up to ¾ inch in diameter. This soil extended to depths of about ½ foot bgs.

Silt Fill (ML Fill)
Silt fill was encountered below the organic soil fill in TP-2 and TP-3 and extended to depths of 1¼ and 1 foot bgs, respectively. The fill was generally brown, dry to moist, exhibited low plasticity, and included trace subrounded gravel and cobbles up to 5 inches in diameter.

Lean Clay (CL)
Lean clay was encountered below the fill in all three test pits, and extended to depths of 6 to 7 feet bgs. This material was generally hard, brown to orange-brown, dray to moist, and exhibited low to medium plasticity.

Lean Clay with Sand (CL)
Lean clay with sand was encountered below the lean clay in all three test pits, and extended to the full depths explored, approximately 9¼ to 10¼ feet bgs. This material was generally stiff to very stiff, brown, moist, exhibited low plasticity, and included fine-grained sand.

The soils encountered during our subsurface investigation were consistent with the Missoula flood deposits described in Section 2.1.

2.3.3 Groundwater

Groundwater was not encountered within the depths explored on August 8, 2019. To determine approximate regional groundwater levels in the area, we researched well logs available on the Oregon Water Resources Department (OWRD)[4] website for wells located within Section 14, Township 3 South, Range 1 West, Willamette Meridian. Our review indicated that groundwater levels in the area generally ranged from about 5 to 40 feet bgs. Deeper water zones were reported at depths below 50 feet bgs. It should be noted groundwater levels vary with local topography. In addition, the groundwater levels reported on the OWRD logs often reflect the purpose of the well, so water well logs may only report deeper, confined groundwater, while geotechnical or environmental borings will often report any groundwater encountered, including shallow, unconfined groundwater. Therefore, the levels reported on the OWRD well logs referenced above are considered generally indicative of local water levels and may not reflect actual groundwater levels at the project site. We anticipate that groundwater levels will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors. Additionally, the on-site, lean clay is conducive to formation of perched groundwater.

[4] Oregon Water Resources Department, 2019. Well Log Records, *accessed August 2019*, from OWRD web site: http://apps.wrd.state.or.us/apps/gw/well_log/.

3.0 SEISMIC CONSIDERATIONS

3.1 Seismic Design

Section 1613.3.2 of the 2014 Oregon Structural Specialty Code (2014 OSSC) requires that the determination of the seismic site class be based on subsurface data in accordance with Chapter 20 of the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7). Based on the results of the explorations and review of geologic mapping, we have assigned the site as Site Class D for the subsurface conditions encountered.

Earthquake ground motion parameters for the site were obtained in accordance with the 2014 OSSC using the Seismic Hazards by Location calculator on the ATC website[5]. The site Latitude 45.304606° North and Longitude 122.765572° West were input as the site location. The following table shows the recommended seismic design parameters for the site.

Table 1 Seismic Ground Motion Values

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_s)	0.924g
	Spectral Acceleration, 1.0 second (S_1)	0.409g
Coefficients (Site Class D)	Site Coefficient, 0.2 sec. (F_A)	1.131
	Site Coefficient, 1.0 sec. (F_V)	1.591
Adjusted MCE Spectral Response Parameters	MCE Spectral Acceleration, 0.2 sec. (S_{MS})	1.044g
	MCE Spectral Acceleration, 1.0 sec. (S_{M1})	0.651g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 seconds (S_{DS})	0.696g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.434g
Seismic Design Category		D

3.2 Seismic Hazards

3.2.1 Liquefaction

In general, liquefaction occurs when deposits of loose/soft, saturated, cohesionless soils, generally sands and silts, are subjected to strong earthquake shaking. If these deposits cannot drain quickly enough, pore water pressures can increase, approaching the value of the overburden pressure. The shear strength of a cohesionless soil is directly proportional to the effective stress, which is equal to the difference between the overburden pressure and the pore water pressure. When the pore water pressure increases to the value of the overburden pressure, the shear strength of the soil approaches zero, and the soil can liquefy. The liquefied soils can undergo rapid consolidation or, if unconfined, can flow as a liquid. Structures supported by the liquefied soils can experience rapid, excessive settlement, shearing, or even catastrophic failure. The Oregon Department of Geology and Mineral Industries' Oregon Statewide Geohazards Viewer[6] shows a low hazard for liquefaction for the site or immediate vicinity.

[5] Applied Technology Council (ATC), 2019. USGS seismic design parameters determined using "Seismic Hazards by Location," *accessed August 2019*, from the ATC website https://hazards.atcouncil.org/.

[6] Oregon Department of Geology and Mineral Industries, 2019. Oregon Statewide Geohazards Viewer, *accessed August 2019*, from DOGAMI web site: http://www.oregongeology.org/sub/hazvu/index.htm.

For fine-grained soils, susceptibility to liquefaction is evaluated based on penetration resistance and plasticity, among other characteristics. Criteria for identifying non-liquefiable, fine-grained soils are constantly evolving. Current practice to identify non-liquefiable, fine-grained soils is based on moisture content and plasticity characteristics of the soils[7,8]. The susceptibility of sands, gravels, and sand-gravel mixtures to liquefaction is typically assessed based on penetration resistance, as measured using SPTs, CPTs, or Becker Hammer Penetration tests (BPTs).

Based on their plasticity characteristics and lack of saturated conditions, the lean clay soils encountered within our explorations are considered non-liquefiable. Based on review of geologic mapping and our previous experience in the area, we do not anticipate liquefiable conditions are present at depths below those explored as part of this assignment.

3.2.2 Slope Instability

Due to the relatively level topography at and surrounding the site, the risk of slope instability at the site is considered low. The proposed grading includes relatively minimal planned changes in site grades and is not anticipated to significantly increase this risk.

3.2.3 Surface Rupture

3.2.3.1 Faulting

Although the site is situated in a region of the country with known active faults and historic seismic activity, no known faults exist on or immediately adjacent to the site. Therefore, the risk of surface rupture at the site due to faulting is considered low.

3.2.3.2 Lateral Spread

Surface rupture due to lateral spread can occur on sites underlain by liquefiable soils that are located on or immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spread, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face.

Based on the relatively level topography at the site and the non-liquefiable nature of the soils at the site, the risk of damage associated with lateral spread is considered to be negligible.

4.0 CONCLUSIONS

Based on the results of our field explorations and analyses, the proposed project may be constructed as described in Section 1.1 of this report, provided the recommendations presented later in this report are incorporated into the design and development.

Satisfactory subgrade support for planned shallow foundations, floor slabs, and pavements can be achieved by the native, stiff to better, native lean clay (CL), or structural fill that is properly placed and compacted on this soil during construction. This soil was encountered at depths of about ½ to 1¼ feet bgs within the borings.

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[7] Seed, R.B. et al., 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework. Earthquake Engineering Research Center Report No. EERC 2003-06.

[8] Bray, Jonathan D., Sancio, Rodolfo B., et al., 2006. Liquefaction Susceptibility of Fine-Grained Soils, Journal of Geotechnical and Geoenvironmental Engineering, Volume 132, Issue 9, September 2006.

The existing undocumented fill materials encountered within the explorations was variable in terms of relative consistency. Due to its highly variable consistency, it is evident the existing fill materials were not placed in accordance with typical code requirements for structural fill. The existing fill materials are not recommended for subgrade support of building foundations, floor slabs, or pavements due to the inherent risk of (1) uneven subgrade response once loads are applied, and (2) excessive, long-term, total and differential settlements. CGT recommends the existing fill materials be removed and replaced with structural fill placed and compacted in accordance with the recommendations provided in Section 5.4 below.

The near surface lean clay (CL) is susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to the subgrade could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. In the event that construction occurs during wet weather, CGT recommends that measures be implemented to protect the fine-grained subgrade in areas of repeated construction traffic. Geotechnical recommendations for wet weather construction are presented in Section 5.3 of this report.

5.0 RECOMMENDATIONS

The recommendations presented in this report are based on the information provided to us, results of our field investigation and analyses, laboratory data, and professional judgment. CGT has observed only a small portion of the pertinent subsurface conditions. The recommendations are based on the assumptions that the subsurface conditions do not deviate appreciably from those found during the field investigation. CGT should be consulted for further recommendations if the design of the proposed development changes and/or variations or undesirable geotechnical conditions are encountered during site development.

5.1 Site Preparation

5.1.1 Stripping

Existing vegetation, topsoil, rooted soils, and undocumented fill soils should be removed from within, and for a minimum 5-foot margin around, proposed building pad and pavement areas. Based on the results of our field explorations, topsoil stripping depths are anticipated to be less than ½ foot bgs. Based on the results of our field explorations, undocumented fill encountered at the site extended to depths of about 1¼ feet bgs. These materials may be deeper or shallower at locations away from the completed explorations. The geotechnical engineer's representative should provide recommendations for actual stripping depths based on observations during site stripping. Stripped surface vegetation and rooted soils should be transported off-site for disposal, or stockpiled for later use in landscaped areas. Stripped, inorganic fill materials should be transported off-site for disposal, or may be stockpiled for later use as structural fill as described in Section 5.4.1 of this report.

5.1.2 Grubbing

Grubbing of trees, if required, should include the removal of the root mass and roots greater than ½ inch in diameter. Grubbed materials should be transported off-site for disposal. Root masses from larger trees may extend greater than 3 feet bgs. Where root masses are removed, the resulting excavation should be properly backfilled with structural fill in conformance with Section 5.4 of this report.

5.1.3 Test Pit Backfills

The test pits conducted at the site were loosely backfilled during our field investigation. Where test pits are located within finalized building, structural fill, or pavement areas, the loose backfill materials should be re-excavated. The resulting excavations should be backfilled with structural fill in conformance with Section 5.4 of this report.

5.1.4 Existing Utilities & Below-Grade Structures

All existing utilities at the site should be identified prior to excavation. Abandoned utility lines beneath the new building, pavements, and hardscaping features should be completely removed or grouted full. Soft, loose, or otherwise unsuitable soils encountered in utility trench excavations should be removed and replaced with structural fill in conformance with Section 5.4 this report. Buried structures (i.e. footings, foundation walls, retaining walls, slabs-on-grade, tanks, etc.), if encountered during site development, should be completely removed and replaced with structural fill in conformance with Section 5.4 of this report.

5.1.5 Subgrade Preparation

After site preparation as recommended above, but prior to placement of structural fill and/or aggregate base, the geotechnical engineer's representative should observe the exposed subgrade soils in order to identify areas of excessive yielding through either proof rolling or probing. Proof rolling of subgrade soils is typically conducted during dry weather using a fully-loaded, 10- to 12-cubic-yard, tandem-axle, tire-mounted, dump truck or equivalent weighted water truck. Areas of limited access or that appear too soft or wet to support proof rolling equipment should be evaluated by probing. During wet weather, subgrade preparation should be performed in general accordance with the recommendations presented in Section 5.3 of this report. If areas of soft soil or excessive yielding are identified, the affected material should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report.

5.1.6 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County, and State regulations.

5.2 Temporary Excavations

5.2.1 Overview

Conventional earthmoving equipment in proper working condition should be capable of making necessary excavations for the anticipated site cuts as described earlier in this report. All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and adjacent improvements. A "competent person," as defined by OR-OSHA, should be on-site during construction in accordance with regulations presented by OR-OSHA. CGT's current role on the project does not include review or oversight of excavation safety.

5.2.2 OSHA Soil Type

For use in the planning and construction of temporary excavations up to 10 feet in depth, an OSHA soil type "A" may be used for the stiff to better, lean clay (CL) encountered near the surface of the site.

5.2.3 Utility Trenches

Temporary trench cuts should stand near vertical to depths of approximately 4 feet in the native, lean clay (CL) encountered near the surface of the site. If groundwater seepage undermines the stability of the trench, or if sidewall caving is observed during excavation, the sidewalls should be flattened or shored. Depending on the time of year trench excavations occur, trench dewatering may be required in order to maintain dry working conditions. Pumping from sumps located within the trench will likely be effective in removing water resulting from seepage. If groundwater is encountered, we recommend placing trench stabilization material at the base of the excavations. Trench stabilization material should be in conformance with Section 5.4.3.

5.2.4 Excavations Near Foundations

Excavations near footings should not extend within a 1½ horizontal to 1 vertical (1½H:1V) plane projected out and down from the outside, bottom edge of the footings. In the event excavation needs to extend below the referenced plane, temporary shoring of the excavation and/or underpinning of the subject footing may be required. The geotechnical engineer should be consulted to review proposed excavation plans for this design case to provide specific recommendations.

5.3 Wet Weather Considerations

For planning purposes, the wet season should be considered to extend from late September to late June. It is our experience that dry weather working conditions should prevail between early July and mid-September. Notwithstanding the above, soil conditions should be evaluated in the field by the geotechnical engineer's representative at the initial stage of site preparation to determine whether the recommendations within this section should be incorporated into construction.

5.3.1 Overview

Due to the fines content, the on-site lean clay (CL) is susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to subgrade soils could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. For wet weather construction, site preparation activities may need to be accomplished using track-mounted equipment, loading removed material onto trucks supported on granular haul roads, or other methods to limit soil disturbance. The geotechnical engineer's representative should evaluate the subgrade during excavation by probing rather than proof rolling. Soils that have been disturbed during site preparation activities, or soft or loose areas identified during probing, should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2.

5.3.2 Geotextile Separation Fabric

We recommend a geotextile separation fabric be placed to serve as a barrier between the prepared subgrade and granular fill/base rock in areas of repeated or heavy construction traffic. The geotextile fabric should meet the requirements presented in the current Oregon Department of Transportation (ODOT) Standard Specification for Construction, Section 02320.

5.3.3 Granular Working Surfaces (Haul Roads & Staging Areas)

Haul roads subjected to repeated heavy, tire-mounted, construction traffic (e.g. dump trucks, concrete trucks, etc.) will require a minimum of 18 inches of imported granular material. For light staging areas, 12 inches of

imported granular material is typically sufficient. Additional granular material or geo-grid reinforcement may be recommended based on site conditions and/or loading at the time of construction. The imported granular material should be in conformance with Section 5.4.2 and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. The prepared subgrade should be covered with geotextile fabric (Section 5.3.2) prior to placement of the imported granular material. The imported granular material should be placed in a single lift (up to 24 inches deep) and compacted using a smooth-drum, non-vibratory roller until well-keyed.

5.3.4 Footing Subgrade Protection

A minimum of 3 inches of imported granular material is recommended to protect fine-grained, footing subgrades from foot traffic during inclement weather. The imported granular material should be in conformance with Section 5.4.2. The maximum particle size should be limited to 1 inch. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade, and compacted using non-vibratory equipment until well keyed.

5.4 Structural Fill

The geotechnical engineer should be provided the opportunity to review all materials considered for use as structural fill (prior to placement). Samples of the proposed fill materials should be submitted to the geotechnical engineer a minimum of 5 business days prior their use on site[9]. The geotechnical engineer's representative should be contacted to evaluate compaction of structural fill as the material is being placed. Evaluation of compaction may take the form of in-place density tests and/or proof roll tests with suitable equipment. Structural fill should be evaluated at intervals not exceeding every 2 vertical feet as the fill is being placed.

5.4.1 On-Site Soils – General Use

5.4.1.1 Silt Fill (ML Fill), Lean Clay (CL), Lean Clay with Sand (CL)

Re-use of these soils as structural fill may be difficult because these soils are sensitive to small changes in moisture content and are difficult, if not impossible, to adequately compact during wet weather. We anticipate the moisture content of these soils will be higher than the optimum moisture content for satisfactory compaction. Therefore, moisture conditioning (drying) should be expected in order to achieve adequate compaction. If used as structural fill, these soils should be free of organic matter, debris, and particles larger than 4 inches. When used as structural fill, these soils should be placed in lifts with a maximum pre-compaction thickness of about 8 inches at moisture contents within –1 and +3 percent of optimum, and compacted to not less than 92 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor).

If the on-site materials cannot be properly moisture-conditioned and/or processed, we recommend using imported granular material for structural fill.

5.4.2 Imported Granular Structural Fill – General Use

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel that is fairly well graded between coarse and fine particle sizes. The granular fill should contain no organic matter, debris, or particles larger than 4 inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. For fine-grading purposes, the maximum particle size should be limited to 1½

[9] Laboratory testing for moisture density relationship (Proctor) is required. Tests for gradation may be required.

inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. Standard No. 200 Sieve if placed during dry weather, and provided the fill material is moisture-conditioned, as necessary, for proper compaction. Imported granular fill material should be placed in lifts with a maximum thickness of about 12 inches, and compacted to not less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). Proper moisture conditioning and the use of vibratory equipment will facilitate compaction of these materials.

Granular fill materials with high percentages of particle sizes in excess of 1½ inches are considered non-moisture-density testable materials. As an alternative to conventional density testing, compaction of these materials should be evaluated by proof roll test observation (deflection tests), where accepted by the geotechnical engineer.

5.4.3 Trench Base Stabilization Material

If groundwater is present at the base of utility excavations, trench base stabilization material should be placed. Trench base stabilization material should consist of a minimum of 1 foot of well-graded granular material with a maximum particle size of 4 inches and less than 5 percent material passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material, placed in one lift (up to 24 inches thick), and compacted until well-keyed.

5.4.4 Trench Backfill Material

Trench backfill for the utility pipe base and pipe zone should consist of granular material as recommended by the utility pipe manufacturer. Trench backfill above the pipe zone should consist of well-graded granular material containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 8 percent material passing the U.S. Standard No. 200 Sieve. As a guideline, trench backfill should be placed in maximum 12-inch-thick lifts. The earthwork contractor may elect to use alternative lift thicknesses based on their experience with specific equipment and fill material conditions during construction in order to achieve the required compaction. The following table presents recommended relative compaction percentages for utility trench backfill.

Table 2 Utility Trench Backfill Compaction Recommendations

Backfill Zone	Recommended Minimum Relative Compaction	
	Structural Areas[1,2]	Landscaping Areas
Pipe Base and Within Pipe Zone	90% ASTM D1557 or pipe manufacturer's recommendation	88% ASTM D1557 or pipe manufacturer's recommendation
Above Pipe Zone	92% ASTM D1557	90% ASTM D1557
Within 3 Feet of Design Subgrade	95% ASTM D1557	90% ASTM D1557

1 Includes proposed building, pavement areas, structural fill areas, exterior hardscaping, etc.
2 Or as specified by the local jurisdiction where located in the public right of way.

5.4.5 Controlled Low-Strength Material (CLSM)

CLSM is a self-compacting, cementitious material that is typically considered when backfilling localized areas. CLSM is sometimes referred to as "controlled density fill" or CDF. Due to its flowable characteristics, CLSM typically can be placed in restricted-access excavations where placing and compacting fill is difficult. If

chosen for use at this site, we recommend the CLSM be in conformance with Section 00442 of the most recent, State of Oregon, Standard Specifications for Highway Construction The geotechnical engineer's representative should observe placement of the CLSM and obtain samples for compression testing in accordance with ASTM D4832. As a guideline, for each day's placement, two compressive strength specimens from the same CLSM sample should be tested. The results of the two individual compressive strength tests should be averaged to obtain the reported 28-day compressive strength. If CLSM is considered for use on this site, please contact the geotechnical engineer for site-specific and application-specific recommendations.

5.5 Shallow Foundations

5.5.1 Subgrade Preparation

Satisfactory subgrade support for shallow foundations can be obtained from the native, stiff to better, lean clay (CL), or new structural fill that is properly placed and compacted on this soil during construction. These materials first encountered at depths of about ½ to 1¼ foot bgs within our explorations in the vicinity of the building pad. The geotechnical engineer's representative should be contacted to observe subgrade conditions prior to placement of forms, reinforcement steel, or granular backfill (if required). If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2. The maximum particle size of over-excavation backfill should be limited to 1½ inches. All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

5.5.2 Minimum Footing Width & Embedment

Minimum footing widths should be in conformance with the current OSSC. As a guideline, CGT recommends individual spread footings have a minimum width of 24 inches. We recommend continuous wall footings have a minimum width of 18 inches. All footings should be founded at least 18 inches below the lowest, permanent adjacent grade to develop lateral capacity and for frost protection.

5.5.3 Bearing Pressure & Settlement

Footings founded as recommended above should be proportioned for a maximum allowable soil bearing pressure of 2,500 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For foundations founded as recommended above, total settlement of foundations is anticipated to be less than 1 inch. Differential settlements between adjacent columns and/or bearing walls should not exceed ½ inch. If an increased allowable soil bearing pressure is desired, the geotechnical engineer should be consulted.

5.5.4 Lateral Capacity

A maximum passive (equivalent fluid) earth pressure of 150 pounds per cubic foot (pcf) is recommended for design of footings cast neat into excavations in suitable native soil or confined by imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

1. Concrete must be poured neat in excavations or the foundations must be backfilled with imported granular structural fill,
2. The adjacent grade must be level,
3. The static ground water level must remain below the base of the footings throughout the year.
4. Adjacent floor slabs, pavements, or the upper 12-inch-depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.35 may be used when calculating resistance to sliding for footings founded on the native soils described above. An ultimate coefficient of friction equal to 0.45 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

5.5.5 Subsurface Drainage

Recognizing the fine-grained soils encountered at this site, we recommend placing foundation drains at the exterior, base elevations of perimeter continuous wall footings. Foundation drains should consist of a minimum 4-inch diameter, perforated, PVC drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should also be encased in a geotextile fabric in order to provide separation from the surrounding fine-grained soils. Foundation drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer's representative should observe the drains prior to backfilling. Roof drains should not be tied into foundation drains.

5.6 Floor Slabs

5.6.1 Subgrade Preparation

Satisfactory subgrade support for slabs constructed on grade, supporting up to 150 psf area loading, can be obtained from the native, stiff to better, lean clay (CL), or new structural fill that is properly placed and compacted on this soil during construction. The geotechnical engineer's representative should observe floor slab subgrade soils to evaluate surface consistencies. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the CGT geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill as described in Section 5.4.2.

5.6.2 Crushed Rock Base

Concrete floor slabs should be supported on a minimum 6-inch-thick layer of crushed rock (base rock). Floor slab base rock should consist of well-graded granular material (crushed rock) containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Floor slab base rock should be placed in one lift and compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). We recommend "choking" the surface of the base rock with sand just prior to concrete placement. Choking means the voids between the largest aggregate particles are filled with sand, but does not provide a layer of sand above the base rock. Choking the base rock surface reduces the lateral restraint on the bottom of the concrete during curing. Choking the base rock also reduces punctures in vapor retarding membranes due to foot traffic where such membranes are used.

5.6.3 Design Considerations

For floor slabs constructed with a 6-inch thick base rock layer as recommended, an effective modulus of subgrade reaction of 175 pounds per cubic inch (pci) is recommended for the design of the floor slab. A higher effective modulus of subgrade reaction can be obtained by increasing the base rock thickness. Please contact the geotechnical engineer for additional recommendations if a higher modulus is desired. Floor slabs constructed as recommended will likely settle less than ½ inch. For general floor slab construction, slabs should be jointed around columns and walls to permit slabs and foundations to settle differentially.

5.6.4 Subgrade Moisture Considerations

Liquid moisture and moisture vapor should be expected at the subgrade surface. The recommended crushed rock base is anticipated to provide protection against liquid moisture. Where moisture vapor emission through the slab must be minimized, e.g. impervious floor coverings, storage of moisture sensitive materials directly on the slab surface, etc., a vapor retarding membrane or vapor barrier below the slab should be considered. Factors such as cost, special considerations for construction, floor coverings, and end use suggest that the decision regarding a vapor retarding membrane or vapor barrier be made by the architect and owner.

If a vapor retarder or vapor barrier is placed below the slab, its location should be based on current American Concrete Institute (ACI) guidelines, ACI 302 Guide for Concrete Floor and Slab Construction. In some cases, this indicates placement of concrete directly on the vapor retarder or barrier. Please note that the placement of concrete directly on impervious membranes increases the risk of plastic shrinkage cracking and slab curling in the concrete. Construction practices to reduce or eliminate such risk, as described in ACI 302, should be employed during concrete placement.

5.7 Pavements

Pavement subgrade preparation should be performed in general accordance with the recommendations presented in Section 5.1.5 above. The subgrade surfaces should be crowned (or sloped) for proper drainage in accordance with specifications provided by the project civil engineer.

5.7.1 Traffic Classifications

Recognizing that traffic data has not been provided, CGT has considered three levels of traffic demand for review and design of pavement sections. We modeled the following four design cases (traffic levels) developed from the Asphalt Pavement Association of Oregon (APAO):

- *APAO Level I (Light):* This design case considers typical ADTT of 2 to 7 per day over 20 years. Examples under this loading consist of residential streets and parking lots of less than 500 stalls.
- *APAO Level II (Low Moderate):* This design case considers typical ADTT of 7 to 14 per day over 20 years. Among others, examples under this loading consist of urban minor collector streets and parking lots with more than 500 stalls.

We recommend the owner and design team review the traffic levels presented above and select those that most accurately represent anticipated daily truck traffic for select new pavements.

5.7.2 Asphalt Concrete Pavements

5.7.2.1 Input Parameters

Design of the asphalt concrete (AC) pavement sections presented below were based on the parameters presented in the following table, the American Association of State Highway and Transportation Officials (AASHTO) 1993 "Design of Pavement Structures" manual, and pavement design manuals presented by APAO and ODOT[10]. If any of the items listed need revision, please contact us and we will reassess the provided design sections.

Table 3 Input Parameters Used in AC Pavement Design

Input Parameter	Design Value[1]
Pavement Design Life	20 years
Annual Percent Growth	0 percent
Initial Serviceability	4.2
Terminal Serviceability[2]	2.5
Reliability[2]	75 percent
Standard Deviation[2]	0.49
Drainage Factor[3]	1.0
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---	---

Input Parameter		Design Value[1]
Resilient Modulus	Subgrade (Native Soils)[4]	5,000 psi
	Crushed Aggregate Base[2]	20,000 psi
Structural Coefficient[2]	Crushed Aggregate Base	0.10
	Asphalt	0.42
Vehicle Traffic[4] (range in ESAL[5])	APAO Level I (Very Light)	Less than 10,000
	APAO Level II (Light)	Less than 50,000

1 If any of the above parameters are incorrect, please contact us so that we may revise our recommendations, if warranted.
2 Value based on guidelines presented in the ODOT Pavement Design Guide.
3 Assumes good drainage away from pavement, base, and subgrade is achieved by proper crowning of subgrades.
4 Values based on experience with similar soils in the region.
5 ESAL = Total 18-Kip equivalent single axle load. Traffic levels taken from Table 3.1 of APAO manual. If actual traffic levels will be above those identified above, the geotechnical engineer should be consulted.

5.7.2.2 Recommended Minimum Sections

The following table presents the minimum AC pavement sections for various traffic loads indicated in the preceding table, based on the referenced AASHTO procedures.

Table 4 Recommended Minimum Asphalt Concrete Pavement Sections

Material	APAO Traffic Loading	
	Level I	Level II
Asphalt Pavement (inches)	2½	3½
Crushed Aggregate Base (inches)[1]	9	9
Subgrade Soils	Prepared in conformance with Section 5.1.5 of this report.	

1 Thickness shown assumes dry weather construction. A granular sub-base section and/or a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the subgrade. Refer to Section 5.3 for additional discussion.

10 Oregon Department of Transportation (ODOT) Pavement Design Guide, August 2011.

5.7.2.3 AC Pavement Materials

We recommend pavement aggregate base consist of dense-graded aggregate in conformance with Section 02630.10 of the most recent ODOT SSC, with the following additional considerations. We recommend the material consist of crushed rock or gravel, have a maximum particle size of 1½ inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Aggregate base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

We recommend asphalt pavement consist of Level 2, ½-inch, dense-graded AC in conformance with the most recent ODOT SSC. Asphalt pavement should be compacted to at least 91 percent of the material's theoretical maximum density as determined in general accordance with ASTM D2041 (Rice Specific Gravity), or as specified by the local jurisdiction.

5.7.3 Rigid (Concrete) Pavements

5.7.3.1 Input Parameters

Design of the rigid (Portland Cement Concrete, PCC) pavement sections presented below was based on the assumed parameters presented in the following table and the referenced AASHTO design manual. If any of the items listed need revision, please contact us and we will reassess the provided design sections. Jointing, reinforcement, and surface finish should be performed in accordance with the project civil engineer, architect, and owner requirements.

Table 5 Input Parameters Used in PCC Pavement Design

Parameter / Discussion		Design Value
Subgrade Modulus (k-value)		175 psi
Standard Deviation[1]		0.39
Load Transfer Devices incorporated?		Yes; Load Transfer Coefficient = 3.2
Minimum Concrete Modulus of Rupture		600 psi
Concrete Elastic Modulus		5.0 x 10^6 psi
Minimum Air-Entrained Concrete Compressive Strength		4,000 psi
Vehicle Traffic[2] (range in ESAL)	APAO Level I (Very Light)	Less than 10,000
	APAO Level II (Light)	Less than 50,000

1 Value based on guidelines presented in the ODOT Pavement Design Guide.

2 ESAL = Total 18-Kip equivalent single axle load. If actual traffic levels will be above those identified above, the geotechnical engineer should be consulted.

5.7.3.2 Recommended Minimum Sections

The following table presents the recommended minimum concrete pavement sections based on the referenced AASHTO procedures.

Table 6 Recommended Minimum PCC Pavement Sections

Material	APAO Traffic Loading	
	Level I	Level II
Portland Cement Concrete, PCC[1] (inches)	5	5¾
Leveling Coarse, Sand or All-Weather Base[2,3] (inches)	2	2
Subgrade Soils	Prepared in conformance with Section 5.1.5 of this report	

1 Concrete strength and other properties should be in conformance with Table 5 above.

2 Leveling course thickness should be a minimum of four times the maximum particle size. Example. If crushed rock up to ¾ inch in diameter is used, the leveling course should be at least 3 inches thick.

3 Assumes dry weather construction. Increased base rock sections and/or a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the subgrade. Refer to Section 5.3 for additional discussion

5.7.3.3 PCC Pavement Materials

We recommend all-weather base consist of dense-graded aggregate in conformance with Section 02630.10 of the most recent ODOT SSC, with the following additional considerations. We recommend the material consist have a maximum particle size of ¾-inch and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Aggregate base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

Portland cement concrete (PCC) pavement should be in conformance with Section 02001 of the most recent ODOT SSC and meet the properties detailed in Table 5 above.

5.8 Additional Considerations

5.8.1 Drainage

Subsurface drains should be connected to the nearest storm drain, on-site infiltration system (to be designed by others) or other suitable discharge point. Paved surfaces and grading near or adjacent to the building should be sloped to drain away from the building. Surface water from paved surfaces and open spaces should be collected and routed to a suitable discharge point. Surface water should not be directed into foundation drains.

5.8.2 Expansive Potential

The near surface native soils consist of low to moderate plasticity, lean clay (CL). Based on our experience with similar soils in the vicinity of the site, these soils are not considered to be susceptible to appreciable movements from changes in moisture content. Accordingly, no special considerations are required to mitigate expansive potential of the near surface soils at the site.

6.0 RECOMMENDED ADDITIONAL SERVICES

6.1 Design Review

Geotechnical design review is of paramount importance. We recommend the geotechnical design review take place prior to releasing bid packets to contractors.

6.2 Observation of Construction

Satisfactory earthwork, foundation, floor slab, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that qualified personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report. We recommend geotechnical engineer's representative attend a pre-construction meeting coordinated by the contractor and/or developer. The project geotechnical engineer's representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Site Stripping
- Subgrade Preparation for Shallow Foundations, Structural Fills, Floor Slabs, and Pavements
- Compaction of Structural Fill and Utility Trench Backfill
- Compaction of Base Rock for Floor Slabs & Pavements
- Compaction of HMAC for Pavements

It is imperative that the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

7.0 LIMITATIONS

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are forwarded to assist in the planning and design process and are not intended to be, nor should they be construed as, a warranty of subsurface conditions.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.

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Appendix A: Subsurface Investigation and Laboratory Testing

Dutch Brothers Wilsonville
29702 Town Center Loop SW
Wilsonville, Oregon

CGT Project Number G1905110

August 23, 2019

Prepared For:

Douglas Fry
18187 Siena Drive
Lake Oswego, Oregon, 97034

Prepared by
Carlson Geotechnical

A.1.0 SUBSURFACE INVESTIGATION

Our field investigation consisted of three test pits completed in early August 2019. The exploration locations are shown on the Site Plan, attached to the geotechnical report as Figure 2. The exploration locations shown therein were determined based on measurements from existing site features (buildings, etc.) and are approximate. Surface elevations indicated on the logs were estimated based on topographic contours shown on the referenced Site Plan and are approximate. The attached figures detail the exploration methods (Figure A1), soil classification criteria (Figure A2), and present detailed logs of the explorations (Figures A3 through A5), as discussed below.

A.1.1 Test Pits

CGT observed the excavation of three test pits (TP-1 through TP-3) at the site on August 8, 2019, to depths of about 9¼ to 10¼ feet bgs. The test pits were excavated using a Takeuchi TB 135 mini-excavator provided and operated by our subcontractor, Tabert Trucking and Excavation of Sherwood, Oregon. The test pits were loosely backfilled with the excavated materials upon completion.

A.1.2 In-Situ Testing: Pocket Penetrometer Tests

Pocket penetrometer readings were generally taken at approximate ½-foot intervals in the upper four feet of each test pit. The pocket penetrometer is a hand-held instrument that provides an approximation of the unconfined compressive strength of cohesive, fine-grained soils. The correlation between pocket penetrometer readings and the consistency of cohesive, fine-grained soils is provided on the attached Figure A2.

A.1.3 Material Classification & Sampling

Representative grab samples of the soils encountered were obtained at select intervals within the test pits. A qualified member of CGT's geological staff collected the samples and logged the soils in general accordance with the Visual-Manual Procedure (ASTM D2488). An explanation of this classification system is attached as Figure A2. The grab samples were stored in sealable plastic bags and transported to our soils laboratory for further examination and testing. Our geotechnical staff visually examined all samples in order to refine the initial field classifications.

A.1.4 Subsurface Conditions

Subsurface conditions are summarized in Section 2.3 of the geotechnical report. Detailed logs of the explorations are presented on the attached exploration logs, Figures A3 through A5.

A.2.0 LABORATORY TESTING

Laboratory testing was performed on samples collected in the field to refine our initial field classifications and determine in-situ parameters. Laboratory testing included the following:

- Seven moisture content determinations (ASTM D2216).
- One Atterberg limits (plasticity) tests (ASTM D4318).
- One percentage passing the U.S. Standard No. 200 Sieve tests (ASTM D1140).

Results of the laboratory tests are shown on the exploration logs.

DUTCH BROTHERS WILSONVILLE - WILSONVILLE, OREGON Project Number G1905110	FIGURE A1 Exploration Key

Atterberg limits ˆ lasticity) test results 21˝ 3 ' 4318): PL = ° lastic 8imit, LL = Liquid Limit, and 3 ˜ = 3 oisture ˜ ontent 21˝ 3 ' 2216)

FINES CONTENT (%) Percentage passing the U.S. Standard No. 200 Sieve (21˝ 3 ' 1140)

SAMPLING

GRAB Grab samˆ le

@;8 Bulk sample

SPT **St¸ˇ ! ¸ˇ! Penetrat℃ˇ Test** 1°˝) consists of driving a ($inch, outside-diameter, split$spoon samˆ ler into the undisturbed formation with repeated blows of a 140-pound, hammer falling a vertical distance of 30 inches ASTM D1586). ˝ he number of blows " $value) required to drive the samˆ ler the last 12 inches of an *4$inch sample interval is used to characterize the soil consistency or relative density. The drill rig was equipped with an cat-head or automatic hammer to conduct the SPTs. The observed N$values, hammer efficiency, and $N_{+)}$ are noted on the boring logs.

MC **Modifie! C¸ ifornia** sampling consists of .$inch, outside-diameter, split$spoon samˆ ler 21˝ 3 G3550) driven similarly to the SPT sampling method described above. A sampler diameter correction factor of 0.44 is applied to calculate the equivalent SPT $N_{+)}$ value per Lacroi˙ and Horn, 1973.

CORE **Rock Coring** interval

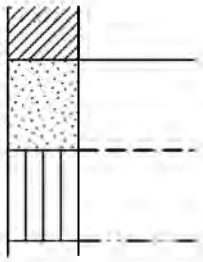
SH **She #˝ Tube** is a .$inch, inner$diameter&thin-walled, steel tube push samˆ ler 21˝ 3 ' 1587) sed to collect relatively undisturbed samˆ les of fine-grained soils.

WDCP ˜ **°! cat ˙ ˝˜ amic Coˇ e Penetromeˇ** - ' ˜ °) test consists of driving 1.1-inch diameter&steel rods with a 1.4-inch diameter, cone tip into the ground using a ./$ pound drop hammer with a */$ inch ˇree-fall height. ˝ he number of blows required to drive the steel rods is recorded for each 10 centimeters . .94 inches) of penetration. ˝ he blow count ˇor each interval is then converted to the corresponding SPT $N_{+)}$ values.

DCP ˙ ˝**namic Cone Penetromeˇ** DCP) test consists of driving a 20-millimeter diameter, hardened steel cone on *+$ millimeter diameter steel rods into the ground using a 10-kilogram drop hammer with a 460-millimeter free-fall height. The depth of penetration in millimeters is recorded for each drop of the hammer.

POC ET PEN. (tsf) **Pocket Penetromeˇ** test is a hand-held instr ment that ˆ rovides an approximation of the unconfined comˆ ressive strength in tons per square foot (tsf) of cohesive, fine-grained soils.

CONTACTS



Observed (measured) contact between soil or rock units.

Inferred (approximate) contact between soil or rock units.

˝ ransitional (gradational) contact between soil or rock units.

ADDITIONAL NOTATIONS

Italics Notes drillin¸ action or dig¸ in¸ effort

?Braces } Interˆ retation of material ori¸ in/geologic formation (e.g. { Base Rock } or { Columbia River Basalt })

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All measurements are approximate.

DUTCH BROTHERS WILSONVILLE - WILSONVILLE, OREGON
Project Number G1905110

FIGURE A2
Soil Classification

Classification f Terms and C ntent

AM : Group Name and Symbol
Re˘a^ve Densi˘y or Consistency
Color
Mo˙sture Content
Plasticity
ther Constituents
ther: Gra˙n Shape, Approximate Gradation
rganics, Cement, Structure, Odor, etc.
Geologic Name or Formation

Grain Size

		U.S. Standard Sieve
&˙nes		<#200 (*.075 mm.
Sand	Fine	#200 - #40 (*.425 mm.
	Medium	#40 - #10 () mm.
	° oarse	#10 - #4 (9%,-.
Gravel	Fine	#4 - 0.75 inch
	° oarse	0.75 inch - 3 inches
° obbles		3 to 12 inches
Boulders		> 12 inches

C arse-Grained (Granular) Soils

Relative Density

SPT 3*45alue	˛ ensi˘y
0 - 9	5ery Loose
4 - 0*	Loose
10 - /*	Medium Dense
30 - -*	˛ ense
6-*	5ery Dense

Minor Constituents

Percent by Volume	Descriptor	xample
0 - -;	"Trace" as part of soil description	"trace silt"
5 - 0-;	"With" as part of group name	"**POORLY GRADED SAND WITH SILT**"
15 - 9C;	Modifier to group name	"**SILTY SAND**"

Fine-Grained (Cohesive) Soils

SPT 3*45alue	Tor˝ane tsf Shear Strength	Pocket Pen tsf 8nconfined	° onsistency	Manual Penetra^on Test
')	'*%0/	'*%)-	Very Soft	Thumb penetrates more than 1 inch
2 - 9	0.13 - *%)-	0.25 - *%-*	Soft	Thumb penetrates about 1 inch
4 - A	0.25 - *%-*	0.50 - 0%**	Medium Stiff	Thumb penetrates about ¼ inch
8 - 0-	0.50 - 0%**	1.00 -)%**	Stiff	Thumb penetrates less than ¼ inch
15 - /*	1.00 -)%**	2.00 - 9%**	Very Stiff	Readi˘y indented by thumbnai˘
6/*	6)%**	69%**	Hard	Difficult to indent by thumbnail

M˙nor Constituents

Percent by Volume	Descriptor	Example
0 - -;	"Trace" as part of soil description	"trace fine-grained sand"
5 - 0-;	"Some" as part of soil description	"some fine-grained sand"
15 - /*;	"With" as part of group name	"**SILT WITH SAND**"
30 - 9C;	Modifier to group name	"**SANDY SILT**"

Moisture Content

Dry: Absence of moisture, dusty, dry to the touch
Moist: Leaves moisture on hand
> et: Visible free water, likely from below water table

	Plasticity	˙ ry Strength	Dilatanc˝	Toughness
ML	on to Low	on to Low	Slow to Rapid	Low, can't roll
CL	Low to Medium	Medium to H˙gh	None to Slow	Medium
MH	Medium to H˙gh	Low to Medium	None to Slow	Low to Medium
CH	Medium to H˙$!	: ˙gh to Very H˙$!	one	:˙$!

Structure

Stra^˙fied: Al˙ernating layers of mater˙a˘ or color >6 mm thic7
Laminated: Alternating layers < 6 mm thick
Fissured: Breaks along definite fracture planes
Slickensided: Striated, polished, or glossy fracture planes
Blocky: Cohesive soil that can be broken down into small angular lumps which resist fur˜her breakdown
Lenses: Has small pockets of different soils, note thickness
: omogeneous: Same color and appearance throughout

Visual-˛ anual Classification

Major Divisions			Group Symbols	Typical Names
° oarse Grained Soils: More than -*; retained on No. 200 sieve	Gravels: 50% or more *retained* on the No. 4 sieve	° ˜ean Gravels	GW	> e˜˝4graded gravels and gravel/sand m˙xtures, l˜^˜e or no fines
			GP	Poor˘y45raded gravels and gravel/sand m˙xtures, l˜^˜e or no fines
		Gravels with Fines	GM	Si˜˝y gravels, gravel?sand/si˙ m˙#tures
			GC	° ˜ayey gravels, gravel?sand/clay m˙#tures
	Sands: More than -*; *passing* the No. 4 sieve	° ˜ean Sands	SW	> e˜˝4graded sands and gravel˘y sands, l˜^˜e or no fines
			SP	Poor˘y45raded sands and gravel˘y sands, l˜^˜e or no fines
		Sands with Fines	SM	Si˜˝y sands, sand/si˙ m˙#tures
			SC	° ˜ayey sands, sand/clay m˙#tures
&˙ne-Grained Soils: -*; or more Passes No. 200 Sieve	Si˙ and C˘ays <o= Plasticity Fines		M<	Inorganic si˜˝s, rock flour, clayey si˜˝s
			° <	Inorganic clays of low to medium plastic˜˝y, gravel˘y clays, sandy clays, lean clays
			<	rganic soi˘ of low plastic˜˝y
	Si˙ and C˘ays : ˙gh Plasticity Fines		M:	Inorganic si˜˝s, clayey si˜˝s
			°:	Inorganic clays of high plasticity, fat clays
			:	rganic soi˘ of medium to high plasticity
: ˙$!˘y Organic Soi˘s			˜2	Peat, muck, and other highly organic soils

CARLSON CGT GEOTECHNICAL 503-601-34./

References:
ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
Terzaghi, K., and Peck, R.B., 1948, Soil Mechanics in Engineering Practice, John Wiley & Sons.

Carlson Geotechnical
A Division of Carlson Testing, Inc.
www.carlsontesting.com

FIGURE A3

Test Pit TP-1

CLIENT Douglas Fry
PROJECT NAME Dutch Brothers - Wilsonville
PROJECT NUMBER G1905110
PROJECT LOCATION 29702 Town Center Loop SW - Wilsonville, Oregon
DATE STARTED 8/8/19
GROUND ELEVATION 176 ft
ELEVATION DATUM Topographic Contours - See Site Plan
WEATHER Cloudy, ~61 degrees
SURFACE Grass
LOGGED BY MMS
REVIEWED BY JAJ
EXCAVATION CONTRACTOR Tabert Trucking & Excavation
SEEPAGE ---
EQUIPMENT Takeuchi TB135
GROUNDWATER AT END ---
EXCAVATION METHOD 24 inch toothed bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐
		OL FILL	**ORGANIC SOIL FILL:** Brown, dry to moist, low plasticity, some rootlets, trace roots up to ½ inch in diameter, trace subangular gravel up to ¾ inch in diameter.		0				0.5		
			LEAN CLAY: Hard, brown, dry to moist, low to medium plasticity, trace rootlets.			GRAB 1			4.5		15
174					2				4.5		
						GRAB 2			4.5		22 40 / 19
		CL							4.5		
172					4				4.5		
						GRAB 3					31
			Trace orange, black, tan mottling.								
170					6						
			LEAN CLAY WITH SAND: *Stiff to very stiff*, brown, moist, low plasticity, with fine-grained sand.			GRAB 4					30
168					8						
		CL									
166					10	GRAB 5					
164											

- Test pit TP-1 terminated at 10¼ feet bgs.
- No groundwater or caving encountered.
- Loosely backfilled with excavated material upon completion.

CGT EXPLORATION WITH WDCP G1905110 LOGS.GPJ 8/15/19 DRAFTED BY: MLL

Carlson Geotechnical
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FIGURE A4

Test Pit TP-2

CLIENT Douglas Fry
PROJECT NAME Dutch Brothers - Wilsonville
PROJECT NUMBER G1905110
PROJECT LOCATION 29702 Town Center Loop SW - Wilsonville, Oregon
DATE STARTED 8/8/19
GROUND ELEVATION 177 ft
ELEVATION DATUM Topographic Contours - See Site Plan
WEATHER Cloudy, ~61 degrees
SURFACE Grass
LOGGED BY MMS
REVIEWED BY JAJ
EXCAVATION CONTRACTOR Tabert Trucking & Excavation
SEEPAGE ---
EQUIPMENT Takeuchi TB135
GROUNDWATER AT END ---
EXCAVATION METHOD 24 inch toothed bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐
					0						0 20 40 60 80 100
		OL FILL	**ORGANIC SOIL FILL:** Brown, dry to moist, low plasticity, some rootlets, trace roots up to ½ inch in diameter, trace subangular gravel up to ¾ inch in diameter.						4.5		
176		ML FILL	**SILT FILL:** Brown, dry to moist, low plasticity, trace subrounded gravel and cobbles up to 5 inches in diameter.						4.5		
			LEAN CLAY: Hard, brown, dry to moist, low to medium plasticity, trace rootlets.			GRAB 1			4.5		13
					2				4.5		
174									4.5		
									4.0		
									4.5		
		CL			4				4.5		
			Some red-orange staining, trace black staining, trace tan mottling below 4½ feet bgs.			GRAB 2					
172											
					6						
170											
			LEAN CLAY WITH SAND: *Stiff to very stiff*, brown, moist, low plasticity, with fine-grained sand.			GRAB 3					30 78 ☐
					8						
		CL									
168			Some subangular gravel up to 3 inches in diameter, trace subrounded cobbles up to 9 inches in diameter.			GRAB 4					
166											

•Test pit TP-2 terminated at 9¼ feet bgs due to practical refusal on gravel.
•No groundwater or caving encountered.
•Loosely backfilled with excavated material upon completion.

CGT EXPLORATION WITH WDCP G1905110 LOGS.GPJ 8/15/19 DRAFTED BY: MLL

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www.carlsontesting.com

FIGURE A5

Test Pit TP-3

CLIENT Douglas Fry
PROJECT NAME Dutch Brothers - Wilsonville
PROJECT NUMBER G1905110
PROJECT LOCATION 29702 Town Center Loop SW - Wilsonville, Oregon
DATE STARTED 8/8/19
GROUND ELEVATION 177 ft
ELEVATION DATUM Topographic Contours - See Site Plan
WEATHER Cloudy, ~61 degrees
SURFACE Grass
LOGGED BY MMS
REVIEWED BY JAJ
EXCAVATION CONTRACTOR Tabert Trucking & Excavation
SEEPAGE ---
EQUIPMENT Takeuchi TB135
GROUNDWATER AT END ---
EXCAVATION METHOD 24 inch toothed bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
176		OL FILL	**ORGANIC SOIL FILL:** Brown, dry to moist, low plasticity, some rootlets, trace roots up to ½ inch in diameter, trace subangular gravel up to ¾ inch in diameter.		0				4.0	
		ML FILL	**SILT FILL:** Brown, dry to moist, low plasticity, trace subrounded gravel and cobbles up to 5 inches in diameter.						4.5	
			LEAN CLAY: Hard, orange-brown, dry to moist, low to medium plasticity, trace rootlets.		2				4.5	
174		CL							4.5	
					4	GRAB 1			4.5	
			Trace orange and black staining below 4½ feet bgs.						4.5	
172									4.5	
					6					
170			**LEAN CLAY WITH SAND:** *Stiff to very stiff*, tan-brown, moist, low plasticity, with fine-grained sand.							
		CL			8	GRAB 2				
168										
					10	GRAB 3				
166										

▲ WDCP N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100
20

•Test pit TP-3 terminated at 10¼ feet bgs.
•No groundwater or caving encountered.
•Loosely backfilled with excavated material upon completion.

CGT EXPLORATION WITH WDCP G1905110 LOGS.GPJ 8/15/19 DRAFTED BY: MLL

LIGHTING

EXHIBIT 07

LIGHTING SCHEDULE

CONTRACTOR PROVIDED
UNLESS NOTED OTHERWISE

4/25/2018 2:22:19

ID	FIXTURE DESCRIPTION	MANUF	MODEL	REMARKS
L-1	INTERIOR GENERAL LIGHTING SUSPENDED	Startek	Starpower	4' linear suspended via aircraft cable to 9'-0" AFF, 4000K. **SEE NOTE 1**
L-2	EXTERIOR DOWNLIGHT	DMF	DRD5S	
L-2	INTERIOR EMER. LIGHTING, / NIGHT ILLUMINATION	DMF	DRD5S	Same fixture, see lighting plan notes, for circuit
L-3	INTERIOR EXIT LIGHT	BEST	EZXTEU1RWEM	Exit, red on white self powered universal mount LED
L-4	EXTERIOR SCONCE	TECH LIGHTING	700OWVEX-9-3000K-4-H-UNV	
L-5	EXTERIOR LED STRIP LIGHTING @ PARAPET			Coordinate with sign company, see Cover contacts
L-6	WALL PACK	RAB	WPLED-26-Y-/E	Exterior Door fixture, 3000K w/ EM
L-12	BOLLARD LIGHTING	LITHONIA	DSXB LED 16C	Exterior pathway
L-13	FLOOD LIGHT	LITHONIA	OLFSP 2RH 40K 120 PESP DDB	Garbage Area
L-14	EXTERIOR LIGHT. BOLLARD	HYDREL	TIOGA 3LED16	"Runner" Path Lighting
NOTES:	**1.** IF ACT SUSPENDED CEILING IS REQUIRED BY LOCAL JURISDICTION, CLLG-1 MAY BE CONVERTED TO CLG-2 AND SUSPENDED CEILING CAN BE ADDED AT A HEIGHT OF 9'0" AFF, COORDINATE WITH MECH AND ELEC, FOR ALTERNATE DIFFUSERS AND FIXTURES			

Imperial Lighting

L1

Job: Dutch Brothers Coffee

Descr: 4' suspended linear general illumination

FEATURES

- Extruded aluminum housing
- Three standard lumen packages
- 4' and 8' individual units
- Up to 145 LPW
- 2.5 MacAdam ellipse binning
- Soft diffused lighting
- Standard anodize finishes: clear or black
- Custom colors available upon request
- Approved for dry and damp locations
- 5 year warranty
- Made in the USA

SPECIFICATIONS

PERFORMANCE (LOW OUTPUT, CRI 80+)

Model	Lumens	Watts	LPW
SP-N1-4L-30K	2,029	16.8	120.9
SP-N1-4L-35K	2,058	16.8	122.7
SP-N1-4L-40K	2,086	16.8	124.5
SP-N1-4L-50K	2,143	16.7	128.0
SP-N1-8L-30K	4,307	33.0	130.5
SP-N1-8L-35K	4,375	33.0	132.7
SP-N1-8L-40K	4,443	32.9	135.0
SP-N1-8L-50K	4,578	32.8	139.5

PERFORMANCE (STANDARD OUTPUT, CRI 80+)

Model	Lumens	Watts	LPW
SP-N1-4S-30K	3,424	26.5	129.3
SP-N1-4S-35K	3,483	26.5	131.3
SP-N1-4S-40K	3,541	26.6	133.4
SP-N1-4S-50K	3,658	26.6	137.5
SP-N1-8S-30K	7,204	52.9	136.1
SP-N1-8S-35K	7,329	52.9	138.5
SP-N1-8S-40K	7,453	52.9	140.8
SP-N1-8S-50K	7,702	52.9	145.6

PERFORMANCE (HIGH OUTPUT, CRI 80+)

Model	Lumens	Watts	LPW
SP-N1-4H-30K	5,805	47.2	123.1
SP-N1-4H-35K	5,882	47.1	124.9
SP-N1-4H-40K	5,960	47.0	126.7
SP-N1-4H-50K	6,114	46.9	130.4
SP-N1-8H-30K	11,776	93.0	126.6
SP-N1-8H-35K	11,917	93.2	127.9
SP-N1-8H-40K	12,137	93.2	130.2
SP-N1-8H-50K	12,578	93.2	135.0

***Bold indicates DLC Premium 4.2 Listed**

ORDERING INFORMATION

[ ] – [ ] – [ ] – [ ] – [ ]

SERIES	MODEL	LENGTH	OUTPUT	COLOR TEMP.	FINISH
SP	N1 = Narrow	4 = 4'	L = Low	30K = 3000K	CA = Clear Anodize
		8 = 8'	S = Standard	35K = 3500K	BA = Black Anodize
			H = High	40K = 4000K	PO = Powder Coat Other
				50K = 5000K	

[ ] – [ ] – [ ] – [ ] – [ ] – [ ]

WIRING OPTIONS	MOUNTING ACC.	OPTIONS	DIMMING OPTIONS	VOLTAGE	PLUG
ECEW05 = Cord, End Exit, White 5'	PMGC05 = Pendant Mount w/ Grippers and 5' Cables w/ Loops	NS = No Sensor	ND = No Dimming	U = 120-277	PN = No Plug
ECEW10 = Cord, End Exit, White 10'	PMGC10 = Pendant Mount w/ Grippers and 10' Cables w/ Loops	DM = Daylight/Motion Sensor	AD = 0-10V Dimming	C = 347	P1 = L5-15p
ECEB05 = Cord, End Exit, Black 5'	PMCK05 = Pendant Mount w/ 5' Canopy Kit	MS = Motion Sensor			P2 = L6-15p
ECEB10 = Cord, End Exit, Black 10'	PMCK10 = Pendant Mount w/ 10' Canopy Kit	B06A = Battery Backup 6 Watt w/ Unswitched Line			P3 = L7-15p
FCE = Feed Conduit (Through Wire), End Exit	SM = Surface Mount	B10A = Battery Backup 10 Watt w/ Unswitched Line			
	RM = Rotational Mount	B06B = Battery Backup 6 Watt w/ Night Light Option			
		B10B = Battery Backup 10 Watt w/ Night Light Option			
		NL = Night Light Without Battery Backup			

For fixtures EM/NL

Example: SP-N1-8S-35K-CA-ECEW05-PMGC05-NS-ND-U-PN
See website for accessories page.

Intertek 5 YEAR WARRANTY RoHS Made In USA DLC PREMIUM

2/28/2018

StarPower™

CONSTRUCTION

DIMENSIONS

Model	Nominal Length	Luminaire Length	Raceway Length	Weight
SP-N1-4	4 ft.	48.0" (1,219mm)	46.15" (1,172mm)	7 lbs. max (3.2kg)
SP-N1-8	8 ft.	96.0" (2,348mm)	94.15" (2,391mm)	14 lbs. max (6.4kg)

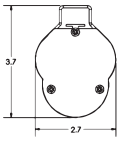
MATERIALS

Housing	Aluminum Extrusion
Finish	Clear Anodize, Black Anodize, Various Powder Coat
Lens Cover	Frosted Acrylic (Impact Resistant)

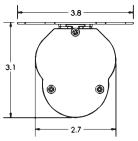
ELECTRICAL

Input Voltage	U: 120-277 Vac C: 347 Vac
Hertz	50/60
Input Current	SP-N1-8H-x-U: .77 - .33A SP-N1-8S/8L/4H-x-U: .56-.24A SP-N1-4S/4L-x-U: .29-.13A SP-N1-8H-x-C: .27A SP-N1-8S/8L/4H-x-C: .185A SP-N1-4S/4L-x-C: .11
Operating Temp.	-40°C to˚+50°C -40°F to +122°F
Power Factor	> 0.93
THD	< 12%

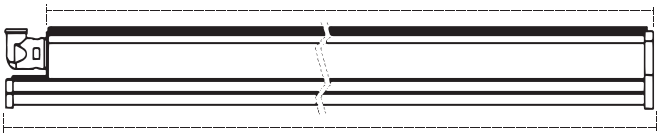
Pendant



Surface



Raceway Length



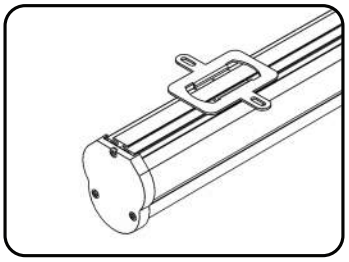
Luminaire Length

MOUNTING

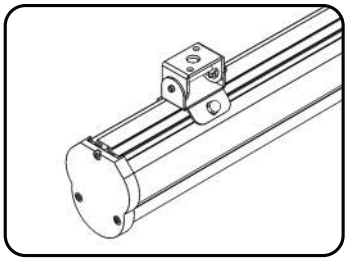
Pendant

*Pendant mount comes with gripper to accept cable and optional canopies.

Surface

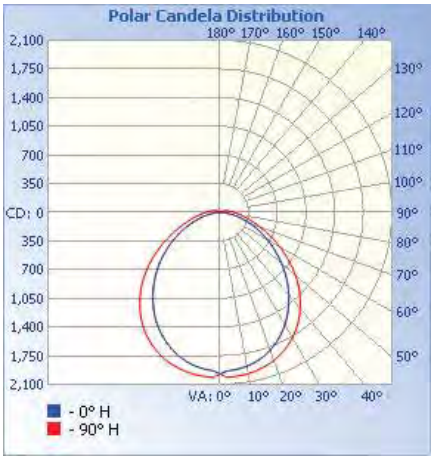


Rotational

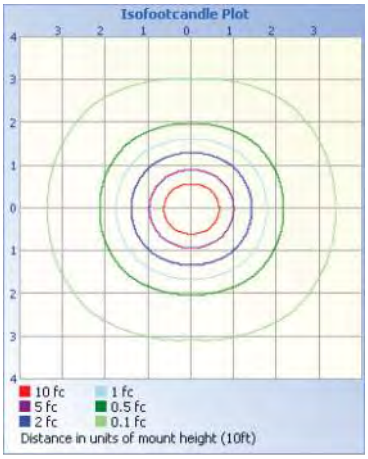


PHOTOMETRICS: SP-N-4H-50K

POLAR CANDELA DISTRIBUTION



ISOFOOTCANDLE PLOT



1960 Swanson Ct, Unit C, Gurnee, IL 60031 • (877) STARTEK • info@starteklightingamerica.com • www.starteklightingamerica.com

Imperial Lighting	L2	Job: Dutch Brothers Coffee Prototype
		Descr: Thin profile surface downlight

- Edgeless design disappears into the ceiling
- Clear uniform light, no dark spots
- Thinnest in its class, extends just 0.6" from the ceiling plane
- Meets the demands of almost any environment with fire, sound and air tight ratings
- Ultra-low profile allows it to install in as little as 2" of ceiling space

2 hour fire rated
STC/IIC sound rated
IC rated
Wet location rated
50,000 hrs lifetime
Warranty

Frame-in Kit

JUNCTION BOX: Metallic outlet box certified UL514A up to 2 hour fire rating. Equipped with (4) 1/2" trade size knockouts (two side, two top) to allow straight conduit runs. Approved for 6 (three in, three out) #12 AWG 70°C through wiring conductors.

MOUNTING: Pre-installed mounting brackets allow vertical adjustment of bar hangers up to 1".

CEILING: ½" up to 1 ¾".

CUTOUT: 4 ⅛" (105mm) octagonal opening.

Light Engine

LED: Optimized LED array delivers smooth, uniform illumination with no visible fasteners or dark spots.

LUMEN OUTPUT (POWER): 750 lm (9.0W), 1000 lm (12.5W).

COLOR QUALITY: 90+ CRI, less than 3-step SDCM.

CCT OPTIONS: 3000K.

INPUT VOLTAGE: 120V – *Contact DMF for future availability of 277V.*

DIMMING: Down to less than 5% for TRIAC/ELV at 120V – *Contact DMF for future availability of additional dimming options.*

LIFETIME: 50,000 hours at 70% lumen maintenance.

PHOTOMETRIC TESTING: Tested in accordance to IESNA LM-79-2008.

TRIM: Edgeless die-cast aluminum.

LISTINGS: cULus Listed. ENERGY STAR® qualified. California Title 24 2016 JA8 compliant. UL Listed for Wet Location. DRDHNJO metallic outlet box certified UL514A up to 2 hour fire rating, STC/IIC Sound Rated, ASTM E283 certified Air Tight, IC rated.

WARRANTY: 5 year limited warranty.

Product Code:	Type:	
Project:	Contact:	Date:

dmf Lighting 1118 E. 223rd St. Carson, CA 90745 T: 1.800.441.4422

DUTCH BROS Coffee

EXT. DOWNLIGHT

L.2.1

DRD5S

Surface Mount LED Downlight

General New Construction
SurfaceFrame - Octagonal Junction Box

PRODUCT SELECTION GUIDE

FRAME-IN KIT (Product Code Example: DRDH + N + JO = DRDHNJO)

PRODUCT CODE		APPLICATION		APERTURE		DRIVER	
DRDH	Housing	N	New Construction	JO	Octagonal Junction Box	[Blank]	Integrated TRIAC/ELV 120V Dimming

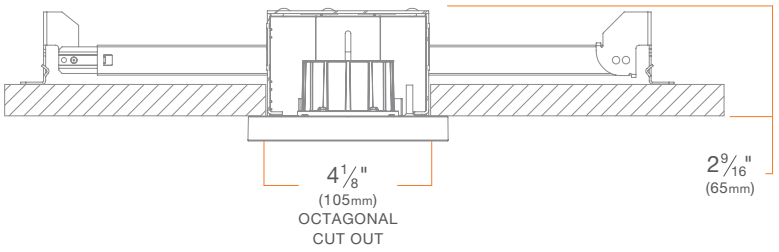
LIGHT ENGINE (Product Code Example: DRD5S + 4 + R + 07 + 9 + 30 = DRD5S4R07930)

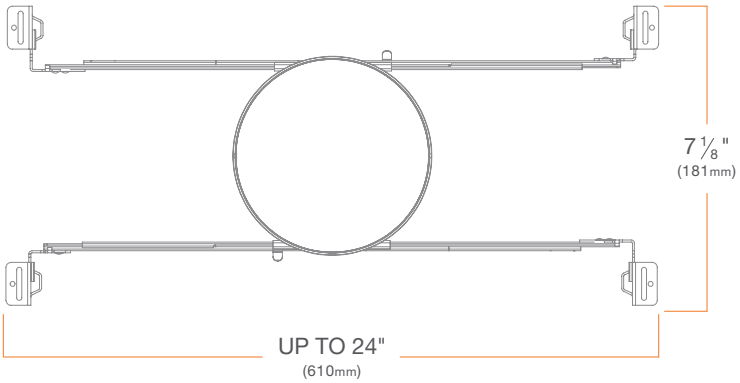
PRODUCT CODE		APERTURE		SHAPE		LUMENS		CRI		CCT		DRIVER	
DRD5S	Module	4	4" Aperture	R	Round	07	750 lm	9	90+ CRI	30	3000K	[Blank]	TRIAC/ELV
						10	1000 lm						

0-10V dimming and EM options available
Summer 2018

DIMENSIONS

DRDHNJO
SurfaceFrame
Octagonal Junction Box





DUTCH BROS Coffee

EXT. DOWNLIGHT

L.2.2

DRD5S

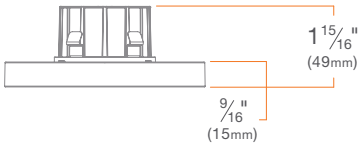
Surface Mount LED Downlight

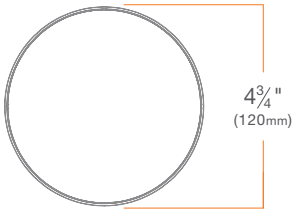
General New Construction
SurfaceFrame - Octagonal Junction Box

LIGHT ENGINE OVERVIEW

DRD5S4R

4" Round Surface Mount
LED Downlight





	DRD5S4R07	DRD5S4R10
Total Module Lumen Output (lm)	750	1000
Total Rated Power (W)	9.0	12.5
Efficacy (lm/W)	83	80
Color Rendering Index	90+	
CCT Options	3000K	
Optics	Flood	
Binning	< 3-step SDCM	
Lifetime (L70)	50,000 hours	
Max Ambient Operating Temperature	40°C	
Input Voltage (V)	120/277V, 50/60Hz	
Input Current at 120V (Max)	0.075	0.104
Input Current at 277V (Max)	0.034	0.047
Power Factor	>0.9	
Total Harmonic Distortion	<20%	
Dimming	100% - 5%	

DUTCH BROS Coffee

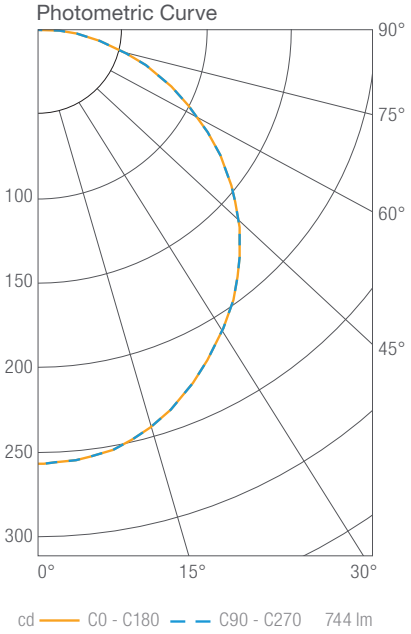
EXT. DOWNLIGHT

L.2.3

PHOTOMETRICS

Light Engine: DRD5S4R07930 (DRD5S Luminaire, 750 lm, 90 CRI, 3000K)

Photometric Curve



Luminous Intensity

Gamma	C 0°
0.0°	258
5.0°	256
10.0°	253
15.0°	247
20.0°	237
25.0°	226
30.0°	213
35.0°	200
40.0°	185
45.0°	169
50.0°	151
55.0°	132
60.0°	113
65.0°	93
70.0°	73
75.0°	54
80.0°	35
85.0°	18
90.0°	6

Values in candela

Zonal Lumen Summary

Zone	Lumens	Luminaire %
0-30	199	27
0-40	324	44
0-60	573	77
0-90	744	100
0-180	744	100

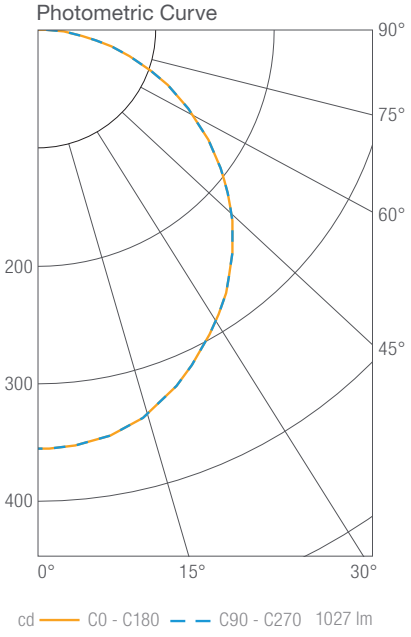
Illuminance Chart

Distance from LED	Foot Candles	Diameter
3.0'	29	8.8'
6.0'	7	17.7'
9.0'	3	26.5'
12.0'	2	35.3'

Beam Angle: 112°

Light Engine: DRD5S4R10930 (DRD5S Luminaire, 1000 lm, 90 CRI, 3000K)

Photometric Curve



Luminous Intensity

Gamma	C 0°
0.0°	356
5.0°	354
10.0°	349
15.0°	340
20.0°	327
25.0°	312
30.0°	294
35.0°	276
40.0°	255
45.0°	233
50.0°	209
55.0°	183
60.0°	155
65.0°	128
70.0°	101
75.0°	74
80.0°	48
85.0°	25
90.0°	9

Values in candela

Zonal Lumen Summary

Zone	Lumens	Luminaire %
0-30	274	27
0-40	447	44
0-60	790	77
0-90	1027	100
0-180	1027	100

Illuminance Chart

Distance from LED	Foot Candles	Diameter
3.0'	40	8.8'
6.0'	10	17.7'
9.0'	4	26.5'
12.0'	2	35.3'

Beam Angle: 112°

DIMMER COMPATIBILITY

Recommended Phase-control Dimmers (Dims down to 5% nominal measured light output)

Brand	Series	Model Number	Max Load 750lm DRD5S4R07	Max Load 1000lm DRD5S4R10
Cooper	Aspire	9573	29	23
Leviton	Vizia	VPE06	64	48
Lutron	CL Series	AYCL-253, DVCL-253	26	20
	Grafik Eye 3000	QSGR-3P, QSGR-6P	31	24
	Grafik Sys / Homeworks	RPM-4U	44	35
	Maestro CL	MACL-153M, MSCL-OP153M, MSCL-VP153M	16	12

Compatible Phase-control Dimmers[1] (Dims down to 10% nominal measured light output)

Brand	Series	Model Number	Max Load 750lm DRD5S4R07	Max Load 1000lm DRD5S4R10
Cooper	Aspire	9573	29	23
	Decorator	DLC03P, DAL06P	29	23
Legrand	Adorne	ADTP703	48	38
	Digital Light Management	LMRC-221	250	195
Leviton	IllumaTech	IPE04	32	25
	Vizia	VPE04	42	32
	Vizia	VPE06	64	48
Lutron	CL Series	AYCL-153, CTCL-153, DVCL-153, LGCL-513, SCL-153, TGCL-513	15	11
	CL Series	AYCL-253, DVCL-253	26	20
	Grafik Eye 3000	QSGR-3P, QSGR-6P	31	24
	Grafik Sys / Homeworks	RPM-4U	44	35
	Maestro CL	MACL-153M, MSCL-OP153M, MSCL-VP153M	16	12
	Maestro Wireless	MRF2-6ELV, MRF2-6CL	15	12
	Radio RA	RRD-6NA, RRD-6CL, RRD-6D	15	12
	Skylark Contour CL	CTCL-153P	15	12

[1] *Dimmer compatibility reflects performance compatibility only. Please reference your local codes for application.*

Imperial Lighting

L3

Job: Dutch Brothers Coffee

Descr: Exit

STANDARD	OPTIONAL
UL LISTED, LED, DAMP LOCATION, MOUNTING CANOPY	2C, SDT, ASSEMBLED IN USA

ILLUMINATION

- *Ultra-bright, energy efficient, long-life Red or Green LED.*

ELECTRICAL

- *Dual 120/277 voltage.*
- *Charge rate/power "ON" LED indicator light and push-to-test switch for mandated code compliance testing.*
- *4.8V long-life, maintenance-free, rechargeable NiCd battery.*
- *Internal solid-state transfer switch automatically connects the internal battery to LED board for minimum 90 minute emergency illumination.*
- *Fully automatic solid-state, two-rate charger initiates battery charging to recharge a discharged battery in 24 hours.*

MOUNTING

- *EZ-snap mounting canopy included for top or end mount.*
- *Universal K/O pattern on back plate for wall mount.*

HOUSING

- *Injection molded, engineering grade, 5VA flame retardant, high-impact resistant, thermoplastic in white or black finish.*
- *EZ snap out Chevron directional indicators.*
- *Compact, low-profile design.*

OPTIONS

- *SDT: Self-diagnostic test feature performs monthly, biannually, and annually tests to ensure reliable operation and to meet electrical and life safety codes.*
- *2C: Dual-circuit option on the AC-only unit enables it to be connected to two different (one acting as a back-up to the other) supplies at the same time.*
- *Custom: Signs available with requested 'special' wording.*
- *USA: Substantial transformation assembly in the U.S. complies with "AssembLED in the USA" under the Buy American Act.*

WARRANTY/LISTING

- *Five year warranty on all electronics and housing. Battery pro-rated for five years.*
- *Meets UL924, NFPA 101 Life Safety Code, NEC, OSHA, Local and State Codes..*
- *UL listed for damp locations. (0°C – 50°C)*

DIMENSIONS

CUSTOM SIGNAGE AVAILABLE

ORDERING INFORMATION

Special voltage and SALIDA face plate options available. Check with your Best Lighting Representative.

Sample Part Number: ***EZXTEU-2-R-W-EM***

Model	No. of faces	Letter	Housing	Battery	Options
EZXTEU	1 Single Face	R Red	W White	Blank AC Only	SDT Self-diagnostics
	2 Universal Single/ Double Face	G Green	B Black	EM Battery Back-up	2C Dual-Circuit operation
					Custom Custom wording
					USA Assembled in the USA

BEST LIGHTING PRODUCTS • 1213 ETNA PARKWAY, PATASKALA OH 43062 • 740-964-1198 • www.bestlighting.net

Imperial Lighting

L4

Job: Dutch Brothers Coffee

Descr: Exterior wall sconce, adjustable up/down light beams

With its unassuming minimalist profile, The Vex outdoor LED wall sconce features up and down lighting and delivers a wide range of optical control and illumination options in a unique and deceptively simple design. Independent, up and down beam angels from 10° - 120° are achieved with simple tool-free adjustment. Beams can be set symmetric or asymmetric in both directions and are lockable. Angle markers ensure consistent and precise aiming and adjustment from fixture to fixture. Vex is ideal for indoor or outdoor accent lighting, ambient and/or way-finding applications where beam angle is critical and/or being used to add dramatic effects.

Key features

- Tool-free, independent, up/down beam angle adjustment 10° - 120°
- Asymmetric or Symmetric Beam Shaping
- Lockable
- Angle markers for consistent and precise aiming

TECH LIGHTING

VEX WALL SCONCE

SPECIFICATIONS

DELIVERED LUMENS	554
WATTS	18.7
VOLTAGE	Universal 120V - 277V
DIMMING	0-10V, ELV, TRAC, CL
LIGHT DISTRIBUTION	Symmetric or Asymmetric depending on barn doors position
MOUNTING OPTIONS	Wall
OPTICS	Adjustable beam spread
CCT	3000K or 4000K
CRI	90+
COLOR BINNING	3-Step
BUG RATING	B0-U3-G0
DARK SKY	Non-Compliant
WET LISTED	IP65
GENERAL LISTING	ETL
CALIFORNIA TITLE 24	Can be used to comply with CEC 2016 Title 24 Part 6 for outdoor use. Registration with CEC Appliance Database not required.
START TEMP	-30°C
FIELD SERVICEABLE LED	Yes
CONSTRUCTION	Aluminum
HARDWARE	Stainless Steel
FINISH	Marine Grade Powder Coat
LED LIFETIME	L70; 35,000 Hours
WARRANTY*	5 years

* Visit techlighting.com for specific warranty limitations and details.

VEX
shown in black

VEX
shown in bronze

VEX
shown in charcoal

VEX
shown in white

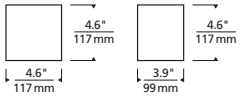
ORDERING INFORMATION

700OWVEX	CRI	COLOR TEMPERATURE	LENGTH	FINISH	INPUT VOLTAGE
	9 90 CRI	**30** 3000K	**4** 4"	**H** CHARCOAL	**UNV** UNV 120V-277V
		40 4000K		**Z** BRONZE	
				W WHITE	
				B BLACK	

techlighting.com

VEX WALL SCONCE

TECH LIGHTING®



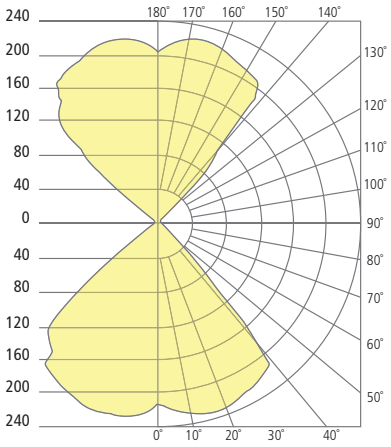
Vex

PHOTOMETRICS*

*For latest photometrics, please visit www. techlighting.com/OUTDOOR

VEX

Total Lumen Output:	554
Total Power:	18.7
Luminaire Efficacy:	29.6
Color Temp:	3000K
CRI:	90+
BUG Rating:	B0-U3-G0



TECH LIGHTING®

GENERATION BRANDS
7400 Linder Avenue, Skokie, Illinois 60077
T 847.410.4400 F 847.410.4500

techlighting.com

D-Series
LED Bollard

d"series

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

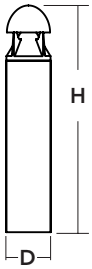
The D-Series LED Bollard is a stylish, energy-saving, long-life solution designed to perform the way a bollard should—with zero uplight. An optical leap forward, this full cut-off luminaire will meet the most stringent of lighting codes. The D-Series LED Bollard's rugged construction, durable finish and long-lasting LEDs will provide years of maintenance-free service.

Specifications

Diameter: 8" Round *(20.3 cm)*

Height: 42" *(106.7 cm)*

Weight (max): 27 lbs *(12.25 kg)*



XX - To be confirmed prior to ordering

Ordering Information

EXAMPLE: DSXB LED 16C 700 40K SYM MVOLT DDBXD

DSXB LED

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Control options	Other options	Finish *(required)*
DSXB LED	**Asymmetric** 12C 12 LEDs[1] **Symmetric** 16C 16 LEDs[2]	350 350 mA 450 450 mA [3,4] 530 530 mA 700 700 mA	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted AMBLW Amber limited wavelength [3,4]	ASY Asymmetric [1] SYM Symmetric	MVOLT [5] 120 [5] 208 [5] 240 [5] 277 [5] 347 [4]	**Shipped installed** PE Photoelectric cell, button type DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ELCW Emergency battery backup[6]	**Shipped installed** SF Single fuse (120, 277, 347V) [4,7] DF Double fuse (208, 240V) [4,7] H24 24" overall height H30 30" overall height H36 36" overall height FG Ground-fault festoon outlet L/AB Without anchor bolts L/AB4 4-bolt retrofit base without anchor bolts [8]	DWHXD White DNAXD Natural aluminum DDBXD Dark bronze DBLXD Black DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Accessories

Ordered and shipped separately.

MRAB U Anchor bolts for DSXB [8]

NOTES

1. Only available in the 12C, ASY version.
2. Only available in the 16C, SYM version.
3. Only available with 450 AMBLW version.
4. Not available with ELCW.
5. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
6. Not available with 347V. Not available with fusing. Not available with 450 AMBLW.
7. Single fuse (SF) requires 120, 277, or 347 voltage option. Double fuse (DF) requires 208 or 240 voltage option.
8. MRAB U not available with L/AB4 option.

Performance Data

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%.

Confirm or select Lumens required

Light Engines	Drive Current	System Watts	3000 K					4000 K					5000 K					Limited Wavelength Amber				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
Asymmetric (12 LEDs)	350	16	1,194	75	1	0	1	1,283	80	1	0	1	1,291	81	1	0	1					
	530	22	1,719	78	1	0	1	1,847	84	1	0	1	1,859	85	1	0	1					
	700	31	2,173	70	1	0	1	2,335	75	1	0	1	2,349	76	1	0	1					
	Amber 450	16																348	22	1	0	1
Symmetric (16 LEDs)	350	20	1,558	78	1	0	0	1,674	84	1	0	0	1,685	84	1	0	0					
	530	28	2,232	80	2	0	1	2,397	86	2	0	1	2,412	86	2	0	1					
	700	39	2,802	72	2	0	1	3,009	77	2	0	1	3,028	78	2	0	1					
	Amber 450	20																419	21	1	0	1

Note: Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.00	0.98	0.97	0.95

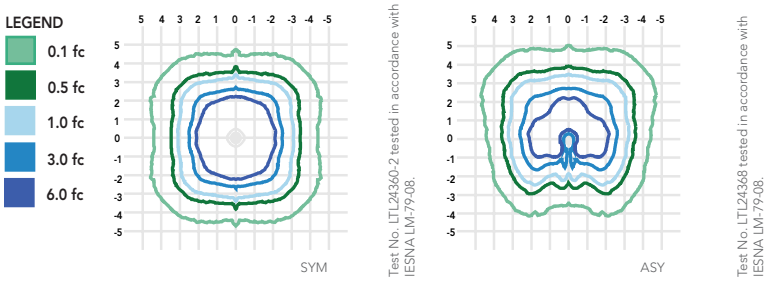
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A) 120	208	240	277	347
12C	350	16W	0.158	0.118	0.114	0.109	0.105
	530	22W	0.217	0.146	0.136	0.128	0.118
	700	31W	0.296	0.185	0.168	0.153	0.139
	Amber 450	16W	0.161	0.120	0.115	0.110	0.106
16C	350	20W	0.197	0.137	0.128	0.121	0.114
	530	28W	0.282	0.178	0.162	0.148	0.135
	700	39W	0.385	0.231	0.207	0.185	0.163
	Amber 450	20W	0.199	0.139	0.130	0.123	0.116

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Bollard homepage.

Isofootcandle plots for the DSXB LED 700 40K. Distances are in units of mounting height (3').



FEATURES & SPECIFICATIONS

INTENDED USE
The rugged construction and maintenance-free performance of the D-Series LED Bollard is ideal for illuminating building entryways, walking paths and pedestrian plazas, as well as any other location requiring a low-mounting-height light source.

CONSTRUCTION
One-piece 8-inch-round extruded aluminum shaft with thick side walls for extreme durability, and die-cast aluminum reflector and top cap. Die-cast aluminum mounting ring allows for easy leveling even in uneven areas and full 360-degree rotation for precise alignment during installation. Three ½" x 11" anchor bolts with double nuts and washers and 3-5/8" max. bolt circle template ensure stability. Overall height is 42" standard.

FINISH
Exterior parts are protected by a zinc-infused super durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering for maximum retention of gloss and luster. A tightly controlled multi-stage process ensures a minimum 3-mil thickness for a finish that can withstand the elements without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Two 0% uplight optical distributions are available: symmetrical and asymmetrical. IP66 sealed LED light engine provides smoothly graduated illumination without uplight. Light engines are available in standard 4000 K (>70 CRI) or optional 3000 K (>80 CRI) or 5000 K (67 CRI). Limited-wavelength amber LEDs are also available.

ELECTRICAL
Light engines consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (L95/100,000 hours at 700mA at 25°C). Class 2 electronic drivers are designed for an expected life of 100,000 hours with < 1% failure rate. Electrical components are mounted on a removable power tray.

LISTINGS
CSA certified to U.S. and Canadian standards. Light engines are IP66 rated. Rated for -40°C minimum ambient. Cold-weather emergency battery backup rated for -20°C minimum ambient.

WARRANTY
Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

OLF
LED Security Floodlight with photocell, two heads

Catalog Number

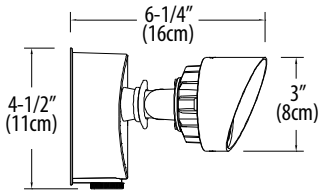
Notes

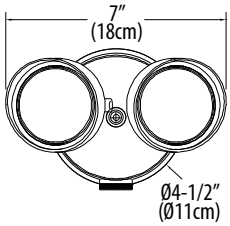
Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Width:	7.00" *(17.8 cm)*
Height:	4.5" *(11.4 cm)*
Depth:	6.25" *(15.9 cm)*
Weight:	1.5 lbs. *(0.68 kg)*
Lumen Output:	2,160
Input Power:	25W
Efficacy:	86 Lumens per Watt
Input volage:	120V





Introduction

The OLF LED security floodlight combines energyefficient LEDs with photocell (or dusk-to-dawn) technology.

OLF 2RH contains two round heads delivering 2,160 lumens using only 25W power. OLF 2RH replaces up to two 90W PAR incandescent lamps and saves 86% energy. A built-in photocell prevents daylight operation, and reduces energy costs further. OLF family is a flexible and cost effective solution for any residential and commercial security floodlighting application.

Ordering Information

EXAMPLE: OLF 2RH 40K 120 PE DDB

OLF					
Series	**Number of heads**	**Color Temperature[1]**	**Voltage**	**Control**	**Finish**
OLFSP	2RH 2 heads, round	40K 4000K [1]	120 120 volts	(blank) none PESP Dusk-to-dawn photocell	DDB Dark Bronze WH White

Complete list of configurations available:

- OLF 2RH 40K 120 DDB
- OLF 2RH 40K 120 PE DDB
- OLF 2RH 40K 120 WH
- OLF 2RH 40K 120 PE WH

NOTES

1. Correlated color temperature (CCT) shown is nominal per ANSI C78, 377-2008.
2. LED lifespan based on IESNA LM-80-08 results and calculated per IESNA TM-21-11 methodology.

FEATURES & SPECIFICATIONS

INTENDED USE
OLF security floodlights are ideal for an energy-efficient replacement of two 90W incandescent security lights. The OLF LED provides over 10 years of maintenance-free general illumination for outdoor applications. OLF 2RH with PE (photocell) option prevents daylight operation and saves energy costs. Ideal for entrances, walkways, corridors, yards, driveways and patios.

CONSTRUCTION
Cast-aluminum housing with dark bronze or white polyester powder paint for lasting durability. Photocell sensitivity is adjustable. LED lamp heads are thermally isolated from the driver that is located in the rear housing, promoting a long service life. Lenses are sealed to prolong service life. LEDs maintain 70% of light output at 50,000 hours of service life[2].

ELECTRICAL
Consumes 25W power, 120V input. 60Hz driver. Available in models with or without dusk-to-dawn photocell. Rated for outdoor installations, -40°C minimum ambient.

INSTALLATION
Mounts to a recessed junction box on wall or ceiling. Crossbar and hardware provided. Wet location listed for mounting 4 feet above ground. Tool-less adjustable heads allow for precise aiming. Neighbor-friendly visors are adjustable or removable.

LISTINGS
UL/cUL listed Listed to U.S. and Canadian safety standards for wet locations. Tested in accordance with IESNA LM-79 and LM-80 standards. Add EnergyStar staement

WARRANTY
Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

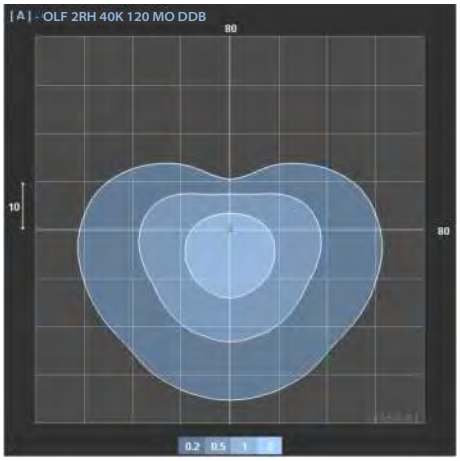
Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Photometric Diagrams

Full photometric data report available within 2 weeks from request. Contact Acuity tech support.

LEGEND

- 0.1 fc
- 0.2 fc
- 0.5 fc
- 1.0 fc

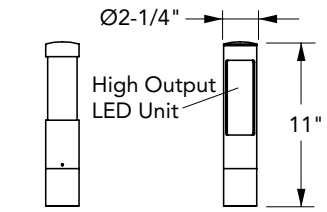


TIOGA LED
12V LED16

CATALOG NUMBER	
NOTES	
TYPE	

Specifications

D:	2-1/4"
H:	11"



ML360 (T4) ML180 (T3)

DESCRIPTION

The TIOGA is a LED marker or pathway light with an opaque lens and 360° or 120° of illumination. Available with 3 white kelvin temperatures and a true amber that meets wildlife safety requirements.

ORDERING INFORMATION

EXAMPLE: TIOGA 3LED16 AMB 12 ML120 SDE BRT

TIOGA	3LED16		12	
Series	**Light Source**	**Color Temperature**	**Voltage**	**Distribution***
TIOGA	3LED16 6 watt LED	27K 2700K 30K 3000K 40K 4000K 50K 5000K AMB 591 nanometers	12[1] 12 Volt	ML120 120° light pattern (was T4) ML360 360° light pattern (was T3)

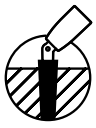
Confirm to match exterior lights

Mounting Style*	Color Filter				Finish*			
PM60D Fixed Post Mount with Conduits, Aluminum SDE Surface Mount	FM Mercury Vapor FR Red FRD Red Dichroic FP Pink FA Amber		FG Green FGD Green Dichroic FLB Light Blue FMB Medium Blue FMBD Medium Blue Dichroic		All Material BL Black Textured BRS Bronze Smooth BRT Bronze Textured DBL Black Smooth DDB Designer Bronze		DNA Natural Aluminum NBS[2] Natural Bronze Smooth VET Verde Textured WH White CF Custom Finish WH White Smooth	

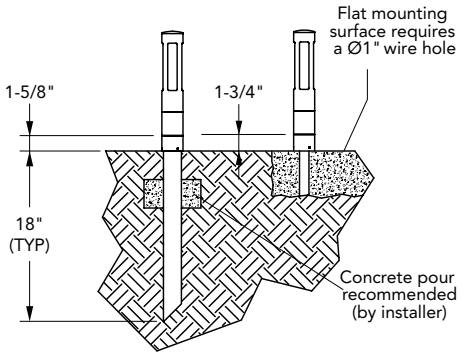
Confirm prior to ordering

Confirm if Dutch wants blue color filter

MOUNTING



GROUND MOUNT



PM60D, PMBR60D MOUNT SDE MOUNT

Notes:
1. Remote Transformer Required. Options for remote transformers.
2. NBS paint uses specialty pigments to give a natural appearance that may vary by fixture.

HYDREL
One Lithonia Way Conyers GA. 30012
Phone: 800-705-SERV (7378) • www.hydrel.com

FEATURES & SPECIFICATIONS

CONSTRUCTION:
Aluminum: Body, cap, stem, and mount machined from 6061 - T6 ALUMINUM. Lens cut from heat strengthened borosilicate glass for superior clarity and strength.

LED UNIT: Winscape proprietary replaceable LED unit using three (3) High Output LEDs and an integral low voltage (11V-14V) AC / DC LED driver and a field replaceable optic. Units have near constant light output when supplied with 11VAC - 14VAC to combat voltage drop. Dimmable using standard LOW VOLTAGE MAGNETIC dimming switch / systems.

FINISHES:
Aluminum: Available in standard TGIC polyester powder coat finishes. Custom powder coat finishes available (contact factory for more information).

FEATURES: Field replaceable lens. Color filter can be specified and is held securely by a removable stainless steel clip ring. Fixture supplied with 6 feet of 12/2 landscape cable. Lens frosted to minimize glare.

Total Fixture Draw		
Input Voltage (VAC*)	Total Current (Amps)	Wattage
8.0	0.165	1.32
9.0	0.358	3.23
10.0	0.448	4.48
11.0	0.463	5.10
12.0	0.471	5.65
12.5	0.476	5.95
13.0	0.487	6.34
14.0	0.499	6.99

* Contact factory for Current and Wattage rating for VDC.

GENERAL: This fixture requires a low voltage MAGNETIC transformer to function properly. Magnetic transformer must be purchased separately (see Accessories section on our website). SDE mount style mounts to any flat surface and has a Ø1-1/8" center hole to accommodate up to 3/4" conduit for wiring.

LISTING: c ETL us. Wet Location.

WARRANTY: 5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

EXHIBIT 08

260-
20-

After recording return to:
PERKINS COIE
111 SW Fifth Avenue, Suite 2500
Portland, Oregon 97204
Telephone (503) 295-4400
Attn: Richard A. Cantlin

CHICAGO TITLE INSURANCE CO. C 89153

PLANNED BUSINESS COMMUNITY DECLARATION FOR WILSONVILLE TOWN CENTER PROPERTY

This PLANNED BUSINESS COMMUNITY DECLARATION OF EASEMENTS, COVENANTS, CONDITIONS AND RESTRICTIONS (the "Declaration") is made this 14 of February, 1992, by Capital Realty Corp, an Oregon corporation.

RECITALS

Declarant owns that certain real property known as Wilsonville Town Center which is situated in Clackamas County, Oregon, and described on Exhibit "A" which is attached hereto and made a part hereof, a portion of which is being purchased by Tandy Corporation. The portion being purchased by Tandy Corporation is described as Parcel 2 on Exhibit A. It is the desire and intention of Declarant that the Property, as defined below, be subject to this Declaration in furtherance of a plan for the development of the Property and in furtherance of the goal of enhancing the value, desirability and attractiveness of the Property and every part thereof. The Declarant's intention and desire is to initially develop and use the Property and any and all portion(s) thereof (if at all) only for the construction, operation and maintenance of a first-class community shopping center and mixed use development and related facilities.

SECTION 1. DEFINITIONS.

The following terms shall have the following meanings:

1.1 Architect. The term "Architect" shall mean a person licensed as such pursuant to the laws of the State of Oregon.

1.2 Association. The term "Association" shall mean the non-profit unincorporated association composed of all Owners, as formed after Notice of Withdrawal by Declarant, as defined below. Upon the majority vote of all Owners and compliance with Laws, the Association may incorporate as a non-profit corporation.

1.3 Building. The term "Building" shall mean and include, but not be limited to, the main portion of a

structure built for permanent use and all projections or extensions thereof, including, but not limited to, garages, outside platforms and docks, storage tanks, carports, enclosed malls and porches.

1.4 Center. The term "Center" shall mean the Wilsonville Town Center project as shown on the Master Plan, as defined below.

1.5 Declarant. The term "Declarant" shall mean Capital Realty Corp., an Oregon corporation, together with any successors and assigns thereof specified as a successor Declarant in a written document signed by the preceding Declarant. The term "Declarant" shall also refer to the Association in the event that Declarant has recorded a Notice of Withdrawal as provided in Section 10.8 of this Declaration.

1.6 Declaration. Declaration shall mean this Planned Business Community Declaration and any amendments or supplements thereto.

1.7 Improvement(s). The term "Improvement(s)" shall mean all improvements now or hereafter placed or constructed in, under or upon the Property including, without limitation, buildings, outbuildings, roads, driveways, parking areas, fences, screening walls and barriers, retaining walls, stairs, decks, all utility distribution facilities, planted trees and shrubs, poles, signs, and all other improvements.

1.8 Institutional First Mortgagee. The term "Institutional First Mortgagee" shall mean an entity which has or had a first lien on a Tract and which is a bank, savings and loan association, mortgage company, insurance company or other similar business entity which, in the ordinary course of its business, regularly makes loans to borrowers secured by first liens against commercial real estate. Any notice to such an entity required by this Declaration shall be delivered to the address specified by that entity.

1.9 Law or Laws. The term "Law" or "Laws" includes all governmental statutes, ordinances, laws, codes, rules, regulations, equitable principles, and all judicial and land use decisions, including orders, approvals, denials, and conditions thereof.

1.10 Master Plan. The term "Master Plan" shall mean the Site Master Plan, as defined in section 4.7 below.

1.11 Mortgage. The term "Mortgage" shall include a deed of trust or recorded land sale contract, as well as a mortgage.

1.12 Mortgagee. The term "Mortgagee" shall mean a beneficiary under a deed of trust or a vender under a recorded land sale contract, as well as a mortgagee under a mortgage.

1.13 Occupant. The term "Occupant" shall mean a lessee of an Owner, or any other person or entity, other than an Owner, in lawful possession of a Tract, building, or portion thereof, with the permission of the Owner.

1.14 Owner. The term "Owner" shall mean and refer to any person or entity which is the record owner of a fee simple title to any Tract, including the Declarant, and any contract vendees or Mortgagees in possession.

1.15 Notice of Withdrawal. The term "Notice of Withdrawal" shall mean the recorded notice by Declarant that Declarant ceases to develop the Property or is no longer an Owner and withdraws from its role as Declarant as provided in Section 10.8 of this Declaration.

1.16 Property. The term "Property" means the property described in Exhibit A and any property added to this planned business community by any amended or supplemental Declaration.

1.17 Property Line. The term "property line" means the boundary of any Tract.

1.18 Record - Recorded - Recordation. Reference to "Record", "recorded" or "recordation" shall relate, with respect to any document, to the filing for record of said document in the official records of the County of Clackamas, State of Oregon.

1.19 Sign. The term "sign" shall mean any structure, device or contrivance, whether electric or non-electric, upon or within which any poster, bill, bulletin, printing, lettering, painting, device or other communication of any kind whatsoever is used, placed, posted, shown, seen, tacked, nailed, pasted, or otherwise fastened or affixed, or an integral part thereof.

1.20 Street. The term "Street" shall mean any public street, highway, road, or thoroughfare within or adjacent to the Property and shown on any recorded subdivision or parcel map, or record of survey, whether designated thereon as a street, boulevard, avenue, alley, road, or otherwise.

1.21 Tandy. The term "Tandy" shall mean Tandy Corporation, together with any successors or assigns of the interest of Tandy in Parcel 2 as described on Exhibit A.

1.22 Tract. The term "Tract" shall mean a fractional part of the Property as partitioned or subdivided according to Law whether or not the partition or subdivision occurs after this Declaration is recorded.

1.23 Turnover Meeting. The term "Turnover Meeting" shall mean the initial meeting of the Association as called by Declarant in a Notice of Withdrawal, as described in Section 10.8 of this Declaration.

1.24 Violation. The term "Violation" shall mean any breach or violation of any term, covenant, condition or restriction contained in this Declaration.

1.25 Visible From Neighboring Property. The phrase "visible from neighboring property" shall mean, with respect to any given object on a Tract, that such object is or would be visible to a person six (6) feet tall, standing on any part of any property that is adjacent or contiguous to the Property or standing on any part of any adjacent road, street or highway at an elevation equal to the base of the object being viewed.

SECTION 2. SUBJECT PROPERTY AND EASEMENTS.

2.1 General Declaration. Declarant hereby declares that all of the Property, is, and shall be, subject to this Declaration. All Occupants of the Property hold such interest subject to this Declaration to the extent permitted by Law.

2.2 Addition of Other Real Property. For so long as Declarant owns all or a portion of the Property, Declarant shall add to the Property subject to this Declaration any and all real property hereafter owned in fee simple by Declarant adjacent or contiguous with the property described in Exhibit A hereto. Upon proper recordation of an appropriate supplemental Declaration in the chains of title of both the property described in Exhibit A hereto and such contiguous or adjacent property, all provisions of this Declaration shall apply to such contiguous or adjacent property in the same manner as if it were originally covered by this Declaration. The rights of the Owners of the property described in Exhibit A hereto and the contiguous or adjacent property so added shall be mutual and identical.

2.3 Easements. Declarant hereby declares and reserves the following reciprocal, nonexclusive easements for the benefit of all Owners, Occupants and guests and permittees thereof:

2.3.1 An easement for necessary ingress and egress over all walking and driving areas as generally described in

the Master Plan or otherwise now or hereafter located on each Tract and an easement for parking over all parking areas as generally described in the Master Plan now or hereafter located on each Tract.

2.3.2 An easement and right-of-way over each Tract for the purpose of installing, maintaining, repairing, and replacing public utility lines, services and facilities reasonably necessary to serve conveniently all or any of the Tracts.

2.3.2.1 The precise location of the easement and right-of-way shall be subject to the prior approval of the existing Owner of the Tract to be burdened by such easement (herein the "Servient Owner") and any Institutional First Mortgagee which approval will not be unreasonably denied or withheld. Failure of any Servient Owner or Institutional First Mortgagee to disapprove in writing the requested location of an easement, stating the reasons for such disapproval, within sixty (60) days after receipt by the Servient Owner or Institutional First Mortgagee as the case may be of a written request for such approval (which request shall be accompanied by a legal description, sketch or other documentation sufficient to locate the easement with particularity) shall be deemed to be the approval of such Servient Owner and Institutional First Mortgagee.

2.3.2.2 In connection with any installation, maintenance, repair or replacement of public utility lines, services or facilities, (1) the Owner of the Tract benefitted by the same (herein the "Dominant Owner") shall be responsible for payment of all costs and expense associated therewith, (2) all such activities shall be carried out so as not to unreasonably interfere with the use or enjoyment by any Servient Owner of its Tract, (3) the Dominant Owner shall indemnify and hold harmless all Servient Owner(s) of an from all losses, cost or expense reasonably incurred by such Servient Owner(s) arising out of or in any way connected with such activities, (4) the Dominant Owner shall keep the Tract free of any liens, (5) the Dominant Owner will grant no public utility or other easements without the prior consent of any proposed Servient Owner, and (6) the Dominant Owner shall furnish the Servient Owner with evidence of liability insurance coverage with respect to all utility installation, maintenance, repair or replacement activities, which insurance shall be in amounts then commercially reasonable and shall be written by an insurance company reasonably acceptable to Servient Owner.

2.3.2.3 A Servient Owner, from time to time, may cause such utility lines, services and facilities and the easement therefore to be relocated, if the existing location

of such utility and easement unreasonably interferes with such Servient Owner's existing or anticipated use of the Tract burdened by the easement, provided that (1) the Servient Owner seeking to relocate the easement and utility gives to any affected Dominant Owner(s), not less than twenty (20) days' prior written notice of the Servient Owner's intention to relocate the same, (2) the Servient Owner shall be responsible for payment of all costs and expenses associated with such relocation, (3) all utility relocation activities shall be carried out so as not to unreasonably interfere with the use or enjoyment by any Dominant Owner of its Tract, (4) the Servient Owner shall indemnify and hold harmless all Dominant Owner(s) of and from all loss, cost or expense incurred by such Dominant Owner(s) arising out of or in any way in connection with such relocation, and (5) the Servient Owner shall furnish the Dominant Owner(s) with evidence of liability insurance coverage with respect to all utility relocation activities, which insurance shall be in amounts then commercially reasonable and shall be written by an insurance company reasonably acceptable to Dominant Owner(s). Any such relocation activity shall not be performed in the final calendar quarter of any given year, except in emergency situations.

2.4 Access Easements to Adjacent Property. Declarant hereby acknowledges those certain temporary easements and rights-of-way contained in the two Easement Agreements attached as Exhibit B. Upon Declarant acquiring fee simple title to the Grantee's Property, as that term is defined in Exhibit B, and the addition of such property to the Property subject to this Declaration, such easements shall be terminated.

SECTION 3. CONSTRUCTION OF IMPROVEMENTS

3.1 Approval of Plans Required. No Improvements shall be erected, placed, altered, maintained or permitted to remain on any Tract without approval of final plans and specifications therefor (the "Plans") by the Declarant. The Plans shall be submitted in duplicate, signed by an authorized agent of the Owner submitting them. The Plans shall contain the following information: site plans, landscape plans, building plans, building elevations and outline specifications. This material shall be sufficient in detail to fully describe proposed access, circulation, configurations, setbacks, service areas, utilities, amenities, parking, grading, drainage, site lighting, signage, screening, landscaping and building materials. Included shall be tabulation of site usage including: parcel area, building floor area, site coverage and parking spaces. Also required shall be a perspective rendering showing the style, type and color of the exterior materials. Preliminary plans meeting

the foregoing requirements may be submitted, but approval of such shall be conditioned on final plans conforming in all relevant respects with the approved preliminary plans. Such approval may be obtained prior to the closing of a sale of property to a prospective Owner and shall bind Declarant the same as if such approval were given to an existing Owner. Notwithstanding the above, the Improvements proposed by Tandy as approved with conditions by the City of Wilsonville Design Review Board by Notice of Decision dated January 27, 1992, regarding file no. 91DR29, are hereby approved by Declarant. Material changes in approved plans, including the Tandy plans approved herein, must be submitted to and approved by the Declarant. Declarant shall not unreasonably withhold or delay any approval.

3.2 Basis for Approval. Declarant may adopt guidelines to implement this Declaration and provide guidance to Owners in complying with this Declaration. Declarant may withhold approval of any proposed improvements only if such do not comply with the Declaration or Declarant in good faith believes that notwithstanding compliance with this Declaration, the proposed improvements are not of comparable quality and compatible design and construction to other planned and constructed improvements on the Property.

3.3 Result of Inaction. Declarant shall approve or disapprove Plans within thirty (30) days after submission of such Plans and of any additional information reasonably requested by Declarant, provided, however, Declarant shall not in any event be liable for damages due to the breach of this covenant. If Declarant does not approve or disapprove plans within the time allowed above, such plans shall be deemed automatically approved. Notwithstanding the above thirty (30) day period, if Declarant disapproves plans or approves plans with conditions or modifications, Declarant shall notify the Owner-applicant of its decision prior to such time as the City of Wilsonville issues any decision relating to the same plans, if the Owner-applicant has timely notified Declarant of such a deadline.

3.4 Approval. Declarant may approve Plans as submitted, or as altered or amended, or subject to specific conditions. Upon approval or conditional approval, one copy of the approved Plans, together with any conditions, shall be retained for permanent record by Declarant, and one copy of the approved Plans, together with any conditions, shall be retained by the Owner submitting such Plans. Declarant and the Owner shall each sign and date a certification of approval on both sets of the approved Plans.

3.5 Proceeding with Work. Upon receipt of approval from Declarant, the Owner shall, as soon as practicable, satisfy

any and all conditions of such approval, shall secure all necessary governmental permits and approvals, and shall diligently proceed with the commencement and completion of all approved excavation, construction and alterations. In all cases, work shall commence within one (1) year from the date of approval. If work is not so commenced, approval shall be deemed revoked unless Declarant, pursuant to written request made and received prior to the expiration of said one (1) year period, extends in writing that period of time for an additional reasonable period of time.

3.6 Completion of Work. Any work or construction commenced pursuant to approved Plans shall be completed within two (2) years from the date of approval of the Plans by Declarant. If such work or construction is not completed within two years, approval shall be deemed revoked unless such work or construction has been prosecuted in a diligent and continuous manner according to good construction practices, then the period of time for completion shall be extended by one (1) additional year. In the event a force majeure shall occur, which shall not include disruption due to inconvenience or expense, the period of time for completion shall also be extended for the period of time caused by the force majeure but not to exceed one (1) additional year..

3.7 Declarant Not Liable. Declarant shall not be liable in any manner to any contractor, subcontractor or materialman, nor for any damage, loss or prejudice suffered or claimed by any person or entity on account of: (a) the approval or disapproval of any Plans, whether or not in any way defective; (b) the development of any Tract or the construction of any Improvement, or performance of any work, whether or not pursuant to approved Plans; or (c) injury to any person or property due to construction, the performance of any work, or the location of any physical object. Each Owner shall indemnify and hold Declarant harmless from any and all such claims, losses, damages, costs and expenses (including attorney's fees) which arise from any activity, construction or condition existing on such Owner's Tract except to the extent of any liability arising solely from any intentional tort or willful misconduct of Declarant.

3.8 Construction or Use Without Approval. If any Improvement is erected, placed or maintained upon any Tract, or any new use commenced upon any Tract, other than with approval by Declarant or as is authorized under the terms of this Declaration, such Improvement or use shall be deemed to have been undertaken in violation of this Declaration, and upon written notice from Declarant, any such Improvement shall be removed, altered or amended as required by Declarant, and any such use shall be altered or shall cease so as to conform to this Declaration. Should such removal, alteration,

cessation or amendment not be accomplished within thirty (30) days after receipt of such notice, then the party in breach shall be subject to the enforcement procedures set forth in Section 9 below.

SECTION 4. SITE DEVELOPMENT RESTRICTIONS.

4.1 Temporary Structures. No temporary buildings or other temporary structures shall be permitted on any building site except trailers, temporary buildings and the like for construction purposes during the construction period of a permanent Building except that Tandy may conduct certain parking lot promotions including tent sales that do not unreasonably interfere with access or parking rights provided in this Declaration, upon the approval of the City of Wilsonville as required by Law and the prior written notification to Declarant.

4.2 Building Setbacks. Building setback areas shall be landscaped and maintained in accordance with Section 6 of this Declaration and the City of Wilsonville requirements.

4.3 Utilities, Mechanical Equipment. All utility lines, including electrical, shall be underground. Pad-mounted transformers, switch-gear and similar equipment, which must be installed above ground line, shall be screened with suitable landscaping or walls of design and material compatible with those of the adjacent buildings and consistent with safety and other regulations of the utility companies.

4.4 Parking Areas. Owners shall provide on-site parking space as required by the City of Wilsonville. No parking shall be permitted on any street or drive, or any place other than parking areas located upon Building sites. Each Owner shall be responsible for compliance by its employees and visitors with the above prohibition on parking outside parking areas located upon Building Sites. All driveways and areas for parking, maneuvering, loading and unloading shall be paved with asphalt or concrete. Off-street parking adequate to accommodate the parking needs of the Owner and any Occupant of each Tract, together with the employees and visitors thereof, shall be provided by the Owner of each Tract. If parking requirements increase as a result of a change in the use of a Tract, the area of a Building, or the number of persons employed, additional off-street parking shall be provided to satisfy the intent of this Section. Required off-street parking shall be provided on the subject Tract, or on a Tract immediately adjacent thereto. Where parking is provided other than upon the subject Tract, the Declarant shall be given a certified copy of a recorded instrument, duly executed and acknowledged by the person or entity holding title to the Tract or other property upon which the parking area is

located. Parking areas shall be paved, providing dust-free all-weather surfaces. The perimeters of parking areas shall be screened from adjacent streets as required by the City of Wilsonville. All parking areas will be maintained at even grade with one another, consistent with the existing typography, and no barriers shall be permitted which would unreasonably or materially and adversely interfere with any other Owner or Occupant's rights to access to such parking areas, except such temporary barriers as may be approved pursuant to Section 4.1 above.

4.5 Loading Areas; Storage. No outside storage of any kind, including but not limited to overnight parking of cars, shall be allowed on any Tract, except that overnight parking of delivery trucks or company vehicles is allowed. Appropriate provision shall be made for any necessary vehicle loading; no on-street vehicle loading shall be permitted; and all loading dock areas shall be set back, recessed or screened so as not to be visible from neighboring property or Streets. The perimeters of parking areas shall be screened from adjacent Streets. "Screening" refers to sight-obscuring fencing or sight-obscuring planting meeting City of Wilsonville standards.

4.6 Site Lighting. All site lighting shall meet City of Wilsonville standards and be approved by the City of Wilsonville Design Review Board.

4.7 Restriction on Development. Declarant intends to construct and complete the Center with all buildings, roadways and parking areas in materially the configurations, locations and size shown for same on the Site Master Plan, a copy of which is attached hereto as Exhibit C together with such changes thereto as Declarant shall reasonably approve (the "Master Plan"). The Center shall be designed, constructed and completed, if at all, to meet all physical requirements of the site and to overcome all conditions relative to soil and water, and to comply with all Laws. It is agreed that at no time shall any buildings, signs or other improvements be constructed on any portion of the Property in such manner or of such height that shall violate the height restrictions then imposed by the City of Wilsonville. It is further agreed that future development of the Property, if any, will include Buildings substantially in the locations and of such size and mass as depicted on the Master Plan. Any substantial modification of such future development which materially bars visibility of the Tandy store and signage from access points upon adjacent properties and adjacent roadways shall require notice to, and the approval of Tandy.

SECTION 5. ARCHITECTURAL RESTRICTIONS

5.1 Floor to Area Ratio. The maximum gross building floor area to land ratio shall conform to City of Wilsonville standards.

5.2 Exterior Materials. Building exterior designs shall be contemporary in style and of high quality commercial grade materials. Material selection is subject to approval of the Declarant and the City of Wilsonville Design Review Board.

5.3 Equipment. All mechanical equipment shall be located or screened so as not to be visible from neighboring property. Penthouses and mechanical equipment screening walls shall be of design and materials compatible with those of the Building. Antennae and other communications equipment shall be visually masked to the extend practicable and consistent with electro-magnetic and transmission/reception considerations. All screening of equipment shall meet the standards and approval of the City of Wilsonville Design Review Board.

5.4 Design. All Buildings shall appear as an integrated part of the Improvements on the Property.

SECTION 6. LANDSCAPING RESTRICTIONS

6.1 Initial Landscaping. Within ninety (90) days following completion of construction of each Improvement, or by the date each Improvement is occupied if such Improvement is of a character and use capable of occupancy, whichever shall occur first, each Tract shall be landscaped in accordance with Plans approved by Declarant and the Wilsonville Design Review Board. Such landscaping shall be planted within the time frame specified above, but shall not necessarily be mature. All portions of a Tract (including any parking lot, parking area or vehicle storage area) not occupied by a Street, private drive, parking space, or Building or other improvement shall be landscaped in a complimentary and similar manner. Such landscaping shall comply with Laws.

6.2 Landscaping Maintenance. All landscaping of a Tract, other than that described in Section 7.3 below, shall be orderly, trimmed and cut at all times. The Owner of the Tract shall pay all costs and expenses of such maintenance. If, in Declarant's reasonable opinion, landscaping or screening is not installed or maintained as required pursuant to this Declaration, Declarant shall be entitled to the remedies set forth in Section 9 below.

6.3 Signs. No Sign shall be installed or maintained by any Owner or Occupant other than identification signs, informational and vehicular control signs, signs identifying the Building or the business of the Owner or Occupant, and temporary real estate and development signs. All signs shall be subject to the approval of Declarant and shall comply with the City of Wilsonville Design Review Board.

6.4 Fences. No fences of any kind shall be permitted unless necessary for security purposes. All fences must be approved by Declarant pursuant to section 3 hereof.

SECTION 7 REGULATION OF OPERATIONS AND USES

7.1 Permitted Uses of Tracts. Except as otherwise specifically prohibited herein, or by Law or by any lease or other agreement, any office or retail use allowed under existing land use regulations applicable to the Property shall be permitted on any Tract, provided that such use conforms to the provisions and spirit of this Declaration. Tandy is expressly permitted to place recycling bins on the Parcel 2 property as depicted on the approved Tandy plans as described in Section 3.1 of this Declaration and approved by the City of Wilsonville. Such approved use shall be performed or carried out entirely within a Building that is constructed in such manner that the enclosed operations and uses do not cause or produce a nuisance to any Owner or Occupant, such as, but not limited to, vibration that is felt by persons on adjacent Tracts, sound that is easily heard by persons on adjacent Tracts, electro-mechanical disturbances, electro-magnetic disturbances, radiation, air or water pollution, dust, or emission of odorous, toxic or nontoxic matter (including steam). Certain activities which cannot, by their nature, be carried on within a Building may be permitted, provided Declarant specifically consents in writing and the activity is not visible from neighboring property.

7.1.1. Neither the Property nor any portion thereof shall at any time or from time to time for a period of twenty (20) years from the date hereof be used or occupied for any of the following purposes, to-wit: a billiard room which is less than first-class in decoration and operation; a bingo hall; a church or other place of worship; an automobile repair facility (except as same may be utilized in connection with a department store or other similar operation); a full-scale automobile dealership (including both automobile sales and servicing, provided that a showroom facility for automobile sales only shall be permitted); a massage parlor except in connection with an athletic club or exercise facility; an animal kennel or boarding facility; a discotheque; a dance hall; a karate studio except in connection with an athletic club type facility; a car wash; an off-track betting

establishment; an amusement or gameroom; so-called "head shop"; a hotel facility; a single primary use gun range; any business or use which emits offensive odors, fumes, dust or vapors although it is acknowledged that restaurants and dry cleaning establishments do emit odors which are objectionable to certain people, but such uses are expressly permitted hereby; any business or use which is a public or private nuisance; any business or use which emits loud noises or sound which are generally recognized to be objectionable; any business or use which creates fire, explosion(s) or other hazard; an adult book store or store selling or exhibiting pornographic materials; a beauty school; a barber college; a reading room in excess of five hundred (500) square feet of ground floor space; a place for instruction catering primarily to students or trainees rather than to customers or employees; a gasoline station or a "flea market". Further, neither the Parcel 2 Property nor any portion thereof shall at any time or from time to time for a period of twenty (20) years from the date hereof be used or occupied for the purpose of a grocery store type facility; a pharmacy type facility; or a restaurant in excess of five thousand (5,000) square feet of floor space including all food preparation, storage, sales counter, and seating areas.

7.1.2 No portion of the Property shall be used for industrial warehousing or similar uses (except as may be incidental to the uses or conduct of the businesses approved pursuant to this Declaration or otherwise in existence on the subject Tracts), or for manufacturing except for the storage and/or manufacture of such goods as are necessary or incidental to the conduct of the uses described in subparagraph 7.1. above. In addition, no portion of the Property shall be used or operated for any use or purposes and/or by any tenant or other occupant that is not consistent and compatible with the intention of Declarant and Tandy at all times to maintain and operate a first-class community shopping center and mixed use development.

7.1.4 Without limiting the foregoing, it is additionally hereby covenanted that:

i. The Owner or Occupant of any Tract shall not allow any long-term use of those portions of any and all portions of the Property constituting parking areas that precludes parking, except with respect to any Tract sold by Declarant in fee simple, pursuant to all provisions of Law and this Declaration and subject to approval by Declarant, for which Owner or Occupant of such Tract has substituted adequate parking, in which case Owner or Occupant may use the former parking area as provided under Law and this Declaration, but the new substituted parking area or any portion thereof is thereafter subject

to this prohibition and in no event shall any such long-term use (1) impede pedestrian or vehicular access to any store on the Property or any parking area or (2) be permitted upon any parking area adjacent to Parcel 2 to the north at such time as such adjacent property is added to the Property;

ii. For so long as Tandy is utilizing a portion of its store for a reasonably complete selection of the particular product or service described below, Declarant shall not voluntarily make or enter into any lease or other occupancy agreement, license, permit, easement, or other grant of interest with any occupant, lessee, concessionaire or other person, party or entity acquiring or utilizing any portion of the Property, other than Tandy, to sell, lease, distribute or display appliances, televisions, stereos, records, tapes, compact discs or other recorded music, telephones and related products, electronic equipment or computer hardware or software of any nature whatsoever, unless the entire store premises are less than 4,000 square feet or unless the sale of such item or items is not a primary element of the goods sold in such store and in any event such sales activity involves less than 4,000 square feet;

iii. No space and/or portion of Parcel 1 or Parcel 2 as shown on Exhibit A nor any space and/or portion of any property hereafter added to the Property that is adjacent to the Tandy Tract or within two hundred (200) feet of any entry way to the Tandy store shall be leased or occupied by or conveyed to any other party for use as a motion picture or other theater (excepting any "omni vision" or other non "long-run" theater, and further excepting any display theater utilized in a manner solely incidental to sale of goods or products);

7.2 Condition of Property. The Owner or Occupant of any Tract shall at all times keep the Tract and any Improvements thereon in a safe and clean condition, and shall comply, at its own expense, with all Laws.

7.3 Maintenance of Improvements. Each Owner and Occupant shall be responsible for the maintenance and repair of all Improvements and landscaping on its Tract at its own cost. Such maintenance and repair includes, but is not limited to: (a) Maintenance of all parking areas, private drives, curbs and walkways in accordance with any guidelines hereto and in a clean and safe condition including cleaning, repairing and repainting as often as may be necessary; and (b) cleaning, maintenance and relamping of any external lighting fixtures.

7.4 Refuse Collection Areas. All outdoor refuse collection areas shall be visually screened so as not to be visible from neighboring property or Streets. No refuse collection area shall be permitted between a street and the front of a building.

7.5 Public Utilities. The Declarant reserves the sole right to grant consents for the construction and operation of public utilities including, but not limited to, street railways, interurban or rapid transit, freight railways, poles or lines for electricity, telephone or telegraph, above or below ground conduits, and gas pipes in and upon any and all streets now existing or hereafter established upon which any portion of the Property may now or hereafter front or abut. Any endeavor by Declarant concerning the construction and operation of street railways, interurban or rapid transit or freight railways shall be taken at Declarant's sole expense. The Declarant reserves the exclusive right to grant consents and to petition the proper authorities for any and all street improvements such as grading, seeding, tree planting, sidewalks, paving, sewer and water installation, whether it be on the surface or subsurface, which in the opinion of the Declarant are necessary on or to the Property. Notwithstanding the provisions of Section 2.3, the Declarant reserves the exclusive right to approve above-ground utility lines across the Property or any portion thereof on a temporary basis for the purpose of construction, and such lines shall be permitted when required by a government agency.

7.6 Utilities and Antennae. No sewer, drainage or utility lines, wires, satellite dishes or other device for the communication of transmission of electric current, power or signals (including telephone, television, microwave or radio signals) shall be constructed, placed or maintained anywhere in or upon the Property other than within Buildings or structures unless contained in conduits or placed or maintained underground or concealed in or under Buildings or other structures. No device for the transmission or reception of telephone, television, microwave or radio signals will be allowed within the Property unless the antenna is located and screened so as not to be visible from neighboring properties and streets. Nothing contained herein shall be construed to forbid the erection or use of temporary power or telephone facilities during construction or repair of Improvements.

7.7 Other Uses of Tracts. Dissimilar uses permitted by Law shall be subject to approval by Declarant. Approval or disapproval of uses shall be based upon the effect of such uses on the Property and the Owners and Occupants thereof and the compatibility of such uses with the spirit and intent of this Declaration, and approval shall not be unreasonably withheld.

SECTION 8. MODIFICATION AND REPEAL.

8.1 Amendments or Termination. This Declaration, or any provision hereof, or any covenant, condition, or restriction contained herein, may be terminated, extended, modified or otherwise amended by Declarant with the consent of any and all Owners and Occupants materially affected by such action, except that supplemental Declarations adding additional property as provided in Section 2.2 above or a Notice of Withdrawal as provided in Section 10.8 below shall not require any consent.

8.1.1 Notice. Declarant shall notify any and all Owners, Occupants and Institutional First Mortgagees at least forty-five (45) days and no more than sixty (60) days prior to any termination, extension, modification, or amendment of this Declaration, other than a supplemental Declaration adding additional property as provided in Section 2.2 above or a Notice of Withdrawal as provided in Section 10.8 below. Failure of any Owner, Occupant, or Institutional First Mortgagee to disapprove in writing the proposed action within forty-five (45) days after receipt of a written request for such approval containing the text of any new language to be included and of any existing language to be deleted shall be deemed to be the consent of such Owner, Occupant, or Institutional First Mortgagee.

8.2 Limitation. No modification or amendment of this Declaration shall avert or abridge any approval given by Declarant with respect to proposed development by an Owner.

8.3 Governmental Regulation. All valid laws are deemed to be a part of this Declaration and to the extent that they conflict with any provision, covenant, condition or restriction hereof, said Law shall control and the provision hereof in conflict shall be considered (i) amended to include said law preserving the intent and spirit of the provision; or (ii) stricken herefrom if no amendment of the provisions can be made to preserve the intent and spirit of said provision; provided always that the remainder of this Declaration shall be deemed to remain in full force and effect.

SECTION 9. ENFORCEMENT

9.1 Violation and Liability. The Owner of each Tract and the Occupant, if any, shall be liable for the violation or breach of any term, covenant, condition or restriction contained in this Declaration (herein a "Violation").

9.2 Right to Judicial Remedies. Declarant or any Owner shall have the right to seek any remedy provided by Law against any other Owner or Occupant with respect to a

Violation or attempted Violation, including to enjoin or prevent such Owner or Occupant from doing so, to cause the Violation to be remedied, or to recover damages for the Violation.

9.3 Right of Entry to Remedy Violation. If any Violation shall remain uncured, unabated and/or not removed after ten (10) days written notice to the Owner and to any Occupant, unless a complete cure has been promptly commenced and is being diligently prosecuted, Declarant shall have the right to enter the Tract where the Violation exists and to summarily abate, cure and/or remove, at the Owner's expense, any such Violation. No entry by Declarant nor its agents shall be deemed a trespass, and neither Declarant nor its agents shall be subject to liability for entry or any action taken to remedy or remove a Violation. The cost of any such remedy or removal shall be a binding personal obligation of the Owner of such Tract and shall be paid immediately to Declarant upon demand therefor. Any such cost shall (a) bear interest at the rate of ten percent (10%) per annum from the date incurred until fully repaid to Declarant, and (b) shall constitute a lien against all tracts owned by the subject Owner. In the event Declarant fails to exercise its rights under this Section 9.3, any other Owner may make demand on Declarant to do so, and if Declarant does not so act after ten (10) days' written notice to both Declarant and the Owner or Occupant of the Tract where the Violation exists, and a complete cure has not been promptly commenced and diligently pursued by such Owner or Occupant of the Tract where the Violation exists, the other Owner shall succeed to the rights of Declarant to remedy the Violation under this Section 9.3.

9.4 Right of Entry to Inspect. During reasonable hours and upon reasonable prior written notice, and subject to reasonable security requirements, Declarant or its agents shall have the right to enter upon and inspect any Improvements for the purpose of verifying compliance with this Declaration and standards adopted by Declarant. Declarant and its agents shall not be deemed to have committed a trespass or other wrongful act by reasons of such entry or inspection.

9.5 Nuisance. The result of every Violation is hereby declared to constitute a nuisance and every remedy allowed by law shall be available to and may be exercised by Declarant.

9.6 Attorney's Fees. In any legal proceeding involving the enforcement of any provision hereof or an interpretation of the rights or liabilities of Declarant, or an Owner or Occupant, the losing party or parties shall pay the attorney's fees and other reasonable costs of litigation of the prevailing party or parties, both in preparation for and at trial and in preparation for and on appeal, in such reasonable

amount as shall be fixed by the court before which the matter is heard.

9.7 Failure to Enforce. The failure of Declarant or any other Owner to enforce the observance or performance by an Owner or Occupant of any of the terms, covenants, conditions or restrictions imposed by this Declaration on such Owner or Occupant shall in no event be deemed to be a waiver of the right to do so thereafter or in other cases, nor of the right to enforce any of the other provisions of this Declaration, and the Declarant or other Owner shall have no liability whatsoever with respect to such failure or alleged failure.

9.8 Remedies Cumulative. All of the rights and remedies of Declarant herein are cumulative and are in addition to any other rights and remedies available at law and in equity.

SECTION 10. MISCELLANEOUS.

10.1 Constructive Notice and Acceptance. By the recording of this Declaration, it shall be deemed that every person or entity who now or hereafter owns, occupies, leases, possesses or acquires any right, title or interest in or to any portion of the Property has consented and agreed to every term, covenant, condition and restriction contained herein.

10.2 Declarant Not Liable.

10.2.1 Enforcement of This Declaration. Neither Declarant nor its successors or assigns shall be liable to any Owner, Occupant, Mortgagee or other person or entity by reason of any mistake in judgment, negligence, nonfeasance, action or nonaction, or for the enforcement or failure to enforce any provision of this Declaration. Each Owner, Occupant, and Mortgagee of any of the Property, by acquiring its interest therein, agrees that it will not bring any action or suit against Declarant to recover any such damages or to seek any other relief (including equitable relief) by reason of the same. Notwithstanding the above, Declarant shall remain liable for its own gross negligence or intentional misconduct.

10.2.2 Other Liability. Each and every Owner and Occupant shall and does, by taking title to or by occupying any portion of the Property, agree to defend, indemnify and hold harmless Declarant and each other Owner and Occupant from any claim, loss, damage, cost or expense (including attorneys' fees) arising out of the use, operation, ownership, occupancy, and condition or state of repair of that portion of the Property owned or occupied by such Owner or Occupant. This subsection does not apply to intentional torts of the Declarant and each other Owner and Occupant.

10.3 Runs With Land. All of the easements, covenants, conditions, restrictions and agreements set forth herein are made for the direct, mutual and reciprocal benefit of each and every Tract of the Property, shall create mutual equitable servitudes upon each Tract in favor of every other Tract; shall create reciprocal rights and obligations between respective Owners and Occupants of all Tract, their heirs, successors and assigns, and shall, as to the Owner and Occupant of each tract, its heirs, successors and assigns, operate as covenants running with the land for the mutual benefit of all Tracts, except as otherwise herein provided.

10.4 Rights of Mortgagees. No breach of any covenant, condition or restriction herein contained, or any enforcement thereof, shall render invalid the lien of any Mortgage now or hereafter placed upon the Property or a portion thereof, but Properties obtained by Mortgagees by foreclosure proceedings are subject to all the terms, covenants, conditions, restrictions of this Declaration.

10.5 Captions. The captions and headings of sections are used for convenience only and are not intended in any way to define, limit or describe the scope or intent of any particular action.

10.6 Invalidation. If any provision of this Declaration is held to be invalid by a court of competent jurisdiction, the invalidity of such provision shall not effect the remaining provisions which shall be deemed to remain valid and in full force and affect.

10.7 Insurance. If such insurance is available on commercially reasonable terms, each Owner shall obtain and maintain comprehensive general liability insurance with policy limits and from such companies as are reasonably acceptable to Declarant and naming Declarant as an additional insured on such policies. Evidence of such insurance shall be provided to Declarant upon request. Notwithstanding the above, any Owner that demonstrates to Declarant's reasonable satisfaction that it has a net worth in excess of $100,000,000 shall be permitted to self-insure up to limits reasonably satisfactory to Declarant.

10.8 Declarant's Withdrawal; Owners' Association. In the event Declarant ceases to develop the Property or is no longer an Owner, Declarant shall record a Notice of Withdrawal from its role as Declarant, as provided below. All rights and liabilities of Declarant hereunder shall terminate upon completion of the Turnover Meeting, as defined below, and the administration of this Declaration shall then vest in an owners' Association which shall thereafter administer the

Property in a manner consistent with this Declaration and as provided below.

10.8.1 Formation. A non-profit unincorporated association composed of all Owners shall automatically be formed in the event Declarant records a Notice of Withdrawal. Upon the majority vote of all Owners and compliance with Law, the Association may incorporate as a non-profit corporation.

10.8.2 Authority. Upon formation of the Association and completion of the Turnover Meeting, the Association shall have the authority and shall assume the responsibility to administer the Property in a manner consistent with this Declaration, including enforcement of this Declaration.

10.8.3 Notice of Withdrawal. If Declarant is no longer an Owner or ceases to develop the Property, Declarant shall record a Notice of Withdrawal stating that Declarant is withdrawing from all rights and liabilities under this Declaration upon completion of the Turnover Meeting, as defined below. The Notice of Withdrawal shall state the time and place for the Turnover Meeting, not less than thirty (30) days or more than sixty (60) days from the date of recording. Declarant shall also deliver a copy of the recorded Notice of Withdrawal to each Owner, within ten (10) days of recording.

10.8.4 Turnover Meeting. At the Turnover Meeting, Declarant shall preside until officers are elected. Declarant shall transfer to the Owners all documents, contracts, records, reports or any other material required or reasonably requested for administration of the Property in a manner consistent with this Declaration. At the Turnover Meeting the members present shall elect officers, such officers shall appoint a committee to review and approve Plans on behalf of the Association pursuant to Section 3 of this Declaration, and the members present shall vote on what matters will, in the future, require a majority vote of all of the members and what matters may be resolved by the officers or an appointed committee, except that approval of Plans may always be performed by a committee. The members present shall also establish a mailing address for the Association and adopt bylaws setting forth how future meetings will be called and run, how officers will be elected or removed, and other such organizational matters, subject to Law and to this Declaration. If no Owners other than Declarant attend the Turnover Meeting, the Owner owning the greatest acreage of the Property shall automatically be appointed President of the Association and shall automatically be appointed to review Plans on behalf of the Association, and Declarant shall deliver all the above materials to such Owner, which shall satisfy Declarant's obligation to complete the Turnover

Meeting. Upon completion of the Turnover Meeting, all rights and liabilities of Declarant under this Declaration shall automatically terminate and the administration of the Property in a manner consistent with this Declaration, and all rights and liabilities associated therewith, shall vest in the Association.

10.8.5 Membership.

10.8.5.1 Qualification. Upon formation of the Association, each Owner shall be a member of the Association. Ownership of a Tract shall be the sole and exclusive qualification for membership in the Association.

10.8.5.2 Transfer of Membership. The Association membership of each Owner shall be appurtenant to the Tract giving rise to such membership, and shall not be assigned, transferred, conveyed, hypothecated or alienated in any way except upon the transfer of title to said Tract or the execution of a land sale contract or assignment of the entire vendee's interest thereof, and then only to the transferee, vendee, or assignee, respectively. Any attempt to make a prohibited transfer of membership in the Association shall be void. Any such transfer or execution of a contract or assignment shall operate automatically to transfer the membership in the Association appurtenant to the subject Tract to the transferee, vendee, or assignee, as the case may be.

10.8.5.3 Address of Owners; Notices. Upon formation of the Association, each Owner shall be obligated to provide the Association with the current name, address and telephone number of the Owner or owners of the Tract. Said names, addresses and/or telephone numbers may be changed at any time by not less than three (3) days' written notice. Any notices desired or required to be given to any Owner shall be in writing and shall be given personally or by mail. If given by mail, such notice shall be deemed received five (5) days after depositing said notice in the United States mail, postage prepaid, certified or registered mail, return receipt requested and addressed to the Owner at the address provided most recently by said Owner. If given personally, such notice shall be effective upon receipt.

10.8.6 Voting. All members of the Association shall be entitled to one (1) vote for each full acre of land in the Property owned by such member and shall be entitled to one (1) vote for any additional land in the Property owned by such member less than a full acre but greater than 0.85 acres. If an Owner owns more than one Tract, said Owner shall have the votes associated with each such Tract. Any action or other matter requiring a vote, or for which a vote is desired, shall be approved upon the concurrence of the Owners having

not less than fifty-one percent (51%) of the total votes of all Owners, except as otherwise provided in Section 10.8.4 above. The vote for a Tract must be cast as a unit, no fractional votes shall be allowed.

IN WITNESS WHEREOF, the undersigned has executed this Declaration as of the date first above written.

CAPITAL REALTY CORP.,
an Oregon corporation

Brett Wilcox, President

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 13th day of February, 1992 by Brett Wilcox as President of Capital Realty Corp., an Oregon corporation.

Notary Public for Oregon
My commission expires 5-21-94

The undersigned U.S. National Bank of Oregon acknowledges and consents to the recording of this Declaration as an encumbrance to the Parcel 1 Property solely in its capacity as beneficiary of a deed of trust encumbering the Parcel 1 Property.

U.S. NATIONAL BANK OF OREGON

By: _____
Name: David B. Robinson
Title: Vice President

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 14 day of February, 1992 by David R. Robertson as Vice President of U.S. National Bank of Oregon.

OFFICIAL SEAL
DEANNE L. HILDEBRAND
NOTARY PUBLIC-OREGON
COMMISSION NO. CC5952
MY COMMISSION EXPIRES MAY 21, 1995

NOTARY PUBLIC FOR OREGON
My Commission Expires: 5-21-95

EXHIBIT A

PARCEL 1 DESCRIPTION

A parcel of land consisting of two parcels, one of which is Parcel 1 of Partition Plat No. 1991-164 recorded in Fee 91-48507 of the Clackamas County Plat Records, situated in the southwest quarter of Section 13 and a parcel within the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

COMMENCING at the southwest corner of Section 13, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon; thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 44.00 feet to the **POINT OF BEGINNING**; thence continuing North 00°03'01" East along said section line a distance of 339.50 feet; thence South 89°58'30" West a distance of 338.63 feet to the easterly right-of-way line of Town Center Loop Road West; thence North 00°00'22" East along said easterly right-of-way line a distance of 46.55 feet to a point of curvature; thence 247.91 feet along the arc of a 380.54 foot radius curve to the left through a central angle of 37°19'37" and whose chord bears North 18°39'27" West a distance of 243.55 feet to a point on a curve; thence North 45°03'00" East a distance of 589.42 feet to the westerly, northwest corner of said Parcel 1 of Partition Plat 1991-164; thence tracing the northerly, northeasterly, easterly, and southerly lines of said Parcel 1 the following courses and distances: North 45°03'00" West 4.59 feet; thence South 89°57'00" East a distance of 66.14 feet; thence South 00°03'00" West a distance of 63.00 feet; thence South 89°57'00" East a distance of 479.70 feet; thence South 00°03'01" West a distance of 285.68 feet to the intersection with a non-tangent curve; thence 93.82 feet along the arc of a 317.33 foot radius curve to the right through a central angle of 16°56'21" and whose chord bears South 55°30'59" East a distance of 93.48 feet to a point of reverse curvature; thence 248.26 feet along the arc of a 338.67 foot radius curve to the left through a central angle of 42°00'00" and whose chord bears South 68°02'49" East a distance of 242.74 feet to a point of tangency; thence South 89°02'49" East a distance of 51.65 feet to a point of curvature; thence 174.68 feet along the arc of a 200.00 foot radius curve to the right through a central angle of 50°02'34" and whose chord bears South 64°01'32" East a distance of 169.18 feet to a point of tangency; thence South 39°00'15" East a distance of 97.50 feet to a point on a non-tangent curve; thence 338.31 feet along the arc of 494.00 foot radius curve to the left through a central angle of 39°14'18" and whose chord bears South 19°40'06" West a distance of 331.74 feet to a point of tangency; thence South 00°02'57" West a distance of 39.46 feet to a point of curvature; thence 46.76 feet along the arc of a 30.00 foot radius curve to the right through a central angle of 89°18'29" and whose chord bears South 44°42'11" West a distance of 42.17 feet to a point of tangency; thence South 89°21'26" West a distance of 975.76 feet to the Point of Beginning. Said parcel of land contains 22.96 acres, more or less.

PARCEL 2
LEGAL DESCRIPTION

A parcel of land being a portion of Parcel 1 of Partition Plat 1991-202 of the Clackamas County Survey Records and a portion of that certain tract described in deed to Plaza Royal recorded September 5, 1980 in Recorder's Fee 80-33295 of the Clackamas County Deed Records and situated in the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

COMMENCING at the southeast corner of Section 14, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon: thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 1,077.07 feet to the most westerly northwest corner of Parcel 1 of **Partition Plat No. 1991-164** recorded in Fee 91-48507 of the Clackamas County Plat Records and the **TRUE POINT OF BEGINNING**: thence leaving said section line and tracing the southeasterly line of Parcel 1 of **Partition Plat 1991-202** South 45°03'00" West 400.00 feet; thence leaving said southeasterly line North 44°57'00" West 435.01 feet to a point of non-tangent curvature; thence tracing the arc of a 2,000.00 foot radius curve to the right (the radial center of which bears North 65°07'50" West) through a central angle of 07°23'12" an arc distance of 257.84 feet (the long chord bears South 28°33'4f" West 257.66 feet) to the northeasterly right-of-way line of Town Center Loop Road West (a 72.00 foot-wide public road right-of-way); thence tracing said northeasterly road right-of-way line North 57°44'38" West 72.00 feet to a point of radial intersection with a 1,928.00 foot radius curve; thence leaving said northeasterly right-of-way line and tracing the arc of a 1,928.00 foot radius curve to the left (the radial center bears North 57°44'38" West) through a central angle of 05°32'12" an arc distance of 186.31 feet (the long chord bears North 29°29'16" East 186.23 feet); thence South 89°52'55" West 304.91 feet to a point of non-tangent curvature on the said northeasterly right-of-way line of Town Center Loop Road West; thence tracing said right-of-way line along a 268.16 foot radius curve to the right (the radial center bears North 56°01'43" East) through a central angle of 33°55'55" an arc distance of 158.81 feet (the long chord bears North 17°00'19" West 156.50 feet) to a point of tangency; thence continuing along said right-of-way line North 00°02'22" West 151.37 feet to the intersection with the southeasterly line of that certain tract as deeded to the the estate of Harold Laswell, et al, in deed recorded April 9, 1991 in recorder's fee 91-33353 of the Clackamas County Deed Records; thence tracing the westerly line of said Laswell tract, said line being common with the easterly right-of-way line of Town Center Loop Road West North 00°02'22" West 98.21 feet to a point of curvature; thence leaving said westerly line of Laswell and tracing the northwesterly and northerly lines of said tract the following courses and distances: tracing the arc of a 30.00 foot radius curve to the right through a central angle of 90°00'41" an arc

distance of 47.13 feet (the long chord bears North 44°57'58" East 42.43 feet) to a point of tangency; thence North 89°58'19" East 72.56 feet to the centerline of the vacated road known as Market Road No. 27 and the southeasterly line of that certain tract described in deed to the City of Wilsonville recorded November 12, 1986 in recorder's fee 86-44959 of the Clackamas County Deed Records; thence tracing said southeasterly line and continuing along the southeasterly line of that certain tract described in deed to the City of Wilsonville per Recorder's Fee 86-44957 of the Clackamas County Deed Records North 38°37'19" East 51.22 feet to the northerly line of said tract per fee 86-44959; thence tracing said northerly line South 89°58'19" West 104.56 feet to a point of curvature; thence tracing a 30.00 foot radius curve to the right through a central angle of 89°59'19" an arc distance of 47.12 feet (the long chord bears North 45°02'02" West 42.42 feet) to a point of tangency on the easterly right-of-way line of said Town Center Loop Road West as dedicated per document recorded May 31, 1984 in Recorder's fee 84-18317 of the Clackamas County Deed Records; thence leaving said northerly property line and tracing said easterly right-of-way line North 00°02'22" West 121.76 feet; thence leaving said easterly right-of way line and tracing the following courses and distances: North 89°52'55" East 894.38 feet to a line being parallel with and 140.00 feet westerly of the said section line common to sections 13 and 14; thence tracing said parallel line South 00°03'01" West 528.73 feet; thence South 56°23'33" East 168.00 feet to the **TRUE POINT OF BEGINNING.**

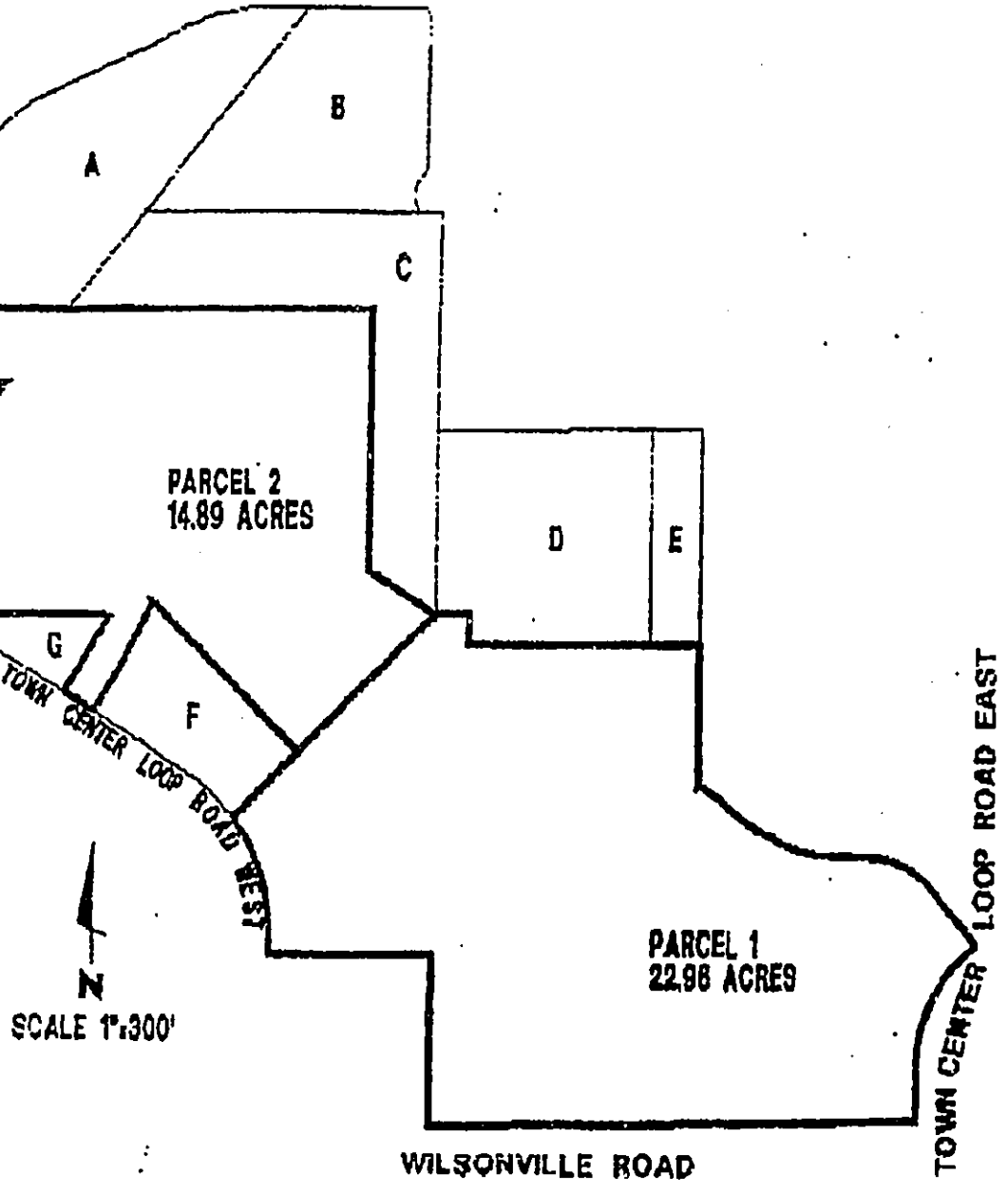
Containing 648,809 square feet or 14.89 acres more or less.

PARCEL2.LEG
467-0302
12/03/91

REGISTERED PROFESSIONAL LAND SURVEYOR
Pat Marquis
OREGON
JANUARY 30, 1981
PAT MARQUIS
2302
1-28-92

A PORTION OF THE WITHIN DESCRIBED PROPERTY LIES WITHIN PARTITION PLAT 1992-24

EXHIBIT B


A
B
C
D
E
F
G
PARCEL 2
14.89 ACRES
PARCEL 1
22.96 ACRES
TOWN CENTER LOOP ROAD WEST
TOWN CENTER LOOP ROAD EAST
WILSONVILLE ROAD
N
SCALE 1"=300'

EASEMENT AGREEMENT

This EASEMENT AGREEMENT, dated for reference purposes this ____ day of _____, 1992, is by and between CAPITAL REALTY CORP., an Oregon corporation, its successors and assigns ("Grantor"), and the ESTATE OF FRED A. ANDERSON, DECEASED, EMMA D. LASWELL, a protected person, as successor-in-interest to the Estate of Harold J. Laswell, Deceased, E. JEAN YOUNG, DAVID S. YOUNG, SHERILYNN J. YOUNG and MARLENE A. YOUNG (collectively "Grantee").

RECITALS

A. Grantor is the owner of that certain real property located in Clackamas County, Oregon and more particularly described on Exhibit A attached hereto ("Parcel A").

B. Grantee is the owner of that certain real property abutting Parcel A and more particularly described on Exhibit B attached hereto ("Parcel B"). Pursuant to that certain Wilsonville Town Center Real Estate Contract dated December 27, 1991 (the "WTC Contract"), Grantor is purchasing Parcel B (together with additional land) from Grantee.

C. Grantor will convey Parcel A to Tandy Corporation ("Tandy"). Tandy will then succeed to the rights and obligations hereunder of Grantor that run with the land described as Parcel A.

NOW, THEREFORE, for valuable consideration, the parties agree as follows:

1. Grant of Easement; Establishment of Right-of-Way.

1.1 Grantor hereby grants and conveys to Grantee a temporary, nonexclusive easement and right-of-way, for the purposes set forth in Paragraph 1.3 below, on, over and across the property described on Exhibit C attached hereto and depicted on Exhibit D attached hereto (the "Easement"), subject to all the terms and conditions hereof.

1.2 The Easement shall exist until such time as Grantor (owner of Parcel A) and Grantee (owner of Parcel B) choose to become subject to such Wilsonville Town Center Covenants, Conditions and Restrictions ("CC&R's") as are agreed upon by the parties which CC&R's otherwise provide access to Parcel B from the area of the existing easement and

from Town Center Loop Road West. At such time as CC&R's are recorded encumbering Parcel A and Parcel B, the Easement shall terminate automatically, and Grantee shall upon request execute a recordable document evidencing such termination.

1.3 Grantee shall use the Easement in connection only with vehicular and pedestrian ingress and egress to and from Parcel B. For purposes of this Agreement, the term "vehicular" does not include farm trucks (excluding pickup trucks) or farm equipment. Following construction of the Roadway (as defined below), Grantee shall have the same rights of ingress and egress over the Roadway as tenants of Grantor, and shall also be subject to the same prohibitions, i.e., Grantee shall not park, load or unload any vehicle on the Easement, other than under emergency conditions. Use of the Easement shall be limited to Grantor and Grantee and their respective successors, assigns, invitees and guests.

2. Construction of Private Roadway. Grantee acknowledges that Grantor will improve the Easement by constructing a roadway thereon (the "Roadway"). During the period of construction of the Roadway, Grantor shall provide Grantee with alternative means of access to Parcel B across Parcel A. The alternative easement location shall be designated in writing by Grantor and use thereof shall be limited to (i) the specific route so designated, and (ii) specific times and dates so designated. In the event Grantor has not constructed the Roadway by June 1, 1994, Grantee may do so at its own cost and expense, subject to the following terms and conditions: (i) the Roadway shall be constructed wholly within the Easement, and (ii) the Roadway shall be constructed in accordance with all applicable statutes, ordinances and land use approvals.

3. Maintenance and Repair. Grantor shall, at its sole cost and expense, maintain the Roadway in good condition and repair. Notwithstanding the foregoing (i) Grantee shall be solely responsible for the repair of any damage to the Roadway caused by Grantee's use thereof, and (ii) in the event Grantor does not complete its purchase of Parcel B and Grantee constructs improvements on Parcel B, Grantee shall, following such date, be responsible for payment of its proportionate share of the cost of maintenance and repair of the Roadway. For purposes of this Section 3, Grantee's proportionate share shall be reasonably determined by Grantor based upon the factors set forth in ORS 105.175, as may be amended from time to time.

4. Real Property Taxes. Grantor shall pay when due all real property taxes, assessments or other charges levied against the land covered by the Easement.

5. Indemnification. Grantee shall defend, indemnify and hold Grantor harmless from any claim, loss or liability (including attorney fees) arising out of Grantee's use of the Easement.

6. Condemnation; Dedication. In the event that the Easement or any part thereof is taken by power of eminent domain, or is conveyed under threat of condemnation and such taking will render the Roadway unusable for normal, regular two-way vehicular ingress and egress, Grantor and Grantee shall participate in obtaining alternative access to their respective parcels and, if necessary, Grantee shall be entitled to a replacement easement over the common areas of Parcel A. The proceeds of such condemnation or sale shall be payable solely to Grantor.

7. Breach of Obligations. In the event either party shall fail to perform its obligations under this Agreement, the other party shall be entitled to require such performance by suit for specific performance or, where appropriate, through injunctive relief. Such remedies shall be in addition to any other remedies afforded under Oregon law and those rights of cure and reimbursement specifically granted under this Agreement.

8. Attorney Fees. In the event of any litigation arising under this Agreement, the prevailing party shall recover from the losing party the prevailing party's reasonable attorney fees at trial or on appeal as adjudged by the trial or appellate court.

9. Notices. Whenever any notice is required under this Agreement, it shall be made in writing and served either personally or sent by U.S. certified mail, postage prepaid, return receipt requested, and addressed to the parties as follows:

If to Grantor: Capital Realty Corp.
101 S.W. Main Street, Suite 1500
Portland, Oregon 97204
Attention: Kimberly J. Beach

With a copy to: Perkins Coie
111 S.W. Fifth Avenue, Suite 2500
Portland, Oregon 97204
Attention: Richard A. Cantlin

If to Grantee: Estate of Fred A. Anderson
8865 S.W. Center Street
Tigard, Oregon 97223

David S. Young, on behalf of
David S. Young, Sherilynn J. Young,
and E. Jean Young
P.O. Box 7
Wilsonville, Oregon 97070

Marlene A. Young
1757 Park Road N.W.
Washington, D.C. 20010

Eugene Derfler, on behalf of
Emma D. Laswell
1408 - 34th Ave. N.W.
Salem, Oregon 97304

Either party may designate a different address for purposes of any subsequent notice by written notice to the other party.

10. Rights of Successors. The easements, benefits and obligations hereunder create mutual benefits and servitudes on Parcels A and B running with the land. This Agreement shall bind and inure to the benefit of the parties hereto, their respective heirs, personal representatives, successors and/or assigns.

11. Not a Public Dedication. Nothing herein contained shall be deemed to be a gift or dedication of any portion of the Easement to the general public or for any public purposes whatsoever, it being the intention of the parties hereto that this Agreement shall be strictly limited to and for the purposes expressed herein.

12. Governing Law. This Agreement shall be construed and enforced in accordance with the laws of the state of Oregon.

IN WITNESS WHEREOF, the parties have executed this Easement Agreement as of the date first set forth above.

GRANTOR:

CAPITAL REALTY CORP.,
an Oregon corporation

By _____
Kimberly J. Beach,
Vice President

GRANTEE:

ESTATE OF FRED A. ANDERSON,
Deceased

By _____
Personal Representative

EMMA D. LASWELL,
a protected person

By _____

_____
E. Jean Young

_____
David S. Young

_____
Sherilynn J. Young

_____
Marlene A. Young by _____ Attorney-in-Fact

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 10th day of February, 1992 by Kimberly J. Beach, the Vice President of CAPITAL REALTY CORP., an Oregon corporation, on behalf of the corporation.

Jeannette E Andress
Notary Public for Oregon
My commission expires 5-21-94

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 7 day of Feb., 1992 by Phyllis M Anderson as Personal Representative on behalf of the ESTATE OF FRED A. ANDERSON, Deceased.

M Kimball
Notary Public for Oregon
My commission expires 3/9/93

STATE OF OREGON)
) ss.
County of [illegible])

The foregoing instrument was acknowledged before me this [illegible] day of [illegible], 1992 by [illegible], as [illegible] on behalf of EMMA D. LASWELL, a protected person.

[illegible]
Notary Public for Oregon
My commission expires [illegible]

33

STATE OF OREGON)
) ss.
County of Multnomah)

7 The foregoing instrument was acknowledged before me this day of Feb, 1992 by E. Jean Young.

Notary Public for Oregon
My commission expires 3/4/93

STATE OF OREGON)
) ss.
County of Multnomah)

7 The foregoing instrument was acknowledged before me this day of Feb, 1992 by David S. Young.

Notary Public for Oregon
My commission expires 3/4/93

STATE OF OREGON)
) ss.
County of Multnomah)

7 The foregoing instrument was acknowledged before me this day of Feb, 1992 by Sherilynn J. Young.

Notary Public for Oregon
My commission expires 3/4/93

STATE OF OREGON)
) ss.
County of Multnomah)

7 The foregoing instrument was acknowledged before me this day of Feb, 1992 by Marlene A. Young, through her attorney in fact David S. Young

Notary Public for Oregon
My commission expires 3/4/93

EXHIBIT A

LEGAL DESCRIPTION

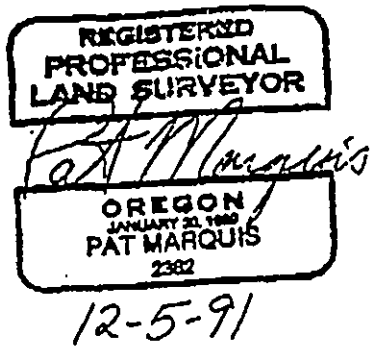
A parcel of land situated in the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

COMMENCING at the southeast corner of Section 14, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon: thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 1,077.07 feet to the most westerly northwest corner of Parcel 1 of Partition Plat No. 1991-164 recorded in Fee 91-48507 of the Clackamas County Plat Records and the TRUE POINT OF BEGINNING: thence leaving said section line and tracing the following courses and distances: South 45°03'00" West 400.00 feet; thence North 44°57'00" West 435.01 feet to a point of non-tangent curvature; thence tracing the arc of a 2,000.00 foot radius curve to the right (the radial center of which bears North 65°07'50" West) through a central angle of 07°23'12" an arc distance of 257.84 feet (the long chord bears South 28°33'46" West 257.66 feet) to the northeasterly right-of-way line of Town Center Loop Road West (a 72.00 foot-wide public road right-of-way); thence tracing said northeasterly road right-of-way line North 57°44'38" West 72.00 feet to a point of radial intersection with a 1,928.00 foot radius curve; thence leaving said northeasterly right-of-way line and tracing the arc of a 1,928.00 foot radius curve to the left (the radial center bears North 57°44'38" West) through a central angle of 05°32'12" an arc distance of 186.31 feet (the long chord bears North 29°29'16" East 186.23 feet); thence South 89°52'55" West 304.91 feet to a point of non-tangent curvature on the said northeasterly right-of-way line of Town Center Loop Road West; thence tracing said right-of-way line along a 268.16 foot radius curve to the right (the radial center bears North 56°01'43" East) through a central angle of 33°55'55" an arc distance of 158.81 feet (the long chord bears North 17°00'19" West 156.50 feet) to a point of tangency; thence continuing along said right-of-way line North 00°02'22" West 151.37 feet to the intersection with the southeasterly line of that certain tract as deeded to the estate of Harold Laswell, et al, in deed recorded April 9, 1991 in recorder's fee 91-33353 of the Clackamas County Deed Records; thence tracing the westerly line of said Laswell tract, said line being common with the easterly right-of-way line of Town Center Loop Road West North 00°02'22" West 98.21 feet to a point of curvature; thence leaving said westerly line of Laswell and tracing the northwesterly and northerly lines of said tract the following courses and distances: tracing the arc of a 30.00 foot radius curve to the right through a central angle of 90°00'41" an arc distance of 47.13 feet (the long chord bears North 44°57'58" East 42.43 feet) to a point of tangency; thence North 89°58'19" East 72.56 feet to the centerline of the vacated road known as Market Road No. 27 and the southeasterly line of that certain tract described in deed to the

City of Wilsonville recorded November 12, 1986 in recorder's fee 86-44959 of the Clackamas County Deed Records; thence tracing said southeasterly line and continuing along the southeasterly line of that certain tract described in deed to the City of Wilsonville per Recorder's Fee 86-44957 of the Clackamas County Deed Records and continuing along said centerline North 38°37'19" East 246.05 feet; thence leaving said centerline North 89°52'55" East 638.12 feet to a line being parallel with and 140.00 feet westerly of the said section line common to Sections 13 and 14; thence tracing said parallel line South 00°03'01" West 528.73 feet; thence leaving said parallel line South 56°23'33" East 168.00 feet to the TRUE POINT OF BEGINNING.

Containing 619,320 square feet or 14.218 acres more or less.

THUNDR3.LEG
467-0302
12/04/91



12-5-91

A PORTION OF THE WITIN DESCRIBED PROPERTY LIES WITHIN PARTITION PLAT 1992-24

EXHIBIT B

PARCEL B
LEGAL DESCRIPTION

A parcel of land being a portion of Parcel 1 of Partition Plat 1991-202 of the Clackamas County Survey Records and situated in the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

COMMENCING at the southeast corner of Section 14, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon: thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 1,077.07 feet to the most westerly northwest corner of Parcel 1 of Partition Plat No. 1991-164 recorded in Fee 91-48507 of the Clackamas County Plat Records; thence leaving said section line and tracing the southeasterly line of Parcel 1 of Partition Plat 1991-202 South 45°03'00" West 400.00 feet to the TRUE POINT OF BEGINNING: thence continuing along said southeasterly line South 45°03'00" West 189.42 feet to the northeasterly right-of-way line of Town Center Loop Road West (a 72.00 foot-wide public road right-of-way) and a point of non-tangent curvature; thence tracing said northeasterly road right-of-way line along the arc of a 380.54 foot radius curve to the left (the radial center bears South 52°40'44" West) through a central angle of 20°25'23" an arc distance of 135.64 feet (the long chord bears North 47°31'57" West North 44°57'00" West 435.01 feet) to a point of tangency; thence continuing along said right-of-way line North 57°44'38" West 232.88 feet to a point of non-tangent curvature; thence leaving said right-of-way and tracing a 2,000.00 foot radius curve to the left (the radial center bears North 57°44'38" West) through a central angle of 07°23'12" an arc distance of 257.84 feet (the long chord bears North 28°33'46" East 257.66 feet); thence South 44°57'44" East 435.01 feet to the TRUE POINT OF BEGINNING. Containing 83,985 square feet or 1.928 acres more or less.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 20, 1978
PAT MARQUIS
2382

1-28-92

PARCELF.LEG
467-0302
1/27/92

THE WITHIN DESCRIBED PROPERTY LIES WITHIN PARTITION PLAT 1992-24

EXHIBIT C

ACCESS EASEMENT
LEGAL DESCRIPTION

A parcel of land being a portion of Parcel 1 of Partition Plat 1991-202 of the Clackamas County Survey Records and situated in the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

COMMENCING at the southeast corner of Section 14, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon: thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 1,077.07 feet to the most westerly northwest corner of Parcel 1 of **Partition Plat No. 1991-164** recorded in Fee 91-48507 of the Clackamas County Plat Records; thence leaving said section line and tracing the southeasterly line of Parcel 1 of Partition Plat 1991-202 South 45°03'00" West 400.00 feet; thence leaving said southeasterly line North 44°57'00" West 435.01 feet to a point of non-tangent curvature and **THE TRUE POINT OF BEGINNING**: thence tracing the arc of a 2,000.00 foot radius curve to the right (the radial center of which bears North 65°07'50" West) through a central angle of 07°23'12" an arc distance of 257.84 feet (the long chord bears South 28°33'46" West 257.67 feet) to the northeasterly right-of-way line of Town Center Loop Road West (a 72.00 foot-wide public road right-of-way); thence tracing said northeasterly road right-of-way line North 57°44'38" West 72.00 feet to a point of radial intersection with a 1,928.00 foot radius curve; thence leaving said northeasterly right-of-way line and tracing the arc of a 1,928.00 foot radius curve to the left (the radial center bears North 57°44'38" West) through a central angle of 05°32'12" an arc distance of 186.31 feet (the long chord bears North 29°29'16" East 186.23 feet); thence North 74°25'13" East 95.94 feet to the **TRUE POINT OF BEGINNING.**

Containing 16,000 square feet or 0.367 acres more or less.

ACCESS.LEG
467-0302
12/03/91

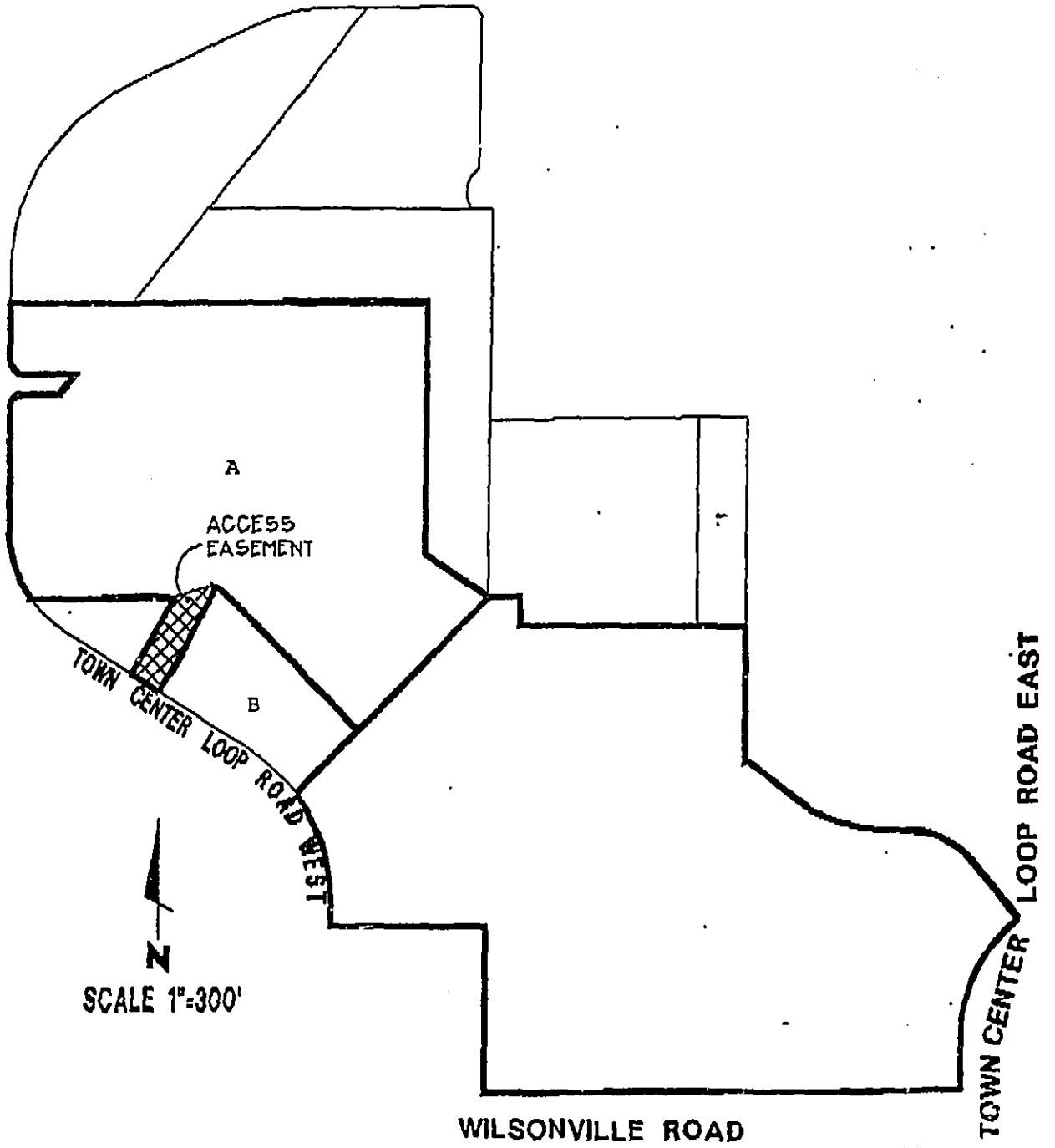
REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 20, 1989
PAT MARQUIS
2092

1-28-92

THE WITHIN DESCRIBED PROPERTY LIES WITHIN PARTITION PLAT 1992-24

EXHIBIT D

EXHIBIT MAP



EASEMENT AGREEMENT

This EASEMENT AGREEMENT, dated for reference purposes this ____ day of _____, 1992, is by and between CAPITAL REALTY CORP., an Oregon corporation, its successors and assigns ("Grantor"), and the ESTATE OF FRED A. ANDERSON, DECEASED, EMMA D. LASWELL, a protected person, as successor-in-interest to the Estate of Harold J. Laswell, Deceased, E. JEAN YOUNG, DAVID S. YOUNG, SHERILYNN J. YOUNG and MARLENE A. YOUNG (collectively "Grantee").

RECITALS

A. Grantor is the owner of that certain real property located in Clackamas County, Oregon and more particularly described on Exhibit A attached hereto ("Parcel A").

B. Grantee is the owner of that certain real property abutting Parcel A and more particularly described on Exhibit B attached hereto ("Parcel B"). Pursuant to that certain Wilsonville Town Center Real Estate Contract dated December 27, 1991 (the "WTC Contract"), Grantor is purchasing Parcel B (together with additional land) from Grantee.

C. Grantor will convey Parcel A to Tandy Corporation ("Tandy"). Tandy will then succeed to the rights and obligations hereunder of Grantor that run with the land described as Parcel A.

NOW, THEREFORE, for valuable consideration, the parties agree as follows:

1. Grant of Easement; Establishment of Right-of-Way.

1.1 Grantor hereby grants and conveys to Grantee a temporary, nonexclusive easement and right-of-way, for the purposes set forth in Paragraph 1.3 below, on, over and across the property described on Exhibit C attached hereto and depicted on Exhibit D attached hereto (the "Easement"), subject to all the terms and conditions hereof.

1.2 The Easement shall exist until such time as Grantor (owner of Parcel A) and Grantee (owner of Parcel B) choose to become subject to such Wilsonville Town Center Covenants, Conditions and Restrictions ("CC&R's") as are agreed upon by the parties which CC&R's otherwise provide access to Parcel B from the area of the existing easement and

from Town Center Loop Road West. At such time as CC&R's are recorded encumbering Parcel A and Parcel B, the Easement shall terminate automatically, and Grantee shall upon request execute a recordable document evidencing such termination.

1.3 Grantee shall use the Easement in connection only with vehicular and pedestrian ingress and egress to and from Parcel B. For purposes of this Agreement, the term "vehicular" does not include farm trucks (excluding pickup trucks) or farm equipment. Following construction of the Roadway (as defined below), Grantee shall have the same rights of ingress and egress over the Roadway as tenants of Grantor, and shall also be subject to the same prohibitions, i.e., Grantee shall not park, load or unload any vehicle on the Easement, other than under emergency conditions. Use of the Easement shall be limited to Grantor and Grantee and their respective successors, assigns, invitees and guests.

2. Construction of Private Roadway. Grantee acknowledges that Grantor will improve the Easement by constructing a roadway thereon (the "Roadway"). During the period of construction of the Roadway, Grantor shall provide Grantee with alternative means of access to Parcel B across Parcel A. The alternative easement location shall be designated in writing by Grantor and use thereof shall be limited to (i) the specific route so designated, and (ii) specific times and dates so designated. In the event Grantor has not constructed the Roadway by June 1, 1994, Grantee may do so at its own cost and expense, subject to the following terms and conditions: (i) the Roadway shall be constructed wholly within the Easement, and (ii) the Roadway shall be constructed in accordance with all applicable statutes, ordinances and land use approvals.

3. Maintenance and Repair. Grantor shall, at its sole cost and expense, maintain the Roadway in good condition and repair. Notwithstanding the foregoing (i) Grantee shall be solely responsible for the repair of any damage to the Roadway caused by Grantee's use thereof, and (ii) in the event Grantor does not complete its purchase of Parcel B and Grantee constructs improvements on Parcel B, Grantee shall, following such date, be responsible for payment of its proportionate share of the cost of maintenance and repair of the Roadway. For purposes of this Section 3, Grantee's proportionate share shall be reasonably determined by Grantor based upon the factors set forth in ORS 105.175, as may be amended from time to time.

4. Real Property Taxes. Grantor shall pay when due all real property taxes, assessments or other charges levied against the land covered by the Easement.

5. Indemnification. Grantee shall defend, indemnify and hold Grantor harmless from any claim, loss or liability (including attorney fees) arising out of Grantee's use of the Easement.

6. Condemnation; Dedication. In the event that the Easement or any part thereof is taken by power of eminent domain, or is conveyed under threat of condemnation and such taking will render the Roadway unusable for normal, regular two-way vehicular ingress and egress, Grantor and Grantee shall participate in obtaining alternative access to their respective parcels and, if necessary, Grantee shall be entitled to a replacement easement over the common areas of Parcel A. The proceeds of such condemnation or sale shall be payable solely to Grantor.

7. Breach of Obligations. In the event either party shall fail to perform its obligations under this Agreement, the other party shall be entitled to require such performance by suit for specific performance or, where appropriate, through injunctive relief. Such remedies shall be in addition to any other remedies afforded under Oregon law and those rights of cure and reimbursement specifically granted under this Agreement.

8. Attorney Fees. In the event of any litigation arising under this Agreement, the prevailing party shall recover from the losing party the prevailing party's reasonable attorney fees at trial or on appeal as adjudged by the trial or appellate court.

9. Notices. Whenever any notice is required under this Agreement, it shall be made in writing and served either personally or sent by U.S. certified mail, postage prepaid, return receipt requested, and addressed to the parties as follows:

If to Grantor: Capital Realty Corp.
101 S.W. Main Street, Suite 1500
Portland, Oregon 97204
Attention: Kimberly J. Beach

With a copy to: Perkins Coie
111 S.W. Fifth Avenue, Suite 2500
Portland, Oregon 97204
Attention: Richard A. Cantlin

If to Grantee: Estate of Fred A. Anderson
8865 S.W. Center Street
Tigard, Oregon 97223

David S. Young, on behalf of
David S. Young, Sherilynn J. Young,
and E. Jean Young
P.O. Box 7
Wilsonville, Oregon 97070

Marlene A. Young
1757 Park Road N.W.
Washington, D.C. 20010

Eugene Derfler, on behalf of
Emma D. Laswell
1408 - 34th Ave. N.W.
Salem, Oregon 97304

Either party may designate a different address for purposes of any subsequent notice by written notice to the other party.

10. Rights of Successors. The easements, benefits and obligations hereunder create mutual benefits and servitudes on Parcels A and B running with the land. This Agreement shall bind and inure to the benefit of the parties hereto, their respective heirs, personal representatives, successors and/or assigns.

11. Not a Public Dedication. Nothing herein contained shall be deemed to be a gift or dedication of any portion of the Easement to the general public or for any public purposes whatsoever, it being the intention of the parties hereto that this Agreement shall be strictly limited to and for the purposes expressed herein.

12. Governing Law. This Agreement shall be construed and enforced in accordance with the laws of the state of Oregon.

IN WITNESS WHEREOF, the parties have executed this Easement Agreement as of the date first set forth above.

GRANTOR:

CAPITAL REALTY CORP.,
an Oregon corporation

By _____
Kimberly J. Beach,
Vice President

GRANTEE:

ESTATE OF FRED A. ANDERSON,
Deceased

By _____
_____

EMMA D. LASWELL,
a protected person

By _____

_____
E. Jean Young

_____
David S. Young

_____
Sherilynn J. Young

_____
Marlene A. Young by _____
Attorney-in-fact

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 10th day of February, 1992 by Kimberly J. Beach, the Vice President of CAPITAL REALTY CORP., an Oregon corporation, on behalf of the corporation.

Notary Public for Oregon
My commission expires 5-21-94

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 7 day of Feb, 1992 by Phyllis M Anderson, as Personal Representative on behalf of the ESTATE OF FRED A. ANDERSON, Deceased.

Notary Public for Oregon
My commission expires 3/4/93

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 5th day of February, 1992 by Evelyn L Dailey, as [illegible] on behalf of EMMA D. LASWELL, a protected person.

Notary Public for Oregon
My commission expires 12/5/93

95

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 7 day of Feb, 1992 by E. Jean Young.

Notary Public for Oregon
My commission expires 3/4/93

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 7 day of Feb, 1992 by David S. Young.

Notary Public for Oregon
My commission expires 3/4/93

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 7 day of Feb, 1992 by Sherilynn J. Young.

Notary Public for Oregon
My commission expires 3/4/93

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 7 day of Feb, 1992 by Marlene A. Young, through her attorney in fact David S. Young.

Notary Public for Oregon
My commission expires 3/4/93

EXHIBIT A

LEGAL DESCRIPTION

A parcel of land situated in the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

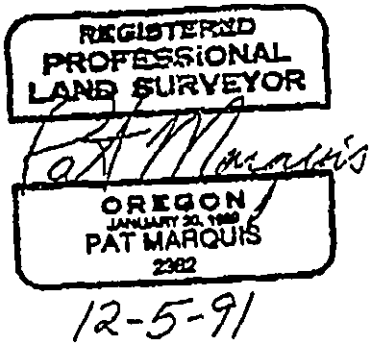
COMMENCING at the southeast corner of Section 14, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon: thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 1,077.07 feet to the most westerly northwest corner of Parcel 1 of Partition Plat No. 1991-164 recorded in Fee 91-48507 of the Clackamas County Plat Records and the TRUE POINT OF BEGINNING: thence leaving said section line and tracing the following courses and distances: South 45°03'00" West 400.00 feet; thence North 44°57'00" West 435.01 feet to a point of non-tangent curvature; thence tracing the arc of a 2,000.00 foot radius curve to the right (the radial center of which bears North 65°07'50" West) through a central angle of 07°23'12" an arc distance of 257.84 feet (the long chord bears South 28°33'46" West 257.66 feet) to the northeasterly right-of-way line of Town Center Loop Road West (a 72.00 foot-wide public road right-of-way); thence tracing said northeasterly road right-of-way line North 57°44'38" West 72.00 feet to a point of radial intersection with a 1,928.00 foot radius curve; thence leaving said northeasterly right-of-way line and tracing the arc of a 1,928.00 foot radius curve to the left (the radial center bears North 57°44'38" West) through a central angle of 05°32'12" an arc distance of 186.31 feet (the long chord bears North 29°29'16" East 186.23 feet); thence South 89°52'55" West 304.91 feet to a point of non-tangent curvature on the said northeasterly right-of-way line of Town Center Loop Road West; thence tracing said right-of-way line along a 268.16 foot radius curve to the right (the radial center bears North 56°01'43" East) through a central angle of 33°55'55" an arc distance of 158.81 feet (the long chord bears North 17°00'19" West 156.50 feet) to a point of tangency; thence continuing along said right-of-way line North 00°02'22" West 151.37 feet to the intersection with the southeasterly line of that certain tract as deeded to the estate of Harold Laswell, et al, in deed recorded April 9, 1991 in recorder's fee 91-33353 of the Clackamas County Deed Records; thence tracing the westerly line of said Laswell tract, said line being common with the easterly right-of-way line of Town Center Loop Road West North 00°02'22" West 98.21 feet to a point of curvature; thence leaving said westerly line of Laswell and tracing the northwesterly and northerly lines of said tract the following courses and distances: tracing the arc of a 30.00 foot radius curve to the right through a central angle of 90°00'41" an arc distance of 47.13 feet (the long chord bears North 44°57'58" East 42.43 feet) to a point of tangency; thence North 89°58'19" East 72.56 feet to the centerline of the vacated road known as Market Road No. 27 and the southeasterly line of that certain tract described in deed to the

47

City of Wilsonville recorded November 12, 1986 in recorder's fee 86-44959 of the Clackamas County Deed Records; thence tracing said southeasterly line and continuing along the southeasterly line of that certain tract described in deed to the City of Wilsonville per Recorder's Fee 86-44957 of the Clackamas County Deed Records and continuing along said centerline North 38°37'19" East 246.05 feet; thence leaving said centerline North 89°52'55" East 638.12 feet to a line being parallel with and 140.00 feet westerly of the said section line common to Sections 13 and 14; thence tracing said parallel line South 00°03'01" West 528.73 feet; thence leaving said parallel line South 56°23'33" East 168.00 feet to the TRUE POINT OF BEGINNING.

Containing 619,320 square feet or 14.218 acres more or less.

THUNDR3.LEG
467-0302
12/04/91



12-5-91

A PORTION OF THE WITHIN DESCRIBED PROPERTY LIES WITHIN PARTITION PLAT 1992-24

48

EXHIBIT B

PARCEL B
LEGAL DESCRIPTION

A parcel of land being a portion of Parcel 1 of Partition Plat 1991-202 of the Clackamas County Survey Records and situated in the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

COMMENCING at the southeast corner of Section 14, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon: thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 1,077.07 feet to the most westerly northwest corner of Parcel 1 of Partition Plat No. 1991-164 recorded in Fee 91-48507 of the Clackamas County Plat Records; thence leaving said section line and tracing the southeasterly line of Parcel 1 of Partition Plat 1991-202 South 45°03'00" West 589.42 feet to the northeasterly right-of-way line of Town Center Loop Road West (a 72.00 foot-wide public road right-of-way) and a point of non-tangent curvature; thence tracing said northeasterly road right-of-way line along the arc of a 380.54 foot radius curve to the left (the radial center bears South 52°40'44" West) through a central angle of 20°25'23" an arc distance of 135.64 feet (the long chord bears North 47°31'57" West North 44°57'00" West 435.01 feet) to a point of tangency; thence continuing along said right-of-way line North 57°44'38" West 304.88 feet to THE TRUE POINT OF BEGINNING: thence continuing along said right-of-way North 57°44'38" West 158.42 feet to a point of curvature; thence tracing the arc of a 268.16 foot radius curve to the right through a central angle of 23°46'21" an arc distance of 111.26 feet (the long chord bears North 45°51'27" West 110.47 feet); thence leaving said right-of-way line North 89°52'55" East 304.91 feet to a point of non-tangent curvature; thence tracing the arc of a 1,928.00 foot radius curve to the right (the radial center bears North 63°16'50" West) through a central angle of 05°32'12" an arc distance of 186.31 feet (the long chord bears South 29°29'16" West 186.23 feet) to THE TRUE POINT OF BEGINNING. Containing 27,191 square feet or 0.624 acres more or less.

PARCELOG.LEG
467-0302
1/27/92

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 20, 1989
PAT MARQUIS
2382

1-28-92

THE WITHIN DESCRIBED PROPERTY LIES WITHIN PARTITION PLAT 1992-24

EXHIBIT C

ACCESS EASEMENT
LEGAL DESCRIPTION

A parcel of land being a portion of Parcel 1 of Partition Plat 1991-202 of the Clackamas County Survey Records and situated in the southeast quarter of Section 14 in Township 3 South, Range 1 West, Willamette Meridian, City of Wilsonville, Clackamas County, Oregon. Said parcel of land being more particularly described as follows:

COMMENCING at the southeast corner of Section 14, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon: thence North 00°03'01" East along the section line between Sections 13 and 14 a distance of 1,077.07 feet to the most westerly northwest corner of Parcel 1 of **Partition Plat No. 1991-164** recorded in Fee 91-48507 of the Clackamas County Plat Records; thence leaving said section line and tracing the southeasterly line of Parcel 1 of **Partition Plat 1991-202** South 45°03'00" West 400.00 feet; thence leaving said southeasterly line North 44°57'00" West 435.01 feet to a point of non-tangent curvature and **THE TRUE POINT OF BEGINNING:** thence tracing the arc of a 2,000.00 foot radius curve to the right (the radial center of which bears North 65°07'50" West) through a central angle of 07°23'12" an arc distance of 257.84 feet (the long chord bears South 28°33'46" West 257.67 feet) to the northeasterly right-of-way line of Town Center Loop Road West (a 72.00 foot-wide public road right-of-way); thence tracing said northeasterly road right-of-way line North 57°44'38" West 72.00 feet to a point of radial intersection with a 1,928.00 foot radius curve; thence leaving said northeasterly right-of-way line and tracing the arc of a 1,928.00 foot radius curve to the left (the radial center bears North 57°44'38" West) through a central angle of 05°32'12" an arc distance of 186.31 feet (the long chord bears North 29°29'16" East 186.23 feet); thence North 74°25'13" East 95.94 feet to the **TRUE POINT OF BEGINNING.**

Containing 16,000 square feet or 0.367 acres more or less.

ACCESS.LEG
467-0302
12/03/91

REGISTERED
PROFESSIONAL
LAND SURVEYOR
OREGON
JANUARY 20, 1989
PAT MARQUIS
2322

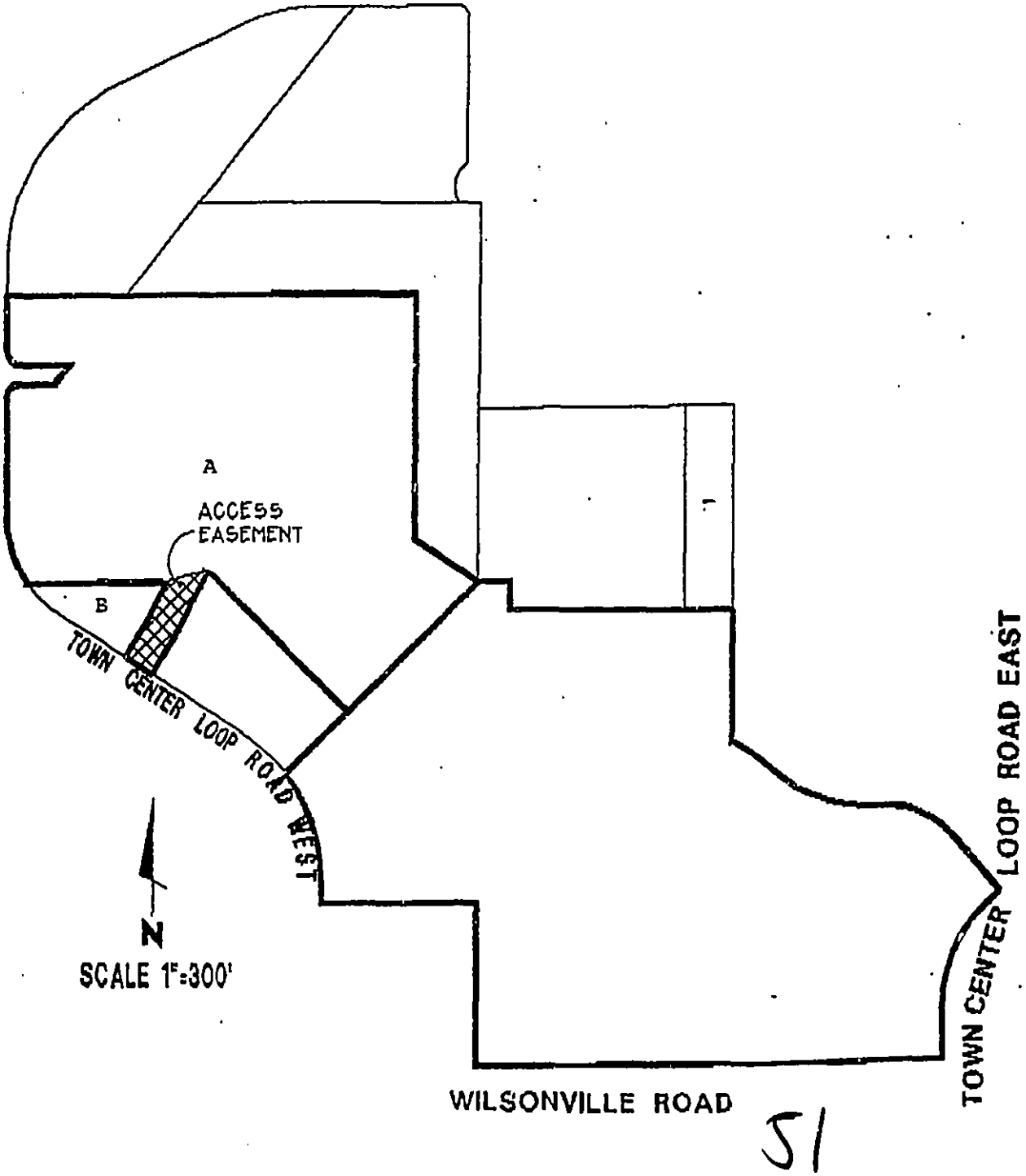
1-20-92

THE WITHIN DESCRIBED PROPERTY LIES WITHIN PARTITION PLAT 1992=24

50

EXHIBIT D

EXHIBIT MAP



STATE OF OREGON
County of Clackamas } ss.

I John Kauffman, County Clerk, for the County of Clackamas, do hereby certify that the instrument of writing was received for recording in the records of said county at

92 FEB 14 PM 4:40

COUNTY OF CLACKAMAS ★ STATE OF OREGON ★

Witness my hand and seal affixed

JOHN KAUFFMAN
County Clerk

Recording Certificate
CCP-74 (Rev. 4/91)
92 08575

WILSONVILLE TOWN CENTER
WILSONVILLE, OREGON

KS Architects P.C.

VICINITY MAP

SITE MASTER PLAN: PHASE I, II & III

EXHIBIT C

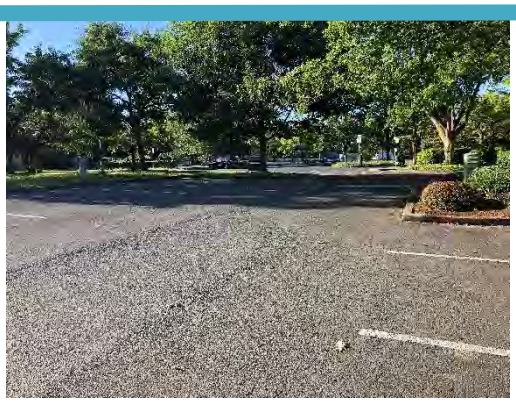
EXHIBIT 09

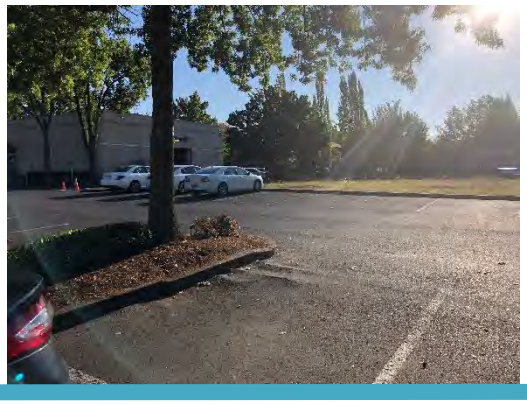
Prepared for

WILSONVILLE
OREGON

Wilsonville Dutch Brothers

Transportation Impact Analysis





Prepared by

DKS

September 2019

September 25, 2019

Dominique Huffman
City of Wilsonville
29799 Town Center Loop East
Wilsonville, OR 97070

Subject: Dutch Brothers Drive-Thru Coffee Stand Transportation Impact Study P19006-002

Dear Dominque,

DKS Associates is pleased to submit this transportation impact study for the proposed Dutch Brothers Drive-Thru Coffee Stand located on the southeast corner of Town Center Loop West & Park Place in Wilsonville. Please feel free to call if you have any questions or comments regarding this study.

Sincerely,
DKS Associates

Scott Mansur, P.E., PTOE
Transportation Engineer

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1: INTRODUCTION

This study evaluates the transportation impacts associated with the proposed development located on the southeast corner of the intersection of Town Center Loop West and Park Place in Wilsonville, Oregon (tax parcel 31W13CC00500). Based on the information provided by the project sponsor, the project will consist of a 485 square foot Dutch Bros Coffee drive-thru stand with one drive-thru window and one walk-up window.

The purpose of this transportation impact analysis is to identify potential mitigation measures needed to offset transportation impacts that the proposed development may have on the nearby transportation network. The impact analysis is focused on the study intersections, which were selected for evaluation in coordination with City staff. The intersections are shown in Figure 1 and listed below:

- Wilsonville Road/Town Center Loop West
- Town Center Loop West/Citizens Drive
- Town Center Loop West/Park Place
- Park Place/Site Driveway

This chapter introduces the proposed development. Table 1 lists important characteristics of the study area and proposed project.

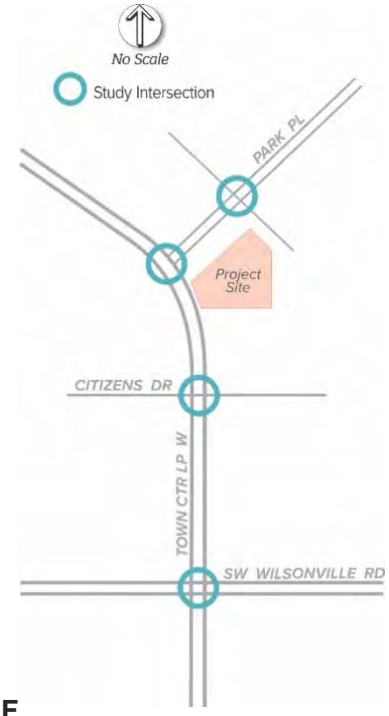


Figure 1: Study Area Map

Table 1: Key Study Area and Proposed Development Characteristics

Characteristics	Information
Study Area	
Number of Study Intersections	4
Analysis Periods	Weekday AM Peak Hour (Peak hour between 7-9 AM) Weekday PM Peak Hour (Peak hour between 4-6 PM)
Project Site	
Existing Land Use	Vacant
Proposed Development	Bros Coffee drive-thru stand (485 square feet)
Proposed Project Accesses	Existing full access driveway on Park Place

CHAPTER 2: EXISTING CONDITIONS

This chapter provides documentation of existing study area conditions, including the study area roadway network, pedestrian and bicycle facilities, and existing traffic volumes and operations. Supporting details for volumes and operations are provided in the appendix.

Project Site

The project sponsor plans to build a 485 square foot Dutch Bros Coffee drive-thru stand with a single drive-thru service window and a single walk-up window at the southeast corner of the intersection of Town Center Loop West and Park Place.

Study Area Roadway Network

Key roadways in the study area are summarized in Table 2 along with their existing (or proposed) roadway characteristics. Adjacent to the site Town Center Loop West is identified as a Major Arterial, and Park Place as a Collector street. The functional classifications for City of Wilsonville streets are provided in the *City of Wilsonville Transportation System Plan* (TSP).[1]

Table 2: Study Area Roadway Characteristics (within the Study Area)

Street	Classification	No. of Lanes	Posted Speed	Sidewalks	Bike Lanes	On-Street Parking
SW Wilsonville Road	Major Arterial	4	25 mph	Yes	Yes	No
Park Place	Collector	2	N/A[1]	Yes	Yes	Partial
Citizens Drive	Local Street	2	N/A[1]	Partial	No	No
Town Center Loop West	Major Arterial	4	35 mph	Yes	No	No

[1] There is no posted speed limit on Park Place or Citizens Drive.

Pedestrian and Bicycle Facilities

Near the project site, Town Center Loop West provides sidewalks but no bike lanes. Park Place has sidewalks and bike lanes on both sides of the street.

The pedestrian counts for the Town Center Loop West/Park Place and Town Center Loop West/Citizens Drive intersections are shown in Figure 2.

[1] Figure 3-2, *Wilsonville Transportation System Plan*, Adopted by Council, June 2016.

Figure 2: Existing Pedestrian Counts

Public Transit Service

South Metro Area Regional Transit (SMART) operates several fixed routes that serve Wilsonville and the surrounding area.[2] Route 4 travels on Wilsonville Road, Town Center Loop West, and Park Place and provides service between the SMART Central Station in Wilsonville to Meridian Creek Middle School. There is a stop on Park Place just northeast of the site access driveway.

[2] South Metro Area Regional Transit (SMART) operates several fixed routes that serve Wilsonville and make connections to TriMet in Portland, Cherriots in Salem, and Canby Area Transit. The City's transit center, "SMART Central at Wilsonville Station," provides connections to all SMART routes and to TriMet's Westside Express Service (WES) commuter rail station.

Future Planned Projects

Higher Priority Projects

The following is a list of higher priority projects included in the Wilsonville TSP.[3] A map of these improvements can be seen in the appendix. It should be noted that the following projects are currently not funded.

- **SI-04 Wilsonville Road/Town Center Loop West Intersection Improvements:** Widen the north leg of the intersection and install a second southbound right-turn lane.
- **BW-08 Town Center Loop Pedestrian, Bicycle, and Transit Improvements:** Create more direct connections between designations within Town Center area, improve accessibility to civic uses and transit stops, retrofit sidewalks with curb ramps, highlight crosswalks with colored pavement, and construct other similar treatments that support pedestrian, bicycle, and transit access and circulation; also construct shared-use path along Town Center Loop West from Wilsonville Road to Parkway Avenue and restripe Town Center Loop East from Wilsonville Road to Parkway Avenue to a three-lane cross-section with bike facilities
- **BW-09 Town Center Loop Bike/Pedestrian Bridge:** Construct bike/pedestrian bridge over I-5 approximately aligned with Barber Street to improve connectivity of Town Center area with businesses and neighborhoods on west side of I-5; include aesthetic design treatments.

Additional Planned Projects

There are currently no additional planned projects within the study area discussed in the Wilsonville TSP.

Existing Traffic Volumes and Operations

The City of Wilsonville's code is based on peak hour operations during the PM peak hour which is when the highest adjacent street traffic volumes typically take place. However, due to the characteristics of the proposed development, separate trip generation and intersection safety analysis was conducted to determine if there are any AM peak safety related impacts. Existing AM and PM peak hour traffic operations were analyzed at the following study intersections based on coordination with city staff:[4]

- Wilsonville Road/Town Center Loop West
- Town Center Loop West/Citizens Drive
- Town Center Loop West/Park Place
- Park Place/Site Driveway

[3] Figure 5-2, Wilsonville Transportation System Plan, Amended June 2016.

[4] Email from Steve Adams on April 22, 2019.

Intersection turn movement volumes were collected[5] at these intersections during two consecutive days of PM peak period and one day of AM peak period. The volume data was collected when schools were in session when traffic volumes are at their highest. The most conservative set of volumes between the two days was used in the intersection operations analysis and is shown in Figure 3. The following sections describe intersection performance measures, required operating standards, and existing operating conditions.

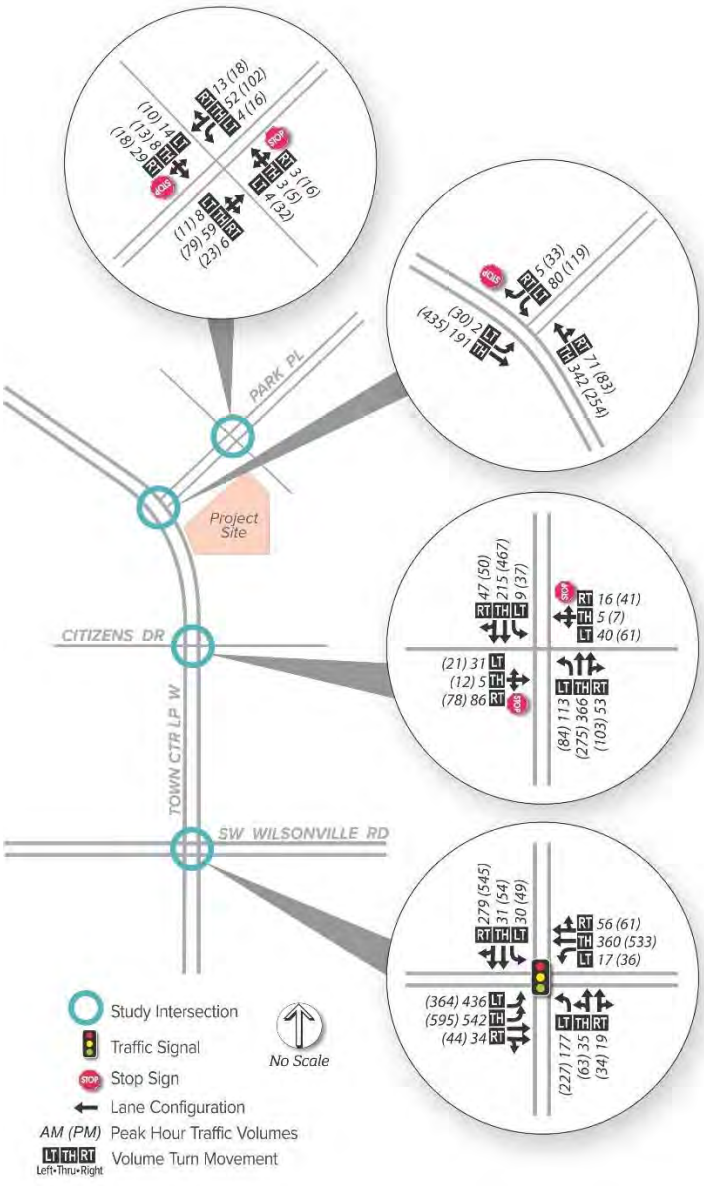


Figure 3: Existing AM and PM Peak Hour Traffic Volumes

[5] Traffic data for all study intersections was collected on December 4th and December 5th, 2018 by Key Data Network.

Intersection Performance Measures

Level of service (LOS) ratings and volume-to-capacity (v/c) ratios are two commonly used performance measures that provide a good picture of intersection operations.

- **Level of service (LOS):** A "report card" rating (A through F) based on the average delay experienced by vehicles at the intersection.[6] LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity.
- **Volume-to-capacity (v/c) ratio:** A decimal representation (typically between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases, and performance is reduced. If the ratio is greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and usually results in excessive queues and long delays.

Required Operating Standards

The City of Wilsonville requires study intersections on public streets to meet its minimum acceptable level of service (LOS) standard, which is LOS D for the overall intersection for the PM peak period.[7]

Existing Operating Conditions

Existing traffic operations at the study intersections were determined for the AM and PM peak hour based on the 2010 Highway Capacity Manual (HCM) methodology for unsignalized intersections and 2000 Highway Capacity Manual (HCM) methodology for signalized intersections.[8] Table 3 lists the estimated delay, LOS, and v/c ratio of each study intersection. These results were then compared with the City of Wilsonville's minimum acceptable level of service (LOS) operating standard of LOS D or better. The existing study intersections currently meet operating standards.

[6] A description of Level of Service (LOS) is provided in the appendix and includes a list of the delay values (in seconds) that correspond to each LOS designation.

[7] *City of Wilsonville Code*, City of Wilsonville Section 4.140(.09)J.2., p.166.

[8] *2000 & 2010 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000/2010.

Table 3: Existing AM and PM Peak Study Intersection Operations

Intersection	Operating Standard	Existing AM Peak			Existing PM Peak		
		Delay	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*
Wilsonville Road/Town Center Loop West	LOS D	28.3	C	0.42	34.0	C	0.52
Town Center Loop West/Citizens Drive	LOS D	24.2	A/C	0.20	36.4	A/E	0.39
Town Center Loop West/Park Place	LOS D	14.2	A/B	0.18	18.5	A/C	0.33
Park Place/Site Driveway	LOS D	9.7	A/A	0.02	11.9	A/B	0.13

Unsignalized Intersections:
Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement
LOS = Level of Service of Major Street/Minor Street
v/c = Volume-to-Capacity Ratio of Worst Movement

Signalized intersections:
Delay = Average Stopped Delay per Vehicle (sec)
LOS = Level of Service of Intersection
v/c = Volume-to-Capacity Ratio of Intersection

CHAPTER 3: PROJECT IMPACTS

This chapter reviews the impacts that the proposed development may have on the study area transportation system. This analysis includes site plan evaluation, trip generation, trip distribution, and future year traffic volumes and operating conditions for the four study intersections.

Proposed Development

At the time when the traffic analysis was completed, the project sponsor had planned to build a 2,100 square foot medical service office building and a 485 square foot Dutch Bros Coffee drive-thru stand with a single drive-thru service window and a single walk-up window at the southeast corner of the intersection of Town Center Loop West and Park Place. However, the most recent site plan now shows only the Dutch Bros Coffee drive-thru. To avoid significant rework, the analysis below includes both the medical service building and the Dutch Bros. The medical service building generates less than 20 peak hour trips and was not found to significantly impact the study intersections.

Build Analysis Scenarios

Future operating conditions were analyzed at the study intersections for the following traffic scenarios. The comparison of the following scenarios enables the assessment of project impacts:

- Existing + Stage II[9]
- Existing + Project
- Existing + Stage II + Project

All build analysis scenarios include a two-way stop-controlled intersection at the intersections of the Project Access/Park Place, Town Center Loop West/Citizens Drive, and Park Place/Town Center Loop West with stop control on the minor street/access. The intersection of Town Center Loop West/Wilsonville Road is a signalized intersection.

Trip Generation

Trip generation is the method used to estimate the number of vehicles added to site driveways and the adjacent roadway network by a development during a specified period (i.e., such as the PM peak hour). For this study, a combination of Institute of Transportation Engineers (ITE) trip generation rates and collected trip generation surveys were used.

For the drive-thru coffee stand, trip generation surveys were collected at two existing Dutch Bros Coffee locations in the surrounding region (i.e., Portland Metro area) during the AM and

[9] Existing 2019 + Stage II will include traffic from other developments that have Stage II approval or are under construction.

PM peak periods. Historical trip generation survey data for a Dutch Bros located in Dallas, Oregon was also used as it has similar amenities. The average trip generation rates for the three locations were calculated and are shown in Table 4.

Table 4: Trip Generation Survey Data – Dutch Bros Coffee Locations

Location	Size	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Dallas	1 Drive-Thru Window & 1 Walk-Up Window	88	88	**176**	36	36	**72**
Happy Valley		78	78	**156**	59	55	**114**
Beaverton		88	81	**169**	53	48	**101**
Average Hourly Trip Rate		**85**	**82**	**167**	**49**	**46**	**96**

ITE 10th Edition trip generation rates[10] were used to calculate the trip generation for the medical service building as shown in Table 5, which also provides the trip generation for the entire proposed development. The trip generation rate shown for the medical clinic is back calculated based on the non-linear ITE trip generation equation.

Pass-by trip reductions were applied to the drive-thru coffee stand primary trip generation. Pass-by trips account for vehicles that were already on adjacent streets and decided to stop at the coffee shop and resume their previous route. ITE's Trip Generation Handbook provides recommended pass-by percentage estimates for various land uses.[11]

As shown in the table below, the development is expected to generate approximately 35 (19 in, 16 out) net AM peak hour trips and 22 (10 in, 12 out) net PM peak hour trips.

Table 5: AM and PM Peak Hour Trip Generation

Land Use (ITE Code)	Size	AM Peak Hour				PM Peak Hour			
		AM Trip Rate	In	Out	Total	PM Trip Rate	In	Out	Total
Medical Clinic (630)	2.1 KSF	8.1 Trips/KSF[a]	10	7	17	5.7 Trips/KSF[a]	5	7	12
Coffee Stand	1 Drive-Thru Window & 1 Walk-Up Window	167 Trips	85	82	167	96 Trips	49	46	96
Total Primary Trips		**-**	**95**	**89**	**184**	**-**	**54**	**53**	**109**
Pass-By Trip Reduction – 89% (Only Applies to Coffee Stand)		-	*-76*	*-73*	*-149*	-	*-44*	*-41*	*-85*
Total Net New Trips		**-**	**19**	**16**	**35**	**-**	**10**	**12**	**22**

[a] KSF = 1,000 square feet

[10] Trip Generation Manual, 10th Edition, Institute of Transportation Engineers, 2017.

[11] Trip Generation Manual, Volume 1, 9th Edition, Institute of Transportation Engineers, 2012.

Trip Distribution

Trip distribution provides an estimate of where project-related trips would be coming from and going to. It is given as percentages at key gateways to the study area and is used to route project trips through the study intersections. Figure 4 and Figure 5 shows the expected trip distribution and project trip routing, respectively, for the additional traffic generated by the Dutch Bros Coffee and medical service building.

The distribution shows 65% of trips traveling south of the project site via Wilsonville Road (45% west of Town Center Loop West, 20% east of Town Center Loop East). Approximately 25% of trips will travel north, 15% of these via Parkway Avenue and 10% via Canyon Creek Road. Approximately 5% of trips will travel west on Town Center Loop West. Additionally, 5% of trips will be generated internally. The trip distribution was estimated using the City of Wilsonville travel demand model and existing traffic volumes.

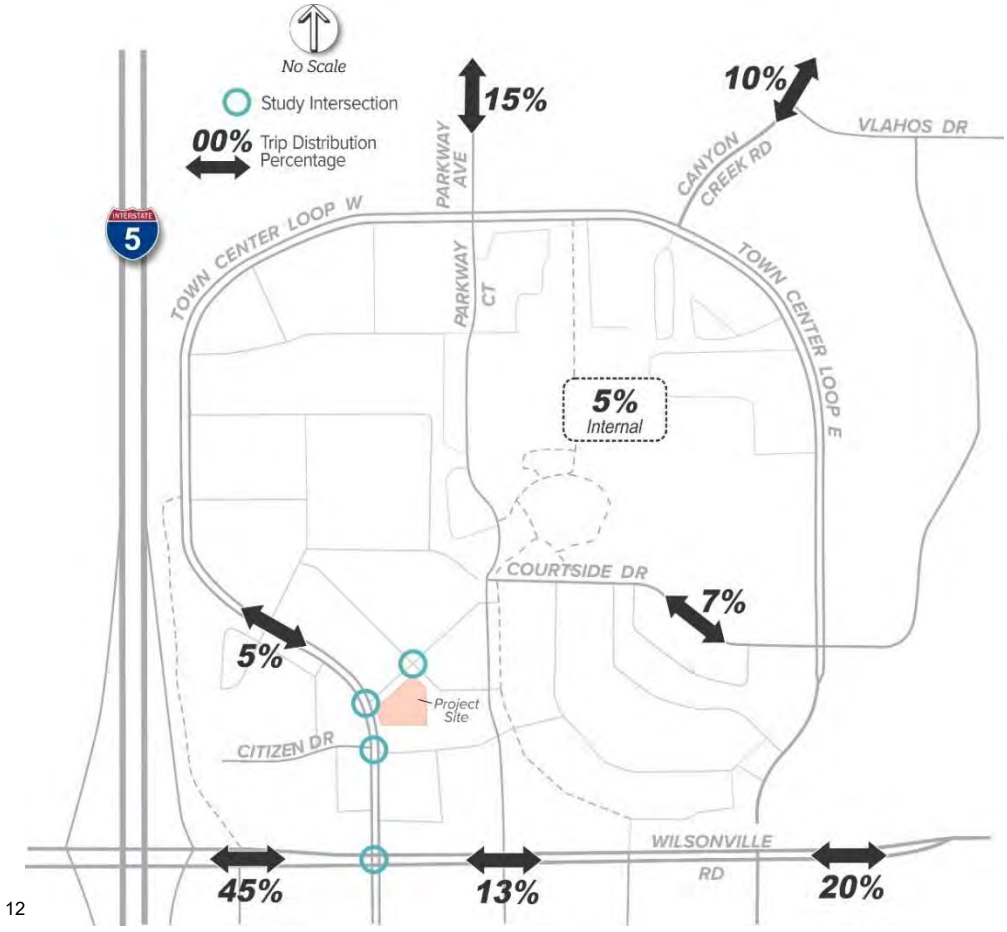


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Figure 4: Trip Distribution

[12] Wilsonville Travel Forecast Model, select zone model run for TAZ 4029.

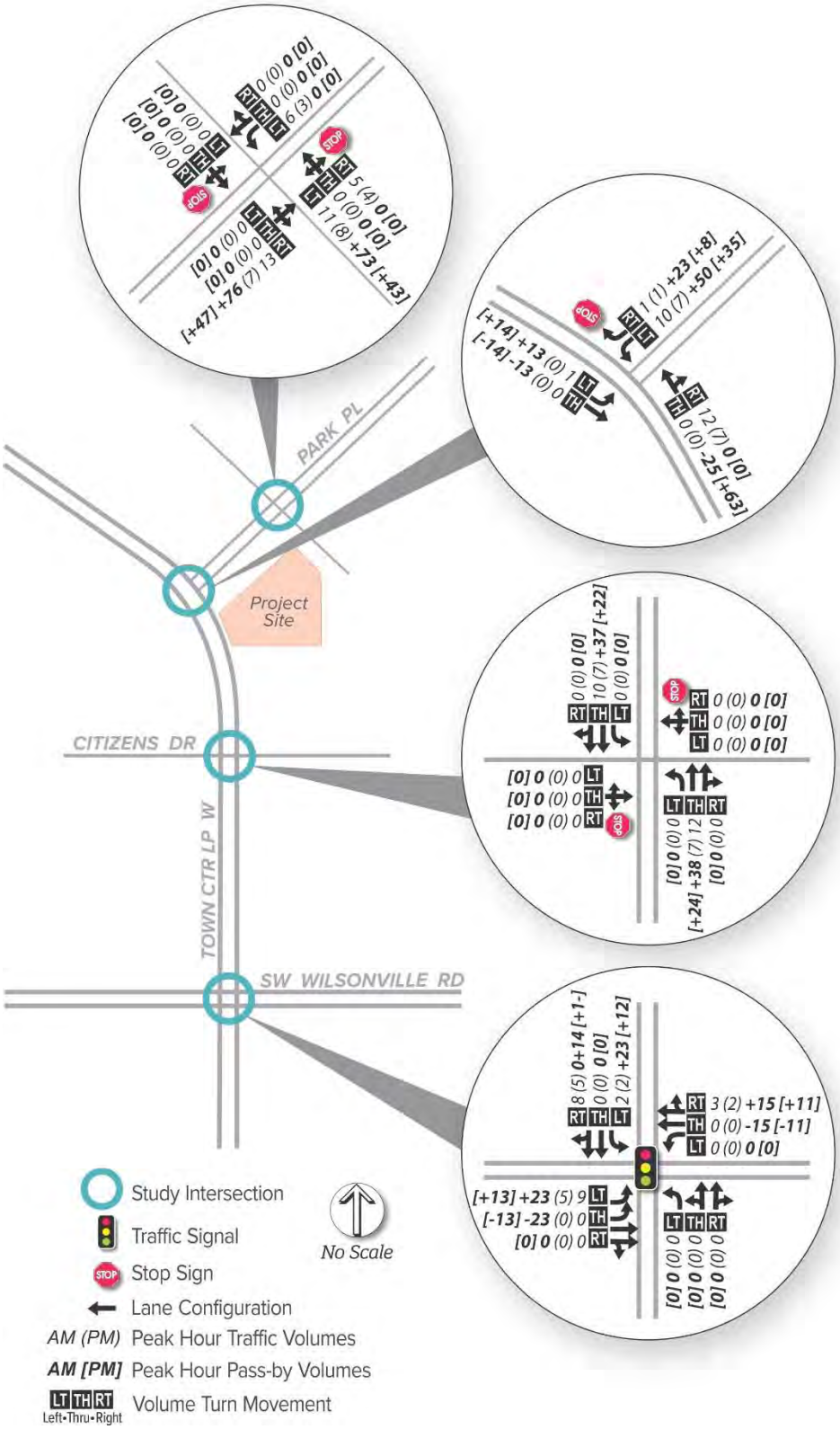


Figure 5: Project and Pass-by Trips

Project Trips Through City of Wilsonville Interchange Areas

The project trips through the two City of Wilsonville I-5 interchange areas were estimated based on the trip generation and distribution assumptions as discussed prior.

The proposed development is expected to generate 10 net new PM peak hour trips through the I-5/Wilsonville Road interchange area and 6 net new PM peak hour trips through the I-5/Elligsen Road interchange area for the Project scenario.

2019 Build Traffic Volumes and Operating Conditions

Future traffic volumes were estimated at the study intersections for each scenario. The future operating scenarios include various combinations of three types of traffic: Existing, Project, and Stage II. Stage II development trips are estimated based on the list of currently approved Stage II developments provided by City staff.[13] The Stage II list only exists for PM peak hour trips, therefore, no Stage II scenarios were provided for the AM peak hour. The Stage II list is included in the appendix. Figure 6 and Figure 7 on the following pages show the AM and PM peak hour traffic volumes used to analyze the future scenarios.

[13] Email from Daniel Pauly, City of Wilsonville, December 21, 2018.

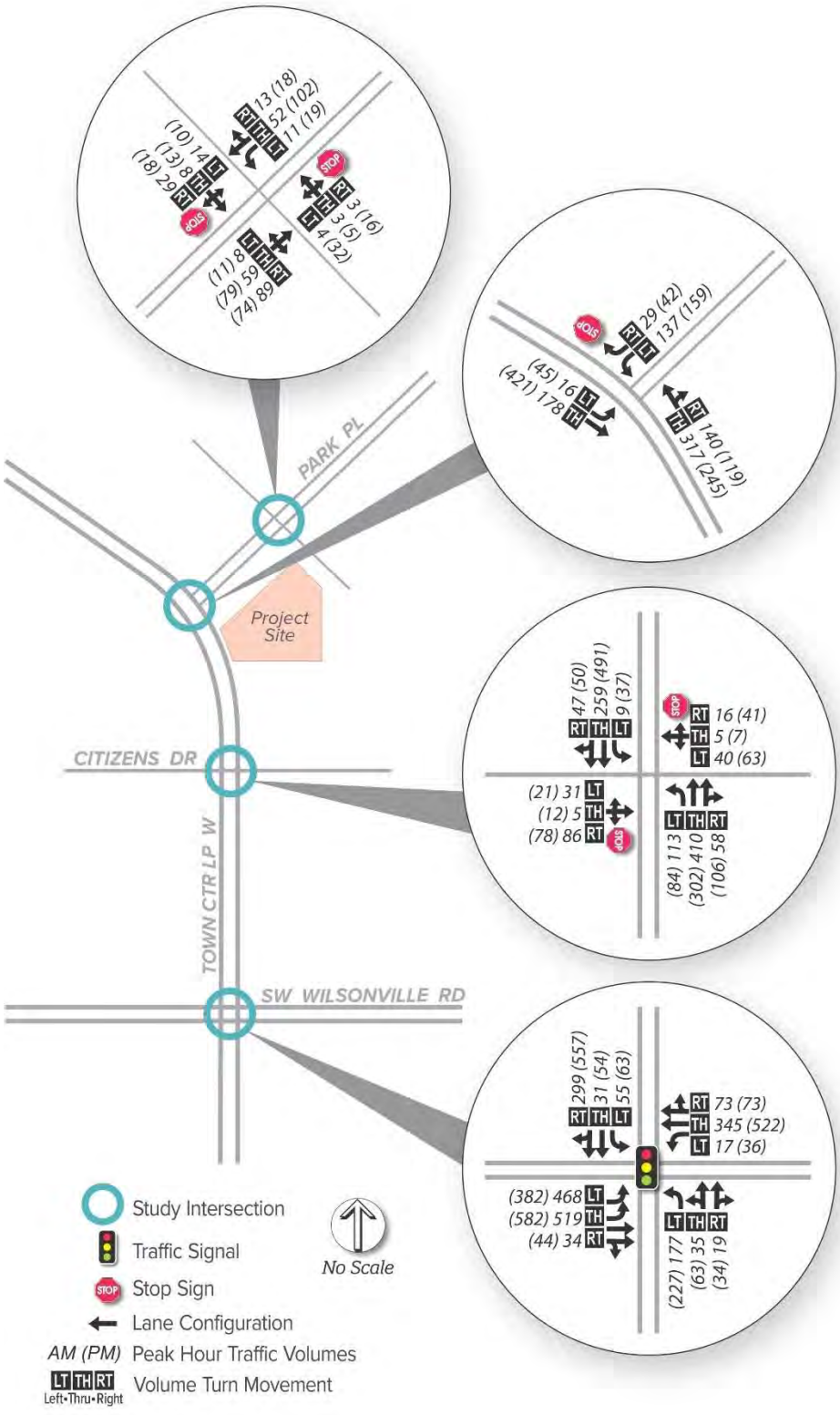


Figure 6: Build 2019 Existing + Project Peak Hour Traffic Volumes

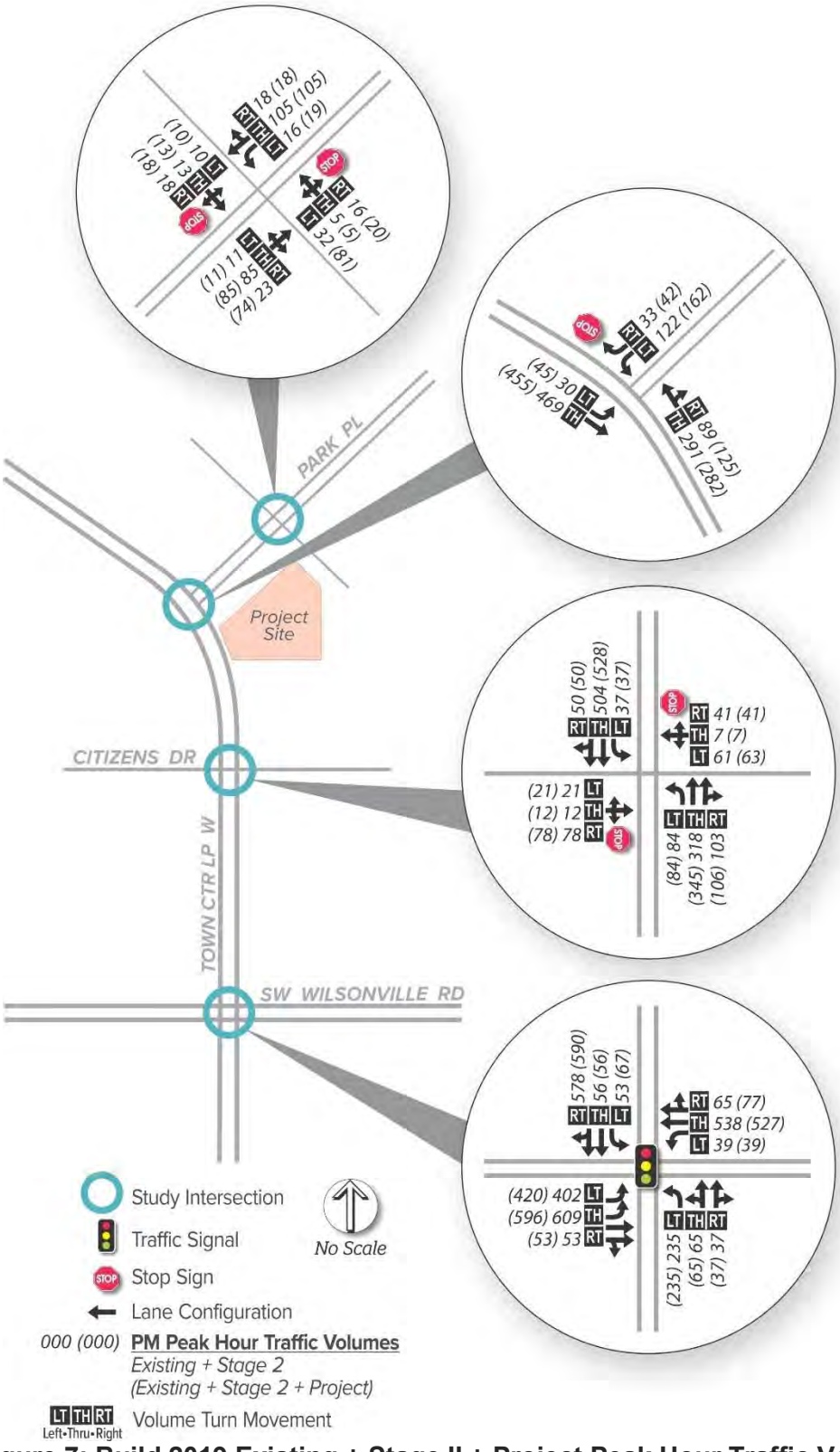


Figure 7: Build 2019 Existing + Stage II + Project Peak Hour Traffic Volumes

Intersection Operations

The study intersection operating conditions for the proposed development are listed in Table 6. All study intersections meet the City's operating standards for all scenarios shown below.

Table 6: Existing, Stage II, and Project Intersection Operations Comparison

Intersection	Existing			Existing + Stage II			Existing + Project			Existing + Stage II + Project		
	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c
AM Peak Hour												
Wilsonville Rd/ Town Cntr Lp W	28.3	C	0.42				28.9	C	0.43			
Town Cntr Lp W/ Citizens Drive	24.2	A/C	0.20				27.6	A/D	0.23			
Town Cntr Lp W/ Park Place	14.2	A/B	0.18				17.1	A/C	0.34			
Park Place/ Site Driveway	9.7	A/A	0.02				11.7	A/B	0.18			
PM Peak Hour												
Wilsonville Rd/ Town Cntr Lp W	34.0	C	0.52	35.0	D	0.55	34.4	C	0.53	35.5	D	0.56
Town Cntr Lp W/ Citizens Drive	36.4	A/E	0.39	42.8	A/E	0.44	41.0	A/E	0.43	50.1	A/F	0.49
Town Cntr Lp W/ Park Place	18.5	A/C	0.33	20.7	A/C	0.37	23.1	A/C	0.47	27.0	A/D	0.53
Park Place/ Site Driveway	11.9	A/B	0.13	12.1	A/B	0.13	14.7	A/B	0.30	15.0	A/C	0.30

Signalized Intersections:
Delay = Average Stopped Delay per Vehicle (sec)
LOS = Level of Service of Intersection
v/c = Volume-to-capacity Ratio of Intersection

Unsignalized Intersections:
Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement
LOS = Level of Service of Major Street/Minor Street
v/c = Volume-to-Capacity Ratio of Worst Movement

It should be noted that the PM peak hour delay shown in the table for intersection of Town Center Loop West/Citizens Drive under the Existing + Stage II + Project scenario does not meet the City's standard. This approach operates at LOS F, but since the minor street approach (Citizens Drive) is privately owned, it is not required to meet the City's operational standards.

Queuing Analysis

Vehicle queuing analysis was performed for the AM and PM peak hour based on the Existing + Project and Existing + Project + Stage II traffic volumes to determine the 95th percentile queues. The queuing analysis was based on traffic simulations performed in SimTraffic™ and included the estimation of 95th percentile queues for applicable movements. The 95th percentile

queue is the queue length for a given intersection movement that has only a 5% chance of being exceeded during the peak traffic hour. The 95th percentile queues reported in Table 7 below represent turning movements at existing turn pockets related to the project at the study intersections.

Table 7: Queuing Results

Intersection	Movement	Available Storage	Existing + Project		Existing + Project + Stage II
			AM	PM	PM
Wilsonville Road/Town Center Loop West	Dual EBL	300 feet	275 feet	250 feet	275 feet
	SBL	85 feet	**90 feet**	**100 feet**	**125 feet**
	SBR	300 feet	75 feet	150 feet	175 feet
Town Center Loop West/Park Place	SBL	75 feet	25 feet	25 feet	25 feet
	WBL	75 feet	75 feet	75 feet	**90 feet**
	WBR	150 feet	50 feet	50 feet	75 feet
Park Place/Site Driveway	NBLTR	N/A	50 feet	50 feet	50 feet
	WBL	75 feet	25 feet	25 feet	25 feet

Bold/Highlighted: Estimated 95th percentile queue exceeds available storage.

As shown in the table, the 95th percentile southbound left turn queue from Town Center Loop West onto Wilsonville Road is greater than the available storage of 85 feet in all three analyzed scenarios. Under the Existing + Project + Stage II scenario, the westbound left turn 95th percentile queue from Park Place onto Town Center Loop West is 90 feet, which is greater than the available storage of 75 feet.

Both turn lane locations only exceed available storage by approximately one vehicle (assume each vehicle requires 25 feet to queue). In addition, these queuing conditions will only occur during brief periods during the peak hour. In order to provide additional storage to meet the estimated queuing needs, impacts to landscaping and mature trees would be required. If delays increase at these locations, vehicles would likely use an alternative route. Therefore, there is no recommendation for queuing mitigations at these locations.

Site Plan Evaluation

The following sections discuss the site accesses, circulation, and pedestrian and bicycle facilities of the proposed development. At the beginning of this project, the project sponsor provided a site plan[14] showing the development consisting of a medical service building and

[14] Site plan dated December 18, 2018.

Dutch Bros drive-thru coffee shop. Just recently, the project sponsor provided an updated site plan,[15] which does not show the medical service building and also shows a different layout for the drive-thru window at Dutch Bros. The following site plan evaluation is based on the most recent site plan, however, the intersection analysis was not updated to reflect the reduced trip generation as a preliminary sensitivity analysis showed minimal change to the study intersection operations. Both site plans can be found in the appendix.

Site Access and Circulation

There are two existing site access, one full-access driveway on Park Place and one full-access entrance south of Bank of America, opposite Citizens Drive. The site plan shows sufficient space for two-way motor vehicle circulation throughout the parking lot (24-foot wide aisles).

The City has minimum driveway clear drive aisle length standards. For driveways with more than 100 average daily traffic (ADT), the minimum clear drive aisle placement from the back of sidewalk shall be 100 feet. The current site plan shows the drive aisle to be placed within 100 feet from the back of sidewalk and meets the City's standards.

The most recent site plan shows two drive-thru aisles, which merge into a single lane prior to reaching the drive-thru service window. The entrance to the two drive-thru lanes are located near the Park Place site driveway and the exit is located near the Bank of America. The drive-thru aisle can hold approximately 13 queued vehicles. On-site vehicle queuing was observed during the Dutch Bros trip generation data collection visits and the maximum queues were recorded. The maximum and the average of the maximum queues during the peak periods at the Dallas, Happy Valley, and Beaverton sites are shown in Table 8 below.

Table 8: On-Site Vehicle Queues – Dutch Bros Coffee Locations

Location	Size	Maximum Queue Observed	
		AM Peak Hour	PM Peak Hour
Dallas	1 Drive-Thru Window & 1 Walk-Up Window	7 vehicles	4 vehicles
Happy Valley		10 vehicles	12 vehicles
Beaverton		12 vehicles	11 vehicles
Average Maximum Queues		**10 vehicles**	**9 vehicles**

Based on the site plan, the proposed development should be able to accommodate the maximum and average maximum queues without spilling onto the adjacent street network.

Pedestrian and Bicycle Facilities

The site plan shows sidewalks along Town Center Loop West and Park Place fronting the project site. Marked pedestrian walking areas are shown on the site plan at each of the

[15] Site plan dated August 16, 2019.

buildings' entrances, providing clear guidance for pedestrians to safely cross through the parking lot. It is recommended to construct all sidewalks to meet ADA requirements.

Marked bicycle lanes do not currently exist on Park Place and the project development does not include the addition of any marked bicycle facilities.

Pedestrian Crossing Treatments

Counts of pedestrians using the walk-up window were collected during the Dutch Bros trip generation data collection visits to the Happy Valley and Beaverton locations. During the AM peak hour, it was observed that on average up to 15 customers used the walk-up service window. During the PM peak hour, it was observed that on average up to 8 customers used the walk-up service window.

Due to an expected increase in pedestrian demand associated with the Dutch Bros coffee shop and existing land uses on the west side of Town Center Loop West, it is recommended that a marked crosswalk, pedestrian refuge island, intersection lighting, and rectangular rapid flashing beacons (RRFB) with signage be installed on the south leg of Town Center Loop West intersection with Park Place to provide a safe enhanced pedestrian crossing.

This improvement will ensure that there is an enhanced crossing to connect pedestrians to the project site from the retail, office, and hotel uses on the west side of Town Center Loop West. The enhanced crossing is also recommended to make pedestrians more visible at this location due to the curvature of the roadway for southbound vehicles on Town Center Loop West and congestion and queuing is estimated to increase with the build out of the development. See Figure 8 for a concept layout of this improvement.

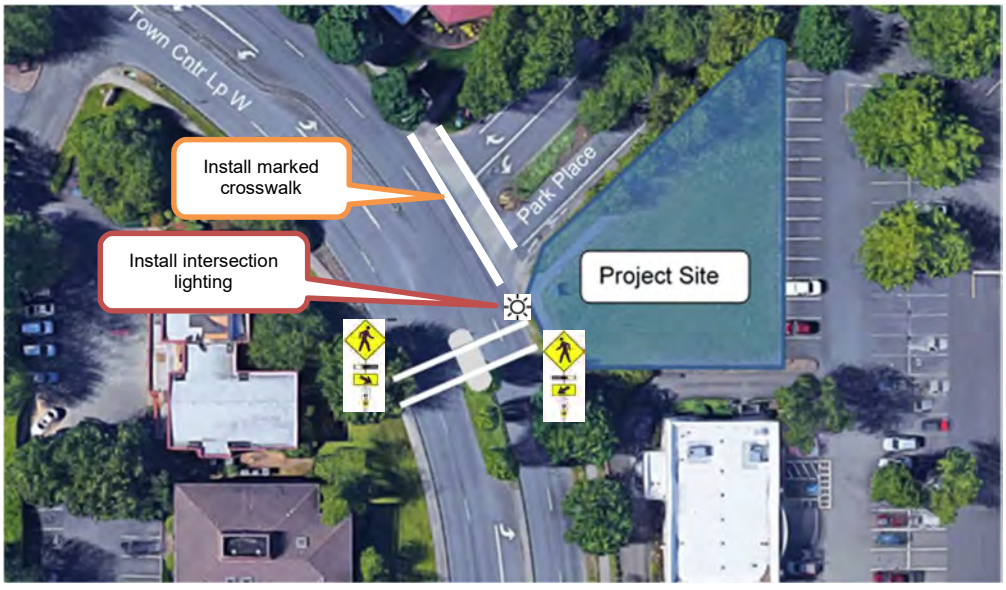


Figure 8: Enhanced Pedestrian Crossings Near Project Site

Additionally, this crossing would improve the spacing between signalized/enhanced pedestrian crossings in the area. The nearest protected pedestrian crossing point is located at the Wilsonville Road traffic signal, approximately 525 feet south of the project site.

It is also recommended that a marked crosswalk be installed on the east leg of the intersection. With the build out of the development, queuing on that approach is estimated to increase and the marked crosswalk will improve pedestrian visibility, increasing the safety of pedestrians at this intersection.

Access Sight Distance

Preliminary sight distance was evaluated at the existing Park Place driveway. According to industry standards[16], the intersection sight distance for left-turning vehicles is 280 feet (based on a speed of 25 mph). However, the intersection of Town Center Loop is located 190 feet from the Park Place driveway. Based on field observations, sight distance looking left from the driveway on Park Place was uninhibited from the driveway to the Town Center Loop intersection.

Parking

Proposed developments are required to comply with the City of Wilsonville Planning and Land Development code for the number of vehicular parking stalls and bicycle parking spaces that are provided on site.[17] Table 9 lists the vehicular and bicycle parking requirements for the development.

The table also lists the estimated peak parking demand. The coffee shop estimated demand is based on the field visits performed as part of the trip generation survey data. It was observed that during the AM peak hour, the peak parking demand was 5-7 vehicles.

Table 9: Vehicular and Bicycle Parking Summary

Land Use (ITE Code)	Floor Area (KSF[a])	Estimated Peak Stall Demand	Spaces Required by City Code[b]			Proposed Parking Stalls
			Vehicle Minimum	*Vehicle Maximum*	*Bicycle Minimum*	
Coffee Shop w/ Drive-Through Window and No Indoor Seating	0.5	7	5	7	4	**16 stalls + 2 ADA stall**

[a] KSF = 1,000 square feet

[b] City of Wilsonville, Planning and Land Development Ordinance, Section 4.155, Table 5, Updated June 2013.

As shown above, five vehicular stalls are needed to meet the minimum City Code requirements for the proposed development. As shown on the site plan, there are 18 parking stalls proposed.

[16] A Policy on Geometric Design of Highways and Streets, AASHTO, 2011.

[17] City of Wilsonville, Planning and Land Development Ordinance, Sections 4.154-4.198, Updated Feb. 2004.

The estimated peak parking demand for the coffee drive-thru combined is shown to be seven vehicles based on field observations.

The table above also indicates that four bicycle parking spaces are required at the project site to meet the minimum City Code requirements. The site plan currently shows four bicycle parking stalls, meeting the requirement.

Project Impact Summary

The project development is anticipated to result in the following impacts. It is recommended to City staff that the following be considered in the approval process of this development.

Trip Generation

- The proposed development is expected to generate 22 total (10 in, 12 out) net new PM peak hour trips. In the AM peak hour, the proposed development is anticipated to generate approximately 35 total (19 in, 16 out) net new AM peak hour trips.
- Of the total net new project trips in the PM Peak hour, 6 trips are estimated to pass through the I-5/SW Elligsen Road interchange area and 10 PM peak hour trips through the I-5/Wilsonville Road interchange area.
- Based on collected data, an average of up to 15 customers used the walk-up service window during the AM peak hour. During the PM peak hour, it was observed that an average of up to 8 customers used the walk-up service window.

Intersection Operations

- All public street intersections meet City operating standards under all analysis scenarios.
- The intersection of Town Center Loop West/Citizens Drive does not meet the City's standard under the Existing + Stage II + Project scenario. However, the minor street approach (Citizens Drive) is privately owned and is not required to meet the City's operational standards.

Site Plan Evaluation

- The clear drive aisle lengths shall be shown at a minimum 100 feet at all proposed driveways per City design standards.
- It is recommended to construct all sidewalks to meet ADA requirements.
- It is recommended that a marked crosswalk, pedestrian refuge island, intersection lighting, and rectangular rapid flashing beacon (RRFB) with signage be installed on the south leg of Town Center Loop West intersection with Park Place to provide a safe enhanced pedestrian crossing.
- It is recommended that a marked crosswalk be added to the stopped approach on the east leg of Town Center Loop West intersection with Park Place.
- Prior to occupancy, sight distance at any proposed access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon to assure that buildings, signs or landscaping does not restrict sight distance.

APPENDIX

Appendix A – Site Plan

Appendix B – Existing Peak Hour Traffic Counts

Appendix C – Level of Service Description

Appendix D – Stage II Project List

Appendix E – HCM Analysis Existing AM/PM Results

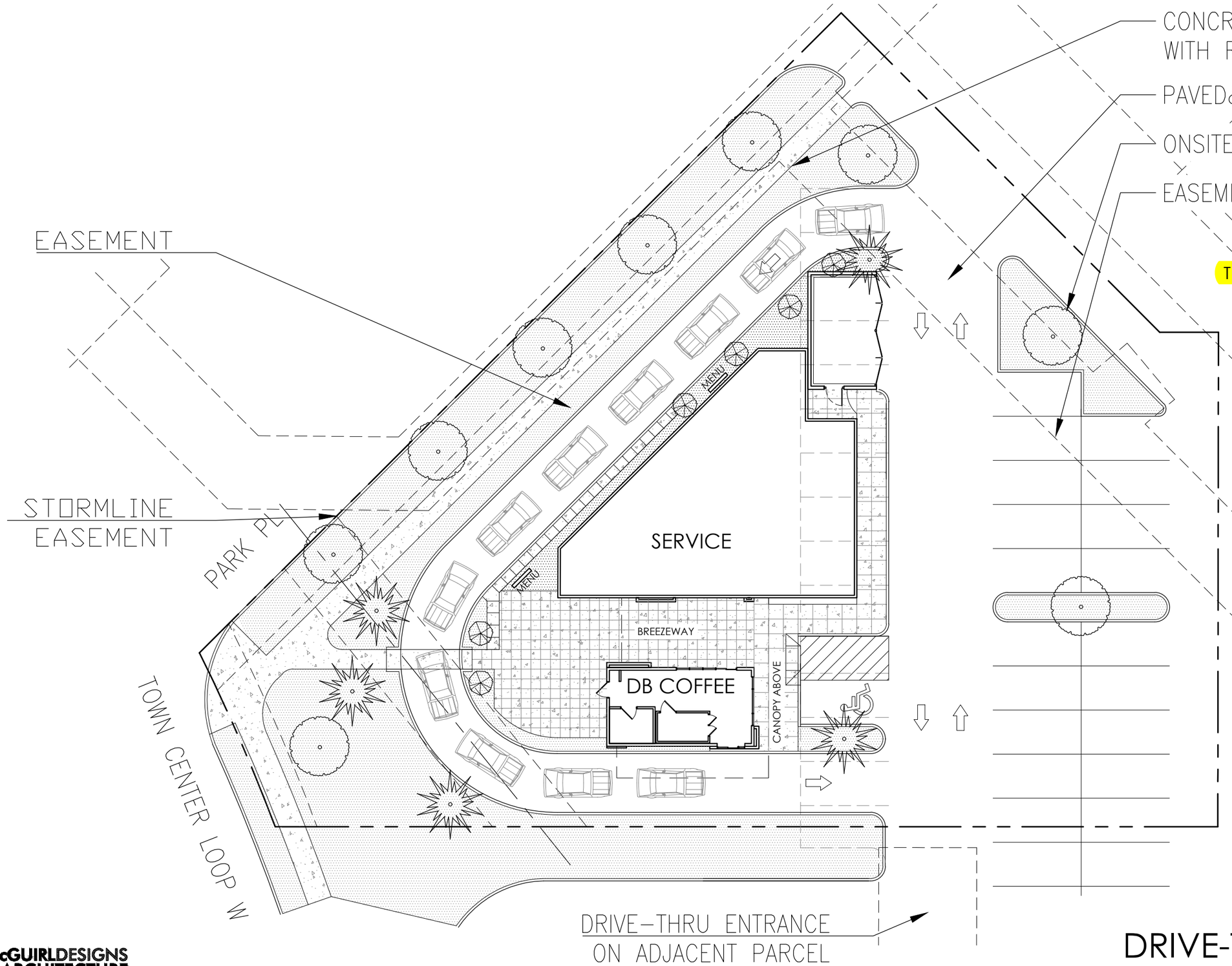
Appendix F – HCM Analysis Existing + Project AM/PM Results

Appendix G – HCM Analysis Existing + Stage II PM Results

Appendix H – HCM Analysis Existing + Stage II + Project PM Results

Appendix I – Transportation System Plan Projects

Appendix A – Site Plan



USE:
TENANT 01-SERVICE
TENANT 02-DRIVE-THRU COFFEE

BLDG AREA (GSF):
2620 SQ. FT.
TENANT 01 -2135 SQ. FT.
TENANT 02 -485 SQ. FT.

PARKING:
MINIMUM REQUIRED - 16
TENANT 01 - 10.7(4.1/1000SF)
TENANT 02 - 4.8(9.9/1000SF)

MAXIMUM ALLOWED - 24
TENANT 01 - 16.2(6.2/1000SF)
TENANT 02 - 7.2(14.9/1000SF)

PARKING PROVIDED:
17 & 1 ACCESSIBLE

DRIVE THRU QUEUE:
~220 LF

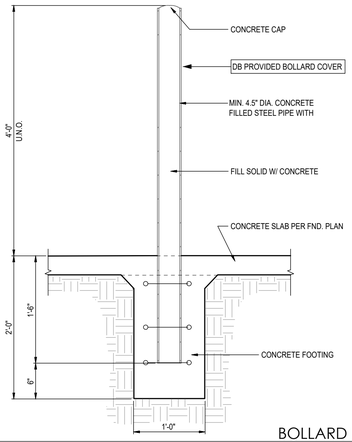
TRASH AREA:
(X4) 8CY CONTAINERS

SK-015
DATE: 12/18/2018

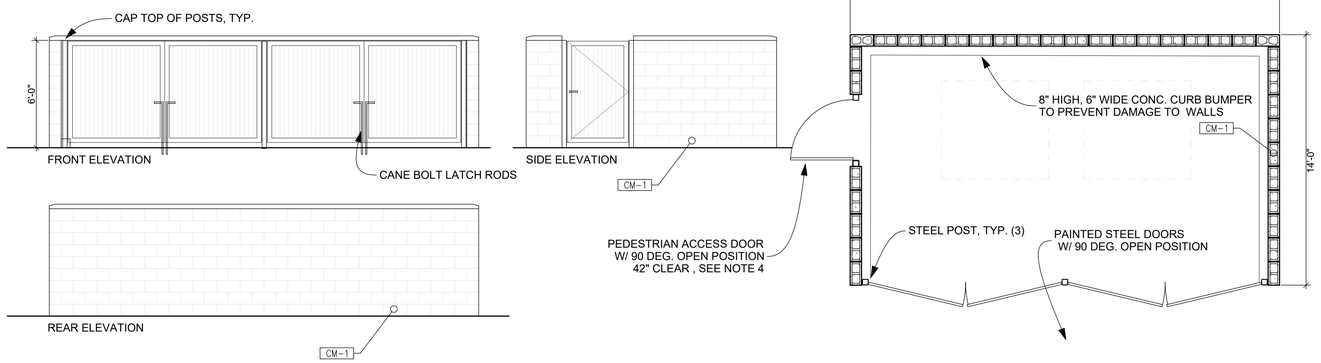
DRIVE-THRU & SERVICE

SCALE: 1"=20'0"

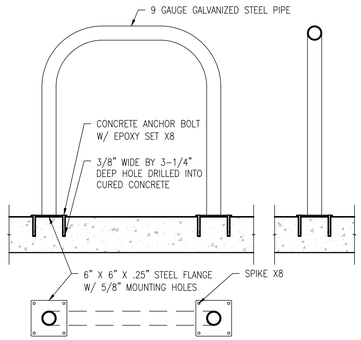
McGUIRLDESIGNS
& ARCHITECTURE
www.mcguirldesigns.com



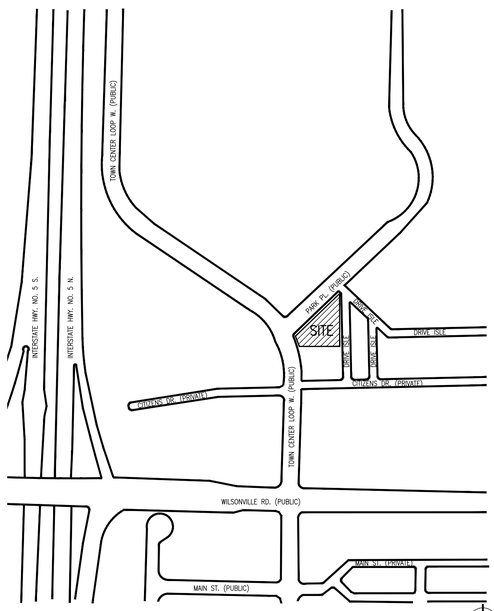
BOLLARD DTL F6
1 1/2" = 1'



TRASH AREA DTL B6
1/4" = 1'



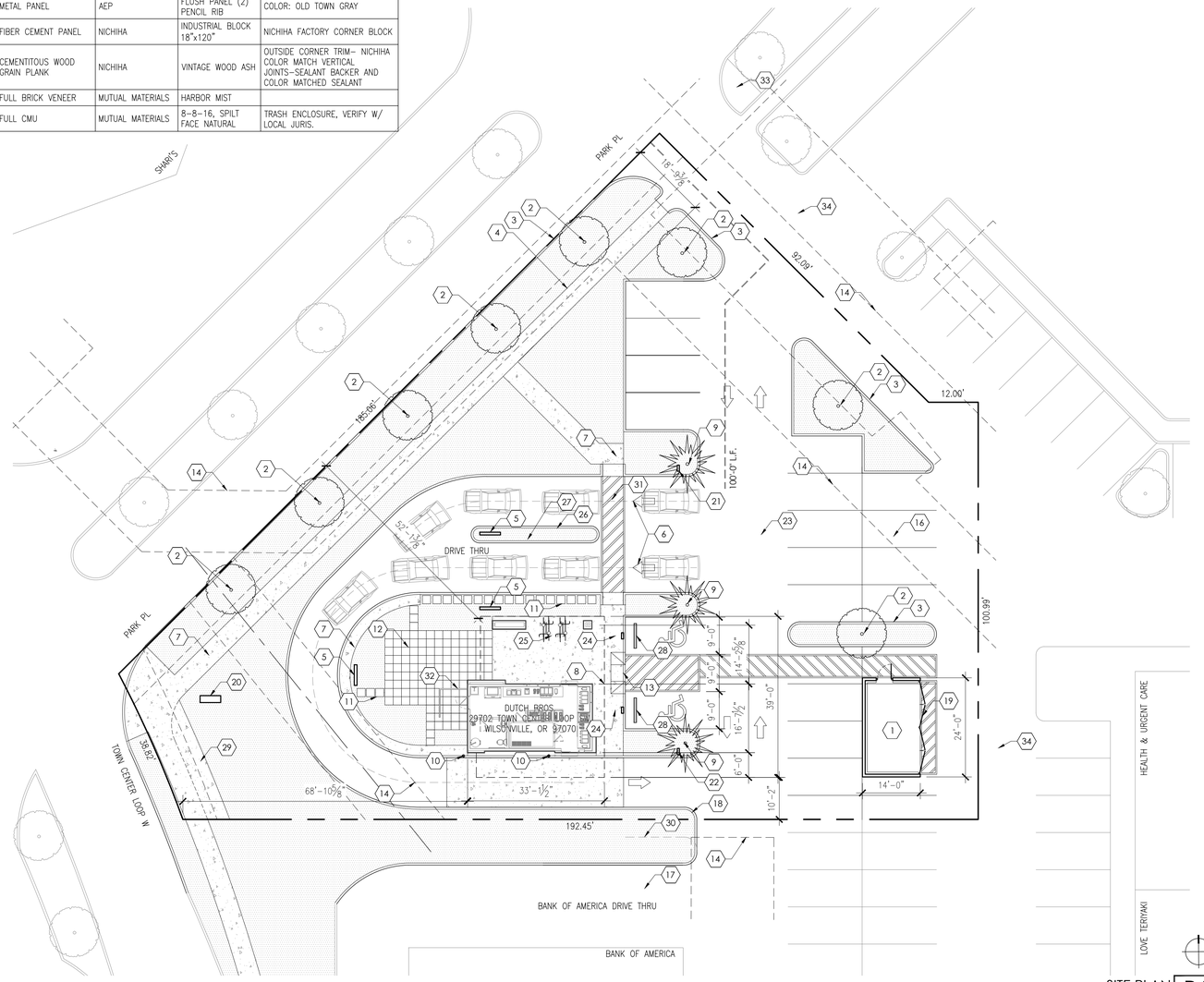
BIKE RACK DTL F4
1" = 1'



VICINITY MAP F1
NTS

EXTERIOR FINISH SCHEDULE

TAG	MATERIAL	MANUF.	MODEL	REMARKS
MP-1	BOX RIB METAL PANEL	AEP	PRESTIGE PC10-12C	
MP-2	METAL PANEL	AEP	FLUSH PANEL (2) PENCIL RIB	COLOR: OLD TOWN GRAY
FC-1	FIBER CEMENT PANEL	NICHIHA	INDUSTRIAL BLOCK 18"x120"	NICHIHA FACTORY CORNER BLOCK
WD-1	CEMENTITOUS WOOD GRAIN PLANK	NICHIHA	VINTAGE WOOD ASH	OUTSIDE CORNER TRIM- NICHIHA COLOR MATCH VERTICAL JOINTS-SEALANT BACKER AND COLOR MATCHED SEALANT
VN-1	FULL BRICK VENEER	MUTUAL MATERIALS	HARBOR MIST	
CM-1	FULL CMU	MUTUAL MATERIALS	8-8-16, SPILT FACE NATURAL	TRASH ENCLOSURE, VERIFY W/ LOCAL JURIS.



SITE PLAN B1
1/16" = 1'

GENERAL NOTES

1. THE PROPOSED WATER SERVICE SHALL:
   - 1.1. BE LOCATED AT THE STANDARD LOCATION BEHIND CURB IN THE FURNISHING ZONE AND AT A MINIMUM 18" FROM THE PROPERTY LINE.
   - 1.2. BE AT THE MINIMUM OF 3 FEET HORIZONTAL CLEARANCE (SKIN TO SKIN) TO OTHER EXISTING OR PROPOSED WATER SERVICE, CATCH BASINS, MANHOLES, UTILITY VAULTS AND ANY OTHER UTILITIES.
   - 1.3. MEET THE HORIZONTAL CLEARANCE PER PWB STANDARD PLAN P-845.
   - 1.4. NOT BE LOCATED IN ANY TYPES OF STORM SEWER FACILITIES LIKE SWALE, PLANTER BOX, ETC.
   - 1.5. BE AT A MINIMUM OF 5 FEET HORIZONTAL CLEARANCE (SKIN TO SKIN) TO EXISTING/PROPOSED SANITARY SEWER LINE, POWER POLE, STREET LIGHT, SWALE, PLANTER BOX, DRIVEWAYS, EXISTING/PROPOSED JUNCTION BOX OR UTILITY VAULTS AND ANY ABOVE GROUND STRUCTURES.
2. WORK WITHIN THE RIGHT-OF-WAY TO BE DONE UNDER SEPARATE PERMITS
3. IF CONTRACTOR REQUIRES ADDITIONAL SITE ACCESS WHERE AN EXISTING CURB EXISTS, BUILT CURB RAMP

KEYNOTES

1. GARBAGE AND RECYCLING AREAS
2. (E) TREE TO REMAIN
3. (E) 6" CURB
4. (E) CONC. SIDEWALK
5. MENU
6. (N) DIRECTIONAL PAINT
7. CONC. WALKWAY
8. ROOF OVERHANG
9. TREE
10. BOLLARD
11. 24" x 24" PAVERS
12. CONC. PAVING
13. ADA RAMP
14. EASEMENT
15. *NOT IN USE
16. PAVED AND STRIPED LOT
17. ADJACENT PROPERTY DRIVE THROUGH ENTRANCE
18. 6" CURB TO TIE INTO EXISTING CURB
19. TRASH LOADING ZONE
20. MONUMENT SIGN
21. ENTRY SIGN
22. EXIT SIGN
23. ASPHALT
24. ADA STALL SIGN
25. SHORT TERM BIKE PARKING
26. (N) 6" CURB
27. (N) LANDSCAPED ISLAND
28. PARKING STOP
29. (N) SIDEWALK ADDITION
30. (E) LANDSCAPE BOUNDARY LINE
31. (N) PAINTED CROSSWALK
32. 5'-8" WOOD SEMI-SIGHT OBSTRUCTING FENCE
33. BUS STOP
34. DRIVE ISLE

LEGEND

- HYD — FIRE HYDRANT
- (E) POWER POLE
- (E) SIGN
- (E) BOLLARD
- (E) TRAFFIC SIGNAL POLE
- (E) LIGHT POLE
- HB — HOSE BIB
- DOUBLE CHECK VALVE ASSEMBLY
- W W — WATER METER / GATE VALVE
- XW — (E) UNDERGROUND WATER
- G — (E) UNDERGROUND GAS
- P — UNDERGROUND POWER
- W — UNDERGROUND WATER
- SS — SANITARY SEWER
- SD — STORM DRAIN
- FDC — FIRE DEPARTMENT CONNECTION

DRAWING LIST

Sheet Number	Sheet Title
A061	SITE PLAN
A101	BUILDING FLOOR PLAN
A201	BUILDING ELEVATIONS I
A301	BUILDING SECTIONS
A800	BUILDING RENDERINGS

AREA CALCULATIONS

AREA TYPE	EXISTING AREA	PROPOSED AREA
SITE SQUARE FOOTAGE	22809 SQ. FT.	22809 SQ. FT.
BUILDING SQUARE FOOTAGE	–	509 SQ. FT.
IMPERVIOUS SQUARE FOOTAGE	10695 SQ. FT.	4462 SQ. FT.
PERVIOUS SQUARE FOOTAGE	3771 SQ. FT.	2733 SQ. FT.
PARKING SQUARE FOOTAGE	–	11891 SQ. FT.
PARKING LANDSCAPE SQUARE FT.	–	5369 SQ. FT.
TOTAL LANDSCAPED SQ. FT.	–	6504 SQ. FT.

PER CODE 4.155(.03)(B)
LANDSCAPED REQUIREMENT FOR PARKING: 10% = 1,189 SQ. FT.
TOTAL LANDSCAPED AREA: 15% OF TOTAL SITE = 3,421 SQ. FT.

SIGNAGE CALCULATIONS

ELEVATION	LINEAR FEET	AREA SQUARE FOOTAGE
NORTH	22809 SQ. FT.	22809 SQ. FT.

PER CODE 4.156.08(.02 [2]) SIGNS ON BUILDING. ALSO SEE TABLE LISTED IN SECTION 4.156.08 PAGE 20.

ANSI FULL BLEED D (34.00 X 22.00 INCHES)M:\MDG.CTB\ALL\08\ 8/16/2019 8:58:43 AM

WILSONVILLE
29702 SW TOWN CENTER LOOP W.
WILSONVILLE, OREGON 97070

DESCRIPTION	DATE
REVISIONS	
CONSULTANT	

1812043 PROJECT NO.

MCGUIRL DESIGNS & ARCHITECTURE
www.mcguirldesigns.com
T: (503)347-4649

08.16.2019 DATE

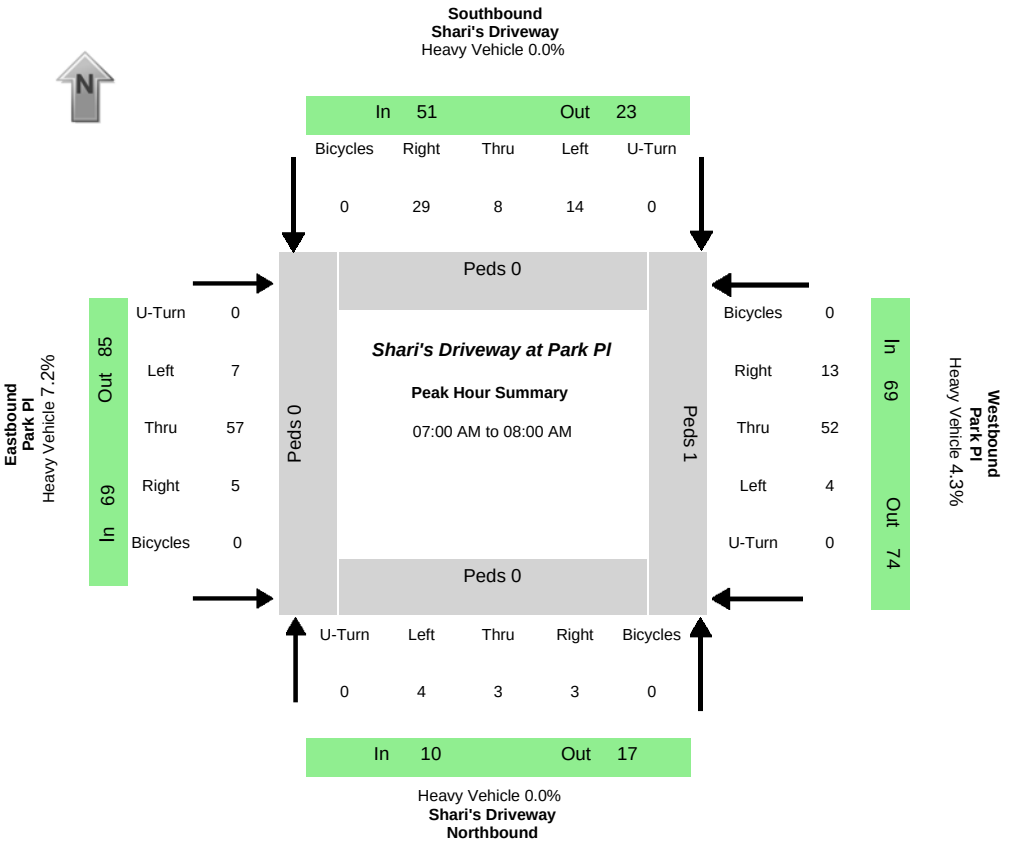
SITE PLAN

A061

Appendix B – Existing Peak Hour Traffic Counts

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Shari's Driveway*
E/W street	*Park Pl*
City, State	Wilsonville OR
Site Notes	
Location	44.256575 - -121.184115
Start Date	Wednesday, May 29, 2019
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:00:00 AM
Peak 15 Min Start	07:40:00 AM
PHF (15-Min Int)	0.80



Peak-Hour Volumes (PHV)																								
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB	
4	3	3	0	14	8	29	0	7	57	5	0	4	52	13	0	10	51	69	69	17	23	85	74	
Percent Heavy Vehicles																								
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.8%	0.0%	0.0%	0.0%	3.8%	7.7%	0.0%	0.0%	0.0%	7.2%	4.3%	0.0%	4.3%	2.4%	6.8%	

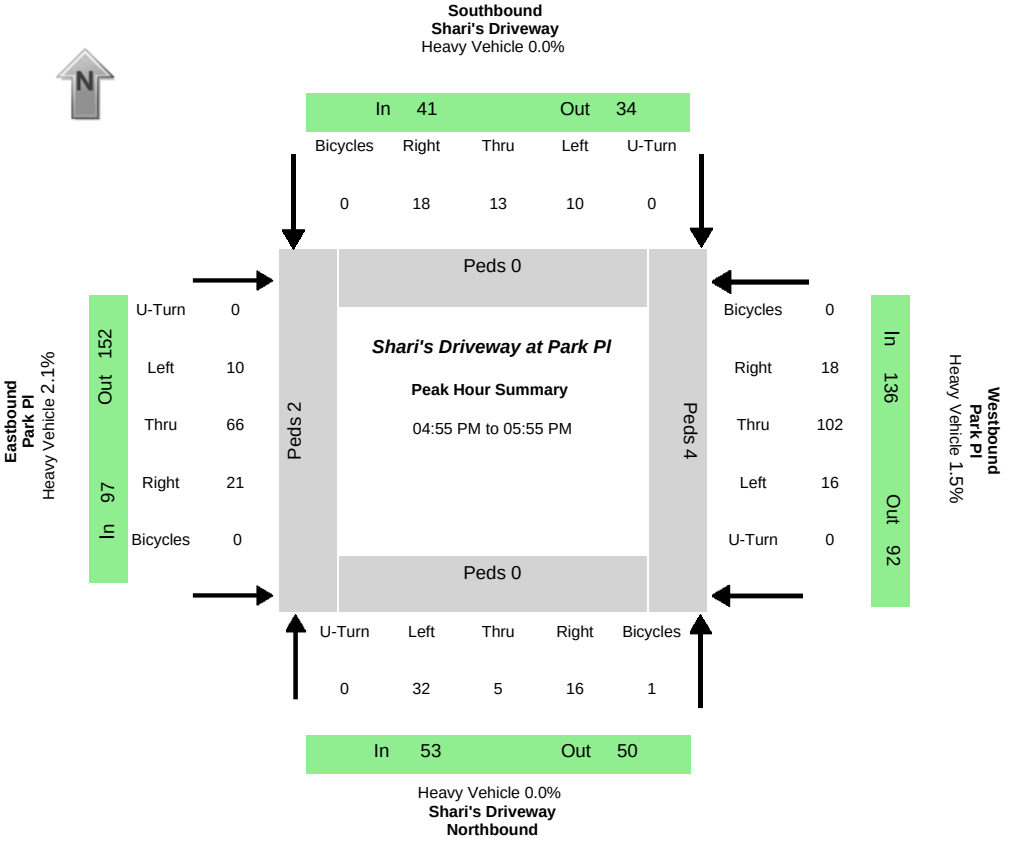
PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

All Vehicle Volumes

	Northbound Shari's Driveway				Southbound Shari's Driveway				Eastbound Park Pl				Westbound Park Pl				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
07:00:00 AM	0	0	1	0	2	0	2	0	1	12	0	0	0	3	0	0		
07:05:00 AM	2	1	1	0	1	0	1	0	1	4	0	0	0	8	3	0		
07:10:00 AM	0	1	1	0	1	1	3	0	0	4	0	0	0	2	2	0	58	
07:15:00 AM	0	0	0	0	3	0	3	0	1	2	1	0	1	5	0	0	53	
07:20:00 AM	1	1	0	0	0	1	1	0	0	5	0	0	0	5	0	0	45	
07:25:00 AM	0	0	0	0	1	0	1	0	0	2	0	0	1	3	0	0	38	
07:30:00 AM	0	0	0	0	1	2	2	0	1	4	1	0	0	3	2	0	38	
07:35:00 AM	0	0	0	0	0	0	2	0	0	1	2	0	0	5	2	0	36	
07:40:00 AM	1	0	0	0	0	2	1	0	0	3	0	0	0	5	1	0	41	
07:45:00 AM	0	0	0	0	0	0	5	0	1	5	1	0	0	9	0	0	46	
07:50:00 AM	0	0	0	0	3	2	6	0	1	10	0	0	1	2	3	0	62	
07:55:00 AM	0	0	0	0	2	0	2	0	1	5	0	0	1	2	0	0	62	199
08:00:00 AM	0	0	1	0	0	1	0	0	2	5	0	0	1	3	0	0	54	191
08:05:00 AM	0	0	1	0	1	0	1	0	0	7	2	0	0	6	1	0	45	188
08:10:00 AM	0	0	1	0	4	1	1	0	0	4	0	0	0	2	3	0	48	189
08:15:00 AM	1	0	0	0	0	2	4	0	0	5	0	0	0	2	0	0	49	187
08:20:00 AM	0	0	0	0	2	2	2	0	0	0	1	0	0	4	0	0	41	184
08:25:00 AM	0	0	0	0	1	0	3	0	2	5	3	0	0	4	4	0	47	198
08:30:00 AM	1	0	0	0	1	0	3	0	0	6	2	0	0	1	1	0	48	197
08:35:00 AM	0	0	0	0	0	0	0	0	1	5	1	0	0	3	1	0	48	196
08:40:00 AM	0	0	0	0	0	0	3	0	0	5	1	0	0	4	0	0	39	196
08:45:00 AM	2	0	1	0	1	1	3	0	0	4	1	0	2	3	1	0	43	194
08:50:00 AM	0	0	0	0	1	1	1	0	0	1	0	0	0	3	1	0	40	174
08:55:00 AM	2	0	0	0	2	0	4	0	1	6	5	0	0	6	1	0	54	188

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*Shari's Driveway*
E/W street	*Park Pl*
City, State	Wilsonville OR
Site Notes	
Location	44.256575 - -121.184115
Start Date	Wednesday, May 29, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:55:00 PM
Peak 15 Min Start	04:55:00 PM
PHF (15-Min Int)	0.68



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
32	5	16	0	10	13	18	0	10	66	21	0	16	102	18	0	53	41	97	136	50	33	152	92

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	2.1%	1.5%	0.0%	0.0%	1.3%	2.2%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

PHV - Pedestrians

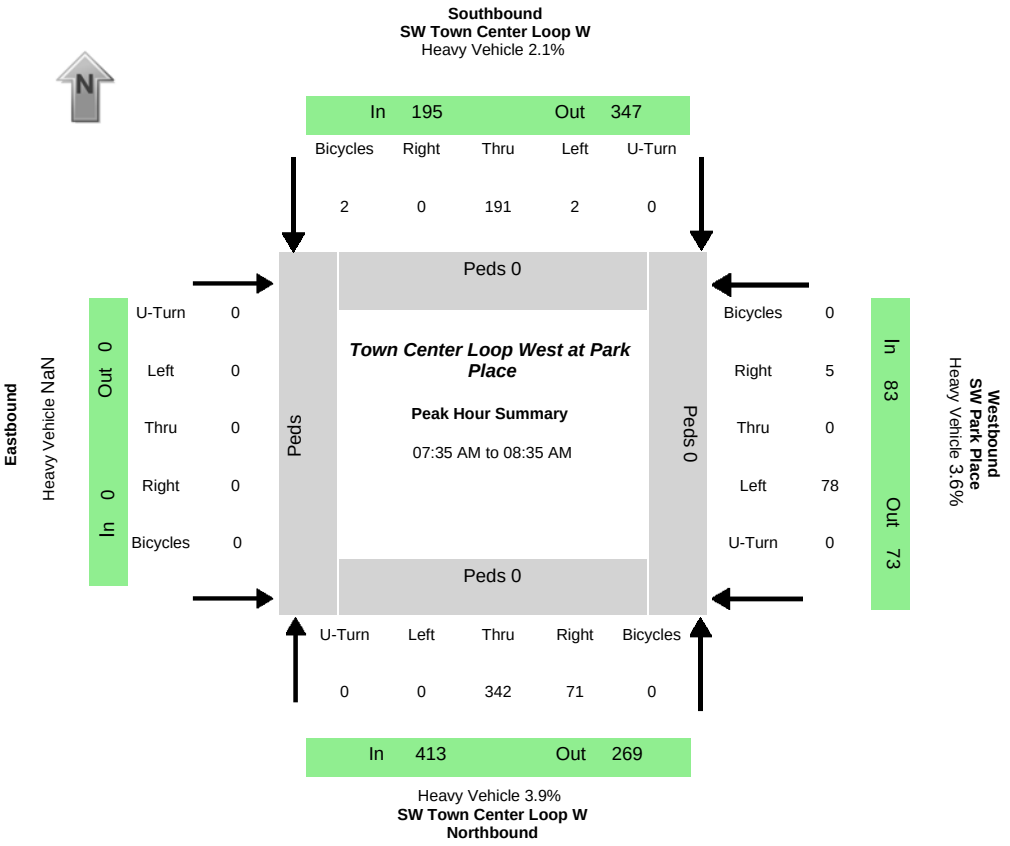
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	2	4	6

All Vehicle Volumes

	Northbound Shari's Driveway				Southbound Shari's Driveway				Eastbound Park Pl				Westbound Park Pl				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	0	1	0	1	1	0	0	1	0	0	0	1	9	4	0		
04:05:00 PM	4	0	1	0	2	0	2	0	2	8	0	0	0	12	2	0		
04:10:00 PM	2	0	1	0	2	0	3	0	0	7	2	0	0	8	1	0	77	
04:15:00 PM	1	0	1	0	2	0	2	0	0	1	1	0	4	5	0	0	76	
04:20:00 PM	2	0	0	0	0	0	2	0	0	4	2	0	1	3	2	0	59	
04:25:00 PM	1	0	1	0	2	0	4	0	0	4	0	0	3	9	0	0	57	
04:30:00 PM	0	1	2	0	0	1	1	0	0	5	3	0	2	8	1	0	64	
04:35:00 PM	2	0	1	0	0	0	1	0	0	6	0	0	2	10	2	0	72	
04:40:00 PM	2	1	0	0	2	1	3	0	1	5	3	0	1	7	2	0	76	
04:45:00 PM	2	0	0	0	1	0	1	0	0	11	2	0	0	4	0	0	73	
04:50:00 PM	2	0	0	0	0	0	2	0	0	5	2	0	2	5	3	0	70	
04:55:00 PM	5	1	0	0	1	0	3	0	2	4	2	0	4	6	1	0	71	281
05:00:00 PM	10	0	2	0	0	3	0	0	2	14	2	0	1	18	4	0	106	319
05:05:00 PM	3	0	3	0	0	0	1	0	0	8	8	0	2	8	2	0	120	321
05:10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	295
05:15:00 PM	0	1	1	0	2	1	3	0	3	6	1	0	1	8	2	0	64	307
05:20:00 PM	0	0	2	0	0	1	1	0	0	8	0	0	0	6	1	0	48	310
05:25:00 PM	1	1	1	0	1	0	1	0	0	4	6	0	1	9	3	0	76	314
05:30:00 PM	5	1	1	0	2	2	0	0	2	5	0	0	3	8	1	0	77	320
05:35:00 PM	0	0	0	0	2	1	2	0	1	4	0	0	2	14	1	0	85	323
05:40:00 PM	0	1	3	0	2	0	3	0	0	1	1	0	1	12	0	0	81	319
05:45:00 PM	2	0	1	0	0	3	0	0	0	4	0	0	0	9	3	0	73	320
05:50:00 PM	6	0	2	0	0	2	4	0	0	8	1	0	1	4	0	0	74	327
05:55:00 PM	3	0	0	0	0	1	2	0	0	7	0	0	0	7	0	0	70	318

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SW Town Center Loop W*
E/W street	*SW Park Place*
City, State	Wilsonville OR
Site Notes	
Location	45.304604 - -122.766048
Start Date	Wednesday, May 29, 2019
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:35:00 AM
Peak 15 Min Start	07:40:00 AM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)																								
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB	
0	342	71	0	2	191	0	0	0	0	0	0	78	0	5	0	413	193	0	83	269	347	0	73	
Percent Heavy Vehicles																								
0.0%	3.8%	4.2%	0.0%	50.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.0%	20.0%	0.0%	3.9%	2.1%	NaN	3.6%	1.9%	4.0%	NaN	5.5%	

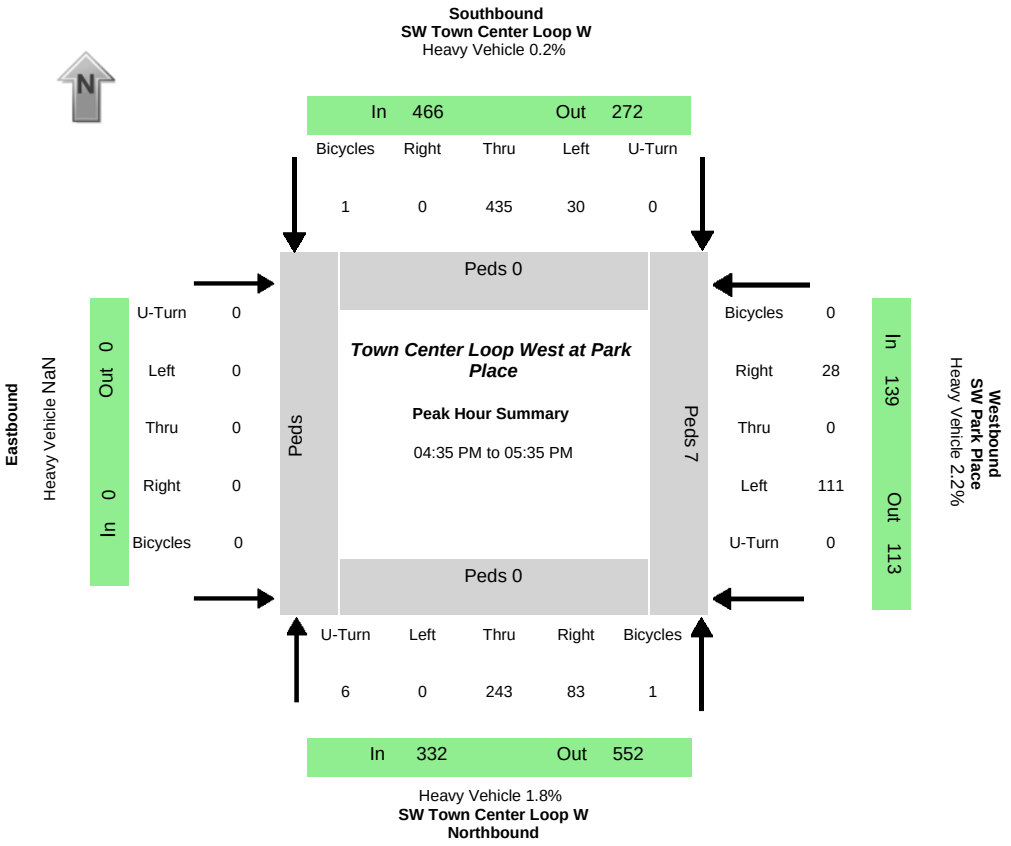
PHV- Bicycles																	PHV - Pedestrians					
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
	0	0	0	0	2		0					0		0	0	2	0	0		0	0

All Vehicle Volumes

	Northbound SW Town Center Loop W				Southbound SW Town Center Loop W				Eastbound				Westbound SW Park Place				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
07:00:00 AM		13	15	0	0	11		0					4		0	0		
07:05:00 AM		20	5	0	0	10		0					12		0	0		
07:10:00 AM		23	4	0	0	18		0					4		0	0	139	
07:15:00 AM		22	4	0	0	14		0					9		0	0	145	
07:20:00 AM		21	5	0	0	21		0					8		0	0	153	
07:25:00 AM		27	2	0	0	18		0					3		0	0	154	
07:30:00 AM		20	6	0	0	18		0					6		0	0	155	
07:35:00 AM		25	2	0	1	11		0					7		1	0	147	
07:40:00 AM		32	3	0	0	22		0					7		0	0	161	
07:45:00 AM		37	7	0	0	16		0					15		0	0	186	
07:50:00 AM		33	5	0	0	9		0					4		0	0	190	
07:55:00 AM		27	11	0	0	17		0					8		0	0	189	643
08:00:00 AM		37	6	0	1	11		0					4		0	0	173	659
08:05:00 AM		25	9	0	0	17		0					7		0	0	180	670
08:10:00 AM		24	4	0	0	22		0					5		0	0	172	676
08:15:00 AM		23	6	0	0	13		0					3		2	0	160	674
08:20:00 AM		23	1	0	0	16		0					7		1	0	150	667
08:25:00 AM		25	8	0	0	18		0					4		1	0	151	673
08:30:00 AM		31	9	0	0	19		0					7		0	0	170	689
08:35:00 AM		23	4	0	0	14		0					3		0	0	166	686
08:40:00 AM		25	8	0	1	15		0					6		2	0	167	679
08:45:00 AM		17	5	1	0	20		0					6		0	0	150	653
08:50:00 AM		27	3	0	0	17		0					6		0	0	159	655
08:55:00 AM		23	8	0	3	12		0					11		1	0	160	650

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SW Town Center Loop W*
E/W street	*SW Park Place*
City, State	Wilsonville OR
Site Notes	
Location	45.304604 - -122.766048
Start Date	Wednesday, May 29, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	05:05:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	243	83	6	30	435	0	0	0	0	0	0	111	0	28	0	332	465	0	139	552	271	0	113

Percent Heavy Vehicles

0.0%	0.8%	4.8%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	1.8%	0.2%	NaN	2.2%	0.5%	0.7%	NaN	4.4%

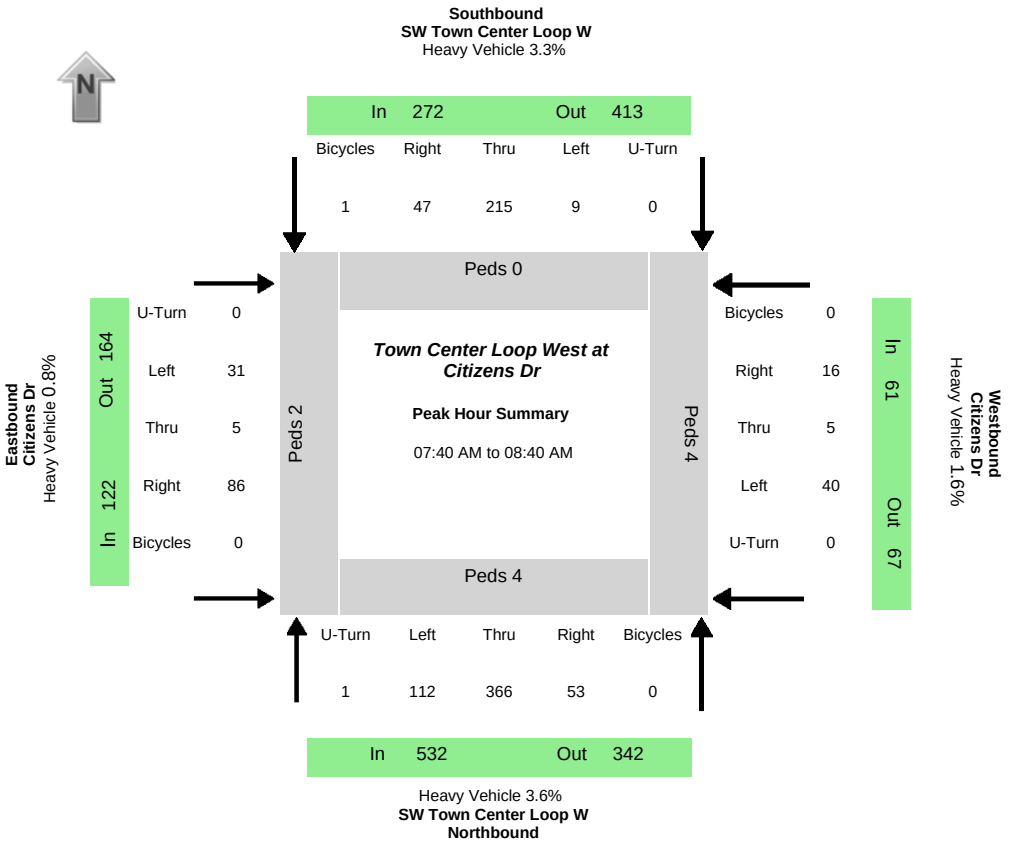
PHV- Bicycles																	PHV - Pedestrians				
Northbound				Southbound				Eastbound				Westbound					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
	1	0	0	0	1		0					0		0	0	2	0	0		7	7

All Vehicle Volumes

	Northbound SW Town Center Loop W				Southbound SW Town Center Loop W				Eastbound				Westbound SW Park Place				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM		11	0	1	0	38		0					9		0	0		
04:05:00 PM		26	6	0	3	35		0					14		1	0		
04:10:00 PM		18	10	0	2	40		0					14		2	0	230	
04:15:00 PM		25	4	0	0	44		0					7		1	0	252	
04:20:00 PM		21	4	0	2	36		0					7		0	0	237	
04:25:00 PM		13	4	0	0	28		0					13		1	0	210	
04:30:00 PM		17	7	0	2	31		0					4		2	0	192	
04:35:00 PM		25	6	0	0	36		0					15		2	0	206	
04:40:00 PM		22	6	3	2	42		0					5		1	0	228	
04:45:00 PM		16	8	0	5	33		0					5		4	0	236	
04:50:00 PM		12	7	0	0	38		0					8		0	0	217	
04:55:00 PM		19	8	0	0	32		0					12		2	0	209	877
05:00:00 PM		16	3	2	0	39		0					14		2	0	214	894
05:05:00 PM		16	11	0	5	31		0					11		5	0	228	888
05:10:00 PM		25	5	0	10	41		0					7		5	0	248	895
05:15:00 PM		25	11	1	1	38		0					9		1	0	258	900
05:20:00 PM		21	7	0	2	32		0					5		2	0	248	899
05:25:00 PM		26	6	0	3	39		0					7		1	0	237	922
05:30:00 PM		20	5	0	2	34		0					13		3	0	228	936
05:35:00 PM		19	6	0	1	35		0					10		1	0	231	924
05:40:00 PM		34	0	0	1	31		0					16		1	0	232	926
05:45:00 PM		20	5	0	0	31		0					11		3	0	225	925
05:50:00 PM		15	8	0	2	32		0					11		4	0	225	932
05:55:00 PM		21	5	0	1	14		0					10		3	0	196	913

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SW Town Center Loop W*
E/W street	*Citizens Dr*
City, State	Wilsonville OR
Site Notes	
Location	45.303983 - -122.765875
Start Date	Wednesday, May 29, 2019
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:40:00 AM
Peak 15 Min Start	07:55:00 AM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
112	366	53	1	9	215	47	0	31	5	86	0	40	5	16	0	532	271	122	61	342	413	164	67

Percent Heavy Vehicles																							
0.9%	4.6%	1.9%	0.0%	11.1%	3.3%	2.1%	0.0%	0.0%	0.0%	1.2%	0.0%	2.5%	0.0%	0.0%	0.0%	3.6%	3.3%	0.8%	1.6%	2.6%	4.1%	1.2%	3.0%

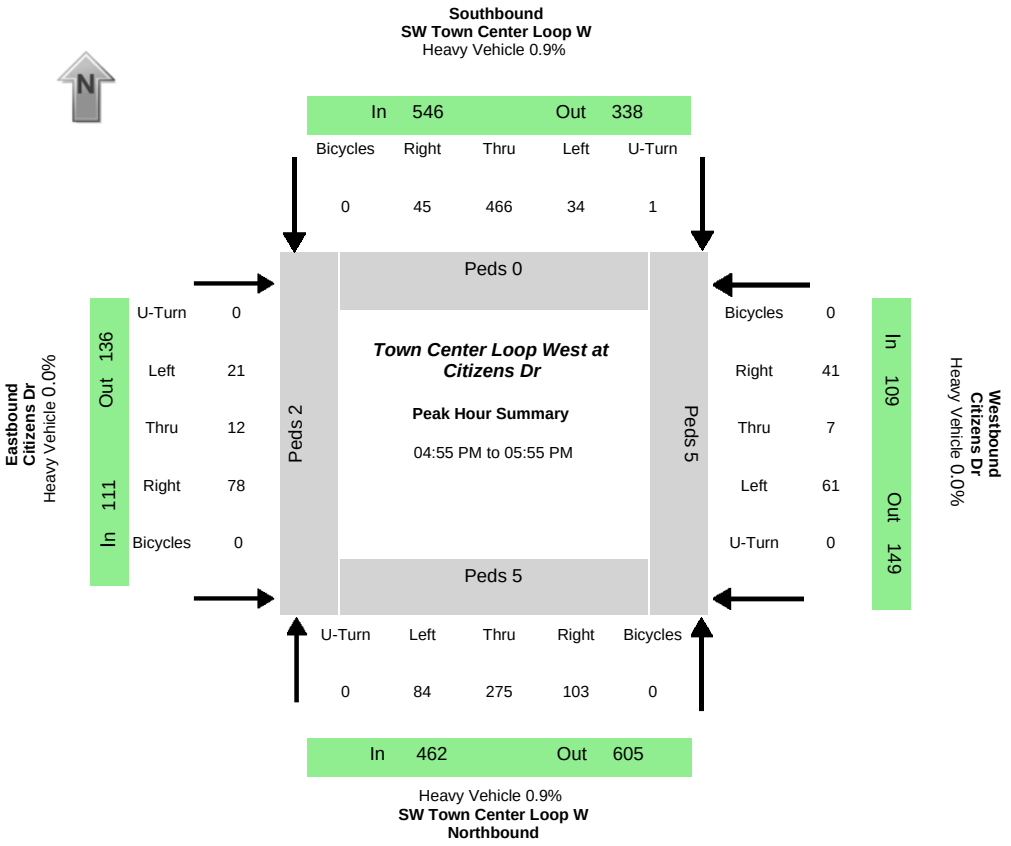
PHV- Bicycles																	PHV - Pedestrians				
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	4	0	2	4	10

All Vehicle Volumes

	Northbound SW Town Center Loop W				**Southbound** SW Town Center Loop W				**Eastbound** Citizens Dr				**Westbound** Citizens Dr				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
07:00:00 AM	2	25	2	0	0	12	3	0	1	0	3	0	2	0	0	0		
07:05:00 AM	11	23	4	0	0	19	0	0	1	0	4	0	6	1	1	0		
07:10:00 AM	10	26	6	0	2	18	0	0	1	2	3	0	1	0	0	0	189	
07:15:00 AM	9	20	1	0	2	18	2	0	4	0	11	0	4	0	2	0	212	
07:20:00 AM	11	25	1	0	0	24	5	0	0	1	9	0	4	0	1	0	223	
07:25:00 AM	9	25	3	0	1	17	1	0	3	0	8	0	1	0	1	0	223	
07:30:00 AM	8	25	5	0	1	19	5	0	1	0	12	0	3	2	0	0	231	
07:35:00 AM	7	25	4	0	3	14	0	0	2	0	7	0	2	0	0	0	214	
07:40:00 AM	10	31	4	0	1	26	4	0	4	0	9	0	4	0	0	0	238	
07:45:00 AM	9	40	3	0	2	24	3	0	4	0	4	0	4	0	0	0	250	
07:50:00 AM	6	33	1	0	0	12	2	0	3	1	4	0	1	1	2	0	252	
07:55:00 AM	12	34	2	0	1	21	4	0	3	0	6	0	1	1	1	0	245	895
08:00:00 AM	8	40	4	0	0	11	4	0	3	1	10	0	6	0	0	0	239	932
08:05:00 AM	11	29	3	0	0	19	4	0	3	2	7	0	0	0	2	0	253	942
08:10:00 AM	11	23	5	0	1	19	8	0	2	0	7	0	4	0	3	0	250	956
08:15:00 AM	12	28	9	0	1	12	2	0	2	1	3	0	4	0	0	0	237	957
08:20:00 AM	13	20	1	1	2	15	7	0	0	0	11	0	3	0	3	0	233	952
08:25:00 AM	7	30	2	0	0	20	3	0	2	0	9	0	1	0	1	0	225	958
08:30:00 AM	4	36	10	0	0	22	4	0	3	0	9	0	4	1	1	0	245	971
08:35:00 AM	9	22	9	0	1	14	2	0	2	0	7	0	8	2	3	0	248	986
08:40:00 AM	7	30	5	0	1	17	3	0	3	1	7	0	5	1	1	0	254	974
08:45:00 AM	8	19	2	0	1	23	2	0	2	1	3	0	4	1	1	0	227	948
08:50:00 AM	10	27	1	0	0	16	6	0	2	0	6	0	1	0	1	0	218	952
08:55:00 AM	9	27	3	0	1	19	4	0	4	1	5	0	0	0	0	0	210	939

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SW Town Center Loop W*
E/W street	*Citizens Dr*
City, State	Wilsonville OR
Site Notes	
Location	45.303983 - -122.765875
Start Date	Wednesday, May 29, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:55:00 PM
Peak 15 Min Start	05:05:00 PM
PHF (15-Min Int)	0.94



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
84	275	103	0	34	466	45	1	21	12	78	0	61	7	41	0	462	546	111	109	605	338	136	149

Percent Heavy Vehicles

0.0%	1.1%	1.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.9%	0.0%	0.0%	0.8%	0.9%	0.0%	0.7%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PHV - Pedestrians

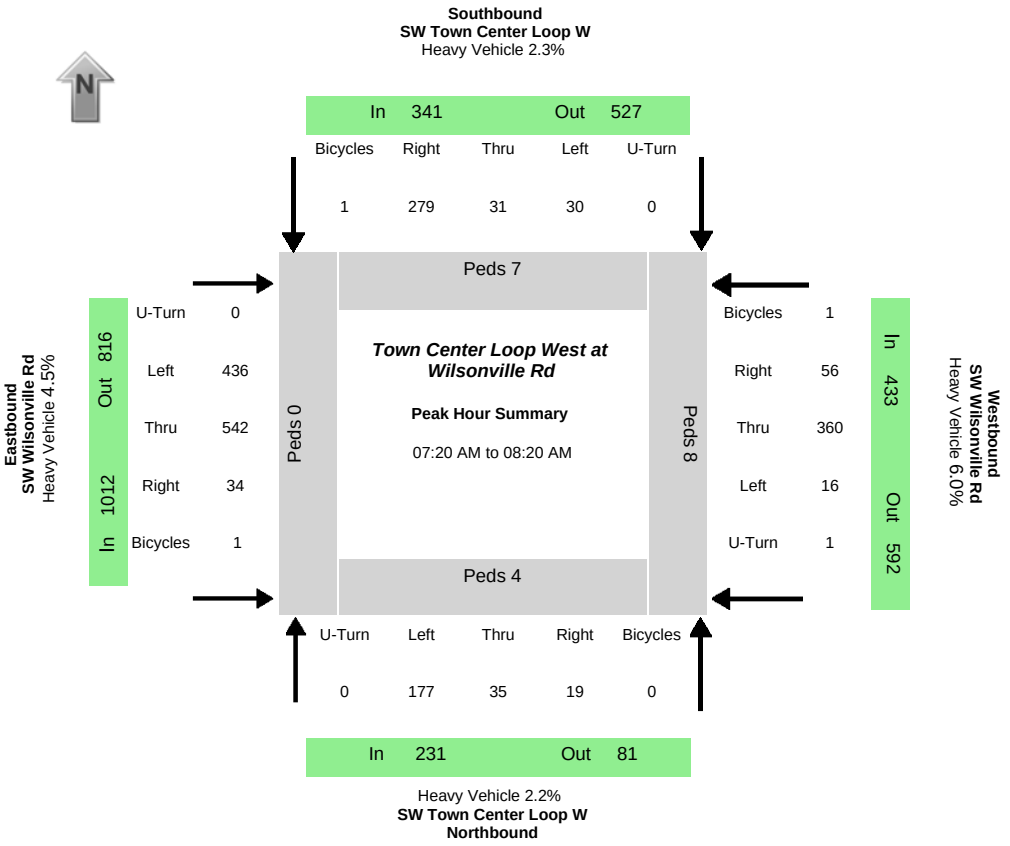
in Crosswalk				
NB	SB	EB	WB	**Sum**
5	0	2	5	12

All Vehicle Volumes

	Northbound SW Town Center Loop W				Southbound SW Town Center Loop W				Eastbound Citizens Dr				Westbound Citizens Dr				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	8	7	5	0	3	45	3	0	0	1	9	0	6	1	3	0		
04:05:00 PM	10	27	4	0	2	47	4	0	2	0	6	0	9	1	3	0		
04:10:00 PM	9	24	18	0	1	48	4	0	1	0	7	0	6	1	2	0	327	
04:15:00 PM	3	26	9	0	4	28	6	0	1	1	7	0	6	2	1	0	330	
04:20:00 PM	5	20	7	1	3	47	3	0	2	0	9	0	3	1	3	0	319	
04:25:00 PM	4	13	6	0	5	47	5	0	1	2	3	0	4	0	2	0	290	
04:30:00 PM	5	19	13	0	2	35	1	0	4	0	8	0	12	1	2	0	298	
04:35:00 PM	6	25	11	0	3	38	6	0	1	0	8	0	5	0	3	0	300	
04:40:00 PM	10	26	6	0	2	38	2	0	1	0	6	0	2	1	3	0	305	
04:45:00 PM	7	16	2	0	3	42	3	0	0	1	4	0	2	1	7	0	291	
04:50:00 PM	10	18	7	0	7	35	2	0	0	0	7	0	7	0	1	0	279	
04:55:00 PM	10	25	9	0	4	36	0	0	1	0	7	0	4	0	3	0	281	1203
05:00:00 PM	5	15	6	0	3	47	7	0	1	1	5	0	5	1	5	0	294	1213
05:05:00 PM	8	22	10	0	1	33	3	0	1	0	6	0	4	0	4	0	292	1190
05:10:00 PM	11	24	14	0	1	49	5	1	1	1	5	0	0	1	4	0	310	1186
05:15:00 PM	6	34	13	0	2	38	5	0	1	1	10	0	4	0	3	0	326	1209
05:20:00 PM	4	24	5	0	3	34	5	0	0	3	7	0	3	0	3	0	325	1196
05:25:00 PM	2	25	8	0	2	37	2	0	5	1	4	0	6	0	2	0	302	1198
05:30:00 PM	12	20	15	0	7	38	3	0	2	1	5	0	7	1	4	0	300	1211
05:35:00 PM	5	23	6	0	5	40	3	0	1	0	3	0	5	1	5	0	306	1202
05:40:00 PM	7	24	6	0	1	41	6	0	4	0	4	0	9	0	2	0	316	1209
05:45:00 PM	6	23	6	0	3	36	2	0	1	2	16	0	8	2	1	0	307	1227
05:50:00 PM	8	16	5	0	2	37	4	0	3	2	6	0	6	1	5	0	305	1228
05:55:00 PM	7	22	8	0	1	21	2	0	2	1	9	0	10	1	3	0	288	1216

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SW Town Center Loop W*
E/W street	*SW Wilsonville Rd*
City, State	Wilsonville OR
Site Notes	
Location	45.302863 - -122.765813
Start Date	Wednesday, May 29, 2019
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:20:00 AM
Peak 15 Min Start	07:40:00 AM
PHF (15-Min Int)	0.96



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
177	35	19	0	30	31	279	0	436	542	34	0	16	360	56	1	231	340	1012	433	81	527	816	592
Percent Heavy Vehicles																							
1.7%	5.7%	0.0%	0.0%	0.0%	0.0%	2.9%	0.0%	3.0%	5.2%	14.7%	0.0%	6.3%	6.4%	3.6%	0.0%	2.2%	2.4%	4.5%	6.0%	7.4%	3.2%	4.2%	4.7%

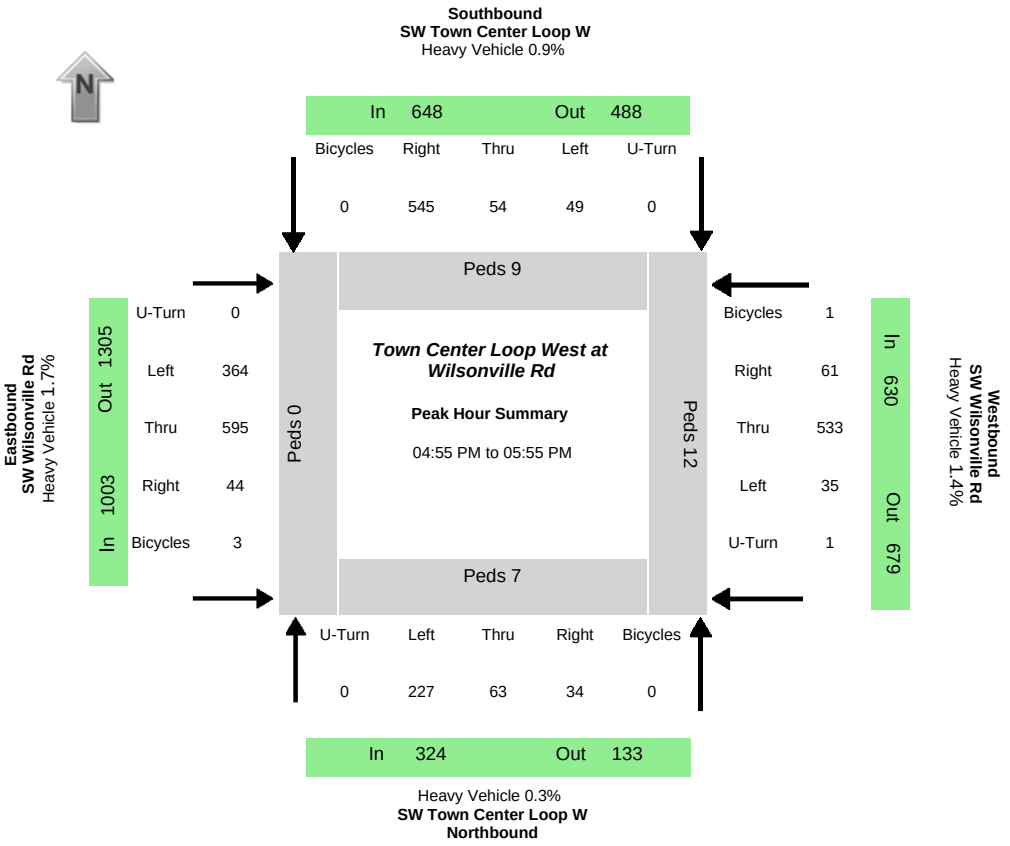
PHV- Bicycles																	PHV - Pedestrians					
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	3	4	7	0	8	19

All Vehicle Volumes

	Northbound SW Town Center Loop W				**Southbound** SW Town Center Loop W				**Eastbound** SW Wilsonville Rd				**Westbound** SW Wilsonville Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
07:00:00 AM	8	0	3	0	1	1	17	0	24	23	2	0	2	19	1	0		
07:05:00 AM	16	8	2	0	1	2	26	0	30	32	3	0	0	22	6	0		
07:10:00 AM	13	5	0	0	0	3	18	1	18	31	2	0	0	26	5	0	371	
07:15:00 AM	12	4	0	0	2	0	35	0	25	35	1	0	0	33	4	0	421	
07:20:00 AM	15	3	1	0	3	1	35	0	37	37	4	0	2	32	6	0	449	
07:25:00 AM	20	4	2	0	1	1	24	0	26	40	2	0	1	31	2	1	482	
07:30:00 AM	13	3	1	0	5	2	20	0	31	45	2	0	0	39	6	0	498	
07:35:00 AM	11	1	1	0	2	2	22	0	42	41	2	0	0	28	1	0	475	
07:40:00 AM	20	2	2	0	4	1	35	0	39	46	4	0	0	39	4	0	516	
07:45:00 AM	19	4	2	0	2	4	26	0	34	43	5	0	1	19	6	0	514	
07:50:00 AM	9	2	0	0	0	4	13	0	41	49	0	0	1	41	5	0	526	
07:55:00 AM	11	6	3	0	1	3	25	0	33	47	5	0	2	17	7	0	490	1859
08:00:00 AM	14	4	2	0	4	4	22	0	47	45	3	0	2	21	6	0	499	1932
08:05:00 AM	22	3	3	0	3	4	19	0	39	45	2	0	1	25	1	0	501	1951
08:10:00 AM	18	3	1	0	3	4	24	0	34	52	3	0	2	33	7	0	525	2013
08:15:00 AM	5	0	1	0	2	1	14	0	33	52	2	0	4	35	5	0	505	2016
08:20:00 AM	13	6	2	0	4	3	27	0	26	49	1	0	1	25	3	0	498	2000
08:25:00 AM	15	1	1	0	2	1	23	0	39	42	8	0	0	18	7	0	471	2002
08:30:00 AM	7	3	1	0	3	5	30	0	31	34	4	0	4	31	4	0	474	1992
08:35:00 AM	12	1	0	0	2	4	27	0	41	28	4	0	2	27	3	0	465	1990
08:40:00 AM	10	7	0	0	3	2	25	0	37	33	5	0	3	32	1	0	466	1952
08:45:00 AM	16	2	2	0	1	0	30	0	35	33	3	0	2	18	3	0	454	1932
08:50:00 AM	15	7	1	0	1	4	16	0	25	34	2	0	3	32	4	0	447	1911
08:55:00 AM	7	5	4	0	3	4	20	0	32	28	2	0	0	18	2	1	415	1877

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*SW Town Center Loop W*
E/W street	*SW Wilsonville Rd*
City, State	Wilsonville OR
Site Notes	
Location	45.302863 - -122.765813
Start Date	Wednesday, May 29, 2019
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:55:00 PM
Peak 15 Min Start	05:10:00 PM
PHF (15-Min Int)	0.98



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
227	63	34	0	49	54	545	0	364	595	44	0	35	533	61	1	324	648	1003	630	133	488	1305	679

Percent Heavy Vehicles

0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	0.5%	2.5%	0.0%	0.0%	2.9%	1.5%	0.0%	0.0%	0.3%	0.9%	1.7%	1.4%	0.8%	0.4%	1.1%	2.2%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
7	9	0	12	28

All Vehicle Volumes

	Northbound SW Town Center Loop W				Southbound SW Town Center Loop W				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	20	7	7	0	2	1	35	0	9	33	3	0	1	60	6	0		
04:05:00 PM	12	9	1	0	4	5	72	1	41	35	2	0	2	45	6	0		
04:10:00 PM	13	12	1	0	6	6	55	0	32	32	3	0	4	28	4	0	615	
04:15:00 PM	20	6	3	0	0	2	30	0	21	29	4	0	5	50	8	0	609	
04:20:00 PM	12	2	2	0	2	1	55	0	24	52	3	0	0	57	3	0	587	
04:25:00 PM	20	5	2	0	2	3	40	0	32	51	4	0	3	46	5	0	604	
04:30:00 PM	15	5	4	0	4	7	53	0	31	28	5	0	1	36	2	0	617	
04:35:00 PM	16	6	3	0	1	3	32	0	27	48	5	0	4	49	1	0	599	
04:40:00 PM	9	2	4	0	3	6	40	0	35	38	7	0	3	65	5	0	603	
04:45:00 PM	17	6	2	0	3	2	51	0	27	53	5	0	7	37	1	0	623	
04:50:00 PM	22	8	5	0	3	5	37	0	20	32	0	0	3	50	3	0	616	
04:55:00 PM	22	6	2	0	2	3	35	0	36	48	6	0	2	53	7	0	621	2443
05:00:00 PM	18	2	0	0	2	2	59	0	27	57	10	0	3	34	4	0	628	2477
05:05:00 PM	20	14	3	0	4	7	45	0	29	39	3	0	0	45	4	0	653	2455
05:10:00 PM	23	6	6	0	1	6	48	0	25	33	2	0	3	41	7	0	632	2460
05:15:00 PM	20	5	3	0	1	3	45	0	45	52	3	0	6	49	6	0	652	2520
05:20:00 PM	23	5	0	0	5	1	48	0	33	53	4	0	3	47	5	0	666	2534
05:25:00 PM	18	1	5	0	2	2	46	0	33	38	2	0	3	39	5	0	659	2515
05:30:00 PM	17	4	7	0	2	6	39	0	28	45	3	0	4	45	13	0	634	2537
05:35:00 PM	11	4	0	0	3	3	46	0	32	57	1	0	3	54	1	1	623	2558
05:40:00 PM	15	5	1	0	10	10	41	0	25	59	3	0	2	43	4	0	647	2559
05:45:00 PM	26	7	3	0	11	5	54	0	30	55	3	0	1	21	2	0	652	2566
05:50:00 PM	14	4	4	0	6	6	39	0	21	59	4	0	5	62	3	0	663	2605
05:55:00 PM	16	3	5	0	3	5	33	0	33	63	5	0	3	42	7	0	663	2601

Appendix C – Level of Service Description

TRAFFIC LEVELS OF SERVICE

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

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

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

UNSIGNALIZED INTERSECTIONS (Two-Way Stop Controlled)

Unsignalized intersection level of service is reported for the major street and minor street (generally, left turn movements). The method assesses available and critical gaps in the traffic stream which make it possible for side street traffic to enter the main street flow. The 2010 Highway Capacity Manual describes the detailed methodology. It is not unusual for an intersection to experience level of service E or F conditions for the minor street left turn movement. It should be understood that, often, a poor level of service is experienced by only a few vehicles and the intersection as a whole operates acceptably.

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

Level-of-Service Criteria: Automobile Mode

Control Delay (s/vehicle)	**LOS by Volume-to-Capacity Ratio**	
	***v/c* ≤ 1.0**	***v/c* > 1.0**
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

Note: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole

SIGNALIZED INTERSECTIONS

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

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

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

Appendix D – Stage II Project List

Updated by D. Pauly 06.17.19

Stage II Approved

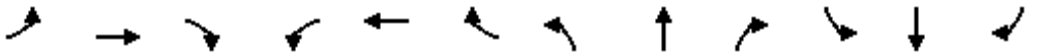
Project	Land Use	Status	Size	Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
					Internal	Pass-By	In	Out	Total
Ash Park Subdivision	Residential	Partially Built, 3 homes built and occupied	12 units				6	3	9
Hydro-Temp: Recent agreement with the City, the project is vested and so are the traffic trips	Office/Flex-Space	Not built	60.8 KSF				44	46	90
Mercedes Benz (Phase 2)	Auto Dealership	Not built					20	26	46
Shredding Systems (SQFT does not including paint canopy and another canopy)	Industrial/Commercial	Not built	66.8 KSF				20	46	66
Town Center Ph III *and trip dedication to Miller Paint store Uses marked with "*" have not been built and PM peak hr trip sum exceeds remaining vested trip level by 2 trips. It has yet to be determined how to allocate trips between remaining buildings.*	EyeHealth NW Medical Office (Pad 2)	Built	7.7 KSF				7	18	25
	*High Turnover Restaurant (Pad 1)	Not built	7.5 KSF				24	17	47*
	*Miller Paint store	Not built	5.0 KSF				6	6	15*
	Remaining Approved Total								85
Wilsonville Road Business Park Phase II	Phase 2 - office (2-story building on west parcel)	Partially Built	21.7 KSF				15	71	86
Universal Health Services	Mental Health Facility	Not built	62K						
Aspen Meadows 14-Lot Single-Family Subdivision at 28500 and 28530 SW Canyon Creek Rd. South	Residential	Partially Built, 2 homes built and occupied	14				7	5	12
SORT Bionergy **Minimal impact, no PM Peak indicated in traffic impact analysis*	Industrial	Not built					*	*	*
Charbonneau Range 40-lot Subdivision	Residential	Partially Built, 24 homes built and occupied	40 lots				10	6	16
Hilton Garden Inn	Hotel	Under construction	118 units				15	15	30
Frog Pond-Stafford Meadows	Residential	Under construction	46 units				30	16	46
Frog Pond-Frog Pond Meadows	Residential	Under construction	128 net new sf residential (137-9 existing)				81	48	129
Frog Pond-Morgan Farm	Residential	Under construction	80 units				51	29	80
Fir Avenue Commons	Residential	Under construction	10 units				7	3	10
Aspen Meadows II	Residential	Not built	5 units				2	3	5
Family Fun Center Expansion 2018	Commercial	Under construction	16 bowling lanes - 8 batting cages				4	-1	3

Grace Chapel	Religious	Not built	Replace commercial college with larger church including 11,705 addition				-71	-29	-100

Stage II Approved – Villebois													
Project	Phase	Status	Land Use					Total PM Peak Trips	Trip Allocation Percentage		Net New (Primary + Diverted) PM Peak Hour Trips not yet active		
			SF	Town.	Apt.	Retail	School		Internal	Pass-By	In	Out	Total
North (Entirety)	Residential	Partially built, 330 homes sold and occupied	468								88	50	138
Central	Residential	Partially Built, 699 homes (96 single family, 238 condo/row homes, 365 apartments) occupied	102	391	365	8.5 KSF					87	49	136
FOR REFERENCE SAP EAST			537	42									
FOR REFERENCE SAP SOUTH (Includes PDP 7 Grande Pointe)			560										

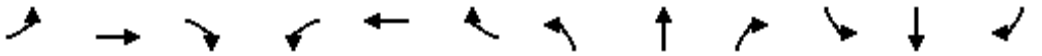
Pending Projects for Which Traffic Analysis has been completed (except Villebois)										
Project	Land Use	Status	Size	Total PM Peak T	Trip Allocation Percentage			Net New (Primary) PM Peak Hour Trips		
					Internal	Pass-By	Diverted	In	Out	Total
Industrial Focus (D.P. Nicoli)	Industrial	Under land use review	128 net new sf residential (137-9 existing)					81	48	129

Appendix E – HCM Analysis Existing + Project AM Results



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	542	34	17	360	56	177	35	19	30	31	279
Future Volume (vph)	436	542	34	17	360	56	177	35	19	30	31	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.5	4.5		4.0	4.0	4.5
Lane Util. Factor	0.97	0.95		1.00	0.95		*0.95	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (prot)	3335	3402		1703	3328		1681	3212		1770	1538	1482
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (perm)	3335	3402		1703	3328		1681	3212		1770	1538	1482
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	454	565	35	18	375	58	184	36	20	31	32	291
RTOR Reduction (vph)	0	3	0	0	10	0	0	15	0	0	119	147
Lane Group Flow (vph)	454	597	0	18	423	0	92	133	0	31	44	13
Confl. Peds. (#/hr)	7		4	4		7			8	8		
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	19.0	58.5		2.9	42.4		12.8	12.8		8.3	8.3	8.3
Effective Green, g (s)	19.0	59.0		2.9	42.9		12.8	12.8		8.8	8.8	8.3
Actuated g/C Ratio	0.19	0.59		0.03	0.43		0.13	0.13		0.09	0.09	0.08
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	633	2007		49	1427		215	411		155	135	123
v/s Ratio Prot	c0.14	c0.18		0.01	0.13		c0.05	0.04		0.02	c0.03	
v/s Ratio Perm												0.01
v/c Ratio	0.72	0.30		0.37	0.30		0.43	0.32		0.20	0.32	0.11
Uniform Delay, d1	38.0	10.2		47.6	18.7		40.2	39.7		42.3	42.8	42.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.6	0.4		3.4	0.5		1.0	0.3		0.5	1.0	0.3
Delay (s)	41.6	10.6		51.0	19.2		41.2	40.0		42.8	43.8	42.7
Level of Service	D	B		D	B		D	D		D	D	D
Approach Delay (s)		23.9			20.5			40.5			43.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	364	595	44	36	533	61	227	63	34	49	54	545
Future Volume (vph)	364	595	44	36	533	61	227	63	34	49	54	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.5	4.5		4.0	4.0	4.5
Lane Util. Factor	0.97	0.95		1.00	0.95		*0.95	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (prot)	3433	3493		1787	3511		1715	3271		1787	1566	1519
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (perm)	3433	3493		1787	3511		1715	3271		1787	1566	1519
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	371	607	45	37	544	62	232	64	35	50	55	556
RTOR Reduction (vph)	0	4	0	0	6	0	0	15	0	0	164	262
Lane Group Flow (vph)	371	648	0	37	600	0	116	200	0	50	147	38
Confl. Peds. (#/hr)	9		7	7		9			12	12		
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	16.6	60.6		5.1	49.1		13.0	13.0		13.8	13.8	13.8
Effective Green, g (s)	16.6	61.1		5.1	49.6		13.0	13.0		14.3	14.3	13.8
Actuated g/C Ratio	0.15	0.56		0.05	0.45		0.12	0.12		0.13	0.13	0.13
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	518	1940		82	1583		202	386		232	203	190
v/s Ratio Prot	c0.11	0.19		0.02	c0.17		c0.07	0.06		0.03	c0.09	
v/s Ratio Perm												0.02
v/c Ratio	0.72	0.33		0.45	0.38		0.57	0.52		0.22	0.73	0.20
Uniform Delay, d1	44.5	13.3		51.1	20.0		45.9	45.6		42.8	46.0	43.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.4	0.5		2.9	0.7		3.2	0.9		0.3	11.5	0.4
Delay (s)	48.8	13.8		53.9	20.7		49.1	46.4		43.2	57.4	43.5
Level of Service	D	B		D	C		D	D		D	E	D
Approach Delay (s)		26.5			22.6			47.4			50.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Appendix F – HCM Analysis Existing + Project PM Results

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	137	29	317	140	16	178
Future Vol, veh/h	137	29	317	140	16	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	2	2
Mvmt Flow	151	32	348	154	18	196

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	559	251	0	0	502	0
Stage 1	425	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.88	6.98	-	-	4.14	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	-	-	2.22	-
Pot Cap-1 Maneuver	454	743	-	-	1059	-
Stage 1	621	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	446	743	-	-	1059	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	446	743	1059	-
HCM Lane V/C Ratio	-	-	0.338	0.043	0.017	-
HCM Control Delay (s)	-	-	17.1	10.1	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0.1	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	468	519	34	17	345	73	177	35	19	55	31	299
Future Volume (vph)	468	519	34	17	345	73	177	35	19	55	31	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.5	4.5		4.0	4.0	4.5
Lane Util. Factor	0.97	0.95		1.00	0.95		*0.95	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.97		1.00	0.98		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (prot)	3335	3401		1703	3304		1681	3212		1770	1534	1482
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (perm)	3335	3401		1703	3304		1681	3212		1770	1534	1482
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	488	541	35	18	359	76	184	36	20	57	32	311
RTOR Reduction (vph)	0	3	0	0	15	0	0	15	0	0	130	153
Lane Group Flow (vph)	488	573	0	18	420	0	92	133	0	57	45	15
Confl. Peds. (#/hr)	7		4	4		7			8	8		
Confl. Bikes (#/hr)			1			1						1
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	21.0	57.9		2.9	39.8		12.8	12.8		8.9	8.9	8.9
Effective Green, g (s)	21.0	58.4		2.9	40.3		12.8	12.8		9.4	9.4	8.9
Actuated g/C Ratio	0.21	0.58		0.03	0.40		0.13	0.13		0.09	0.09	0.09
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	700	1986		49	1331		215	411		166	144	131
v/s Ratio Prot	c0.15	0.17		0.01	c0.13		c0.05	0.04		c0.03	0.03	
v/s Ratio Perm												0.01
v/c Ratio	0.70	0.29		0.37	0.32		0.43	0.32		0.34	0.32	0.11
Uniform Delay, d1	36.6	10.4		47.6	20.4		40.2	39.7		42.4	42.3	41.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.4		3.4	0.6		1.0	0.3		0.9	0.9	0.3
Delay (s)	39.4	10.8		51.0	21.0		41.2	40.0		43.3	43.2	42.2
Level of Service	D	B		D	C		D	D		D	D	D
Approach Delay (s)		23.9			22.2			40.5			42.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	5	86	40	5	16	113	410	58	9	259	47
Future Vol, veh/h	31	5	86	40	5	16	113	410	58	9	259	47
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	4	4	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	3	3	3
Mvmt Flow	32	5	89	41	5	16	116	423	60	9	267	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	757	1030	164	847	1024	246	317	0	0	487	0	0
Stage 1	311	311	-	689	689	-	-	-	-	-	-	-
Stage 2	446	719	-	158	335	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.54	6.54	6.94	4.18	-	-	4.16	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.52	4.02	3.32	2.24	-	-	2.23	-	-
Pot Cap-1 Maneuver	298	234	855	255	234	754	1226	-	-	1065	-	-
Stage 1	677	659	-	402	445	-	-	-	-	-	-	-
Stage 2	564	433	-	828	641	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	263	209	851	205	209	751	1224	-	-	1061	-	-
Mov Cap-2 Maneuver	263	209	-	205	209	-	-	-	-	-	-	-
Stage 1	612	652	-	363	401	-	-	-	-	-	-	-
Stage 2	493	391	-	727	635	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.6	23	1.6	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1224	-	-	502	205	751	1061	-	-
HCM Lane V/C Ratio	0.095	-	-	0.251	0.226	0.022	0.009	-	-
HCM Control Delay (s)	8.2	-	-	14.6	27.6	9.9	8.4	-	-
HCM Lane LOS	A	-	-	B	D	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1	0.8	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	8	59	89	11	52	13	85	3	9	14	8	29
Future Vol, veh/h	8	59	89	11	52	13	85	3	9	14	8	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	7	7	7	4	4	4	0	0	0	0	0	0
Mvmt Flow	10	74	111	14	65	16	106	4	11	18	10	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	185	0	0	274	259	131	259	306	73
Stage 1	-	-	-	-	-	-	150	150	-	101	101	-
Stage 2	-	-	-	-	-	-	124	109	-	158	205	-
Critical Hdwy	4.17	-	-	4.14	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.263	-	-	2.236	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1486	-	-	1378	-	-	683	649	924	698	611	995
Stage 1	-	-	-	-	-	-	857	777	-	910	815	-
Stage 2	-	-	-	-	-	-	885	809	-	849	736	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1486	-	-	1378	-	-	641	637	923	676	600	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	641	637	-	676	600	-
Stage 1	-	-	-	-	-	-	850	771	-	903	807	-
Stage 2	-	-	-	-	-	-	834	801	-	827	730	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.1	11.7	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	660	1486	-	-	1378	-	-	807
HCM Lane V/C Ratio	0.184	0.007	-	-	0.01	-	-	0.079
HCM Control Delay (s)	11.7	7.4	0	-	7.6	-	-	9.8
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.3

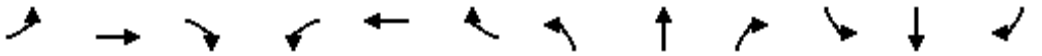
Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	159	42	245	119	45	421
Future Vol, veh/h	159	42	245	119	45	421
Conflicting Peds, #/hr	0	0	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	175	46	269	131	49	463

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	672	207	0	0	407	0
Stage 1	342	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.1	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	389	799	-	-	1163	-
Stage 1	691	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	370	794	-	-	1156	-
Mov Cap-2 Maneuver	370	-	-	-	-	-
Stage 1	687	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.3	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	370	794	1156	-
HCM Lane V/C Ratio	-	-	0.472	0.058	0.043	-
HCM Control Delay (s)	-	-	23.1	9.8	8.3	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.4	0.2	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	382	582	44	36	522	73	227	63	34	63	54	557
Future Volume (vph)	382	582	44	36	522	73	227	63	34	63	54	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.5	4.5		4.0	4.0	4.5
Lane Util. Factor	0.97	0.95		1.00	0.95		*0.95	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (prot)	3433	3492		1787	3498		1715	3271		1787	1566	1519
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (perm)	3433	3492		1787	3498		1715	3271		1787	1566	1519
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	390	594	45	37	533	74	232	64	35	64	55	568
RTOR Reduction (vph)	0	4	0	0	8	0	0	15	0	0	167	268
Lane Group Flow (vph)	390	635	0	37	599	0	116	200	0	64	149	39
Confl. Peds. (#/hr)	9		7	7		9			12	12		
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	17.2	60.4		5.1	48.3		13.0	13.0		14.0	14.0	14.0
Effective Green, g (s)	17.2	60.9		5.1	48.8		13.0	13.0		14.5	14.5	14.0
Actuated g/C Ratio	0.16	0.55		0.05	0.44		0.12	0.12		0.13	0.13	0.13
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	536	1933		82	1551		202	386		235	206	193
v/s Ratio Prot	c0.11	0.18		0.02	c0.17		c0.07	0.06		0.04	c0.10	
v/s Ratio Perm												0.03
v/c Ratio	0.73	0.33		0.45	0.39		0.57	0.52		0.27	0.72	0.20
Uniform Delay, d1	44.2	13.4		51.1	20.5		45.9	45.6		43.0	45.8	43.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	0.5		2.9	0.7		3.2	0.9		0.5	11.2	0.4
Delay (s)	48.8	13.9		53.9	21.3		49.1	46.4		43.5	57.1	43.4
Level of Service	D	B		D	C		D	D		D	E	D
Approach Delay (s)		27.1			23.2			47.4			49.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	12	78	63	7	41	84	302	106	37	491	50
Future Vol, veh/h	21	12	78	63	7	41	84	302	106	37	491	50
Conflicting Peds, #/hr	0	0	5	5	0	0	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	22	13	83	67	7	44	89	321	113	39	522	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	971	1246	295	912	1216	222	577	0	0	439	0	0
Stage 1	629	629	-	561	561	-	-	-	-	-	-	-
Stage 2	342	617	-	351	655	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	210	175	707	232	183	788	999	-	-	1124	-	-
Stage 1	442	478	-	485	513	-	-	-	-	-	-	-
Stage 2	652	484	-	644	466	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	173	153	703	173	160	785	997	-	-	1119	-	-
Mov Cap-2 Maneuver	173	153	-	173	160	-	-	-	-	-	-	-
Stage 1	402	460	-	440	465	-	-	-	-	-	-	-
Stage 2	552	439	-	531	449	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	29.5	1.5	0.5
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	997	-	-	357	172	785	1119	-	-
HCM Lane V/C Ratio	0.09	-	-	0.331	0.433	0.056	0.035	-	-
HCM Control Delay (s)	9	-	-	20	41	9.9	8.3	-	-
HCM Lane LOS	A	-	-	C	E	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.4	2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	5.1

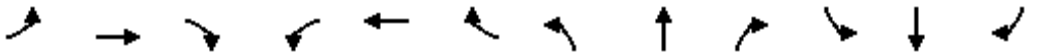
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	79	74	19	102	18	81	5	20	10	13	18
Future Vol, veh/h	11	79	74	19	102	18	81	5	20	10	13	18
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	4	4	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	16	116	109	28	150	26	119	7	29	15	19	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	176	0	0	225	0	0	447	435	175	444	476	165
Stage 1	-	-	-	-	-	-	203	203	-	219	219	-
Stage 2	-	-	-	-	-	-	244	232	-	225	257	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1400	-	-	1344	-	-	525	517	874	528	491	885
Stage 1	-	-	-	-	-	-	804	737	-	788	726	-
Stage 2	-	-	-	-	-	-	764	716	-	782	699	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1400	-	-	1344	-	-	480	499	871	490	474	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	480	499	-	490	474	-
Stage 1	-	-	-	-	-	-	794	727	-	778	711	-
Stage 2	-	-	-	-	-	-	705	701	-	736	690	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.1	14.7	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	525	1400	-	-	1344	-	-	601
HCM Lane V/C Ratio	0.297	0.012	-	-	0.021	-	-	0.1
HCM Control Delay (s)	14.7	7.6	0	-	7.7	-	-	11.7
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0.3

Appendix G – HCM Analysis Existing + Stage II PM Results



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	402	609	53	39	538	65	235	65	37	53	56	578
Future Volume (vph)	402	609	53	39	538	65	235	65	37	53	56	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.5	4.5		4.0	4.0	4.5
Lane Util. Factor	0.97	0.95		1.00	0.95		*0.95	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (prot)	3433	3486		1787	3507		1715	3267		1787	1566	1519
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (perm)	3433	3486		1787	3507		1715	3267		1787	1566	1519
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	410	621	54	40	549	66	240	66	38	54	57	590
RTOR Reduction (vph)	0	4	0	0	7	0	0	16	0	0	166	277
Lane Group Flow (vph)	410	671	0	40	608	0	120	208	0	54	162	42
Confl. Peds. (#/hr)	9		7	7		9			12	12		
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	17.8	59.5		5.2	46.9		13.2	13.2		14.6	14.6	14.6
Effective Green, g (s)	17.8	60.0		5.2	47.4		13.2	13.2		15.1	15.1	14.6
Actuated g/C Ratio	0.16	0.55		0.05	0.43		0.12	0.12		0.14	0.14	0.13
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	555	1901		84	1511		205	392		245	214	201
v/s Ratio Prot	c0.12	0.19		0.02	c0.17		c0.07	0.06		0.03	c0.10	
v/s Ratio Perm												0.03
v/c Ratio	0.74	0.35		0.48	0.40		0.59	0.53		0.22	0.76	0.21
Uniform Delay, d1	43.9	14.1		51.1	21.6		45.8	45.5		42.2	45.7	42.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.8	0.5		3.1	0.8		3.5	1.1		0.3	13.6	0.4
Delay (s)	48.7	14.6		54.1	22.4		49.3	46.6		42.5	59.3	42.9
Level of Service	D	B		D	C		D	D		D	E	D
Approach Delay (s)		27.5			24.3			47.5			50.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix H – HCM Analysis Existing + Stage II + Project PM Results

Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	162	42	282	125	45	455
Future Vol, veh/h	162	42	282	125	45	455
Conflicting Peds, #/hr	0	0	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	178	46	310	137	49	500

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	734	231	0	0	454	0
Stage 1	386	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.1	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	355	771	-	-	1117	-
Stage 1	656	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	337	767	-	-	1110	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	656	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.5	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	337	767	1110	-
HCM Lane V/C Ratio	-	-	0.528	0.06	0.045	-
HCM Control Delay (s)	-	-	27	10	8.4	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	2.9	0.2	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	596	53	39	527	77	235	65	37	67	56	590
Future Volume (vph)	420	596	53	39	527	77	235	65	37	67	56	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.5	4.5		4.0	4.0	4.5
Lane Util. Factor	0.97	0.95		1.00	0.95		*0.95	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (prot)	3433	3485		1787	3495		1715	3267		1787	1565	1519
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.97		0.95	1.00	1.00
Satd. Flow (perm)	3433	3485		1787	3495		1715	3267		1787	1565	1519
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	429	608	54	40	538	79	240	66	38	68	57	602
RTOR Reduction (vph)	0	4	0	0	8	0	0	16	0	0	170	282
Lane Group Flow (vph)	429	658	0	40	609	0	120	208	0	68	164	43
Confl. Peds. (#/hr)	9		7	7		9			12	12		
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	18.2	59.4		5.2	46.4		13.2	13.2		14.7	14.7	14.7
Effective Green, g (s)	18.2	59.9		5.2	46.9		13.2	13.2		15.2	15.2	14.7
Actuated g/C Ratio	0.17	0.54		0.05	0.43		0.12	0.12		0.14	0.14	0.13
Clearance Time (s)	4.0	4.5		4.0	4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.0		2.5	4.0		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	568	1897		84	1490		205	392		246	216	202
v/s Ratio Prot	c0.12	0.19		0.02	c0.17		c0.07	0.06		0.04	c0.10	
v/s Ratio Perm												0.03
v/c Ratio	0.76	0.35		0.48	0.41		0.59	0.53		0.28	0.76	0.22
Uniform Delay, d1	43.8	14.1		51.1	21.9		45.8	45.5		42.5	45.6	42.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.4	0.5		3.1	0.8		3.5	1.1		0.4	13.9	0.4
Delay (s)	49.2	14.6		54.1	22.7		49.3	46.6		42.9	59.6	42.9
Level of Service	D	B		D	C		D	D		D	E	D
Approach Delay (s)		28.2			24.7			47.5			50.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	12	78	63	7	41	84	345	106	37	528	50
Future Vol, veh/h	21	12	78	63	7	41	84	345	106	37	528	50
Conflicting Peds, #/hr	0	0	5	5	0	0	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	22	13	83	67	7	44	89	367	113	39	562	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1034	1332	315	978	1302	245	617	0	0	485	0	0
Stage 1	669	669	-	607	607	-	-	-	-	-	-	-
Stage 2	365	663	-	371	695	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	189	156	687	208	162	762	966	-	-	1081	-	-
Stage 1	418	459	-	455	489	-	-	-	-	-	-	-
Stage 2	632	462	-	627	447	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	154	136	683	152	141	759	964	-	-	1076	-	-
Mov Cap-2 Maneuver	154	136	-	152	141	-	-	-	-	-	-	-
Stage 1	379	442	-	411	442	-	-	-	-	-	-	-
Stage 2	532	418	-	513	430	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	35.3	1.4	0.5
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	964	-	-	328	151	759	1076	-	-
HCM Lane V/C Ratio	0.093	-	-	0.36	0.493	0.057	0.037	-	-
HCM Control Delay (s)	9.1	-	-	22	50.1	10	8.5	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.6	2.3	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	11	85	74	19	105	18	81	5	20	10	13	18
Future Vol, veh/h	11	85	74	19	105	18	81	5	20	10	13	18
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	4	4	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	16	125	109	28	154	26	119	7	29	15	19	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	180	0	0	234	0	0	460	448	184	457	489	169
Stage 1	-	-	-	-	-	-	212	212	-	223	223	-
Stage 2	-	-	-	-	-	-	248	236	-	234	266	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1396	-	-	1333	-	-	515	509	864	517	482	880
Stage 1	-	-	-	-	-	-	795	731	-	784	723	-
Stage 2	-	-	-	-	-	-	760	713	-	774	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1333	-	-	471	492	861	479	466	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	471	492	-	479	466	-
Stage 1	-	-	-	-	-	-	785	721	-	774	708	-
Stage 2	-	-	-	-	-	-	701	698	-	728	683	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1	15	11.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	516	1396	-	-	1333	-	-	592
HCM Lane V/C Ratio	0.302	0.012	-	-	0.021	-	-	0.102
HCM Control Delay (s)	15	7.6	0	-	7.8	-	-	11.8
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0.1	-	-	0.3

Appendix I – Transportation System Plan Projects

Table 5-5. Higher Priority Projects (Southeast Quadrant)

Project		Description	Cost
Spot Improvements			
SI-04	Wilsonville Road/ Town Center Loop West Intersection Improvements	Widen the north leg of the intersection and install a second southbound right-turn lane (dual lanes)	$500,000
Standalone Pedestrian and Bicycle Improvements (Bikeways and Walkways)			
BW-08	Town Center Loop Pedestrian, Bicycle, and Transit Improvements	Create more direct connections between destinations within Town Center area, improve accessibility to civic uses and transit stops, retrofit sidewalks with curb ramps, highlight crosswalks with colored pavement, and construct other similar treatments that support pedestrian, bicycle, and transit access and circulation; also construct shared-use path along Town Center Loop West from Wilsonville Road to Parkway Avenue and restripe Town Center Loop East from Wilsonville Road to Parkway Avenue to a three-lane cross-section with bike facilities	$500,000
BW-09	Town Center Loop Bike/Pedestrian Bridge	Construct bike/pedestrian bridge over I-5 approximately aligned with Barber Street to improve connectivity of Town Center area with businesses and neighborhoods on west side of I-5; include aesthetic design treatments	$4,000,000
BW-10	French Prairie Drive Pathway	Construct 10-foot wide shared-use path along French Prairie Drive from Country View Lane to Miley Road or reconfigure existing roadway to remove a travel lane in each direction and add bicycle and pedestrian facilities	$1,140,000
Standalone Pedestrian and Bicycle Improvements (Safe Routes to School)			
SR-01	Boeckman Creek Primary Safe Routes to School Improvements	Construct a bicycle parking shelter near the school and a new 10 to 12-foot bike path on the south side of the existing sidewalk that meanders south of the tree line and connects to the existing marked crosswalk near the school parking lot	$65,000
Standalone Pedestrian and Bicycle Improvements (Local Trails)			
LT-01	Memorial Park Trail Improvements	Construct trails throughout Memorial Park, including the Memorial Park Center Loop Trail, the River Trail, Kolbe Homestead Trail, and Klein Homestead Trail	$595,000
Standalone Pedestrian and Bicycle Improvements (Regional Trails)			
RT-01B	Boeckman Creek Trail (South)	Construct north-south trail through east Wilsonville following Boeckman Creek, with connections to neighborhoods, parks, and intersecting roads (may need a boardwalk for various sections and would require a comprehensive public process)	$1,150,000 (Partial Regional funding)
RT-04	Waterfront Trail Improvements	Improve the condition of the shared-use path as it passes underneath the I-5 Boone Bridge by removing the Jersey barriers, installing bollards, widening the trail, adding appropriate pedestrian features such as benches and lighting, and altering the grade of the path underneath the underpass to make it more easily accessible	$125,000

Table 5-12. Additional Planned Projects (Southeast Quadrant)

Project		Description	Why Not Higher Priority?	Cost
Spot Improvements				
SI-P3	Miley Road/I-5 Southbound Ramp Improvements	Install traffic signal and southbound left-turn lane	Outside City's jurisdiction (ODOT facility) and no future Wilsonville growth expected; improvement needs would be triggered primarily by regional traffic	$750,000
SI-P4	Miley Road/Airport Road Intersection Improvements	Install traffic signal and northbound left-turn lane	Outside City's jurisdiction (Clackamas County facility) and no future Wilsonville growth expected; improvement needs would be triggered primarily by regional traffic	$750,000
Standalone Pedestrian and Bicycle Improvements (Bikeways and Walkways)				
BW-P4	Wilsonville Road Enhanced Pedestrian Crossing at Rose Lane	Install new pedestrian crossing adjacent to Rose Lane and nearby transit stops; potential crossing treatments include, but are not limited to, rectangular rapid flashing beacons (RRFBs), signage, etc.	Crossing need at this location is considered low at this time, and there is an existing pedestrian crossing and flasher to the west at Kolbe Lane that provides more direct access to Memorial Park and the Boeckman Creek Trail	$50,000
Standalone Pedestrian and Bicycle Improvements (Local Trails)				
LT-P5	New School Site Trail	Shared Use Path from Boeckman Creek Elementary School to planned school and park site, with possible connections to adjacent neighborhoods	Medium priority due to existing connections; will become important when school and park are constructed	$700,000
LT-P6	Park Access Trail	Low Volume Roadway accessed from Montgomery Way; would require extensive public process	Lower priority until after other critical trail and pathway connections are completed	$20,000
LT-P7	School Connection Trail	Construct the School Connection Trail identified in the Frog Pond Area Plan	Medium priority due to existing connections; will become important when school and park are constructed	$460,000
LT-P8	60th Avenue Trail	Construct the 60th Avenue Trail identified in the Frog Pond Area Plan	Medium priority due to existing connections; will become important when school and park are constructed	$240,000