

5134733 AGR

RecFee - \$196.00 Pages: 75 - LANDERHOLM  
Clark County, WA 01/06/2015 11:23

RETURN ADDRESS

Randall Printz  
Landerholm  
PO Box 1086  
Vanouver, WA. 98666

Please print neatly or type information  
Document Title(s)

Development Agreement

Reference Numbers(s) of related documents:

None

Additional Reference #'s on page \_\_\_\_\_

Grantor(s) (Last, First and Middle Initial)

City of Camas, Green Mountain Land LLC

Additional grantors on page \_\_\_\_\_

Grantee(s) (Last, First and Middle Initial)

City of Camas, Green Mountain Land LLC

Additional grantees on page \_\_\_\_\_

Legal Description (abbreviated form: i.e. lot, block plat or section, township, range, quarter/quarter)

Sections 17, 20 and 21 T2N, R3E

Additional legal is on page \_\_\_\_\_

Assessor's Property Tax Parcel/Account Number

172555-000, 172557-000, 172553-000, 172559-000, 173178-000  
172341-000, 171727-000, 171704-000 173165-000

Additional parcel #'s on page \_\_\_\_\_

The Auditor/Recorder will rely on the information provided on this form. The staff will not read the document to verify the accuracy or completeness of the indexing information provided herein.

I am requesting an emergency nonstandard recording for an additional fee as provided in RCW 36.18.010. I understand that the recording processing requirements may cover up or otherwise obscure some part of the text of the original document.

Stacey Shields  
Signature of Requesting Party

After recording, return to:

RANDALL B. PRINTZ  
Landerholm, Memovich,  
Lansverk & Whitesides, P.S.  
P.O. Box 1086  
Vancouver, WA 98666-1086

---

Space Above for Recording Information Only

### **DEVELOPMENT AGREEMENT**

This Development Agreement (the "Agreement") is made and entered into by and between the CITY OF CAMAS, a Washington Municipal Corporation (hereinafter referred to as the "City") and Green Mountain Land LLC (hereinafter referred to as the "Owner") (and collectively referred to as "Parties").

#### **RECITALS**

**WHEREAS**, Owner owns or controls certain real property which is located within the City's municipal boundary and which is more fully described in the attached Exhibit "A", (hereinafter referred to as the "Property"); and,

**WHEREAS**, the City and the Owner recognize this area will develop over a period of years and wish to provide predictability about the development standards that will apply to the Property over the course of its full development in order to increase efficient use of urban services; provide compatibility amongst the various phases of the Property as they develop; and to allow for substantial environmental review to occur prior to any development, recognizing that Washington's State Environmental Policy Act discourages piecemeal review; and,

**WHEREAS**, the City is a Washington Municipal Corporation with annexation powers, and land use planning and permitting authority over all land within its corporate limits; and,

**WHEREAS**, the Washington State Legislature has authorized the execution of Development Agreements between local governments and a person having ownership or control of real property within its jurisdiction pursuant to RCW 36.70B.170(1); and,

DEVELOPMENT AGREEMENT  
Green Mountain Land, LLC Page - 1 - 1063638

**WHEREAS**, pursuant to RCW 36.70B.170, a Development Agreement may set forth the development standards and other provisions that shall apply to, govern and vest the development, use and mitigation of the development of real property for the duration specified in the agreement; which statute provides:

(1) A local government may enter into a Development Agreement with a person having ownership or control of real property within its jurisdiction. A city may enter into a development agreement for real property outside its boundaries as part of a proposed annexation or a service agreement. A development agreement must set forth the development standards and other provisions that shall apply to and govern and vest the development, use, and mitigation of the development of the real property for the duration specified in the agreement. A development agreement shall be consistent with applicable development regulations adopted by a local government planning under chapter 36.70A RCW; and

**WHEREAS**, the legislative findings supporting the enactment of this section provide:

The legislature finds that the lack of certainty of the approval of development projects can result in a waste of public and private resources escalate housing costs for consumers and discourage the commitment to comprehensive planning which would make maximum efficient use of resources at the least economic cost to the public. Assurance to a development project applicant that upon government approval the project may proceed in accordance with existing policies and regulations, and subject to conditions of approval, all as set forth in a development agreement, will strengthen the public planning process, encourage private participation and comprehensive planning, and reduce the economic cost of development. Further, the lack of public facilities and services is a serious impediment to development of new housing and commercial uses. Project applicants and local governments may include provisions and agreements whereby applicants are reimbursed over time for financing public facilities. It is the intent of the legislature by RCW 36.70B.170 through 36.70B.210 to allow local governments and owners and developers of real property to enter into development agreements; and

**WHEREAS**, for the purposes of this Agreement, "Development Standards" includes, but is not limited to, all of the standards listed in RCW 36.70B.170(3); and,

**NOW, THEREFORE, THE PARTIES HERETO AGREE AS FOLLOWS:**

**Section 1. Development Agreement.** This Agreement is a Development Agreement to be implemented under the authority of and in accordance with RCW 36.70B.170 through RCW 36.70B.210. It shall become a contract between the Owner and the City upon its

DEVELOPMENT AGREEMENT  
Green Mountain Land, LLC Page - 2 -1063638

approval by ordinance or resolution following a public hearing as provided for in RCW 36.70B.170; and upon execution by all parties.

**Section 2. Term of Agreement.** This Agreement shall be valid through December 31, 2029; unless extended or terminated by mutual consent of the Parties; provided however, if this Agreement or any initial land use applications related to the Property and filed within one year of the effective date of this Agreement, are appealed, the term of this Agreement shall be tolled for the time during which the appeal is pending or 18 months, whichever is less.

**Section 3. Previous Agreements.** The parties agree that the Pre-Annexation Agreement dated May 22, 2008 and recorded under Clark County Auditor's No. 4458438 and the Agreement dated December 21, 2009, between GM Camas LLC and the City, recorded under Clark County Auditor's No. 4636619 are intended to be completely superseded by this Agreement with respect to the Property and those agreements will no longer apply to the Property or be binding on the parties.

**Section 4. Vesting.** Any land use applications submitted with respect to the Property during the term of this Amendment, shall be vested to: (1) the following zoning, land use regulations and Development Standards in effect on the effective date of this Agreement, unless otherwise provided for in this Agreement: CMC title 13 Divisions I, II, and IV; CMC title 14.02.050 and resolution 1193 adopting the 2012 SMMWW; CMC title 16.01-16.21; CMC 16.31; CMC Title 17 and CMC Title 18. Any land use approvals affecting the Property issued after the effective date of this Agreement shall remain in effect during the term of this Agreement, regardless of the time period that they would have otherwise been valid for; provided however, that preliminary plat approvals shall be valid for a period of seven years from the date of the approval, regardless of whether the end of such seven years occurs during or after the term of this Agreement. Nothing in this section shall preclude the City from extending such preliminary plat approval beyond seven years if the City determines such act is appropriate. An archeological pre-determination report shall be required for the project with an application for a Planned Residential Development. The City, based upon review of the archeological predetermination report, may require additional surveys, studies, or mitigation. The City is currently considering amendments to its zoning code that would (a) expressly provide for commercially zoned property to be included in a Planned Residential Development under certain prescribed conditions. While nothing in this Amendment shall be construed as indicating or requiring that the City will adopt such regulations, in the event that the City does adopt such regulations, the Property may be developed utilizing those regulations without waiving any of the rights vested under this Agreement. The vesting provided for under this Agreement shall not apply to System Development Charges, Impact Fees or application or review fees.

**Section 5. Master Plan.** Attached as Exhibit "B" and incorporated by reference herein, is a Mixed Use Master Plan (Master Plan). The Master Plan will provide the Parties with predictability regarding the future development of the Property including any associated

offsite improvements related to transportation or utilities. Future development of the Property shall be generally consistent with the Master Plan. Planning standards that the Owner may utilize for the Master Plan are provided for in Section 5.6. The property shall be developed with a maximum of 1,300 dwelling units and reserve a net 8.8 acres of undeveloped land for construction of commercial uses within the Urban Village area. At the sole discretion of the City, for each additional full acre of net developed commercial land within the Urban Village area beyond the initial 8.8 acres, an additional residential bonus of 40 units may be granted and applied to the overall property. In no event, shall more than 1400 dwelling units be developed on the Property. It is contemplated by the parties that due to the number of years it will likely take the project to fully build out, changing market conditions, future urban growth boundary expansion considerations and other factors, the parties may wish to revisit some portions of the Master Plan, including raising the maximum number of residential units or commercial square footage. While nothing contained herein shall be construed to obligate either party to amend the Master Plan, it is recognized that future evolution of the City may warrant consideration of such issues.

**Section 5.1 SEPA.** Pursuant to the State Environmental Policy Act (SEPA), piecemeal environmental review is to be discouraged. As such, the Parties wish for SEPA review to be accomplished as part of the Agreement for as many of the Master Plan's potential adverse environmental impacts as can be reasonably analyzed, based upon current information submitted with this Agreement, including, but not limited to, the conceptual master plan, traffic study, tree analysis, GIS data as to the general presence of wetlands on some portions of the Property, ELS letter addressing off site impacts of storm water to surrounding plant and wetland communities. This may be done under the Consolidated Review provisions of SEPA. The SEPA checklist attendant with this Agreement identifies various potential adverse impacts including transportation, parks, trees, wetlands sewer, water and storm water. The Checklist also identifies a variety of technical reports or information that provides a basis for the proposed mitigation or partial mitigation of these impacts. It is the intent of this Agreement and its attendant SEPA process, to have the City issue a Threshold Determination (as that term is utilized in RCW 43.21C) on the identified impacts of the implementation of the Master Plan. Impacts that are identified at future stages of the development, i.e., Planned Residential Development approval or Preliminary Plat approval, that have been previously analyzed through this or other SEPA processes, shall not be re-analyzed; provided the future identified adverse impacts are substantially similar to and of the same or less intensity as those previously analyzed under this or other SEPA processes. Nothing in this Section shall preclude the City from requesting information on the potential adverse environmental impacts associated with a specific preliminary plat application that have not been previously analyzed as required under the State Environmental Policy Act.

**Section 5.2 Parks.** The Master Plan includes an extensive park/open space/trail network that can easily be accessed on foot, bike or by auto. This network provides developed and undeveloped areas of active and passive recreation, connected by a trail system that runs throughout the project. Attached as Exhibit "C", which is incorporated by reference

herein, is a parks/open space/trail plan and summary sheet which describes the major components of the recreational network. It is anticipated that, (assuming appropriate amendments are made to the Parks Plan and Park Impact Fee program that provides PIF credits in an amount acceptable to the Owner) future development phases of the Property shall implement the applicable parks/open space/trail portion of the Master Plan, or something substantially similar thereto. The Parties agree that a park in this area that would in whole or in part be Park Impact Fee Creditable. However, as of the date of this Agreement, specificity as to the size of the park or the extent of improvements of the park; or the amount of Park Impact Fee credits that would be available for park land dedication or construction of improvements has not yet been determined. Because of these factors, the Parties agree to work together through the Parks Plan update and Park Impact Fee program update to arrive at an agreement regarding the size and improvements of the park to be created by the Owner and the amount of Park Impact fee Credits that would be issued to the Owner for the construction and dedication of the park.

**Section 5.3 Transportation.** Kittelson and Associates Transportation Engineers and the City have analyzed the transportation impacts of the full development of the Property as depicted in the Master Plan. The attached analysis includes consideration of the transportation impacts of 1,300 hundred residential units. The Property at full development will increase the existing number of PM peak hour trips on the transportation system by 1,365 trips. Based upon Kittelson's and the City's analysis, the future development of the Property (PRD and Preliminary Plat approval) shall be conditioned upon the mitigation measures and timing of construction as provided for in Exhibit "D", which is attached hereto and incorporated herein. The Property shall be vested during the term of this Agreement with 1,365 PM peak hour and 13,980 average daily trips and no additional off site transportation mitigation or analysis will be required during the term of this Agreement; provided however, that in the event the Owner proposes uses or intensities of uses that would cause the total number of PM Peak or Average Daily trips to exceed the number of trips analyzed as part of this Agreement, then the City may require additional transportation analysis and lawful mitigation. The transportation vesting provided for in this Section shall be subject to the mitigation measures and the timing provided for in Exhibit "D". Some of the transportation improvements (either on Goodwin Road, Ingle Road or off site) may be on the City's Transportation Capital Facility Plan. The Owner or successor in interest to the Property, upon construction of such qualifying transportation improvement, shall receive Transportation Impact Fee Credits, but only if such improvements are eligible for Credits under the City's applicable Capital Facilities Plan and Transportation Impact Fee programs.

**Section 5.4 Tree Preservation.** The Property has been previously logged and portions cleared for a golf course, but there remain a large number of trees of varying species on the Property. In order to enhance the ability to preserve trees in a predictable manner, the Parties wish to provide a comprehensive tree preservation plan for the future development of the Property, rather than through a piece meal approach whereby tree preservation is determined on a phase by phase basis as the Property develops over many years. In addition to

the preservation of nearly five thousand trees, over 2,000 trees will be planted in conjunction with the development of the property consistent with the City's landscape requirements. Attached as Exhibit "E", which is incorporated by reference herein, is a Comprehensive Tree Preservation Plan for the Master Plan. Future development phases of the Property shall implement and be consistent with the Comprehensive Tree Preservation Plan for each tree area identified in Exhibit E, or something substantially similar thereto, as approved by the City. Compliance with the Tree Preservation Plan provided for in Exhibit "E" in a future PRD or other design or application for the development of the Property, will be deemed to satisfy the City's tree preservation regulations for the project as whole, including CMC 17.19.030. At the time any Preliminary Plat or Site Plan Review application, is applied for, the development applicant shall provide a report from a certified arborist or biologist regarding the health of the trees to remain in the development applied for to assure that no trees will be left standing that will cause an unreasonable risk of harm to future residents of the project.

**Section 5.5 Planning Standards.** The Parties: in recognizing the critical area constraints on the Property, particularly slopes and wetlands; the desire to reduce impacts to those critical areas; the Property's variety of different zoning designations, densities and uses; and, the desire to create a neighborhood environment that will offer a variety of housing types that will be functionally integrated through pedestrian, open space and trail connectivity, have created planning standards to enhance the Property's ability to achieve these and other goals. These standards may be used in addition to those that would otherwise be available through the City's PRD or density transfer provisions. Attached as Exhibit "F" is a set of these Planning Standards relating to various identified portions of the Conceptual Master Plan that may be used in the development of the property.

**Section 5.6 Existing Covenant** The parties agree the existing Conservation Covenant, recorded with the Clark County auditor under file #9608010075, shall expire and no longer apply to the Property upon approval of planned Residential Development of the entire property. Such PRD application shall be reviewed in absence of consideration of the covenant, but instead evaluate critical areas based upon current analysis and regulations. Notwithstanding the expiration of the Conservation covenant, the City may, as part of a development review process, require separate conservation covenants to be recorded as part of mitigating any critical or sensitive area impacts.

**Section 6 Storm Water Regulations.** With respect to Storm water Standards only, during the term of this Agreement the Property shall adhere to and be regulated by the rules and regulations and ordinances that are in effect on the date of this Agreement; specifically, CMC title 14.02.050 and resolution 1193 adopting the 2012 SMMWW. The Parties recognize that there may be opportunities for regional storm water strategies or facilities in the North Lacamas Lake area. The Parties agree to continue to explore with each other and with interested third parties options for regional storm water strategies / facilities in this area.

DEVELOPMENT AGREEMENT  
Green Mountain Land, LLC Page - 6 -1063638

**Section 6.1.** The City shall have no liability for any damages or losses suffered by the Owner or the Owner's successors if a federal or state agency takes action that voids, nullifies or preempts the City's agreement to permit vesting under this Agreement. Owner and Owner's successors shall further indemnify and hold harmless the City of Camas from any and all liability, including third party liability, under any applicable state or federal regulations including, but not limited to, the Clean Water Act, for any actual or alleged violation of said regulations arising from the City's agreement to allow the vesting described in this Section 6.1 or in the event said third party or agency challenges the adoption of this Agreement within the applicable timeframes. In such event, the City, in its sole discretion, may require the owner or the owner successors to post a bond in an amount deemed reasonably sufficient to cover all costs and expenses associated with any claim or action for liability as described herein, including reasonable attorney's fees to be incurred by the City in defending any third party claim. Upon notice of any claim or action for liability against City relating to this Section, the City shall timely notify Owner or Owner's successors of their duties for indemnification of the City. Within ten (10) days of such notice, Owner may, at Owner's sole discretion, revoke its vested rights to the City's current storm water standards arising under this section by giving written notice of such revocation to the City. Upon such revocation, the Owner shall have no further liability to the City or obligation to indemnify the City. The Owner may choose to waive the vesting provided for in Section 6, if it notifies the City in writing. In that event, any fully complete development application submitted to the City and relating to the Property, shall vest to the storm water rules and regulations in effect at the time such application is submitted to the City. If the Owner chooses to waive the vesting provided for in Section 6, then all vested rights created in Section 6, shall become null and void, but such choice shall not affect any other provisions of this Agreement.

**Section 7 Streetscape.** Owner agrees to incorporate into its development application submittal package streetscape standards for primary streets within the Property addressing street specifications, tree spacing and species, sidewalk separation, trash receptacles, benches and other street amenities that will create an inviting, safe passage for not only vehicular but pedestrian traffic. Owner streetscape standards will be consistent with the streetscape standards identified in Exhibit "G" or to the adopted streetscape standards, at the City's sole discretion, at the time of development approval. At the time of application, Owner shall further be required to meet the current City minimum Street standards in CMC 17.19 and the Camas Design Standards Manual.

**Section 8 Significant Views.** The property includes land (Green Mountain) that is recognized as an important scenic and forested backdrop to Lacamas Lake as viewed from roads and vistas around the lake, which in turn plays a role in defining the City's character. The City's Comprehensive Plan identifies the goal of "preserving the scenic and aesthetic quality of shoreline areas and vistas to the greatest extent possible." The Comprehensive Plan also identifies as a strategies to achieve these goals: establishment and maintenance of a permanent open space network and greenways; and, preserving the visual integrity of the wooded hillsides that provide the backdrop for the City; including the preservation of natural



vegetation, minimizing disruption of soils and slopes, maintaining drainage patterns and encouraging wildlife habitats. As such, any development application under this Amendment shall comply with CMC 16.33 including any necessary mitigation plan, prepared and reviewed in accordance with CMC 16.33. Compliance with this section shall include, but not be limited to, review of any Development Application for consistency with the policies under CMC Section 16.33.010(B) and may be conditioned or denied to mitigate views impacts consistent with CMC Section 16.33.010(B)(4), (5).

**Section 9 Golf Course.** The parties acknowledge that a portion of the property is currently utilized as a golf course and related uses, subject to a conditional use permit. Nothing contained within this Amendment shall be construed as an indication on the part of the City that such use is prohibited or constrained in any manner and such use may continue after the execution of this Agreement.

**Section 10. Remedies.** Should a disagreement arise between the City and Developer regarding the interpretation and application of this Agreement, the parties agree to attempt to resolve the disagreement by first meeting and conferring. If such meeting proves unsuccessful to resolve the dispute, the disagreement may be resolved by judicial action filed in the Clark County Superior Court.

**Section 11. Performance.** Failure by either party at any time to require performance by the other party of any of the provisions hereof shall in no way affect the parties' rights hereunder to enforce the same, nor shall any waiver by a party of the breach hereof be held to be a waiver of any succeeding breach or a waiver of this non-waiver clause.

**Section 12. Venue.** This Agreement shall be construed in accordance with and, governed by, the laws of the State of Washington. The parties agree to venue in the Superior Court for Clark County, State of Washington, to resolve any disputes that may arise under this Agreement.

**Section 13. Severability.** If any portion of this Agreement shall be invalid or unenforceable to any extent, the validity of the remaining provisions shall not be affected thereby.

**Section 14. Inconsistencies.** If any provisions of the Camas Municipal Code are deemed inconsistent with the provisions of this Agreement, the provisions of this Agreement shall prevail.

**Section 15. Binding on Successors and Recording.** The rights and obligations created by this Agreement are assignable and shall be binding upon and inure to the benefit of Owner, the City, and their respective heirs, successors and assigns. Only Owner and the City or their assigns shall have the right to enforce the terms of this Amendment. This Agreement shall be recorded against the real property indicated on Exhibit "A" with the Clark County Auditor.

DEVELOPMENT AGREEMENT  
Green Mountain Land, LLC Page - 8 -1063638

**Section 16. Recitals.** Each of the recitals contained herein are intended to be, and are incorporated as, covenants between the parties and shall be so construed.

**Section 17. Amendments.** This Agreement may only be amended by mutual agreement of the parties. Pursuant to RCW 36.70B.170(4), the City reserves the authority to impose new or different regulations to the extent required by a serious threat to public health and safety.

**Exhibits:**

Exhibit A: Legal Description of Property  
Exhibit B: Master Plan  
Exhibit C: Park Plan  
Exhibit D: Transportation Mitigation  
Exhibit E: Tree Plan  
Exhibit F: Planning Standards  
Exhibit G: Streetscape Standards

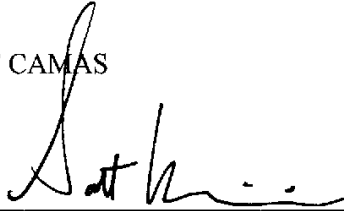
IN WITNESS WHEREOF, the parties hereto have caused this  
Amendment to be executed as of the dates set forth below:

CITY OF CAMAS

GREEN MOUNTAIN LAND LLC

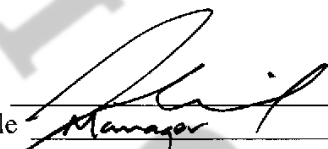
By

Title

  
Mayor

By

Title

  
Manager

STATE OF WASHINGTON )

) ss.

County of Clark )

I certify that I know or have satisfactory evidence that John O'Neil is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute this instrument and acknowledged it as the Manager of GREEN MOUNTAIN LAND, LLC to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DEVELOPMENT AGREEMENT

Green Mountain Land, LLC Page - 9 -1063638

DATED: December 22, 2014.

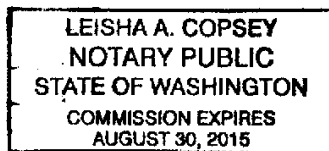


Linda N. Gill  
NOTARY PUBLIC for the State of Washington,  
Residing in the County of Clark  
My Commission Expires: 5-28-16

STATE OF WASHINGTON )  
County of Clark ) ss.

I certify that I know or have satisfactory evidence that Scott Higgins is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute this instrument and acknowledged it as the Mayor of the CITY OF CAMAS, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: December 16, 2014.



Leisha A. Copsey  
NOTARY PUBLIC for the State of Washington,  
Residing in the County of Clark  
My Commission Expires: 8/30/15

DEVELOPMENT AGREEMENT  
Green Mountain Land, LLC Page - 10 -1063638



LAND SURVEYORS  
ENGINEERS

(360) 693-1385  
1111 Broadway  
Vancouver, WA  
98660

EXHIBIT A

LEGAL DESCRIPTION FOR GREEN MOUNTAIN LAND, LLC  
PERIMETER

May 27, 2014

A parcel of land in the South half of Section 17, the East half of Section 20, and the West half of Section 21, all in Township 2 North, Range 3 East of the Willamette Meridian in Clark County Washington, described as follows:

BEGINNING at the Northeast corner of the Southeast quarter of said Section 17;

THENCE North  $89^{\circ} 22' 57''$  West, along the North line of the South half of said Section 17, a distance of 3514.78 feet, more or less, to the centerline of Northeast Ingle Road;

THENCE South  $01^{\circ} 53' 59''$  West, along said centerline, a distance of 477.58 feet to a point on a 335.00 foot radius curve to the left;

THENCE along said centerline, and along said 335.00 foot radius curve to the left (the long chord of which bears South  $19^{\circ} 58' 22''$  East, a distance of 249.60 feet), an arc distance of 255.77 feet;

THENCE South  $41^{\circ} 50' 43''$  East, along said centerline, a distance of 141.81 feet to a 675.00 foot radius curve to the right;

THENCE along said centerline, and along said 675.00 foot radius curve to the right (the long chord of which bears South  $33^{\circ} 13' 03''$  East, a distance of 202.52 feet), an arc distance of 203.29 feet;

THENCE South  $24^{\circ} 35' 23''$  East, along said centerline, a distance of 57.61 feet to a point on a 1200.00 foot radius curve to the left;

THENCE along said centerline, and along said 1200.00 foot radius curve to the left (the long chord of which bears South  $28^{\circ} 02' 22''$  East, a distance of 144.41 feet), an arc distance of 144.50 feet;

THENCE South  $31^{\circ} 29' 20''$  East, along said centerline, a distance of 190.47 feet;

THENCE South  $30^{\circ} 43' 55''$  East, along said centerline, a distance of 678.85 feet;

Z:\8000\8900\8930\8938\Legal Descriptions\8938.000\leg-Perimeter.doc  
JMB

Page 1 of 4



LAND SURVEYORS  
ENGINEERS

(360) 695-1385  
1111 Broadway  
Vancouver, WA  
98660

THENCE South 29° 58' 13" East, along said centerline, a distance of 238.24 feet to a point which bears South 59° 56' 15" West from a 1/2" iron pipe marking the Northwest corner of that parcel of land conveyed to Keith and Gloria Bakker by deed recorded under Auditor's File No. G 646584, records of Clark County;

THENCE leaving said centerline, North 59° 56' 15" East, a distance of 21.66 feet to said iron pipe on the North line of said Bakker parcel;

THENCE continuing North 59° 56' 15" East, along said North line, a distance of 329.81 feet to a 3/4" iron pipe and the Northeast corner thereof;

THENCE South 33° 49' 02" East, along the East line of said Bakker parcel, a distance of 667.95 feet to a 3/4" iron pipe at the Southeast corner thereof;

THENCE South 49° 37' 59" West, along the South line of said Bakker parcel, a distance of 353.18 feet, more or less, to the centerline of Northeast Ingle Road;

THENCE South 40° 25' 24" East, along said centerline, a distance of 178.15 feet to a point which bears South 06° 18' 14" West from a 1/2" iron pipe on an Easterly line of that parcel of land conveyed to James M. Bartmess by deed recorded under Auditor's File No. 8911140220, records of Clark County;

THENCE North 06° 18' 14" East, along said Easterly line, a distance of 71.63 feet to said iron pipe and to an angle point;

THENCE North 86° 45' 59" East, along the Southerly line of said Bartmess tract, a distance of 9.94 feet to the Northwest corner of that parcel of land conveyed to Ronald and Rhonda Warman by deed recorded under Auditor's File No. 9004270087, records of Clark County;

THENCE North 86° 58' 36" East, along the North line of said Warman parcel, a distance of 790.14 feet to the Northeast corner thereof;

THENCE South 02° 04' 33" West, along the East line of said Warman parcel, a distance of 973.64 feet, more or less to the Northeasterly right-of-way line of Northeast Ingle Road as conveyed to Clark County by deed recorded under Auditor's File No. 4217481 D, said point being 30.00 feet from, when measured perpendicular to, the centerline of said Road;

THENCE South 40° 25' 24" East, along said right-of-way line, a distance of 353.90 feet to a point on a 2030.00 foot radius curve to the right;

Z:\8000\8900\8930\8938\Legal Descriptions\8938.0008\leg-Perimeter.doc  
JMB

Page 2 of 4



LAND SURVEYORS  
ENGINEERS

(360) 695-1383  
1111 Broadway  
Vancouver, WA  
98660

THENCE along said right-of-way, and along said 2030.00 foot radius curve to the right (the long chord of which bears South  $37^{\circ} 00' 37''$  East, a distance of 241.71 feet), an arc distance of 241.85 feet;

THENCE South  $33^{\circ} 35' 50''$  East, along said right-of-way, a distance of 1043.01 feet to a point on a 830.00 foot radius curve to the right;

THENCE along said right-of-way, and along said 830.00 foot radius curve to the right (the long chord of which bears South  $23^{\circ} 12' 47''$  East, a distance of 299.21 feet), an arc distance of 300.85 feet;

THENCE South  $12^{\circ} 49' 45''$  East, along said right-of-way, a distance of 392.70 feet to a point on a 770.00 foot radius curve to the left;

THENCE along said right-of-way, and along said 770.00 foot radius curve to the left (the long chord of which bears South  $29^{\circ} 32' 51''$  East, a distance of 443.01 feet), an arc distance of 449.36 feet;

THENCE South  $46^{\circ} 15' 59''$  East, along said right-of-way, and the Southerly projection thereof, a distance of 39.01 feet, more or less, to a point on the centerline of Northeast Goodwin Road;

THENCE North  $43^{\circ} 58' 00''$  East, along said centerline, a distance of 494.48 feet to a point on a 955.00 foot radius curve to the right;

THENCE along said centerline, and along said 955.00 foot radius curve to the right (the long chord of which bears North  $56^{\circ} 56' 15''$  East, a distance of 428.71 feet), an arc distance of 432.40 feet;

THENCE North  $69^{\circ} 54' 30''$  East, along said centerline, a distance of 354.84 feet to a point on a 955.00 foot radius curve to the right;

THENCE along said centerline, and along said 955.00 foot radius curve to the right (the long chord of which bears North  $80^{\circ} 35' 44''$  East, a distance of 354.20 feet), an arc distance of 356.26 feet to a point on the South line of the Northwest quarter of said Section 21;

Z:\8000\8900\8930\8938\Legal Descriptions\8938.0008\leg-Perimeter.doc  
JMB

Page 3 of 4



LAND SURVEYORS  
ENGINEERS

(360) 693-1385  
1111 Broadway  
Vancouver, WA  
98660

THENCE South  $88^{\circ} 43' 02''$  East, along said South line, a distance of 987.61 feet to the Southeast corner of said Northwest quarter;

THENCE North  $01^{\circ} 27' 15''$  East, along the East line of said Northwest quarter, a distance of 1314.56 feet to the North line of the South half of the Northwest quarter of said Section 21;

THENCE North  $88^{\circ} 42' 01''$  West, along said North line, a distance of 1800.91 feet, more or less, to the East line of the T.J. Fletcher Donation Land Claim No. 51;

THENCE North  $01^{\circ} 13' 25''$  East, along said East line, a distance of 1315.09 feet, more or less, to the North line of the Northwest quarter of said Section 21;

THENCE North  $88^{\circ} 40' 59''$  West, along said North line, a distance of 830.93 feet to the Northwest corner of said Section 21;

THENCE North  $01^{\circ} 45' 50''$  East, along the East line of the Southeast quarter of said Section 17, a distance of 2650.46 feet to the POINT OF BEGINNING.

SUBJECT TO county roads.

EXCEPT that parcel conveyed to Green Mountain Resorts, Inc. by deed recorded under Auditor's File No. 9311050364, also known as Mountain Glen Subdivision, recorded in Book "J" of Plats, at Page 199, records of Clark County.

ALSO EXCEPT that parcel of land conveyed to R. Lon and Rachelle Combs, recorded under Auditor's File No. 4150099 D, records of Clark County.



Z:\8000\8900\8930\8938\Legal Descriptions\8938.0008leg-Peclimeter.doc  
JMB

Page 4 of 4

# GREEN MOUNTAIN

## CONCEPTUAL MASTER PLAN FOR A MIXED USE PRD

CAMAS, WASHINGTON  
GREEN MOUNTAIN LAND, LLC. 11/19/14

TOTAL SITE AREA 283.3 AC

### SITE AREA TABLE

R10 ZONE	119.7 AC
R5 ZONE	54.8 AC
MF10 ZONE	90.0 AC
CC ZONE	18.8 AC

### RESIDENTIAL DENSITY CALCULATION

R-10	119.7 @ 13 / ACRES = 1555 UNITS
R-5	54.8 @ 25 / ACRES = 1370 UNITS
MF-10	90.0 @ 17 / ACRES = 1530 UNITS
CC	18.8 @ 10 / ACRES = 188 UNITS
TOTAL	1843 UNITS

### DENSITY TABLE

POD	ACRES	APPROXIMATE LOT SIZE RANGE	MAXIMUM UNITS/LOTS
A	12.2 (A1-A3)	RD	219
B	15.5 (B1-B3)	1000-3000	217
C	11.9 (C1-C3)	3000-5000	95
D	41.3 (D1-D3)	4000-6000	309
E	26.5 (E1-E3)	4200-7200	172
F	28.6 (F1-F3)	5250-9000	157
G	30.0 (G1-G3)	15,000-40,000	31
H	15.4 (H1-H3)		100
TOTALS	181.4 AC		1300

\*40% OF G (TOTAL 60 ACRES) TO BE PRESERVED OPEN SPACE

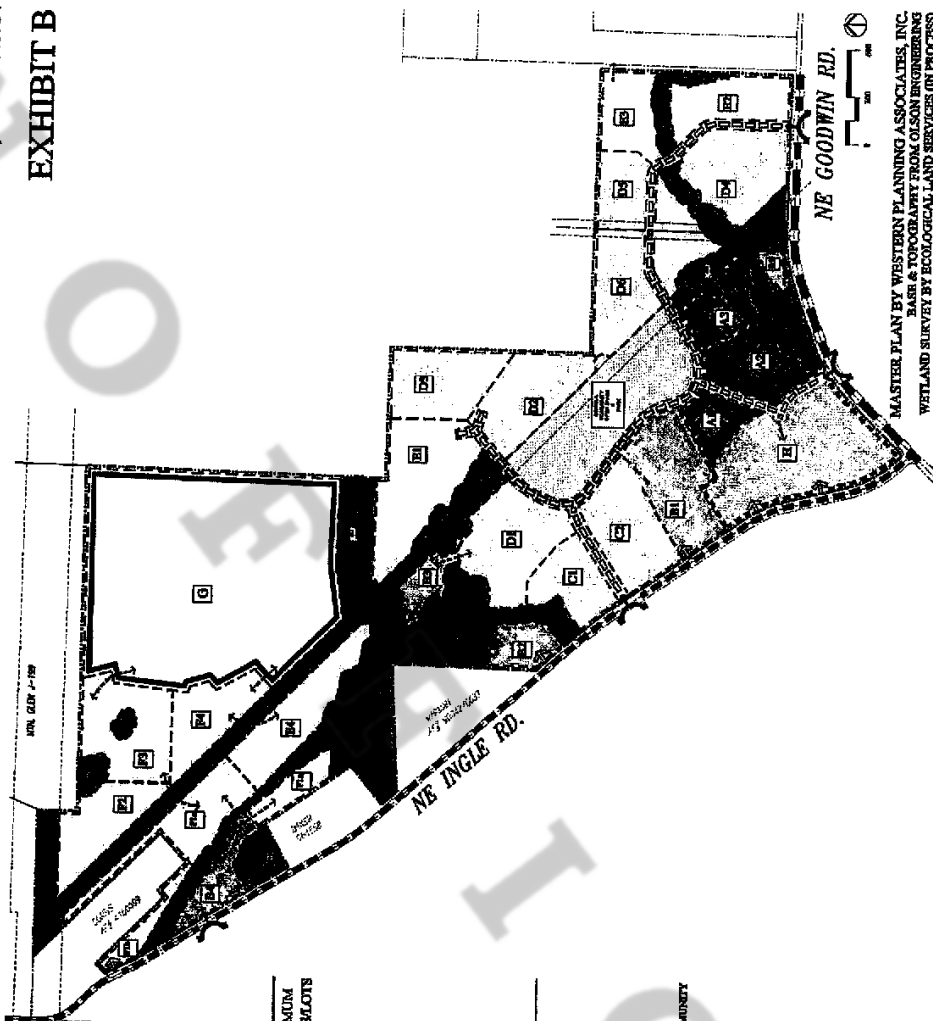
PARK & OPEN SPACE	88.5 AC
NEIGHBORHOOD CIRCULATOR	8.5 AC
ARTERIAL & COLLECTOR FRONTAGE	1.8 AC
IRREGULAR (WOODS & FIELDS)	
URBAN VILLAGE AREA (A1, A2, A3, B3)	
A COMMERCIAL MEDICAL AND RESIDENTIAL COMMUNITY CENTER (C1, C2, C3, D1, D2, D3)	

### CIRCULATION COMPONENTS

ARTERIAL	---
COLLECTOR	---
NEIGHBORHOOD CIRCULATOR	-----
NEIGHBORHOOD CONNECTOR	-----
COMMUNITY ENTRY & ACCESS POINTS	--->+

NOTE:

The master plan and master plan map are prepared for informational purposes only. The master plan and master plan map are not intended to be used for any other purpose. The master plan and master plan map are not intended to be used for any other purpose.



MASTER PLAN BY WESTERN PLANNING ASSOCIATES, INC.  
BASED & TOPOGRAPHY FROM OLSON ENGINEERING  
WETLAND SURVEY BY ECOLOGICAL LAND SERVICES (IN PROCESS)



**GREEN MOUNTAIN**  
**CONCEPTUAL PARK & OPEN SPACE PLAN**  
 CAMAS, WASHINGTON  
 GREEN MOUNTAIN LAND, LLC. 11/19/14  
**EXHIBIT C**

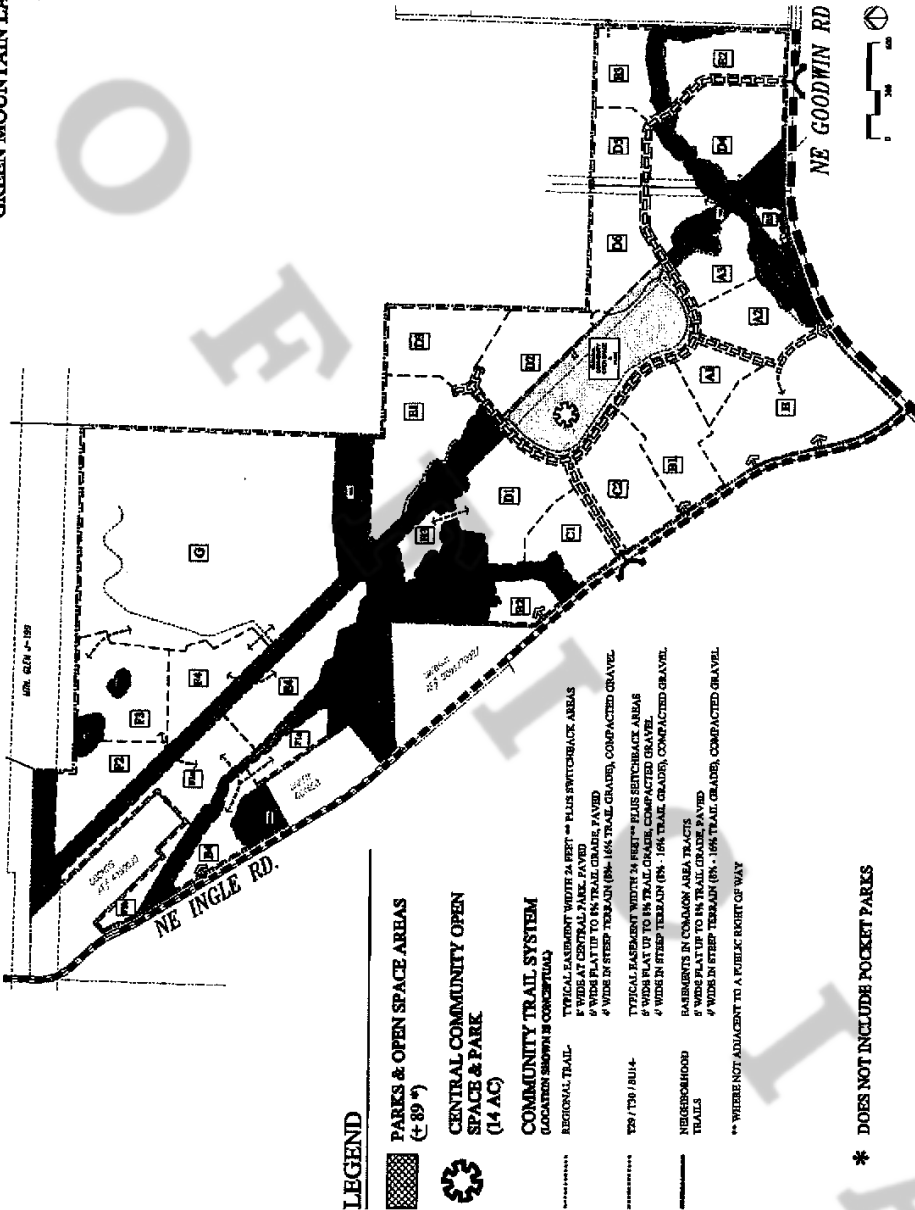


Exhibit D

**KITTELSON & ASSOCIATES, INC.**

TRANSPORTATION ENGINEERING / PLANNING

610 SW Alder Street, Suite 700, Portland, OR 97205 503.228.5230 · 503.273.8169

**MEMORANDUM**

---

Date: November 20, 2014 Project #: 13865

To: Curleigh Carothers, P.E.; City of Camas

cc: Ryan Lopossa, P.E.; City of Vancouver  
Jeff Barsness, P.E.; Washington State Department of Transportation  
David Jardin, Clark County  
Randy Printz, Landerholm Law Firm  
John Schmidt and John O'Neil; Green Mountain Land, LLC

From: Chris Brehmer, P.E., Kelly Laustsen, and Ribeka Toda; Kittelson & Associates, Inc.

Project: Green Mountain Master Plan

Subject: Transportation Impact Analysis

---

This memorandum documents the results of the transportation impact analysis prepared by Kittelson & Associates, Inc. (KAI) for the proposed Green Mountain Master Plan development to be located at the northeast corner of NE Ingle Road and NE Goodwin Road in Camas, Washington. This study concludes that Phase 1 of the site can be developed as proposed while maintaining safe and acceptable traffic operations at the study intersections assuming provision of an eastbound left-turn lane on NE Goodwin Road at NE Ingle Road. Further transportation improvements are recommended to accommodate full build-out of the proposed development. The methodology of our analysis, pertinent findings, and our recommendations are documented in this memorandum.

**INTRODUCTION**

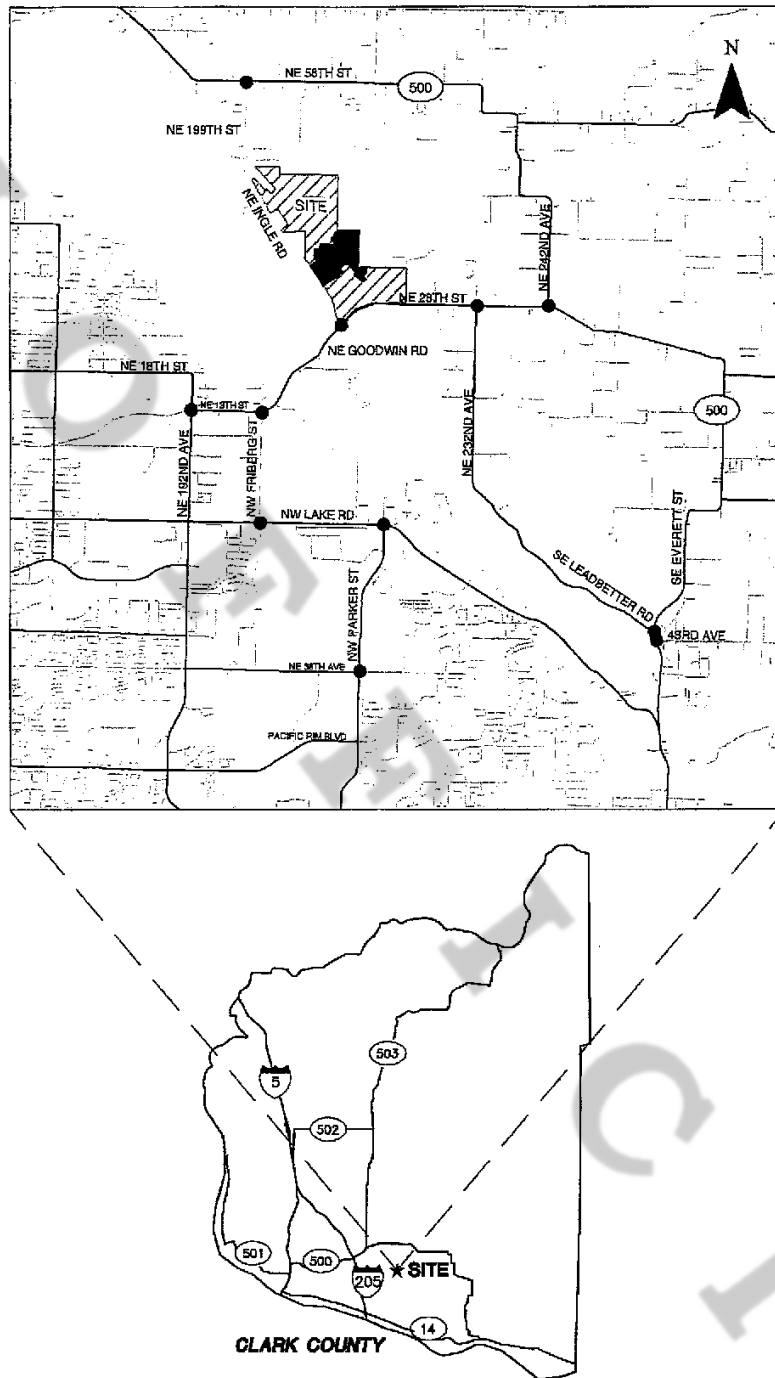
Green Mountain Land, LLC is in the process of preparing a master plan to establish a mixed-use development on the 283-acre site. Green Mountain Golf Course is currently located on a large portion of the property; otherwise the site is vacant. The site is currently zoned for a mix of residential uses (R-10, MF-10 and R-6) and Community Commercial (CC). Figure 1 illustrates the site vicinity map.

The master plan proposes eight phases of development, with the sequence and timing of phases largely market dependent. It is expected that Phase 1 will be completed by 2018 and full master plan build-out will be assumed by 2029 for traffic impact assessment purposes.

---

*FILENAME: H:\profile\13865 - Green Mountain Master Plan\report\updated Nov 2014\Green Mountain Traffic Study\_Nov 20.docx*

H:\profiles\13695 - Green Mountain Master Planning\figs\13695\_traffic\_study-nov-update.dwg Nov 20, 2014 - 2:29pm - Knausen Layout Tab: 1.dwg



● - Study Intersections

Site Vicinity  
Camas, Washington

Figure  
1

Figure 2 illustrates a conceptual image of the master plan site vision. A mix of residential and commercial uses is planned in accordance with the zoning, with a mixed use village proposed to better integrate the commercially zoned portion of the property. The village would be located at the southwest corner of the project and will encompass approximately twenty-four acres. Further project details are provided later in this report.

## SCOPE OF THE REPORT

This analysis identifies the transportation-related impacts associated with the proposed Green Mountain Master Plan development and was prepared in accordance with City of Camas transportation impact analysis requirements. The study scope and overall study area for this project were selected based on a review of the local transportation system and direction provided by City of Camas, City of Vancouver, Clark County, and Washington Department of Transportation (WSDOT) staff.

Operational analyses were performed at the following intersections:

- NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500, WSDOT maintained)
- NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street (City of Vancouver maintained)
- NW Friberg Street/NE Goodwin Road
- NE Ingle Road/NE Goodwin Road
- NE 232<sup>nd</sup> Avenue/NE 28<sup>th</sup> Street
- NE 242<sup>nd</sup> Avenue (SR 500)/NE 28<sup>th</sup> Street (WSDOT maintained)
- NW Friberg Street/NW Lake Road
- NW Parker Street/NW Lake Road
- NE Everett Street (SR 500)/SE Leadbetter Road
- NW Parker Street/NE 38<sup>th</sup> Avenue
- NE Everett Street (SR 500)/NE 43<sup>rd</sup> Avenue (WSDOT maintained)
- Site-Access Driveways

# **GREEN MOUNTAIN** CONCEPTUAL MASTER PLAN FOR A MIXED USE PRD

CAMAS, WASHINGTON  
GREEN MOUNTAIN LAND, LLC. 11/19/14

## **EXHIBIT B**

TOTAL SITE AREA 283.3 AC

### **SITE AREA TABLE**

R10 ZONE	199.7 AC
R6 ZONE	54.8 AC
MD ZONE	15.3 AC
CC ZONE	13.5 AC

### **RESIDENTIAL DENSITY CALCULATION**

R10	13.57 (41.2) AC/RES - 112 UNITS
R6	54.8 (52.7) AC/RES - 395 UNITS
MD	15.3 (5.1) AC/RES - 100 UNITS
<b>TOTAL</b>	<b>194 UNITS</b>

### **DENSITY TABLE**

POD	ACRES	APPROXIMATE LOT SIZE RANGE	MAXIMUM UNITS/LOTS
A	12.2 (41.4)	100-1000	219
B	15.2 (41.4)	1000-3000	217
C	11.9 (41.2)	3000-5000	95
D	41.2 (41.2)	4000-6000	309
E	26.5 (41.4)	4200-7200	172
F	28.6 (41.4)	5250-9000	157
G	30.9 (41.7)	15,000-40,000	31
H	15.4 (41.3)		100
<b>TOTALS</b>	<b>181.4 AC</b>		<b>1300</b>

\*NO. OF 0 TOTAL 10 ACRES TO BE PRESERVED OPEN SPACE

LAND & OTHER USES  
NEIGHBORHOOD CIRCULATOR  
ARTERIAL & COLLECTOR (PASTURE)  
DEVELOPMENT (GOVERNMENT & INDUSTRY)  
URBAN VILLAGE AREA (U. A. 1, A2, A3, B5)  
A COMMERCIAL MIXED USE AND RESIDENTIAL COMMUNITY CENTER (1 24.9 AC (BUREAU 24.3 AC (NET))

### **CIRCULATION COMPONENTS**

**ARTERIAL**  
**COLLECTOR**  
**NEIGHBORHOOD CIRCULATOR**  
NEIGHBORHOOD CIRCULATOR  
NEIGHBORHOOD CONNECTOR  
COMMUNITY ENTRANCES & ACCESS POINTS  
NOTE: The project is a conceptual master plan and does not represent a final engineering design. The project is subject to change and the final design will be determined by the project owner and the engineering firm.

Plan provided by Western  
Planning Associates,

11/19/14

Figure  
Conceptual Master Plan  
Camas, Washington  
2

KITTELSON & ASSOCIATES, INC.  
TRANSPORTATION ENGINEERS/PLANNERS

As required by the City of Camas, a transportation impact study was prepared to address the following transportation issues:

- Year 2014 existing land use and transportation system conditions within the site vicinity during the weekday a.m. and p.m. peak hours;
- Planned developments and transportation improvements in the study area;
- Trip generation and distribution estimates for the proposed development;
- Forecast year 2018 background traffic conditions without the proposed development during the weekday a.m. and p.m. peak hours;
- Forecast year 2018 total traffic conditions with the completion of Phase 1 of the proposed development during the weekday a.m. and p.m. peak hours;
- Forecast year 2029 background traffic conditions without the proposed development during the weekday a.m. and p.m. peak hours;
- Forecast year 2029 total traffic conditions with full build-out and occupancy of the proposed development during the weekday a.m. and p.m. peak hours;
- Level of service analyses for the study intersections; and
- On-site access and circulation.

Conclusions and recommendations are provided following the operational analysis.

## ANALYSIS METHODOLOGY

All level of service analyses described in this report were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual* (Reference 1). A description of level of service and the criteria by which they are determined is presented in *Appendix "A"*. *Appendix "A"* also indicates how level of service is measured and what is generally considered the acceptable range of level of service.

To ensure that this analysis was based on a reasonable worst-case scenario, the peak 15 minute flow rate during the peak hour analysis periods was used in the evaluation of all intersection levels of service. For this reason, the analysis reflects conditions that are only likely to occur for 15 minutes out of each average peak hour. Traffic conditions during other weekday hours and throughout the weekend will likely be better than those described in this report.

At the City of Vancouver-maintained NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street intersection, the peak 15-minute flow rate was assessed by applying the peak 15-minute volume across the hour and not applying a peak hour factor in accordance with guidance provided by the City.

### Operating Standards

The study intersections are each operated and maintained by one of three impacted jurisdictions: WSDOT, the City of Vancouver, or the City of Camas. Each of these jurisdictions has their own operating standards. WSDOT requires LOS "E" or better for non-HSS (Highways of Statewide Significance) in urban areas, City of Vancouver requires LOS "E" or better and a v/c ratio of less than 0.95 for signalized intersections. The City of Camas requires LOS "D" or better and a v/c ratio of 0.90 or better for all intersections. Table 1 lists the study intersections, the responsible jurisdiction, and the corresponding operating standard.

Table 1: Operating Standards at Study Intersections

ID	Study Intersection	Jurisdiction	Standard
1	NE 195 <sup>th</sup> Avenue/NE 58 <sup>th</sup> Street (SR 500)	WSDOT	LOS "C" for non-HSS in rural area <sup>1</sup>
2	NE 192 <sup>nd</sup> Avenue/NE 13 <sup>th</sup> Street	Vancouver	LOS "E" and v/c ratio less than 0.95
3	NW Friberg Street/NE Goodwin Road	Camas	LOS "D" and v/c of 0.90 or better
4	NE Ingle Road/NE Goodwin Road	Camas	LOS "D" and v/c of 0.90 or better
5	NE 232 <sup>nd</sup> Avenue/NE 28 <sup>th</sup> Street	Camas	LOS "D" and v/c of 0.90 or better
6	NE 242 <sup>nd</sup> Avenue (SR 500)/NE 28 <sup>th</sup> Street	WSDOT	LOS "C" for non-HSS in rural area <sup>1</sup>
7	NW Friberg Street/NW Lake Road	Camas	LOS "D" and v/c of 0.90 or better
8	NW Parker Street/NW Lake Road	Camas	LOS "D" and v/c of 0.90 or better
9	NE Everett Street (SR 500)/SE Leadbetter Road	WSDOT	LOS "C" for non-HSS in rural area <sup>1</sup>
10	NW Parker Street/NE 38 <sup>th</sup> Avenue	Camas	LOS "D" and v/c of 0.90 or better
11	NE Everett Street (SR 500)/NE 43 <sup>rd</sup> Avenue	WSDOT	LOS "C" for non-HSS in rural area <sup>1</sup>

<sup>1</sup>The City of Camas TIF Update applied the WSDOT standard for facilities in urban areas (LOS "E" for non-HSS in urban area). Based on conversations with WSDOT, the standard for rural areas is currently applicable to the WSDOT study intersections.

Source: City of Camas Traffic Impact Fee Update (Reference 2)

### Turn Lane Guidelines

For roadways under Washington State jurisdiction, such as SR 500, WSDOT has defined traffic-volume based turn lane guidelines within the *WSDOT Design Manual* (Reference 3). Left-turn lane guidelines are provided in section 1310.04(2)(a) while right-turn lane guidelines are provided in section 1310.04(3).

### EXISTING CONDITIONS

The existing conditions analysis identifies site conditions and the current operational and geometric characteristics of roadways within the study area. These conditions will be compared with future conditions later in this report.

The site of the proposed development and surrounding study area was visited and inventoried in March 2014. At that time, information was collected regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

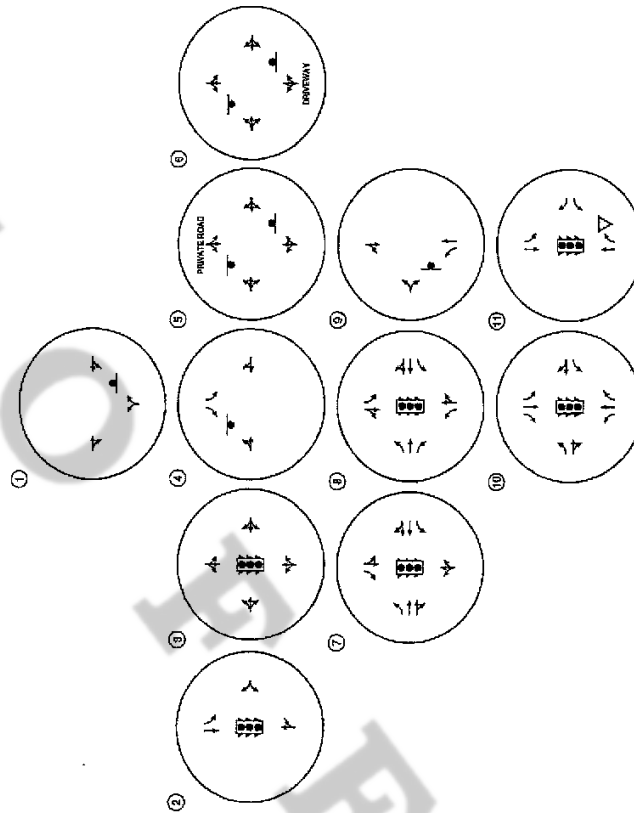
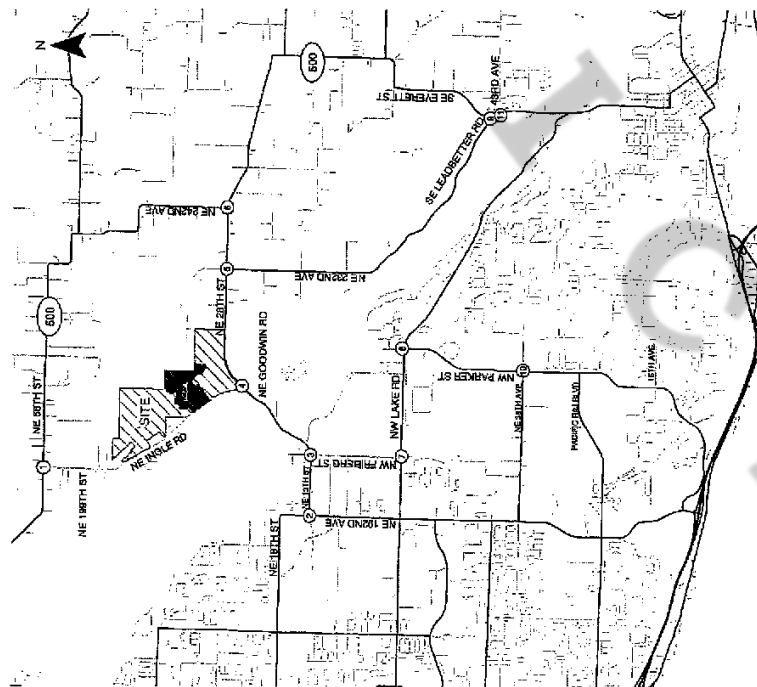
#### Site Conditions and Adjacent Land Uses

The area encompassed by the master plan site is largely undeveloped. The southwest corner of the property is occupied by the Green Mountain Golf Course, a portion of which is proposed to remain open after completion of the Phase 1 master plan development. The areas surrounding the site are also largely undeveloped, with a few single family homes situated along NE 28<sup>th</sup> Street, NE 199<sup>th</sup> Avenue, and SR 500.

#### Transportation Facilities

Table 2 provides a summary of key transportation facilities in the site vicinity and Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.





## Existing Lane Configurations and Traffic Control Devices

Figure 3

KITTILSON & ASSOCIATES, INC.

Table 2: Existing Transportation Facilities and Roadway Designations

Roadway	Classification <sup>1</sup>	Cross-Section	Speed Limit (mph)	Side-Walks?	Bicycle Lanes?	Median?	On-Street Parking?
NE 13 <sup>th</sup> Street / NE Goodwin Road / NE 28 <sup>th</sup> Street	Arterial	5-lane	40	Yes	Yes	Yes	None
SR 500	Non-HSS <sup>2</sup>	2-lane	50	None	None	None	None
NE Ingle Road / NE 199 <sup>th</sup> Avenue	Collector	2-lane	50	None	None	None	None
NE 192 <sup>nd</sup> Avenue	Arterial	2-lane	40	Partial	None	None	None
SE 192 <sup>nd</sup> Avenue	Arterial	5-lane	40	Partial	None	None	None
NW Friberg Street / NE 202 <sup>nd</sup> Avenue	Arterial	2-lane	40	Partial	None	None	None
SE 1 <sup>st</sup> Street / NW Lake Road	Arterial	5-lane	40	Yes	Yes	Yes	None
NW Parker Street	Arterial	5-lane	35	Yes	Yes	None	None
NE Everett Road	Arterial	2-lane	35	None	None	None	None
NW Pacific Rim Blvd./ SE 34 <sup>th</sup> Street	Arterial	5-lane	40	Yes	None	Yes	None

<sup>1</sup> Source: City of Camas Traffic Impact Fee Update (Reference 2)

<sup>2</sup> HSS = Highways of Statewide Significance

### Pedestrian and Bicycle Facilities

Neither sidewalks nor striped bicycle facilities are provided in the vicinity of the site on either NE Ingle Road or NE Goodwin Road/NE 28<sup>th</sup> Street.

### Transit Facilities

The C-Tran *Camas Connector* Dial-A-Ride service currently operates within a portion of the study area, with a northern boundary of Lake Road, western boundary of Parker Street, and eastern boundary of SR 500. This service operates by accepting telephone calls from riders to be taken to a location inside a defined boundary. The hours of operation are Monday through Friday from 5:30 a.m. to 9:15 a.m. and 2:00 p.m. to 7:00 p.m. No service is available on holidays (Reference 4).

### Crash Analysis

The crash histories of the study intersections were reviewed in an effort to identify potential intersection safety issues. Crash records were obtained from WSDOT. The data represents records between January 1, 2008 and November 30, 2013. The crash rate was calculated to determine the number of crashes per million entering vehicles (MEV). Generally speaking, a crash rate greater than 1.0 crashes per MEV suggests locations where crash patterns should be reviewed in greater detail.

A brief discussion of the crash data at key intersections is presented after Table 3. There were no fatalities reported at the study intersections during the time periods studied. *Appendix "B" contains the crash data.*

As shown in Table 3, the two intersections where the highest crash rates were observed were NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street and NE Ingle Road/NE Goodwin Road. At all other intersections, the observed crash rates are well below 1.0 crash per million entering vehicles.

Table 3: Intersection Crash Histories (1/1/2008 - 11/30/2013)

Intersection	Total	Collision Type						Severity		Crash Rate Crashes/ MEV <sup>2</sup>
		Rear End	Turn- ing	Angle	Pedes- -trian	Fixed Object	Road way Ditch	PDO <sup>1</sup>	Injury	
1. NE 199 <sup>th</sup> Ave / NE 58 <sup>th</sup> St (SR 500)	7	0	0	4	0	3	0	5	2	0.57
2. NE 192 <sup>nd</sup> Ave / NE 13 <sup>th</sup> St	8	1	6	0	0	1	0	4	4	0.27
3. NE Friberg St / NE Goodwin Rd	5	1	3	1	0	0	0	3	2	0.32
4. NE Ingle Rd / NE Goodwin Rd	16	4	0	5	1	4	2	11	5	1.03
5. NE 232 <sup>nd</sup> Ave / NE 28 <sup>th</sup> St	3	0	0	1	0	2	0	2	1	0.25
6. NE 242 <sup>nd</sup> Ave (SR 500) / NE 28 <sup>th</sup> St	4	0	0	2	0	1	1	2	2	0.30
7. NW Friberg St / NW Lake Rd	6	3	0	1	0	2	0	6	0	0.24
8. NW Parker St / NW Lake Rd	3	0	1	0	0	2	0	3	0	0.12
9. NE Everett St (SR 500) / SE Leadbetter Rd	5	0	0	0	0	3	2	2	3	0.54
10. NW Parker St / NE 38 <sup>th</sup> Ave	9	0	5	4	0	0	0	6	3	0.29
11. NE Everett St (SR 500) / NE 43 <sup>rd</sup> Ave	7	1	5	0	0	1	0	3	4	0.36

<sup>1</sup> PDO = Property Damage Only | <sup>2</sup> MEV = Million Entering Vehicles

#### NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500)

The second highest crash rate, 0.57, occurs at the intersection of NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street. There have been seven reported collisions, including four angle collisions and three fixed-object collisions at this intersection. The crash data was reviewed in an effort to identify potential trends. Three of the angle crashes involved vehicles making a northbound left turn from NE 199<sup>th</sup> Avenue to NE 58<sup>th</sup> Street; another involved an eastbound vehicle turning right from NE 58<sup>th</sup> Street to NE 199<sup>th</sup> Avenue. Of the three fixed object collisions, two involved utility poles and one involved a domestic animal. Collisions with domestic animals are challenging to eliminate and one of the collisions with the utility poles involved a driver asleep at the wheel. Four of the seven crashes occurred during wet road surface conditions. Given the relatively low number of reported collisions

and the unusual nature of three of the seven collisions (the three fixed-object collisions), there are no safety-based mitigation measures recommended at this intersection at this time in conjunction with site development. If an eastbound right-turn lane is added to the intersection in the future (which is currently warranted as will be described later in this report), it may provide safety benefits.

#### ***NE Ingle Road/NE Goodwin Road***

The highest crash rate, 1.03, occurs at the intersection of NE Ingle Road/NE Goodwin Road. There have been reported collisions including 4 four rear-end collisions, 5 five angle collisions, 4 fixed-object collisions (involving a utility pole, a mailbox, a boulder, and a wood sign post), 2 roadway ditch collisions, and a pedestrian collision at this intersection. As discussed later in this report, the Green Mountain Master Plan proposes to construct an exclusive eastbound left-turn lane on NE Goodwin Road at NE Ingle Road in conjunction with the Phase 1 site development. Providing an eastbound left-turn lane and potential related reconfiguration of the southbound stop bar location (refer to sight distance discussion below) in conjunction with Phase 1 site development could provide a safety benefit at this intersection.

Two of the angle collisions involved vehicles exceeding reasonably safe speeds while making a westbound right-turn at the intersection. One of the recommended mitigation measures for the 2029 full build-out scenario of the proposed development is the addition of a westbound right-turn lane at this intersection, which could provide a safety benefit for turning vehicles. Additional long-term mitigation measures anticipated in conjunction with site development include constructing a three-lane roadway section on NE Goodwin Road along the site frontage and signaling the intersection when warranted.

#### **Intersection Sight Distance**

Intersection sight distance was observed at the study intersections and was found to meet applicable city or WSDOT standards, with the exception of the sight distance at the NE Ingle Road/NE Goodwin Road intersection. As shown in Exhibit 1 below, the stop bar on NE Ingle Road is set back approximately 25 feet from the edge of NE Goodwin Road.

**Exhibit 1: Stop Bar on NE Ingle Road at NE Goodwin Road**

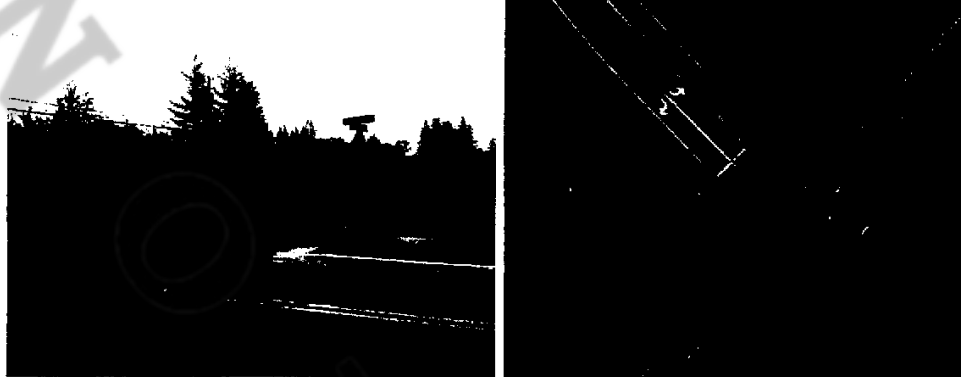


Image source: Google Maps (right image)

As indicated in Exhibit 2, vehicles currently pull past the stop bar to obtain sufficient sight distance to then execute a turning maneuver. Regardless of the proposed site development, we recommend that the City of Camas consider potential improvements to enhance the intersection sight distance, such as relocating the stop bar closer to NE Goodwin Road.

**Exhibit 2: Vehicle Waiting to Make Left-Turn from NE Ingle Road to NE Goodwin Road**



**Existing Traffic Operations**

Manual turning-movement counts were conducted at the study intersections in March and April 2014. The counts were conducted on a typical mid-week day during the morning peak period (7:00 to 9:00 a.m.) and the evening peak period (4:00 to 6:00 p.m.) per City requirements. Individual Intersection peak hours were then identified for operational analysis purposes.

Figures 4 and 5 provide a summary of the existing turning-movement counts, which are rounded to the nearest five vehicles per hour for the weekday a.m. and p.m. peak hours, respectively. *Appendix "C" contains the traffic count worksheets used in this study.*

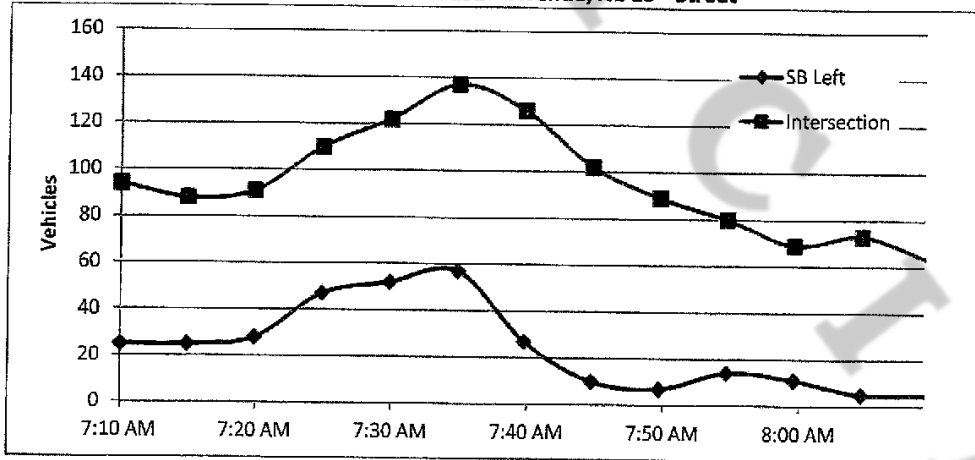
As shown in Figures 4 and 5, the study intersections operate acceptably during both study periods. *Appendix "D" contains the existing conditions traffic operations worksheets.*

#### **Operations at NE 192<sup>nd</sup> Avenue / NE 13<sup>th</sup> Street**

As noted in the "Analysis Methodology" section, analysis of the City of Vancouver-maintained NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street intersection involved application of the peak 15-minute flow rate across the hour and not applying a peak hour factor. This analysis methodology is in accordance with guidance provided by the City.

During the weekday AM peak hour, significant peaking occurs at the intersection related to vehicles accessing Union High School on NW Friberg Street. In particular, the southbound left-turning volume peaks in advance of the school start at 7:45 AM, as shown in Exhibit 3. During this "peak of the peak" period, queueing for the southbound left-turn lane sometimes exceeds the available striped storage (approximately 160 feet). Based on field observation, heightened delays and queueing for the southbound left-turn movement are contained to about fifteen minutes in advance of the school start, during which time some southbound left-turning vehicles do not clear through the intersection during each cycle. After this time, volumes decrease significantly and left-turning vehicles consistently clear through the intersection in a single cycle.

**Exhibit 3: Peak Hour Traffic Volumes at NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street**



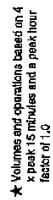
Kittelson & Associates, Inc.

Portland, Oregon



KITTELSON & ASSOCIATES, INC.  
75448047A R10W ENGINEERING PLANNING

**Figure 4**



Existing Intersection Operations  
Weekday PM Peak Hour  
Camas, Washington

KITTELSON & ASSOCIATES, INC.  
TRANSPORTATION ENGINEERING PLANNING



## TRAFFIC IMPACT ANALYSIS

The traffic impact analysis identifies how the study area's transportation system will operate upon phased build-out of the proposed master plan site. A horizon year of 2018 was selected to assess conditions with build-out of Phase 1 while a 15-year 2029 horizon year was assumed for site build-out. The impact of site-generated weekday a.m. and p.m. peak hour trips was examined as follows:

- Planned developments and transportation improvements in the study area were identified and accounted for;
- Trip generation and distribution estimates for the proposed development were prepared for Phase 1 and full build-out of the proposed development;
- Forecast year 2018 background traffic conditions without the proposed development were analyzed at the study intersections;
- Forecast year 2018 total traffic conditions with completion of Phase 1 of the proposed development were analyzed at the study intersections;
- Forecast year 2029 background traffic conditions without the proposed development were analyzed at the study intersections;
- Forecast year 2029 total traffic conditions with full build-out and occupancy of the proposed development were analyzed at the study intersections; and
- On-site circulation and site-access operations were evaluated.

### Proposed Development Plan

Green Mountain Land, LLC is proposing to master plan the 283-acre site with mixed-use development. Green Mountain Golf Course is currently located on a large portion of the master plan property. We understand that a portion of the existing Green Mountain Golf Course may remain temporarily available for use after completion of Phase 1 site development and that, ultimately, the golf course will be closed prior to full master plan build-out. No effort has been made to account for "credit" for existing trips to and from the golf course for the purposes of this transportation impact analysis report.

The master plan proposes eight phases of development, with the sequence and timing of phases to be finalized pending market conditions. It is expected that Phase 1 will be completed by 2018 and full master plan build-out is assumed by 2029 for traffic impact assessment purposes. A mix of residential and commercial uses is planned in accordance with the zoning, with a mixed use village proposed to better integrate the commercially zoned portion of the property. The application seeks

approval of an overlay zone for a portion of the site intended for an urban village. The village would be located at the southwest corner of the project and will encompass approximately twenty-four acres.

For traffic impact study purposes, Phase 1 is assumed to consist of a residential component with 215 single-family detached homes. Full build-out of the master plan residential component assumed construction of up to 536 apartment units and 764 single-family detached homes. The retail portion of the proposed development plan was assumed to develop after Phase 1 and was assumed to be a 90,000 square-foot shopping center for trip generation purposes<sup>1</sup>.

Access to Phase 1 development is anticipated along NE Ingle Road, with additional access added to NE Goodwin Road during later stages of the development. Final details of the number and location of site access points will be defined during preparation of individual site plan applications, therefore appropriate planning level assumptions have been made for master planning purposes. The proposed master plan anticipates two public street neighborhood circulator connections to NE Goodwin Road serving the site in conjunction with two public street neighborhood circulator connections along NE Ingle Road. The commercial site is expected to have direct driveway access to NE Ingle Road. Some residential areas (not individual residence driveways) not served by the anticipated neighborhood circulator facilities may also seek direct access to NE Ingle Road or NE Goodwin Road as appropriate.

### ***Trip Generation***

Trip generation estimates for the proposed development were generated based on information provided in the standard reference manual *Trip Generation, 9<sup>th</sup> Edition* published by the Institute of Transportation Engineers (ITE -- Reference 7). The internal and pass-by trip rates applied to each land use were also determined from ITE's *Trip Generation, 9<sup>th</sup> Edition*. Table 4 summarizes the daily, weekday a.m., and weekday p.m. peak-hour trips for the Phase 1 assumed development while Table 5 summarizes the complete master plan site trip generation estimate. All daily trips have been rounded to the nearest ten and all peak hour trips have been rounded to the nearest five trips.

---

<sup>1</sup> The unit mix for phase 1 and buildout was developed based on a reasonable worst-case scenario. Final development may result in a less-intense mix of residential units.

Table 4: Trip Generation Estimate – Phase 1

Land Use	ITE Code	Size	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	215 units	2,050	160	40	120	215	135	80

Table 5: Trip Generation Estimate – Build-out (Includes Phase 1)

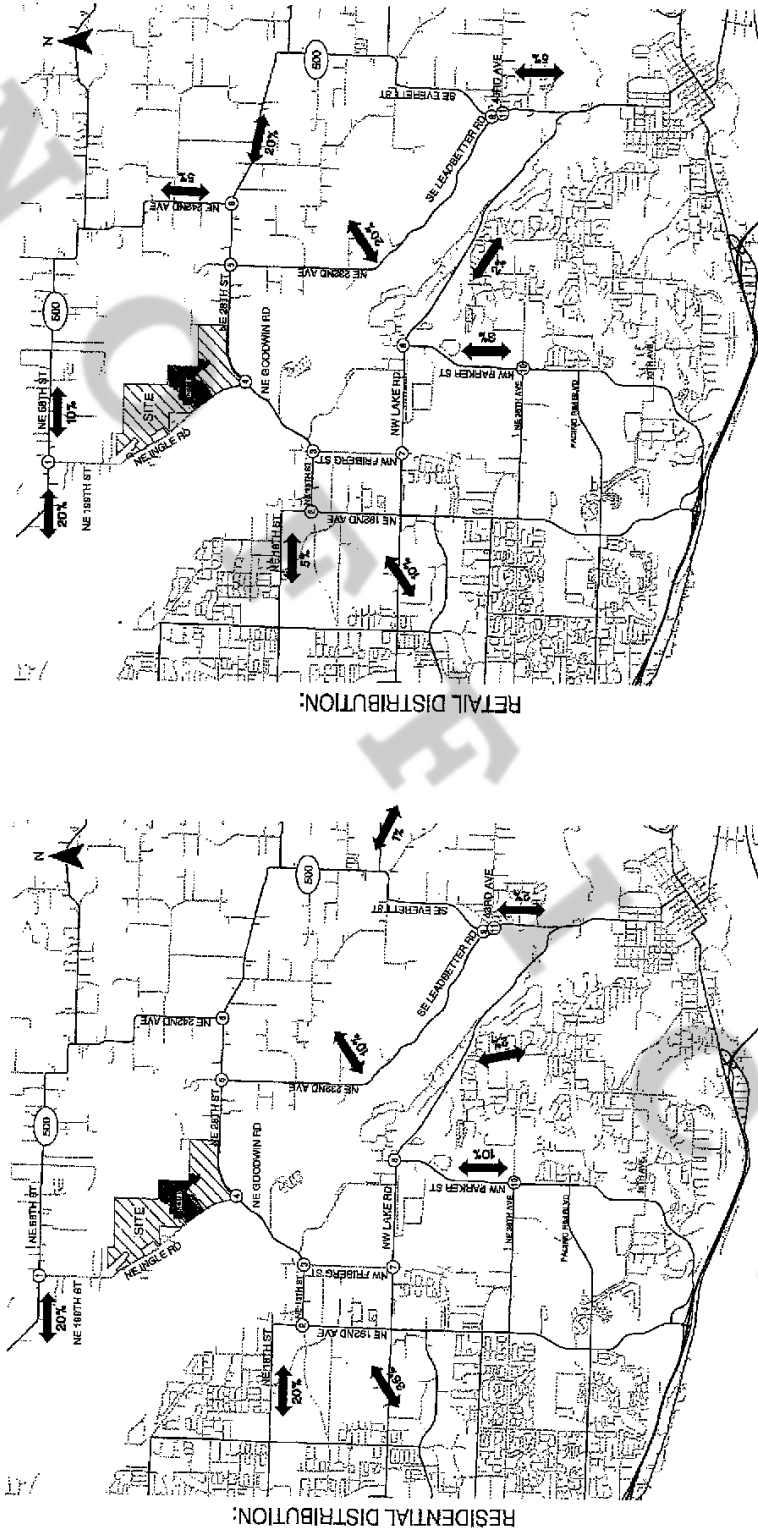
Land Use	ITE Code	Size	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Apartment	220	536 units	3,570	275	55	220	330	215	115
Single-Family Detached Housing	210	764 units	7,270	575	145	430	765	480	285
Total Residential (1,300 units)			10,840	850	200	650	1,095	695	400
Internalization (6% Daily, 5% PM)			630	0	0	0	60	30	30
Shopping Center	820	90,000 square feet	6,340	145	90	55	560	270	290
Internalization (10% Daily, 11% PM)			630	0	0	0	60	30	30
Pass-By Trips (34%)			1,940	50	25	25	170	85	85
Total Trips			17,180	995	290	705	1,655	965	690
Less Internalization			1,260	0	0	0	120	60	60
Less Pass-by trips			1,940	50	25	25	170	85	85
Net New Trips for Full Build-out			13,980	945	265	680	1,365	820	545

### Trip Distribution

The distribution of site-generated trips onto the study area roadway system was estimated based on a review of surrounding roadway characteristics, existing uses, the 2035 travel demand model maintained by the Southwest Washington Regional Transportation Council (RTC), and review agency guidance. Trip distribution patterns were developed separately for the residential and retail trips. Figure 6 illustrates the trip distribution patterns for the residential and retail trips.

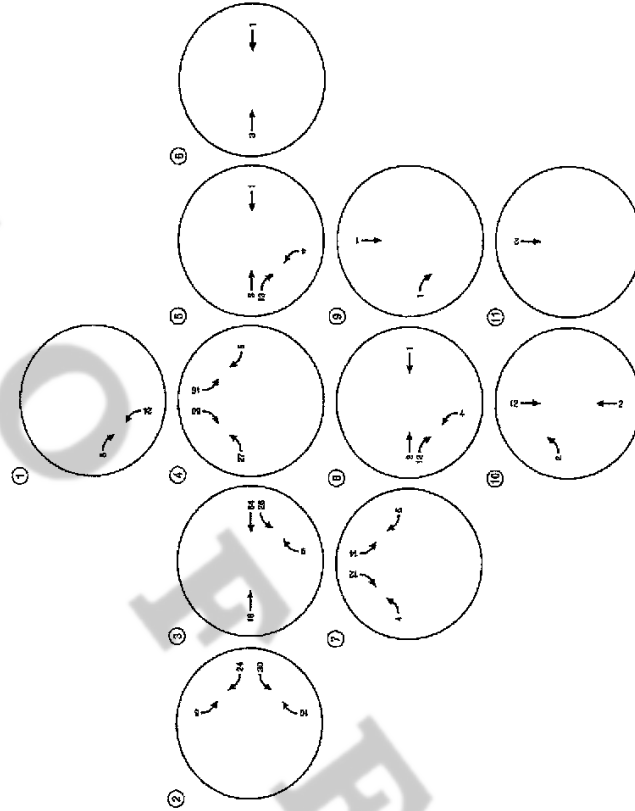
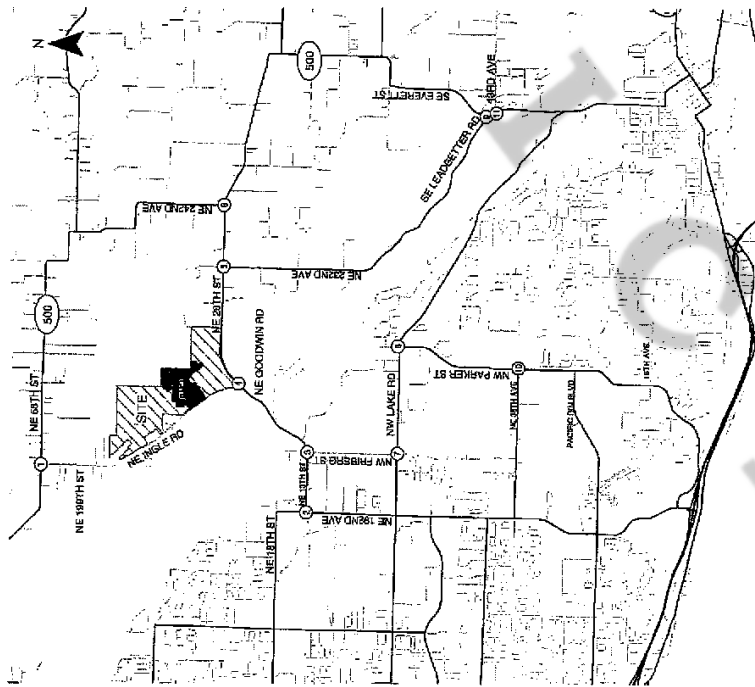
### Trip Assignment

The weekday a.m. and p.m. peak hour site trips shown in Tables 4 and 5 were assigned to the roadway network based on the trip distribution patterns shown in Figure 6. Figures 7 through 10 show the assignment of site-generated trips during the weekday a.m. and p.m. peak hours for Phase 1 and at Build-out. Note that the site-generated build-out volumes shown in Figures 9 and 10 include the Phase 1 site-generated trips and thus reflect the total number of trips generated. A figure showing the assignment of pass-by trips is provided in Appendix "E".



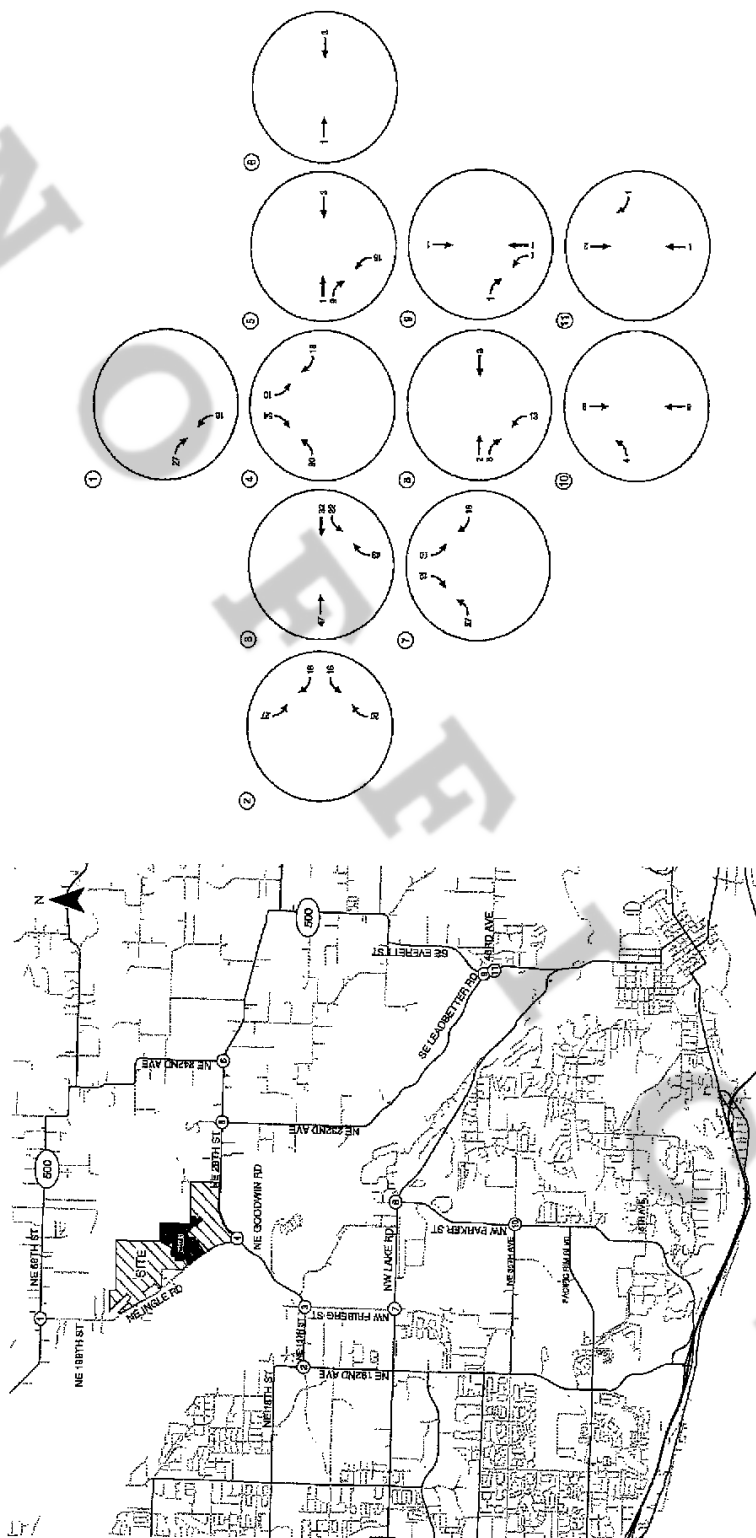
Estimated Trip Distribution Pattern  
Camas, Washington

KITTELSON & ASSOCIATES, INC.  
TRANSPORTATION BUSINESS PLANNING



Total Estimated Trip Assignment - Phase 1  
Weekday AM Peak Hour  
Camas, Washington

Figure  
7



**Total Estimated Trip Assignment - Phase 1  
Weekday PM Peak Hour  
Camas, Washington**

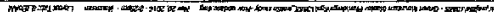
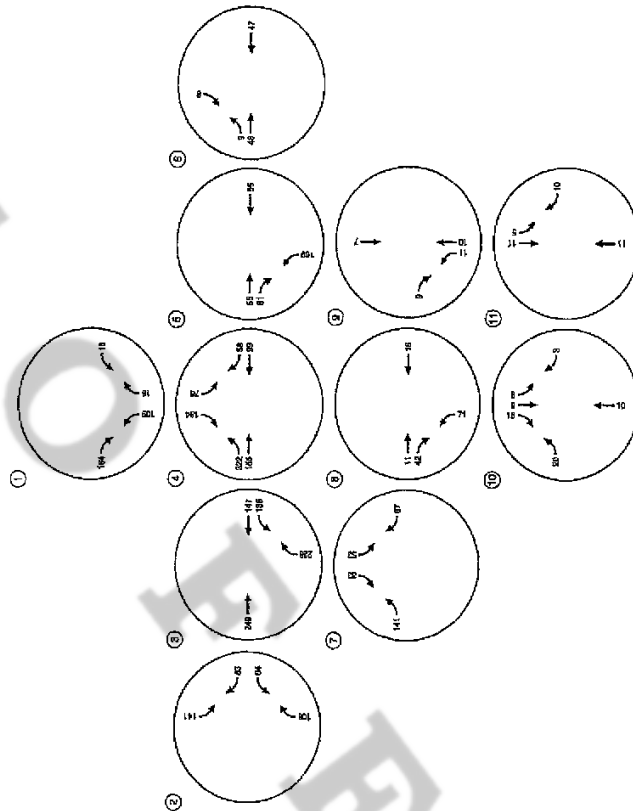
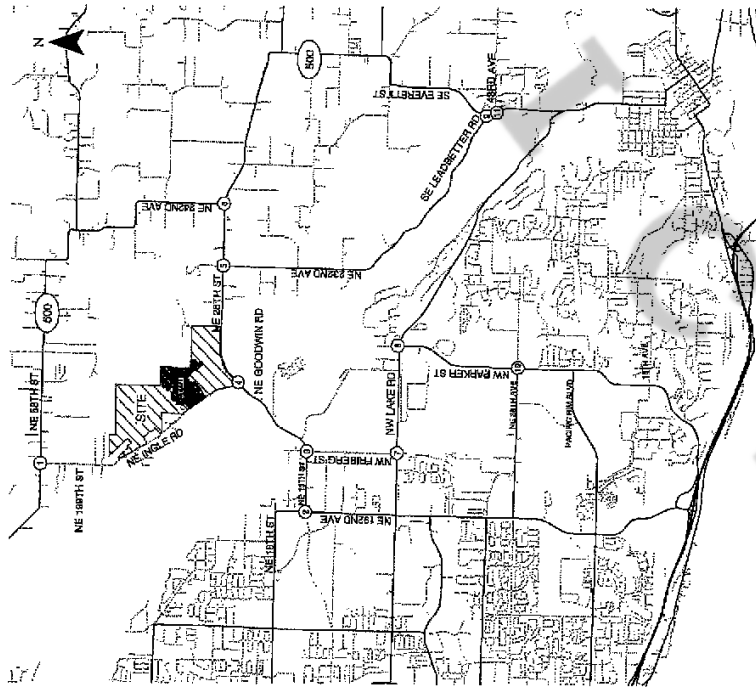


Figure 9



Total Estimated Trip Assignment - Full Build-Out  
Weekday PM Peak Hour  
Camas, Washington

Figure  
10



### 2018 Background Traffic Conditions

The 2018 background traffic analysis projects how the study area's transportation system will operate during the year that Phase 1 of the proposed development is expected to be completed. This analysis includes traffic growth due to previously approved in-process developments within the study area, but does not include traffic from any of the proposed Green Master Plan development phases. Per agency direction, no growth was applied to City of Camas roadways and a 2% growth rate was applied to City of Vancouver roadways (Reference 8).

### *Planned Developments and Transportation Improvements*

City of Camas staff identified 13 local development projects that are approved but not yet occupied. These in-process developments include:

- |                                |                                |
|--------------------------------|--------------------------------|
| ▪ Lake Hills                   | ▪ Deerhaven Subdivision        |
| ▪ Two Creeks                   | ▪ Hadley's Glen                |
| ▪ The Summit at Columbia Vista | ▪ Millshore Downs              |
| ▪ Parker Village               | ▪ Fisher Creek Campus          |
| ▪ The Hills at Round Lake      | ▪ Lacamas Prairie              |
| ▪ North Hills Subdivision      | ▪ 192 <sup>nd</sup> Plaza West |
| ▪ Brady Road Subdivision       |                                |

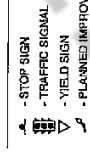
*Appendix "F" contains the data received pertaining to the in-process trips.*

Planned and funded transportation improvements within the study area include the widening of NW Friberg Street (between Lake Road and NE 13<sup>th</sup> Street) and the addition of a westbound left-turn lane, northbound right-turn lane, and eastbound right-turn lane at the NW Friberg Street/NE Goodwin Road Intersection. Figure 11 shows the lane configuration and traffic control devices assumed in the 2018 analysis.

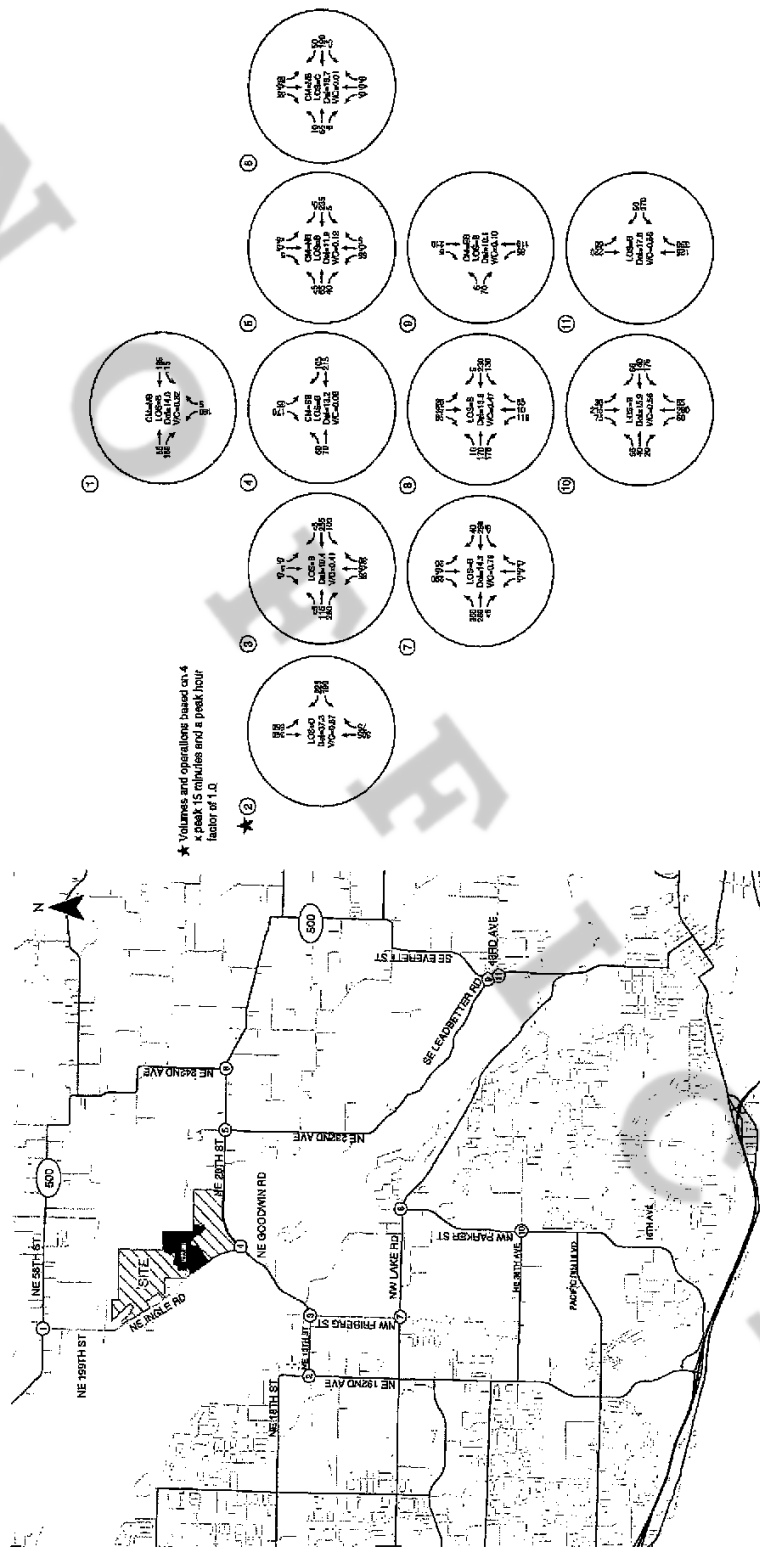
### *Traffic Operations*

Figures 12 and 13 summarize the year 2018 background traffic operations analysis results at the study intersections for the weekday a.m. and weekday p.m. peak-hours, respectively. The projected turning movement counts are rounded to the nearest five vehicles per hour. As shown, the study intersections operate acceptably during the weekday a.m. and weekday p.m. peak periods in the 2018 background conditions.

*Appendix "G" contains the 2018 background conditions traffic operations worksheets.*



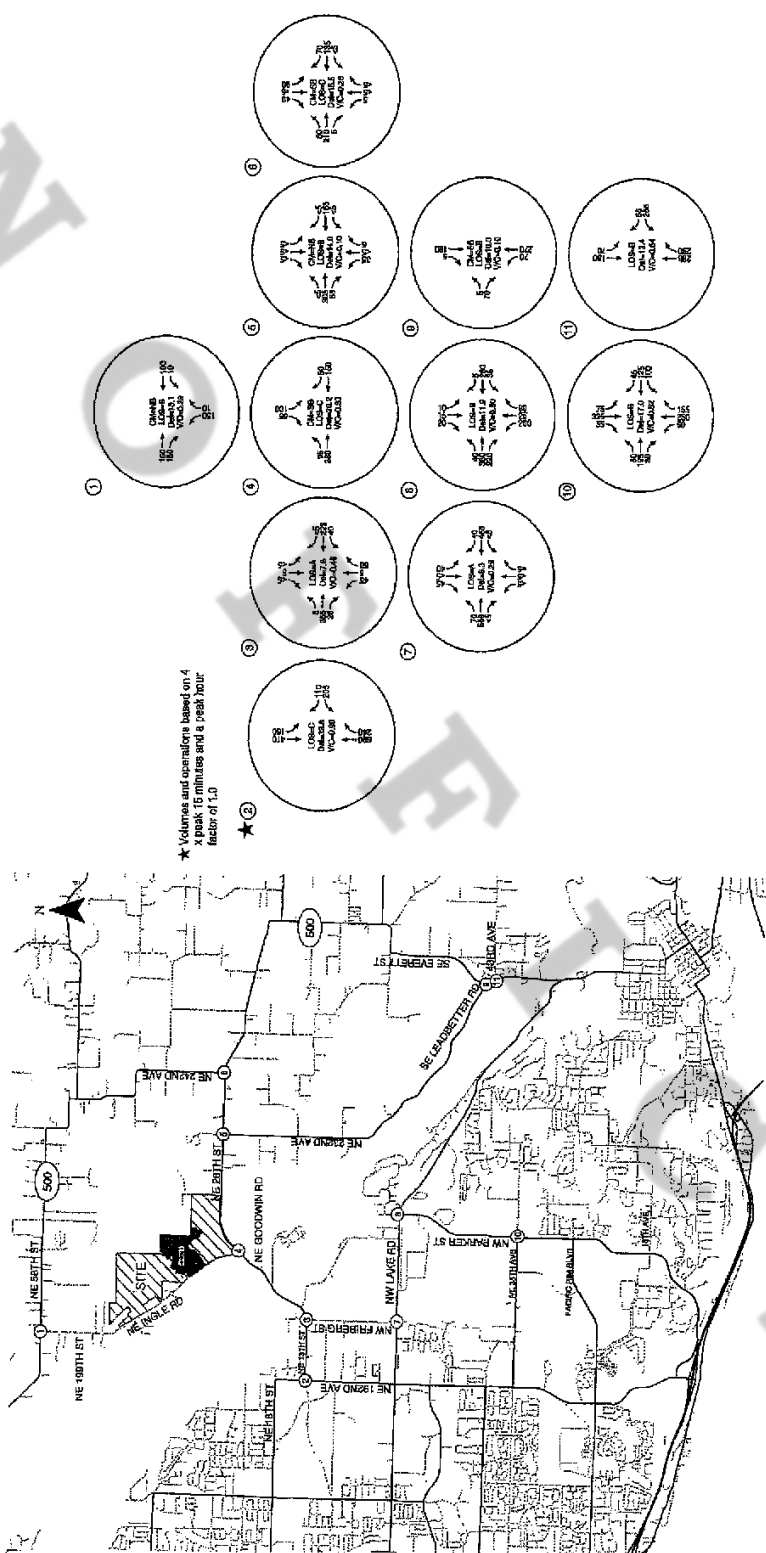
Year 2018 Lane Configurations and Traffic Control Devices  
Camas, Washington



2018 Background Conditions  
Weekday AM Peak Hour  
Camas, Washington

CRITICAL MOVEMENT (TWSC)  
INTERSECTION LEVEL OF SERVICE (ILOS) / CRITICAL MOVEMENT  
LEVEL OF SERVICE (TWSC)  
INTERSECTION AVERAGE CONTROL DELAY (SIC) / CRITICAL  
MOVEMENT CONTROL DELAY (TWSC)  
CRITICAL VOLUME-TO-CAPACITY RATIO  
TWO-WAY STOP CONTROL

KITTELSON & ASSOCIATES, INC.  
REPRESENTATION ENGINEERING-PLANNING



2018 Background Conditions  
Weekday PM Peak Hour  
Camas, Washington

**KITTELSON & ASSOCIATES, INC.**  
TRANSPORTATION ENGINEERING/PLANNING

## 2018 Total Traffic Conditions

The year 2018 total traffic analysis forecasts how the study area's transportation system will operate with the addition of traffic from Phase 1 of the proposed development. Phase 1 site-generated trips were added to the 2018 background traffic volumes at the study intersections to arrive at the total traffic volumes.

All lane configurations are consistent with background conditions with the exception of the intersection of NE Ingle Road/NE Goodwin Road. The developer proposes to construct an exclusive eastbound left-turn lane on NE Goodwin Road at NE Ingle Road in conjunction with the Phase 1 site development. Consequently, provision of the turn lane was assumed for the total traffic analysis.

## Traffic Operations

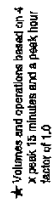
Figures 14 and 15 summarize the year 2018 total traffic operations analysis results at the study intersections for the weekday a.m. and weekday p.m. peak-hours, respectively. The projected turning movement counts are rounded to the nearest five vehicles per hour. As shown, all but one of the study intersections are forecast to operate acceptably during the weekday a.m. and p.m. peak periods under 2018 total traffic conditions. The southbound movement at the intersection of NE Ingle Road/NE Goodwin Road is anticipated to operate at a LOS E during the weekday p.m. peak hour. Operations at this intersection could be mitigated with the addition of an eastbound right-turn lane. Based on a sensitivity analysis, this mitigation is triggered by the 203<sup>rd</sup> unit to be constructed. Up until this point, the southbound left-turn lane is forecast to operate at a LOS D. Table 6 provides the operations at NE Ingle Road/NE Goodwin Road during the weekday PM peak hour supporting the sensitivity analysis.

Table 6: NE Ingle Road/NE Goodwin Road Operations Assessment – weekday PM peak hour

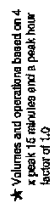
Scenario	Critical Movement	LOS	v/c ratio
2018 Background Conditions	SBL	C	0.33
2018 Background + 200 Homes	SBL	D	0.52
2018 Background + 203 homes	SBL	E	0.53
2018 Total Traffic (215 homes)	SBL	E	0.53
2018 Total Traffic (2015 homes) – mitigated <sup>1</sup>	SBL	D	0.51

Notes: LOS = Level of Service; v/c ratio = volume-to-capacity ratio  
<sup>1</sup>Mitigation includes provision of westbound right-turn lane

Appendix "H" contains the 2018 total traffic conditions traffic operations worksheets. Appendix "I" contains the traffic operations worksheets supporting the sensitivity analysis at NE Ingle Road/NE Goodwin Road.



2018 Total Traffic Conditions (Phase 1)  
Weekday AM Peak Hour  
Camas, Washington



2018 Total Traffic Conditions (Phase 1)  
Weekday PM Peak Hour  
Camas, Washington

CM	=	CRITICAL MOVEMENT (TWSC)
LOS	=	INTERSECTION LEVEL OF SERVICE (800) / CRITICAL MOVEMENT
Dat	=	LEVEL OF SERVICE (TWSC)
V/C	=	INTERSECTION AVERAGE CONTROL DELAY (S89) / CRITICAL
TWC	=	INTERVENTION CONTROL DELAY (TW80)
TW80	=	CRITICAL VOLUME-TO-CAPACITY RATIO
		TWO-WAY 8700 CONTROL

**KITTELSON & ASSOCIATES, INC.**  
TRANSPORTATION CONSULTING ENGINEERS  
10000 WILSON BLVD., SUITE 100  
LOS ANGELES, CALIF. 90024  
(213) 709-1100

## 2029 Background Traffic Conditions

The 2029 background traffic analysis identifies how the study area's transportation system will operate with regional growth, including completion of Phase 1 development. No further funded transportation improvement projects were identified at the study intersections that would be in place prior to the year 2029. In addition to the previously described in-process development, a one percent annual growth rate was applied to the 2018 background traffic volumes on City of Camas roadways to account for regional growth in the area per staff direction. Continued use of a two percent annual growth rate was assumed to the City of Vancouver roadways (NE 192<sup>nd</sup> Avenue).

The same lane configurations used in the 2018 analysis were assumed, with the exception of the configuration at NE Ingle Road/NE Goodwin Road. As previously noted, the developer proposes to construct an exclusive eastbound left-turn lane at the intersection in conjunction with the Phase 1 site development so this turn lane was assumed for the 2029 analysis. Signal timings were optimized with the assumption that signals in the area will be re-timed in the next fifteen years. In addition, some peak hour factors (PHF) were increased to account for future traffic changes, including:

- PHF increased to 0.80 in the a.m. peak hour at NW Friberg Street/NE Goodwin Road and NE 242<sup>nd</sup> Avenue/NE 28<sup>th</sup> Street
- PHF increased to 0.75 in the a.m. peak hour at NW Friberg Street/NW Lake Road; NW Parker Street/NW Lake Road; and NW Parker Street/NE 38<sup>th</sup> Avenue

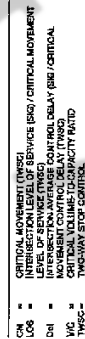
## Traffic Operations

Figures 16 and 17 summarize the year 2029 background traffic operations analysis results at the study intersections for the weekday a.m. and weekday p.m. peak-hours, respectively. As illustrated in the figures, all but two of the study intersections are forecast to operate acceptably:

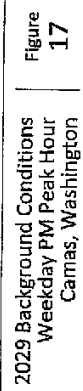
- The intersection of NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street is projected to operate at a LOS E and over-capacity during the weekday a.m. peak hour and LOS F and over-capacity during the p.m. peak hour.
- The southbound approach to the intersection of NE Ingle Road/NE Goodwin Road is projected to operate at a LOS E during the weekday p.m. peak hour (with provision of the westbound right-turn lane recommended in conjunction with Phase 1 site development).

*Appendix "J" contains the 2029 background conditions traffic operations worksheets.*





2029 Background Conditions  
Weekday AM Peak Hour  
Camas, Washington



## 2029 Total Traffic Conditions

The year 2029 total traffic analysis forecasts how the study area's transportation system will operate with full build-out of the proposed master plan development. The year 2029 background traffic volumes were added to the full build-out site-generated traffic to arrive at the total traffic volumes.

### ***Traffic Operations***

Figures 18 and 19 summarize the year 2029 total traffic operations analysis results at the study intersections for the weekday a.m. and weekday p.m. peak-hours, respectively. The projected turning movement counts are rounded to the nearest five vehicles per hour. As shown, the following study intersections do not meet standards during either the weekday a.m. or p.m. peak periods:

- NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500) (weekday a.m. and p.m. peak hours)
- NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street (weekday a.m. and p.m. peak hours, previously was failing during background a.m. and p.m. peak hours)
- NE Ingle Road/NE Goodwin Road (weekday a.m. and p.m. peak hours, previously was failing during background p.m. peak hour)

Potential mitigation measures for these intersections are discussed later in the report.

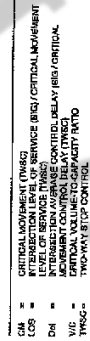
*Appendix "K" contains the 2029 total traffic conditions traffic operations worksheets.*

### Turn-Lane Considerations

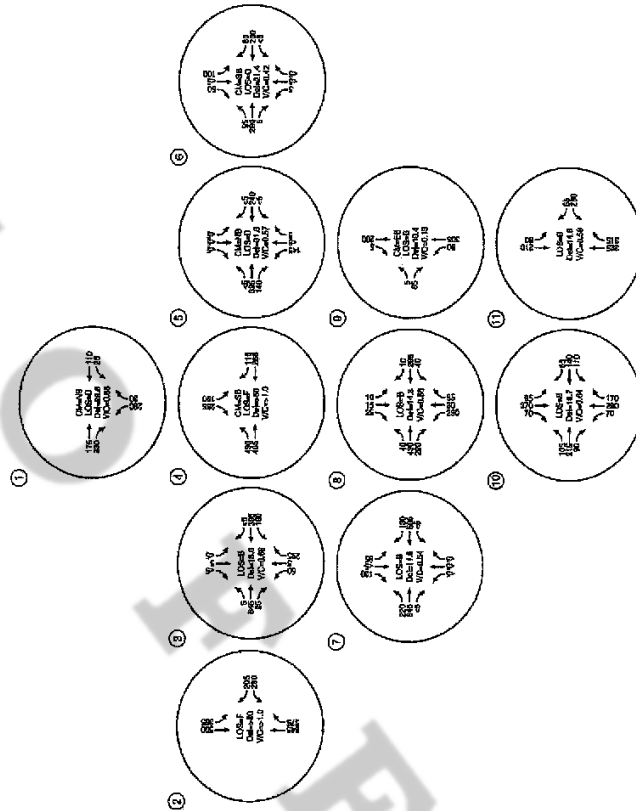
As referenced under the "Analysis Methodology," roadways under Washington State jurisdiction are subject to the turn lane guidelines contained in the *WSDOT Design Manual* (Reference 3). The potential need for turn-lanes at each study intersection was reviewed for the analysis scenarios. Intersections that meet turn-lane guidelines are further discussed below.

#### ***NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500)***

Traffic volumes at the intersection of NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500) meet WSDOT's guidelines for an eastbound right-turn lane on NE 58<sup>th</sup> Street under existing conditions and all future scenarios during both the weekday a.m. and p.m. peak hour. Construction of a right-turn lane could require right-of-way acquisition and will likely impact one or more private driveways along NE 58<sup>th</sup> Street (depending on the length of the deceleration lane constructed).



2029 Total Traffic Conditions (Build Out)  
Weekday AM Peak Hour  
Camas, Washington



**2029 Total Traffic Conditions (Build Out)**  
**Weekday PM Peak Hour**  
**Camas, Washington**

GM	CRITICAL MOVEMENT (TWSC)
LOS	INTERSECTION LEVEL OF SERVICE (LOS) / CRITICAL MOVEMENT
Dd	LEVEL OF SERVICE (TWSC)
WC	INTERSECTION AVERAGE CONTROL DELAY (SIC) / CRITICAL
WC2	MOVEMENT CONTROL DELAY (TWSC)
WC2	CRITICAL VOLUME-TO-CAPACITY RATIO
	TWO-WAY STOP CONTROL

KITTELSON & ASSOCIATES, INC.  
TRAINING/PROFESSIONAL CONSULTING/RESEARCHING

The table below assesses volumes at the intersection for various horizon year scenarios and the impact of the proposed development.

Table 7: NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500) Eastbound Right-Turn Lane Assessment

Scenario	Eastbound Right-Turn (EBRT) Volume	Meets Guideline?	Development-Added EBRT Trips	Impact of Development
2014 Existing Traffic – AM Peak	180	Yes		
2014 Existing Traffic – PM Peak	145	Yes		
2018 Background Traffic – AM Peak	180	Yes	8 (Phase 1)	4%
2018 Background Traffic – PM Peak	150	Yes	27 (Phase 1)	18%
2029 Background Traffic – AM Peak	210	Yes	45 (Build-out)	21%
2029 Background Traffic – PM Peak	190	Yes	138 (Build-out)	73%

The recorded crash history at the intersection was reviewed to identify potential safety issues that an eastbound right-turn lane might address. No crashes were reported involving vehicles making an eastbound right-turn. Given the lack of crash history and the relatively small impact of Phase 1, no improvements are recommended in conjunction with Phase 1. Nonetheless, given the amount of site-generated traffic that will be added to the eastbound right-turn movement as future phases of the master plan build-out, if right turn crashes materially increased, it is possible that a nexus could be established between requiring construction of an eastbound right-turn lane and traffic volume increases attributable to master plan trip development. Accordingly, we recommend that future site plan applications prepared subsequent to Phase 1 provide an updated assessment as to the potential need for providing a right-turn taper or lane at the intersection.

#### **NE 242<sup>nd</sup> Avenue (SR 500)/NE 28<sup>th</sup> Street**

Traffic volumes at the intersection of NE 242<sup>nd</sup> Avenue (SR 500)/NE 28<sup>th</sup> Street meet WSDOT's guidelines for a left-turn lane on the eastbound approach under existing conditions and all future scenarios during the weekday p.m. peak hour. The table below assesses volumes at the intersection for each horizon year scenario and the impact of the proposed development. *As shown in the table, the Phase 1 development does not add any trips to the eastbound left-turn lane.* The trips generated by build-out of the master plan development are from the retail component and total less than 10.

Table 8: NE 242<sup>nd</sup> Avenue (SR 500)/NE 28<sup>th</sup> Street Eastbound Left-Turn Lane Assessment

Scenario	Eastbound Left-Turn Volume	Meets Guidelines? (Recommended Storage)	Development-Added Trips	Impact of Development
2014 Existing Traffic – AM Peak	10	No		
2014 Existing Traffic – PM Peak	80	Yes (100 feet)		
2018 Background Traffic – AM Peak	10	No	0 (Phase 1)	0%
2018 Background Traffic – PM Peak	80	Yes (100 feet)	0 (Phase 1)	0%
2029 Background Traffic – AM Peak	10	No	2 (Build-out)	20%
2029 Background Traffic – PM Peak	90	Yes (100 feet)	9 (Build-out)	10%

The recorded crash history at the intersection was reviewed to identify potential safety issues that an eastbound left-turn lane might address. While two angle crashes were reported from vehicles making a southbound left-turn, no crashes were reported involving vehicles making an eastbound left-turn.

Based on our review of the information provided above, we find no basis for recommending improvements to the NE 242<sup>nd</sup> Avenue (SR 500)/NE 28<sup>th</sup> Street intersection in conjunction with Phase 1 site development. We base this conclusion on the proposed development adding no trips to the left-turn movement in question, the lack of crash history related to left-turns, and the general lack of a nexus given the small trip impact of the proposed Phase 1 development at this location.

#### *Planned Future Intersection Improvements*

The 2012 *City of Camas Traffic Impact Fee Update Report* (Reference 2) identifies the future need to widen NE 28<sup>th</sup> Street to have a center left-turn lane from Ingle Road to NE 242<sup>nd</sup> Avenue. A related project would create a new NE 242<sup>nd</sup> Avenue extension south of NE 28<sup>th</sup> Street. Given the City's planned improvements, we recommend the City of Camas make a finding that the traffic impact fee payments made by the master plan for Phase 1 and future phases of the project mitigate development impacts at the intersection, and therefore require no additional mitigation.

#### **Recommended Mitigations**

As discussed above, all study intersections meet operating standards under existing and 2018 background and total traffic conditions for both the weekday a.m. and p.m. peak hours. Four intersections do not meet operating standards in 2029 under background and/or total traffic conditions; each is discussed below.

#### **NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500)**

The minor street northbound left-turn at the intersection of NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500) is projected to not meet current WSDOT standards in the 2029 total traffic conditions during the weekday a.m. and p.m. peak hours. The intersection is projected to operate at a volume-to-capacity (v/c) ratio of 0.72 and LOS D during the a.m. peak hour and v/c ratio of 0.70 and LOS D during the p.m. peak hour. It is therefore not within WSDOT's LOS requirement (LOS C) for non-HSS facilities in rural areas. The intersection is three-legged and stop-controlled on the northbound approach. The northbound left-turn is the critical movement at the intersection, with all other movements operating at a LOS A and well under capacity. During both the weekday a.m. and p.m. peak hours, the northbound left-turn is 3 seconds or less over the delay threshold between LOS C and LOS D. In the event that the area around the intersection urbanizes before build-out, the WSDOT performance standard will shift to LOS E and the intersection would operate within WSDOT standards.

As discussed in the *Turn-Lane Considerations* section above, the intersection currently meets warrants for an eastbound right-turn lane, which would improve operations for northbound left-turning vehicles to a LOS C during the 2029 total traffic conditions. As also discussed above, it is expected that a nexus might ultimately be established between requiring construction of an eastbound right-turn lane and traffic volume increases attributable to master plan trip development, based on LOS and delay at the intersection. Accordingly, we recommend that future site plan applications prepared subsequent to Phase 1 provide an updated assessment as to the potential need for providing a right-turn taper or lane at the intersection, considering both the need for a right-turn taper or lane and delay with the northbound left-turn.

*Appendix "L" contains the traffic operations worksheets supporting the potential mitigations at NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500).*

#### **NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street**

The intersection of NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street is projected to not meet standards in the 2029 background conditions and the 2029 total traffic conditions during both the weekday a.m. and p.m. peak hours. The intersection operates over-capacity in all four of these scenarios and at a LOS F during the weekday p.m. peak hour in the background conditions and weekday a.m. and p.m. peak hours in the total traffic scenarios.

#### **Potential Future City of Vancouver Improvements**

The City of Vancouver has identified NE 192<sup>nd</sup> Avenue as ultimately requiring five travel lanes (two southbound through lanes, a center left-turn lane, and two northbound through lanes) and includes



the widening on the City's Traffic Impact Fee (TIF) program project list. Because no near-term funding has been programmed for the future five-lane section, the existing section was assumed to be in place in 2029 for the purposes of this traffic study. Widening by the City of Vancouver or others in the interim would add capacity and change the intersection operations.

In the event that NE 192<sup>nd</sup> Avenue is widened to five lanes through the NE 13<sup>th</sup> Street intersection, the intersection is projected to meet City of Vancouver intersection operating standards under 2029 background conditions. To mitigate total traffic conditions, a westbound right-turn lane would also be required. In the event that 192<sup>nd</sup> Avenue is not widened, a northbound right-turn lane and westbound right-turn lane would be sufficient to mitigate 2029 total traffic conditions (mitigation assumes maintaining operations equivalent to or better than those experienced under 2029 background conditions with site build-out but does not fully accommodate forecast queuing).

#### *Potential Master Plan Development Mitigation Options*

As noted above, the provision of a northbound right-turn lane and westbound right-turn lane would offer more than sufficient capacity to mitigate the impact of the master plan site build-out while also providing additional capacity to allow for future growth and development. Therefore, we recommend the Green Mountain Master Plan provide a proportionate share contribution towards the construction of a northbound right-turn lane and a westbound right-turn lane on NE 13<sup>th</sup> Avenue. The City of Vancouver has successfully administered pro-rata share contribution collection systems at other intersections, allowing each development impacting a failing intersection to contribute a "fair-share" of the mitigation cost.

Appendix "M" identifies a proposed proportionate cost sharing methodology. Under this methodology, each trip would be assessed a fee of \$391. Therefore the Green Mountain development contribution at full build-out would be approximately \$123,600. *Details of the cost estimate, capacity generated by the improvements, and impact of the proposed development supporting the proportionate share calculations are provided in Appendix "M."*

It should be noted that the NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street intersection is listed on the City of Vancouver's TIF program project list. In the case of the Green Mountain Master plan, any TIF credits issued by the City of Vancouver would only be redeemable for development impacts in Vancouver (not Camas).

#### ***NE Ingle Road/NE Goodwin Road***

The intersection of NE Ingle Road/NE Goodwin Road is projected to not meet City of Camas intersection operating standards in the 2029 background conditions during the weekday p.m. peak

hour and the 2029 total traffic conditions during both the weekday a.m. and p.m. peak hours. In order to mitigate 2029 background conditions, a two-way left-turn lane could potentially be provided east of the intersection to facilitate southbound left-turns, which are the critical movement at the intersection.

The City's long-term plans anticipate significant reconstruction of the intersection and the approaching roadways as recorded in the 2012 *City of Camas Traffic Impact Fee Update* (Reference 2). Identified improvement needs include:

- Installation of a traffic signal at NE Ingle Road/NE Goodwin Road;
- The extension of a new collector roadway from NE Ingle Road south to NE 232<sup>nd</sup> Avenue;
- Widening of NE Goodwin Road from two to three lanes between NE Ingle Road and NE 232<sup>nd</sup> Avenue; and
- Widening of NE Goodwin Road from two to five lanes NE between Friberg Street and NE Ingle Road.

Considering the Green Mountain Master Plan project location and traffic impacts at the intersection, we recommend the following series of mitigations in conjunction with the proposed development:

- Construct an eastbound left-turn lane on NE Goodwin Road at NE Ingle Road with the first Phase 1 trip.
- Construct a westbound right-turn lane on NE Goodwin Road at NE Ingle Road with the 203<sup>rd</sup> Phase 1 trip (prior to occupancy of 203<sup>rd</sup> single family home on site). The right-turn lane should provide at least 100 feet of storage. (Note, in the long-term future, the City could consider restriping the right-turn lane to a shared through/right lane when widening of NE Goodwin Road west of NE Ingle Road develops two westbound receiving lanes).
- Construct a three-lane roadway section (with center two-way left-turn lane) on NE Goodwin Road along the site frontage in conjunction with standard frontage improvements as adjacent development occurs.
- Upon completion of Phase 1 site development (including construction of the eastbound left-turn lane and westbound right-turn lane on NE Goodwin Road at NE Ingle Road with Phase 1), the developer shall monitor the need for installation of a traffic signal with each future site plan application at the intersection and construct a traffic signal when the intersection no longer satisfies City of Camas performance standard (LOS "D" and v/c of 0.90 or better) and the intersection volumes meet traffic signal warrants (subject to direction from the City of Camas).

- The monitoring effort is recommended to require preparation of then-current traffic counts, assessment of traffic signal warrants based on build-out of the then-current site plan application (and all other approved development), and a summary report prepared by a licensed professional engineer. The study should consider potential turn movement re-routing that is expected to occur at the NE Goodwin Road/NE Ingle Road intersection as new connections to the master plan site are made to NE Goodwin Road east of NE Ingle Road.

#### **On-site Circulation and Operations**

We recommend that a detailed review of on-site circulation and operations be prepared in conjunction with each future site plan application. This review will provide an opportunity to consider site-specific details when they become available and should include consideration of vehicular, pedestrian, and delivery vehicle paths.

On-site landscaping, signage and any above-ground utilities should be provided appropriately to ensure that adequate sight distance is provided and maintained and should be considered as part of future site plan applications.

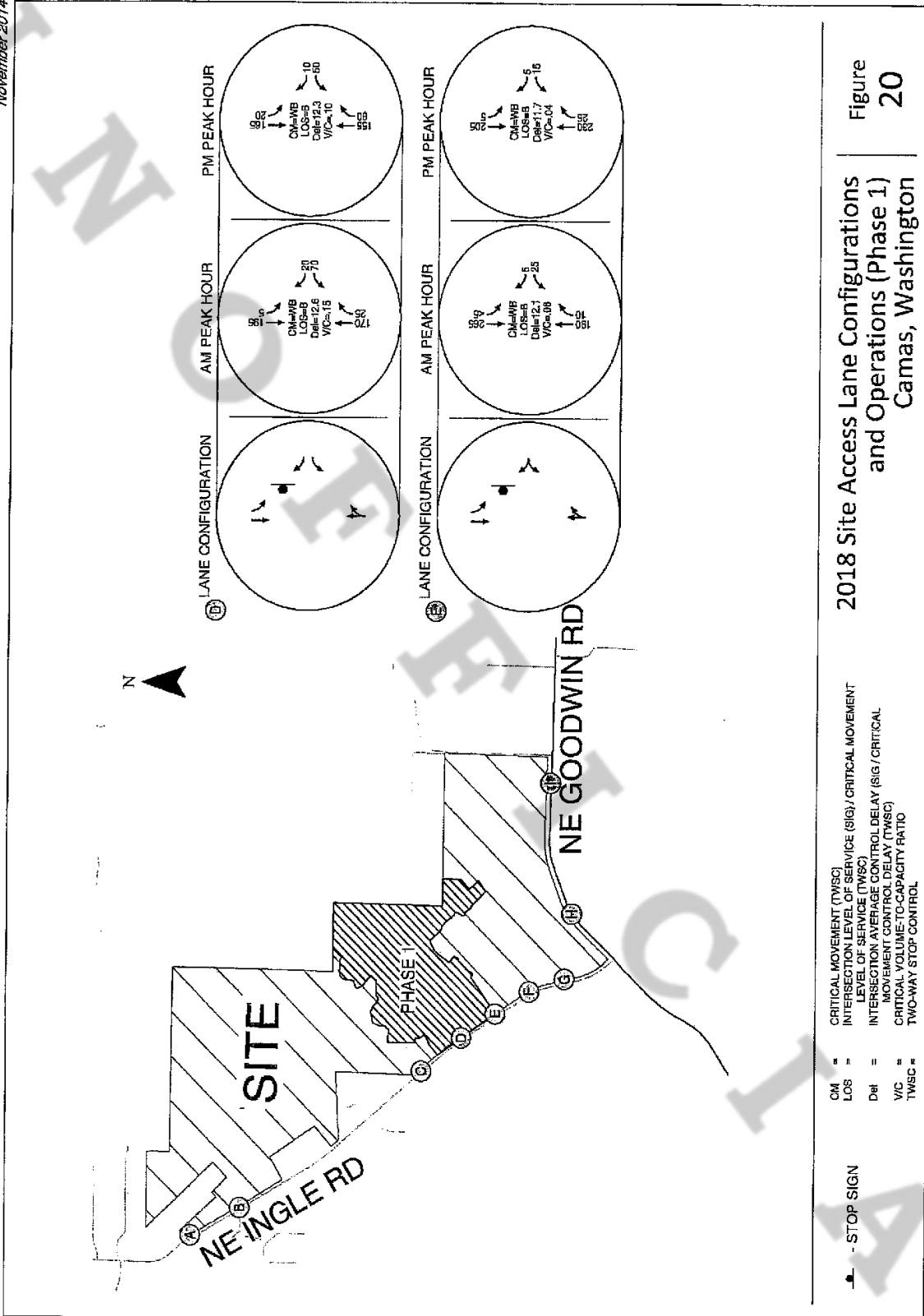
#### **Access Requirements**

The City of Camas requires a minimum intersection spacing of 330 feet on three lane collector streets. This spacing should be maintained with the proposed development.

#### **Phase 1 Access Operations**

The portion of the site that will be developed with Phase 1 is noted in Figure 2. As seen, two access points are proposed for the Phase 1 development. The proposed lane configuration at these accesses and operations is shown in Figure 20. The developer has proposed to maintain access to the existing golf course in conjunction with the Phase 1 development. The existing gravel maintenance only access will be improved to provide an interim main access to the remaining portion of the golf course (reduced to eight holes). The proposed interim golf course access is located approximately 400 feet south of the proposed southern access, which meets the City's intersection spacing requirements for a collector street noted above.

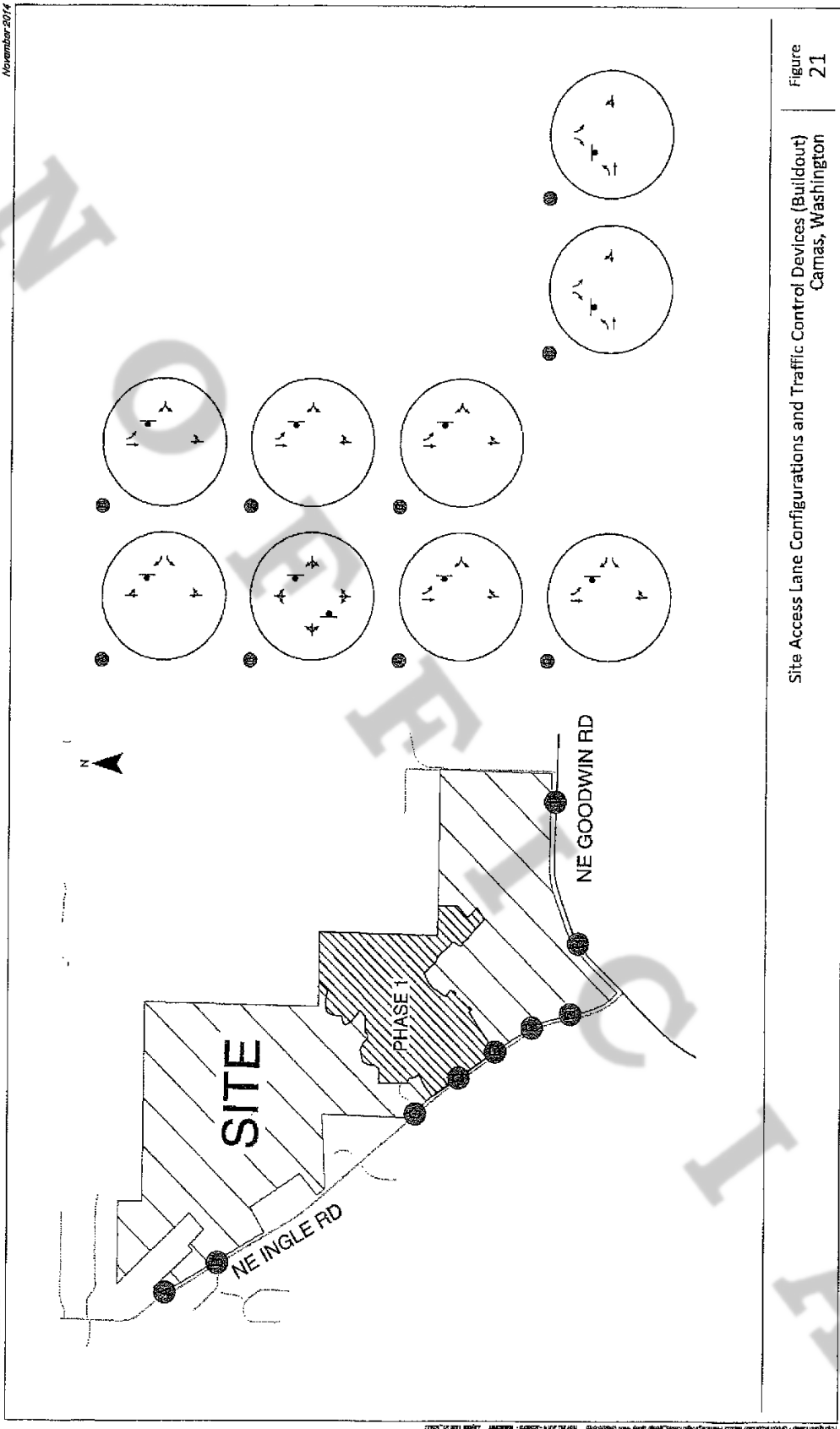
*Appendix "N" contains the traffic operations worksheets for the Phase 1 access operations.*



### ***Build-out Access Operations***

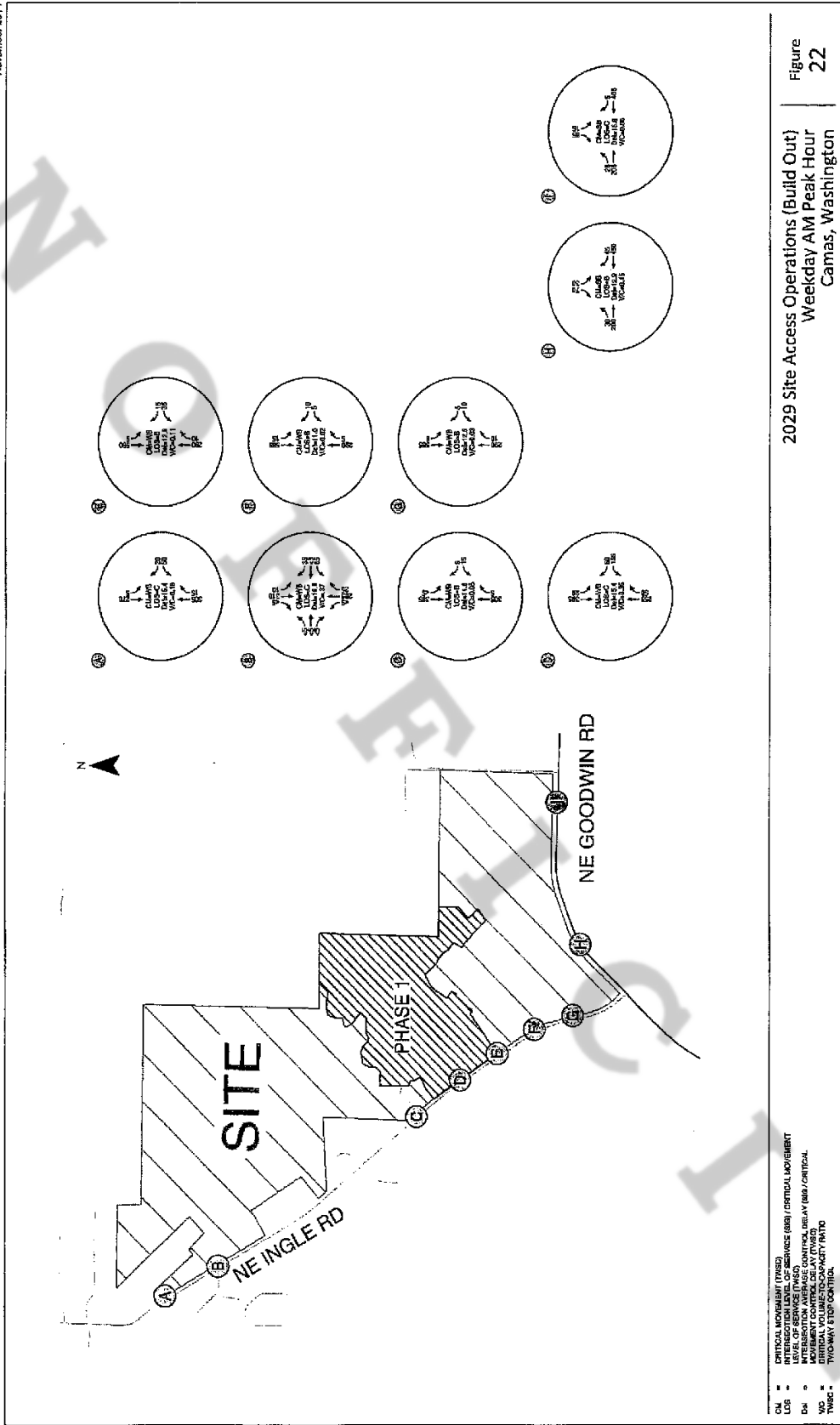
An additional five access points on NE Ingle Road and two access points on NE Goodwin Road are anticipated with full build-out of the development. The exact location of the access points may change as the plans for the development are refined. We assessed operations at these access points assuming the lane configuration shown in Figure 21. As seen in the figure, we expect NE Ingle Road will be developed with a center two-way left-turn lane (TWLTL) through access "C" and NE Goodwin Road will be developed with a TWLTL along the site frontage. Operations at the site accesses for the weekday a.m. and p.m. peak hours are shown in Figures 22 and 23. As seen in the figures, all access points operate at a LOS "C" or better, with the exception of the eastern access on NE Goodwin Road. The southbound left-turn movement at this intersection operates at a LOS D during the weekday p.m. peak hour.

We recommend further evaluation of potential right-turn deceleration lane needs be considered at the time of site plan application. This evaluation should consider the potential need for southbound left-turn lanes or northbound right-turn lanes along NE Ingle Road at the remaining access points as well as corresponding turn lane queue storage requirements. *Appendix "O" contains the traffic operations worksheets for the full build-out access operations.*



Site Access Lane Configurations and Traffic Control Devices (Buildout)  
Camas, Washington

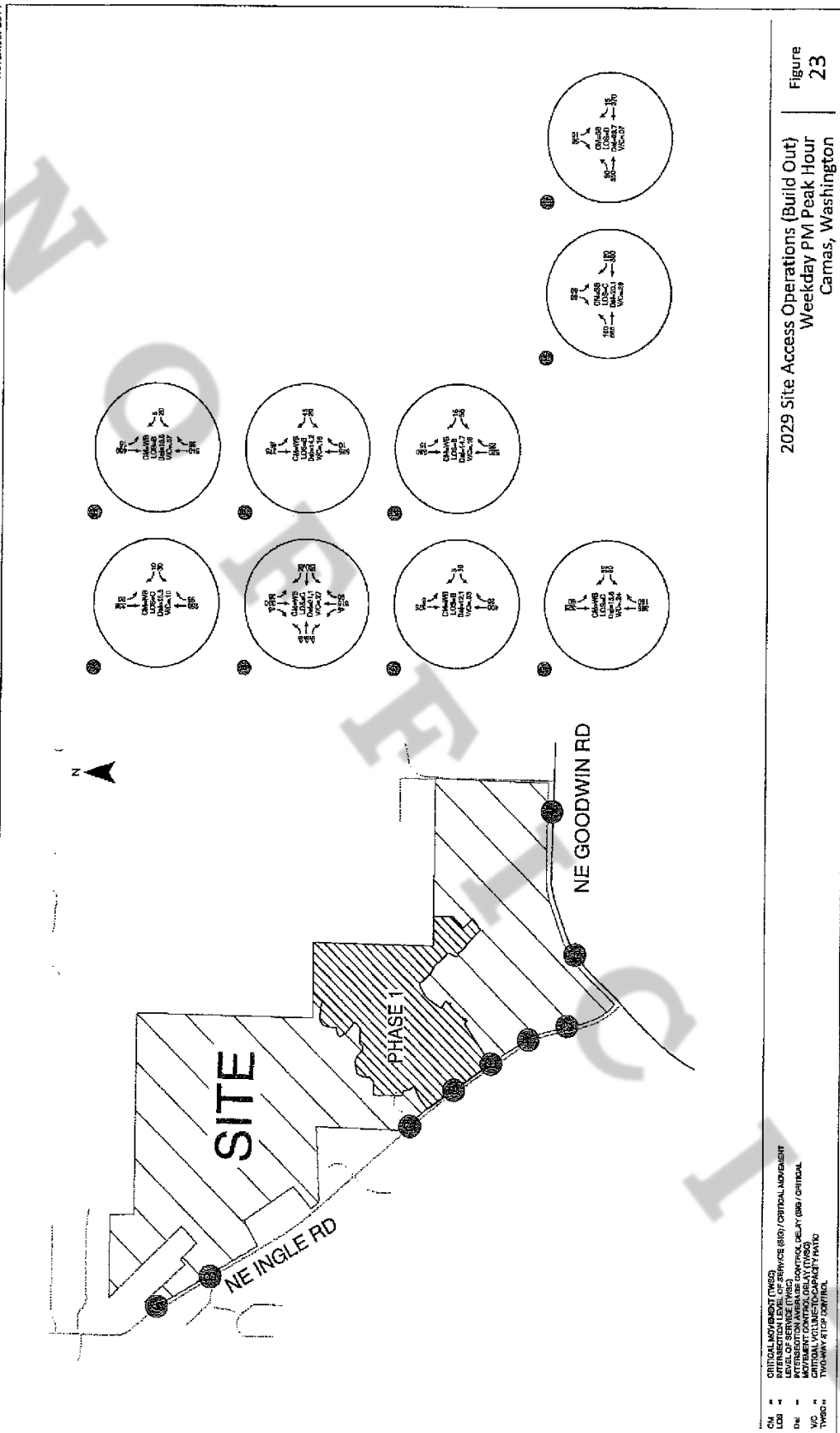
Figure  
21



2029 Site Access Operations (Build Out)  
Weekday AM Peak Hour  
Camas, Washington

November 2014

Green Mountain Master Plan



2029 Site Access Operations (Build Out)  
Weekday PM Peak Hour  
Camas, Washington

Figure  
23



## TRANSPORTATION COMPLIANCE LETTER

This master plan traffic study documents the transportation implications of the proposed development at build-out. There are on-site access, circulation, turn lane, and driveway location and design considerations that will need to be addressed when specific site plan applications are made. Further, the phasing and timing of master plan build-out is likely to evolve over time to adapt to market conditions. Accordingly, it is recommended that a transportation compliance letter be prepared for each preliminary plat or site plan application to address on-site transportation, access and pedestrian standards and to ensure that the mitigation measures provided for in this report are applied at the appropriate phase of development. The transportation compliance letter should also document the trip generation of each phase of development to ensure that the total number of trips generated from future development does not exceed the number of trips vested under the Development Agreement.

We recommend each transportation compliance letter could document:

- The number of site-generated trips (daily, weekday a.m. peak hour, weekday p.m. peak hour) estimated to be used by the then-current proposed site development application.
- The number of site-generated trips (daily, weekday a.m. peak hour, weekday p.m. peak hour) previously used by approved site development applications on the master plan site.
- An accounting of the number of site-generated trips (daily, weekday a.m. peak hour, weekday p.m. peak hour) remaining assuming approval of the then-current site plan application.
  - Note: In the event that a future site plan application is projected to use more trips than were previously assumed through the master plan, additional traffic capacity/concurrency analysis would be triggered (unless a traffic count cordon-study of the master plan campus demonstrates the number of trips generated by the site is less than projected by standard ITE trip rates and thus the overall development impact actually is less than or equal to the number of trips assumed by the master plan).
- Evaluation of outstanding mitigation needs (as appropriate consistent with the Master Plan recommendations) at the intersections of:
  - Need for an eastbound right-turn lane at NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500)
  - NE Ingle Road/NE Goodwin Road (including traffic signal warrant analysis)

## FINDINGS AND RECOMMENDATIONS

Based on the results of the transportation impact analysis, Phase 1 of the Green Mountain Master Plan (estimated to generate 2,050 daily trips and 215 net new p.m. peak hour trips) can be developed while maintaining acceptable levels of service and safety at the study intersections without any required off-site mitigations. The primary findings and recommendations of this study are summarized below.

### Existing Conditions

- All of the study intersections currently operate acceptably during the weekday a.m. and p.m. peak hours.

### Proposed Development Activities

- Phase 1 site development includes 215 residential units. It is estimated to generate 160 net new a.m. peak hour trips (40 in and 120 out) and 215 net new p.m. peak hour trips (135 in and 80 out).
- Build-out of the site development includes 1,300 residential units and 90,000 square feet of retail use. Build-out (including Phase 1) is collectively estimated to generate a total of 995 net new a.m. peak hour trips (290 in and 705 out) and 1,655 net new p.m. peak hour trips (965 in and 690 out).
- Access to Phase 1 of the site will be provided via two full movement driveways on NW Ingle Road. In the future when the site is built out, access will be provided on both NW Ingle Road and NW Goodwin Road.

### Year 2018 Background Traffic Conditions

- Year 2018 background conditions (without construction of the Green Mountain mixed-use development) were estimated assuming completion of approved in-process developments within the study area and an annual 2% growth rate on City of Vancouver roadways.
- Operational analyses indicate that the study intersections are forecast to continue to operate acceptably.

#### Year 2018 Total Traffic Conditions

- Year 2018 total traffic conditions were estimated assuming completion of approved in-process developments within the study area plus Phase 1 of the proposed development.
- Operational analyses indicate that the study intersections are forecast to continue to operate acceptably under 2018 total traffic conditions with one exception:
  - The southbound movement at the intersection of NE Ingle Road/NE Goodwin Road is projected to operate at a LOS E during the weekday p.m. peak hour. This failure is triggered by the 203<sup>rd</sup> single family residential unit in Phase 1 of the development.

#### Year 2029 Background Traffic Conditions

- Year 2029 background conditions (with construction of only Phase 1 of proposed development but no further phases) were estimated assuming the same in-process developments included in the 2018 analysis as well as a one percent growth rate on City of Camas roadways and two percent growth rate on City of Vancouver roadways.
- Operational analyses indicate that the study intersections are forecast to continue to operate acceptably under year 2029 background traffic conditions with two exceptions:
  - The intersection of NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street is projected to operate at a LOS E and over-capacity during the weekday a.m. peak hour and LOS F and over-capacity during the weekday p.m. peak hour,
  - The southbound approach to the intersection of NE Ingle Road/NE Goodwin Road is projected to operate at a LOS F during the weekday p.m. peak hour.

#### Year 2029 Total Traffic Conditions

- Year 2029 total traffic conditions were estimated assuming year 2029 background traffic and complete build-out of the proposed Green Mountain development.
- Operational analyses indicate that the study intersections are forecast to continue to operate acceptably under year 2029 total traffic conditions, with the exception of:
  - NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500) (weekday a.m. and p.m.)
  - NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street (weekday a.m. and p.m.)
  - NE Ingle Road/NE Goodwin Road (weekday a.m. and p.m.)

### Turn-Lane Considerations

- An assessment of turn-lane need was conducted for each study intersection.
- The intersection of NE 199<sup>th</sup> Avenue/NE 58<sup>th</sup> Street (SR 500) meets WSDOT's guidelines for a right-turn lane on the eastbound approach under existing conditions and all future scenarios during both the weekday a.m. and p.m. peak hour.
  - The crash history indicates that no crashes were recorded between 2008-2013 involving vehicles making an eastbound right-turn.
  - Given the lack of crash history related to eastbound right-turns and the relatively small impact of Phase 1 (eight eastbound right-turn trips during the weekday a.m. peak hour, 27 eastbound right-turn trips during the weekday p.m. peak hour), no improvements are recommended in conjunction with Phase 1.
  - In the future, the provision of a right-turn taper or lane could be considered if suggested by the crash history at the intersection.
- The intersection of NE 242<sup>nd</sup> Avenue (SR 500)/NE 28<sup>th</sup> Street meets WSDOT's guidelines for a left-turn lane on the eastbound approach under existing conditions and all future scenarios during the weekday p.m. peak hour.
  - The crash history indicates that no crashes were recorded between 2008-2013 involving vehicles making an eastbound left-turn.
  - The City's long-term plans include a traffic signal and southbound left-turn lane at NE 242nd Avenue (SR 500)/NE 28th Street.
  - Given the lack of recorded crash history, the small impact of the proposed development (no Phase 1 eastbound left-turns and less than 10 at master plan build-out), and future improvement plans at this intersection, no turn-lane improvements are recommended with Phase 1 site development.

### Recommendations

- Regardless of the proposed master plan application, we recommend that the City of Camas consider potential improvements to the intersection of NE Ingle Road/NE Goodwin Road to address intersection sight distance limitations associated with the location of the stop bar, such as relocating the stop bar.
- The following improvements should be provided in conjunction with site development:
  - Phase 1 Site Development

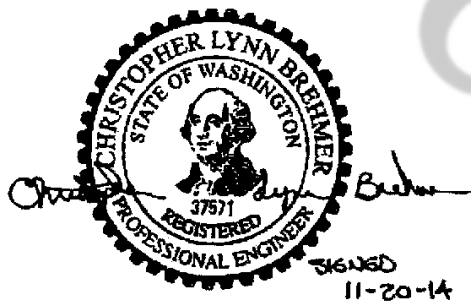
- An eastbound left-turn lane with 100 feet of storage should be provided at NE Ingle Road/NE Goodwin Road.
- A westbound right-turn lane on NE Goodwin Road at NE Ingle Road prior to occupancy of the 203<sup>rd</sup> single family home in Phase 1. The right-turn lane should provide at least 100 feet of storage.
- On-site and off-site landscaping and any above ground utilities at the site-access driveways and internal roadways should be provided appropriately to ensure that adequate sight-distance is maintained.
- For Phase 1 and all future phases, a Transportation Compliance Letter as described above should be prepared by a licensed professional engineer and submitted with the then-current site plan application.
- Full Build-Out of Site Development (items to be assessed in Transportation Compliance Letter unless otherwise mitigated):
  - Future site plan applications should provide an updated assessment as to the potential need for providing an eastbound right-turn taper or lane at the 199<sup>th</sup> Avenue (SR 500)/NE 58<sup>th</sup> Street intersection unless otherwise deemed mitigated by the project or others.
  - Pay a proportionate "fair-share" financial contribution towards capacity mitigations at the intersection of NE 192<sup>nd</sup> Avenue/NE 13<sup>th</sup> Street. This contribution would partially fund the eventual construction of a northbound right-turn lane on NE 192<sup>nd</sup> Avenue and a westbound right-turn lane on NE 13<sup>th</sup> Avenue.
- Mitigations will be needed to improve NE Ingle Road/NE Goodwin Road in 2029. We recommend the following:
  - The applicant construct a three-lane section (with center two-way left-turn lane) on NE Goodwin Road along the site frontage.
  - The applicant assess traffic volumes and signal warrants at NE Ingle Road/NE Goodwin Road with each phase of development and construct a traffic signal and related appurtenances when the intersection no longer satisfies City of Camas performance standard (LOS "D" and v/c of 0.90 or better) and intersection volumes meet traffic signal warrants.

- On-site and off-site landscaping and any above ground utilities at the site-access driveways and internal roadways should be provided appropriately to ensure that adequate sight-distance is maintained.

We trust this letter adequately addresses the traffic impacts associated with the proposed Green Mountain Master Plan development. Please contact us if you have any questions or comments regarding the contents of this report or the analysis performed.

## REFERENCES

1. Transportation Research Board 2000. Highway Capacity Manual. 2000.
2. DKS Associates. *City of Camas Traffic Impact Fee Update*. May 2012.
3. Washington State Department of Transportation. *Design Manual*. July 2013.
4. C-Tran. <http://www.c-tran.com>. May 2014.
5. Oregon Department of Transportation Research Section. *SPR 667 Assessment of Statewide Intersection Safety Performance*. June 2011.
6. American Association of State Highway and Transportation Officials. *Highway Safety Manual*. 2010.
7. Institute of Transportation Engineers. *Trip Generation Manual*, 9<sup>th</sup> Edition. 2012.
8. City of Vancouver. *Traffic Study Guidelines*. December 2013.



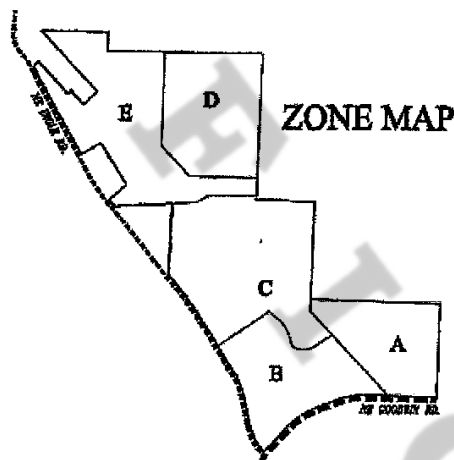
Kittelson & Associates, Inc.

Portland, Oregon

## EXHIBIT E

### Tree Preservation Plan

Zone	Pods Included in Zone	Total Trees in Zone	Trees Preserved	Percentage of Trees Preserved
Zone A (Southeast)	D4, D5, D6 E2, E3	170	90	39%
Zone B (South)	H (CC), A1, A2, A3, B5	342	265	77%
Zone C (Central)	B1, B2, B3, C1, C2, D1, D2, D3, E1	1,454	488	34%
Zone D (Northeast)	G	3,524	2,345	67%
Zone E (Northwest)	B4, E4, F1, F2, F3, F4	4,040	1,571	39%
<b>Total Site</b>		<b><u>9,589</u></b>	<b><u>4,759</u></b>	<b><u>50%</u></b>



The Tree Preservation Plan is based on a complete tree survey of the entire Property. This survey finds that nearly 9,600 trees are present on the property. The Property has been divided into five "zones" that identify five distinct areas of future development. The zones were established to assure that acceptable numbers of trees were preserved throughout the Property, not just in one isolated area rendering the remaining portions of the site bare of trees. The percentage of trees protected in a given zone varies from 34% to 77%, with the net result being that at least 50% of the existing trees on the Property will be preserved.

Compliance with the Tree Preservation Plan will take place with each future development application (Preliminary Plat or Site Plan Review), at which time the applicant will demonstrate that the number of trees protected will meet or exceed the amount listed in the "Trees Preserved" column in the above

table. In the event that a given development application covers only part of a zone, the applicant shall demonstrate that the current development application will not preclude the preservation of the minimum number of trees required to be preserved for that zone when the zone is fully developed. In addition to the trees that will be preserved, thousands of trees will be planted as part of the development's landscape requirements, including in parks, open spaces, streetscapes, and residential areas.

Consistent with Camas City code, Oregon White Oak trees over 20" dbh are considered habitats of local importance, as well as Oregon White Oaks that form a grove of one acre or larger. Such oaks shall be considered jurisdictional for the purposes of this Tree Preservation Plan. Any jurisdictional Oregon White Oak trees shall be mitigated for at a 2:1 stem count ratio and installed within an appropriate area on site. Oregon white oak trees installed as mitigation will be 1.5" caliper at a minimum. Where possible, oaks will be planted within vegetation voids associated with riparian corridors, oak groves and green space to increase oak habitat connectivity across the site. The location of oak plantings shall be at the direction of a professional biologist or certified arborist.



# EXHIBIT F

## URBAN VILLAGE AREA - Mixed Use, Community Commercial, A and B PODS

Urban Village Area	Minimum of 8.8 acres with ground floor Employment/Commercial Use (as provided for in 18.07.030 Table 1). Allow horizontal and vertical Mixed Use PODs H, A1, A2, A3, B5 and 100 Units at the Village Center
--------------------	---

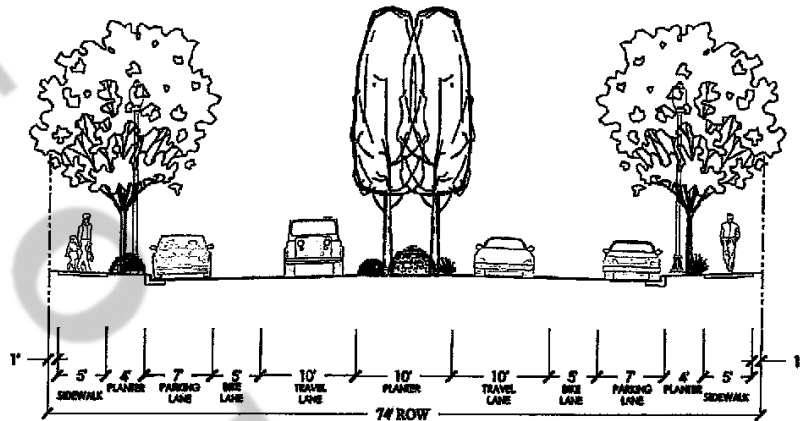
## DENSITY and DIMENSIONS - Camas MF zones and Green Mountain C, B and A PODS

The bold, italic and underlined standards are the Density, Dimension and use standards for the Green Mountain Project C, B and A pods.

C Pod - 6-10 units/acre - 3000-5000 SF lots      B Pod - 6-18 units/acre - 1000-3000 SF lots      A Pod - 12-24 units/acre

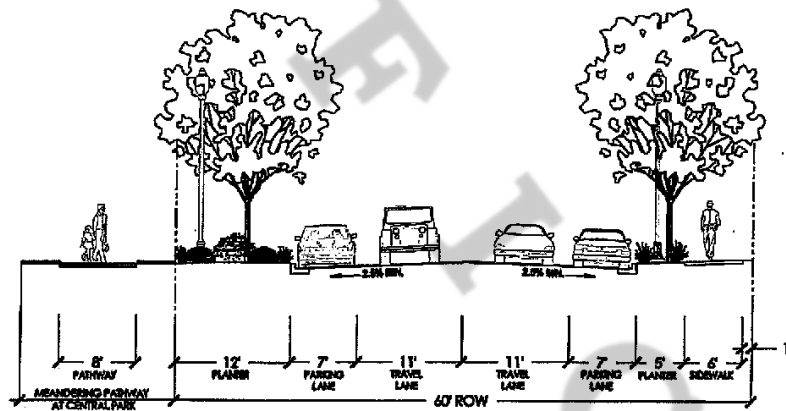
DENSITY	MF-10	C PODS	MF-18	B PODS	MF-24	A PODS
Max. du/gac	10	10	18	18	24	24
Min. du/gac	6	6	6	6	6	12
STANDARD LOTS						
Min. lot SF	3,000	3,000 <u><i>1st</i></u>	2,100	<u><i>1,000 1st</i></u>	1,800	<u><i>1,000 1st</i></u>
Min. lot width	30	30	20	20	20	20
Min. lot depth	70	70	60	<u><i>50</i></u>	60	<u><i>50</i></u>
Max/Floor Area per du	No Max	No Max	No Max	No Max	No Max	No Max
SETBACKS						
Min./front/at garage	15/18	<u><i>10/18</i></u>	10/18	<u><i>6/3@05/18</i></u>	10/18	<u><i>None</i></u>
Min. side	3 [1]	3	3 [1]	3	3 [1]	<u><i>None 1st</i></u>
Min. side Flanking Street	15	<u><i>10</i></u>	15	<u><i>10</i></u>	15	<u><i>None 1st</i></u>
Min. rear (garage @ alley)	10	<u><i>10 1st 1st</i></u>	10	<u><i>10 1st 1st</i></u>	10	<u><i>None 1st</i></u>
LOT COVERAGE, Max.	55%	55%	65%	<u><i>None</i></u>	75%	<u><i>None</i></u>
BUILDING HEIGHT, Max.	35 [2]	35	45 [2]	45	45 [2]	<u><i>60</i></u>

- a. Single Family Detached homes to be permitted. For SPD in A POD apply setbacks in B POD.  
b. 10 feet for front access garage.  
c. Minimum rear yard for alley accessed garage is either 3' or 18'.  
d. Franchise utilities to be located in front or side yard easements abutting right of way.
1. The non-attached side of a dwelling unit shall be three feet.  
Otherwise a zero-lot line is assumed.  
2. Maximum building height: three stories and a basement  
but not to exceed maximum building height.



NOTE: REPLACE PARKING WITH LANDSCAPED CURB EXTENSION AT SELECT INTERSECTIONS

## ENTRY BOULEVARD

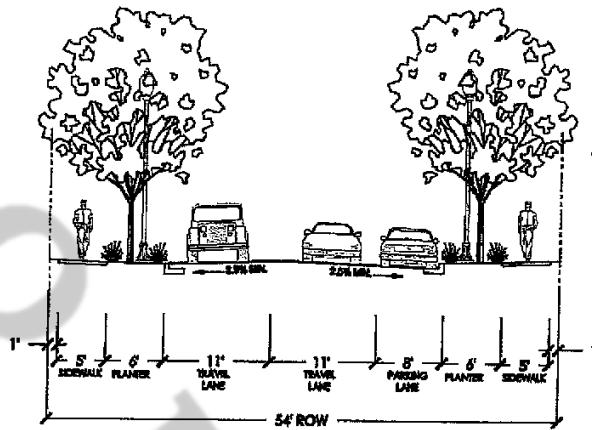


## CIRCULATOR STREET AT CENTRAL PARK

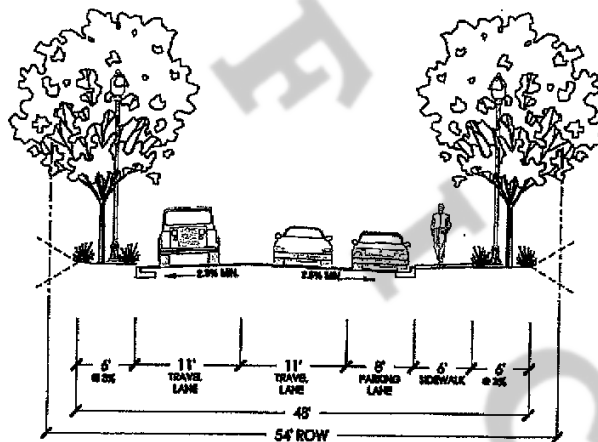
## EXHIBIT G

11/14/14

1 OF 2



**CIRCULATOR STREET**  
**AT D & E PODS**



**CIRCULATOR STREET**  
**AT ENVIRONMENTALLY SENSITIVE FRONTAGE OR CROSSING &**  
**AT STREET GRADES GREATER THAN 12%**

**EXHIBIT G**

11/14/14

2 OF 2