Gracie's Landing Subdivision

Subdivision Application

July 6, 2016

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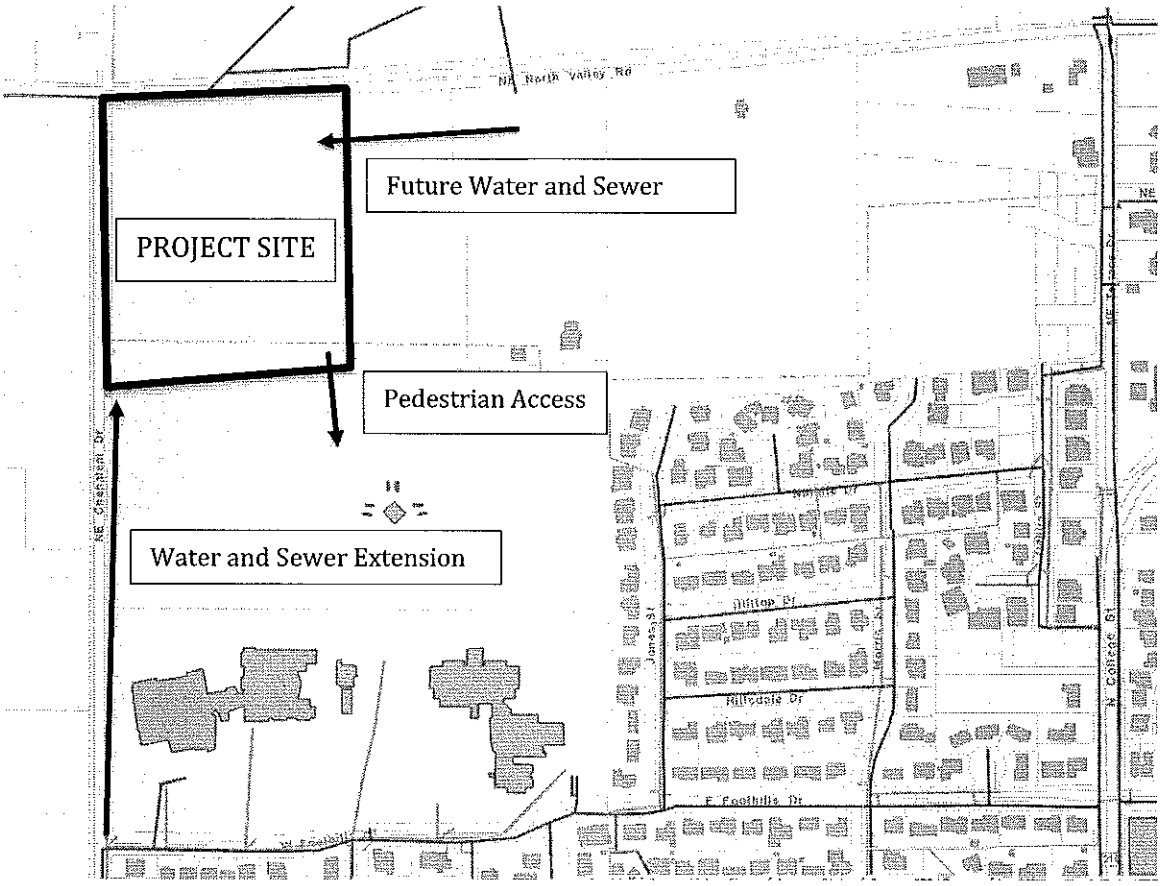
DATA SHEET

Property Owner	Newberg Baptist Church
Applicant	Del Boca Vista, LLC PO Box 486 Newberg, OR 97132 Phone: 971-706-2058
Property Description	R3207-00900 24950 North Valley Rd. Newberg
Zoning:	LDR Low Density Residential
Lot Size:	10.37 ac
Proposal:	53 Lot Subdivision
Minimum Lot Size per Code:	5,000sf
Proposed Lots sizes:	4894-10506 sf
Average Lot Size:	5,580 sf
Target Density:	4.4 units per acre
Proposed Density:	5.11 units/acre

PROJECT OVERVIEW

Del Boca Vista, LLC is proposing a 53-lot subdivision for a detached single-family residential development. This subdivision will occur on tax lot R3207-00900 which is located at 24950 North Valley Road Newberg, OR 97132. The property currently is vacant land. Access to the new lots will be by public roads from Chehalem Drive and North Valley Road that meet Public Works standards.

PUBLIC SERVICES



Sanitary Sewer

All of the proposed lots will be served by gravity to the existing public sanitary sewer system. Sanitary sewer will be extended from the existing manhole located in Chehalem Drive just south of Foothills Drive to the proposed subdivision.

Sanitary flows from this development will discharge to the Chehalem Drive Pump Station. It is anticipated that the pump station may require an increase in pump size to accommodate the additional flow volume, see Exhibit I for the memo by Westlake Consultants dated 3/4/16. A more detailed analysis will be performed and included for approval with the Public Work Improvement Permit submittal.

To accommodate future service to upstream development within the UGB, sanitary sewer will be extended through the development. Refer to the Exhibit C for conceptual future development and extension of sanitary sewer service to the property with the UGB. Accommodation of service to properties outside of the UGB or URA is not permitted by land use law. No sanitary sewer lines are proposed for either Chehalem or North Valley Drives as Goal 11 does not support providing for accommodation of services to properties outside

of the UGB or URA. In addition, the City has not identified a need to expand the UGB north or west of this property in the future.

Water Supply

All of the proposed lots will be served by municipal water. The water mainline will be extended from the existing system located at the Chehalem and Foothills Drive intersection to the proposed subdivision.

The entire site is located with the service area of the city's reservoir gravity service system. Therefore, adequate domestic and fire flow volume and pressure can be provided.

To accommodate future service to upstream development within the UGB, the water line will be extended through the development. Refer to the Exhibit C for conceptual future development and extension of the water main to the property with the UGB and ultimately looping the system with connections at Taylor Drive and Jones Street. No water mains are proposed for either Chehalem or North Valley Drives as Goal 11 does not support providing for accommodation of services to properties outside of the UGB or URA. In addition, the City has not identified a need to expand the UGB north or west of this property in the future.

Storm Drainage

Storm water runoff from the site will be collected to a single detention and water quality facility at the southwest corner of the lot where it will then discharge to the existing roadside ditch along Chehalem Drive. Refer to Exhibit D for the preliminary stormwater report for runoff and sizing calculations.

Wetlands along the southern property line have been identified and delineated on the plans. No site development will impact these areas. The wetlands will be incorporated into the detention facility area. Refer to Exhibit E for Pacific Habitat letter report dated 6/29/16.

Transportation

Chehalem Dr. is classified as a Major Collector in the Transportation System Plan. Ten feet along the 743.66 feet of lot frontage along Chehalem Dr. will be dedicated as public right-of-way to allow for the full development of Chehalem Dr. North Valley Rd. is classified as a County Arterial in the Transportation System Plan. Once annexed, it will be designated as a Major Collector. Ten feet along the 641.66 feet of lot frontage along North Valley Rd. will be dedicated as public right-of-way to allow for the full development of North Valley Rd.

Jurisdiction of Chehalem and North Valley Drives remains with Yamhill County, so frontage improvements will be designed and constructed by permit through the County.

Intersection sight distance at the intersection of Chehalem Dr at N Valley Rd is not adequate for east bound traffic. There is a flashing warning light on the approach, but as the City grows, changes to the approaches and the intersection should be planned and built. Preliminary plans to make improvements to the intersection were submitted to Yamhill

County in 2007 by Ashley Engineering Design. In 2004 the County considered making the intersection all way stop controlled and determined warrants were not met. They are not met at the time of this study. Traffic signal warrants are not met at the intersection. There has been only 1 reported crash at Chehalem Dr at N Valley Rd in the past 5 years while there have been 6 reported crashes at N Valley Rd at Hwy 219. Refer to Exhibit F for the Traffic Impact Analysis dated 5/12/16.

The County and City have expressed a desire to remedy the sight distance problem at this time. The Developer concurs that the issue exists and supports its remediation. The Developer proposes contributing to the future improvement in rough proportionality to the impact from the proposed development. Referring to pages 6 and 7 of the traffic report to compare the overall increase in traffic to the intersection during the peak AM hours, the net increase in traffic from the proposed development is 6.8%. Therefore, a contribution from the developer of approximately 6.8% (to be refined based on actual number of lots approved by the city) of the estimated cost of intersection improvements is a reasonable and proportional assessment.

To provide safe and efficient pedestrian access to the adjacent recreational facility and schools, a public access easement will be provided at the southeast corner of the development. This internal access point provides the shortest and safest route for residents and their children to walk to school and recreational opportunities.

SUBDIVISION CRITERIA

1. FUTURE USE

Approval does not impede the future best use of the property under the same ownership as the full extent of the property is being developed to its maximum extent practicable.

Adjoining land will not be adversely affected. The surrounding uses are: To the North: County EF-40; to the South: City CF; to the East: County EF-10; and to the West: County EF-20. The land to the East is part of the Urban Growth Boundary.

2. APPLICABLE SUBDIVISION CRITERIA

15.405 LOT REQUIREMENTS

15.405.010 Lot area – Lot areas per dwelling unit.

A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:

1. In the R-1 district, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict. The average size of lots in a subdivision intended for single-family development shall not exceed 10,000 square feet.

2. In the R-2, R-3, and RP districts, each lot or development site shall have a minimum area of 3,000 square feet or as may be established by a subdistrict. In the R-2 and R-P districts, the average size of lots in a subdivision intended for single-family development shall not exceed 5,000 square feet.

3. In the AI, AR, C-1, C-2, and C-3 districts, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict.

4. In the M-1, M-2 and M-3 districts, each lot or development site shall have a minimum area of 20,000 square feet.

5. Institutional districts shall have a minimum size of five contiguous acres in order to create a large enough campus to support institutional uses; however, additions to the district may be made in increments of any size.

6. Within the commercial zoning district(s) of the riverfront overlay subdistrict, there is no minimum lot size required, provided the other standards of this code can be met.

B. Lot or Development Site Area per Dwelling Unit.

1. In the R-1 district, there shall be a minimum of 5,000 square feet per dwelling unit.

2. In the R-2, AR, and R-P districts, there shall be a minimum of 3,000 square feet of lot or development site area per dwelling unit. In the R-2 and R-P districts, lots or development sites in excess of 15,000 square feet used for multiple single-family, duplex or multifamily dwellings shall be developed at a minimum of one dwelling per 5,000 square feet lot area.

3. In the R-3 district, there shall be a minimum of 1,500 square feet of lot or development site area per dwelling unit. Lots or development sites in excess of

15,000 square feet used for multiple single-family, duplex or multifamily dwellings shall be developed at a minimum of one dwelling per 2,500 square feet lot area.

C. In calculating lot area for this section, lot area does not include land within public or private streets. In calculating lot area for maximum lot area/minimum density requirements, lot area does not include land within stream corridors, land reserved for public parks or open spaces, commons buildings, land for preservation of natural, scenic, or historic resources, land on slopes exceeding 15 percent or for avoidance of identified natural hazards, land in shared access easements, public walkways, or entirely used for utilities, land held in reserve in accordance with a future development plan, or land for uses not appurtenant to the residence.

D. Lot size averaging is allowed for any subdivision. Some lots may be under the minimum lot size required in the zone where the subdivision is located, as long as the average size of all lots is at least the minimum lot size.

Lot Number	Lot Size (SF)	Lot Number	Lot Size (SF)
1	5951	28	5130
2	5415	29	5130
3	5415	30	5130
4	5415	31	5352
5	5415	32	6790
6	5652	33	10506
7	4900	34	4900
8	4900	35	4900
9	4900	36	4900
10	4900	37	5652
11	6186	38	5415
12	6893	39	5415
13	5718	40	5415
14	5631	41	5415
15	5543	42	5951
16	5455	43	4950
17	5368	44	4950
18	5122	45	5570
19	6146	46	5635
20	8624	47	5130
21	4894	48	5130
22	4950	49	5130
23	4950	50	5130
24	5303	51	5352
25	5303	52	6845
26	5635	53	6212
27	5130	Total	295,740
		Average	5,580

The table above demonstrates that the proposed lot areas meet the code standard when taking into account lot size averaging.

15.405.030 Lot dimensions and frontage.

B. Depth to Width Ratio. Each lot and parcel shall have an average depth between the front and rear lines of not more than two and one-half times the average width between the side lines. Depths of lots shall conform to the standards of this code. Development of lots under 15,000 square feet are exempt from the lot depth to width ratio requirement.

C. Area. Lot sizes shall conform to standards set forth in this code. Lot area calculations shall not include area contained in public or private streets as defined by this code.

D. Frontage.

1. No lot or development site shall have less than the following lot frontage standards:

b. Each lot in an R-2 and R-3 zone shall have a minimum width of 30 feet at the front building line.

RESPONSE: The proposed lot configuration meets all of the provisions of this code section for depth to width ratio, area, and minimum frontage at front building line.

15.405.040 Lot coverage and parking coverage requirements.

B. Residential uses in residential zones shall meet the following maximum lot coverage and parking coverage standards. See the definitions in NMC 15.05.030 and Appendix A, Figure 4.

1. Maximum Lot Coverage.

b. R4-2 and RP: 50 percent.

2. Maximum Parking Coverage. R-1, R-2, R-3, and RP: 30 percent.

3. Combined Maximum Lot and Parking Coverage.

a. R-1, R-2 and RP: 60 percent.

RESPONSE: The development of the individual lots will meet this criterion.

15.410 YARD SETBACK REQUIREMENTS

15.410.020 Front yard setback.

15.410.030 Interior yard setback.

15.410.040 Setback and yard restrictions as to schools, churches, public buildings.

15.410.050 Special setback requirements to planned rights-of-way.

15.410.060 Vision clearance setback.

15.410.070 Yard exceptions and permitted intrusions into required yard setbacks.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.415 BUILDING AND SITE DESIGN STANDARDS

15.415.010 Main buildings and uses as accessory buildings.

15.415.020 Building height limitation.

15.415.030 Building height exemptions.

15.415.040 Public access required.

15.415.050 Rules and exceptions governing single-family attached dwellings.

15.415.060 Home occupation.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.420 LANDSCAPING AND OUTDOOR AREAS

RESPONSE: These provisions will be met with the submission of subdivision plans.

Chapter 15.425 EXTERIOR LIGHTING

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.430 UNDERGROUND UTILITY INSTALLATION

Sections:

15.430.010 Underground utility installation.

15.430.010 Underground utility installation.

A. All new utility lines, including but not limited to electric, communication, natural gas, and cable television transmission lines, shall be placed underground. This does not include surface-mounted transformers, connections boxes, meter cabinets, service cabinets, temporary facilities during construction, and high-capacity electric lines operating at 50,000 volts or above.

B. Existing utility lines shall be placed underground when they are relocated, or when an addition or remodel requiring a Type II design review is proposed, or when a developed area is annexed to the city.

C. The director may make exceptions to the requirement to underground utilities based on one or more of the following criteria:

1. The cost of undergrounding the utility is extraordinarily expensive.

2. There are physical factors that make undergrounding extraordinarily difficult.

3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

RESPONSE: These provisions will be met with the submission of subdivision plans.

Chapter 15.435 SIGNS

RESPONSE: No signs are proposed for this development.

Chapter 15.440 OFF-STREET PARKING, BICYCLE PARKING, AND PRIVATE WALKWAYS

RESPONSE: No off-street parking, bicycle parking or private walkways are proposed for this development.

15.505 STREET AND TRANSPORTATION IMPROVEMENTS DESIGN STANDARDS

15.505.020 Layout of streets, alleys, bikeways, and walkways.

A. Streets, alleys, bikeways, and walkways shall be laid out and constructed as shown in the Newberg transportation system plan or in adopted future street plans.

B. In areas where the transportation system plan or future street plans do not show specific transportation improvements, roads and streets shall be laid out so as to conform to subdivisions, partitions, and developments previously approved for adjoining property as to width, general direction and in other aspects, unless it is found in the public interest to modify these patterns. In addition, transportation improvements shall conform to the standards within this code.

RESPONSE: Not applicable.

15.505.030 Construction of new streets and alleys.

The land divider or developer shall grade and pave all streets and alleys in the subdivision, partition or development to the width specified in NMC 15.505.060, and provide for drainage of all such streets and alleys, construct curbs and gutters within the subdivision, partition or development in accordance with specifications adopted by the city council under NMC 15.510.030. Such improvements shall be constructed to specifications of the city under the supervision and direction of the director. It shall be the responsibility of the land divider or developer to provide street signs.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.040 Improvements to existing streets.

A subdivision, partition or development requiring a Type II design review abutting or adjacent to an existing road of inadequate width shall dedicate additional right-of-way to and improve the street to the width specified in NMC 15.505.060.

RESPONSE: A 10-foot dedication along Wynooski Street frontage will be provided to allow for a full 30-foot right-of-way width from centerline.

15.505.060 Street width and design standards.

A. Design Standards. All streets shall conform with the standards contained in Table 15.505.060. Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (B) through (I) of this section.

RESPONSE: These provisions will be met with the submission of subdivision plans.

B. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet. Where circumstances warrant, the director may allow a reduction of this width to 11 feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

C. Bike Lanes. Striped bike lanes shall be a minimum of five feet wide. Where circumstances warrant, the director may allow a reduction of this width to four feet. Bike lanes shall be provided where shown in the Newberg transportation system plan.

RESPONSE: Not applicable.

D. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide. Where circumstances warrant, the director may allow a reduction of this width to seven feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

G. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

H. Planter Strips. Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited residential streets. Where curb-side sidewalks are allowed, the following shall be provided where possible:

1. Additional reinforcement is done to the sidewalk section at corners.

2. Sidewalk width is six feet.

RESPONSE: Not applicable

15.505.090 Intersections of streets.

A. Angles. Streets shall intersect one another at an angle as near to the right angle as is practicable considering topography of the area and previous adjacent layout; where not so practicable, the right-of-way and street paving within the acute angle shall have a minimum of 30 feet centerline radius where such angle is not less than 75 degrees. In the case of streets intersecting at an angle of less than 75 degrees, then of such minimum as the director may determine in accordance with the purpose of this code.

B. Offsets. Intersections shall be so designed that no offset dangerous to the traveling public is created as a result of staggering of intersections, and in no case shall there be an offset of less than 100 feet centerline to centerline.

C. New or improved intersection construction shall incorporate the minimum intersection curb return radii requirements shown in the following table:

Minimum Curb Return Radii (Feet) Edge of Pavement/Curb
Lowest Street Classification of Two Intersection Streets
Local residential street
15 feet

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.110 Future extension of streets.

Where the subdivision or partition is adjacent to land likely to be divided in the future, streets shall continue through to the boundary lines of the area under the same ownership of which the subdivision or partition is a part, where the director determines that such continuation is necessary to provide for the orderly division of such adjacent land or the transportation and access needs of the community

RESPONSE: Not applicable.

15.505.120 Cul-de-sacs.

A. Cul-de-sacs shall only be permitted when one or more of the circumstances listed in this section exist. When cul-de-sacs are justified, public walkway connections

shall be provided to connect with another street, greenway, school, or similar destination unless one or more of the circumstances listed in this section exist.

1. Physical or topographic conditions make a street or walkway connection impracticable. These conditions include but are not limited to controlled access streets, railroads, steep slopes, wetlands, or water bodies where a connection could not be reasonably made.

2. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment.

3. Where streets or accessways would violate provisions of leases, easements, or similar restrictions.

4. Where the streets or accessways abut the urban growth boundary and rural resource land in farm or forest use, except where the adjoining land is designated as an urban reserve area.

B. There shall be no cul-de-sacs more than 400 feet long (measured from the centerline of the intersection to the radius point of the bulb) or serving more than 18 single-family dwellings.

C. Each cul-de-sac shall have a circular end with a minimum diameter of 90 feet, curb-to-curb, within a 103-foot minimum diameter right-of-way. For residential uses, a 35-foot radius may be allowed if the street has no parking, a mountable curb, attached sidewalks, and sprinkler systems in every building along the street.

RESPONSE: Not applicable

15.505.130 Street names and street signs.

Streets that are in alignment with existing named streets shall bear the names of such existing streets. Names for streets that are not in alignment with existing streets are subject to approval by the director and the fire chief and shall not unnecessarily duplicate or resemble the name of any existing or platted street in the city. It shall be the responsibility of the land divider to provide street signs.

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.140 Grades and curves.

Unless otherwise approved by the director because topographical conditions will not reasonably permit, grades shall not exceed six percent on arterials, 10 percent on collector streets, or 12 percent on all other streets. Centerline radii on curves shall not be less than 300 feet on arterials, or 230 feet on all other streets

RESPONSE: These provisions will be met with the submission of subdivision plans.

15.505.200 Vehicular access standards.

A. Purpose. The purpose of these standards is to manage vehicle access to maintain traffic flow, safety, roadway capacity, and efficiency. They help to maintain an adequate level of service consistent with the functional classification of the street. Major roadways, including arterials, and collectors serve as the primary system for moving people and goods within and through the city. Access is limited and managed on these roads to promote efficient through movement. Local streets and alleys provide access to individual properties. Access is managed on these roads to maintain safe maneuvering of vehicles in and out of properties and to allow safe through movements. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function.

B. Access Spacing Standards. Public street intersection and driveway spacing shall follow the table below...

RESPONSE: These provisions will be met with the submission of subdivision plans.

F. Shared Driveways.

1. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes. Where there is an abutting developable property, a shared driveway shall be provided. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

RESPONSE: Not applicable.

2. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

RESPONSE: These provisions will be met with the submission of subdivision plans.

3. No more than three lots may access one shared driveway.

RESPONSE: These provisions will be met with the submission of subdivision plans.

4. Shared driveways shall be posted as no parking fire lanes where required by the fire marshal.

RESPONSE: These provisions will be met with the submission of subdivision plans.

5. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.

RESPONSE: Not applicable.

15.505.210 Sidewalks.

Sidewalks shall be located and constructed in accordance with the provisions of NMC 15.510.030. Minimum width is five feet.

RESPONSE: These provisions will be met with the submission of subdivision plans.

Gracie's Landing Subdivision

Exhibit A

Application Form

TYPE II APPLICATION (LAND USE) -- 2016

File #: _____

TYPES – PLEASE CHECK ONE:

___ **Design review**
___ **Tentative Plan for Partition**
X **Tentative Plan for Subdivision**
___ **Type II Major Modification**
___ **Variance** _____
___ **Other: (Explain)** _____

APPLICANT INFORMATION:

APPLICANT: Del Boca Vista LLC
ADDRESS: 645 NE Third Street Suite 200 McMinnville, OR 97128
EMAIL ADDRESS: jessica@dbvcorp.com
PHONE: 971-706-2058 MOBILE: 971-998-7507 FAX: _____
OWNER (if different from above): Newberg First Baptist Church PHONE: none
ADDRESS: PO Box 1 Newberg OR 97132
ENGINEER/SURVEYOR: Westlake Consultants PHONE: none
ADDRESS: 16115 SW Sequoia Pkwy Tigard OR 97224

GENERAL INFORMATION:

PROJECT NAME: Gracie's Landing PROJECT LOCATION: 24950 North Valley Rd, Newberg
PROJECT DESCRIPTION/USE: Subdivision of bare land to 53 lots
MAP/TAX LOT NO. (i.e.3200AB-400): R3207-00900 ZONE: R-1 SITE SIZE: 10.37 SQ. FT. ☐ ACRE ☒
COMP PLAN DESIGNATION: LDR TOPOGRAPHY: Flat, cleared land with a few trees in NE section
CURRENT USE: Vacant
SURROUNDING USES:
NORTH: Agricultural SOUTH: Recreational and Athletic Fields
EAST: Large lot residential WEST: Agricultural

SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist: ☐ Fees ☐ Public Notice Information ☐ Current Title Report ☐ Written Criteria Response ☐ Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

Design Review ..... p. 12
Partition Tentative Plat ..... p. 14
Subdivision Tentative Plat ..... p. 17
Variance Checklist ..... p. 20

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

7/1/16
Applicant Signature Date

DocuSigned by:
Dan Swanson 7/1/2016 | 18:31 PDT
Owner Signature Date

Marc Willcuts, Del Boca Vista, Member
Print Name

Dan Swanson, Newberg First Baptist Church
Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

Gracie's Landing Subdivision

Exhibit B

Conditions Covenants & Restrictions

(draft version)

AFTER RECORDING, RETURN TO:
Marc Willcuts
DEL BOCA VISTA LLC
645 NE Third Street Suite 200
Mcminnville, OR 97128

DECLARATION OF

COVENANTS, CONDITIONS AND RESTRICTIONS

FOR

GRACIE'S LANDING

THIS DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR GRACIE'S LANDING ("Declaration") is made this _____ day of _____, 2017 by Del Boca Vista LLC, an Oregon limited liability company, as the Declarant.

RECITALS

A. WHEREAS, the Declarant is the owner, or controls, of all that certain property and improvements thereon located in the City of Newberg, Yamhill County, State of Oregon, referred to as the Plat of GRACIE'S LANDING, recorded _____, 2017, as Document No. 2017-_____, consisting of Lots 1 through 53, Tract A and certain easements noted on the Plat ("Gracie's Landing" or the "Real Property");

B. WHEREAS, the Declarant intends to develop Gracie's Landing as a Class I Planned Community under ORS 94.550 through ORS 94.785, and to establish the planned development project of Gracie's Landing, Declarant desires to impose these mutually beneficial covenants, conditions, restrictions, easements, assessments and liens on the Real Property under a comprehensive general plan of improvement and residential development for the benefit of all of the Owners, the Lots and Common Areas within Gracie's Landing;

C. WHEREAS, the Declarant has deemed it desirable for the preservation of the values and amenities in Gracie's Landing to create a Homeowners Association, which shall be a non-profit Oregon corporation, to which will be delegated and assigned the powers and authority to own, maintain, and administer the Homeowners Association and the Common Area and facilities, and administer and enforce the covenants, conditions, and restrictions of this Declaration, and collect and disburse the assessments and charges hereinafter created;

D. NOW, THEREFORE, the Declarant declares that the Real Property shall be held, transferred, sold, conveyed, and occupied subject to the following covenants, conditions, restrictions, easements, charges, and liens, or as noted herein, which shall run with the land and shall be binding upon all parties having or acquiring any right, title, or interest in the Real Property or any part thereof and shall inure to the benefit of the Homeowners Association and of each Lot Owner. The Declarant is not committing itself to take any action other than as expressly provided herein by adoption of the covenants, conditions, and restrictions set forth in this Declaration. Anyone acquiring one or more Lots will have the advantage of any further development, but shall not have any legal right to insist that there be development except as expressly provided herein.

NOW, THEREFORE, the Declarant subjects the Real Property, together with any and all real property and improvements which may be added to the Real Property pursuant to the provisions of this Declaration, to the covenants, conditions, and restrictions set forth below.

COVENANTS CONDITIONS AND RESTRICTIONS

SECTION 1. INTRODUCTION

1.1 General Declaration. The covenants, conditions, and restrictions set forth in this Declaration shall run with and bind the Real Property, each Lot, and other division, if any, of the Real Property, the Owners, the Occupants, the Homeowners Association, and all other Persons acquiring any interest in the Real Property or any portion thereof, and the heirs, successors, and assigns of the Owners, the Occupants, the Homeowners Association, and such other Persons. These conditions, covenants, and restrictions shall inure to the benefit of and be burdens upon Declarant and upon all Owners, Occupants, future Owners, the Homeowners Association, and future Occupants.

SECTION 2. DEFINED TERMS

Throughout this Declaration, the following terms, when capitalized, shall have the following meanings:

2.1 "Architectural Review Committee" or "ARC" shall mean the Declarant until Turnover and thereafter the Board of Directors or the committee formed pursuant to Section 6 to review and approve or disapprove plans and specifications for the design and construction of Improvements within Gracie's Landing and to undertake such other functions tasks as are specified in Section 6 of this Declaration.

2.2 "Articles" shall mean the Articles of Incorporation for the non-profit corporation, Gracie's Landing Homeowners' Association, or such similar name approved by and filed with the Oregon Secretary of State Corporations Division.

2.3 "Assessments" shall have the meaning ascribed in Section 5.1 herein, and shall include Annual Assessments, Special Assessments, Emergency Assessments and Limited Common Area Assessments.

2.4 "Association" shall mean the Gracie's Landing Homeowners' Association, its successors and assigns, formed pursuant to Section 4.1.

2.5 "Board" shall mean the Board of Directors of the Association, formed pursuant to Section 4.7.

2.6 "Building Structure" shall mean any building constructed on a Lot, including without limitation, a Home or an Improvement, whether attached to or detached from another Building Structure.

2.7 "Bylaws" shall mean and refer to the Bylaws of the Association, which shall be properly adopted and recorded in the County of Yamhill, Oregon.

2.8 "City" shall mean the City of Newberg, Oregon.

2.9 "Code" shall mean the Development Code of the City of Newberg, Oregon.

2.10 "Common Area(s)" shall mean and refer to any areas of land shown on the recorded plat of the Real Property, commonly designated as "Easements" or "Tracts", including any improvements thereon, which are intended to be devoted to the common use and enjoyment of the members of the Association, and areas outlined herein as the maintenance responsibility of the Association, unless provided otherwise in this Declaration. The Easements so designated as Common Areas include the roadways "Taylor Drive" and "Drea's Way" dedicated to the public, the 7.5-foot wide storm drain and pedestrian easement over Lots 3, 7, 27 and 28 for the benefit of Lots 1 through 44, the 15-foot sanitary sewer easement over Taylor Drive for the benefit of Lots 1 through 44, the 15-foot storm drain easement over Drea's Way for the benefit of Lots 1 through 44, and the storm drain easement over Tract A for the benefit o f Lots 1 through 44.

2.11 "Declarant" shall mean Del Boca Vista LLC, its successors and assigns, and any Person succeeding to the responsibility of Declarant pursuant to a designation by Del Boca Vista LLC or by any successor Declarant of such Person as a successor Declarant in a supplemental declaration recorded in the Yamhill County Records. Declarant shall not refer to any other subsequent purchaser of a Lot or Home.

2.12 "Declaration" or "Declaration" shall mean this Declaration of Covenants, Conditions, and Restrictions for Gracie's Landing, as it may be further amended from time to time.

2.13 "Developer" shall mean any Person engaged in the development of any Lot for the purpose of selling or leasing the Improvements ultimately constructed on such Lot.

2.14 "Director" shall mean a member of the Board, selected or elected in accordance with Section 4.

2.15 "General Common Expenses" shall mean those expenditures made or liabilities incurred by the Association, including reserves. Such definition should also apply to the words, "Common Expenses" as used in this Declaation.

2.16 "General Plan of Development" shall mean the Declarant's general plan of development for the Real Property as approved by appropriate governmental agencies, as may be amended from time to time, including the Real Property and all phases thereof.

2.17 "Home" or "Homes" shall mean and refer to any portion of a structure situated on a Lot designed and intended for use and occupancy as a residence by a single family or household.

2.18 "Improvement" shall mean any improvement now or hereafter placed or constructed in, under, or upon the Real Property, including without limitation any building, swimming pool, spa, road, driveway, parking area, fence, screening wall or barrier, retaining wall, stairs, deck, landscaping, and sign. An Improvement shall not be a Home.

2.19 "Lot" or "Parcel" means any of the forty-four (44) parcels of land designated on the Plat as a lot for residential use or any parcel of land designated as a lot for residential use on any replat of the Real Project.

2.20 "Lot Easement Area" shall mean and refer to those portions of any Lot subject to any easement benefiting the Association. The term "Lot Easement Area" shall not refer to any portions of any Lot encumbered by an easement to any other party, including without limitation, any governmental agency.

2.21 "Members" shall mean and refer to the Owners of Lots in Gracie's Landing and who are members of the Gracie's Landing Homeowners' Association.

2.22 "Mortgagee" shall mean the holder of a mortgage on any portion of the Real Property and shall also have the meaning set forth in ORS 86.010 *et. seq.,* and shall include beneficiaries of deeds of trusts and vendors under land sale contracts.

2.23 "Occupant" shall mean and refer to occupant of a Home, who shall be the Owner, lessee or any other person authorized by the Owner to occupy the premises.

2.24 "Owner" shall mean and refer to the Owner of record, including Declarant, whether or not more persons or entities, of the fee simple title to any Lot or a purchaser in possession of any Lot under a land sale contract. The foregoing does not include persons or entities that hold an interest in any Lot merely as security for the performance of an obligation.

2.25 "Other Common Areas" means those other parcels, if any, included within the Property which are, from time to time, designated by Declarant (prior to the Turnover Date) or by the Board (after the Turnover Date) as common areas of Gracie's Landing, such as entry monuments and structures and median strips. Such areas may be conveyed to the Association, dedicated to the public, or owned by Persons other than Declarant or the Association and subject to easements in favor of the Association.

2.26 "Parcel" or "Lot" means any of the forty-four (44) parcels of land designated on the Plat as a lot for residential use or any parcel of land designated as a lot for residential use on any replat of the Real Project.

2.27 "Person" means any individual, association, corporation, partnership, or other legal entity.

2.28 "Plat" means the final plat of the Real Property as recorded in the Yamhill County Records and any amendments thereto.

2.29 "President" means the President of the Association, selected in accordance with Section 4.17.

2.30 "Real Property" means the real property in City of Newberg, Yamhill County, Oregon legally described on the Plat as GRACIE'S LANDING.

2.31 "Declaration" or "Declaration" shall mean this Declaration of Covenants, Conditions, and Restrictions for Gracie's Landing, as it may be further amended from time to time.

2.32 "Rules and Regulations" shall mean and refer to the documents containing rules and regulations and policies adopted by the Board of the Association or the Architectural Review Committee ("ARC"), and as may be from time to time amended by the Board and/or ARC.

2.33 "Secretary" means the Secretary of the Association, selected in accordance with Section 4.17.

2.34 "Turnover Date" means the earlier of (i) the date on which Declarant has substantially developed the Real Property with Homes and has sold Lots representing seventy-five (75%) percent of the votes in the Association, or (ii) the date on which Declarant elects, in its sole discretion, to relinquish control of the Association, as evidenced by a supplemental declaration recorded in the Yamhill County Records, or (iii) the date that is the sixth anniversary of the date of this Declaration.

2.35 "Turnover Meeting" means the meeting of Declarant and the Board called for the purpose of passing control of the Association from Declarant to the Owners, which meeting shall be held pursuant to Section 4.10.1.

SECTION 3. OWNERSHIP AND EASEMENTS

3.1 Non-Severability. The intent of each Owner in the use and benefit of the Common Area shall be appurtenant to the Lot owned by the Owner. No Lot shall be conveyed by the Owner separately from the interest in the Common Area, subject to the provisions of Section 3.3. Any conveyance of any Lot shall automatically transfer the right to use the Common Area without the necessity of express reference in the instrument of conveyance. There shall be no judicial partition of the Common Area. Each Owner, whether by deed, gift, devise or operation of law, for his/her own benefit and for the benefit of all other Owners, specifically waives and abandons all rights, interests and causes of action for judicial partition of any interest in the Common Area and does further agree that no action for judicial partition shall be instituted, prosecuted or reduced to judgment. The ownership interest in the Common Area and Lots described in this Article are subject to the easements granted and reserved in this Declaration or the

Plat for drainage, needed maintenance support and maintenance of the exterior appearance of the Building Structures. Each of the easements reserved or granted herein shall be deemed to be established upon the recordation of this Declaration and the Plat, and shall forever be deemed to be covenants running with the land for the use and benefit of the Owners and their Lots and shall be superior to all other encumbrances applied against or in favor of any portion of Gracie's Landing.

3.2 Common Areas. Gracie's Landing has or shall have certain improvements which are for the benefit of all Lots. In addition, the street and rights-of-way, and any landscaping located therein, while dedicated to the public, shall be maintained by the Association. All of the common improvements and street and right-of-way maintenance are collectively called the "Common Areas."

3.3 Ownership of Lots. Title to each Lot in Gracie's Landing shall be conveyed in fee to an Owner. If more than one person and/or entity owns an undivided interest in the same Lot, such person and/or entities shall constitute one Owner.

3.4 Ownership of Common Areas. Title to the Common Areas, if any, shall be conveyed to the Association by Declarant not later than the Turnover Date, subject to all limitations and conditions of approval imposed on such space by the City. The Board of Directors may convey title to any present or future Common Area Tracts, if any, to a City, County or other Government agency. The Association, with the approval of sixty percent (60%) of the Association membership, may sell, convey or mortgage the Common Area.

3.5 Easements. Individual deeds to Lots may, but shall not be required to, set forth the easement specified in this Declaration of Covenants, Conditions and Restrictions.

3.5.1 Easements on Plat. The Common Area and Lots are subject to the easements and rights-of-way shown, or noted, on the plat of Gracie's Landing. These may include easements for public pedestrian and/or bicycle access, sanitary sewer easements, storm drainage, access and public utility easements. The ingress/egress, utility and drainage easements are set forth on the Plat of Gracie's Landing.

3.5.2 Easements for Common Area. Every Owner shall have a non-exclusive right and easement of use and enjoyment in and to the Common Area, which shall be appurtenant to and shall pass with the title to every Lot.

3.5.3 Easements Reserved by Declarant. So long as Declarant, or Declarant's specified assigns, owns any Lot, Declarant, or Declarant's specified assigns, reserves an easement over, under and across the Common Area in order to carry out sales activity necessary for convenient for the sale of Lots. In addition, Declarant hereby reserves to itself, and for its successors and assigns, a perpetual easement and right-of-way for access over, upon and across the Common Areas for construction, utilities, communications lines, drainage, and ingress and egress for the benefit of the Lots or other property owned by Declarant. Declarant, for itself and its

successors and assigns, hereby retains a right and easement of ingress and egress over, in, upon, under and across the Common Area and the right to store materials thereon and to make such other use thereof as may be reasonably or incident to the construction of the improvements on the Real Property or other real property owned by Declarant in such a way as to not unreasonably interfere with the occupancy, use, enjoyment or access to an Owner's Lot by that Owner or his/her family, tenants, guests or invitees.

3.5.4 Additional Easement. Notwithstanding anything expressed or implied to the contrary, this Declaration shall be subject to all easements granted by Declarant for the installation and maintenance of landscaping, utilities and drainage facilities necessary for the development of Gracie's Landing. No structure, planting or other material shall be placed or permitted to remain within any easement area which may damage or interfere with the installation or maintenance of utilities, or which may change the direction of flow of drainage channels in the easements, or which may obstruct or retard the flow of water through drainage channels in the easements. The easement area of each Lot and all improvements thereon shall be maintained continuously by the Owner of the Lot, except for those improvements for which a public authority, utility company or the Association is responsible. In addition, an easement is specifically reserved to the Owners of the Lot, and the Association, as their interests may exist, for access to, and right of repair or service to utility and/or drainage lines and facilities which exist on each Lot for common use of Owners in said structure.

3.5.5 Association's Easements. There are hereby reserved to the Association and its duly authorized agents and representatives such easements as are necessary to perform the duties and obligations of the Association set forth in this Declaration, the Bylaws and Articles for the maintenance of the landscaping, drainage, roadway and utilities as described in this Declaration.

3.5.6 Easement to Governmental Entities. There is hereby reserved and granted a non-exclusive easement over the Common Area to all governmental and quasi-governmental entities, agencies, utilities, and their agents for the purposes of performing their duties within Gracie's Landing. However, where applicable, the Association may be subject to compensation for the taking or use of such easement rights.

3.5.7 Drainage Lines. Each Owner shall maintain the drainage lines for gutters and downspouts on the Owner's Lot from the Homes to the point of intersection with the publicly owned storm drain facility. The Association hereby reserves a maintenance easement for said drainage lines pursuant to sections 3.5.8 and 3.5.9 as set forth in this Declaration.

3.5.8 Maintenance Easement. An easement is hereby reserved in favor of the Association and its successors and assigns, contractors, agents and employees over, across, and under each Lot, the exterior portions of the dwelling units on each Lot, the Common Areas, the landscaped areas, the planter strips and any other areas of the Real Property necessary or appropriate for the purposes of accomplishing the maintenance, repair, and replacement of Improvements and Common Areas.

3.5.9 Utility Easements. The Association shall have the right to grant nonexclusive easements and rights of way over the Common Areas for the purpose of installing, maintaining, repairing, and replacing public utility lines, services, and facilities reasonably necessary to serve any of the Real Property.

3.5.10 Maintenance Obligations/Owner Restrictions. Except as specifically noted in this Declaration, the Owner, at his/her expense, shall maintain, repair and replace the improvements and utility installations in any Lot Easement Area and shall hold the Association harmless from any such costs. The Association shall be solely responsible for maintenance, repair and replacement of the 7.5-foot wide storm drain and pedestrian easement over Lots 3, 7, 27 and 28 for the benefit of Lots 1 through 44, the 15-foot sanitary sewer easement over Taylor Drive for the benefit of Lots 1 through 44, the 15-foot storm drain easement over Drea's Way for the benefit of Lots 1 through 44, and the storm drain easement over Tract A for the benefit o f Lots 1 through 44

SECTION 4. GRACIE'S LANDING HOMEOWNERS' ASSOCIATION

4.1 Formation and Authority. The Association will be formed by Declarant as an Oregon nonprofit corporation no later than that date which is one hundred eighty (180) days after the date this Declaration and the Plat are recorded, and shall be known as the Gracie's Landing Homeowners' Association.

4.2 Membership. Each Owner, by virtue of being an Owner and so long as such Owner continues in that capacity, shall be a member of the Association. Each membership in the Association shall be appurtenant to the Lot or other portion of the Real Property owned by an Owner and shall not be transferred in any manner whatsoever except upon a transfer of title to such Lot or other portion of the Real Property and then only to the transferee of such title.

4.3 Proxy. Each Owner may cast his/her vote in person, pursuant to a proxy executed by the Owner, or by written ballot, as provided by ORS 94.647. An Owner may not revoke a proxy given pursuant to this section except by actual notice or revocation to the person presiding over a meeting of the Association. A proxy shall not be valid if it is undated or purports to be revocable without notice. A proxy shall terminate one (1) year after its date, unless the proxy specifies a shorter term.

4.4 Procedure. All meetings of the Association, the Board of Directors, the ARC, and Association committees shall be conducted with such rules of order as may from time to time be adopted by the Board of Directors. If the Board of Directors does not adopt any rules, then Roberts' Rules of Order shall be the applicable rules of order. Notwithstanding which rule of order is adopted, the chairman shall be entitled to vote on all matters, not merely to break a tie vote. A tie vote does not constitute a majority or approval of any motion or resolution.

4.5 Contracts Entered Into by Declarant or Before Turnover Meeting. Notwithstanding any other provisions of this Declaration, any management contracts, service contracts or employment contracts entered into by Declarant or the Board of Directors on behalf of the Association before the Turnover Meeting shall have a term of not more than three (3) years. In addition, any such contract shall provide that it may be terminated without cause or penalty by the Association or Board of Directors upon not less than thirty (30) days' notice to the other party given not later than sixty (60) days after the Turnover Meeting.

4.6 Duties and Powers of the Association.The Association shall have all requisite power, duty, and authority to perform its obligations under this Declaration, including without limitation the power, duty and authority to enforce the provisions of this Declaration and to acquire and pay for, out of the common fund provided by assessments pursuant to Section 5, all goods and services necessary or appropriate for the proper functioning of the Association in accordance with this Declaration. Without limiting the generality of the foregoing or the other provisions of this Declaration, the Association shall have the power, duty, and authority, subject to the other provisions of this Declaration, to undertake the following actions:

4.6.1 Determine the amounts necessary or appropriate for the performance by the Association of its powers and duties under this Declaration.

4.6.2 Impose and collect annual and special assessments from the Owners.

4.6.3 Maintain bank accounts on behalf of the Association and designate the signatories for those accounts.

4.6.4 File all required income tax returns.

4.6.5 Enforce by legal means the provisions of this Declaration.

4.6.6 Maintain and repair the Common Areas, and the Improvements thereon and establish one or more reserve funds for such purposes.

4.6.7 Promulgate, modify, and rescind rules and regulations governing the use of the Common Areas, and all Improvements on the foregoing, as well as the Property generally.

4.6.8 Obtain such policies of insurance as the Board may from time to time deem appropriate for the protection of the Association, the Common Areas, and the Improvements thereon, and as may be authorized pursuant to Section 4.13.

4.6.9 Compensate the President, the Secretary, and members of the Architectural Review Committee, if any compensation is established pusuant to Section 4.17.7 or6.1.

4.6.10 Contract for such services (including without limitation legal and accounting services) as may be necessary or appropriate to manage the affairs of Gracie's Landing and the Association properly and in accordance with this Declaration, whether the personnel performing such services are employed directly by the Association or by a manager or management firm or agent retained by the Association.

4.6.11 Appoint such committees as the Board may determine from time to time to be appropriate to assist in the conduct of the affairs of the Association and delegate to any such committee such authority as the Board may deem appropriate, subject in all cases to the provisions of the Declaration. Notwithstanding the foregoing provisions of this Section 4.6.11, the Architectural Review Committee shall in all events be formed as provided in and shall have the authority granted by Section 6 and other applicable provisions of this Declaration.

4.7 Board of Directors

4.7.1 Generally. The Association shall act through the Board. Prior to the Turnover Meeting, Declarant shall select all Directors. During the period when Declarant is selecting the Directors, Declarant may also determine the number of Directors, which may be different than the number set forth in Section 4.7.2. From and after the Turnover Meeting, the number of Directors shall be as set forth in Section 4.7.2, and the Owners shall select or elect the Directors in the manner provided in Section 4.7.3.

4.7.2 Number and Classification of Directors. From and after the Turnover Meeting, the Board shall be comprised of between three (3) and five (5) Directors.

4.7.3 Election of Directors. Each Director shall be elected by majority vote of the Owners, with each such Owner having one vote for each Lot owned. If there is more than one Owner of any Lot, such Owners shall together be considered a single Owner with respect to such Lot for purposes of this Section 4.7.3. The election of Directors pursuant to this Section 4.7.3 shall take place at a meeting of the Owners of the Lots conducted pursuant to Section 4.7.4.

4.7.4 Meetings of Owners. Any meeting of Owners for the purpose of electing Directors pursuant to this Section 4.7 shall be conducted in accordance with the following procedures:

(a) The first such meeting shall be held at least thirty (30) days prior to the Turnover Meeting, on a date selected by the Secretary. Subsequent meetings shall be held at least thirty (30) days prior to the expiration of the term of any Director or, in the case of a vacancy pursuant to Section 4.9, within thirty (30) days after such vacancy occurs.

(b) Any such meeting shall be held at a place within Yamhill County, Oregon designated by the Secretary. The Secretary shall give written notice of any such meeting to each Owner entitled to vote at the meeting at least ten but not more than thirty (30) days prior to the date

of the meeting. The notice shall state the purpose, time, and place of the meeting. The Secretary shall be required to notify an owner of a meeting only if such Owner has previously given written notice to the Secretary setting forth such Owner's name and address. Notice of any meeting may be waived by any Owner at any time. No Owner who is present at a meeting may object to the adequacy or timeliness of the notice given.

(c) The presence, in person or by proxy, of Owners representing not less than forty percent (40%) of the votes in the Association shall constitute a quorum for voting at any meeting of Owners. Any Owner may give a proxy to any Person, so long as the proxy is in writing, signed by such Owner, and filed with the Secretary. A proxy shall expire on the earlier of (i) eleven months after the date of the proxy; or (ii) the date of sale of the Owner's Lot by its Owner.

(d) A special meeting of Owners may be called by the President of the Board, a majority of the Board, or Owners representing not less than fifty percent (50%) of the votes in the Association.

4.8 Terms of Directors

4.8.1 Initial Terms. Subject to the provisions of Section 4.10.1, Directors selected by Declarant pursuant to Section 4.7.1 shall serve at the pleasure of Declarant. As determined by random means, one of the three Directors initially elected by the Owners pursuant to Section 4.7.3 shall serve a three-year term, one shall serve a two-year term, and one shall serve a one-year term.

4.8.2 Subsequent Terms. Except as provided in Sections 4.8.1 and 4.9, all Directors shall serve three-year terms. Any Director may serve more than one term.

4.9 Vacancies; Removal. In the event a Director dies, resigns or ceases to be an Owner of a Lot, the resulting vacancy on the Board shall be filled by selection or vote of the Owner(s). Any Director so selected or elected shall serve the remainder of the replaced Director's term. The Owners may remove any member of the Board, other than members appointed by Declarant or persons who are ex officio directors, with or without cause, by a majority vote of all Owners present and entitled to vote at any meeting of the Owners at which a quorum is present. No removal of a Director shall be effective unless the matter of removal is an item on the agenda and stated in the notice for the meeting required under ORS 94.650, as amended.

4.10 Meetings of the Board

4.10.1 Turnover Meeting. The Turnover Meeting shall be called by Declarant and held within one hundred twenty (120) days after the Turnover Date. Declarant shall give written notice of the time and place of the Turnover Meeting to each Owner who has previously given Declarant written notice setting forth such Owner's name and address. Declarant's notice shall be given at least forty-five (45) but not more than sixty (60) days prior to the date of the

Turnover Meeting. In the event that Declarant does not call the Turnover Meeting as set forth above, any Owner may call such meeting and give notice as required herein. At the Turnover Meeting, the following shall occur:

(a) The Directors selected by Declarant, the President, the Secretary and the Treasurer shall each resign. The Directors selected or elected by the Owners pursuant to Section 4.7 shall conduct theirfirst meeting as the Board;

(b) The new Board shall elect a President, a Secretary and a Treasurer; and

(c) Declarant shall deliver to the new Board all of the Association's property in Declarant's possession, including without limitation, all items required to be delivered to the Association pursuant to Oregon Revised Statutes 94.616, as amended.

4.10.2 Annual Meetings. The Board shall meet annually, within ninety (90) days after the end of each calendar year. At each annual meeting, the Secretary shall present to the Board a report on the financial condition of the Association, including a report of receipts and disbursements for the preceding calendar year and the estimated receipts and expenses for the coming year.

4.10.3 Special Meetings. Special meetings may be called at any time by two Directors. Such meetings shall be scheduled by the Secretary within thirty (30) days after the Secretary's receipt of written requests signed by two or more Directors; provided that if the purpose of a special meeting is to elect a successor Secretary or to consider removal of the Secretary, the meeting may be scheduled by the President or, if the meeting is also for the purpose of electing a successor President or considering the removal of the President, by any other Director.

4.10.4 Place of Meetings. Meetings of the Board shall be held at such place as may be designated from time to time by the Board. All meetings of the Board shall be open to Owners.

4.10.5 Notice. The Secretary shall give written notice to each Director of each Board meeting at least ten but not more than thirty (30) days prior to the date set for such meeting, stating the purpose, time, and place of the meeting. Notice shall be sent to the address of each Director as listed on the books of the Association, or to such other address as any Director may designate by written notice to the Secretary. Notice of any meeting may be waived by any Director at any time. No Director who is present at a meeting may object to the adequacy or timeliness of the notice given. Except in the event of an emergency meeting, notice of each Board meeting shall also be given to the Owners by posting a notice of the meeting at a place or places on the Property at least three (3) days prior to the meeting or in such other manner as is reasonably calculated to inform the Owners of such meetings.

4.11 Quorum. The presence, in person or by proxy, of a majority of the Directors shall constitute a quorum for voting at a Board meeting. When voting is by mail pursuant to Section 4.14, a quorum shall be constituted if the number of votes cast equals at least fifty-one (51%) percent of the total votes entitled to be cast. The Board shall have the power to adjourn a meeting even if less than a quorum is present.

4.12 Proxies. A Director may vote in person or by proxy. A proxy may be given to any other Director, so long as the proxy is in writing, signed by the Director giving the proxy, and filed with the Secretary. A proxy shall expire on the earlier of (i) the end of the Director's term; or (ii) eleven months after the date of the proxy.

4.13 Voting by the Board. Each Director shall have one vote. So long as a quorum is constituted, the vote of Directors together holding a majority of the total votes cast, whether the Directors voting are present in person or by proxy, and whether the vote takes place at a meeting or by mail, shall be a binding vote of the Board for all purposes, unless a greater percentage is required by law or this Declaration.

4.14 Voting by Mail. Voting of the Directors may be by mail. In any case in which voting by mail is necessary or desirable, the Secretary shall give written notice to all Directors, which notice shall (i) include a written resolution setting forth the proposed action, (ii) state that the Directors are entitled to vote by mail for or against such resolution, and (iii) specify a date not less than twenty-five (25) days after the effective date of such notice by which all votes must be received at the principal office of the Association. Votes received after the date specified shall not be effective.

4.15 Compensation of Directors. No Director shall receive compensation from the Association for serving on the Board.

4.16 Insurance. The Board may purchase and maintain insurance on behalf of any Director against any liability incurred by such Director in such capacity, if such insurance is available at a cost and on terms which the Board determines to be reasonable.

4.17 Officers of the Association

4.17.1 Designation. The officers of the Association shall be the President, the Secretary and the Treasurer, each of whom shall be elected by the Board. The same person shall not concurrently hold the offices of President and Secretary. The Board may designate such additional officers as it deems appropriate.

4.17.2 Election. The officers of the Association shall be elected annually by the Board and shall hold offices at the pleasure of the Board and until their successors are elected. If any office becomes vacant, the Board shall elect a successor to fill the unexpired term.

4.17.3 Removal. The Board may remove any officer, at any time, with or without cause.

4.17.4 President. The President shall be a Director and shall be the chief executive officer of the Association. The President shall preside at all meetings of the Board and, unless otherwise provided in this Declaration, shall have all of the general powers and duties normally incident to the office of the chief executive officer of an association.

4.17.5 Secretary. The Secretary shall not be a Director unless no other Owner has indicated his/her willingness to serve as Secretary. The Secretary shall keep the minutes of all proceedings of the Board and all other Association records and shall attend to the giving of all notices pursuant to this Declaration or required by law. The Secretary shall be responsible for the collection, deposit, and disbursement of Association funds and shall keep full and accurate financial records and books of account showing all receipts and disbursements of the Association. The Secretary shall perform all other duties incident to the office of secretary of an association or as may be directed by the Board. The Secretary shall perform all of the foregoing duties at the expense of the Association.

4.17.6 Treasurer. The Treasurer shall not be a Director unless no other Owner has indicated his/her willingness to serve as Treasurer. The Treasurer shall be responsible for Association funds and shall keep full and accurate financial records and books of accounts sufficient for proper accounting purposes showing all receipts and disbursements necessary for the preparation of all financial data and tax returns. The Treasurer shall be responsible for the deposit of all Association funds in such depositories as may from time to time be designated by the Board, and shall disburse Association funds for such purposes as may be permitted hereunder or under the Association Bylaws. The Treasurer shall perform all other duties incident to the office of Treasurer of an Association or as may be directed by the Board. The Treasurer shall perform all of such duties at the expense of the Association.

4.17.7 Compensation of Officers. Other than reimbursement for out-of-pocket expenses incurred on behalf of the Association, neither the President, the Secretary, the Treasurer, nor any other officer of the Association shall receive any compensation from the Association for acting as an officer, unless such compensation is authorized by the Board.

4.18 Execution of Instruments. All agreements, contracts, deeds, leases, and other instruments of the Association shall be executed by such individuals as may be designated from time to time by the Board.

4.19 Indemnification. Neither a Director nor an officer of the Association shall be liable to the Association or the Owners for any mistake of judgment, negligence, or otherwise, except for such Director's or officer's willful misconduct or bad faith. Each Director and officer shall be indemnified by the Association against all expenses and liabilities, including reasonable attorneys, fees, incurred by or imposed upon such Director or officer in such capacity; provided,

however, there shall be no indemnity if such Director or officer is adjudged guilty of willful misconduct or bad faith in connection with the matter as to which indemnification is sought.

SECTION 5. FUNDS AND ASSESSMENTS

5.1 Purpose of Assessments. The assessments levied by the Association shall be used exclusively to promote the recreation, health, safety, and welfare of the Owners and Occupants, and for the improvement, operation and maintenance of the Common Areas, including maintenance and administrative costs, and insurance for the Association, including, but not limited to, a community high-speed internet access provider (if a "server/vendor" should be granted a contract for the entire Property). As used herein, the term "Assessments" shall include Annual Assessments, Special Assessments, Emergency Assessments and Limited Common Area Assessments as those terms are defined herein.

5.1.1 Common Expense Designations. Common Expenses of the nature described in Section 5.1 which are to be, or are, incurred by the Association for the benefit of all of the Owners of Lots within the Real Property shall be separately budgeted for allocation among all of such Owners and shall be designated "General Common Expenses."

5.1.2 Insurance By the Association. The Board shall obtain, and maintain in effect, from reputable insurance companies authorized to do business in the State of Oregon, public liability insurance with respect to all of the Common Area in such amounts and in such forms as the Board deems advisable to provide adequate protection for bodily injury, including deaths of persons, and property damage, whether caused by the negligence of the Association or otherwise; provided, however, that such policy(ies) shall not be for an amount less than $1,000,000.00 per person, per occurrence, and that such policy(ies) shall provide the coverage there under cannot be canceled or substantially modified without at least 10 days written notice to the Association. All Owners are solely responsible for obtaining fire and casualty insurance for their Building Structures. The Association may obtain such other and further policies of insurance as it deems advisable. The named insured on the policy may read Gracie's Landing Homeowners' Association. The casualty insurance to be obtained by the Association pursuant to this paragraph 5.1(b) shall include the following terms, if the Board determines that they are reasonably available:

(i) A waiver of subrogation by the insurer as to any claims against the Board, any Owner, or any guest of an Owner;

(ii) A waiver by the insurer of its rights to repair and reconstruct instead of paying cash;

(iii) A provision that no policy may be canceled, invalidated, or suspended because of the action of an Owner;

(iv) A provision that policy that may be canceled, invalidated, or suspended because of the conduct of any director, officer, or employee of the Association unless the insurer gives the Association a prior written demand the Association correct the defect and allows the Association a reasonable time to make the correction; and

(v) A provision that any "other insurance" clause in any policy shall exclude from its coverage all owners' policies.

At the discretion of the Board, the Association may purchase and maintain insurance on behalf of any person who is or was a Director, Officer, employee or agent of the Association, against any liability asserted against him or her and incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the Association would have the power to indemnify him or her against such liability under the Articles of Incorporation of the Association.

5.1.3 Insurance by the Owners. The insurance described in paragraph 5.1.2 above does not provide personal liability coverage for the Owners, nor fire or extended coverage casualty insurance for the Owners' personal property, the inside surfaces of the Building Structure, and all other improvements including, but not limited to, appliances, heaters and air conditioners, cabinets, flooring, wall and window coverings, light fixtures and personal property nor the Lot or land on which the Building Structure resides. Further, no insurance coverage for fire extended casualty insurance of the Building Structures is provided by the Association. The responsibility for obtaining insurance that covers at least these items rests solely with the individual Owners, except as otherwise noted herein.

5.2 Basis of Assessments and Commencement of Assessments. Except as otherwise provided herein, Assessments are to be levied against all Lots, except those owned by Declarant, whether or not such Lots have been improved with a substantially completed Home. Provided, however, that no Assessment shall be levied against any Lot until such time as it is first sold to a purchaser other than Declarant or Declarant's assignee. Assessments for all Lots conveyed by the Declarant to purchaser/Owner, either by deed or land sales contract, shall begin on the day of the recording of the deed or land sale contract conveying or contracting to convey the Lot of the new Owner. In accordance with ORS 94.704(1), Declarant shall pay all common expenses of the Association that exceed the operating expenses received from non-Declarant Owners, exclusive or the reserve assessments. As of the first of the month following the date of the Turnover Meeting, all Declarant-owned Lots will pay operating and reserve assessments under the payment provisions contained in this Declaration.

5.3 Annual Assessments. Subject to the requirements set forth in this Section 5, the Association shall have the authority to levy annual assessments to pay all expenses associated with the Association's performance of its powers, duties, and responsibilities under this Declaration, as well as to pay all property taxes, lighting, insurance, maintenance, and other expenses incurred with respect to the Common Areas, and the Improvements thereon. The Association shall bill each Owner for such Owner's share of the assessments (determined in accordance with this Section 5) on

an annual, quarterly, or monthly basis, as the Board may determine. Each Owner shall pay any such assessment within thirty (30) days after the date of billing.

5.3.1 Budget. Regardless of the number of Members of the amount of assets of the Association, each year the Board shall prepare, approve and make available to each Member a pro forma operating statement (budget) containing: (i) estimated revenue and expenses on an accrual basis; (ii) the amount of the total cash reserves of the Association currently available for replacement or major repair of the Common Area and contingencies; (iii) an itemized estimate for the remaining life of, and the methods of funding to defray repair, replacement or additions to major components of the Common Area; and (iv) a general statement setting forth the procedures used by the Board in the calculation and establishment of reserves to defray the costs and repair, replacement or additions to major components of the Common Area. For the first fiscal year, the budget shall be approved by the Board no later than the date on which annual assessments are scheduled to commence. Thereafter, the Board shall annually prepare and approve the budget and distribute a copy thereof to each Member, together with written notice of the amount of the annual assessments to be levied against the Owner's Lot, not less than thirty (30) days and not more than ninety (90) days prior to the beginning of the fiscal year. The assessments in the budget are to be collected at intervals as determined by the Board of Directors, and may include both operating and maintenance costs and the reserve assessments, all as defined in the Association documents.

5.4 Special Assessments. In addition to the Annual Assessments, the Board may also levy during any fiscal year a Special Assessment ("Special Assessment"), applicable to that fiscal year only, for the purpose of deferring all or any part of the cost of any construction or reconstruction, unexpected repair, or acquisition or replacement of a described capital improvement, or for any other one-time expenditure not to be paid out of Annual Assessments. Special Assessments for acquisition or construction of new capital improvements or additions which in the aggregate in any fiscal year exceed an amount equal to fifteen percent (15%) of the budgeted gross expenses for the Association for the affected fiscal year may be levied only if approved by a majority of the Owners with voting rights voting on such matter. Prior to the Turnover Meeting, any Special Assessment for acquisition or construction of new capital improvements or additions must be approved by not less than fifty percent of the Owners with voting rights together with the written consent of the Declarant owning a Lot or Home. Special Assessments shall be apportioned as provided in Section 5.6 below and may be payable in a lump sum payment or in installments, without or without interest or discount, as determined by the Board of Directors.

5.5 Emergency Assessments. If the Annual Assessments levied at any time are or will become inadequate to meet all expenses incurred under this Declaration for any reason, including nonpayment of Owner's Assessments on a current basis, the Board of Directors shall immediately determine the approximate amount of such inadequacy and issue a supplemental budget, noting the reason therefore, and levy an Emergency Assessment for the amount required to meet all such expenses on a current basis ("Emergency Assessment"). Emergency Assessments

shall be apportioned as provided in Section 5.6 below, and payable as determined by the Board of Directors.

5.6 Limited Common Area Assessments. Annual Assessments, Special Assessments and Emergency Assessments relating to maintenance, upkeep, repair, replacement of improvement to the Limited Common Areas ("Limited Common Area Assessments") shall be assessed exclusively and on an equal, pro-rata basis only to each Lot having a right to use a Limited Common Area.

5.7 Apportionment of Assessment. Lots shall not be subject to Annual Assessments, Special Assessments, Emergency Assessments or Limited Common Area Assessments until the sale of a Lot to an Owner other than the Declarant. At such time that a Lot is sold to an Owner other then the Declarant, each Lot shall become subject to Annual Assessments, Special Assessments, Emergency Assessments or Limited Common Area Assessments. All Lots subject to an Assessment shall pay an equal, pro-rata share of the Annual Assessments, Special Assessments, Emergency Assessments or Limited Common Area Assessments. Declarant may elect to delay the collection of Annual Assessments against all Lots, but in such case the Declarant may be responsible for the payment of any Association costs in excess of those funds collected by the Association. No Owner may claim exemption from liability for contribution towards common expenses and Assessments by the Owner's waiver of use or enjoyment of the Common Areas or by the Owner's abandonment of the Owner's Lot. An Owner may not claim an offset against an Assessment for failure of the Association to perform its obligations, and no Owner may offset amounts owing or claimed to be owing by the Association or Declarant to the Owner. Declarant, however, may defer that portion of the Annual Assessment attributable to the accrued reserve assessment from the time a Lot becomes subject to assessment until the date the Lot is conveyed, but not beyond the date of the Turnover Meeting, or, if no Turnover Meeting is held, the Declarant transfers administrative control of the Association to the Owners. At such time, the books and records of the Association shall reflect the amount owing from the Declarant for accrued, unpaid reserve Assessments. Lots may be excluded from monthly Assessments until a Home or Improvement upon the Lot is deemed substantially complete.

5.8 Allocation to Lots. The annual assessment levied pursuant to Section 5.3 with respect to any calendar year shall be allocated to the Lots and shall be allocated among such Lots pro rata based on the total number of Lots; provided, however, that Declarant shall not be liable and no unsold Lots owned by Declarant shall be subject to any lien for assessments until conveyance of such Lot(s) by Declarant to a third person.

5.9 Special Assessments. In addition to annual assessments pursuant to Section 5.3, the Association may levy special assessments to pay the cost of any construction, reconstruction, repair, or replacement of any Improvements in or to the Public Open Space or the Other Common Areas or for any other purpose deemed appropriate by the Board; provided, however, that any special assessment shall be levied only upon the affirmative vote of at least seventy-five (75%) percent of the Directors. Special assessments shall be billed to the Owners at such time as the Board may

determine. Special assessments shall be allocated among the Lots in the manner provided with respect to annual assessments in Section 5.3.

5.10 Creation of Reserve Account. The Association may, at its own election, choose to establish a reserve account for replacement of all items of common property. If the Association elects to establish a reserve account, the items of common property that require would the creation of the reserve account are all items of common property of the Association, as determined by the Board, that will normally require replacement in more than three (3) and less than thirty (30) years. Such reserve account shall be funded by assessments against the individual Lots assessed for maintenance of the items for which such reserve account is being established. The assessment against each Lot for this reserve account shall accrue from the date that the Association elects to establish a reserve account, only if the Association elects to establish a reserve account. The Declarant is not required to establish or maintain a reserve account, prepare a reserve study or a maintenance plan pursuant to ORS 94.570(2).

5.11 Records of Assessments. The Association shall maintain records of assessments, of any other income received by the Association, and of all disbursements made. The Board may at any time and from time to time require that an audit of the Association's records be performed at the expense of the Association. The results of any such audit may be presented at any meeting of the Board. Any Director may, at the Association's expense and at any reasonable time, copy any Association records reasonably necessary to the performance of such Director's duties. Any Owner shall have the right to inspect Association records at any reasonable time, after reasonable notice to the Secretary. Any Owner may copy Association records at such Owner's expense.

5.12 Enforcement. In the event that any assessment, or any expense due pursuant hereto is not paid within thirty (30) days after the date of billing, the unpaid amount shall thereafter bear interest from the date first due until paid in full at a rate per annum equal to three (3) percentage points in excess of the announced prime rate of U.S. National Bank of Oregon (or, if such bank ceases to exist or announce a prime rate, Wells Fargo Bank of Oregon) in effect on the date payment was first due. In addition to all other rights and remedies available by law or provided herein, the Association shall also be entitled (i) to impose a late charge with respect to any such unpaid amount equal to ten (10%) percent thereof, to reimburse the Association for its administrative and other expenses incurred as a result of the Owner's failure to pay the assessment or expense when due; and (ii) upon fifteen (15) days prior written notice to the Owner owing such assessment or expense, to impose a lien against such Owner's Lot in the amount of the assessment or expense, plus collection costs (including reasonable attorneys' fees), plus interest and late charges as provided in this Section 5.12. Any such lien shall also secure any additional amounts thereafter coming due from the Owner of the Lot in question. Subject to the provisions of Section 5.14, any such lien shall bind and run with the Lot in question until paid in full. The Association may initiate an action to foreclose any such lien in any manner provided by law. In any action to foreclose any such lien, any judgment rendered against the Owner of the Lot in question and in favor of the Association shall include such amount as the court may adjudge reasonable as attorneys, fees and

costs and expenses reasonably incurred in the preparation for and the prosecution of such action, at trial and on any appeal, in addition to all other amounts provided by law.

5.13 Personal Obligation. Each assessment or charge levied pursuant to the provisions of this Declaration shall be a separate and personal obligation of the Owner of the Lot against which the assessment or charge is levied. The sale, transfer, or conveyance of a Lot shall neither release nor discharge the Owner thereof from such personal liability, nor shall such a sale, transfer, or conveyance extinguish any lien placed on such Lot.

5.14 Subordination. Notwithstanding any other provision of this Declaration, any lien imposed on a Lot under this Section 5 shall be and remain at all times inferior, junior, and subordinate to the lien of any first mortgage or deed of trust encumbering such Lot. Without limiting the generality of the foregoing, the sale or transfer of any Lot under a decree of foreclosure pursuant to any such first mortgage or deed of trust, or proceeding in lieu of foreclosure, shall extinguish any lien imposed on such Lot hereunder prior to the date of sale or transfer. Upon twenty (20) days prior written request, the Association shall execute and deliver such reasonable documentation as any Lot Owner may request to confirm or evidence the provisions of this Section 5.14.

SECTION 6. ARCHITECTURAL AND DESIGN CONTROL

6.1 Establishment of the Architectural Review Committee. On or prior to the Turnover Date, the Architectural Review Committee ("ARC") shall be established to review and approve or disapprove plans, specifications, design, construction, and alterations of all Improvements built within Gracie's Landing. Prior to the Turnover Date, the ARC shall consist solely of the Declarant. After the Turnover Date, the ARC shall consist of no fewer than three (3) Members and no more than five (5) Members. The Members of the ARC need not be Owners, shall serve one-year terms (subject to being reappointed by the Board), unless such term shall be lengthened by the Board at the time of appointment or unless the Board served as the ARC, in which event the terms of the ARC Members shall be the same as their terms as Board members. ARC Members shall be compensated by the Association in such amount, if any, as may be determined from time to time by the Board. Until such time as the ARC is established, Declarant shall have full power and authority to act as the ARC in accordance with the provisions of this Section 6.

6.1.1 Power to Act. Except as otherwise provided in this Declaration, a majority of the Members of the ARC shall the power and authority to act on behalf of the full ARC, without the necessity of a meeting and without the necessity of consulting the remaining Members of the ARC. The ARC shall render is decisions on all matters brought before it only by written instrument setting forth the decision(s) and action(s) taken by the Members consenting thereto.

6.2 Architectural and Design Review

6.2.1 Generally. No Improvement of any kind shall be commenced, erected, placed, or altered on any portion of the Real Property or on any Lot unless such Improvement is in conformance with this Restate Declaration and this Section 6.2 and until plans and specifications showing the nature, kind, shape, height, material, color, and location of such Improvement are submitted to and approved by the ARC pursuant to the provisions of Section 6.3. All such Improvements shall be erected and altered in conformance with all applicable governmental laws, ordinances, rules, and regulations and with the requirements set forth in this Section 6.2. To the extent applicable governmental laws, ordinances, rules, and regulations are in conflict with such requirements, the more restrictive standards shall control.

6.2.2 Design Guidelines. The ARC shall have the authority to promulgate and issue, and thereafter to amend from time to time, design guidelines supplementing, interpreting, and not inconsistent with those set forth in this Section 6.2. Such guidelines shall be supplied in writing to all Owners, shall be fully binding upon all Owners as if set forth in this Declaration, and shall be applied by the ARC in reviewing and approving or denying proposed Improvements. Without limiting the generality of the foregoing, the ARC shall have the authority to include in any such guidelines, among such other provisions as the ARC may deem appropriate, height restrictions with respect to Improvements to be constructed on the Real Property or any portion thereof, requirements and restrictions with respect to exterior lighting in addition to those set forth in this Declaration, requirements regarding parking and landscaping in addition to those set forth in this Declaration, and requirements to be met in connection with construction activities on the Property or any portion thereof. Any requirements or restrictions set forth in the design guidelines need not relate to all components of Gracie's Landing, if the ARC determines that only certain portions of the Property should be affected.

6.2.3 Exterior Finish. The exterior of the Improvements and Homes on all Lots, including without limitation the roof, materials, and color thereof, shall be subject to the approval or disapproval of the ARC and shall be designed, built, and maintained so as to be compatible with the natural surroundings, existing structures, and landscaping within Gracie's Landing. All roofs and roofing surfaces on all Improvements shall be cedar shake, tile materials, or Architectural Composition as approved by the ARC. The siding and siding surfaces of all Improvements shall be lap siding and shall be comprised of or constructed of cedar, fir, brick, L-P inner-seal, fiber cement or equivalents there as approved by the ARC. In no event shall T1-11 or any material that is principally comprised or constructed of plywood be permitted to be used on the exterior of any Home or Improvement. The exterior of each Home shall have no less than three (3) separate and distinct paint colors. Exterior trim, doors, railings, decks, eaves, and gutters, and the exterior finish of garages and other accessory buildings shall be designed, built, and maintained so as to be compatible with the exterior of the structure they are part of or adjoin.

6.2.4 General Construction. All Homes or Improvements erected or constructed in Gracie's Landing shall be of "double-wall" construction and shall utilize and compose construction materials and procedures consistent therewith.

6.2.5 Windows. The frame materials for all windows in all Homes and Improvements shall be composed of and constructed with materials and finished in such a manner so as to be compatible and in harmony with the Home or Improvement in which such window is installed. In no event shall any window frame or divider materials be unfinished or not painted or anodized in a manner and color that is not acceptable to the ARC. Windows on the front (street-facing) of Home shall be wood trimmed.

6.2.6 Exterior Lights. Any exterior lighting which is visible from any Lot or street shall be compatible with its surroundings and approved by the ARC prior to installation.

6.2.7 Hedges, etc. Hedges or other solid-screened plantings may be used as lot line barriers provided that they are otherwise approved by the ARC. No landscaping, hedge or other planting shall be installed that obstructs or prohibits other Owners from using the Common Areas as provided in this Declaration, including, but not limited to, use of the Equestrian Easement.

6.2.8 Tree Removal. No trees with a diameter of six inches or more, measured at a height of five (5) feet above ground level, may be removed from any Lot without the prior approval of the ARC and the City of Newberg.

6.2.9 Service Facilities. Clothes lines, waste facilities, storage facilities, and other service facilities shall be screened so as not to be visible from the street or any adjacent property.

6.2.10 Utilities and Equipment. All utility lines shall be underground. Pad-mounted transformers, switch-gears, and similar equipment which must be installed above ground and all service equipment such as meters, generators, mechanical duct work, piping, and HVAC equipment shall be screened with suitable landscaping or walls of design and material compatible with those of the adjacent buildings.

6.3 Design Review Procedure

6.3.1 Submission of Plans. Prior to the commencement, erection, placement, or alteration of any Improvement on any Lot, the Owner desiring to commence, erect, place, or alter such Improvement shall submit plans and specifications to the ARC in accordance with such procedures as the ARC may establish from time to time. All plans and specifications shall conform to any specific requirements set forth in the design guidelines promulgated pursuant to Section 6.2.2 and shall provide sufficient detail to enable the ARC to determine whether the proposed Improvement is in conformance with the applicable requirements set forth in this Section 6 and in such design guidelines. Such plans and specifications shall be accompanied by the Owner's payment of such reasonable fee as may be fixed by the Board from time to time, but under no circumstances shall exceed four hundred dollars ($400.00), to cover costs of the design review process. The Owner shall also supply any additional information reasonably requested by any member of the ARC. The ARC shall review the information and plans submitted and shall, within

twenty (20) days after submission of all information requested by any member of the ARC, notify the Owner in writing of its approval or disapproval of the proposed Improvement. If the ARC fails to give notice of its decision within sixty (60) days after submission of all information requested by any member of the ARC, then the proposed Improvement shall be conclusively presumed to be approved as submitted.

6.3.2 Approval. The ARC may approve a proposed Improvement as submitted or may impose specific conditions which must be met before approval will be granted. A decision by a majority of the members of the ARC shall constitute a decision of the full ARC. Approval by the ARC does not imply or constitute any necessary or requisite governmental approval, which approval is the sole responsibility of the Owner.

6.3.3 Commencement of Work. As soon as practicable after the receipt of approval by the ARC, if the Owner elects to proceed with the Improvement, the Owner shall satisfy any and all conditions of such approval, shall secure all necessary governmental permits and approvals, and shall commence construction of the approved Improvement. The ARC 's approval of any proposed Improvement shall automatically be deemed revoked one hundred eighty (180) days after issuance unless construction of the Improvement has commenced or the Owner has applied for and received an extension of time from the ARC.

6.3.4 Completion of Work. Any approved Improvement shall be completed within three hundred sixty-five (365) days after the date of commencement of construction; provided, however, that if the construction of any approved Improvement is delayed by causes beyond the reasonable control of the Person constructing such Improvement, the period within which construction must be completed shall be extended by the number of days construction is so delayed. In all cases, landscaping shall be completed within one hundred and eighty (180) days after substantial completion of the Home or associated Improvements. Promptly after completion of any Improvement, the Owner shall give written notice of completion to the ARC. Within thirty (30) days after the effective date of such notice or at any time that the ARC has reason to believe that an Improvement has been completed, the ARC shall inspect the completed Improvement and give written notice to the Owner of any respects in which the completed Improvement fails to conform to the plans therefore as approved by the ARC. The ARC shall specify in any such notice a reasonable period, which shall be not less than thirty (30) days, during which the Owner may remedy the nonconformance. If the ARC fails to give a notice of nonconformance within thirty (30) days after the effective date of a notice of completion, the Improvement shall be conclusively presumed to be approved as completed.

6.3.5 Failure to Act. If at any time the ARC fails for any reason to perform its responsibilities under this Section 6, the Board shall have complete authority to serve as a temporary ARC

6.3.6 Architectural Review Committee Discretion. The ARC, in its sole discretion, may withhold approval of any proposed Improvement if the ARC finds that the proposed

Improvement would be inconsistent with the provisions of Section 7 or would be incompatible with the design standards for Gracie's Landing as set forth in this Section 6 and in the design guidelines promulgated pursuant to Section 6.2.2 and Section 6.2.3. Considerations such as siting, shape, size, color, design, height, impairment of the view from other parts of the Property, solar access, and other effects on the enjoyment of other parts of the Property, as well as any other factors which the ARC believes to be relevant, may be taken into account by the ARC in determining whether or not to approve any proposed Improvement. The ARC, in its sole discretion, may, upon application, waive any provision of this Section 6 if it finds that the application of such provision results in unnecessary hardship to the affected Owner and that strict application is not necessary for the furtherance of the objective to create an attractive development.

6.3.7 Appeal. Any time after the Declarant has delegated appointment of the members of the ARC to the Board of Directors or a separate ARC, any Owner negatively or adversely affected by a decision or action of the ARC may appeal such decision or action to the Board of Directors. Such appeal shall be made in writing addressed to the President and/or the Secretary of the Board of Directors, and must be delivered within ten (10) days after the date of the ARC written decision in the matter, and shall contain specific objections or mitigating circumstances justifying the basis for appeal. If the Board of Directors is also acting as the ARC, then such appeal shall be treated as a request for a rehearing, and in such case the Board of Directors shall actually meet and receive evidence and testimony. A final, conclusive decision shall be made with regard to the appeal within thirty (30) days after receipt of the written request for appeal. The determination of the Board of Directors shall be final.

6.3.8 No Liability. Neither the ARC, nor any member thereof, nor the Association shall be liable to any Owner, Occupant, Developer, or other Person for any damage or loss suffered or claimed as a result of any action or failure to act on the part of the ARC or any member thereof, so long as the ARC or such member has acted in good faith based on actual knowledge.

6.3.9 Nonwaiver. Approval or disapproval by the ARC of any matter proposed to it or within its jurisdiction shall not constitute a precedent or waiver or impair in any manner whatsoever the right of the ARC to grant or withhold approval as to any similar matter thereafter proposed or submitted to it for approval.

6.3.10 Estoppel Certificate. Within ten (10) business days after receipt of a written request from any Owner, the ARC shall provide such Owner with an estoppel certificate executed by a member thereof, certifying with respect to the Lot(s) owned by such Owner that, as of the date of the certificate, either (i) all Improvements on such Lot(s) comply with this Declaration, or (ii) such Improvements do not so comply, in which event the certificate shall also identify the noncomplying Improvements and state with reasonable particularity the nature of such noncompliance. Any purchaser from an Owner, and any mortgagee or other encumbrancer, shall be entitled to rely upon any such certificate as to the matters set forth herein, such matters being

conclusive among Declarant, the ARC, the Association, all Owners, and such purchaser, mortgagee, or other encumbrancer.

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6.4 Architectural Review Committee Inspections.

The ARC shall, from time to time, inspect all work performed with regard to an Improvement and determine if such work is in substantial compliance and conformance with the approval granted. If the ARC determines that the work was not performed in substantial compliance and conformance with the approval granted, or if the ARC determines that any necessary approval was not obtained by the Owner, the ARC shall notify the Owner in writing of the noncompliance. Such notice of noncompliance shall specify the particular circumstances of any noncompliance and shall require the Owner to immediately take all necessary action to bring the work into compliance and conformance with the approved project.

6.5 Failure to Comply.

If the ARC determines that an Owner has not constructed an Improvement consistent with the specifications on which such approval is based or if such Improvement is constructed without prior ARC approval or contrary to the requirements of this Declaration, and if such Owner fails to diligently commence to remedy such noncompliance in accordance with the provisions of the notice of noncompliance, then at the expiration of the expiration of the fifth (5th) day from the date of such notice of noncompliance, the ARC shall schedule a hearing to consider the Owner's continuing noncompliance, and the ARC shall serve notice of such hearing on the Owner by First Class Mail. The hearing shall be set no more than thirty (30) days from the date of the notice of noncompliance. The ARC and the affected Owner shall be able to submit written evidence and oral testimony at the hearing. At the hearing, if the ARC determines that there is no valid reason for the continuing noncompliance, the ARC shall determine the costs of correcting the noncompliance. The ARC shall then require the Owner to remedy or remove the noncompliance within a period of not more than ten (10) days from the date of the ARC determination following the hearing. If the Owner does not comply with the ARC ruling within such ten (10) day period, or within any extension of such period as the ARC, in its sole discretion may grant, the Association may: (a) remove the non-complying Improvement and charge all costs to the Owner; (b) remedy the noncompliance and charge all costs to the Owner; and (c) fine the Owner and lien the affected Lot or Lots for all costs incurred by the Association, including all attorneys fees and costs expended and incurred by the ARC and the Association to enforce compliance before suit or other action is filed and all attorneys fees and costs expended by the ARC and the Association in arbitration, mediation and/or litigation, including any appeals or reviews there from.

6.6 Special Design and Orientation Requirements.

All Homes shall each be designed and built so that the front doors and/or primary access points face toward the access street for such Home and Lot. If an Owner of a Lot fails to comply

with the terms and provisions of this Section 6.6, such Owner acknowledges that the Declarant or Association shall have the power and authority, as provided in Section 6.5, even if judicial intervention is required, to require such Owner to remove and/or remodel any non-conforming Improvements, including a Home, and re-build such Home or Improvement to be in conformity with this Section 6.6.

SECTION 7. PROPERTY USE AND RESTRICTIONS

7.1 Improvements Permitted. No Improvement shall be erected or permitted to remain on any Lot except Improvements consisting of or containing one Home and Improvements normally accessory thereto and as permitted herein. No mobile home or pre-fabricated home shall be erected or permitted to remain on any Lot. Homes on all Lots shall have at least One Thousand Five Hundred (1,500) square feet of finished living space, but not including any attached garage area or open porches. No Home or Improvement shall exceed two (2) stories in height. The minimum square footage of the main floor of any multiple-story Home or Improvement shall not be less than One Thousand (1,000) square feet. Homes on all Lots shall have an attached private garage of sufficient size to store a minimum of two (2) vehicles. The ARC shall not have the right to approve such deviations from the foregoing size restrictions as it deems appropriate.

7.1.1 An Owner is not required to commence construction of a Home or Improvement on any Lot, provided that the Owner continuously maintains the Lot in a clean, manicured, safe and presentable condition.

7.1.2 The completion of construction of any Home or Improvement including exterior decoration shall occur within three hundred and sixty-five (365) days from the date of initial commencement of the construction of the Home or Improvement. During this period of construction time, the following shall occur:

(a). All Lots shall be kept in a neat and orderly condition, free of brushes, vines, weeds and other debris.

(b). All grass on the Lot shall be cut or mowed at sufficient regular intervals to prevent the creation of a nuisance or fire hazard.

(c). All contractors and builders shall keep the job site orderly and in clean condition and shall periodically, during the course of construction, remove all construction waste materials. In the event of hardship due to inclement weather conditions, this provision may be extended by the Declarant or the Declarant's designee for a reasonable period of time.

7.1.3 Setbacks. Minimum setbacks on all Lots in Gracie's Landing shall be governed by the applicable City of Newberg zoning regulations and ordinances.

7.2 Occupancy and Diligent Construction. No Home or Improvement shall be occupied in any manner while under the course of construction or until such Home or Improvement complies with all governmental standards for occupancy or intended use. All construction activity of any type or kind within Gracie's Landing and upon any Lot or any area or portion thereof shall be prosecuted diligently and continuously from the time of commencement until full completion. All exterior and visible portions of all Homes, Improvements, fences, walls or other structures placed on any Lot, in any area in or part of Gracie's Landing shall be constructed of new and high-grade materials and components, unless the use of materials and components that are not new or high-grade have been specifically approved in advance by the ARC. No Homes or Improvements that are constructed or are assembled elsewhere shall be moved onto or placed upon any Lot or any portion or area of Gracie's Landing without the prior written approval of the ARC. This provision shall not prohibit or restrict the erection, installation, movement and use of temporary trailers or structures, provided such trailers or structures exclusively incidental to the sale of Lots and construction and sale of Home upon any Lot or in any area or portion of Gracie's Landing, provided such trailers or structures have been approved in writing by the Declarant or the ARC.

7.3 Residential Use. Except as provided in this Section 7.3, Lots shall be used solely for single-family residential purposes. Without limiting the generality of the foregoing, no trade, craft, business, profession, commercial, or similar activity of any kind shall be conducted on any Lot, nor shall any goods, equipment, vehicles, materials, or supplies used in connection with any trade, service, or business be kept or stored on any such Lot, other than with the prior approval of the Board. Nothing in this Section 7.3 shall be deemed to prohibit or limit (i) activities relating to the sale or rental of Homes, (ii) the right of Declarant or any Developer to construct Homes on any Lot or to store construction materials and equipment on any such Lot in the normal course of construction, or (iii) the right of any Owner to maintain a personal professional library, handle business or professional telephone calls, or confer with business or professional associates, clients, or customers in such Owner's Home. The Board shall not approve any activity otherwise prohibited by this Section 7.3 unless the Board determines that only normal residential activities would be observable outside the Home in question and that the activity would not violate applicable law.

7.4 Design and Style of Homes and Improvements. Homes and Improvements and all other structures, including any additions or alterations thereto, shall be constructed and maintained utilizing only high-quality materials and workmanship and shall be of such character, style and designed so as to be in harmony with the other Home and Improvements located in Gracie's Landing. All Homes and Improvements and all other structures, including any additions or alterations thereto, shall comply in all respects with the terms and provisions of this Declaration and all applicable building codes, ordinances and regulations, including, but not limited to, the Uniform Building Code and the applicable building codes and ordinance of Yamhill County and the State of Oregon. The design, construction and orientation of the Homes on all Lots shall be as provided in Section 6.6 of this Declaration.

7.5 Construction. Except for construction performed by or contracted for by Declarant, no construction, reconstruction or exterior alterations shall occur on any Lot, unless written

approval of the ARC is first obtained pursuant to Article 6. Considerations such as siting, shape, size, color, design, height, solar access, or materials may be taken into account by the ARC in determining whether or not to consent to any proposed work. Such work includes, but is not limited to, Homes, storage sheds, swimming pools, spas, landscaping, greenhouses, patios, basketball hoops or remodeling. The intent of this covenant is to ensure quality of workmanship and materials, harmony of external design with the existing and planned structures as to location and visual compatibility and finish grade elevations. Original construction designs, materials and product specifications by Declarant may vary from any or all specified in this document. All construction performed by or contracted for by Declarant shall be presumed to have met these minimum requirements or have been granted a variance thereto.

7.6 Landscaping. The front yard and any side yards that are visible from any street or right of way of the Lot upon which a Home or Improvement has been constructed shall be fully and completely landscaped with underground irrigation and the planting of cultivated grass laws and various shrubs no more than one hundred and eighty (180) days after substantial completion of the Home or Improvement. Such landscaping shall be in accordance and conformance with the landscaping plan submitted to and approved by the ARC according to the provisions of this Section. Maintenance and upkeep of all landscaping on a Lot is the Owner's sole responsibility. The Lot Owner must obtain any and all required permits and authorizations before the installation of such landscaping and/or irrigations systems.

7.6.1. Landscape installation on a Lot by Owners is subject to approval by the ARC as provided in this Declaration. Except as otherwise provided herein, said completed landscaping on Lots shall be installed by Owners no later than twelve (12) months after substantial completion of the Home or Improvement. All landscaping maintenance on Lots shall be maintained in good condition, including watering, weeding, pruning, fertilization, mowing and other forms of typical maintenance. If an Owner fails to maintain said landscaping, Declarant, or Association in their place reserves the rights outlined in Section 9 to maintain. Owners are strongly encouraged to use sod for the planting of any lawns that will constitute the front yards, back yards and side yards of any Lot. At all times after substantial completion of the construction of a Home on a Lot and before the installation of landscaping, all back and side yards must be maintained so as not to be offensive in appearance nor cause or present any sort of hazardous, dangerous or unsightly condition.

7.6.2 The Association shall also be responsible for the landscaping and maintenance of the side street yards for any Lot that is also a corner Lot.

7.6.3 Watering, trimming and all maintenance associated with the street trees required by the City of Newberg which are planted along certain streets of Gracie's Landing are the responsibility of the Association.

7.6.4 Declarant reserves the right to install and maintain landscape improvements on Lots for sales and marketing purposes, and hereby reserves a landscape easement on the front

yards of said Lots and the street sideyards for this purpose. Declarant is not obligated to provide any landscaping in said areas noted in this section.

7.7 Maintenance. Each Owner and Occupant shall be solely responsible for the maintenance of their Homes. Required maintenance and repair shall include without limitation (i) maintenance of all parking areas and private drives in a clean and safe condition, including cleaning and repairing as often as is necessary; (ii) cleaning, maintenance, and relamping of any external lighting fixtures; (iii) maintenance of exteriors of buildings in an attractive and neat condition at all times; and (iv) maintenance of the landscaping in front of the Home, and outside of side and rear yard fences, in accordance with Section 7.4. The cost of such maintenance by the Association shall be a Common Expense paid out of Assessments described in Article 5. In the event, however, then need for such maintenance or repair is caused by the willful or negligent act or omission of an Owner, his/her family, tenants, guests or invitees, and to the extent such maintenance or repair is not covered by the Association's insurance policy, the costs of such maintenance and repair may, at the discretion of the Board of Directors, be charged to the Owner as an Individual Assessment. If the Board determines that maintenance and repairs are not conducted as required pursuant to this Declaration, the Association may conduct the necessary repairs or maintenance as provided in Sections 3.5 and 9.

7.8 Limitations on Use

7.8.1 Offensive Activities. No noxious or offensive activity shall be permitted carried on in any Lot in Gracie's Landing, nor shall anything be done or placed or maintained upon any Lot which interferes with or jeopardizes enjoyment of, or becomes an annoyance or nuisance to any Owner, or detracts from the value of any Lot in Gracie's Landing as a high-class residential neighborhood.

7.8.2 Animals. No large animals, livestock, or poultry of any kind shall be raised, kept, or permitted on any Lot or in any part of the affected Property. Any permitted domestic-type, household animals (such as dogs, cats, etc.) which are kept on the affected Property must not create any type of nuisance or noxious activity (including noise). No animals shall be allowed to become a nuisance to any residence within Gracie's Landing. Any and all animals permitted under this Subsection shall not be kept, bred or raised from commercial purposes or be maintained in unreasonable numbers. In the event of a dispute over what constitutes a "domestic-type, household animal" or "maintained in unreasonable numbers", the decision of the ARC shall be final.

7.8.3 Parking. Each Lot shall provide adequate room for the parking of private vehicles, and all such private vehicles shall not be allowed to be parked in any portion of the Property so that such vehicle(s) becomes a sight nuisance from any portion of the streets which may act as access to the entire Property. No private vehicle parking shall be allowed on any street or right-of-way, except as may be necessary in connection with construction activities or as may be required to perform other obligations required under this Declaration. No Owners shall permit or

allow any vehicle which is inoperable to remain parked or stored upon any Lot or upon any street for a period of time in excess of forty-eight (48) hours. No Owners shall permit or allow any vehicle which is inoperable to remain parked or stored upon a Common Area for any period of time. In addition, the parking or storage of boats, trailers, recreational vehicles, trucks, campers, motorcycles, and similar equipment or personal property shall not be allowed on any Lot, or any street adjacent thereto, except within an enclosed garage or screened area which prevents the vehicle or equipment therein from being seen from any other Lot, the Common Areas, or any street within the Real Property and the construction of which has been reviewed and approved by the ARC pursuant to Section 6.

7.8.3.1 No personal property, including, but not limited to trailers, recreational vehicles, boats, camper units or tents shall be placed, stored, kept, parked or maintained on any Lot, or on any portion of Gracie's Landing for any period of time in excess of fourteen (14) days in any one calendar year, except that such personal property owned by an Owner may be kept or maintained in an such a manner that is completely enclosed from the public view in an ARC-permitted Improvement.

7.8.4 Antennas and Satellite Dishes. No television antennas or radio aerials shall be permitted on any Lot, Home or any part or area of the Property. Small-size satellite receivers and dishes shall be permitted on a Lot, Home or any part of area of the Property only if such small-size satellite receiver(s) or dish(es) are screened from the view of any street or are placed on the roof of any Home or Improvement. All utilities shall be installed underground, as no overhead wires or services drops for the distribution of electricity or any other telecommunication purposes, nor any poles, towers, or other supporting structures shall be erected, placed or maintained on any Lots. Clotheslines shall be screened so as not to be viewed from any street.

7.8.5 Rubbish and Trash. No Lot or any part of the Common Areas or any part of the Property shall be used as a dumping site or repository for trash, rubbish, refuse, garbage, or any other form of waste of any kind. All garbage and other waste shall be kept in appropriate sanitary containers for proper disposal or recycling and out of public view, and shall not cause or be a form of nuisance to any Owner. Yard rakings, dirt, and other material resulting from landscaping work shall not be dumped onto streets, the Common Areas or any Lot. In the event an Owner or Occupant fails to remove any trash, rubbish, garbage, yard rakings, or other waste materials from such Owner's or Occupant's Lot (or from any street or the Common Areas, if deposited thereon by such Owner or Occupant) within five (5) days after notice from the Association, the Association may have such waste removed and charge the expense of such removal to the Owner of the Lot as provided in Section 9. Trimmings, cuttings and like debris may be composted by an Owner on the Owner's Lot, provided that such trimmings, cutting and like debris are maintained in a singular location on the Lot not visible from any street and so as not to become an annoyance or nuisance to any other Owner in the Property. Each Owner is responsible for trash disposal on the Owner's Lot, and shall only place individual trash containers in the public street (not alleyways) within 12 hours of the scheduled trash collection time and such Owners shall remove the individual trash containers from the public street and from public view within 12 hours after collection.

7.8.6 Temporary Structures. No structure of a temporary character, campers, recreational vehicles, trailer, tent, shack, garage, barn, or other outbuilding shall be permitted or used in Gracie's Landing at any time as a residence either temporarily or permanently. Declarant or its designee reserves the right to locate a temporary construction office within the Property while Homes are being constructed.

7.8.7 Improvements in the Common Areas. No Improvement of any type shall be erected or maintained by any Owner or Occupant so as to trespass or encroach upon the Common Areas, or that that obstructs or prohibits other Owners from using the Common Areas as provided in this Declaration, including, but not limited to, use of the Equestrian Easement.

7.8.8 Signs. No sign or other advertising device of any kind shall be created, displayed, erected or constructed upon or placed within or on any Lot to the public view, except one professionally-made sign measuring not more than eighteen (18) inches by twenty-four (24) inches advertising the Lot for sale. This restriction shall not prohibit the temporary placement of political signs, garage sale signs, for rent signs, or a sign for a City of Newberg permitted home-based business on any Lot by the Owner thereof, or placement of a professionally-made signs by Declarant that complies with applicable sign ordinances, provided any such signs shall not measuring not more than eighteen (18) inches by twenty-four (24) inches. This restriction shall also not apply to signs used by Declarant, builders, realtors or agents during construction and sales of Homes on Lots.

7.8.9 Fences.No fence, either sight or non-sight obscuring, in excess of three (3) feet in height may be located between the building line and the front yard sidewalk, and in the case of a corner Lot, the building line and sidewalk abutting the side yard. The maximum height of any fence located on the remainder of the Lot shall be six (6) feet and must be constructed of cedar wood and be a "good neighbor" construction type with similar material and style to other fences existing within Gracie's Landing at the time the construction is commenced by the Owner. All fences must be approved in advance by the ARC.

7.8.10 Driveways to be Paved. All driveways on Lots shall be paved with asphalt or concrete from the street or access right-of-way to the Home or Improvement, and paving must be completed by no later than substantial completion of the Home or Improvement on the Lot. Dirt or gravel driveways shall only be temporarily permitted during construction of the Home or Improvement and must be paved by no later than substantial completion of the Home or Improvement on the Lot. The driveways for all Lots shall be constructed and oriented and provided in Section 6.6 ofthis Declaration.

7.8.11 Business and Trade. No trade, craft, business, profession, commercial activity, or similar type activity of any kind or nature shall be permitted or conducted on any Lot, not shall any goods, equipment, vehicles, materials or supplies used in connection with any trade, craft, business, profession, commercial activity, or similar type activity be kept or stored on any Lot

(unless allowed and permitted by the City of Newberg), excepting therefrom the right of any homebuilder, contractor, and the Declarant, Declarant's assigns to construct the infrastructure of Orchard Lair No. 1 and the Homes and Improvements on the Lots, and to store construction equipment and materials on said Lots in the normal course of construction of said infrastructure, Homes and/or model homes for the purposes of sales in Orchard Lair No. 1. Furthermore, during the course of construction of a Home or Improvement, the Owner and/or the Owner's Contractor shall be authorized to store construction materials and equipment on the said Lot in the normal course of construction, subject to the provisions of Section 7.1.3.

SECTION 8. COMMON AREAS

8.1 Common Areas. The Common Areas shall be conveyed to the Association by Declarant no later than the Turnover Date, subject to all limitations and conditions of approval imposed on such space by the City. Every Owner and Occupant, and all invitees and guests of all Owners and Occupants, shall have a nonexclusive right and easement to use and enjoy the Common Areas, which right and easement shall be appurtenant to and shall run with the Real Property and all Lots therein. Such right and easement shall be subject to the Association's right to promulgate rules and regulations governing the use of the Common Areas. The Association shall maintain and repair the Common Areas, subject to the Owners' obligations to pay their allocable shares of the cost of such maintenance and repair in accordance with Section 5.

8.2 Future Improvements. Subject to Section 8.1 hereof, the Association shall have the right to make further Improvements in or of the Common Areas and to expand or replace any Improvements in the Common Areas.

8.3 Rights of Association in Common Areas. The Association shall have the right to sell, convey or subject to a security interest or lien all or any portion of the Common Areas if: (a) eighty (80%) percent or more of the Owners agree to the action, with each Owner having one vote for each Lot owned; and (b) the approval of the City is obtained in connection with any action relating to the Tract. For purposes of this Section 8.3, if there is more than one Owner of any Lot, such Owners shall together be considered a single Owner with respect to such Lot. Any such action shall be effective upon recording of an instrument in the Yamhill County real property records, acknowledged by the appropriate officer and setting forth the action taken by the Owners. The proceeds of any such sale, conveyance or borrowing shall be deemed an asset of the Association.

SECTION 9. RIGHT OF ENTRY

Declarant, the Association, the Architectural Review Committee, and any representative of any of the foregoing shall have the right to enter upon any Lot (i) to clean or maintain landscaping, parking areas, driveways, exterior lighting fixtures, and buildings; (ii) to inspect any Lot prior to, during, or upon the completion of construction of Homes or Improvements thereon; (iii) to remove, demolish, replace, alter, repair, or otherwise correct any Home or Improvement which is placed on any Lot without the prior approval of the Architectural Review Committee pursuant to Section 6 or

which is constructed or installed in a manner inconsistent with the terms of the Architectural Review Committee's approval therefore pursuant to Section 6; (iv) to enforce the provisions of Sections 7.3, 7.4.4, and 7.4.5 if the Owner of the Lot in question does not do so as required by this Declaration; or (v) for any other purpose permitted under this Declaration. The Owner of any Lot shall reimburse the Association for any expenses incurred in connection with any action described in the clauses (i), (iii), or (iv) of the preceding sentence promptly upon billing of the same. If the Owner fails to reimburse the Association within ten (10) days after such billing, the Association may impose a lien against the Lot as provided in Section 5.8. No-entry on any Lot pursuant to this Section 9 shall be deemed a trespass or otherwise create any right of action in the Owner or Occupant of such Lot.

SECTION 10. GENERAL PROVISIONS

10.1 Duration. These covenants, conditions, and restrictions shall run with and bind, benefit, and burden in perpetuity the Real Property, all Owners and Occupants, and the lessees, invitees, and guests of all Owners and Occupants.

10.2 Severability. In the event any provision of this Declaration is determined to be invalid or unenforceable, that determination shall not affect the validity or enforceability of any other provision or of the same provision to a different situation.

10.3 Amendment. Prior to the Turnover Date, subject to Section 8.4, this Declaration may be amended at any time and from time to time by Declarant to comply with the requirements of the Federal Housing Administration, the United States Department of Veterans' Affairs, the Farmer's Home Administration of the United States, the Federal National Mortgage Association, the Government National Mortgage Association, the Federal Home Mortgage Loan Corporation, any department, bureau, board, commission or agency of the United States or the State of Oregon or any corporation wholly-owned, directly or indirectly, by the United States or the State of Oregon that insures, guarantees or provides financing for a planned community or lots in a planned community. Thereafter, this Declaration, subject to Sections 8.1, 8.4 and 10.4, may be amended only upon the affirmative vote of eighty-five percent (85%) or more of the Owners, with each Owner having one vote for each Lot owned. For purposes of this Section 10.3, if there is more than one Owner of any Lot, such Owners shall together be considered a single Owner with respect to such Lot. In no event shall an amendment under this section create, limit or diminish the Special Declarant Rights specified in Section 10.11 hereof without Declarant's written consent, or change the boundaries of any Lot or any uses to which any Lot is restricted unless the Owners of the affected Lots unanimously consent to the amendment. When the Association adopts an amendment to this Declaration, the Association shall record the amendment in the real property records of Yamhill County. Any such amendment shall be effective only upon recordation. Amendments to this Declaration shall be executed, recorded and certified on behalf of the Association by any officer of the Association designated for that purpose or, in the absence of such designation, by the president of the Board.

10.4 Enforcement. The Association and each Owner shall have the right to enforce all of the covenants, conditions, restrictions, reservations, easements, liens, and charges now or hereinafter imposed pursuant to any provision of this Declaration by any appropriate proceeding at law or in equity. Any remedies specifically provided herein are nonexclusive and cumulative and are in addition to all other remedies available to the Association and the Owners at law or in equity. In the event that suit or action is instituted to enforce any provision of this Declaration, the prevailing party shall be entitled to recover from the losing party the prevailing party's reasonable attorneys' fees and costs incurred in connection with such suit or action, including those incurred in connection with anyappeal or review proceeding.

10.5 Mortgage Protection. Except upon the written approval of Mortgagees holding Mortgages of Lots which have at least eighty-five percent (85%) of the votes of Lots which are subject to Mortgages, no amendments may be made to this Declaration which add to or amend any material provision of the Declaration which establish, provide for, govern or regulate any of the following:

10.5.1 Termination of this Declaration or any amendment thereto shall require the consent of not less than eighty-five percent (85%) of the Mortgagees holding an interest in Lots. Any such termination of this Declaration shall be carried out by the Owners pursuant to the provisions ofthis Declaration, and only after a vote of the Owners as required by this Declaration.

10.5.2 The provisions of Section 10.3 are intended to only be a limitation on the rights of Owners to amend the Declaration, and any such amendments to the Declaration shall be made only upon full compliance with the provisions of such relating to the procedure and percentage of votes required for such amendment.

105.3 Any Mortgagee who receives a written request to approve an amendment to the Declaration or any other action to be taken, shall be deemed to have given such approval unless such Mortgagee's written request to such action is delivered to the requesting Owners within thirty (30) days after the written request.

10.6 Non-Waiver. Any failure of the Association or any Owner to enforce a covenant, condition, or restriction contained in this Declaration shall not be deemed to constitute a waiver of the Association's or any Owner's right to enforce that or any other covenant, condition, or restriction contained in this Declaration.

10.7 Declarant Not Liable. Neither Declarant nor Declarant's successors or assigns shall be liable to any Owner or Occupant or to any other Person for its enforcement or failure to enforce any provision of this Declaration. Each Owner and Occupant, by acquiring such Owner's or such Occupant's interest in the Property, agrees not to bring any action or suit against Declarant or any successor or assign of Declarant to recover any such damages or to seek any other relief (including without limitation equitable relief) by reason of any such enforcement or failure to enforce any provision of this Declaration. Each Owner and Occupant shall and does, by taking title to or

occupying any portion of the Property, agree to defend, indemnify, and hold harmless Declarant and Declarant's successors and assigns from any claim, loss, damage, cost, or expense (including without limitation reasonable attorneys' fees) arising out of the use, operation, ownership, occupancy, or condition or state of repair of that portion of the Property owned by such Owner or occupied by such Occupant.

10.8 Constructive Notice and Acceptance. By the recording of this Declaration, each Owner and Occupant shall be deemed to have consented and agreed to every term, covenant, condition, and restriction contained herein.

10.9 Joint and Several Liability. If an Owner consists of more than one Person, each such Person shall be jointly and severally liable for any assessment or charge and for the performance of any other obligation imposed pursuant to this Declaration.

10.10 Captions. The captions and headings of sections herein are for convenience only and are not intended in any way to define, limit, or describe the scope or intent of any section of this Declaration.

10.11 Notices. All notices under this Declaration shall be in writing. Any such notice shall be deemed effective on the earlier of the date of delivery or, if mailed, three (3) business days following the date of mailing, if addressed to the addressee at the address, if any, designated in the Association's records.

10.12 Special Rights Retained by Declarant. Declarant has retained "Special Declarant Rights", as that term is defined in Oregon Revised Statutes 94.550(12), and these rights are set forth in Sections 4.7, 4.8, 5.2, 5.4, 6.1, 7.4.8, 10.3 and 10.6.

10.13 Compliance with the Oregon Planned Community Development Act. Notwithstanding any provision of this Declaration that might be construed to the contrary, all activity with relationship to Gracie's Landing and the Association, including but not limited to management and operation of Gracie's Landing and the Association, shall be conducted in accordance with the Oregon Planned Community Development Act.

10.14 Records. The Board of Directors shall preserve and maintain minutes of the meetings of the Association, the Board and any committees. The Board of Directors shall also keep detailed and accurate financial records including individual assessment accounts of Owners, the balance sheet, and income and expense statements. Individual assessment accounts shall designate the name and address of the Owner or Owners of the Lot, the amount of each assessment as it becomes due, the amounts paid upon the account, and the balance due on the assessments. The minutes of the Association, the Board and the committees, and the Association's financial records shall be reasonably available for review and copying by the Owners. A reasonable charge may be imposed by the Association for labor and materials relative to providing copies. Owners can obtain copies of this information within 10 days of a receipt of a written request.

10.15 Indemnification of Directors, Officers, Employees and Agents. The Association shall indemnify any Director, Officer, employee or agent who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by the Association) by reason of the fact that he/she is or was a Director, Officer, employee or agent of the Association or is or was serving at the request of the Association as a Director, Officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by said person in connection with such suit, action or proceeding if he/she acted in good faith and in a manner he/she reasonably believed to be in, or not opposed to, the best interest of the Association, and, with respect to any criminal action or proceeding, has no reasonable cause to believe his/her conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or with a plea of nolo contendere or its equivalent, shall not of itself create a presumption that a person did not act in good faith and in a manner which he/she reasonably believed to be in, or not opposed to, the best interest of the Association, and with respect to any criminal action or proceeding, had reasonable cause to believe his/her conduct was unlawful. Payment under this clause may be made during the pendency of such claim, action, suit or proceeding as and when incurred, subject only to the rights of the Association to reimbursement of such payment form such person, should it be proven at a later time that such person had no right to such payments. All persons who are ultimately held liable for their actions on behalf of the Association as a Director, Officer, employee or agent shall have a right of contribution over and against all other Directors, Officers, employees or agents and members of the Association who participated with or benefited from the acts which created said liability.

10.16 Resolution of Document Conflicts. In the event of a conflict among any of the provisions in the documents governing Gracie's Landing, such conflict shall be resolved by looking to the following documents in the order shown below:

1. Declaration of Covenants, Conditions and Restrictions;
2. Articles of Incorporation;
3. Bylaws;
4. Rules and Regulations.

IN WITNESS WHEREOF, the undersigned being the Declarant herein, has executed this Declaration on this ___ dayof _____, 2017.

DEL BOCA VISTA LLC,
AN OREGON LIMITED LIABILITY COMPANY

_____

By: Marc Willcuts.
Its: Member

STATE OF OREGON)
) ss.
County of Yamhill)

The foregoing instrument was acknowledged before me this _____ day of _____, 2017, by Marc Willcuts, as member of Del Boca Vista LLC, an Oregon limited liability company, who acknowledge the execution of the foregoing to be his voluntary act and deed.

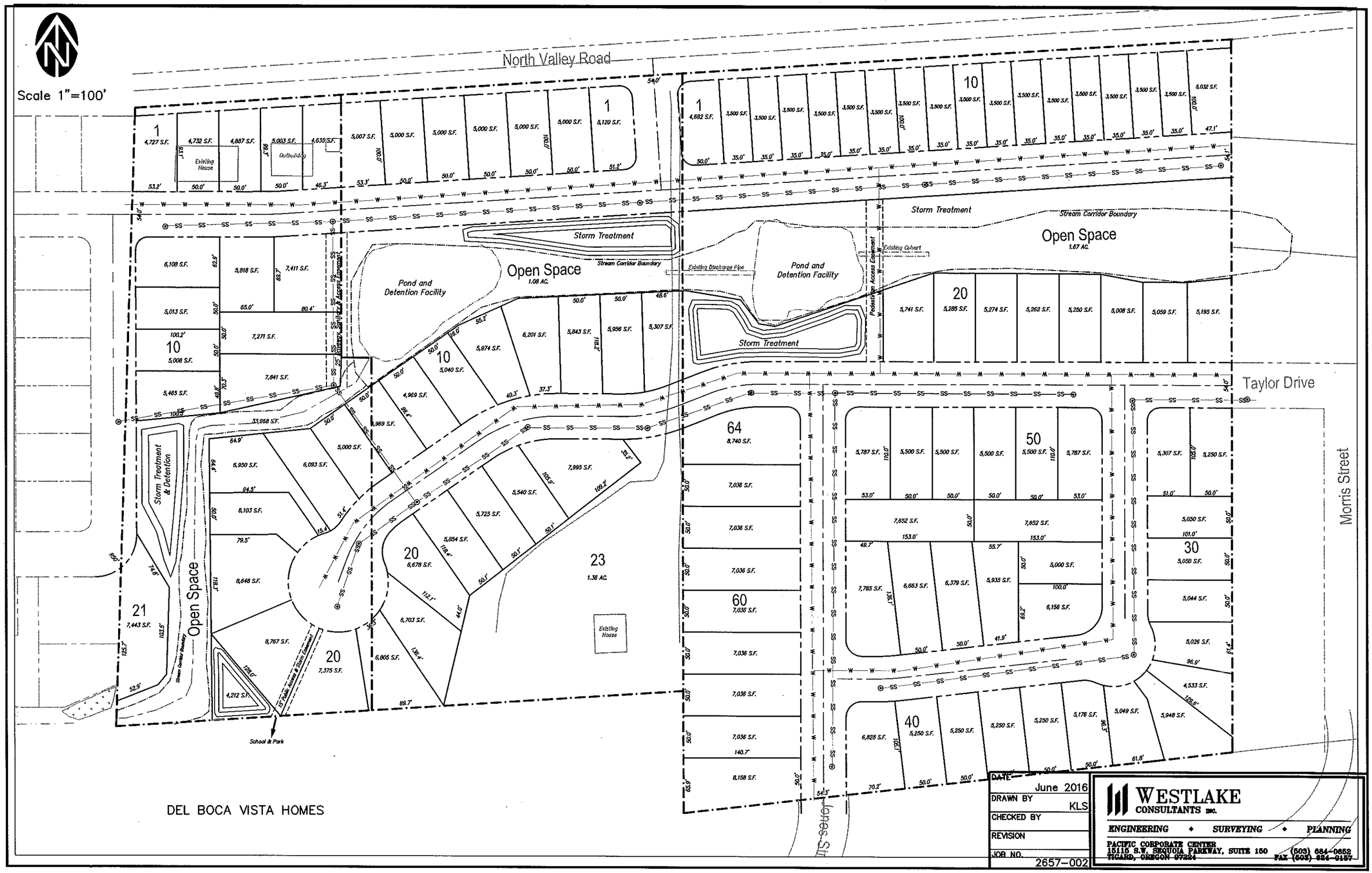
_____
Notary Public for Oregon
My Commission Expires _____

DRAFT

Gracie's Landing Subdivision

Exhibit C

Tentative Plan



DATE	June 2016
DRAWN BY	KLS
CHECKED BY	
REVISION	
JOB NO.	2657-002

WESTLAKE CONSULTANTS INC.

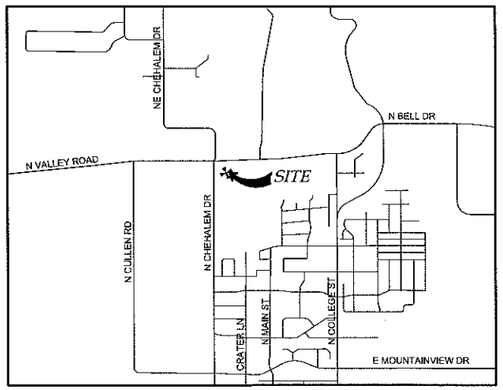
ENGINEERING • SURVEYING • PLANNING

PACIFIC CORPORATE CENTER
15115 S.W. SEQUOIA PARKWAY, SUITE 150
TIGARD, OREGON 97224
(503) 684-0652
FAX (503) 624-0157

PRELIMINARY PLANS FOR

GRACIE'S LANDING

NEWBERG, OR

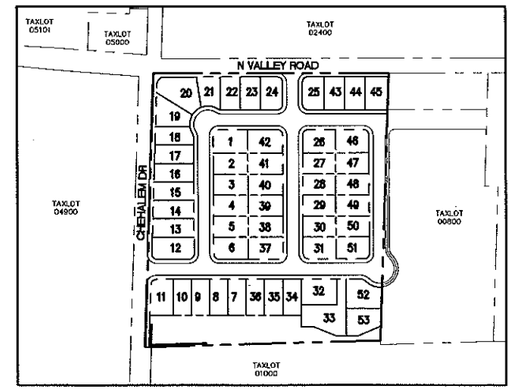


VICINITY MAP

NOT TO SCALE

SHEET INDEX

NAME:	NO.
COVER SHEET	P100
EXISTING CONDITIONS	P200
SITE PLAN / PRELIMINARY PLAT	P300
PHASING PLAN	P301
PRELIMINARY UTILITY PLAN	P400
OFF-SITE STORMWATER PLAN	P401
PRELIMINARY GRADING PLAN	P500
FUTURE STREETS PLAN	P600
SURROUNDING DEVELOPMENT	P601



LOCATION MAP

SCALE: 1"=200'

PROPERTY DESCRIPTION

TAX MAP & LOT:
TAX MAP 3S2W07, TAX LOT 900.

SITE SIZE:
10.82 ACRES

PROPOSAL:
53 LOT RESIDENTIAL SUBDIVISION
(SINGLE FAMILY DETACHED)

STREET ADDRESS

25020 N VALLEY ROAD
NEWBERG, OR 97132

OWNER

DEL BOCA VISTA LLC
P.O. BOX 486
NEWBERG, OR 97132

APPLICANT

DEL BOCA VISTA LLC
P.O. BOX 486
NEWBERG, OR 97132
PHONE: (971) 706-2058

ENGINEER / SURVEYOR

WESTLAKE CONSULTANTS, INC.
PACIFIC CORPORATE CENTER
15115 S.W. SEQUOIA PARKWAY,
SUITE 150 TIGARD, OREGON 97224
PHONE: (503) 684-0652
FAX: (503) 624-0157
CONTACT: JEFF VANDERDASSON, PE
RYAN CROWTHER, PE

DATUM

ELEVATIONS ARE BASED ON YAMHILL COUNTY GEODETIC CONTROL POINT NO. 167. MARK IS AN IRON PIPE IN A MONUMENT BOX AT THE CENTERLINE OF HOLVACK CT. AND FOOTHILLS DR. PUBLISHED ELEVATION IS 230.80' (NGVD29). VERTCON WAS USED TO CALCULATE A +3.41' ADJUSTMENT TO CONVERT TO NAVD88 DATUM. HELD ELEVATION = 234.21' (NAVD88).

LEGEND

EXISTING

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- STORM CATCH BASIN
- STORM MANHOLE
- SEWER MANHOLE
- STORM LINE
- WATER LINE
- SANITARY LINE
- BUILDING FOOTPRINT
- 2-FOOT CONTOUR

PROPOSED

- STORM CATCH BASIN
- MANHOLE
- STORM LINE
- WATER LINE
- SANITARY LINE
- SIDEWALK
- 2-FOOT CONTOUR
- WETLAND

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UTILITY VERIFICATION: CONTRACTOR SHALL POTHOLE TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND SHALL PROVIDE **WESTLAKE CONSULTANTS, INC.** 72-HOURS NOTICE OF ANY POTENTIAL CONFLICTS.

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GRACIE'S LANDING
NEWBERG, OR

COVER SHEET

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40' 0 20' 40' 80'

SCALE: 1 INCH = 40 FEET

LEGEND:

- 2-FOOT CONTOUR
- H2O — UNDERGROUND WATER LINE
- OPL — OVERHEAD LINE
- TEL — UNDERGROUND TELECOMM
- STM — UNDERGROUND STORM DRAIN LINE
- SAN — UNDERGROUND SANITARY SEWER LINE
- GAS — UNDERGROUND GAS LINE
- X — FENCE
- FOUND MONUMENT AS NOTED
- GAS METER
- GAS VALVE
- GUY ANCHOR
- UTILITY POLE
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- WELL
- SIGN
- SANITARY SEWER MANHOLE
- CATCH BASIN
- STORM SEWER MANHOLE
- TREE
- TREE

NOTES

1. BASIS OF BEARINGS AND COORDINATE SYSTEM BASED ON OREGON STATE PLANE NORTH ZONE, NAD83 (2011)(EPOCH: 2010.00), GEOID 12A. ALL COORDINATES HAVE BEEN SCALED TO GROUND BY A COMBINED SCALE FACTOR OF 1.00010799011138.
2. ELEVATIONS ARE BASED ON YAMHILL COUNTY GEODETIC CONTROL POINT NO. 167. MARK IS AN IRON PIPE IN A MONUMENT BOX AT THE CENTERLINE OF HOLVACK CT. AND FOOTHILLS DR. PUBLISHED ELEVATION IS 230.80' (NGVD29). VERTCON WAS USED TO CALCULATE A +3.41' ADJUSTMENT TO CONVERT TO NAVD88 DATUM. HELD ELEVATION = 234.21' (NAVD88)
3. FIELD SURVEYED MAY, 2016

UTILITY STATEMENT

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EXISTING CONDITIONS

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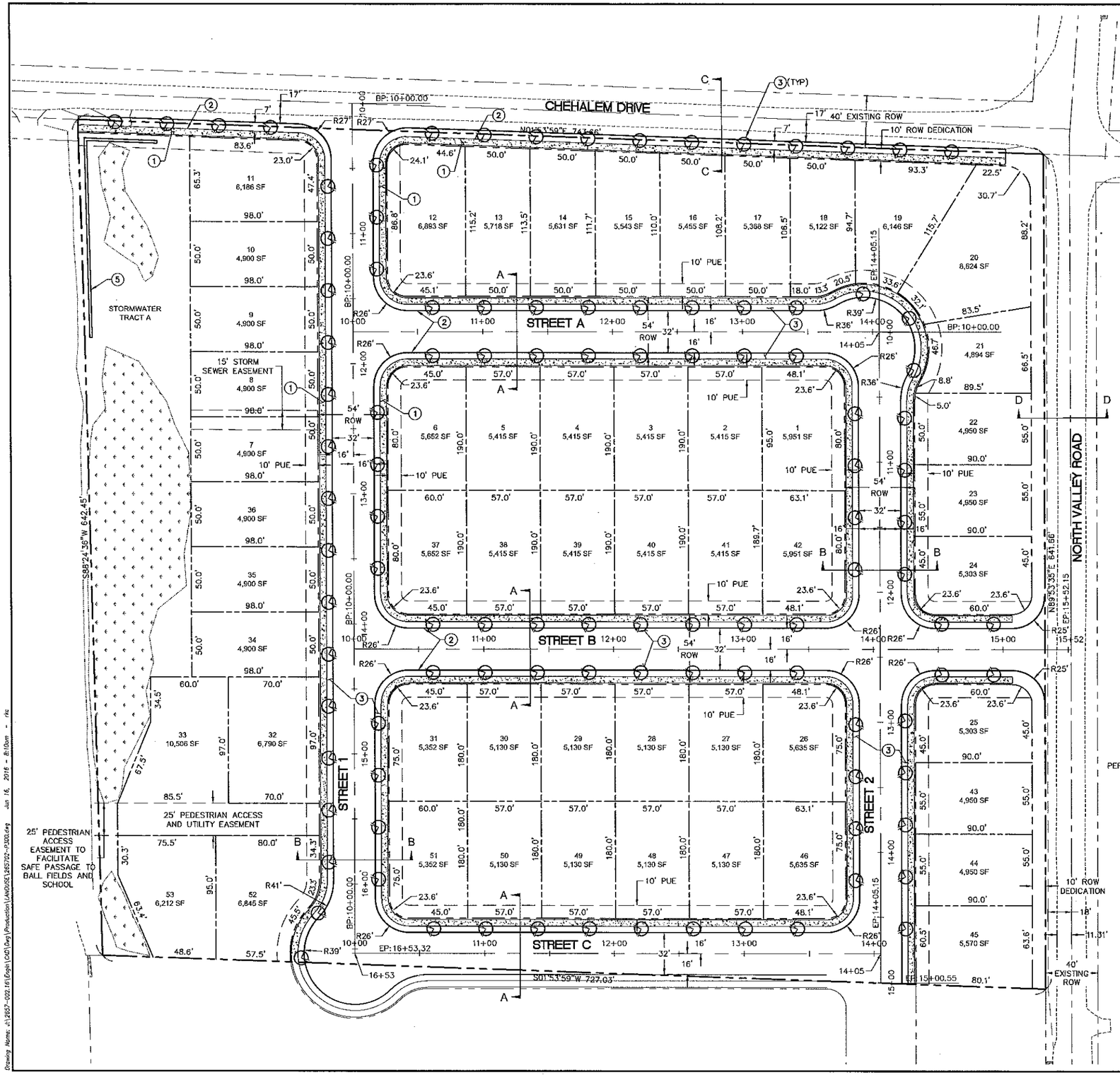
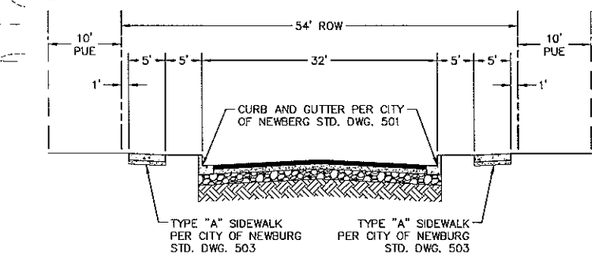


CONSTRUCTION KEYNOTES:

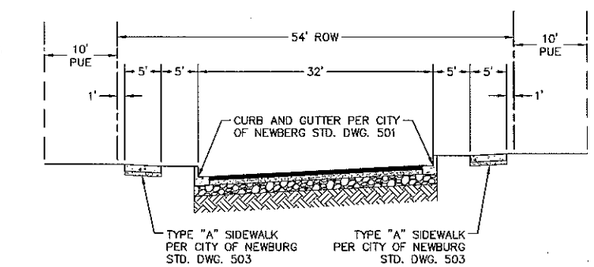
1. INSTALL 5' CONCRETE SIDEWALK.
2. INSTALL STANDARD CURB & GUTTER.
3. PROPOSED STREET TREE AT 35' – 40' ON CENTER. STREET TREES TO BE LOCATED DURING DESIGN TO AVOID CONFLICTS.
4. MATCH EXISTING SIDEWALK, CURB & GUTTER.
5. INSTALL RETAINING WALL.

SCALE: 1 INCH = 40 FEET



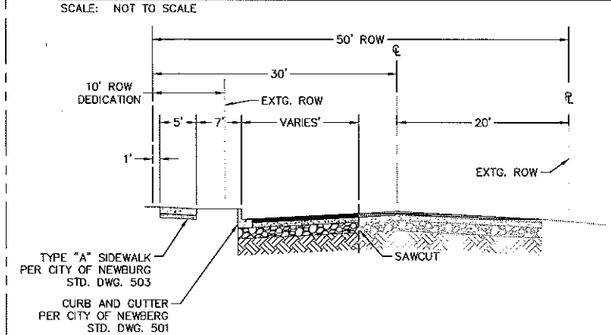
TYPICAL STREET SECTION 'A' - SIDEWALK WITH PLANTER STRIP

SCALE: NOT TO SCALE



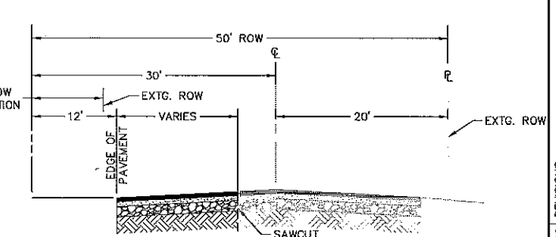
TYPICAL STREET SECTION 'B' - SIDEWALK WITH PLANTER STRIP

SCALE: NOT TO SCALE



TYPICAL HALF STREET SECTION 'C' - CHEHALEM DRIVE

SCALE: NOT TO SCALE



TYPICAL HALF STREET SECTION 'D' - NORTH VALLEY ROAD

SCALE: NOT TO SCALE

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GRACIE'S LANDING

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SITE PLAN / PRELIMINARY PLAT

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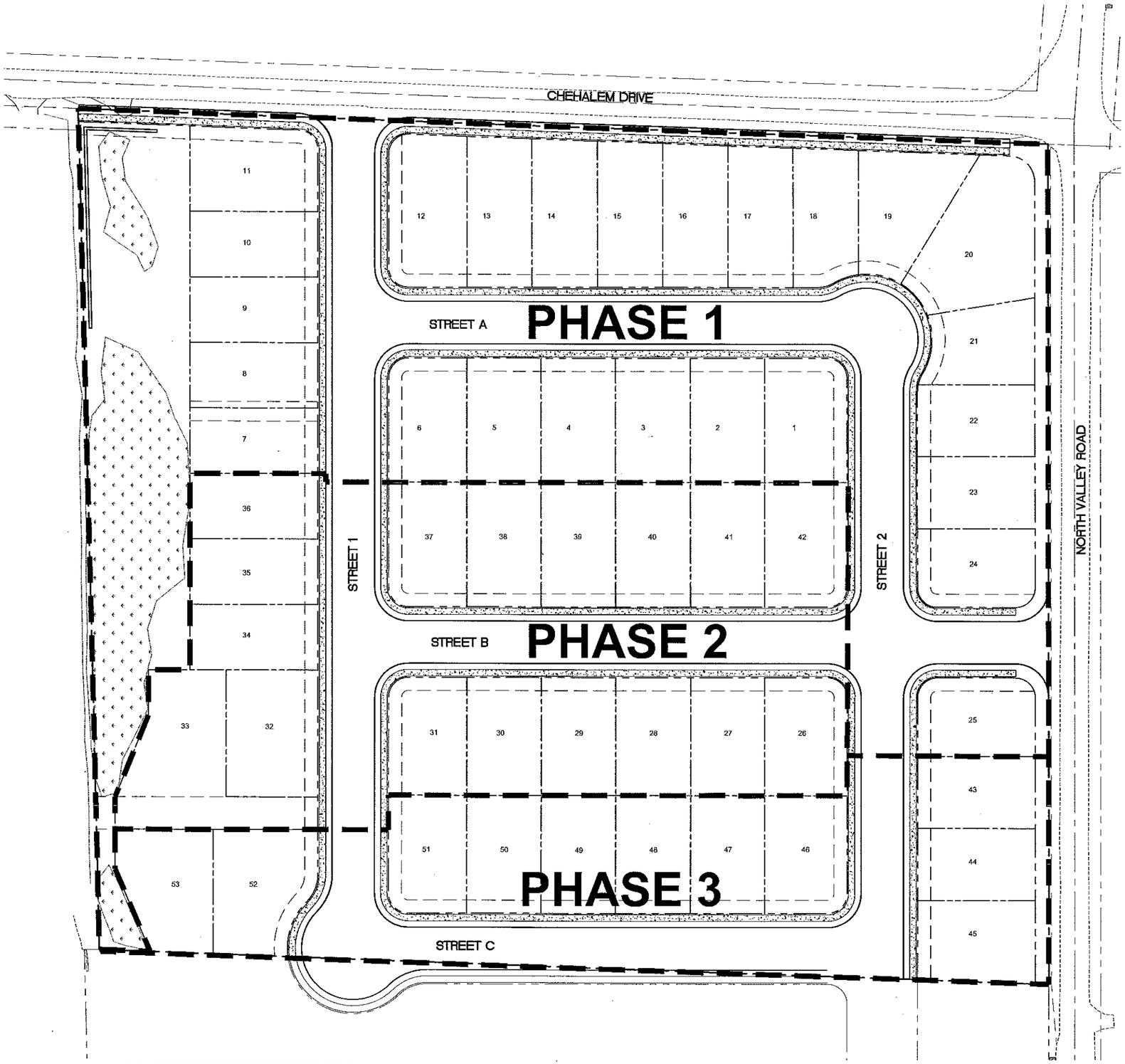

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GRACIE'S LANDING

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PHASING PLAN

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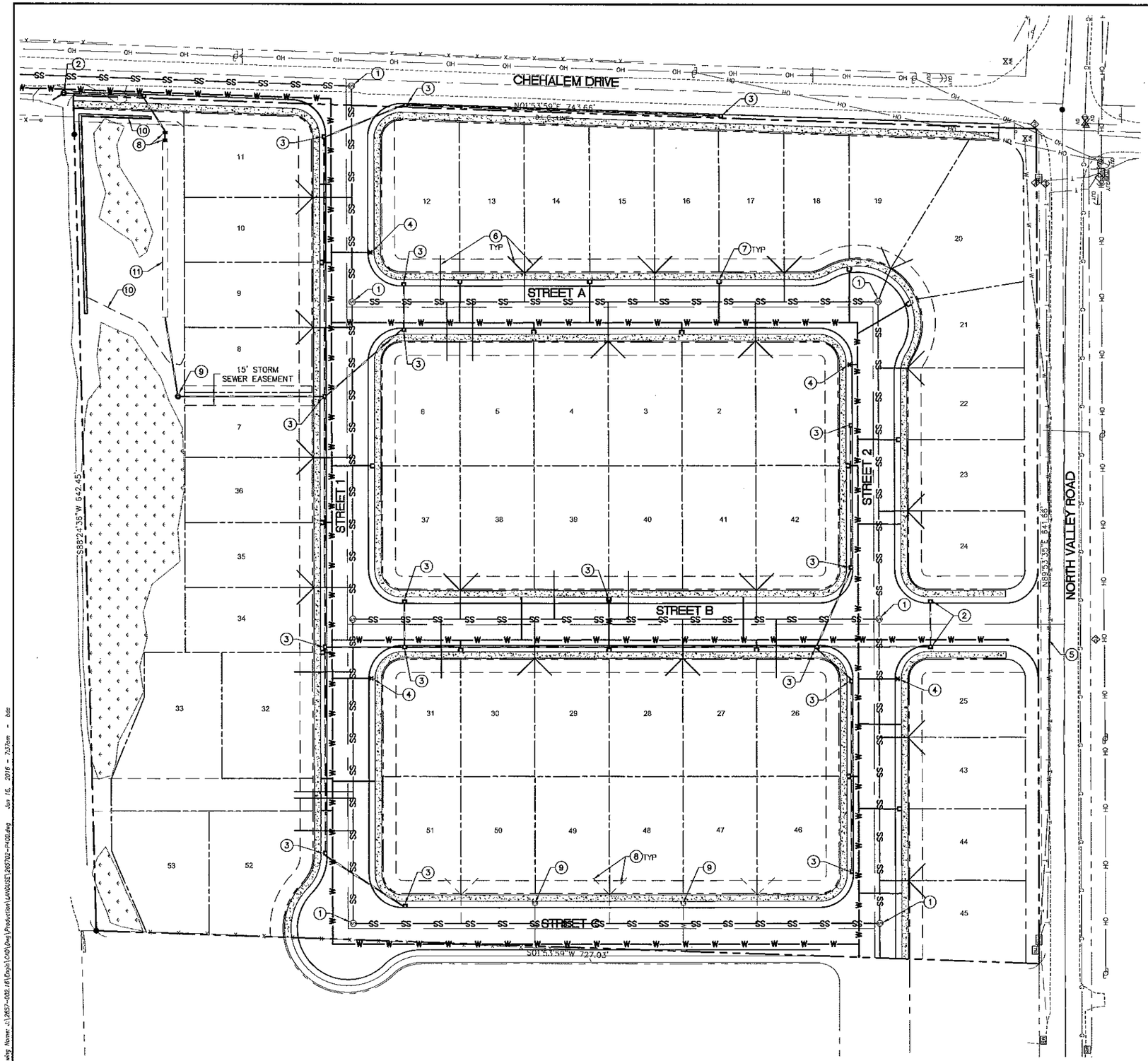

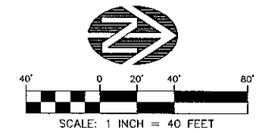

CONSTRUCTION KEYNOTES:

1. INSTALL 48" STANDARD SANITARY MANHOLE.
2. INSTALL 48" STANDARD STORM MANHOLE.
3. INSTALL INLET MANHOLE.
4. INSTALL FIRE HYDRANT.
5. CONNECT TO EXISTING WATER MAIN.
6. INSTALL 4" SANITARY SEWER LATERAL.
7. INSTALL DOMESTIC WATER METER.
8. INSTALL OUTFLOW CONTROL STRUCTURE.
9. INSTALL WATER QUALITY MANHOLE.
10. APPROXIMATE DETENTION POND PERIMETER.
11. APPROXIMATE WATER QUALITY SWALE LOCATION.

NOTES:

1. ALL LOTS TO UTILIZE CURB WEEPS FOR STORMWATER DRAINAGE.
2. ALL SANITARY SEWER MAINS TO BE 8" DIAMETER. ALL SANITARY SEWER LATERALS TO BE 4" DIAMETER.
3. STORM MAINS TO BE A MINIMUM OF 12" DIAMETER.
4. WATER MAINS TO BE 8" DIAMETER.

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GRACIE'S LANDING

NEWBERG, OR

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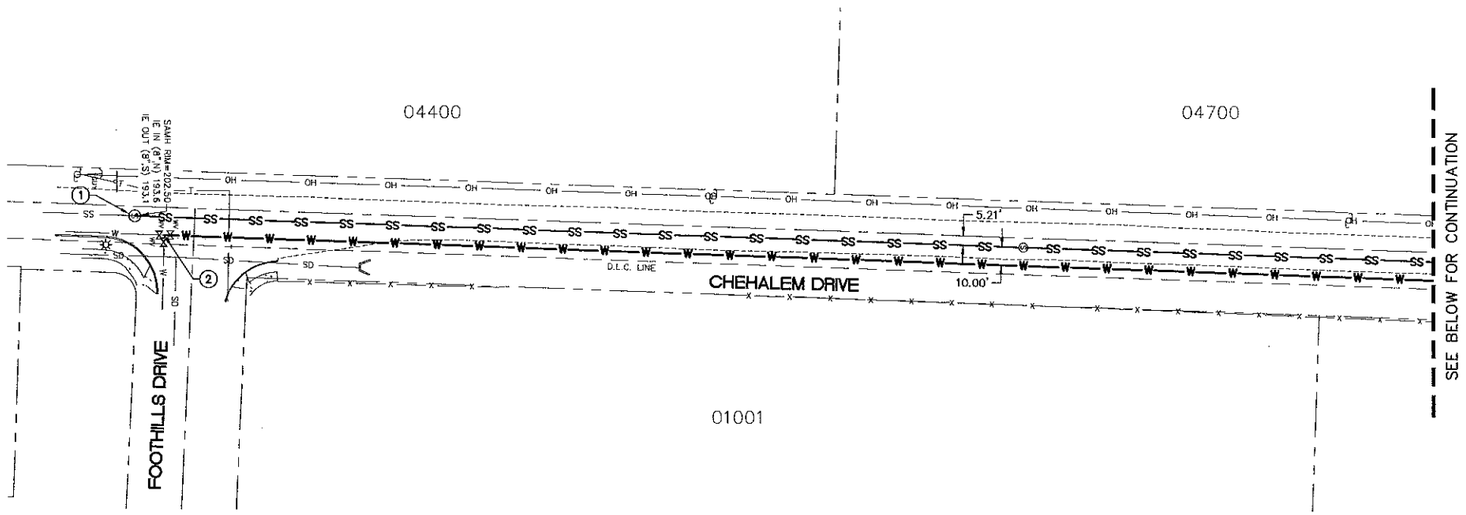

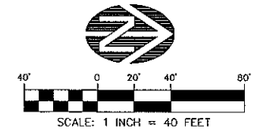

CONSTRUCTION KEYNOTES:

1. CONNECT TO EXISTING SANITARY SEWER MANHOLE.
2. CONNECT TO EXISTING WATER.

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GRACIE'S LANDING

NEWBERG, OR

OFF-SITE SANITARY SEWER AND WATER PLAN

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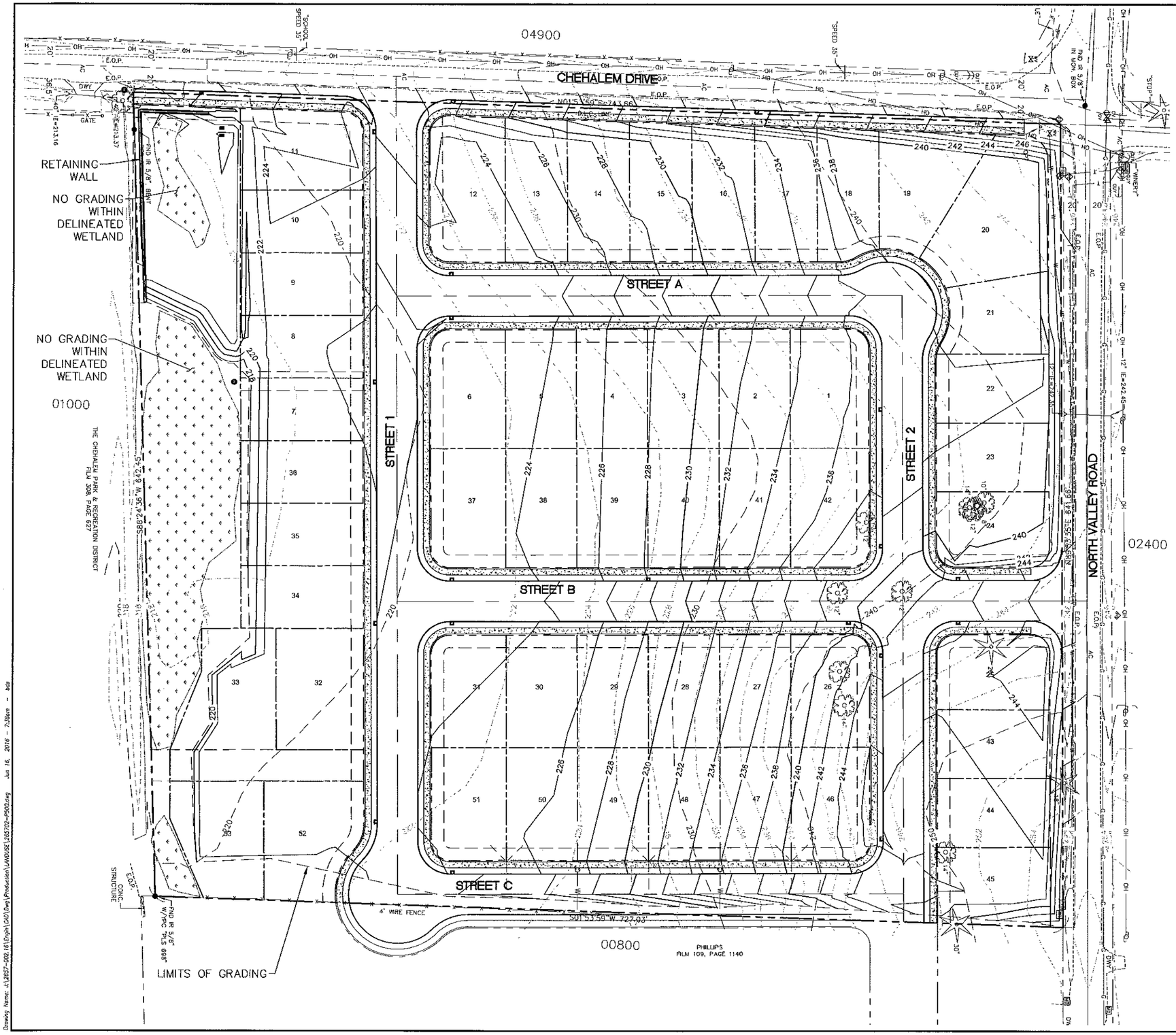

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GRACIE'S LANDING

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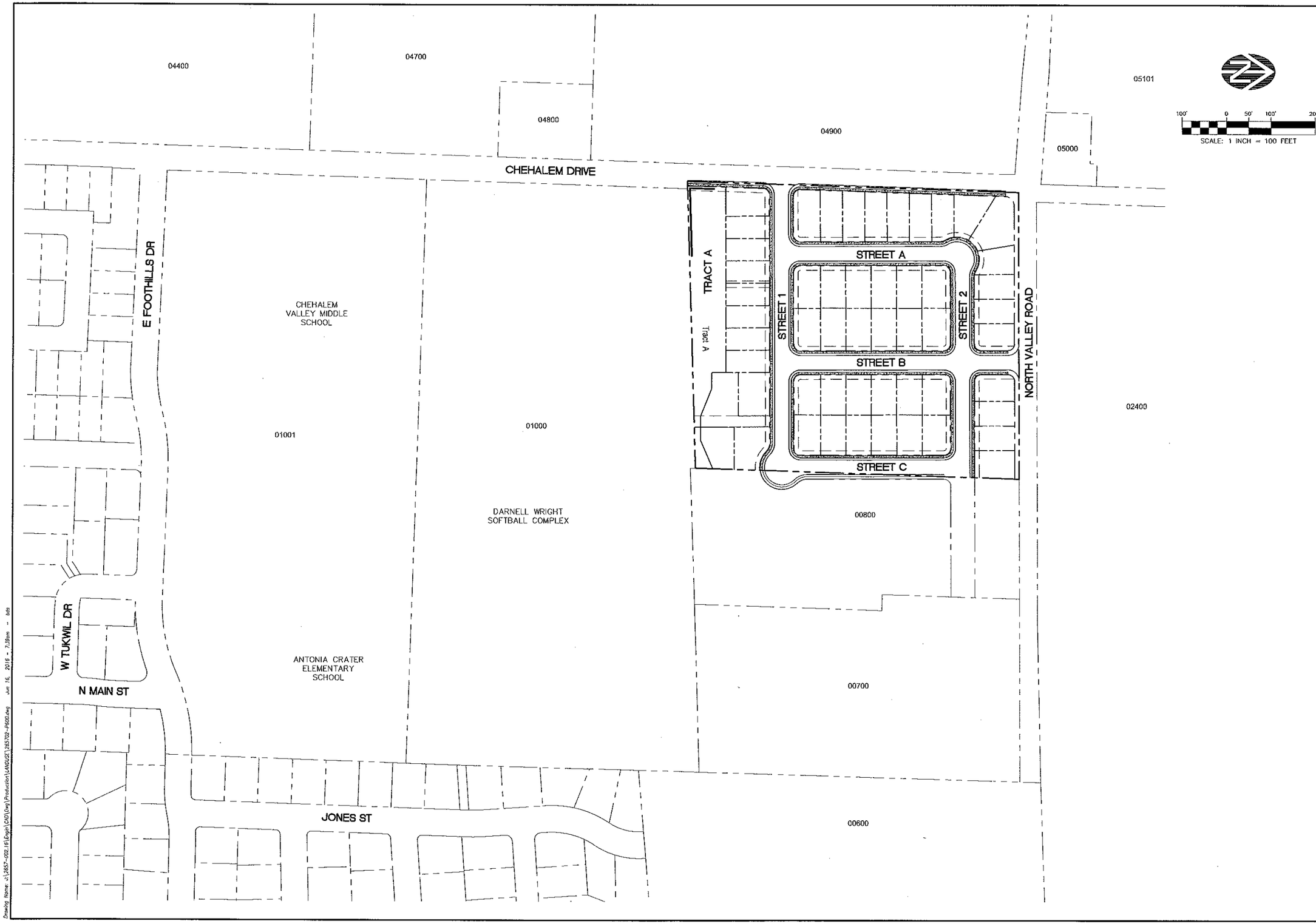

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GRACIE'S LANDING

NEWBERG, OR

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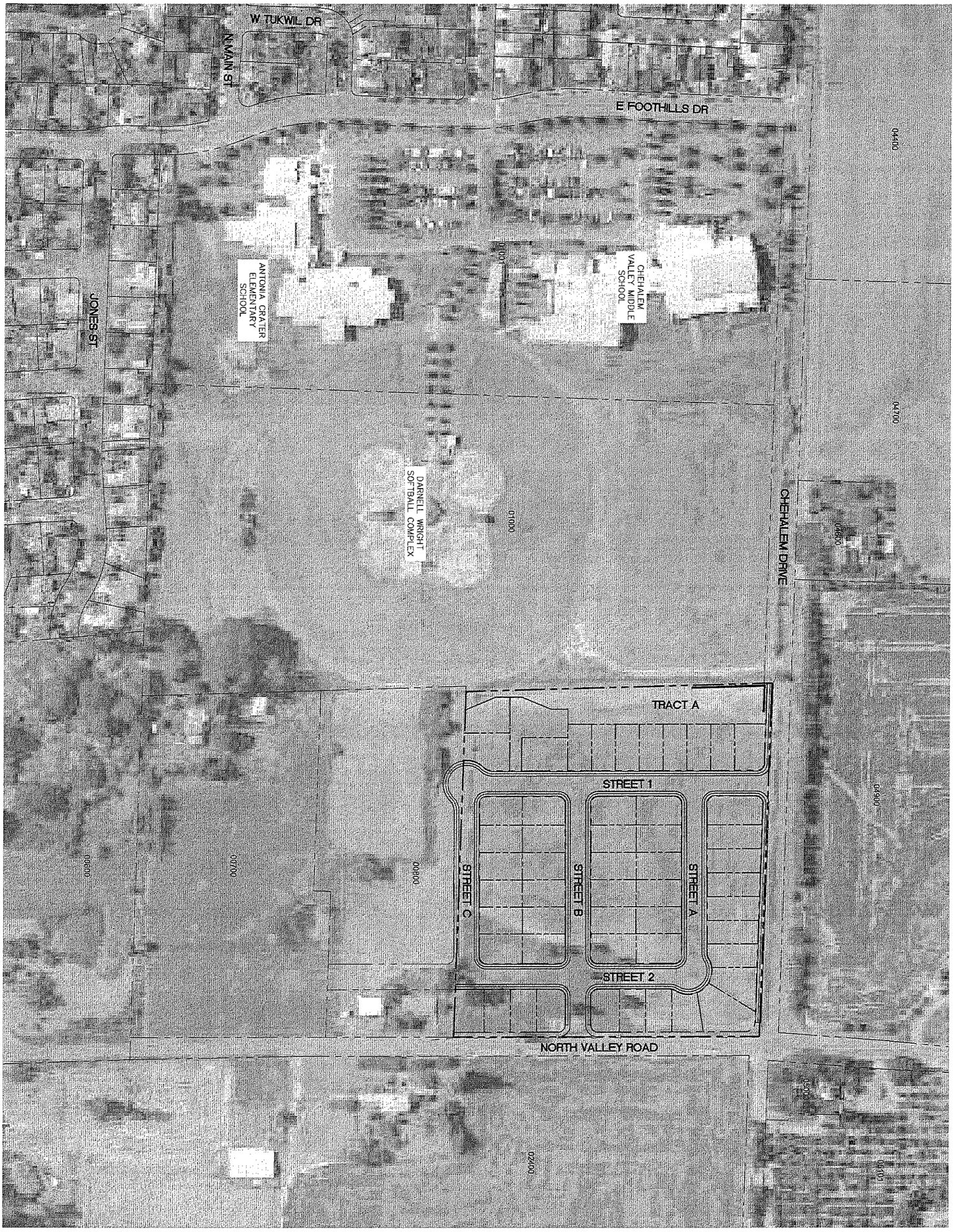

SCALE: 1 INCH = 100 FEET

100' 0 50' 100' 200'

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GRACIE'S LANDING

NEWBERG, OR

SURROUNDING DEVELOPMENT

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Gracie's Landing Subdivision

Exhibit D

Storm Drainage Report

GRACIE'S LANDING PRELIMINARY STORMWATER NARRATIVE

Newberg, Oregon

For:
Del Boca Vista LLC
P.O. Box 486
Newberg, Oregon 97132

Prepared By:
Westlake Consultants Inc.
15115 SW Sequoia Parkway, Suite 150
Tigard, OR 97224
Phone: (503) 684-0652
Fax: (503) 624-0157

June 13th, 2016
WCI #2657-001

Westlake consultants, inc

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City of Newberg Vegetated Swale Detail No. 460 5
City of Newberg Outflow Control Structure Detail No. 417 5
City of Newberg Oriface Plate and Guide Detail No. 418 5

Introduction/Purpose:

The proposed project is a 53 lot single family detached residential subdivision. The site is located at 25020 N Valley Road Newberg, Oregon 97132. The NW corner of the project is at the intersection of Chehalem Drive and N Valley Road.

Stormwater will be collected by catch basins conveyed through a pipe network to a regional water quality and quantity facility. Orifices will be set to release post-developed peak flows to pre-developed rates. Stormwater leaves the site at the south property line into an existing open channel ditch.

The purpose of this preliminary Stormwater Report is to demonstrate compliance with City of Newberg drainage requirements and design criteria.

Jurisdictional Standards:

The stormwater management facility was designed according to the requirements set forth in "2015 Public Works Design and Construction Standards - City of Newberg, dated August 2015". The on-site stormwater management facility will released peak post-developed flows to pre-developed peak flow rates for the ½ of the 2, 2, 10, and 25 year, 24 hour runoff events. Water quality facilities will be designed to treat the water quality storm of 1.0 inch in 24 hours with an average storm return period of 96 hours.

Stormwater Management Calculations:

Pre-Developed:

Total Site Area = 471,550 sf = 10.83 acres
Removal of On-site Area in Tract A (except pond footprint) = 23,646 sf = 0.54 acres
Additional Off-site Area = 6,319 sf = 0.15 acres
→Effective Site Area = 10.83 – 0.54 + 0.15 = 10.44 acres
Impervious Area Total = 0.0 acres, CN = 98
Pervious Area = 10.44 acres

- 5.94 acres, D soils → CN = 80
- 4.50 acres, C soils→ CN = 74

Table -1: Pre-Developed Peak Flow Rates

DESIGN STORM EVENT	DEPTH (IN)	PEAK FLOW RATE (CFS)
½ of the 2 Year	1.25	0.09
2 Year	2.5	1.05
10 Year	3.5	2.64
25 Year	4.0	3.54

Post-Developed:

Total Site Area = 471,550 sf = 10.83 acres
Removal of On-site Area in Tract A (except pond footprint) = 23,646 sf = 0.54 acres
Additional Off-site Area = 6,319 sf = 0.15 acres
→Effective Site Area = 10.83 – 0.54 + 0.15 = 10.44 acres
Impervious Area Total = 6.32 acres

- On-Site Streets and Curbs = 81,963 sf = 1.88 acres, CN = 98
- On-Site Sidewalks = 22,874 sf = 0.53 acres, CN = 98
- Off-Site Street and Curb = 2,514 sf = 0.06 acres, CN = 98
- Off-Site Sidewalks = 2,177 sf = 0.05 acres, CN = 98
- Houses = 53 * 2,877 sf = 152,481 sf = 3.50 acres, CN = 98
- Pond, 25 year peak detained, Surface = 12,894 sf = 0.30 acres, CN = 98

Pervious Area Total = 10.44 acres – 6.32 acres = 4.12 acres, CN = 74

Table -2: Post-Developed Peak Flow Rates

DESIGN STORM EVENT	DEPTH (IN)	PEAK FLOW RATE (CFS)
½ of the 2 Year	1.25	1.69
2 Year	2.5	3.96
10 Year	3.5	6.14
25 Year	4.0	7.29

Water Quality Swale Calculations:

A vegetated swale will be utilized to meet water quality design criteria. The swale will be located running along the bottom of the detention pond. Design of the vegetated swale is based on the requirements set forth in 2015 Public Works Design and Construction Standards - City of Newberg, dated August 2015, standard detail No. 460. A 4.0' wide swale with a min of 100.0 LF is required to treat the anticipated water quality flow. The proposed vegetated swale is 130 LF.

Detention Calculations:

A regional detention basin will be utilized to meet the detention design criteria. Maximum orifice size is 6" based on standard detail No. 417 and No. 418.

Table -3: Pond Peak Flow Release Rates

DESIGN STORM EVENT	PRE-DEVELOPED PEAK FLOW RATE (CFS)	POST-DEVELOPED RELEASED FLOW RATE (CFS)	MEET DESIGN STANDARD
½ of the 2 Year	0.09	0.09	YES!
2 Year	1.05	0.91	YES!
10 Year	2.64	2.17	YES!
25 Year	3.54	2.98	YES!

Computer Modeling:

The analysis of the stormwater conditions was completed using HydroCAD 10. This program uses site conditions, such as soil types, storm characteristics, and impervious areas, to determine runoff rates and volumes for a site for different storm events. A Type-1A storm event was modeled with a ½ of the 2, 2, 10 and 25 year storm events. Rain depths for 24-hour storms are based on *Table 4.2 Rainfall Depths.*

The United States Department of Agriculture Natural Resources Conservation Service (NRCS) websoil survey was utilized to determine the hydrological soil group for the project site. The site falls within hydrological soils group C/D and C. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Summary:

The proposed water quantity and quality facilities will meet City of Newberg Stormwater Management Manual standards. A vegetated water quality swale will treat the water and the pond will detain post-developed peak flow rates to pre-developed peak flow rates for ½ of the 2, 2, 10, and 25 year design storms.

Appendix:

Developed Site Map with Impervious Areas

Vegetated Swale Calculations

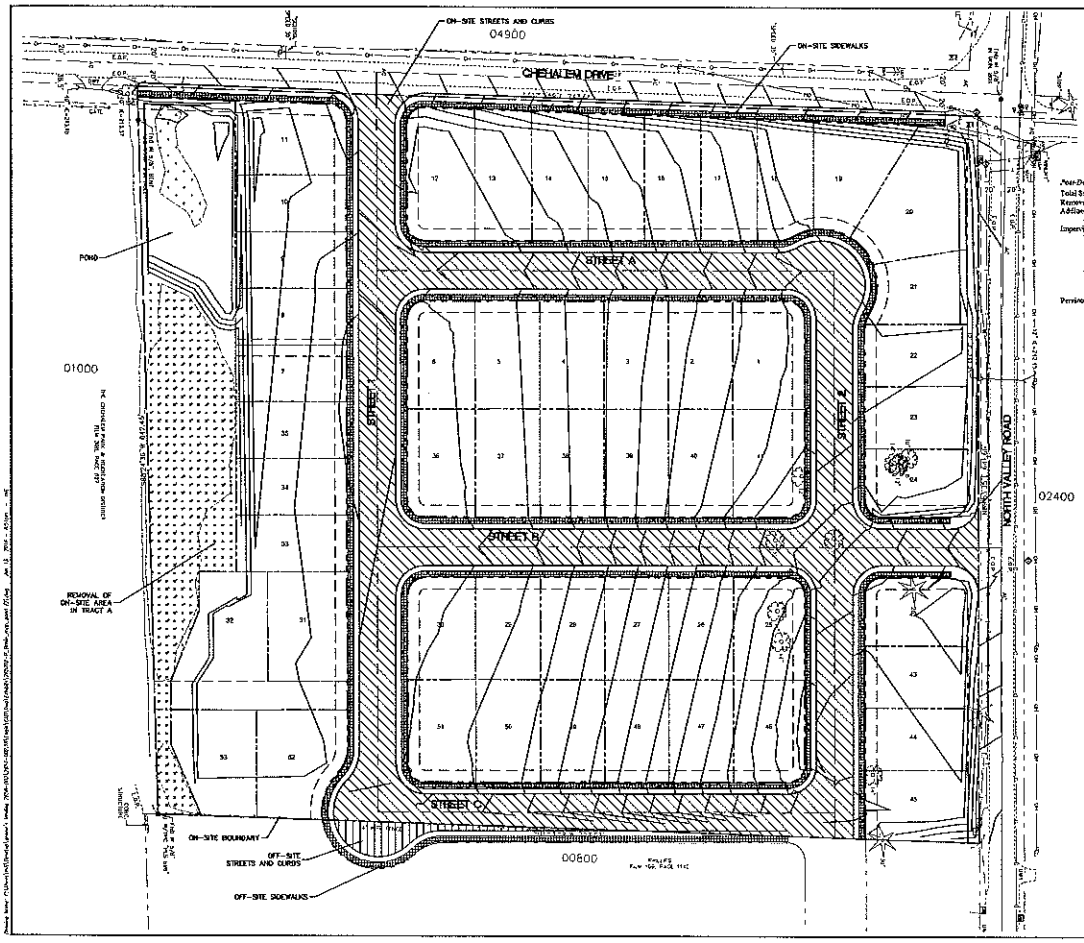
HyrdoCAD Report

NRCS Soils Report

City of Newberg Vegetated Swale Detail No. 460

City of Newberg Outflow Control Structure Detail No. 417

City of Newberg Oriface Plate and Guide Detail No. 418



SCALE: 1 INCH = 40 FEET

Post-Developed

Total Site Area = 475,550 sf = 10.93 acres

Removal of On-site Area in Tract A (except pond footprint) = 23,646 sf = 0.54 acres

Additional Off site Area = 5,519 sf = 0.13 acres

—Effective Site Area = 10.53 – 0.54 – 0.13 = 10.46 acres

Impervious Area Total = 6.32 acres

- On-Site Roads and Curbs = 23,942 sf = 1.55 acres, CN = 98
- On-Site Sidewalks = 25,874 sf = 0.59 acres, CN = 98
- Off-Site Street and Curb = 3,564 sf = 0.08 acres, CN = 98
- Off-Site Sidewalks = 2,152 sf = 0.05 acres, CN = 98
- Houses = 55 * 2,857 sf = 157,081 sf = 3.60 acres, CN = 98
- Pond, 25 year peak detained, Surface = 32,394 sf = 0.74 acres, CN = 98

Pervious Area Total = 10.46 acres—6.32 acres = 4.12 acres, CN = 74

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GRACIE'S LANDING

NEWBERG, OR

DEVELOPED SITE MAP WITH IMPERVIOUS AREAS

REVISIONS			
NO.	DATE	DESCRIPTION	BY

SHEET

EX A

JOB NO. 2657-002

PLANNING SUBMITTAL

BIO-FILTRATION SWALE DESIGN - CITY OF NEWBERG

Location: GRACIE'S LANDING Date: 6/13/2016 Job #: 2657-002

Water Quality Flow:

A = 262,231 sf (Total Impervious area - pond surface = 6.32 ac - 0.30 ac)
I = 1 inches
WQF = 0.25 cfs

Swale Design Data:

Q = 0.25 Design flow rate (c.f.s.)
n = 0.24 manning's n
S = 0.005 longitudinal slope of swale (ft/ft)
b = 4.00 width of bottom (ft.)
Z = 4.00 side slope (ft/ft)

Solve for flow depth by trial and error:

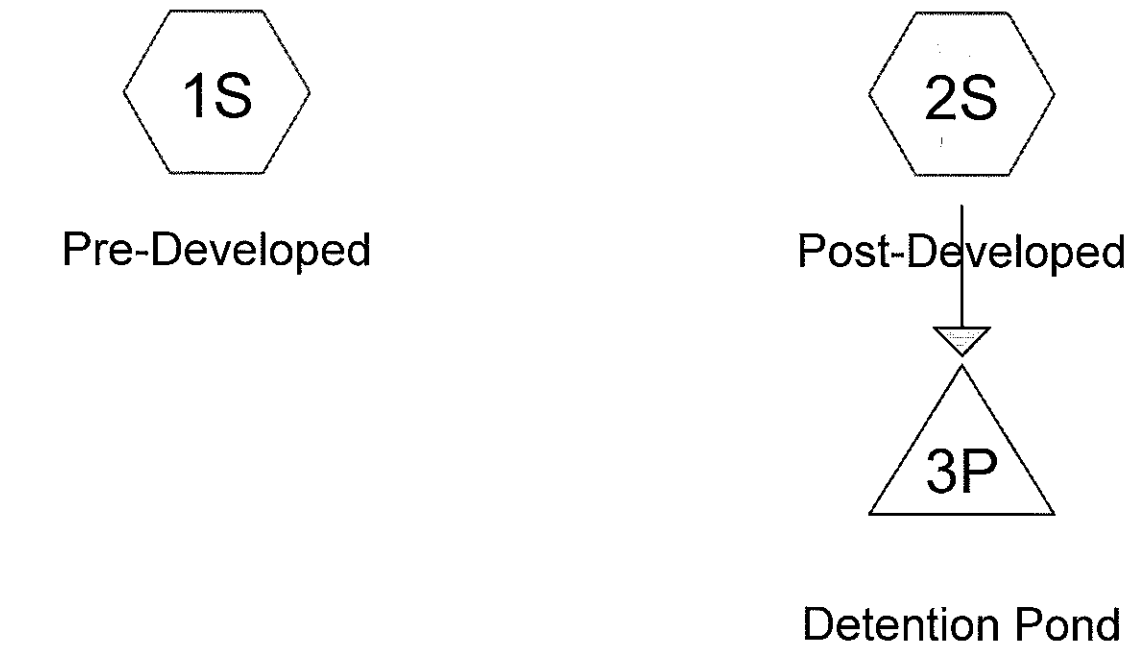
y (ft)	b (ft)	T (ft)
0.2720	3.98	6.16
0.2710	4.01	6.18
0.2715	4.00	6.17
0.2740	3.91	6.10
0.2715	**4.00**	6.17

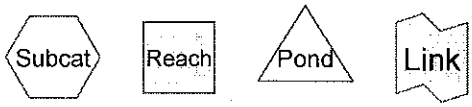
Determine velocity due to design storm:

y = 0.272 found from trial and error
A = 1.38 sq. ft.
V=Q/A
V = 0.18 ft/s < 0.9 ft/s OK

Determine required length:

L=(V)(t)(60)
t = 9.00 min (minimum required)
V = 0.18 ft/s
L= 98.91 Use Minimum Swale Length





Routing Diagram for Gracie's_Landing_2657-002_Preliminary_Storm_v3
Prepared by WCI, Printed 6/13/2016
HydroCAD® 10.00-16 s/n 02749 © 2015 HydroCAD Software Solutions LLC

Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Runoff Area=10.440 ac 0.00% Impervious Runoff Depth=0.12"
Flow Length=742' Tc=16.9 min CN=77/0 Runoff=0.09 cfs 0.102 af

Subcatchment 2S: Post-Developed Runoff Area=10.440 ac 60.54% Impervious Runoff Depth=0.66"
Tc=5.0 min CN=74/98 Runoff=1.69 cfs 0.570 af

Pond 3P: Detention Pond Peak Elev=218.59' Storage=18,699 cf Inflow=1.69 cfs 0.570 af
Outflow=0.09 cfs 0.570 af

Total Runoff Area = 20.880 ac Runoff Volume = 0.672 af Average Runoff Depth = 0.39"
69.73% Pervious = 14.560 ac 30.27% Impervious = 6.320 ac

Summary for Subcatchment 1S: Pre-Developed

Runoff = 0.09 cfs @ 18.64 hrs, Volume= 0.102 af, Depth= 0.12"

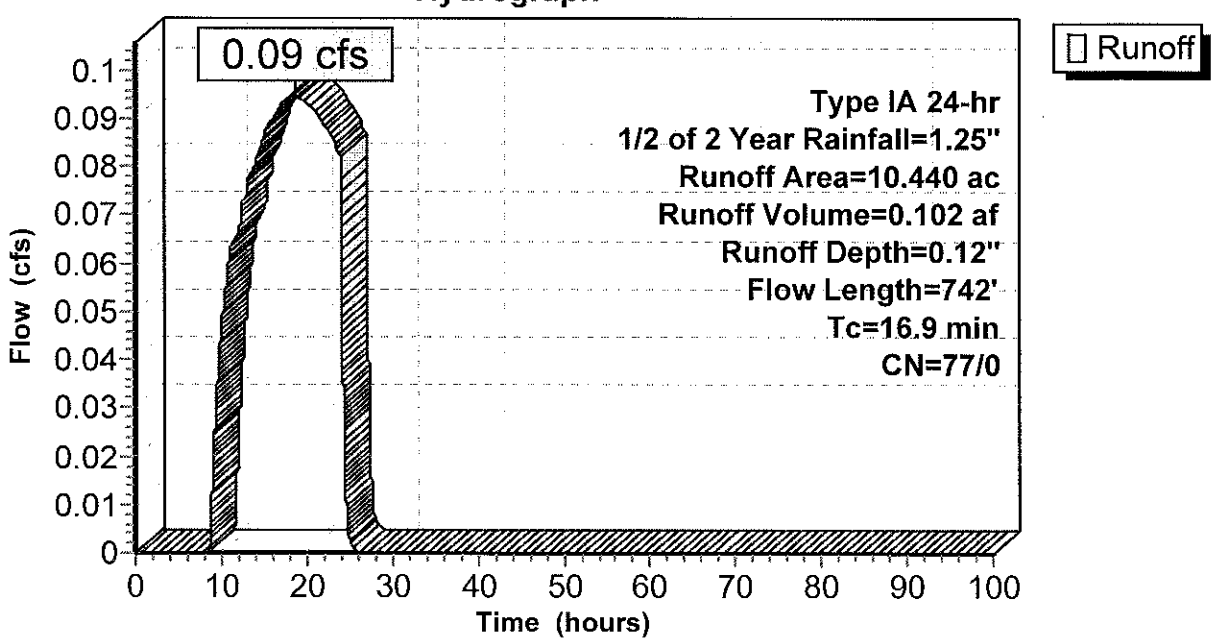
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2 Year Rainfall=1.25"

Area (ac)	CN	Description
4.500	74	>75% Grass cover, Good, HSG C
5.940	80	Pasture/grassland/range, Good, HSG D
10.440	77	Weighted Average
10.440	77	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.50"
8.5	642	0.0323	1.26		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
16.9	742	Total			

Subcatchment 1S: Pre-Developed

Hydrograph



Summary for Subcatchment 2S: Post-Developed

Runoff = 1.69 cfs @ 7.89 hrs, Volume= 0.570 af, Depth= 0.66"

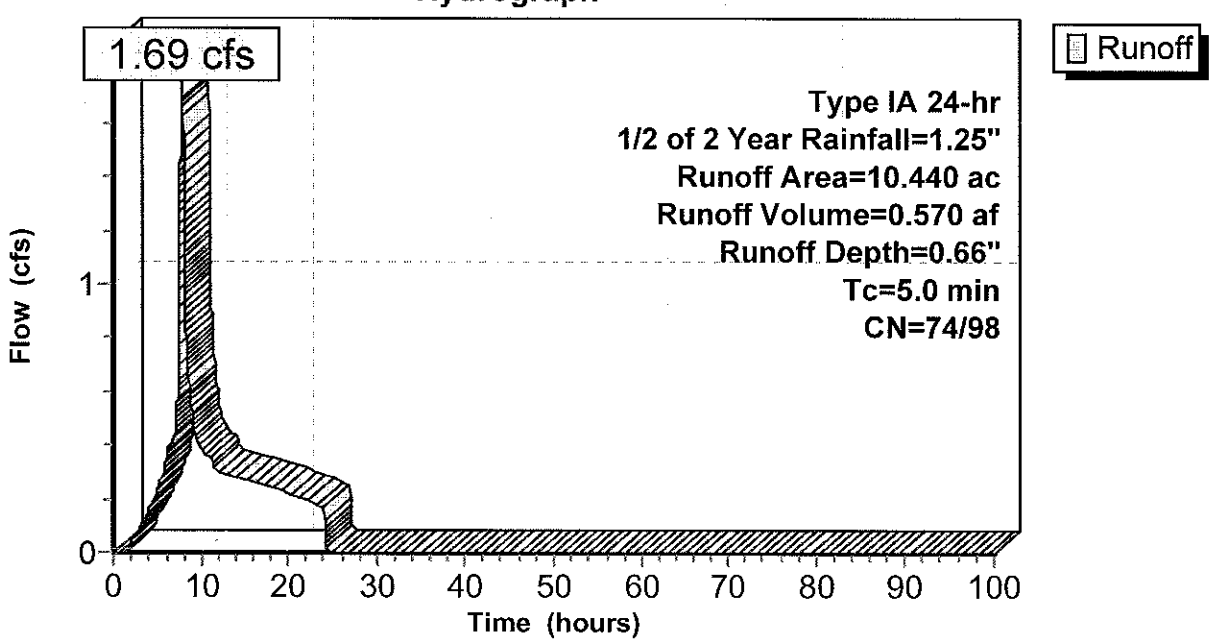
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2 Year Rainfall=1.25"

	Area (ac)	CN	Description
*	6.320	98	Impervious Area
	4.120	74	>75% Grass cover, Good, HSG C
	10.440	89	Weighted Average
	4.120	74	39.46% Pervious Area
	6.320	98	60.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Post-Developed

Hydrograph



Summary for Pond 3P: Detention Pond

Inflow Area =	10.440 ac, 60.54% Impervious, Inflow Depth = 0.66" for 1/2 of 2 Year event				
Inflow =	1.69 cfs @ 7.89 hrs, Volume=	0.570 af			
Outflow =	0.09 cfs @ 24.06 hrs, Volume=	0.570 af, Atten= 95%, Lag= 970.1 min			
Primary =	0.09 cfs @ 24.06 hrs, Volume=	0.570 af			

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 218.59' @ 24.06 hrs Surf.Area= 11,880 sf Storage= 18,699 cf

Plug-Flow detention time= 2,036.1 min calculated for 0.570 af (100% of inflow)
Center-of-Mass det. time= 2,036.3 min (2,754.1 - 717.8)

Volume	Invert	Avail.Storage	Storage Description
#1	216.00'	36,194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

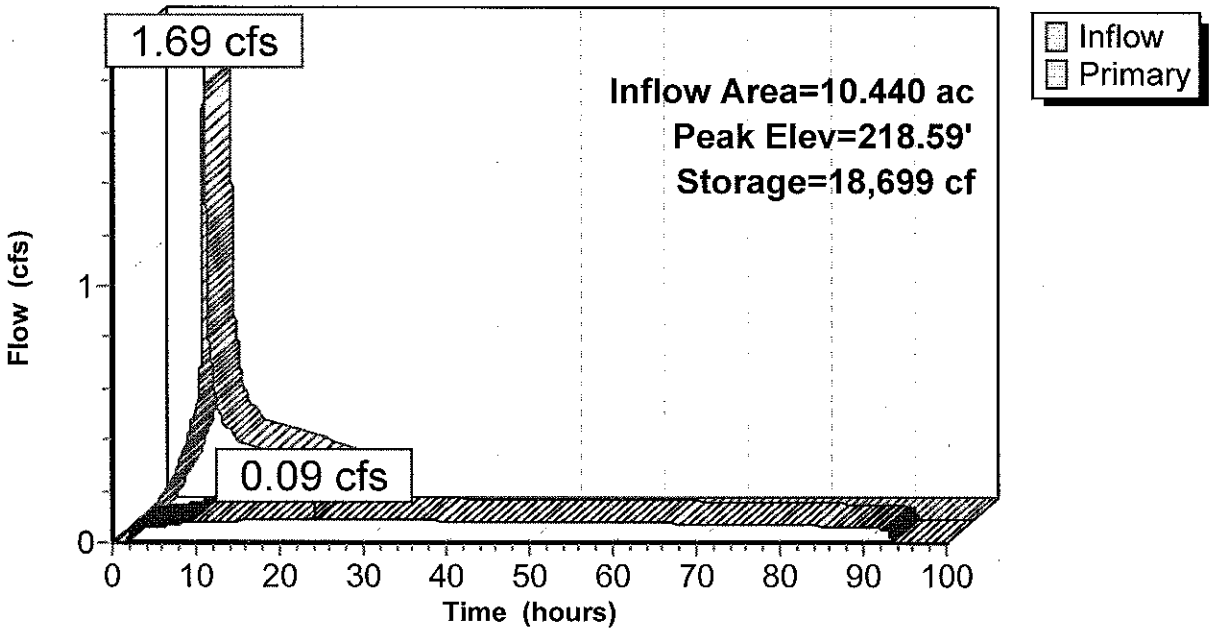
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
216.00	356	0	0
216.50	2,448	701	701
217.00	5,404	1,963	2,664
217.50	9,917	3,830	6,494
218.00	11,466	5,346	11,840
218.50	11,817	5,821	17,661
220.00	12,894	18,533	36,194

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.85'	**1.3" Vert. Orifice/Grate**	C= 0.620
#2	Primary	219.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#3	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#4	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#5	Primary	219.02'	**6.0" Vert. Orifice/Grate**	C= 0.620
#6	Primary	219.51'	**6.0" Vert. Orifice/Grate**	C= 0.620

Primary OutFlow Max=0.09 cfs @ 24.06 hrs HW=218.59' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 9.55 fps)
- **2=Orifice/Grate** (Controls 0.00 cfs)
- **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Orifice/Grate** (Controls 0.00 cfs)
- **5=Orifice/Grate** (Controls 0.00 cfs)
- **6=Orifice/Grate** (Controls 0.00 cfs)

Pond 3P: Detention Pond

Hydrograph



Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Runoff Area=10.440 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=742' Tc=16.9 min CN=77/0 Runoff=1.05 cfs 0.644 af

Subcatchment 2S: Post-Developed Runoff Area=10.440 ac 60.54% Impervious Runoff Depth=1.61"
Tc=5.0 min CN=74/98 Runoff=3.96 cfs 1.405 af

Pond 3P: Detention Pond Peak Elev=219.02' Storage=23,861 cf Inflow=3.96 cfs 1.405 af
Outflow=0.91 cfs 1.405 af

Total Runoff Area = 20.880 ac Runoff Volume = 2.049 af Average Runoff Depth = 1.18"
69.73% Pervious = 14.560 ac 30.27% Impervious = 6.320 ac

Summary for Subcatchment 1S: Pre-Developed

Runoff = 1.05 cfs @ 8.01 hrs, Volume= 0.644 af, Depth= 0.74"

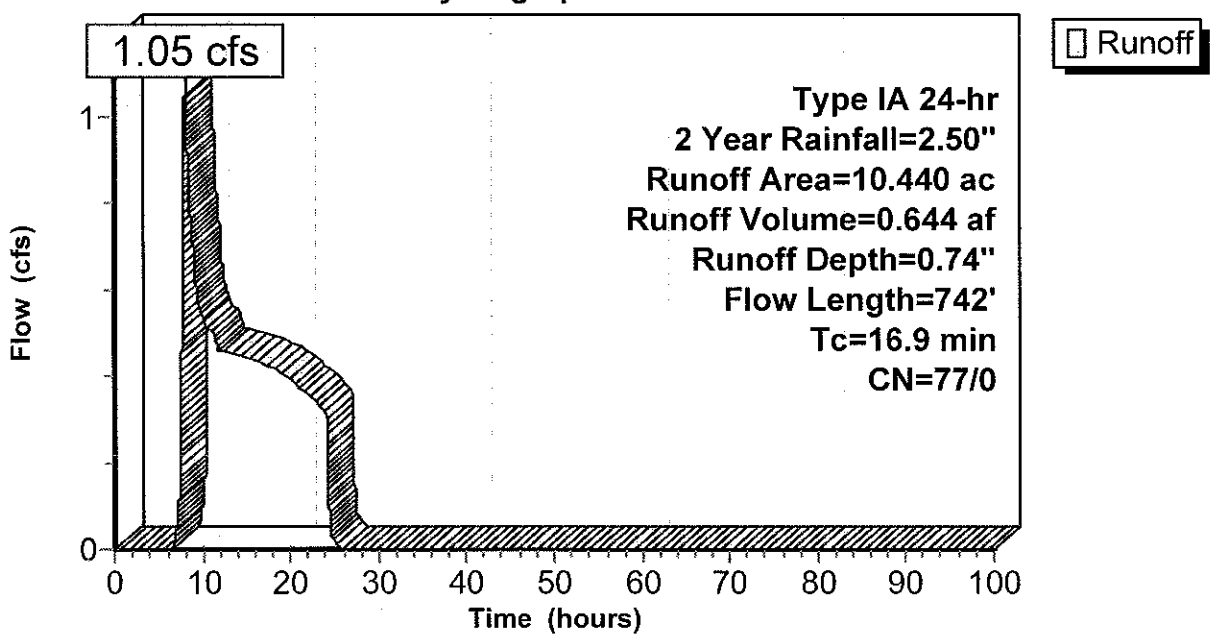
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 Year Rainfall=2.50"

Area (ac)	CN	Description
4.500	74	>75% Grass cover, Good, HSG C
5.940	80	Pasture/grassland/range, Good, HSG D
10.440	77	Weighted Average
10.440	77	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.50"
8.5	642	0.0323	1.26		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
16.9	742	Total			

Subcatchment 1S: Pre-Developed

Hydrograph



Summary for Subcatchment 2S: Post-Developed

Runoff = 3.96 cfs @ 7.91 hrs, Volume= 1.405 af, Depth= 1.61"

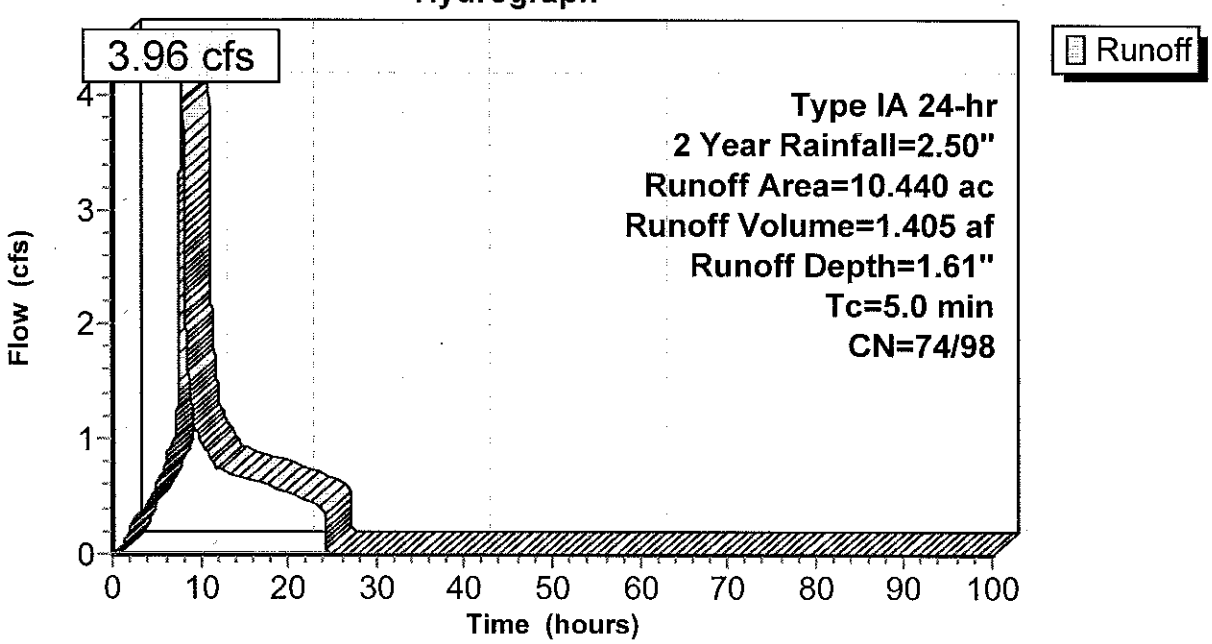
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 Year Rainfall=2.50"

	Area (ac)	CN	Description
*	6.320	98	Impervious Area
	4.120	74	>75% Grass cover, Good, HSG C
	10.440	89	Weighted Average
	4.120	74	39.46% Pervious Area
	6.320	98	60.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Post-Developed

Hydrograph



Summary for Pond 3P: Detention Pond

Inflow Area =	10.440 ac, 60.54% Impervious, Inflow Depth = 1.61" for 2 Year event				
Inflow =	3.96 cfs @	7.91 hrs, Volume=	1.405 af		
Outflow =	0.91 cfs @	10.35 hrs, Volume=	1.405 af, Atten= 77%, Lag= 146.2 min		
Primary =	0.91 cfs @	10.35 hrs, Volume=	1.405 af		

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 219.02' @ 10.35 hrs Surf.Area= 12,188 sf Storage= 23,861 cf

Plug-Flow detention time= 1,078.6 min calculated for 1.405 af (100% of inflow)
Center-of-Mass det. time= 1,078.9 min (1,785.5 - 706.6)

Volume	Invert	Avail.Storage	Storage Description
#1	216.00'	36,194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

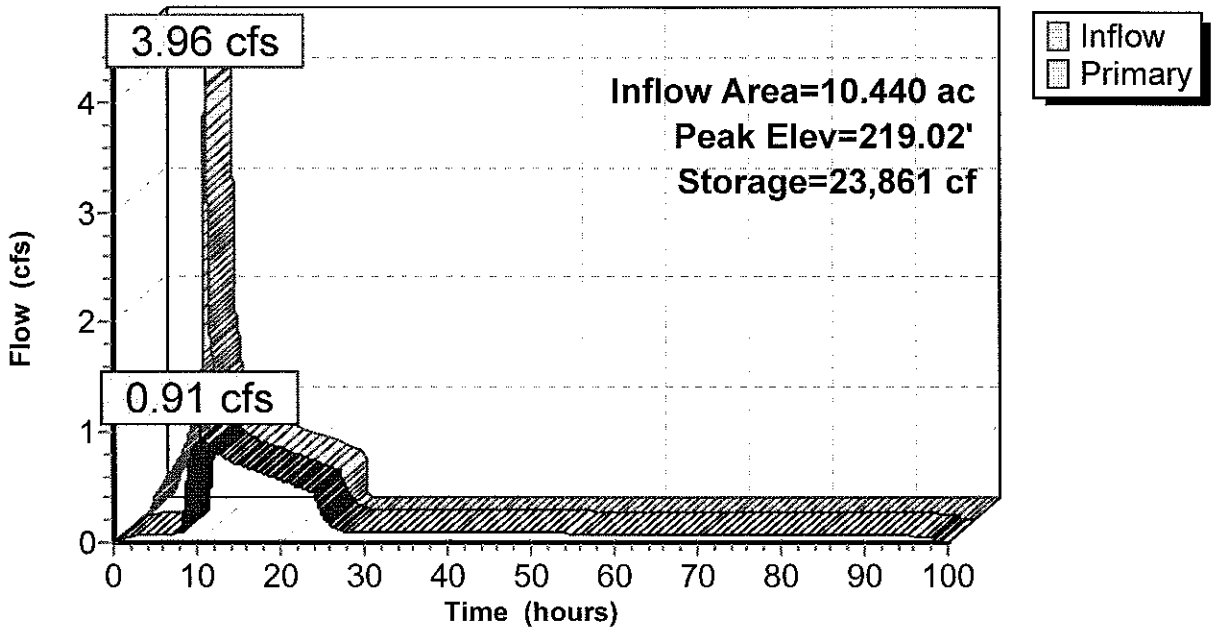
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
216.00	356	0	0
216.50	2,448	701	701
217.00	5,404	1,963	2,664
217.50	9,917	3,830	6,494
218.00	11,466	5,346	11,840
218.50	11,817	5,821	17,661
220.00	12,894	18,533	36,194

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.85'	**1.3" Vert. Orifice/Grate**	C= 0.620
#2	Primary	219.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#3	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#4	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#5	Primary	219.02'	**6.0" Vert. Orifice/Grate**	C= 0.620
#6	Primary	219.51'	**6.0" Vert. Orifice/Grate**	C= 0.620

Primary OutFlow Max=0.91 cfs @ 10.35 hrs HW=219.02' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 10.09 fps)
- **2=Orifice/Grate** (Controls 0.00 cfs)
- **3=Orifice/Grate** (Orifice Controls 0.41 cfs @ 2.30 fps)
- **4=Orifice/Grate** (Orifice Controls 0.41 cfs @ 2.30 fps)
- **5=Orifice/Grate** (Controls 0.00 cfs)
- **6=Orifice/Grate** (Controls 0.00 cfs)

Pond 3P: Detention Pond

Hydrograph



Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Developed Runoff Area=10.440 ac 0.00% Impervious Runoff Depth=1.43"
Flow Length=742' Tc=16.9 min CN=77/0 Runoff=2.64 cfs 1.245 af

Subcatchment 2S: Post-Developed Runoff Area=10.440 ac 60.54% Impervious Runoff Depth=2.47"
Tc=5.0 min CN=74/98 Runoff=6.14 cfs 2.146 af

Pond 3P: Detention Pond Peak Elev=219.51' Storage=29,933 cf Inflow=6.14 cfs 2.146 af
Outflow=2.17 cfs 2.146 af

Total Runoff Area = 20.880 ac Runoff Volume = 3.391 af Average Runoff Depth = 1.95"
69.73% Pervious = 14.560 ac 30.27% Impervious = 6.320 ac

Summary for Subcatchment 1S: Pre-Developed

Runoff = 2.64 cfs @ 8.01 hrs, Volume= 1.245 af, Depth= 1.43"

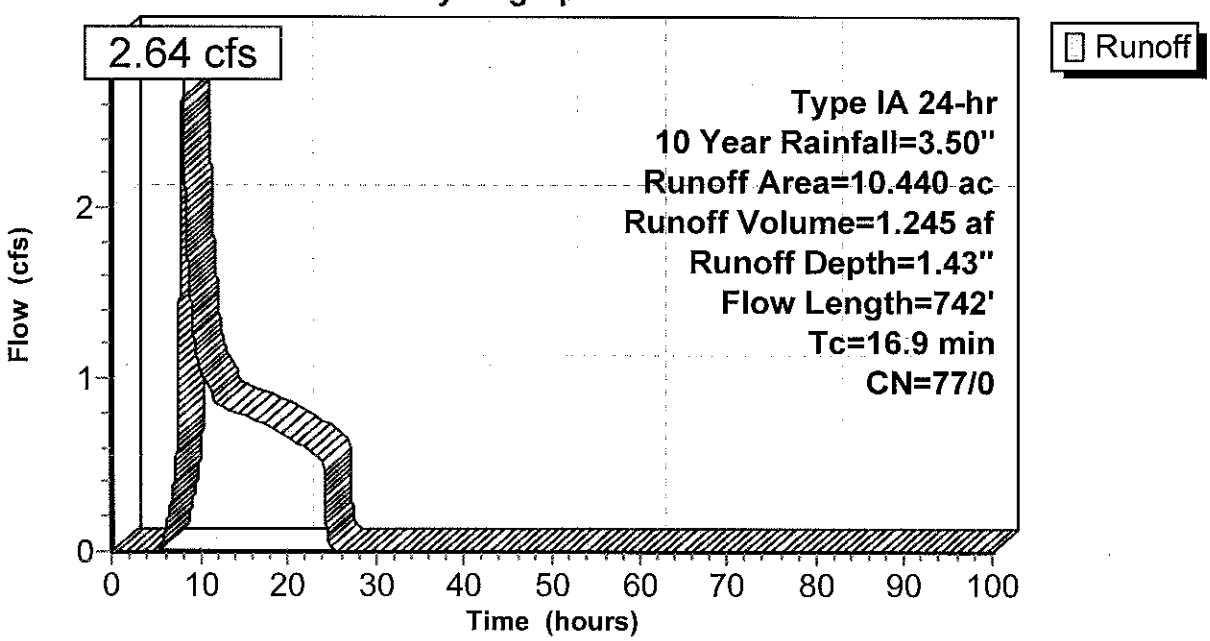
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 Year Rainfall=3.50"

Area (ac)	CN	Description
4.500	74	>75% Grass cover, Good, HSG C
5.940	80	Pasture/grassland/range, Good, HSG D
10.440	77	Weighted Average
10.440	77	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.50"
8.5	642	0.0323	1.26		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
16.9	742	Total			

Subcatchment 1S: Pre-Developed

Hydrograph



Summary for Subcatchment 2S: Post-Developed

Runoff = 6.14 cfs @ 7.91 hrs, Volume= 2.146 af, Depth= 2.47"

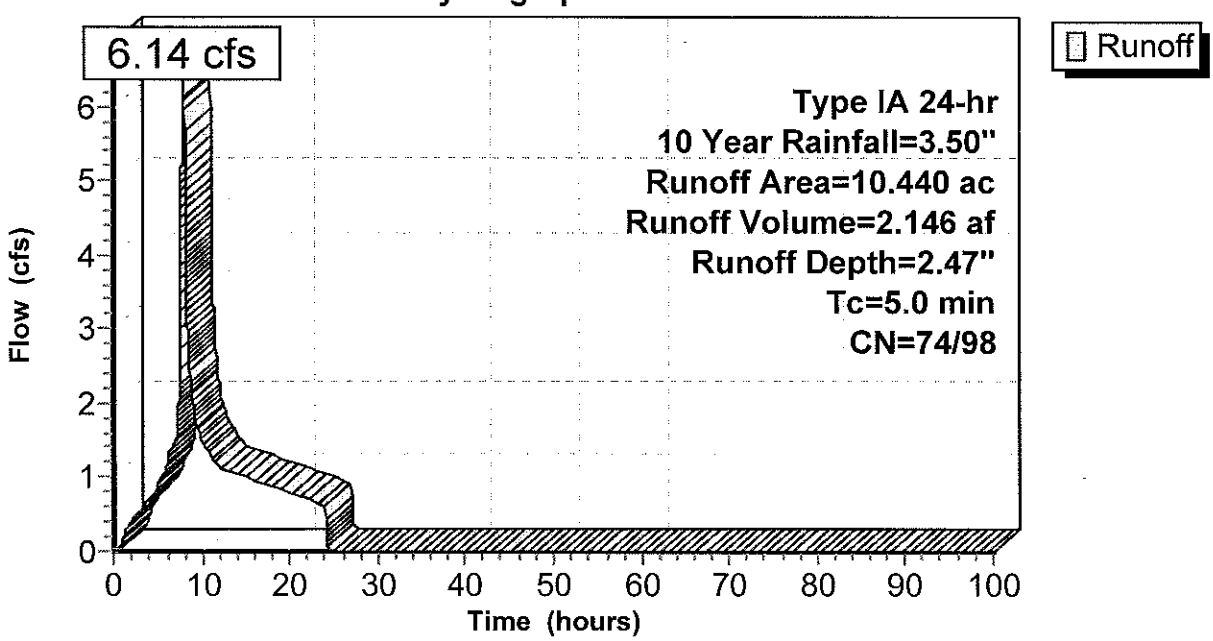
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 Year Rainfall=3.50"

	Area (ac)	CN	Description
*	6.320	98	Impervious Area
	4.120	74	>75% Grass cover, Good, HSG C
	10.440	89	Weighted Average
	4.120	74	39.46% Pervious Area
	6.320	98	60.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Post-Developed

Hydrograph



Summary for Pond 3P: Detention Pond

Inflow Area =	10.440 ac, 60.54% Impervious, Inflow Depth = 2.47" for 10 Year event				
Inflow =	6.14 cfs @	7.91 hrs, Volume=	2.146 af		
Outflow =	2.17 cfs @	8.88 hrs, Volume=	2.146 af, Atten= 65%, Lag= 58.3 min		
Primary =	2.17 cfs @	8.88 hrs, Volume=	2.146 af		

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 219.51' @ 8.88 hrs Surf.Area= 12,541 sf Storage= 29,933 cf

Plug-Flow detention time= 752.1 min calculated for 2.146 af (100% of inflow)
Center-of-Mass det. time= 752.5 min (1,452.6 - 700.2)

Volume	Invert	Avail.Storage	Storage Description
#1	216.00'	36,194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

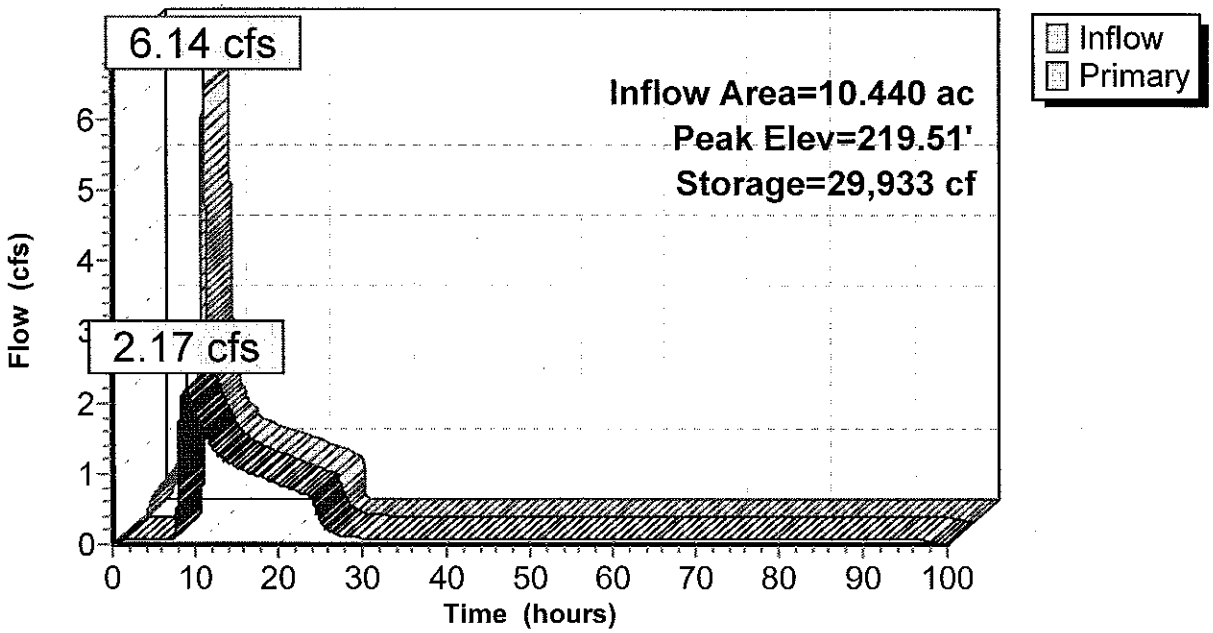
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
216.00	356	0	0
216.50	2,448	701	701
217.00	5,404	1,963	2,664
217.50	9,917	3,830	6,494
218.00	11,466	5,346	11,840
218.50	11,817	5,821	17,661
220.00	12,894	18,533	36,194

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.85'	**1.3" Vert. Orifice/Grate**	C= 0.620
#2	Primary	219.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#3	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#4	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#5	Primary	219.02'	**6.0" Vert. Orifice/Grate**	C= 0.620
#6	Primary	219.51'	**6.0" Vert. Orifice/Grate**	C= 0.620

Primary OutFlow Max=2.17 cfs @ 8.88 hrs HW=219.51' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.10 cfs @ 10.68 fps)
- **2=Orifice/Grate** (Controls 0.00 cfs)
- **3=Orifice/Grate** (Orifice Controls 0.80 cfs @ 4.07 fps)
- **4=Orifice/Grate** (Orifice Controls 0.80 cfs @ 4.07 fps)
- **5=Orifice/Grate** (Orifice Controls 0.48 cfs @ 2.46 fps)
- **6=Orifice/Grate** (Controls 0.00 cfs)

Pond 3P: Detention Pond

Hydrograph



Time span=0.00-100.00 hrs, dt=0.01 hrs, 10001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Pre-Developed Runoff Area=10.440 ac 0.00% Impervious Runoff Depth=1.81"
Flow Length=742' Tc=16.9 min CN=77/0 Runoff=3.54 cfs 1.576 af

Subcatchment2S: Post-Developed Runoff Area=10.440 ac 60.54% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=74/98 Runoff=7.29 cfs 2.531 af

Pond 3P: Detention Pond Peak Elev=219.78' Storage=33,331 cf Inflow=7.29 cfs 2.531 af
Outflow=2.98 cfs 2.531 af

Total Runoff Area = 20.880 ac Runoff Volume = 4.107 af Average Runoff Depth = 2.36"
69.73% Pervious = 14.560 ac 30.27% Impervious = 6.320 ac

Summary for Subcatchment 1S: Pre-Developed

Runoff = 3.54 cfs @ 8.01 hrs, Volume= 1.576 af, Depth= 1.81"

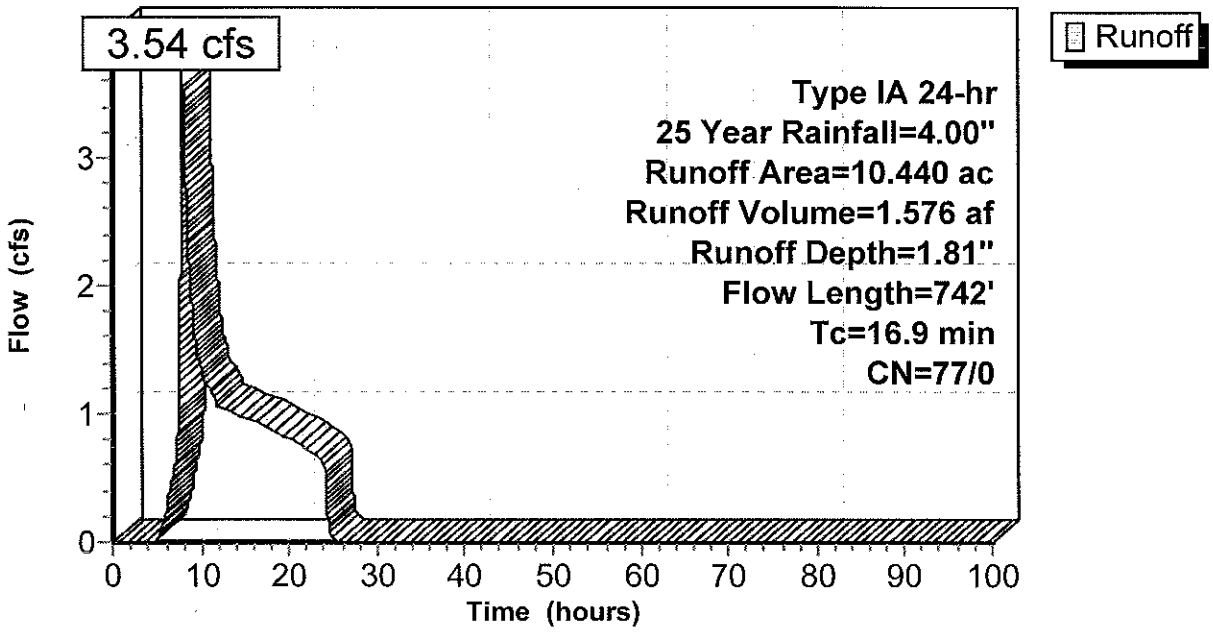
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=4.00"

Area (ac)	CN	Description
4.500	74	>75% Grass cover, Good, HSG C
5.940	80	Pasture/grassland/range, Good, HSG D
10.440	77	Weighted Average
10.440	77	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.50"
8.5	642	0.0323	1.26		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
16.9	742	Total			

Subcatchment 1S: Pre-Developed

Hydrograph



Summary for Subcatchment 2S: Post-Developed

Runoff = 7.29 cfs @ 7.91 hrs, Volume= 2.531 af, Depth= 2.91"

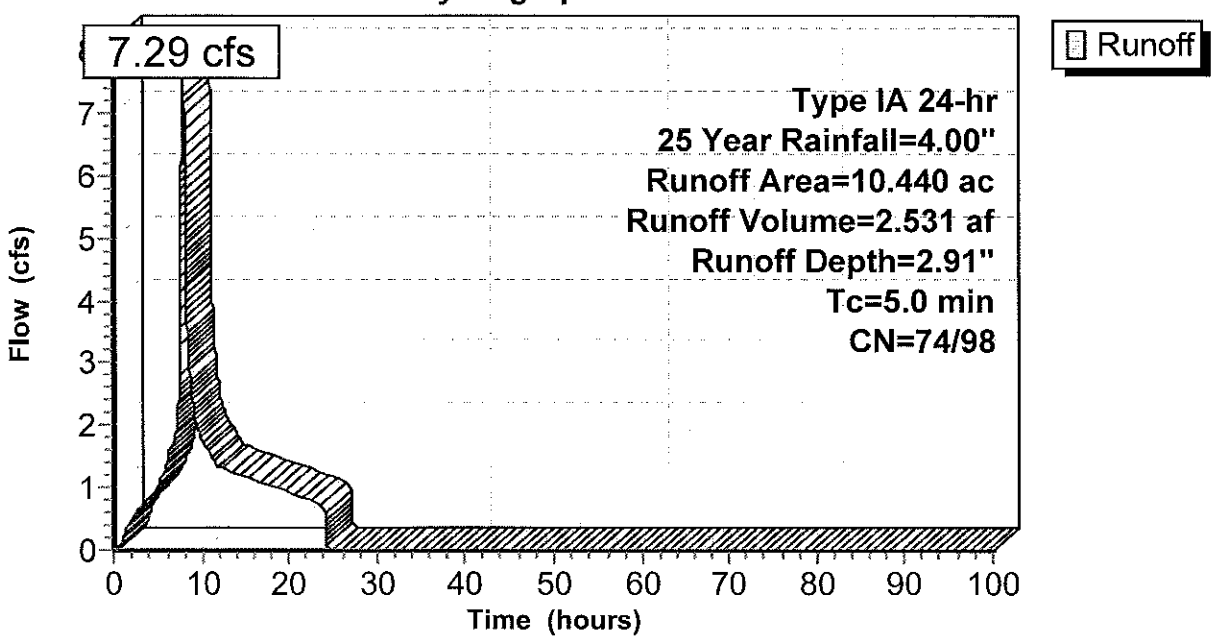
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=4.00"

	Area (ac)	CN	Description
*	6.320	98	Impervious Area
	4.120	74	>75% Grass cover, Good, HSG C
	10.440	89	Weighted Average
	4.120	74	39.46% Pervious Area
	6.320	98	60.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Post-Developed

Hydrograph



Summary for Pond 3P: Detention Pond

Inflow Area =	10.440 ac, 60.54% Impervious, Inflow Depth = 2.91" for 25 Year event				
Inflow =	7.29 cfs @	7.91 hrs, Volume=	2.531 af		
Outflow =	2.98 cfs @	8.46 hrs, Volume=	2.531 af, Atten= 59%, Lag= 33.5 min		
Primary =	2.98 cfs @	8.46 hrs, Volume=	2.531 af		

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Peak Elev= 219.78' @ 8.46 hrs Surf.Area= 12,734 sf Storage= 33,331 cf

Plug-Flow detention time= 656.5 min calculated for 2.531 af (100% of inflow)
Center-of-Mass det. time= 656.9 min (1,354.3 - 697.4)

Volume	Invert	Avail.Storage	Storage Description
#1	216.00'	36,194 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

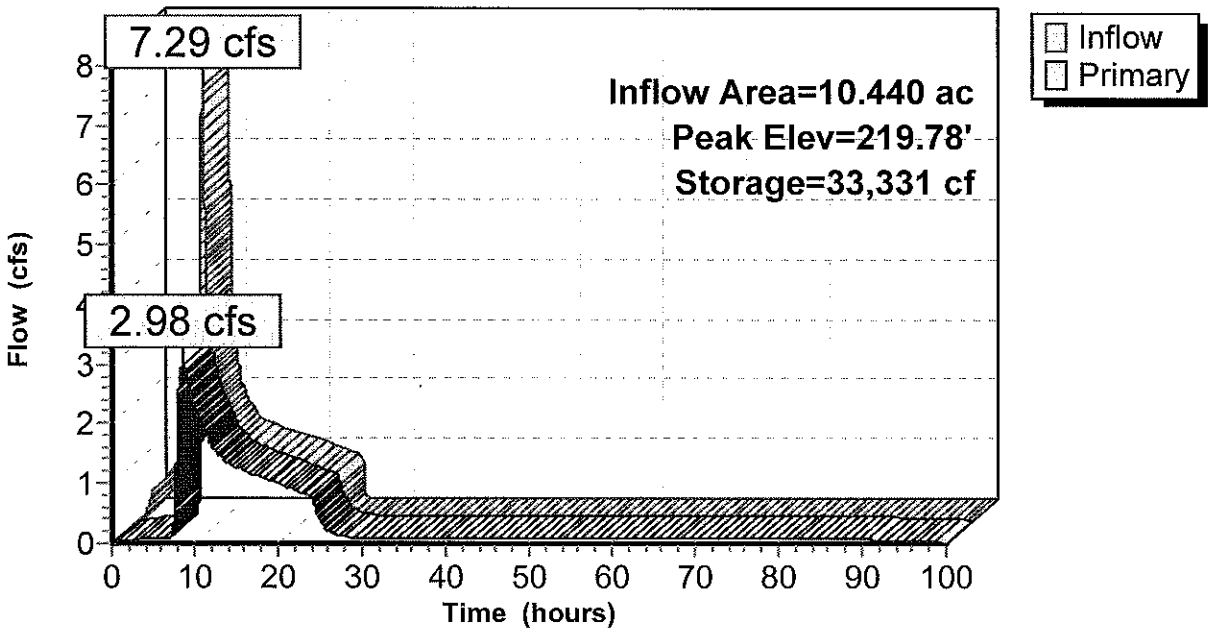
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
216.00	356	0	0
216.50	2,448	701	701
217.00	5,404	1,963	2,664
217.50	9,917	3,830	6,494
218.00	11,466	5,346	11,840
218.50	11,817	5,821	17,661
220.00	12,894	18,533	36,194

Device	Routing	Invert	Outlet Devices	
#1	Primary	214.85'	**1.3" Vert. Orifice/Grate**	C= 0.620
#2	Primary	219.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#3	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#4	Primary	218.59'	**6.0" Vert. Orifice/Grate**	C= 0.620
#5	Primary	219.02'	**6.0" Vert. Orifice/Grate**	C= 0.620
#6	Primary	219.51'	**6.0" Vert. Orifice/Grate**	C= 0.620

Primary OutFlow Max=2.98 cfs @ 8.46 hrs HW=219.78' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.10 cfs @ 10.98 fps)
- **2=Orifice/Grate** (Orifice Controls 0.10 cfs @ 1.52 fps)
- **3=Orifice/Grate** (Orifice Controls 0.95 cfs @ 4.82 fps)
- **4=Orifice/Grate** (Orifice Controls 0.95 cfs @ 4.82 fps)
- **5=Orifice/Grate** (Orifice Controls 0.70 cfs @ 3.54 fps)
- **6=Orifice/Grate** (Orifice Controls 0.19 cfs @ 1.82 fps)

Pond 3P: Detention Pond

Hydrograph



United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Yamhill County, Oregon

Gracie's Landing

June 8, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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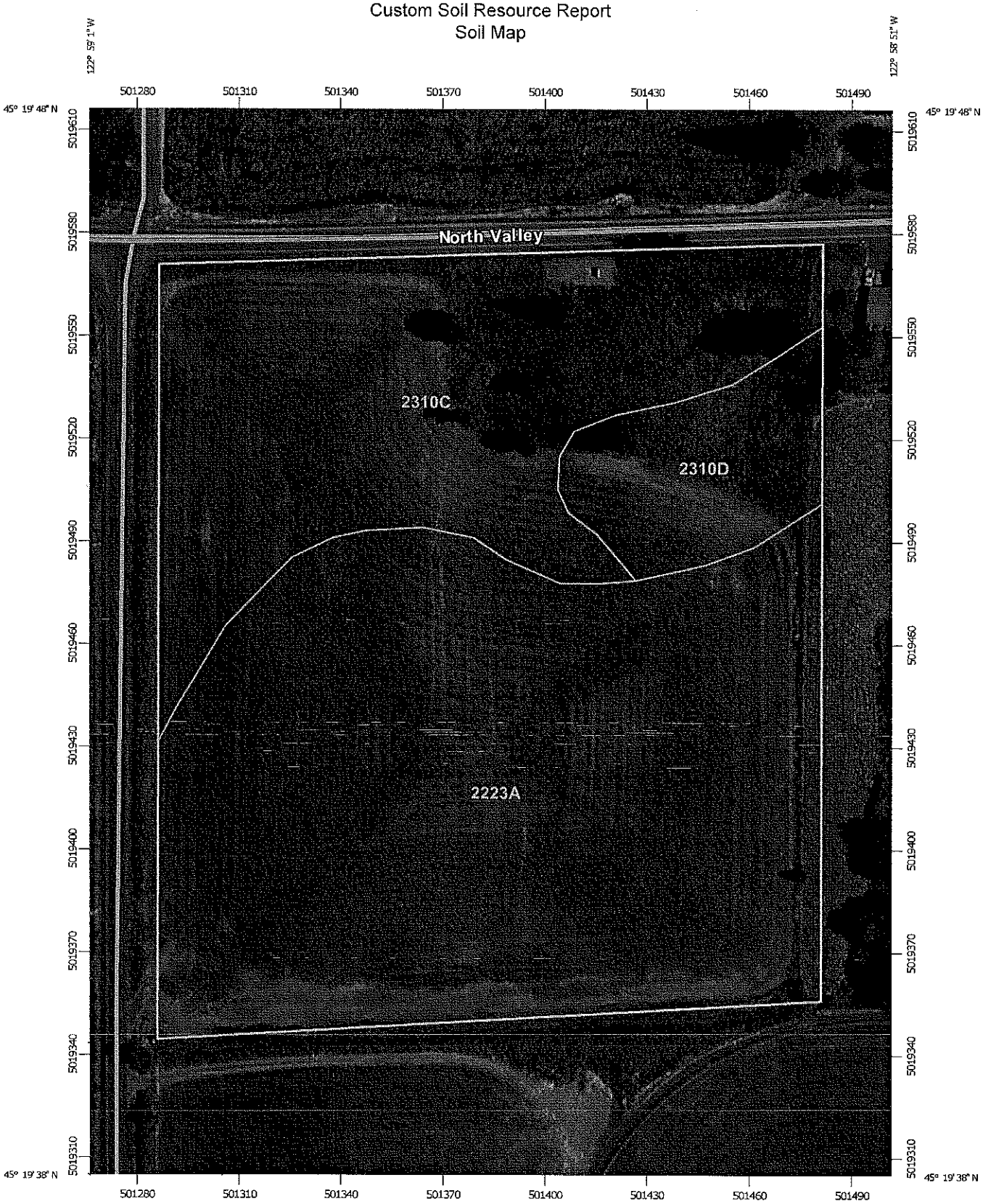
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,520 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Yamhill County, Oregon
Survey Area Data: Version 3, Sep 18, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 8, 2010—Sep 4, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Yamhill County, Oregon (OR071)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2223A (C/D)	Waldo silty clay loam, 0 to 3 percent slopes, nonflooded	6.4	58.9%
2310C (C)	Woodburn silt loam, 3 to 12 percent slopes	3.6	33.1%
2310D (C)	Woodburn silt loam, 12 to 20 percent slopes	0.9	8.1%
Totals for Area of Interest		**10.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas.* Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Yamhill County, Oregon

2223A—Waldo silty clay loam, 0 to 3 percent slopes, nonflooded

Map Unit Setting

National map unit symbol: 2p8v7
Elevation: 140 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Waldo, nonflooded, and similar soils: 84 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waldo, Nonflooded

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Clayey alluvium

Typical profile

Ap - 0 to 6 inches: silty clay loam
A2 - 6 to 14 inches: silty clay loam
BAg - 14 to 28 inches: silty clay
Bg - 28 to 45 inches: silty clay
BCg - 45 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Other vegetative classification: Poorly Drained (G002XY006OR)

Minor Components

Waldo

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Concave, linear
Other vegetative classification: Poorly Drained (G002XY006OR)

Wapato
Percent of map unit: 3 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave, linear
Other vegetative classification: Poorly Drained (G002XY006OR)

2310C—Woodburn silt loam, 3 to 12 percent slopes

Map Unit Setting
National map unit symbol: 1j8b5
Elevation: 100 to 350 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Woodburn and similar soils: 93 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Silty glaciolacustrine deposits

Typical profile
Ap - 0 to 9 inches: silt loam
A - 9 to 17 inches: silt loam
2Bt1 - 17 to 25 inches: silty clay loam
2Bt2 - 25 to 32 inches: silty clay loam
2BCt1 - 32 to 39 inches: silt loam
2BCt2 - 39 to 54 inches: silt loam
2C1 - 54 to 68 inches: silt loam
2C2 - 68 to 80 inches: stratified fine sandy loam to silt loam
3C3 - 80 to 92 inches: stratified fine sandy loam to silt loam

Properties and qualities
Slope: 3 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 25 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)

Minor Components

Dayton

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave

2310D—Woodburn silt loam, 12 to 20 percent slopes

Map Unit Setting

National map unit symbol: 1j8b6
Elevation: 100 to 380 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Woodburn and similar soils: 95 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
A - 9 to 17 inches: silt loam
2Bt1 - 17 to 25 inches: silty clay loam

2Bt2 - 25 to 32 inches: silty clay loam
2BCt1 - 32 to 39 inches: silt loam
2BCt2 - 39 to 54 inches: silt loam
2C1 - 54 to 68 inches: silt loam
2C2 - 68 to 80 inches: stratified fine sandy loam to silt loam
3C3 - 80 to 92 inches: stratified fine sandy loam to silt loam

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 25 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)

Minor Components

Dayton

Percent of map unit: 1 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Water Features

This folder contains tabular reports that present soil hydrology information. The reports (tables) include all selected map units and components for each map unit. Water Features include ponding frequency, flooding frequency, and depth to water table.

Hydrologic Soil Group and Surface Runoff

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

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

The four hydrologic soil groups are:

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

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

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

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

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

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

Report—Hydrologic Soil Group and Surface Runoff

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

Hydrologic Soil Group and Surface Runoff–Yamhill County, Oregon			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
2223A—Waldo silty clay loam, 0 to 3 percent slopes, nonflooded			
Waldo, nonflooded	84	—	C/D
2310C—Woodburn silt loam, 3 to 12 percent slopes			
Woodburn	93	—	C
2310D—Woodburn silt loam, 12 to 20 percent slopes			
Woodburn	95	—	C

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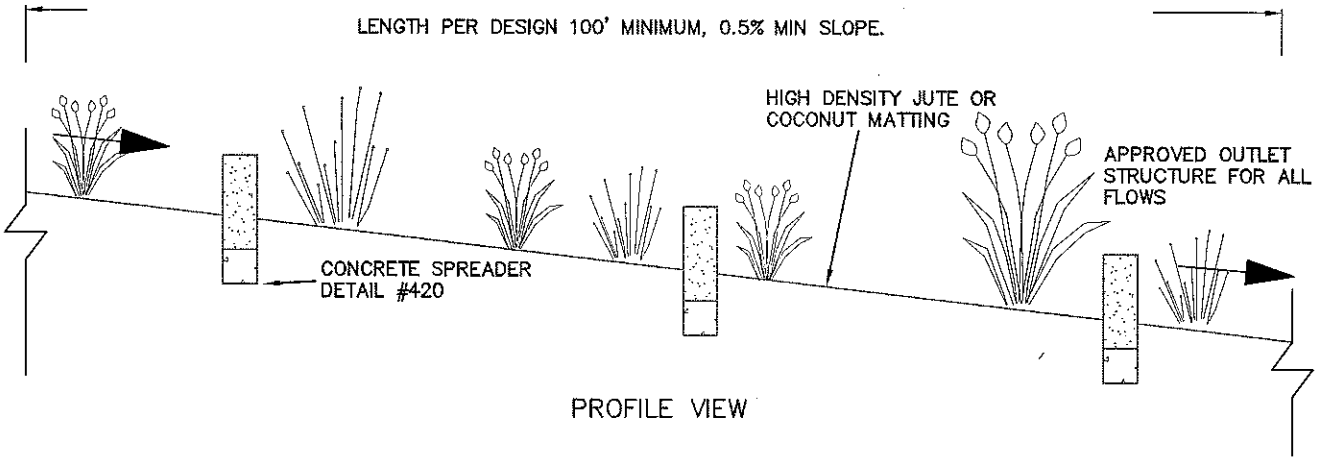
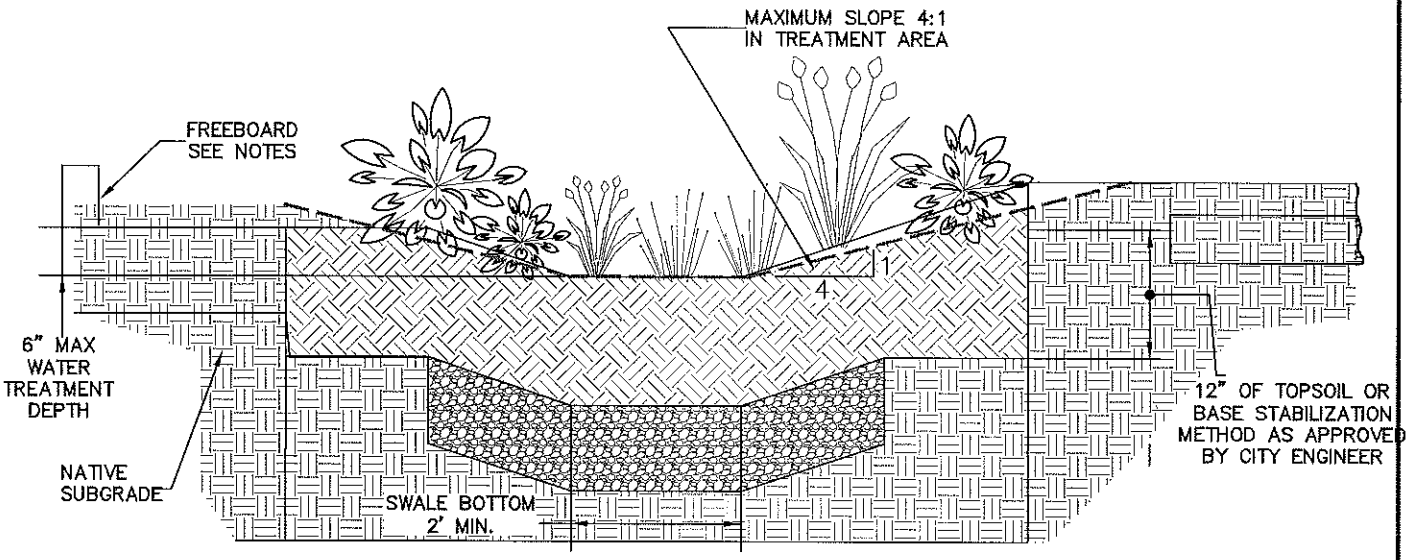


PROFILE VIEW



CROSS-SECTIONAL VIEW WITH ON STREET PARKING

HYDRAULIC DESIGN CRITERIA:

1. DESIGN FLOW: WATER QUALITY FLOW
2. MIN. HYDRAULIC RESIDENCE TIME: 9 MINUTES
3. MAXIMUM WATER DESIGN DEPTH: 0.5 FEET
4. MINIMUM FREE BOARD: 1.0 FOOT (FOR FACILITIES NOT NOT PROTECTED FROM HIGH FLOWS)
5. MANNING "n" VALUE: 0.24
6. MAXIMUM VELOCITY: 2.0 fps BASED ON 25-YEAR FLOW

FACILITY DESIGN CRITERIA:

1. UP UNTIL THE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 4H:1V
2. ABOVE MAX WATER SURFACE, INTERIOR SIDE SLOPES, MAX SLOPE IS 2H:1V
3. IF INTERIOR SIDE SLOPES MUST BE MOWED SIDE SLOPE THEN THE MAX SLOPE IS 4H:1V
4. EXTERIOR SIDE SLOPES MAX 2H:1V
5. MINIMUM FREEBOARD 1 FOOT FROM 25 YEAR DESIGN WATER SURFACE ELEVATION
6. PROVIDE AN ENERGY DISSIPATER AT THE ENTRANCE OF SWALE, WITH A MINIMUM LENGTH OF 4 FEET. IT WILL BE DESIGNED TO REDUCE VELOCITIES AND SPREAD THE FLOW ACROSS THE TREATMENT CROSS SECTION.

FACILITY DESIGN CRITERIA:

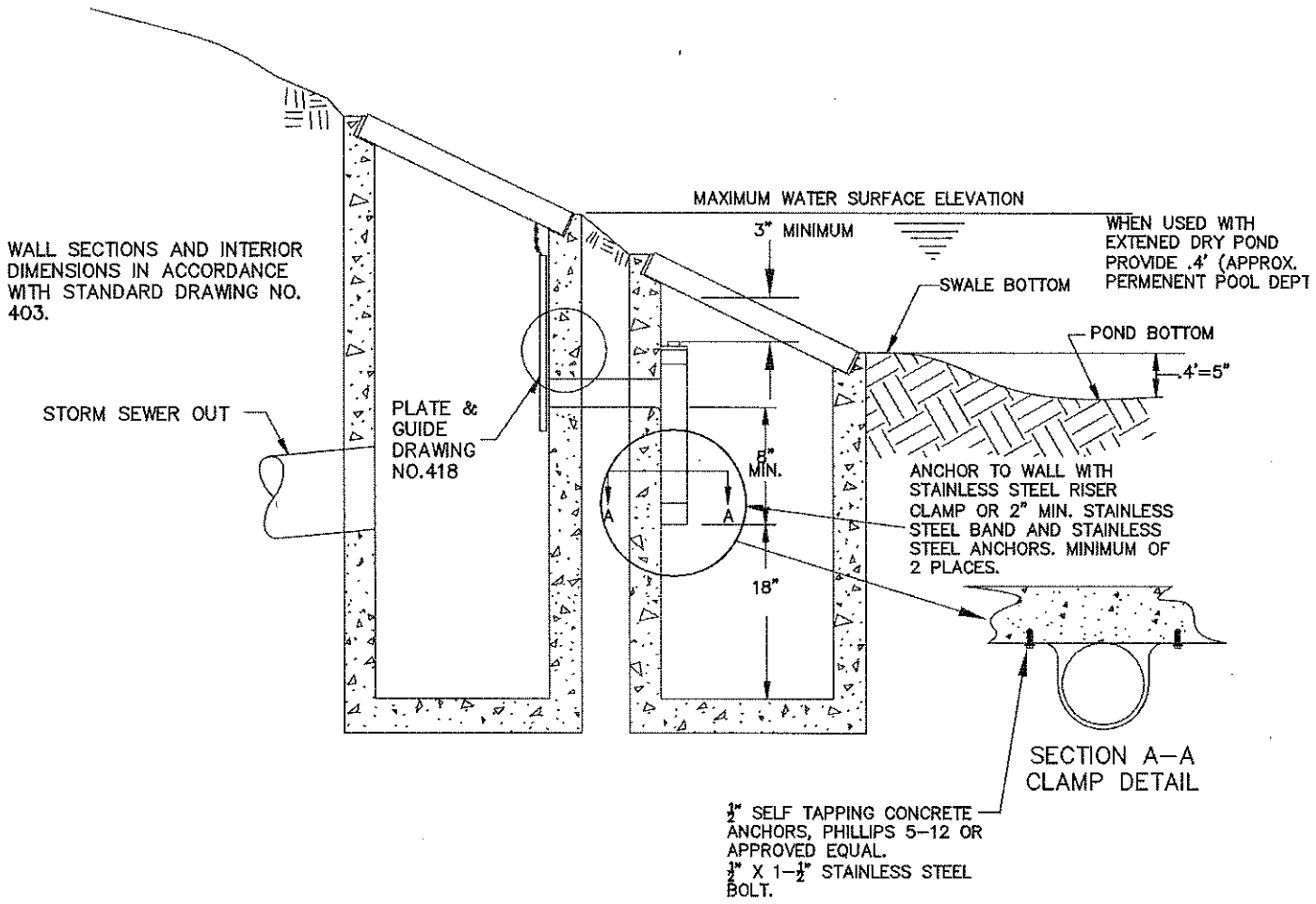
7. THE USE OF INTERMEDIATE FLOW SPREADERS IS REQUIRED, SPACING FOR CONCRETE SPREADERS TO BE DETERMINED BY DESIGN ENGINEER.
8. EXTEND RIVER ROCK, TOPSOIL, AND HIGH DENSITY JUTE OR COCONUT MATTING TO TOP OF TREATMENT AREA (OR WQV LEVEL). EXTEND TOPSOIL AND LOW DENSITY JUTE MATTING TO THE EDGE OF WATER QUALITY TRACT.
9. WHERE SWALES WRAP 180-DEGREES FORMING PARALLEL CHANNELS, FREEBOARD SHALL BE PROVIDED BETWEEN EACH OF THE PARALLEL CHANNELS. A 1 FOOT WALL ABOVE GROUND SURFACE MAY ALSO BE USED. ALTERNATIVE: A SOIL BASED BERM WITH A MIN. TOP WIDTH OF 1 FOOT & MAX 2.5H:1V SIDE SLOPES MAY BE USED.
10. WHERE SWALES ARE DESIGNED WITH DITCH INLETS & OUTLET STRUCTURES & DESIGN OF MAINTENANCE ACCESS TO SUCH STRUCTURES MAY BE DIFFICULT DUE TO SWALE LOCATION, SWALES MAYBE DESIGNED AS FLOW THROUGH FACILITIES WITH UNSUMPED STRUCTURES. MAINTENANCE ACCESS TO STRUCTURE END OF THE FACILITY IS REQUIRED.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

VEGETATED SWALE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	460



NOTES:

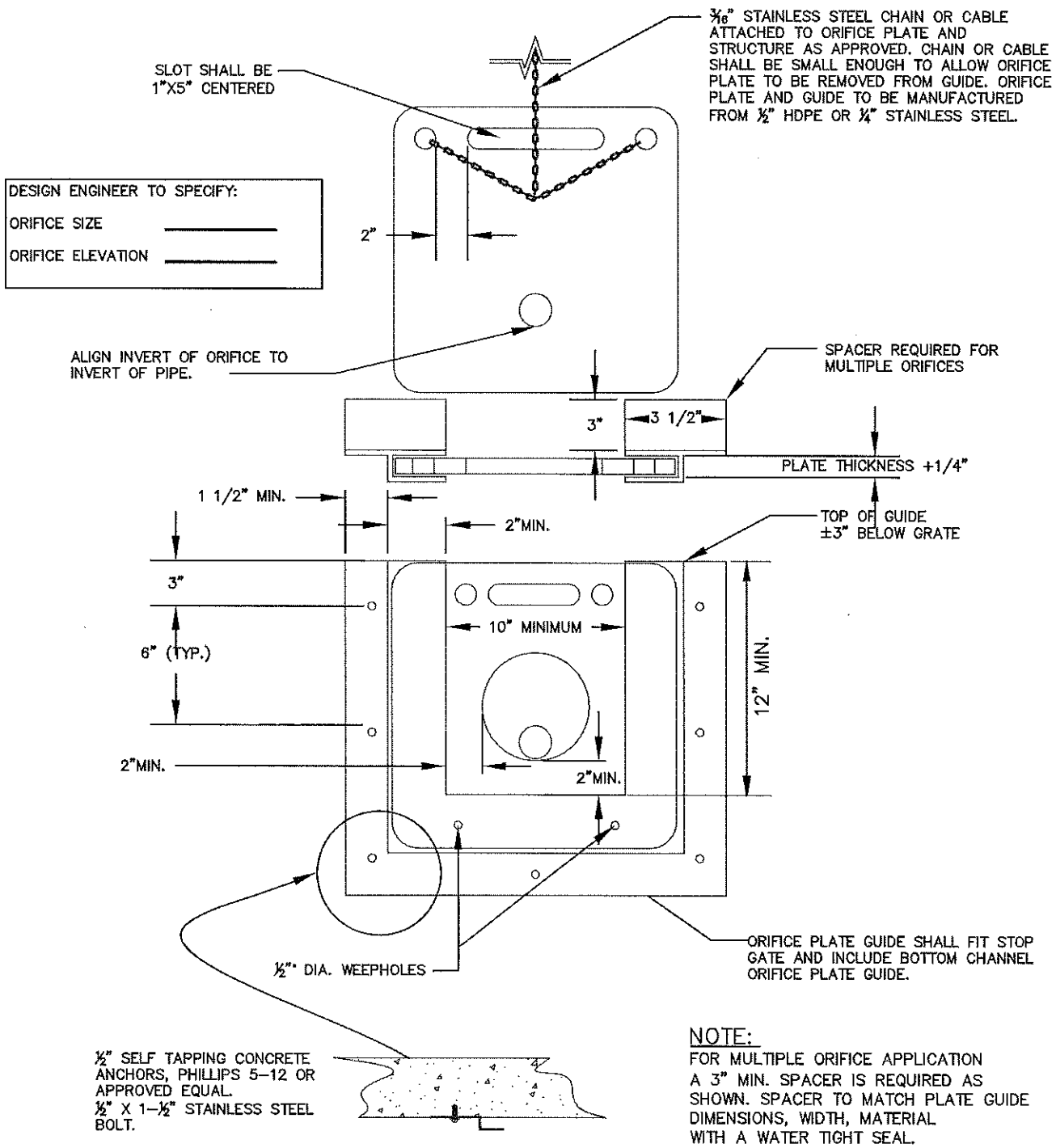
1. CONNECTING PIPE AND TEE SHALL BE 4", 6", OR 8" AWWA C–900 OR ASTM 3034 PVC,AND ONE SIZE LARGER THAN THE ORIFICE OPENING.
2. MAXIMUM ORIFICE OPENING SHALL BE 6" DIAMETER.
3. STRUCTURES SHALL CONFORM TO STANDARD DRAWING NO. 390 DITCH INLET.
4. FRAME AND GRATE SHALL CONFORM TO STANDARD DRAWING NO.403, DITCH INLET FRAME AND GRATE.
5. PLATE AND GUIDE SHALL BE SECURED FLUSH AGAINST WALL OF STRUCTURE AS APPROVED.
6. MAINTAINANCE ACCESS REQUIRED TO WITHIN 10' OF CENTER OF BOTH STRUCTURES.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

OUTFLOW CONTROL STRUCTURE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	417



NOTE:
FOR MULTIPLE ORIFICE APPLICATION A 3" MIN. SPACER IS REQUIRED AS SHOWN. SPACER TO MATCH PLATE GUIDE DIMENSIONS, WIDTH, MATERIAL WITH A WATER TIGHT SEAL.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

ORIFACE PLATE AND GUIDE

SCALE:	N.T.S.
DATE:	MARCH 2014
APPROVED BY:	JAY H.
STANDARD DRAWING	418

Gracie's Landing Subdivision

Exhibit E

Wetlands Analysis

PACIFIC HABITAT SERVICES, INC

9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

(800) 871-9333 • (503) 570-0800 • Fax (503)570-085

June 29, 2016

Dan Danicic
Del Bocca Vista
645 NE 3rd St. Suite 200
McMinnville, OR 97128

Re: Property located at 24950 NE North Valley Road in Newberg, OR.

PHS Number: 5942

Dan:

Pacific Habitat Services, Inc. (PHS) conducted a site visit for the property located at 24950 NE North Valley Road in Newberg, OR. The property is located at the southeast corner of NE North Valley Road and NE Chehalem Drive. The purpose of the site visit was to determine if any sensitive areas, including wetlands and waters, were present on the site. The site currently consists of land that is managed for grass seed. Scattered trees are present in the northeastern portion of the site. The site is sloped from north to south, with the lowest elevations in the southern portion of the site. It was determined that wetlands are present in the southern portion of the site.

Treated stormwater may outfall into the wetland on site. Provided there are no fill or removal activities within wetlands (i.e. grading, etc.), a permit from the Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps) is not required. The stormwater outfall should consist of riprap and/or a flow spreader to ensure that erosion does not occur and cause material to enter the wetlands.

If you have any questions, please feel free to call.

Sincerely,

Amy Hawkins

Amy Hawkins, PWS
Project Manager

Gracie's Landing Subdivision

Exhibit F

Traffic Study

Traffic Impact Analysis
Gracie's Landing

Newberg, Oregon

May 12, 2016

completed with
Del Boca Vista, LLC
McMinnville, Oregon

Prepared by:
Associated Transportation Engineering & Planning, Inc.
Salem, Oregon
May 9, 2016

ASSOCIATED
TRANSPORTATION
ENGINEERING &
PLANNING INC.

A.T.E.P., Inc.
1155 13th St. S.E.
Salem, OR. 97302

Tel.: 503-364-5066
FAX: 503-364-1260
e-mail: kbirky@atepinc.com

Traffic Impact Analysis
Gracie's Landing

Newberg, Oregon

May 12, 2016

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 22, 1991
KARL BIRKY
12/31/2017

completed with
Del Boca Vista, LLC
McMinnville, Oregon

Prepared by:
Associated Transportation Engineering & Planning, Inc.
Salem, Oregon
May 9, 2016

ASSOCIATED TRANSPORTATION ENGINEERING & PLANNING INC.

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Salem, OR. 97302

Tel.: 503-364-5066
FAX: 503-364-1260
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Traffic Conditions when Gracie's Landing is Complete: 3
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Appendices

Turning Movement Counts

ODOT Crash Data

Computer Modeling Printouts

ASSOCIATED TRANSPORTATION ENGINEERING & PLANNING INC.
A.T.E.P., Inc.
1155 13th St. S.E.
Salem, OR. 97302
Tel.: 503-364-5066
FAX: 503-364-1260
e-mail: kbirky@atepinc.com

Traffic Impact Analysis
Gracie's Landing
Newberg, Oregon

Introduction:

Del Boca Vista, LLC intends to develop 75 single family home lots on tax lot 900 of tax map 3S 2W Sec 7 in Newberg, Oregon. The 10.37 acre site is in the southeast quadrant of the North Valley Rd at Chehalem Dr intersection. The site will be developed with streets to Chehalem Dr and N Valley Rd.

Figure 1 - Vicinity Map

Residents of Gracie's Landing will use the Newberg transportation system and add traffic to the roadways. This analysis will consider the traffic impacts at the intersections of:

- N Valley Rd at Chehalem Dr
- N Valley Rd at Hwy 219
- Foothills at Chehalem Dr
- Foothills at Hwy 219
- Chehalem Dr at Mountain View Dr.

Crash data was provided by the ODOT Crash Data Unit for the most recent 5 years.

Summary of Findings:

The 75 single family homes in Gracie's Landing will generate an estimated 714 trips each day. 56 of those trips will be in the AM Peak hour and 75 trips will be in the PM Peak hour. There is adequate capacity at all the studied intersections for the existing traffic and traffic from the planned Gracie's Landing.

Intersection sight distance at the intersection of Chehalem Dr at N Valley Rd is not adequate for east bound traffic. There is a flashing warning light on the approach, but as the City grows, changes to the approaches and the intersection should be planned and built. Preliminary plans to make improvements to the intersection were submitted to Yamhill County in 2007 by Ashley Engineering Design. In 2004 the County considered making the intersection all way stop controlled and determined warrants were not met. They are not met at the time of this study. Traffic signal warrants are not met at the intersection. There has been only 1 reported crash at Chehalem Dr at N Valley Rd in the past 5 years while there have been 6 reported crashes at N Valley Rd at Hwy 219.

History and Existing Conditions:

The site has been used for agricultural purposes in the past. North of the Darnell Wright Softball Complex operated by the Chehalem Parks and Recreation Department, the project site has been annexed and zoned to allow single family homes by the City of Newberg.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	SBT	0.016	10.4	B
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.005	8.9	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.085	14.5	B
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.180	14.5	B
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.001	10.1	B

Existing AM Peak Hour Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	NBT	0.029	12.0	B
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.030	9.4	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.132	20.4	C
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.277	24.5	C
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.008	11.5	B

Existing PM Peak Hour Summary

Figure 2 - Existing Traffic Conditions

Traffic Conditions when Gracie's Landing is Complete:

Gracie's Landing will add 56 trips to the AM Peak hour traffic and 75 trips to the PM Peak hour traffic. This study will assume that 10% of the traffic will travel on N Valley Rd west of the site. 30% will travel east on N Valley Rd and 60% will travel on Chehalem Dr south of the site. Access to the development will be located away from the intersection of Chehalem Dr at N Valley Rd on both Chehalem Dr and N Valley Rd. The study assumed that traffic volumes will increase linearly 1% per year to find 2017 and 2027 performance metrics.

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	SBT	0.016	10.6	B
2	N Valley Rd Entrance	Two-way stop	HCM2010	NBL	0.010	9.8	A
3	Chehalem Dr Access	Two-way stop	HCM2010	WBL	0.022	9.0	A
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.006	9.2	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.089	14.9	B
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.188	14.9	B
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.001	10.4	B

2017 AM Peak Hour Summary with Gracie's Landing

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	NBT	0.030	12.3	B
2	N Valley Rd Entrance	Two-way stop	HCM2010	NBL	0.006	9.2	A
3	Chehalem Dr Access	Two-way stop	HCM2010	WBL	0.015	9.6	A
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.032	9.8	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.136	21.7	C
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.302	26.6	D
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.008	11.8	B

2017 PM Peak Hour Summary with Gracie's Landing

Figure 3 – 2017 Traffic Conditions with Gracie's Landing

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	SBT	0.018	10.8	B
2	N Valley Rd Entrance	Two-way stop	HCM2010	NBL	0.011	10.0	A
3	Chehalem Dr Access	Two-way stop	HCM2010	WBL	0.022	9.1	A
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.006	9.2	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.110	16.3	C
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.226	16.3	C
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.001	10.5	B

2027 AM Peak Hour Summary with Gracie's Landing

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	NBL	0.052	12.9	B
2	N Valley Rd Entrance	Two-way stop	HCM2010	NBL	0.006	9.2	A
3	Chehalem Dr Access	Two-way stop	HCM2010	WBL	0.015	9.7	A
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.035	9.9	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.172	26.8	D
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.384	33.7	D
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.008	12.2	B

2027 PM Peak Hour Summary with Gracie's Landing

Figure 4 – 2027 Traffic Conditions with Gracie's Landing

Crash Data:

The ODOT Crash Data Unit provided information about reported crashes at the shown intersections for the past 5 years.

Intersection	Fatal	Injury	Property Damage	Total Crashes
N Valley Rd at Chehalem Dr	0	1	0	1
N Valley Rd at Hwy 219	0	2	4	6
Foothills at Chehalem Dr	0	0	0	0
Foothills at Hwy 219	0	1	3	4

Figure 5 – Reported Crashes at Studied Intersections in 2010-2014

Summary:

The development of 75 single family homes in the planned Gracie's Landing in the southeast quadrant of N Valley Rd at Chehalem Dr will add traffic to the transportation system. This study finds there is and will continue to be adequate capacity at the intersections for through 2027. The access to the project is planned to be located as far from the intersection of N Valley Rd at Chehalem Dr as reasonably possible to reduce the potential for conflict with traffic at the intersection. Crash data does not indicate significant safety problems at the studied intersections. The City should continue to monitor westbound left turns during the PM Peak hour, though volumes will be 34% of capacity at Foothills at Hwy 219 in 2027.

There is not adequate intersection sight distance on the eastbound approach to the intersection of N Valley Rd at Chehalem Dr. Yamhill County considered changing traffic control from two way stop control to all way stop control, but found that warrants for AWSC were not met. This study finds that warrants for AWSC are not met at this time. There has been 1 reported crash at the intersection in the past 5 years. In 2007 Ashley Engineering Design submitted preliminary plans to Yamhill County to lower the intersection and increase the sight distance. Improving the intersection sight distance to current engineering standards continues to be an important goal for Yamhill County pending identifying funds to make the improvements. There will be 21 trips from the planned development in 2017 during the PM Peak hour traffic period and there will 357 trips through the N Valley Rd at Chehalem Dr intersection during that period. 5.88% of the PM Peak hour traffic through the N Valley Rd at Chehalem Dr intersection will be from the planned Gracie's Landing subdivision.

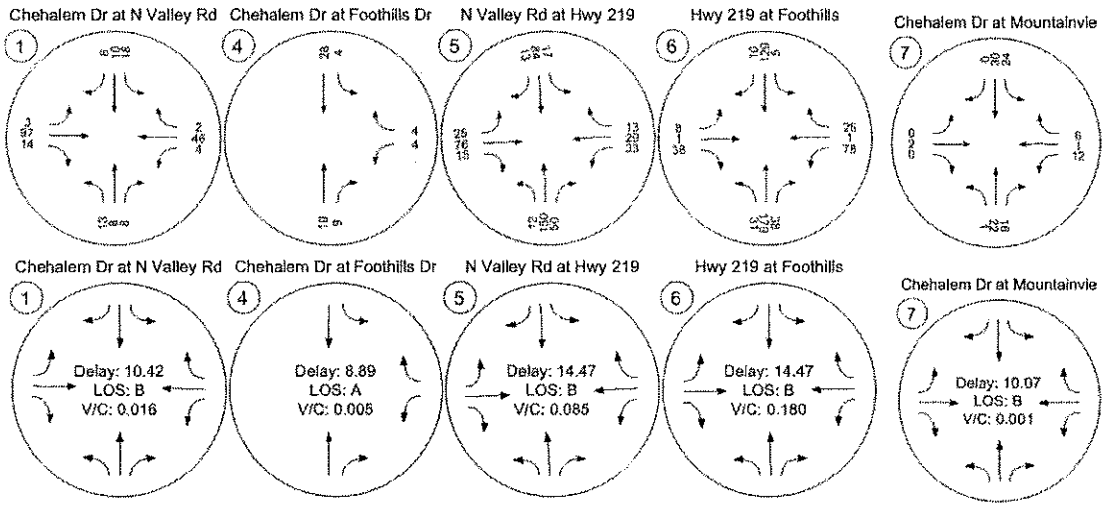


Figure 6 - Existing AM Peak hour Counts and Metrics

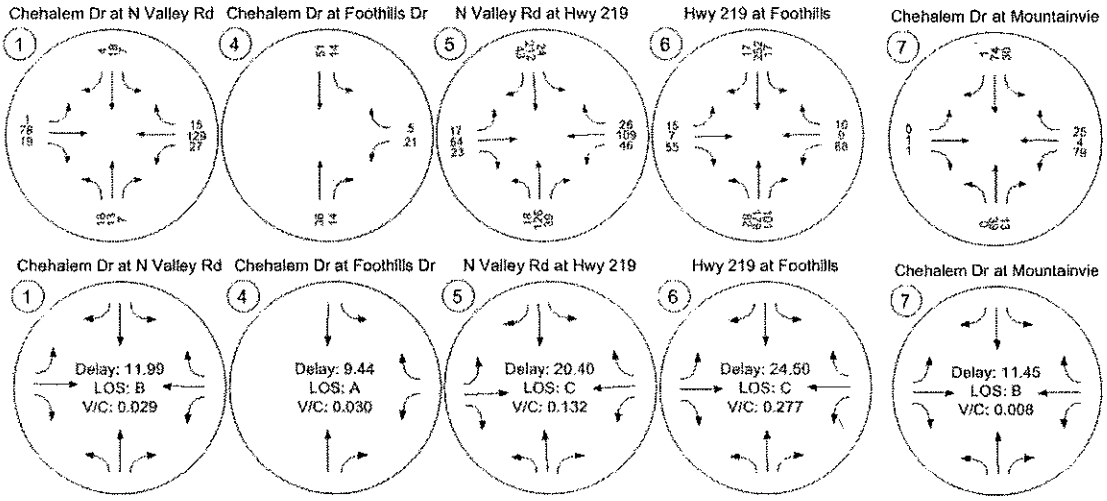


Figure 7 - Existing PM Peak hour Counts and Metrics

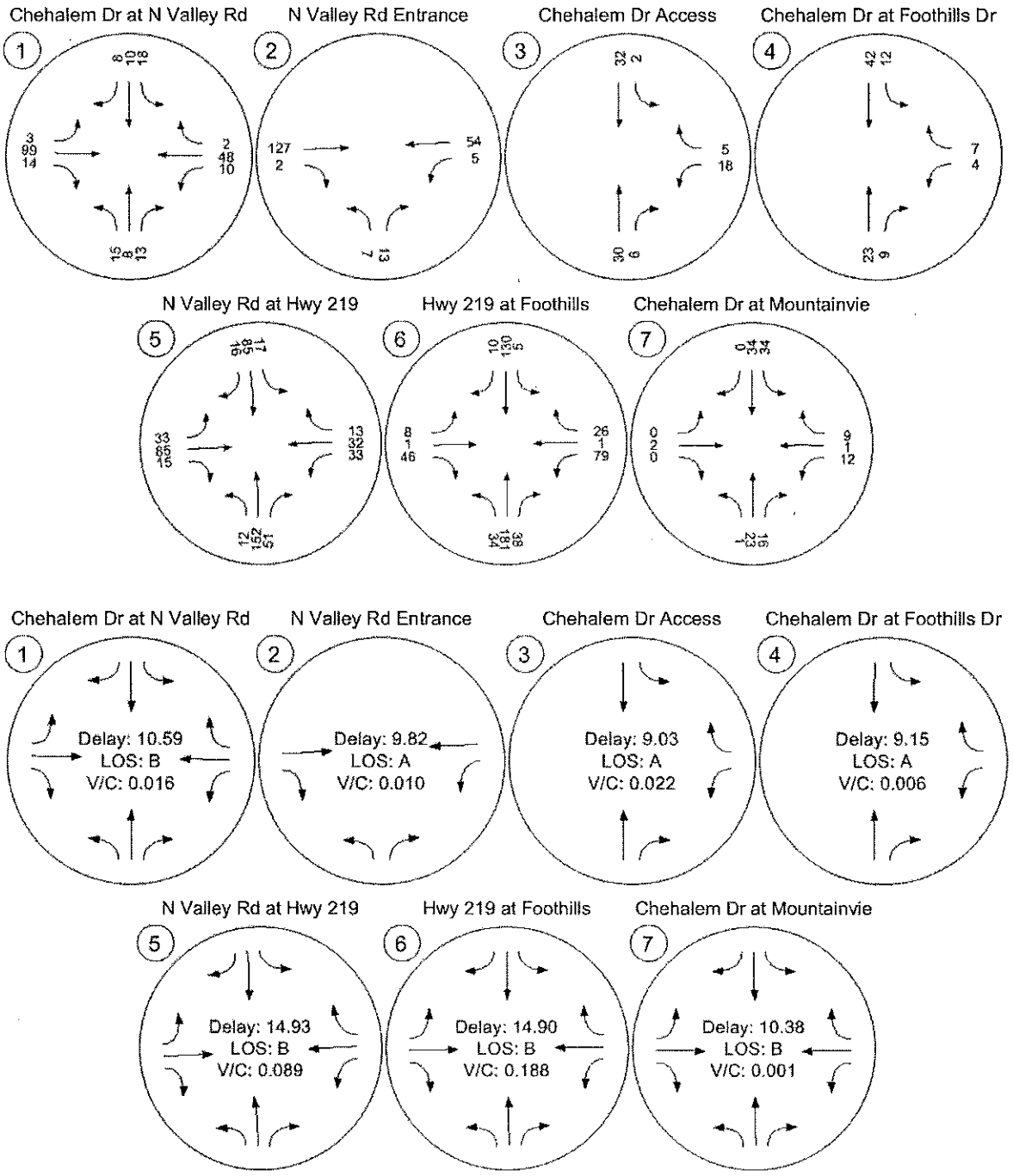


Figure 8 - 2017 AM Peak hour Counts and Metrics with Gracie's Landing

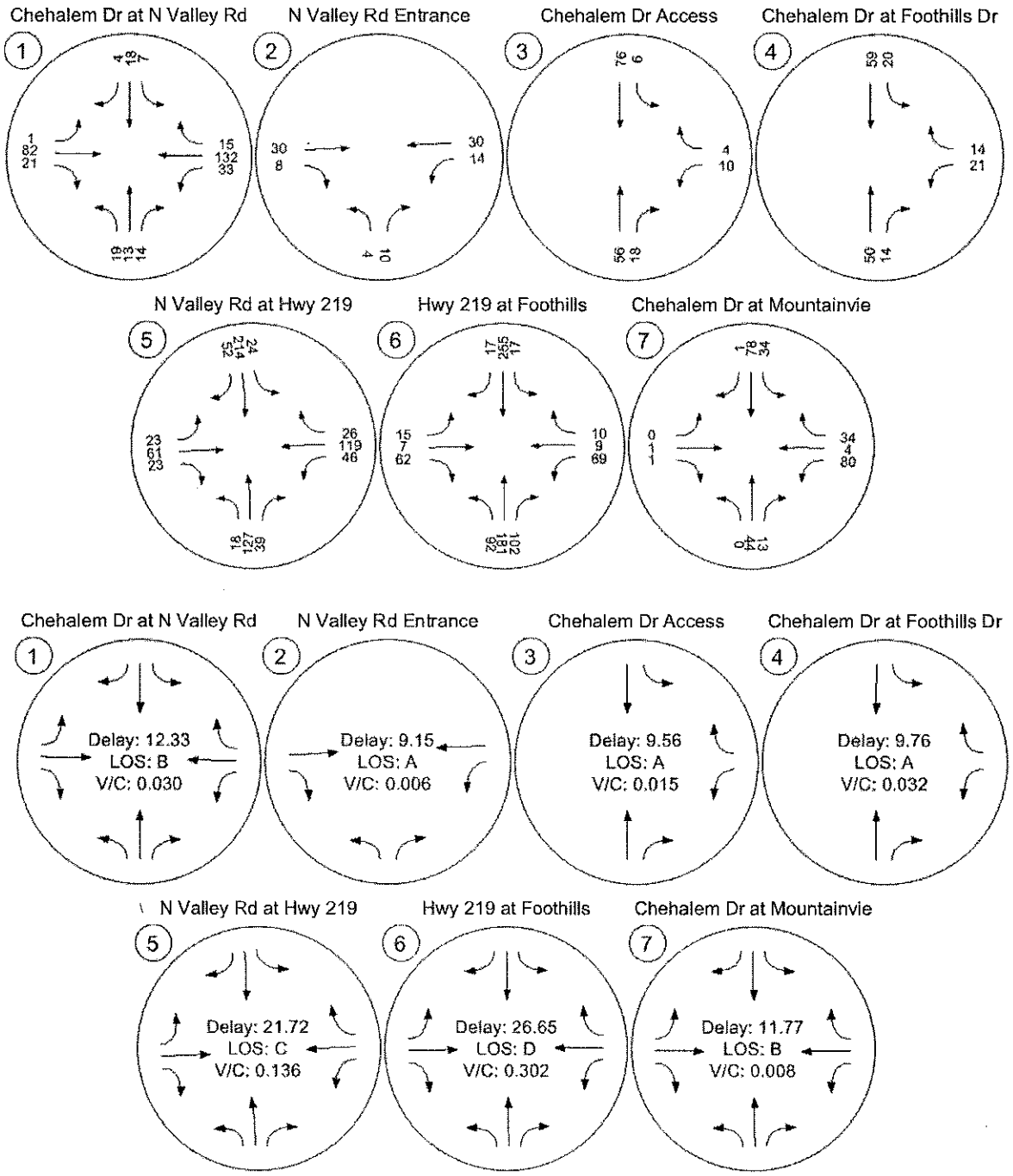


Figure 9 - 2017 PM Peak hour Counts and Metrics with Gracie's Landing

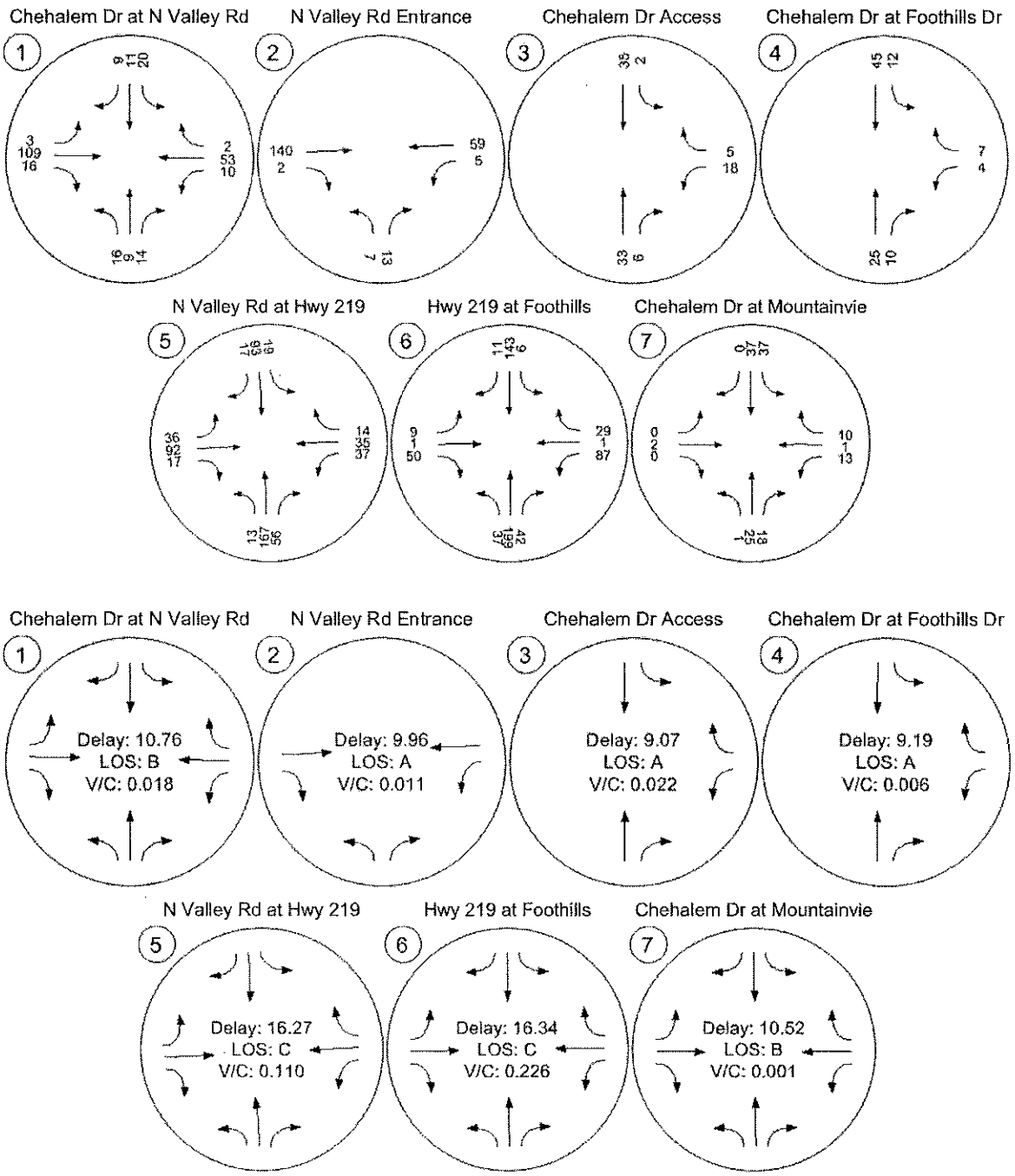


Figure 10 - 2027 AM Peak hour Counts and Metrics with Gracie's Landing

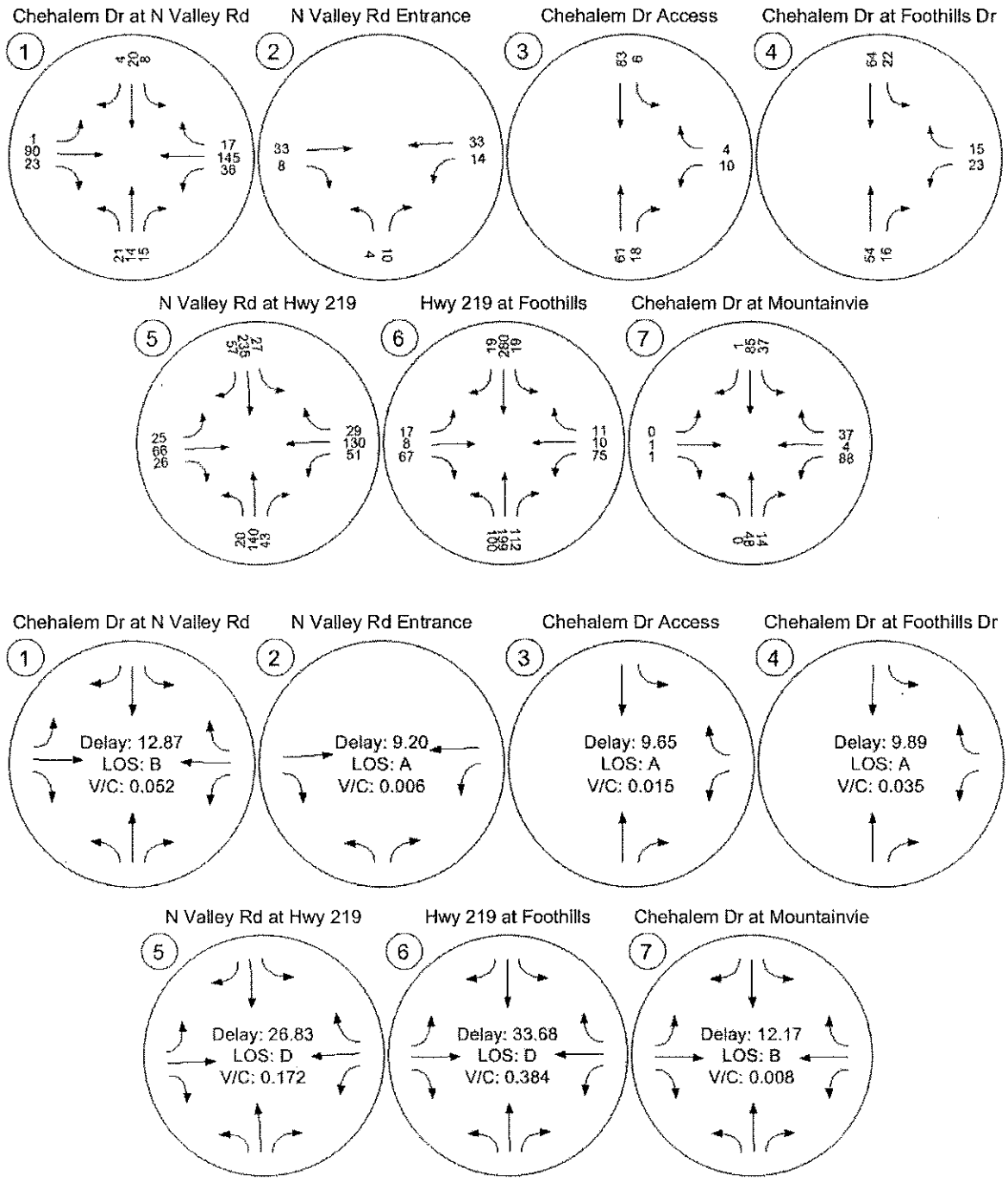


Figure 11 - 2027 PM Peak hour Counts and Metrics with Gracie's Landing

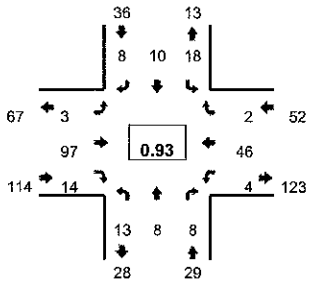
Type of peak hour being reported: Intersection Peak

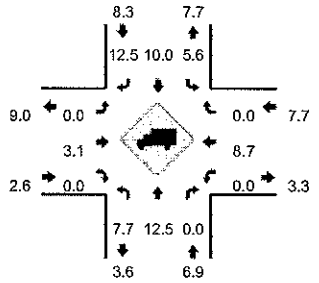
Method for determining peak hour: Total Entering Volume

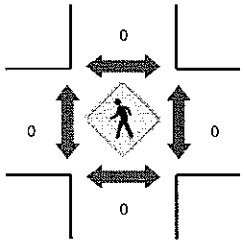
LOCATION: NE Chehalem Dr -- NE North Valley Rd
CITY/STATE: Newberg, OR

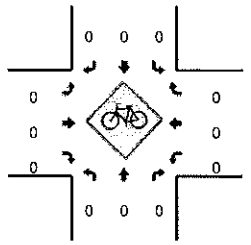
QC JOB #: 13781203
DATE: Thu, Apr 14 2016

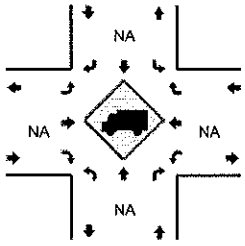
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

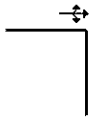


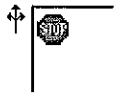


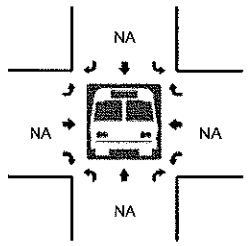












5-Min Count Period Beginning At	NE Chehalem Dr (Northbound)				NE Chehalem Dr (Southbound)				NE North Valley Rd (Eastbound)				NE North Valley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	2	1	0	2	1	0	0	0	13	1	0	1	2	0	0	25	
7:05 AM	0	0	2	0	3	0	0	0	1	11	2	0	0	2	0	0	21	
7:10 AM	1	1	1	0	1	0	1	0	0	6	1	0	0	3	0	0	15	
7:15 AM	1	2	1	0	1	1	2	0	1	7	0	0	0	5	0	0	21	
7:20 AM	1	1	0	0	2	0	1	0	0	11	2	0	0	2	0	0	20	
7:25 AM	2	0	1	0	0	1	0	0	0	7	0	0	0	2	0	0	13	
7:30 AM	1	1	0	0	2	0	0	0	1	11	0	0	0	9	0	0	25	
7:35 AM	2	1	0	0	1	0	1	0	0	7	1	0	0	5	0	0	18	
7:40 AM	0	0	0	0	2	2	1	0	0	4	0	0	0	2	0	0	11	
7:45 AM	1	0	2	0	2	0	0	0	0	9	2	0	2	6	0	0	24	
7:50 AM	2	0	0	0	1	3	0	0	0	9	2	0	1	4	0	0	22	
7:55 AM	0	0	0	0	1	2	2	0	0	2	3	0	0	4	2	0	16	231
8:00 AM	1	0	1	0	0	0	1	0	0	6	2	0	0	1	1	0	13	219
8:05 AM	1	1	0	0	2	2	0	0	0	3	0	0	0	3	0	0	12	210
8:10 AM	0	0	0	0	1	2	1	0	0	8	2	0	0	1	0	0	15	210
8:15 AM	1	0	2	0	1	3	1	0	0	11	0	0	0	5	1	0	25	214
8:20 AM	0	1	1	0	2	1	0	0	0	4	2	0	1	5	0	0	17	211
8:25 AM	0	1	2	0	0	1	0	0	0	9	1	0	0	1	2	0	17	215
8:30 AM	0	0	1	0	1	1	0	0	0	9	0	0	1	5	0	0	18	208
8:35 AM	0	0	1	0	0	1	0	0	0	6	0	0	0	3	0	0	11	201
8:40 AM	1	1	0	0	2	0	0	0	1	3	3	0	0	2	0	0	13	203
8:45 AM	0	1	0	0	1	0	0	0	0	4	0	0	0	0	0	0	6	185
8:50 AM	1	0	0	0	1	2	0	0	0	0	0	0	1	7	1	0	13	176
8:55 AM	0	3	0	0	2	2	2	0	0	7	1	0	0	7	1	0	25	185

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	0	8	0	16	20	8	0	0	80	28	0	12	56	8	0	248
Heavy Trucks	0	0	0		0	4	0		0	4	0		0	4	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:02 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

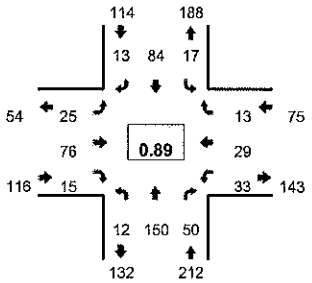
Type of peak hour being reported: Intersection Peak

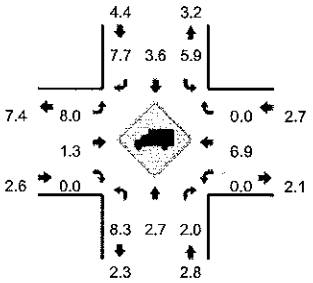
Method for determining peak hour: Total Entering Volume

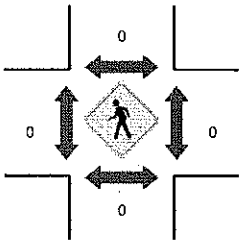
LOCATION: Hwy 219 -- NE North Valley Rd
CITY/STATE: Newberg, OR

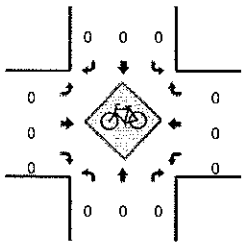
QC JOB #: 13781201
DATE: Thu, Apr 14 2016

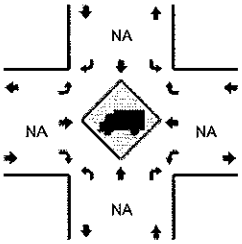
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

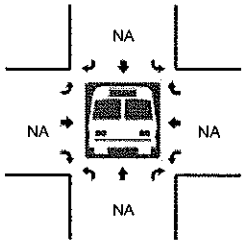












5-Min Count Period Beginning At	Hwy 219 (Northbound)				Hwy 219 (Southbound)				NE North Valley Rd (Eastbound)				NE North Valley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	13	4	0	1	7	1	0	4	9	1	0	1	3	2	0	47	
7:05 AM	0	12	3	0	2	6	0	0	3	11	1	0	1	0	0	0	39	
7:10 AM	1	9	5	0	2	2	1	0	6	4	2	0	0	2	3	0	37	
7:15 AM	2	18	1	0	1	3	1	0	0	6	1	0	1	2	0	0	36	
7:20 AM	0	22	2	0	0	7	1	0	4	6	3	0	1	1	1	0	48	
7:25 AM	1	10	3	0	0	3	1	0	4	6	1	0	4	2	0	0	35	
7:30 AM	2	17	2	0	2	8	1	0	1	11	0	0	3	4	0	0	51	
7:35 AM	1	13	8	0	1	9	1	0	3	7	0	0	2	3	1	0	49	
7:40 AM	2	17	2	0	2	7	1	0	0	5	2	0	3	2	2	0	45	
7:45 AM	1	12	4	0	4	7	2	0	3	4	2	0	1	4	1	0	45	
7:50 AM	1	8	7	0	2	8	0	0	1	6	1	0	1	3	0	0	38	
7:55 AM	2	7	1	0	1	11	1	0	1	5	1	0	4	4	1	0	39	509
8:00 AM	1	9	6	0	2	6	0	0	2	4	0	0	2	1	1	0	34	496
8:05 AM	0	12	5	0	3	7	2	0	2	7	0	0	5	0	2	0	45	502
8:10 AM	0	12	6	0	0	4	1	0	2	5	3	0	3	0	2	0	38	503
8:15 AM	1	11	4	0	0	7	2	0	2	10	2	0	4	5	2	0	50	517
8:20 AM	2	9	5	0	1	5	1	0	0	6	1	0	5	1	0	0	36	505
8:25 AM	2	3	8	0	2	7	0	0	4	7	3	0	3	3	1	0	43	513
8:30 AM	3	6	7	0	0	5	0	0	5	5	0	0	4	4	0	0	39	501
8:35 AM	0	7	2	0	0	7	1	0	1	7	2	0	2	3	2	0	34	486
8:40 AM	0	11	2	0	0	2	0	0	0	3	0	0	1	0	1	0	20	461
8:45 AM	0	9	1	0	2	3	0	0	0	4	3	0	3	2	0	0	27	443
8:50 AM	1	3	3	0	1	7	0	0	0	2	2	0	2	9	0	0	30	435
8:55 AM	2	9	3	0	2	9	0	0	0	4	1	0	0	4	1	0	35	431

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	188	48	0	20	96	12	0	16	92	8	0	32	36	12	0	580
Heavy Trucks	0	8	0		4	4	0		4	0	0		0	4	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

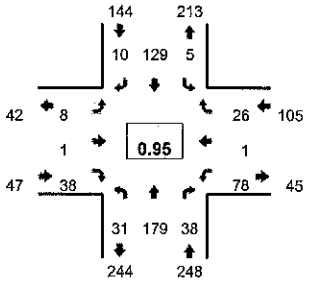
Type of peak hour being reported: Intersection Peak

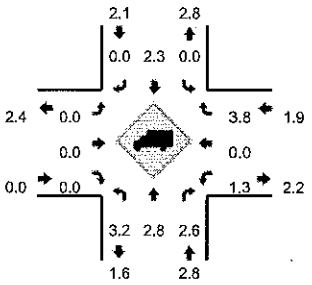
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 219 -- E Foothills Dr
CITY/STATE: Newberg, OR

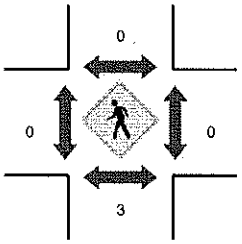
QC JOB #: 13781209
DATE: Thu, Apr 14 2016

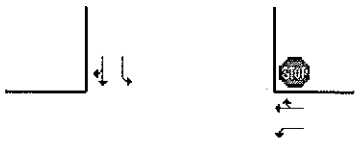
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

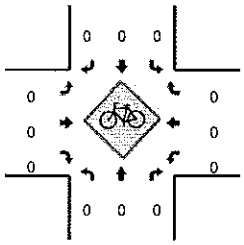


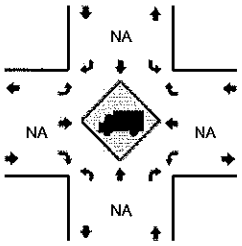


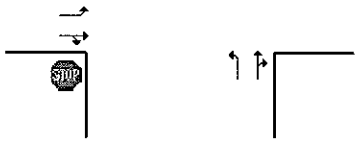
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

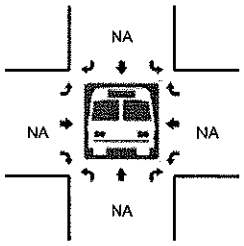












5-Min Count Period Beginning At	Hwy 219 (Northbound)				Hwy 219 (Southbound)				E Foothills Dr (Eastbound)				E Foothills Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	15	0	0	0	9	0	0	1	0	8	0	4	1	1	0	40	
7:05 AM	0	12	1	0	0	8	0	0	0	0	3	0	3	0	2	0	29	
7:10 AM	1	20	1	0	0	5	1	0	0	0	5	0	5	1	1	0	40	
7:15 AM	0	13	3	0	0	2	0	0	1	0	4	0	4	0	3	0	30	
7:20 AM	3	21	2	0	0	11	0	0	1	0	4	0	6	0	3	0	51	
7:25 AM	3	12	5	0	1	11	2	0	0	0	3	0	10	1	2	0	50	
7:30 AM	2	12	2	0	0	12	0	0	0	0	0	0	6	0	6	0	40	
7:35 AM	3	16	0	0	0	10	0	0	0	0	2	0	3	0	5	0	39	
7:40 AM	2	23	2	0	1	12	0	0	0	0	6	0	6	0	2	0	54	
7:45 AM	0	12	4	0	0	11	1	0	1	1	4	0	7	0	0	0	41	
7:50 AM	2	15	3	0	0	11	1	0	1	0	6	0	8	0	1	0	48	
7:55 AM	7	10	3	0	0	13	1	0	0	0	3	0	11	0	0	0	48	510
8:00 AM	0	15	6	0	0	7	1	0	0	0	3	0	2	0	2	1	37	507
8:05 AM	4	11	4	0	1	11	0	0	1	0	5	0	6	0	2	0	45	523
8:10 AM	3	19	3	0	2	8	3	0	1	0	0	0	4	0	1	0	44	527
8:15 AM	2	13	4	0	0	12	1	0	3	0	2	0	8	0	2	0	47	544
8:20 AM	0	13	2	0	0	15	0	0	0	0	0	0	8	0	0	0	38	531
8:25 AM	3	15	3	0	1	12	0	0	0	0	1	0	3	1	0	0	39	520
8:30 AM	3	12	2	0	1	11	0	0	2	0	2	0	4	0	4	0	41	521
8:35 AM	3	8	4	0	0	10	0	0	1	0	1	0	2	0	0	0	29	511
8:40 AM	3	8	3	0	0	4	1	0	0	0	3	0	2	0	2	0	26	483
8:45 AM	2	8	1	0	1	8	0	0	0	1	1	0	6	1	0	0	29	471
8:50 AM	4	10	5	0	0	10	0	0	0	1	3	0	5	1	1	0	40	463
8:55 AM	1	9	4	0	0	14	0	0	1	0	4	0	7	1	1	0	42	457

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	200	36	0	4	136	8	0	8	4	64	0	84	0	12	0	572
Heavy Trucks	0	12	0		0	4	0		0	0	0		0	0	4		20
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:02 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

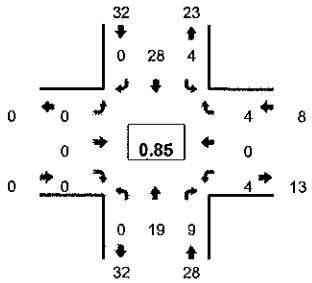
Type of peak hour being reported: Intersection Peak

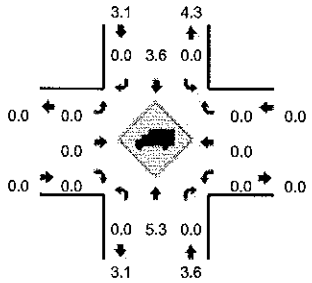
Method for determining peak hour: Total Entering Volume

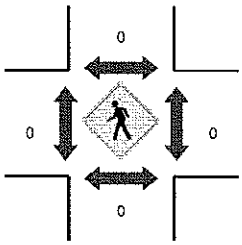
LOCATION: NE Chehalem Dr -- W Foothills Dr
CITY/STATE: Newberg, OR

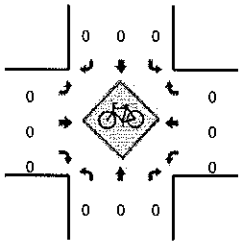
QC JOB #: 13781205
DATE: Thu, Apr 14 2016

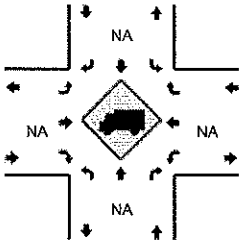
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

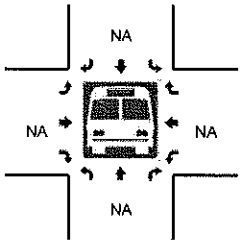












5-Min Count Period Beginning At	NE Chehalem Dr (Northbound)				NE Chehalem Dr (Southbound)				W Foothills Dr (Eastbound)				W Foothills Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	5	0	0	1	2	0	0	0	0	0	0	0	0	0	0	8	
7:05 AM	0	2	1	0	0	2	0	0	0	0	0	0	1	0	0	0	6	
7:10 AM	0	3	1	0	0	1	0	0	0	0	0	0	0	0	1	0	6	
7:15 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	0	0	0	6	
7:20 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	3	
7:25 AM	0	2	1	0	0	2	0	0	0	0	0	0	2	0	1	0	8	
7:30 AM	0	1	2	0	0	0	0	0	0	0	0	0	1	0	2	0	6	
7:35 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	3	
7:40 AM	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	4	
7:45 AM	0	3	2	0	0	4	0	0	0	0	0	0	0	0	0	0	9	
7:50 AM	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4	
7:55 AM	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4	67
8:00 AM	0	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	6	65
8:05 AM	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	4	63
8:10 AM	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	5	62
8:15 AM	0	3	1	0	0	3	0	0	0	0	0	0	0	0	0	0	7	63
8:20 AM	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	68
8:25 AM	0	2	1	0	0	2	0	0	0	0	0	0	0	0	0	0	5	65
8:30 AM	0	1	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5	64
8:35 AM	0	0	2	0	0	1	0	0	0	0	0	0	1	0	0	0	4	65
8:40 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	65
8:45 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	59
8:50 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	59
8:55 AM	0	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	5	60

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	28	4	0	4	44	0	0	0	0	0	0	0	0	0	0	80
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:02 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

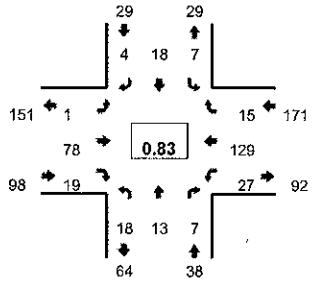
Type of peak hour being reported: Intersection Peak

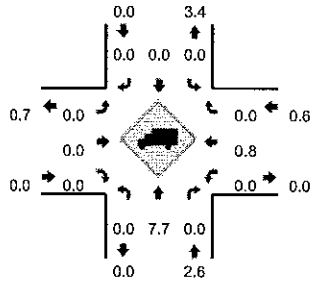
Method for determining peak hour: Total Entering Volume

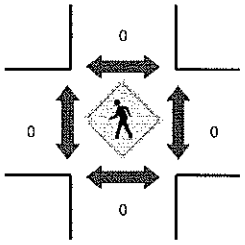
LOCATION: NE Chehalem Dr -- NE North Valley Rd
CITY/STATE: Newberg, OR

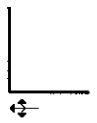
QC JOB #: 13781204
DATE: Wed, Apr 13 2016

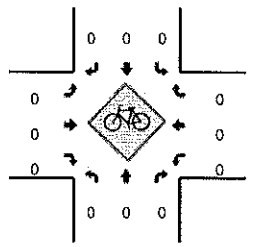
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

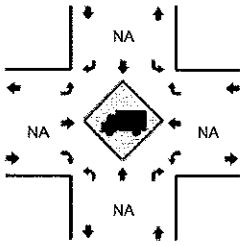


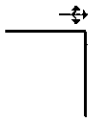


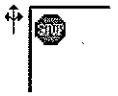


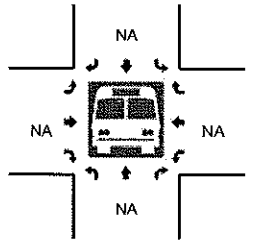












5-Min Count Period Beginning At	NE Chehalem Dr (Northbound)				NE Chehalem Dr (Southbound)				NE North Valley Rd (Eastbound)				NE North Valley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	5	0	0	1	1	0	0	0	5	1	0	0	10	1	0	24	
4:05 PM	2	1	1	0	0	1	0	0	0	6	1	0	1	18	1	0	32	
4:10 PM	1	0	1	0	1	1	0	0	1	10	1	0	1	7	2	0	26	
4:15 PM	1	0	1	0	0	0	0	0	0	6	1	0	0	2	1	0	12	
4:20 PM	0	2	0	0	1	0	0	0	1	5	1	0	1	17	1	0	29	
4:25 PM	2	0	0	0	1	1	0	0	0	10	0	0	0	12	1	0	27	
4:30 PM	1	0	0	0	0	1	2	0	1	7	1	0	0	7	1	0	21	
4:35 PM	0	2	0	0	0	3	0	0	1	8	2	0	1	13	2	0	32	
4:40 PM	4	4	0	0	0	1	1	0	0	5	4	0	0	14	4	0	37	
4:45 PM	0	1	1	0	0	0	0	0	0	3	6	0	6	8	4	0	29	
4:50 PM	1	1	0	0	0	1	0	0	0	5	3	0	1	7	0	0	19	
4:55 PM	2	3	1	0	2	1	2	0	0	5	0	0	1	11	0	0	28	316
5:00 PM	0	1	1	0	1	0	0	0	0	3	0	0	5	12	0	0	23	315
5:05 PM	0	0	1	0	0	3	1	0	0	5	1	0	2	6	0	0	19	302
5:10 PM	4	2	0	0	1	2	0	0	0	3	5	0	0	8	0	0	25	301
5:15 PM	3	1	0	0	0	2	0	0	0	11	2	0	3	13	4	0	39	328
5:20 PM	2	0	0	0	1	0	0	0	0	8	1	0	2	10	3	0	27	326
5:25 PM	2	1	0	0	0	3	0	0	0	3	0	0	2	6	1	0	18	317
5:30 PM	0	2	1	0	0	1	1	0	1	12	4	0	4	9	2	0	37	333
5:35 PM	0	1	0	0	0	0	0	0	0	4	2	0	0	16	0	0	23	324
5:40 PM	3	0	1	0	2	2	0	0	0	7	2	0	2	19	3	0	41	328
5:45 PM	1	1	1	0	0	1	0	0	0	14	0	0	2	7	1	0	28	327
5:50 PM	1	1	1	0	0	3	0	0	0	3	2	0	4	12	1	0	28	336
5:55 PM	2	1	1	0	2	0	0	0	0	6	3	0	1	3	2	0	21	329

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	12	8	0	8	12	4	0	4	92	32	0	24	176	20	0	404
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:02 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

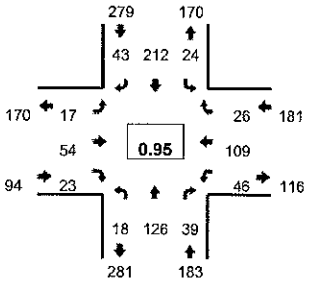
Type of peak hour being reported: Intersection Peak

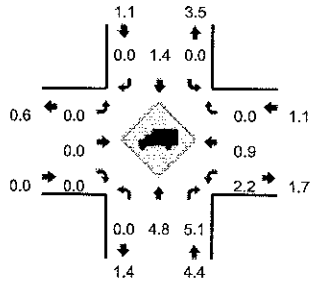
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 219 -- NE North Valley Rd
CITY/STATE: Newberg, OR

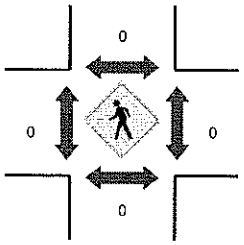
QC JOB #: 13781202
DATE: Wed, Apr 13 2016

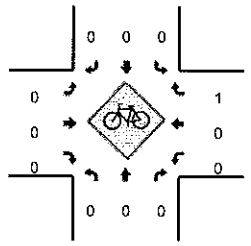
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:40 PM -- 5:55 PM

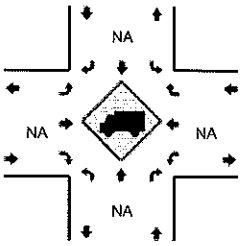


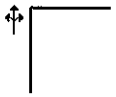


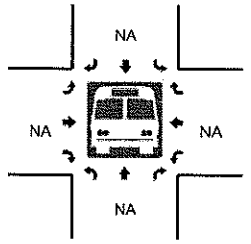
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES











5-Min Count Period Beginning At	Hwy 219 (Northbound)				Hwy 219 (Southbound)				NE North Valley Rd (Eastbound)				NE North Valley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	9	2	0	2	17	1	0	2	1	3	0	5	12	2	0	58	
4:05 PM	2	8	1	0	1	23	3	0	2	3	1	0	1	13	3	0	61	
4:10 PM	2	10	3	0	1	15	1	0	1	8	4	0	5	4	1	0	55	
4:15 PM	2	5	1	0	2	15	1	0	2	5	0	0	2	6	2	0	43	
4:20 PM	1	7	1	0	2	20	4	0	0	5	1	0	0	12	3	0	56	
4:25 PM	1	8	5	0	0	15	3	0	3	4	2	0	5	12	1	0	59	
4:30 PM	0	8	0	0	2	22	1	0	2	8	0	0	2	13	1	0	59	
4:35 PM	4	9	1	0	1	13	6	0	1	5	1	0	3	5	2	0	51	
4:40 PM	4	15	2	0	1	21	5	0	0	3	4	0	4	14	1	0	74	
4:45 PM	1	10	4	0	0	14	3	0	0	2	1	0	3	10	2	0	50	
4:50 PM	3	11	3	0	2	17	1	0	0	2	1	0	2	5	0	0	47	
4:55 PM	2	10	2	0	1	20	4	0	3	6	2	0	7	7	1	0	65	678
5:00 PM	1	16	2	0	2	21	5	1	0	3	2	0	2	8	1	0	64	684
5:05 PM	1	11	2	0	3	14	3	0	1	2	1	0	7	8	2	0	55	678
5:10 PM	2	10	7	0	2	20	4	0	2	2	2	0	2	5	4	0	62	685
5:15 PM	1	12	1	0	2	16	2	0	2	8	0	0	5	15	3	0	67	709
5:20 PM	1	7	3	0	4	13	4	0	1	7	2	0	3	8	2	0	55	708
5:25 PM	0	10	4	0	2	18	2	0	1	2	2	0	3	7	0	0	51	700
5:30 PM	2	14	5	0	0	12	7	0	2	5	3	0	5	8	5	0	68	709
5:35 PM	1	10	3	0	2	13	4	0	1	2	3	0	4	12	2	0	57	715
5:40 PM	3	10	1	0	1	25	1	0	0	6	4	0	2	13	1	0	67	708
5:45 PM	1	10	5	0	2	13	2	0	4	8	2	0	5	12	3	0	67	725
5:50 PM	3	6	4	0	2	27	5	0	0	3	0	0	1	6	2	0	59	737
5:55 PM	2	11	4	0	1	8	2	0	0	10	2	0	5	4	1	0	50	722

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	104	40	0	20	260	32	0	16	68	24	0	32	124	24	0	772
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	1		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

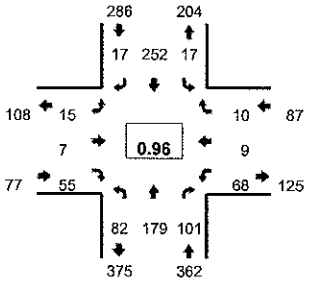
Type of peak hour being reported: Intersection Peak

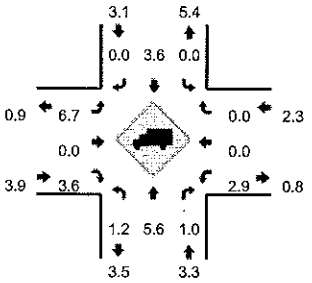
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 219 -- E Foothills Dr
CITY/STATE: Newberg, OR

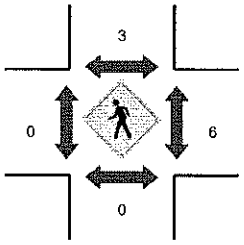
QC JOB #: 13781210
DATE: Wed, Apr 13 2016

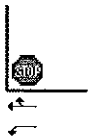
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

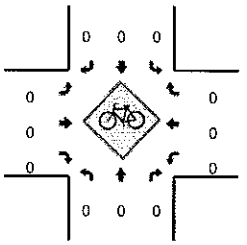


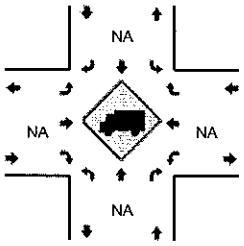


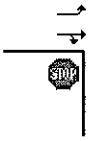
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

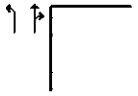


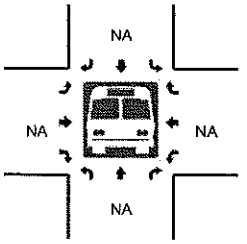












5-Min Count Period Beginning At	Hwy 219 (Northbound)				Hwy 219 (Southbound)				E Foothills Dr (Eastbound)				E Foothills Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	12	8	0	2	24	1	0	1	2	9	0	8	0	1	0	73	
4:05 PM	6	10	5	0	3	24	1	0	1	1	6	0	3	1	0	0	61	
4:10 PM	4	14	9	0	1	21	0	0	2	0	6	0	13	1	0	0	71	
4:15 PM	2	8	5	0	2	15	0	0	0	0	3	0	5	0	1	0	41	
4:20 PM	2	9	5	0	0	21	1	0	1	0	1	0	4	0	0	0	44	
4:25 PM	4	16	7	0	2	19	1	0	0	1	4	0	3	1	1	0	59	
4:30 PM	9	9	5	0	2	29	1	0	1	1	4	0	10	1	0	0	72	
4:35 PM	9	18	10	0	1	16	1	0	0	0	1	0	6	0	0	0	62	
4:40 PM	6	21	14	0	1	18	3	0	0	1	5	0	3	0	0	0	72	
4:45 PM	9	14	10	0	2	20	3	0	2	1	8	0	5	0	2	0	76	
4:50 PM	7	15	8	0	1	20	1	0	2	1	3	0	4	0	0	0	62	
4:55 PM	5	16	7	0	1	22	0	0	1	1	6	0	5	1	0	0	65	758
5:00 PM	4	15	7	0	0	26	1	0	1	0	6	0	6	0	0	0	66	751
5:05 PM	5	13	10	0	1	17	1	0	1	1	3	0	5	3	0	0	60	750
5:10 PM	6	17	5	0	4	20	0	0	2	1	5	0	8	0	2	0	70	749
5:15 PM	8	12	12	0	1	24	3	0	2	0	6	0	6	2	2	0	78	786
5:20 PM	7	14	6	0	2	22	0	0	1	0	4	0	4	0	3	0	63	805
5:25 PM	7	15	7	0	1	18	3	0	2	0	4	0	6	2	1	0	66	812
5:30 PM	3	20	6	0	4	18	1	0	2	0	4	0	5	2	0	0	65	805
5:35 PM	3	17	7	0	1	19	0	0	0	1	5	0	9	1	1	0	64	807
5:40 PM	3	11	8	0	2	25	2	0	1	2	4	0	1	0	2	0	61	796
5:45 PM	4	13	10	0	2	20	1	0	1	1	7	0	1	0	1	0	61	781
5:50 PM	3	13	7	0	1	31	3	0	1	0	5	0	5	1	2	0	72	791
5:55 PM	4	17	7	0	0	8	0	0	1	0	2	0	9	0	2	0	50	776

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	172	92	0	28	264	12	0	20	4	60	0	72	8	28	0	844
Heavy Trucks	0	4	0		0	8	0		4	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:02 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

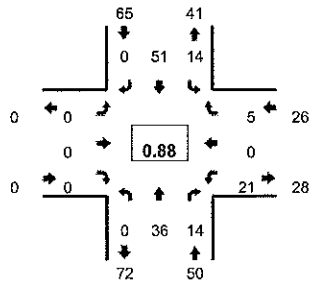
Type of peak hour being reported: Intersection Peak

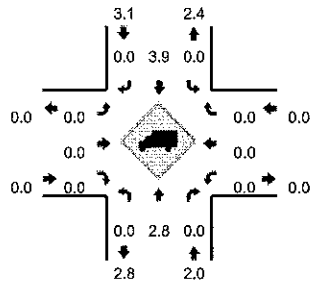
Method for determining peak hour: Total Entering Volume

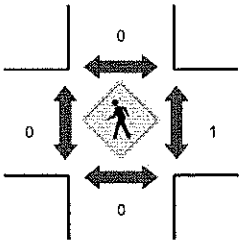
LOCATION: NE Chehalem Dr -- W Foothills Dr
CITY/STATE: Newberg, OR

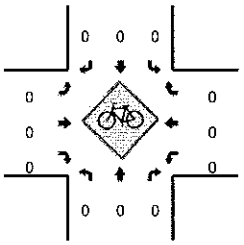
QC JOB #: 13781206
DATE: Wed, Apr 13 2016

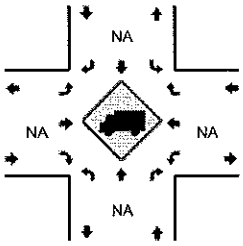
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

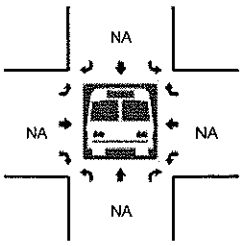












5-Min Count Period Beginning At	NE Chehalem Dr (Northbound)				NE Chehalem Dr (Southbound)				W Foothills Dr (Eastbound)				W Foothills Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	4	3	0	0	2	0	0	0	0	0	0	5	0	1	0	15	
4:05 PM	0	3	2	0	1	2	0	0	0	0	0	0	4	0	1	0	13	
4:10 PM	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	6	
4:15 PM	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	
4:20 PM	0	2	1	0	0	2	0	0	0	0	0	0	0	0	1	0	6	
4:25 PM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3	
4:30 PM	0	1	1	0	0	2	0	0	0	0	0	0	3	0	0	0	7	
4:35 PM	0	3	1	0	0	5	0	0	0	0	0	0	2	0	1	0	12	
4:40 PM	0	5	2	0	1	3	0	0	0	0	0	0	2	0	1	0	14	
4:45 PM	0	1	0	0	2	7	0	0	0	0	0	0	2	0	0	0	12	
4:50 PM	0	3	0	0	1	5	0	0	0	0	0	0	5	0	0	0	14	
4:55 PM	0	5	2	0	1	2	0	0	0	0	0	0	2	0	1	0	13	119
5:00 PM	0	0	1	0	1	2	0	0	0	0	0	0	2	0	1	0	7	111
5:05 PM	0	2	2	0	0	5	0	0	0	0	0	0	0	0	0	0	9	107
5:10 PM	0	7	0	0	0	7	0	0	0	0	0	0	2	0	0	0	16	117
5:15 PM	0	3	2	0	2	5	0	0	0	0	0	0	1	0	0	0	13	126
5:20 PM	0	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	5	125
5:25 PM	0	3	0	0	2	4	0	0	0	0	0	0	3	0	0	0	12	134
5:30 PM	0	3	2	0	3	5	0	0	0	0	0	0	0	0	1	0	14	141
5:35 PM	0	0	1	0	0	3	0	0	0	0	0	0	1	0	0	0	5	134
5:40 PM	0	2	3	0	2	4	0	0	0	0	0	0	2	0	2	0	15	135
5:45 PM	0	2	1	0	0	3	0	0	0	0	0	0	0	0	1	0	7	130
5:50 PM	0	1	1	0	1	8	0	0	0	0	0	0	0	0	1	0	12	128
5:55 PM	0	3	1	0	2	2	0	0	0	0	0	0	0	0	1	0	9	124

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	36	8	0	16	60	0	0	0	0	0	0	36	0	4	0	160
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 4/20/2016 11:02 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

North Valley Rd & Chehalem Dr
January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2011														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2011 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

North Valley Rd / Bell Rd & OR 219 (Hwy 140) Hillsboro-Silverton Highway
January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2013														
TURNING MOVEMENTS	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2013 TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0
YEAR: 2012														
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	1	0	0	1	1	0	1
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	1	1	2	0	1	0	2	0	1	1	2	0	1
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2011 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2010														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2010 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	2	4	6	0	2	0	5	1	5	1	6	0	1

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Foothills Dr & OR 219 (Hwy 140) Hillsboro-Silverton Highway
January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2014														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2014 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2013														
ANGLE	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2013 TOTAL	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2012 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2011														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2011 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	3	4	0	1	0	3	1	3	1	4	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Chehalem Dr & Foothills Dr
January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing AM Traffic.pdf

Scenario 1: Existing AM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	SBT	0.016	10.4	B
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.005	8.9	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.085	14.5	B
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.180	14.5	B
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.001	10.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Chehalem Dr at N Valley Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Base Volume Input [veh/h]	13	8	8	18	10	8	3	97	14	4	46	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	8	8	18	10	8	3	97	14	4	46	2
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	4	2	2	5	3	2	1	27	4	1	13	1
Total Analysis Volume [veh/h]	14	9	9	20	11	9	3	108	16	4	51	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	no	no		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	no	no		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.05	10.32	9.08	10.08	10.42	8.82	7.35	0.00	0.00	7.50	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.13	0.13	0.16	0.16	0.16	0.27	0.27	0.27	0.12	0.12	0.12
95th-Percentile Queue Length [ft]	3.23	3.23	3.23	4.07	4.07	4.07	6.76	6.76	6.76	3.08	3.08	3.08
d_A, Approach Delay [s/veh]	9.85			9.89			0.17			0.53		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.98											
Intersection LOS	B											

Intersection Level Of Service Report
#4: Chehalem Dr at Foothills Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Base Volume Input [veh/h]	19	9	4	28	4	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	9	4	28	4	4
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	6	3	1	9	1	1
Total Analysis Volume [veh/h]	23	11	5	34	5	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.27	0.00	8.89	8.46
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.08	0.08	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	1.88	1.88	0.77	0.77
d_A, Approach Delay [s/veh]	0.00		0.93		8.68	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.48					
Intersection LOS	A					

Intersection Level Of Service Report
#5: N Valley Rd at Hwy 219

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.085

Intersection Setup

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Base Volume Input [veh/h]	12	150	50	17	84	13	25	76	15	33	29	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	150	50	17	84	13	25	76	15	33	29	13
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	3	44	15	5	24	4	7	22	4	10	8	4
Total Analysis Volume [veh/h]	14	174	58	20	98	15	29	88	17	38	34	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.06	0.17	0.02	0.09	0.06	0.02
d_M, Delay for Movement [s/veh]	7.48	0.00	0.00	7.76	0.00	0.00	14.21	14.10	10.95	14.47	13.16	10.71
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
95th-Percentile Queue Length [veh]	0.60	0.60	0.60	0.33	0.33	0.33	0.96	0.96	0.96	0.60	0.60	0.60
95th-Percentile Queue Length [ft]	15.10	15.10	15.10	8.36	8.36	8.36	23.94	23.94	23.94	14.91	14.91	14.91
d_A, Approach Delay [s/veh]	0.43			1.17			13.72			13.31		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.43											
Intersection LOS	B											

Intersection Level Of Service Report
#6: Hwy 219 at Foothills

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.180

Intersection Setup

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Base Volume Input [veh/h]	31	179	38	5	129	10	8	1	38	78	1	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	179	38	5	129	10	8	1	38	78	1	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	8	49	10	1	35	3	2	0	10	21	0	7
Total Analysis Volume [veh/h]	34	195	41	5	140	11	9	1	41	85	1	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.05	0.18	0.00	0.03
d_M, Delay for Movement [s/veh]	7.60	0.00	0.00	7.73	0.00	0.00	12.78	12.83	9.34	14.47	14.22	11.25
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	B
95th-Percentile Queue Length [veh]	0.70	0.70	0.70	0.40	0.40	0.40	0.21	0.21	0.21	0.81	0.81	0.81
95th-Percentile Queue Length [ft]	17.51	17.51	17.51	10.00	10.00	10.00	5.32	5.32	5.32	20.32	20.32	20.32
d_A, Approach Delay [s/veh]	0.96			0.25			10.02			13.68		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	4.01											
Intersection LOS	B											

Intersection Level Of Service Report
#7: Chehalem Dr at Mountainview Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Base Volume Input [veh/h]	1	22	16	24	30	0	0	2	0	12	1	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	22	16	24	30	0	0	2	0	12	1	6
Peak Hour Factor	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	0	7	5	8	10	0	0	1	0	4	0	2
Total Analysis Volume [veh/h]	1	30	21	32	40	0	0	3	0	16	1	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01
d_M, Delay for Movement [s/veh]	7.30	0.00	0.00	7.37	0.00	0.00	9.55	10.04	8.52	9.61	10.07	8.63
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh]	0.10	0.10	0.10	0.15	0.15	0.15	0.01	0.01	0.01	0.09	0.09	0.09
95th-Percentile Queue Length [ft]	2.58	2.58	2.58	3.65	3.65	3.65	0.31	0.31	0.31	2.25	2.25	2.25
d_A, Approach Delay [s/veh]	0.14			3.28			10.04			9.31		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	3.33											
Intersection LOS	B											

Chehalem at N Valley TIA

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Report File: J:\...\Existing AM Traffic.pdf

Scenario 1: Existing AM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	13	8	8	18	10	8	3	97	14	4	46	2	231

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	19	9	4	28	4	4	68

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	12	150	50	17	84	13	25	76	15	33	29	13	517

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	31	179	38	5	129	10	8	1	38	78	1	26	544

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	1	22	16	24	30	0	0	2	0	12	1	6	114

Chehalem at N Valley TIA

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Report File: J:\...\Existing AM Traffic.pdf

Scenario 1: Existing AM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	Final Base	13	8	8	18	10	8	3	97	14	4	46	2	231
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**13**	**8**	**8**	**18**	**10**	**8**	**3**	**97**	**14**	**4**	**46**	**2**	**231**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	Final Base	19	9	4	28	4	4	68
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**19**	**9**	**4**	**28**	**4**	**4**	**68**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	Final Base	12	150	50	17	84	13	25	76	15	33	29	13	517
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**12**	**150**	**50**	**17**	**84**	**13**	**25**	**76**	**15**	**33**	**29**	**13**	**517**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	Final Base	31	179	38	5	129	10	8	1	38	78	1	26	544
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**31**	**179**	**38**	**5**	**129**	**10**	**8**	**1**	**38**	**78**	**1**	**26**	**544**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	Final Base	1	22	16	24	30	0	0	2	0	12	1	6	114
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**22**	**16**	**24**	**30**	**0**	**0**	**2**	**0**	**12**	**1**	**6**	**114**

Signal Warrants Report For Intersection #1: Chehalem Dr at N Valley Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	1	2	1	1
2	1	2	1	1
3	2	3	1	1
4	2	3	1	1
5	2	5	1	1
6	5	11	3	4
7	6	13	3	4
8	10	23	6	7
9	18	40	10	13
10	19	41	10	13
11	19	41	10	13
12	20	44	11	14
13	22	49	12	15
14	23	51	13	16
15	23	51	13	16
16	25	55	14	17
17	31	68	17	22
18	33	72	18	23
19	35	78	20	24
20	40	87	22	27
21	42	91	23	29
22	49	107	27	34
23	50	109	28	35
24	52	114	29	36

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	3	2	2	No	No	No	No	No	No	No	No	No	No
2	2	3	2	2	No	No	No	No	No	No	No	No	No	No
3	2	5	2	2	No	No	No	No	No	No	No	No	No	No
4	2	5	2	2	No	No	No	No	No	No	No	No	No	No
5	2	7	2	2	No	No	No	No	No	No	No	No	No	No
6	2	16	2	7	No	No	No	No	No	No	No	No	No	No
7	2	19	2	7	No	No	No	No	No	No	No	No	No	No
8	2	33	2	13	No	No	No	No	No	No	No	No	No	No
9	2	58	2	23	No	No	No	No	No	No	No	No	No	No
10	2	60	2	23	No	No	No	No	No	No	No	No	No	No
11	2	60	2	23	No	No	No	No	No	No	No	No	No	No
12	2	64	2	25	No	No	No	No	No	No	No	No	No	No
13	2	71	2	27	No	No	No	No	No	No	No	No	No	No
14	2	74	2	29	No	No	No	No	No	No	No	No	No	No
15	2	74	2	29	No	No	No	No	No	No	No	No	No	No
16	2	80	2	31	No	No	No	No	No	No	No	No	No	No
17	2	99	2	39	No	No	No	No	No	No	No	No	No	No
18	2	105	2	41	No	No	No	No	No	No	No	No	No	No
19	2	113	2	44	No	No	No	No	No	No	No	No	No	No
20	2	127	2	49	No	No	No	No	No	No	No	No	No	No
21	2	133	2	52	No	No	No	No	No	No	No	No	No	No
22	2	156	2	61	No	No	No	No	No	No	No	No	No	No
23	2	159	2	63	No	No	No	No	No	No	No	No	No	No
24	2	166	2	65	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9	9.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04	0:05
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	29	36
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	231	231
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #4: Chehalem Dr at Foothills Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	32	28	8
2	31	27	8
3	30	26	8
4	26	22	6
5	24	21	6
6	22	19	5
7	20	18	5
8	19	17	5
9	15	13	4
10	14	13	4
11	14	13	4
12	14	12	3
13	12	11	3
14	12	10	3
15	12	10	3
16	11	10	3
17	6	6	2
18	4	3	1
19	3	3	1
20	1	1	0
21	1	1	0
22	1	1	0
23	1	1	0
24	1	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	60	1	8	No	No	No	No	No	No	No	No	No	No
2	2	58	1	8	No	No	No	No	No	No	No	No	No	No
3	2	56	1	8	No	No	No	No	No	No	No	No	No	No
4	2	48	1	6	No	No	No	No	No	No	No	No	No	No
5	2	45	1	6	No	No	No	No	No	No	No	No	No	No
6	2	41	1	5	No	No	No	No	No	No	No	No	No	No
7	2	38	1	5	No	No	No	No	No	No	No	No	No	No
8	2	36	1	5	No	No	No	No	No	No	No	No	No	No
9	2	28	1	4	No	No	No	No	No	No	No	No	No	No
10	2	27	1	4	No	No	No	No	No	No	No	No	No	No
11	2	27	1	4	No	No	No	No	No	No	No	No	No	No
12	2	26	1	3	No	No	No	No	No	No	No	No	No	No
13	2	23	1	3	No	No	No	No	No	No	No	No	No	No
14	2	22	1	3	No	No	No	No	No	No	No	No	No	No
15	2	22	1	3	No	No	No	No	No	No	No	No	No	No
16	2	21	1	3	No	No	No	No	No	No	No	No	No	No
17	2	12	1	2	No	No	No	No	No	No	No	No	No	No
18	2	7	1	1	No	No	No	No	No	No	No	No	No	No
19	2	6	1	1	No	No	No	No	No	No	No	No	No	No
20	2	2	1	0	No	No	No	No	No	No	No	No	No	No
21	2	2	1	0	No	No	No	No	No	No	No	No	No	No
22	2	2	1	0	No	No	No	No	No	No	No	No	No	No
23	2	2	1	0	No	No	No	No	No	No	No	No	No	No
24	2	2	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	8
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	68
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection #5: N Valley Rd at Hwy 219

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	114	212	75	116
2	109	204	72	111
3	107	199	71	109
4	91	170	60	93
5	87	161	57	88
6	78	144	51	79
7	72	134	47	73
8	68	127	45	70
9	55	102	36	56
10	51	95	34	52
11	51	95	34	52
12	49	91	32	50
13	44	83	29	45
14	41	76	27	42
15	41	76	27	42
16	40	74	26	41
17	23	42	15	23
18	13	23	8	13
19	11	21	8	12
20	5	8	3	5
21	3	6	2	3
22	3	6	2	3
23	2	4	2	2
24	2	4	2	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	326	2	191	No	No	No	No	No	No	No	No	No	No
2	2	313	2	183	No	No	No	No	No	No	No	No	No	No
3	2	306	2	180	No	No	No	No	No	No	No	No	No	No
4	2	261	2	153	No	No	No	No	No	No	No	No	No	No
5	2	248	2	145	No	No	No	No	No	No	No	No	No	No
6	2	222	2	130	No	No	No	No	No	No	No	No	No	No
7	2	206	2	120	No	No	No	No	No	No	No	No	No	No
8	2	195	2	115	No	No	No	No	No	No	No	No	No	No
9	2	157	2	92	No	No	No	No	No	No	No	No	No	No
10	2	146	2	86	No	No	No	No	No	No	No	No	No	No
11	2	146	2	86	No	No	No	No	No	No	No	No	No	No
12	2	140	2	82	No	No	No	No	No	No	No	No	No	No
13	2	127	2	74	No	No	No	No	No	No	No	No	No	No
14	2	117	2	69	No	No	No	No	No	No	No	No	No	No
15	2	117	2	69	No	No	No	No	No	No	No	No	No	No
16	2	114	2	67	No	No	No	No	No	No	No	No	No	No
17	2	65	2	38	No	No	No	No	No	No	No	No	No	No
18	2	36	2	21	No	No	No	No	No	No	No	No	No	No
19	2	32	2	20	No	No	No	No	No	No	No	No	No	No
20	2	13	2	8	No	No	No	No	No	No	No	No	No	No
21	2	9	2	5	No	No	No	No	No	No	No	No	No	No
22	2	9	2	5	No	No	No	No	No	No	No	No	No	No
23	2	6	2	4	No	No	No	No	No	No	No	No	No	No
24	2	6	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.3	13.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:16	0:26
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	75	116
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	517	517
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #6: Hwy 219 at Foothills

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	248	144	105	47
2	238	138	101	45
3	233	135	99	44
4	198	115	84	38
5	188	109	80	36
6	169	98	71	32
7	156	91	66	30
8	149	86	63	28
9	119	69	50	23
10	112	65	47	21
11	112	65	47	21
12	107	62	45	20
13	97	56	41	18
14	89	52	38	17
15	89	52	38	17
16	87	50	37	16
17	50	29	21	9
18	27	16	12	5
19	25	14	11	5
20	10	6	4	2
21	7	4	3	1
22	7	4	3	1
23	5	3	2	1
24	5	3	2	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	392	2	152	No	No	No	Yes	No	No	No	No	No	No
2	2	376	2	146	No	No	No	Yes	No	No	No	No	No	No
3	2	368	2	143	No	No	No	Yes	No	No	No	No	No	No
4	2	313	2	122	No	No	No	No	No	No	No	No	No	No
5	2	297	2	116	No	No	No	No	No	No	No	No	No	No
6	2	267	2	103	No	No	No	No	No	No	No	No	No	No
7	2	247	2	96	No	No	No	No	No	No	No	No	No	No
8	2	235	2	91	No	No	No	No	No	No	No	No	No	No
9	2	188	2	73	No	No	No	No	No	No	No	No	No	No
10	2	177	2	68	No	No	No	No	No	No	No	No	No	No
11	2	177	2	68	No	No	No	No	No	No	No	No	No	No
12	2	169	2	65	No	No	No	No	No	No	No	No	No	No
13	2	153	2	59	No	No	No	No	No	No	No	No	No	No
14	2	141	2	55	No	No	No	No	No	No	No	No	No	No
15	2	141	2	55	No	No	No	No	No	No	No	No	No	No
16	2	137	2	53	No	No	No	No	No	No	No	No	No	No
17	2	79	2	30	No	No	No	No	No	No	No	No	No	No
18	2	43	2	17	No	No	No	No	No	No	No	No	No	No
19	2	39	2	16	No	No	No	No	No	No	No	No	No	No
20	2	16	2	6	No	No	No	No	No	No	No	No	No	No
21	2	11	2	4	No	No	No	No	No	No	No	No	No	No
22	2	11	2	4	No	No	No	No	No	No	No	No	No	No
23	2	8	2	3	No	No	No	No	No	No	No	No	No	No
24	2	8	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.7	10
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:23	0:07
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	105	47
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	544	544
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing AM Traffic.pdf

Scenario 1: Existing AM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Zone	Single Family Homes	ITE 210	Single Family Homes	1.000	0.000	50.00	50.00	0	0	0	0.00
					Added Trips Total			**0**	**0**	**0**	**0.00**

Chehalem at N Valley TIA

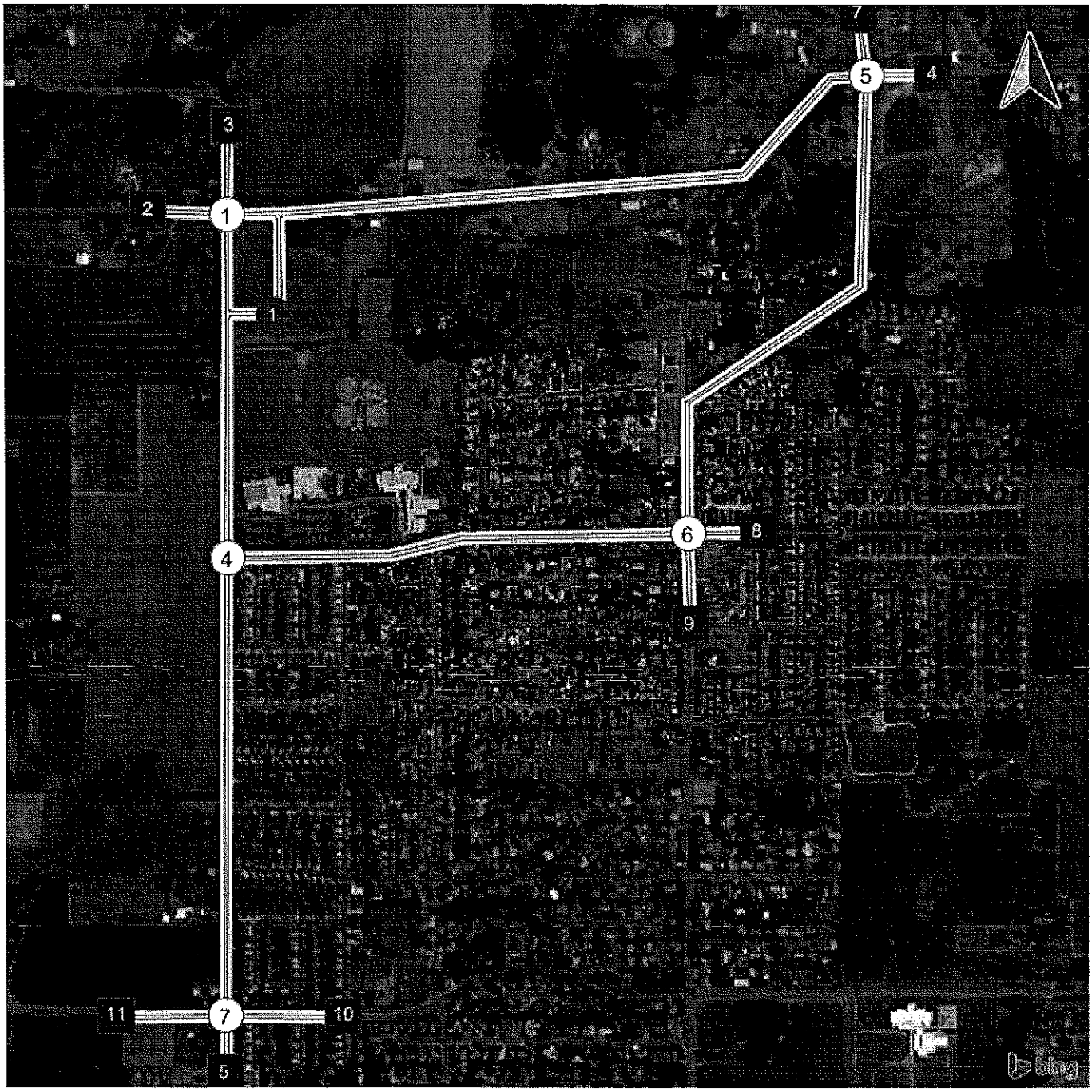
Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing AM Traffic.pdf

Scenario 1: Existing AM Peak
4/21/2016

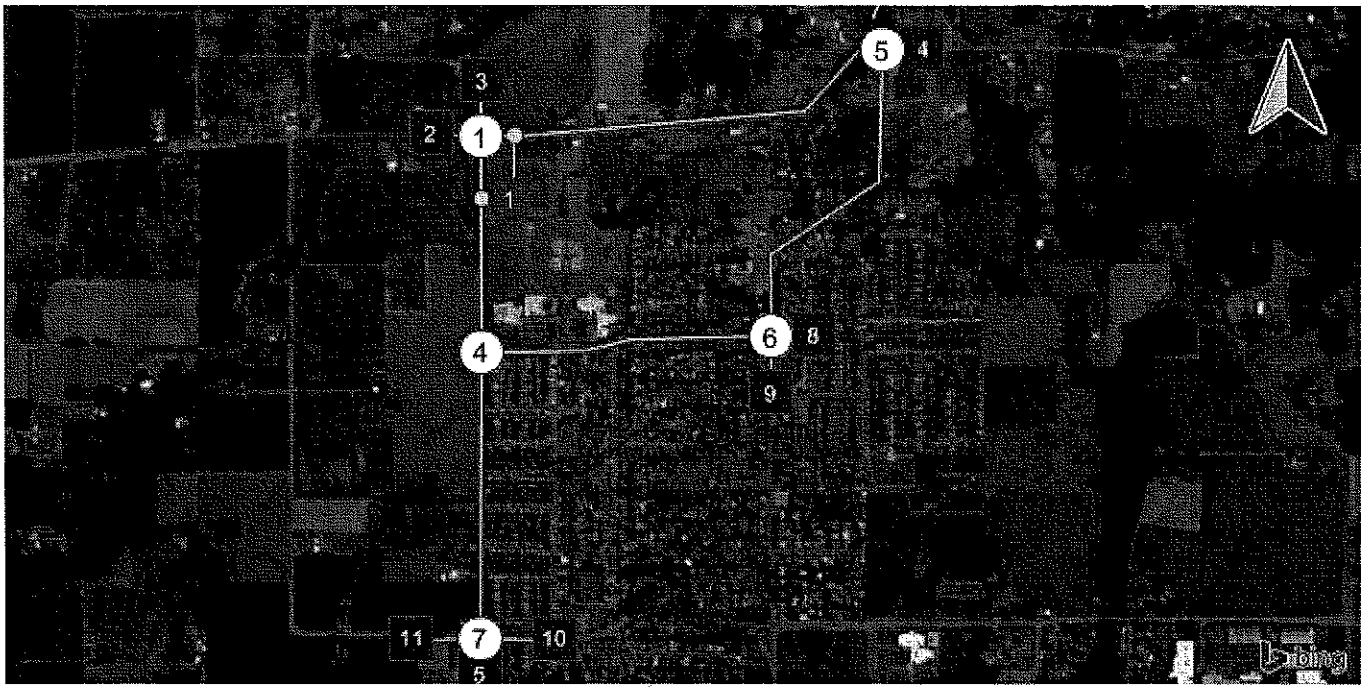
Trip distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	0	10.00	0
3: Gate	0.00	0	0.00	0
4: Gate	20.00	0	20.00	0
5: Gate	10.00	0	10.00	0
7: Gate	20.00	0	20.00	0
8: Gate	0.00	0	0.00	0
9: Gate	20.00	0	20.00	0
10: Gate	20.00	0	20.00	0
11: Gate	0.00	0	0.00	0
Total	**100.00**	**0**	**100.00**	**0**

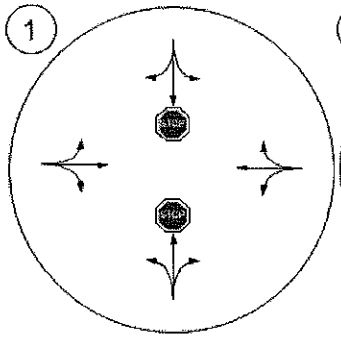
Report Figure 1: Study Intersections



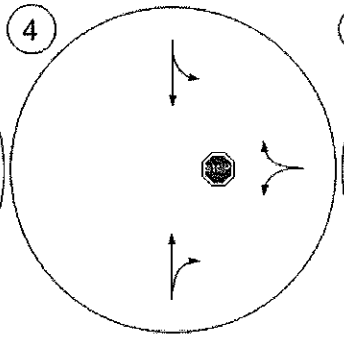
Report Figure 2: Lane Configuration and Traffic Control



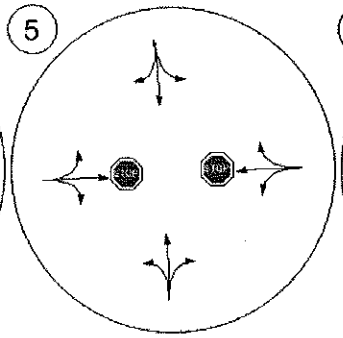
Chehalem Dr at N Valley Rd



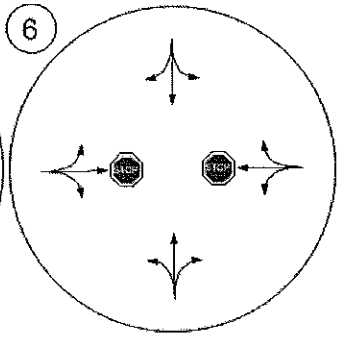
Chehalem Dr at Foothills Dr



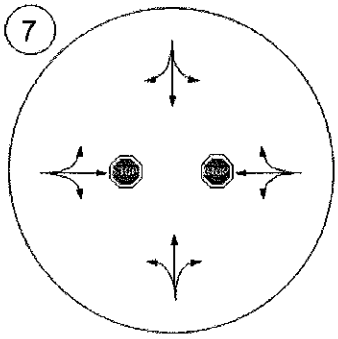
N Valley Rd at Hwy 219



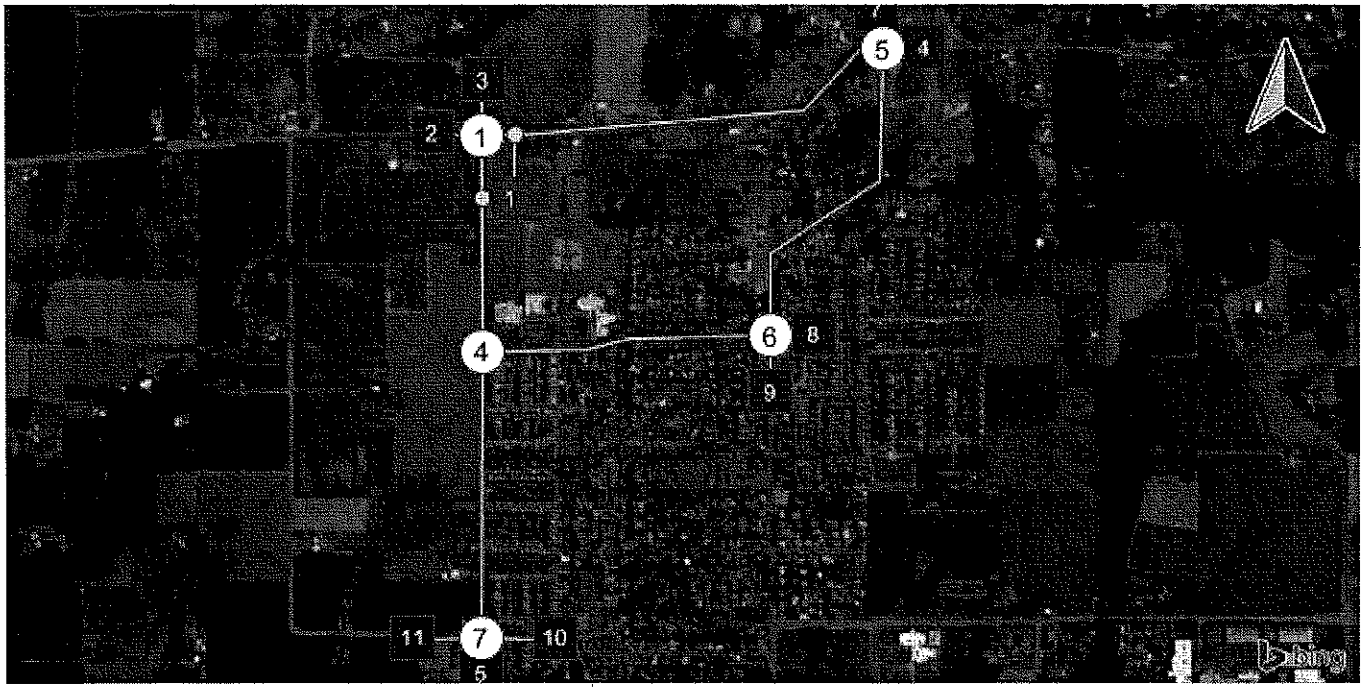
Hwy 219 at Foothills



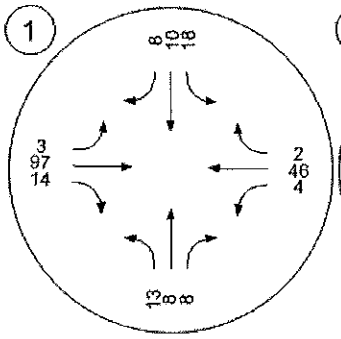
Chehalem Dr at Mountainvie



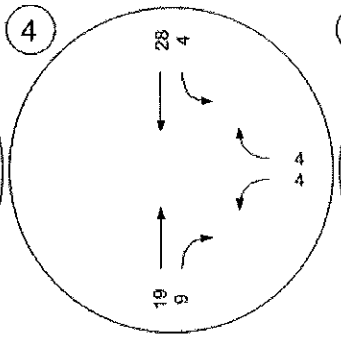
Report Figure 3a: Traffic Volume - Base Volume



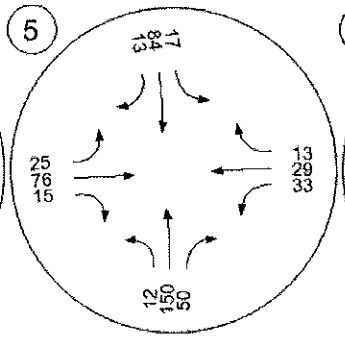
Chehalem Dr at N Valley Rd



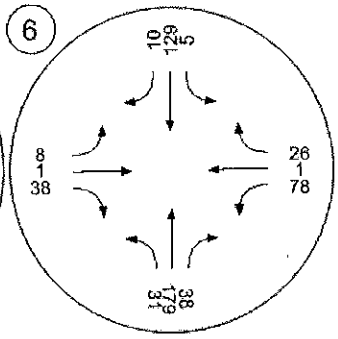
Chehalem Dr at Foothills Dr



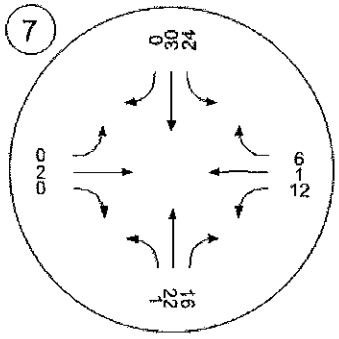
N Valley Rd at Hwy 219



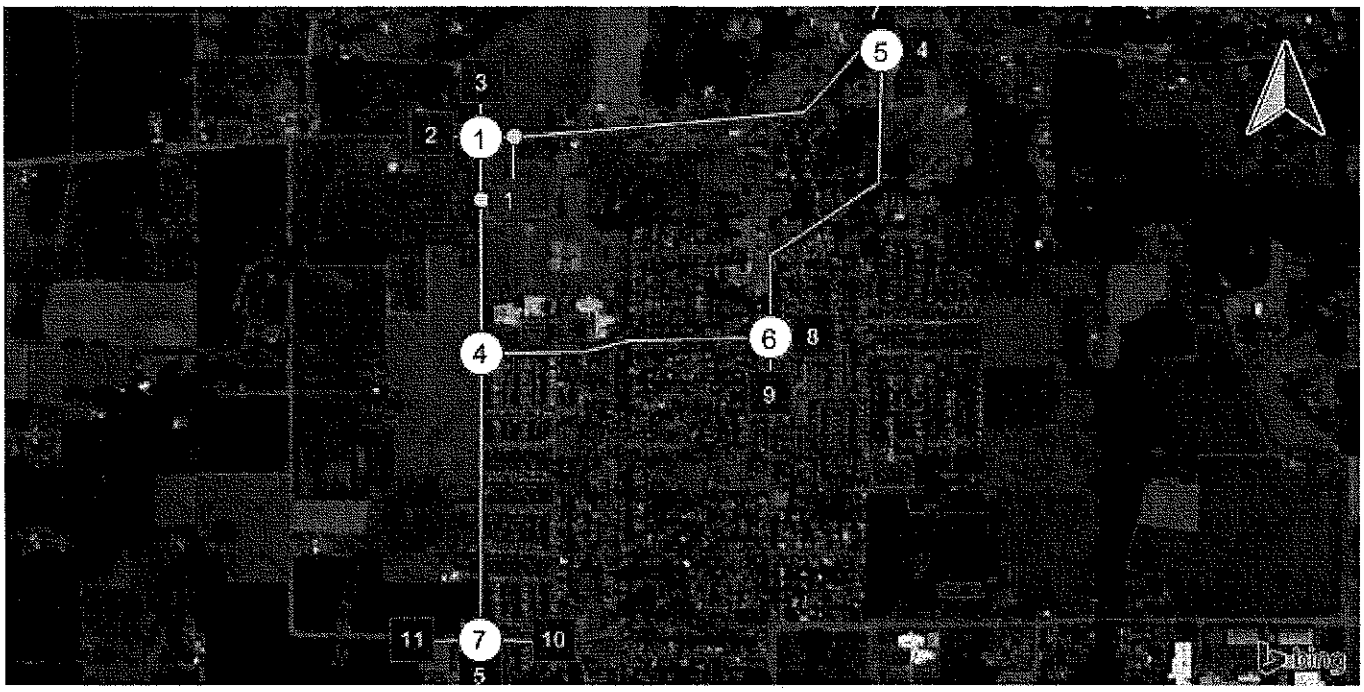
Hwy 219 at Foothills



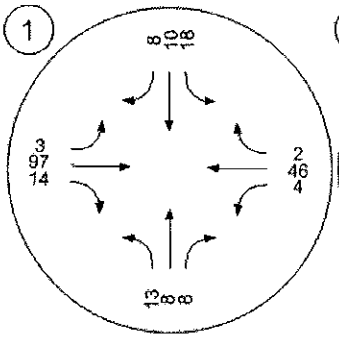
Chehalem Dr at Mountainvie



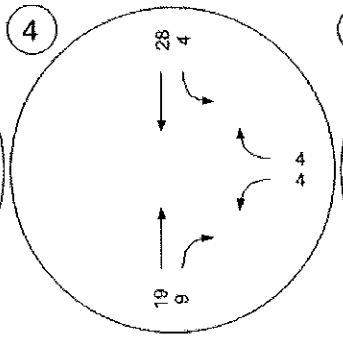
Report Figure 3e: Traffic Volume - Future Total Volume



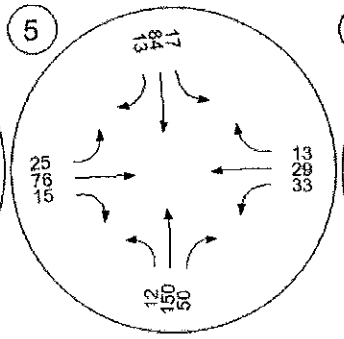
Chehalem Dr at N Valley Rd



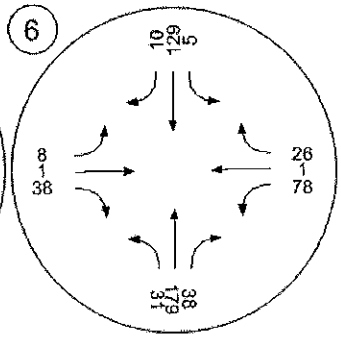
Chehalem Dr at Foothills Dr



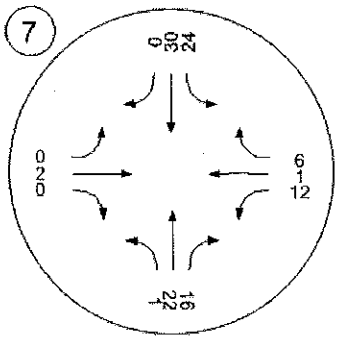
N Valley Rd at Hwy 219



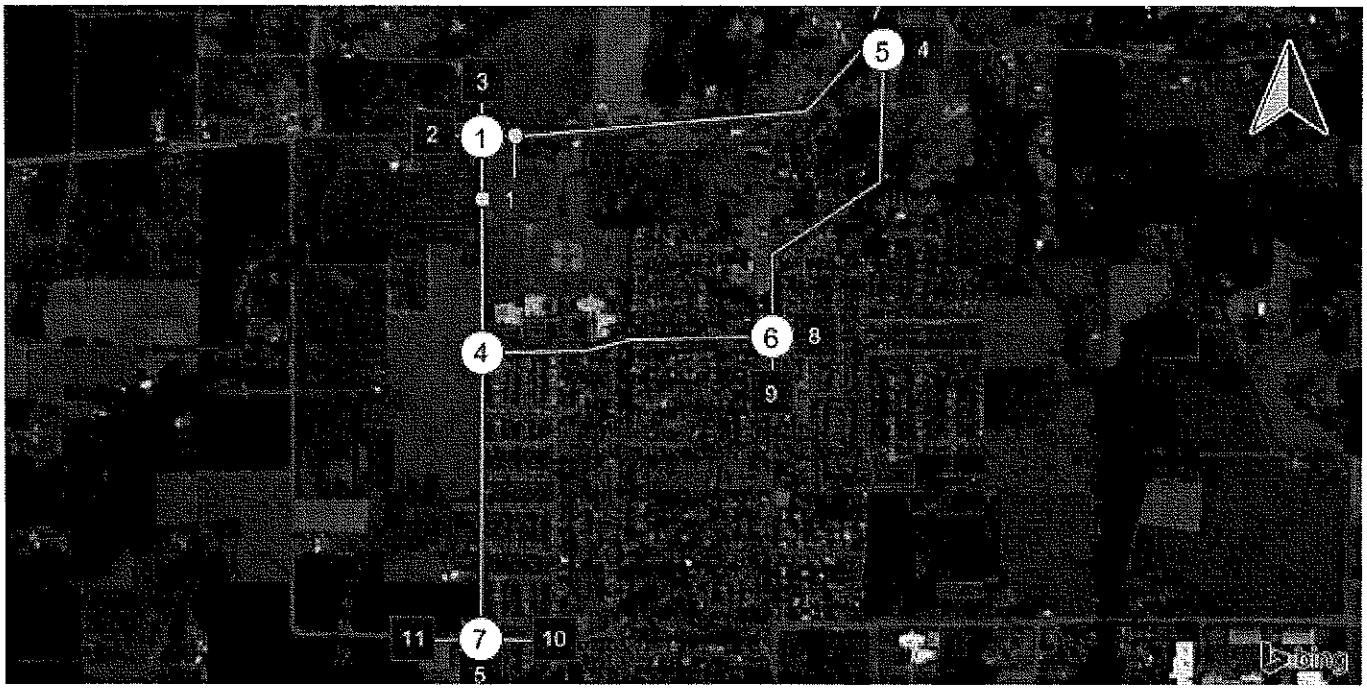
Hwy 219 at Foothills

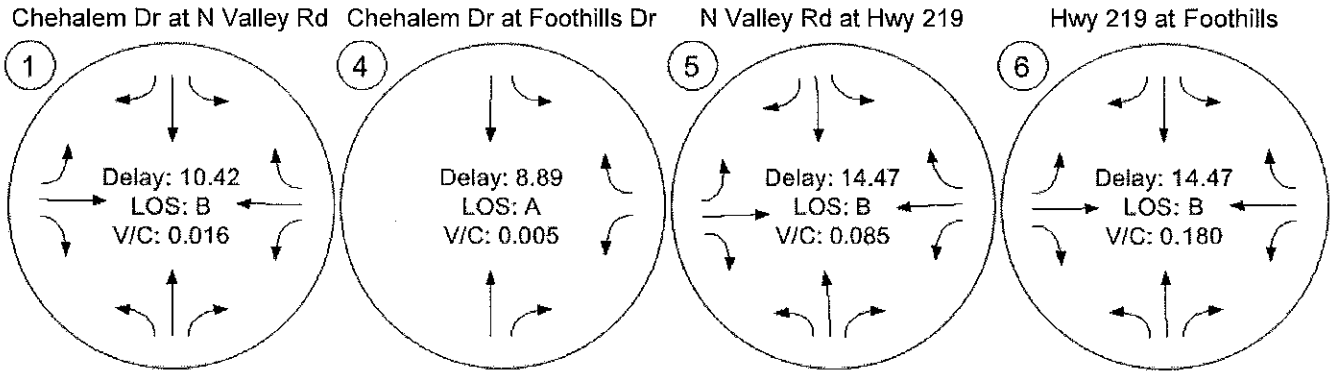


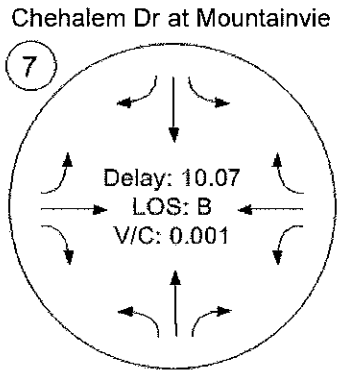
Chehalem Dr at Mountainvie



Report Figure 4: Traffic Conditions







Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing PM Traffic.pdf

Scenario 2: Existing PM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	NBT	0.029	12.0	B
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.030	9.4	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.132	20.4	C
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.277	24.5	C
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.008	11.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Chehalem Dr at N Valley Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Base Volume Input [veh/h]	18	13	7	7	18	4	1	78	19	27	129	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	13	7	7	18	4	1	78	19	27	129	15
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	6	4	2	2	6	1	0	24	6	8	40	5
Total Analysis Volume [veh/h]	22	16	9	9	22	5	1	97	24	34	161	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	no	no		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	no	no		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.03	0.01	0.02	0.04	0.01	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	11.90	11.99	9.30	11.77	11.92	9.51	7.57	0.00	0.00	7.50	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.25	0.25	0.25	0.20	0.20	0.20	0.29	0.29	0.29	0.51	0.51	0.51
95th-Percentile Queue Length [ft]	6.28	6.28	6.28	4.90	4.90	4.90	7.13	7.13	7.13	12.70	12.70	12.70
d_A, Approach Delay [s/veh]	11.44			11.55			0.06			1.19		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	2.90											
Intersection LOS	B											

Intersection Level Of Service Report
#4: Chehalem Dr at Foothills Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

Intersection Setup

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Base Volume Input [veh/h]	36	14	14	51	21	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.50	2.50	2.50	2.50	2.50	2.50
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	14	14	51	21	5
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	11	4	4	15	6	1
Total Analysis Volume [veh/h]	42	16	16	60	25	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.03	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.36	0.00	9.44	8.69
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.16	0.16	0.11	0.11
95th-Percentile Queue Length [ft]	0.00	0.00	3.88	3.88	2.77	2.77
d_A, Approach Delay [s/veh]	0.00		1.55		9.29	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.46					
Intersection LOS	A					

Intersection Level Of Service Report
#5: N Valley Rd at Hwy 219

Control Type:	Two-way stop	Delay (sec / veh):	20.4
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.132

Intersection Setup

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Base Volume Input [veh/h]	18	126	39	24	212	43	17	54	23	46	109	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	126	39	24	212	43	17	54	23	46	109	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	5	34	11	7	58	12	5	15	6	13	30	7
Total Analysis Volume [veh/h]	20	137	42	26	231	47	19	59	25	50	119	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.00	0.06	0.13	0.03	0.13	0.27	0.03
d_M, Delay for Movement [s/veh]	7.83	0.00	0.00	7.61	0.00	0.00	18.53	15.42	11.83	20.40	19.11	14.96
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh]	0.54	0.54	0.54	0.82	0.82	0.82	0.85	0.85	0.85	2.15	2.15	2.15
95th-Percentile Queue Length [ft]	13.58	13.58	13.58	20.57	20.57	20.57	21.35	21.35	21.35	53.79	53.79	53.79
d_A, Approach Delay [s/veh]	0.79			0.65			15.12			18.84		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	7.00											
Intersection LOS	C											

Intersection Level Of Service Report
#6: Hwy 219 at Foothills

Control Type:	Two-way stop	Delay (sec / veh):	24.5
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.277

Intersection Setup

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Base Volume Input [veh/h]	82	179	101	17	252	17	15	7	55	68	9	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	179	101	17	252	17	15	7	55	68	9	10
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	22	48	27	5	68	5	4	2	15	18	2	3
Total Analysis Volume [veh/h]	88	193	109	18	272	18	16	8	59	73	10	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.01	0.00	0.00	0.06	0.03	0.08	0.28	0.03	0.01
d_M, Delay for Movement [s/veh]	8.04	0.00	0.00	7.90	0.00	0.00	18.71	18.81	11.08	24.50	22.58	15.38
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	C
95th-Percentile Queue Length [veh]	1.31	1.31	1.31	0.96	0.96	0.96	0.57	0.57	0.57	1.36	1.36	1.36
95th-Percentile Queue Length [ft]	32.76	32.76	32.76	24.08	24.08	24.08	14.20	14.20	14.20	34.03	34.03	34.03
d_A, Approach Delay [s/veh]	1.81			0.46			13.29			23.23		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	4.73											
Intersection LOS	C											

Intersection Level Of Service Report
#7: Chehalem Dr at Mountainview Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Base Volume Input [veh/h]	0	39	13	30	74	1	0	1	1	79	4	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	39	13	30	74	1	0	1	1	79	4	25
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	0	12	4	9	23	0	0	0	0	24	1	8
Total Analysis Volume [veh/h]	0	48	16	37	91	1	0	1	1	97	5	31
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.03
d_M, Delay for Movement [s/veh]	7.40	0.00	0.00	7.40	0.00	0.00	10.35	10.53	8.74	11.01	11.45	9.55
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.27	0.27	0.27	0.01	0.01	0.01	0.63	0.63	0.63
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	6.87	6.87	6.87	0.19	0.19	0.19	15.65	15.65	15.65
d_A, Approach Delay [s/veh]	0.00			2.12			9.64			10.69		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	5.23											
Intersection LOS	B											

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing PM Traffic.pdf

Scenario 2: Existing PM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	18	13	7	7	18	4	1	78	19	27	129	15	336

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	36	14	14	51	21	5	141

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	18	126	39	24	212	43	17	54	23	46	109	26	737

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	82	179	101	17	252	17	15	7	55	68	9	10	812

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	0	39	13	30	74	1	0	1	1	79	4	25	267

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing PM Traffic.pdf

Scenario 2: Existing PM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	Final Base	18	13	7	7	18	4	1	78	19	27	129	15	336
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**18**	**13**	**7**	**7**	**18**	**4**	**1**	**78**	**19**	**27**	**129**	**15**	**336**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	Final Base	36	14	14	51	21	5	141
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**36**	**14**	**14**	**51**	**21**	**5**	**141**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	Final Base	18	126	39	24	212	43	17	54	23	46	109	26	737
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**18**	**126**	**39**	**24**	**212**	**43**	**17**	**54**	**23**	**46**	**109**	**26**	**737**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	Final Base	82	179	101	17	252	17	15	7	55	68	9	10	812
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**82**	**179**	**101**	**17**	**252**	**17**	**15**	**7**	**55**	**68**	**9**	**10**	**812**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	Final Base	0	39	13	30	74	1	0	1	1	79	4	25	267
		Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**39**	**13**	**30**	**74**	**1**	**0**	**1**	**1**	**79**	**4**	**25**	**267**

Signal Warrants Report For Intersection #1: Chehalem Dr at N Valley Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	3	2	1	1
2	3	2	1	1
3	5	3	1	1
4	5	3	1	1
5	7	4	2	1
6	17	10	4	3
7	19	11	4	3
8	34	20	8	6
9	60	34	13	10
10	62	35	14	10
11	62	35	14	10
12	67	38	15	11
13	74	42	16	12
14	77	44	17	13
15	77	44	17	13
16	82	47	18	14
17	103	59	23	17
18	108	62	24	18
19	116	67	26	20
20	130	74	29	22
21	137	78	30	23
22	161	92	36	27
23	164	94	36	28
24	171	98	38	29

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	5	2	2	No	No	No	No	No	No	No	No	No	No
2	2	5	2	2	No	No	No	No	No	No	No	No	No	No
3	2	8	2	2	No	No	No	No	No	No	No	No	No	No
4	2	8	2	2	No	No	No	No	No	No	No	No	No	No
5	2	11	2	3	No	No	No	No	No	No	No	No	No	No
6	2	27	2	7	No	No	No	No	No	No	No	No	No	No
7	2	30	2	7	No	No	No	No	No	No	No	No	No	No
8	2	54	2	14	No	No	No	No	No	No	No	No	No	No
9	2	94	2	23	No	No	No	No	No	No	No	No	No	No
10	2	97	2	24	No	No	No	No	No	No	No	No	No	No
11	2	97	2	24	No	No	No	No	No	No	No	No	No	No
12	2	105	2	26	No	No	No	No	No	No	No	No	No	No
13	2	116	2	28	No	No	No	No	No	No	No	No	No	No
14	2	121	2	30	No	No	No	No	No	No	No	No	No	No
15	2	121	2	30	No	No	No	No	No	No	No	No	No	No
16	2	129	2	32	No	No	No	No	No	No	No	No	No	No
17	2	162	2	40	No	No	No	No	No	No	No	No	No	No
18	2	170	2	42	No	No	No	No	No	No	No	No	No	No
19	2	183	2	46	No	No	No	No	No	No	No	No	No	No
20	2	204	2	51	No	No	No	No	No	No	No	No	No	No
21	2	215	2	53	No	No	No	No	No	No	No	No	No	No
22	2	253	2	63	No	No	No	No	No	No	No	No	No	No
23	2	258	2	64	No	No	No	No	No	No	No	No	No	No
24	2	269	2	67	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.4	11.5
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07	0:05
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	38	29
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	336	336
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #4: Chehalem Dr at Foothills Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	65	50	26
2	62	48	25
3	61	47	24
4	52	40	21
5	49	38	20
6	44	34	18
7	41	32	16
8	39	30	16
9	31	24	12
10	29	23	12
11	29	23	12
12	28	22	11
13	25	20	10
14	23	18	9
15	23	18	9
16	23	18	9
17	13	10	5
18	7	6	3
19	7	5	3
20	3	2	1
21	2	2	1
22	2	2	1
23	1	1	1
24	1	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	115	1	26	No	No	No	No	No	No	No	No	No	No
2	2	110	1	25	No	No	No	No	No	No	No	No	No	No
3	2	108	1	24	No	No	No	No	No	No	No	No	No	No
4	2	92	1	21	No	No	No	No	No	No	No	No	No	No
5	2	87	1	20	No	No	No	No	No	No	No	No	No	No
6	2	78	1	18	No	No	No	No	No	No	No	No	No	No
7	2	73	1	16	No	No	No	No	No	No	No	No	No	No
8	2	69	1	16	No	No	No	No	No	No	No	No	No	No
9	2	55	1	12	No	No	No	No	No	No	No	No	No	No
10	2	52	1	12	No	No	No	No	No	No	No	No	No	No
11	2	52	1	12	No	No	No	No	No	No	No	No	No	No
12	2	50	1	11	No	No	No	No	No	No	No	No	No	No
13	2	45	1	10	No	No	No	No	No	No	No	No	No	No
14	2	41	1	9	No	No	No	No	No	No	No	No	No	No
15	2	41	1	9	No	No	No	No	No	No	No	No	No	No
16	2	41	1	9	No	No	No	No	No	No	No	No	No	No
17	2	23	1	5	No	No	No	No	No	No	No	No	No	No
18	2	13	1	3	No	No	No	No	No	No	No	No	No	No
19	2	12	1	3	No	No	No	No	No	No	No	No	No	No
20	2	5	1	1	No	No	No	No	No	No	No	No	No	No
21	2	4	1	1	No	No	No	No	No	No	No	No	No	No
22	2	4	1	1	No	No	No	No	No	No	No	No	No	No
23	2	2	1	1	No	No	No	No	No	No	No	No	No	No
24	2	2	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	26
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	141
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection #5: N Valley Rd at Hwy 219

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	279	183	181	94
2	268	176	174	90
3	262	172	170	88
4	223	146	145	75
5	212	139	138	71
6	190	124	123	64
7	176	115	114	59
8	167	110	109	56
9	134	88	87	45
10	126	82	81	42
11	126	82	81	42
12	120	79	78	40
13	109	71	71	37
14	100	66	65	34
15	100	66	65	34
16	98	64	63	33
17	56	37	36	19
18	31	20	20	10
19	28	18	18	9
20	11	7	7	4
21	8	5	5	3
22	8	5	5	3
23	6	4	4	2
24	6	4	4	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	462	2	275	No	No	Yes	Yes	No	No	No	No	No	No
2	2	444	2	264	No	No	Yes	Yes	No	No	No	No	No	No
3	2	434	2	258	No	No	Yes	Yes	No	No	No	No	No	No
4	2	369	2	220	No	No	No	Yes	No	No	No	No	No	No
5	2	351	2	209	No	No	No	Yes	No	No	No	No	No	No
6	2	314	2	187	No	No	No	No	No	No	No	No	No	No
7	2	291	2	173	No	No	No	No	No	No	No	No	No	No
8	2	277	2	165	No	No	No	No	No	No	No	No	No	No
9	2	222	2	132	No	No	No	No	No	No	No	No	No	No
10	2	208	2	123	No	No	No	No	No	No	No	No	No	No
11	2	208	2	123	No	No	No	No	No	No	No	No	No	No
12	2	199	2	118	No	No	No	No	No	No	No	No	No	No
13	2	180	2	108	No	No	No	No	No	No	No	No	No	No
14	2	166	2	99	No	No	No	No	No	No	No	No	No	No
15	2	166	2	99	No	No	No	No	No	No	No	No	No	No
16	2	162	2	96	No	No	No	No	No	No	No	No	No	No
17	2	93	2	55	No	No	No	No	No	No	No	No	No	No
18	2	51	2	30	No	No	No	No	No	No	No	No	No	No
19	2	46	2	27	No	No	No	No	No	No	No	No	No	No
20	2	18	2	11	No	No	No	No	No	No	No	No	No	No
21	2	13	2	8	No	No	No	No	No	No	No	No	No	No
22	2	13	2	8	No	No	No	No	No	No	No	No	No	No
23	2	10	2	6	No	No	No	No	No	No	No	No	No	No
24	2	10	2	6	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	3	5	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.8	15.1
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:56	0:23
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	181	94
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	737	737
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #6: Hwy 219 at Foothills

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	362	286	87	77
2	348	275	84	74
3	340	269	82	72
4	290	229	70	62
5	275	217	66	59
6	246	194	59	52
7	228	180	55	49
8	217	172	52	46
9	174	137	42	37
10	163	129	39	35
11	163	129	39	35
12	156	123	37	33
13	141	112	34	30
14	130	103	31	28
15	130	103	31	28
16	127	100	30	27
17	72	57	17	15
18	40	31	10	8
19	36	29	9	8
20	14	11	3	3
21	11	9	3	2
22	11	9	3	2
23	7	6	2	2
24	7	6	2	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	648	2	164	No	No	No	Yes	No	No	Yes	Yes	No	No
2	2	623	2	158	No	No	No	Yes	No	No	No	Yes	No	No
3	2	609	2	154	No	No	No	No	No	No	No	Yes	No	No
4	2	519	2	132	No	No	No	No	No	No	No	Yes	No	No
5	2	492	2	125	No	No	No	No	No	No	No	No	No	No
6	2	440	2	111	No	No	No	No	No	No	No	No	No	No
7	2	408	2	104	No	No	No	No	No	No	No	No	No	No
8	2	389	2	98	No	No	No	No	No	No	No	No	No	No
9	2	311	2	79	No	No	No	No	No	No	No	No	No	No
10	2	292	2	74	No	No	No	No	No	No	No	No	No	No
11	2	292	2	74	No	No	No	No	No	No	No	No	No	No
12	2	279	2	70	No	No	No	No	No	No	No	No	No	No
13	2	253	2	64	No	No	No	No	No	No	No	No	No	No
14	2	233	2	59	No	No	No	No	No	No	No	No	No	No
15	2	233	2	59	No	No	No	No	No	No	No	No	No	No
16	2	227	2	57	No	No	No	No	No	No	No	No	No	No
17	2	129	2	32	No	No	No	No	No	No	No	No	No	No
18	2	71	2	18	No	No	No	No	No	No	No	No	No	No
19	2	65	2	17	No	No	No	No	No	No	No	No	No	No
20	2	25	2	6	No	No	No	No	No	No	No	No	No	No
21	2	20	2	5	No	No	No	No	No	No	No	No	No	No
22	2	20	2	5	No	No	No	No	No	No	No	No	No	No
23	2	13	2	4	No	No	No	No	No	No	No	No	No	No
24	2	13	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	2	0	0	1	4	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	23.2	13.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:33	0:17
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	87	77
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	812	812
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing PM Traffic.pdf

Scenario 2: Existing PM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Zone	Single Family Homes	ITE 210	Single Family Homes	1.000	0.000	50.00	50.00	0	0	0	0.00
					Added Trips Total			0	0	0	0.00

Chehalem at N Valley TIA

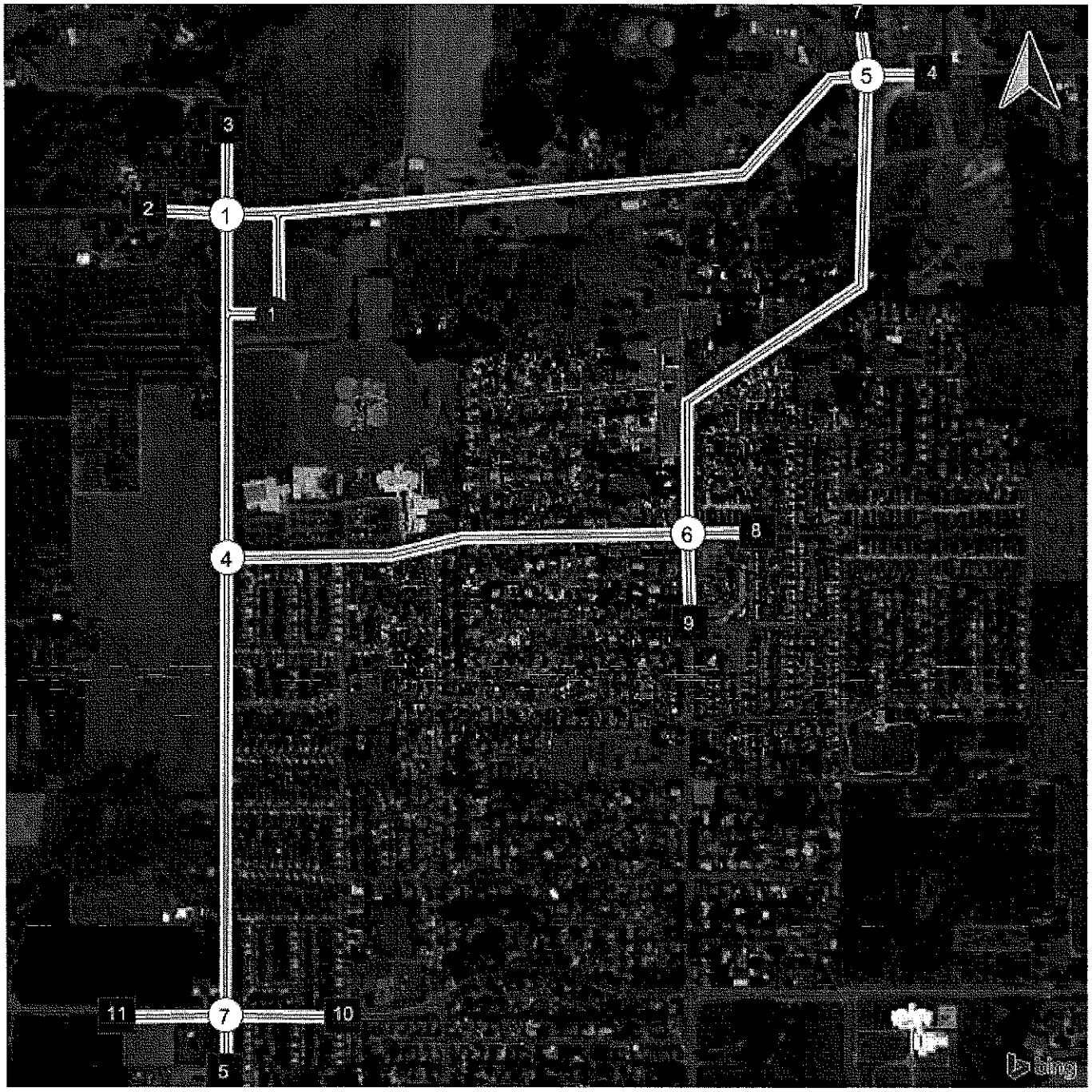
Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\Existing PM Traffic.pdf

Scenario 2: Existing PM Peak
4/21/2016

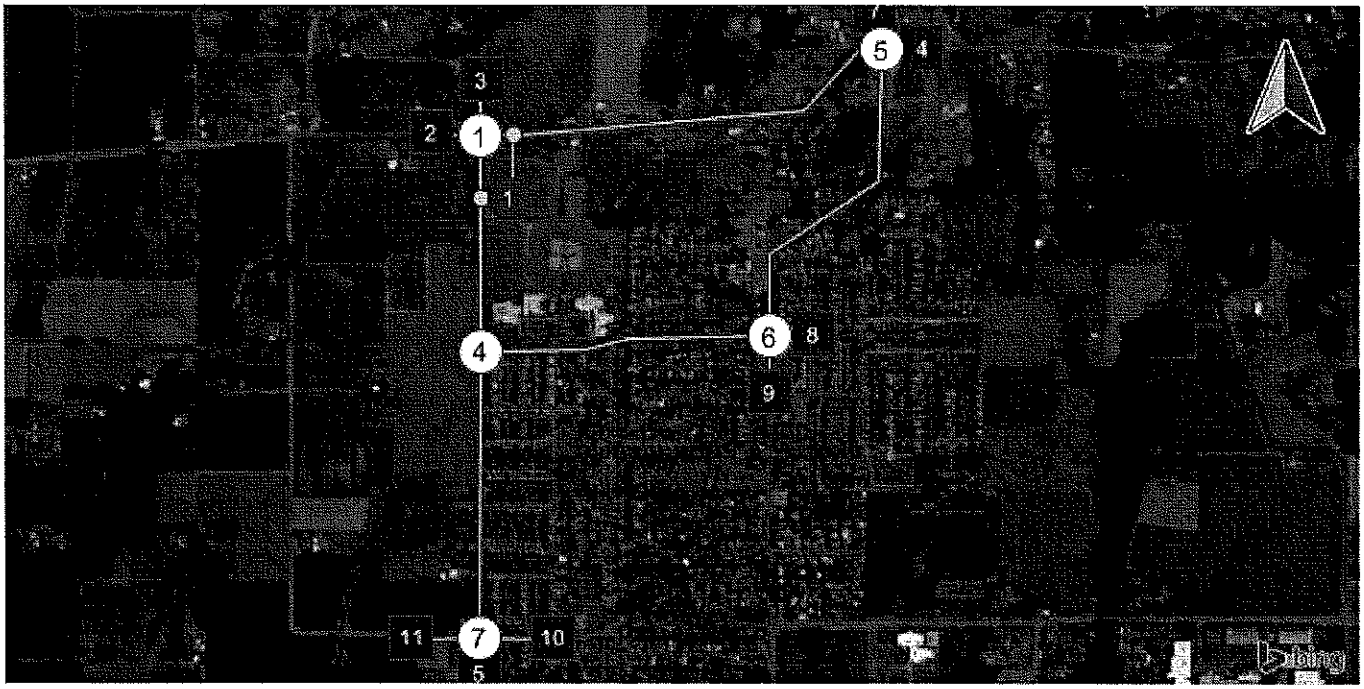
Trip distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	0	10.00	0
3: Gate	0.00	0	0.00	0
4: Gate	20.00	0	20.00	0
5: Gate	10.00	0	10.00	0
7: Gate	20.00	0	20.00	0
8: Gate	0.00	0	0.00	0
9: Gate	20.00	0	20.00	0
10: Gate	20.00	0	20.00	0
11: Gate	0.00	0	0.00	0
Total	**100.00**	**0**	**100.00**	**0**

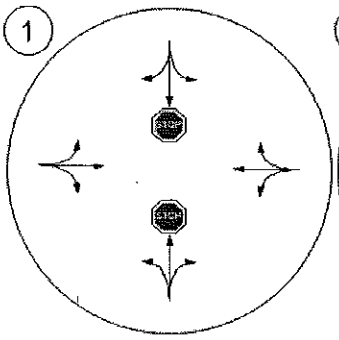
Report Figure 1: Study Intersections



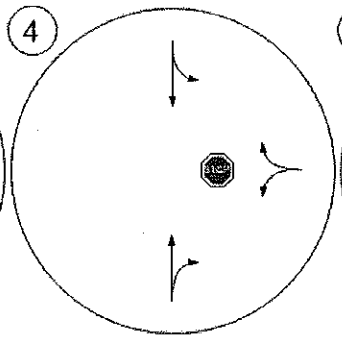
Report Figure 2: Lane Configuration and Traffic Control



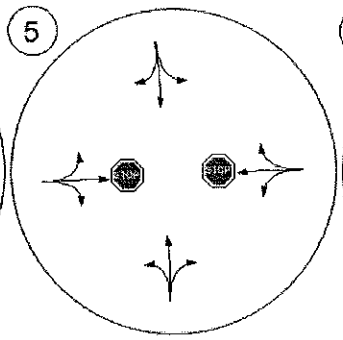
Chehalem Dr at N Valley Rd



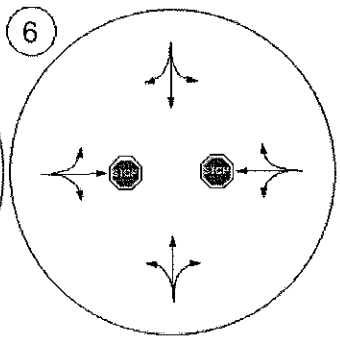
Chehalem Dr at Foothills Dr



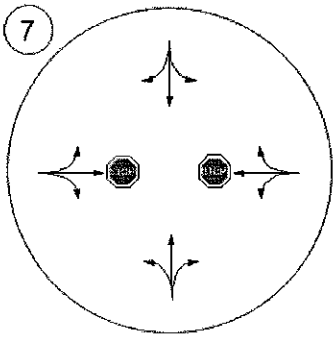
N Valley Rd at Hwy 219



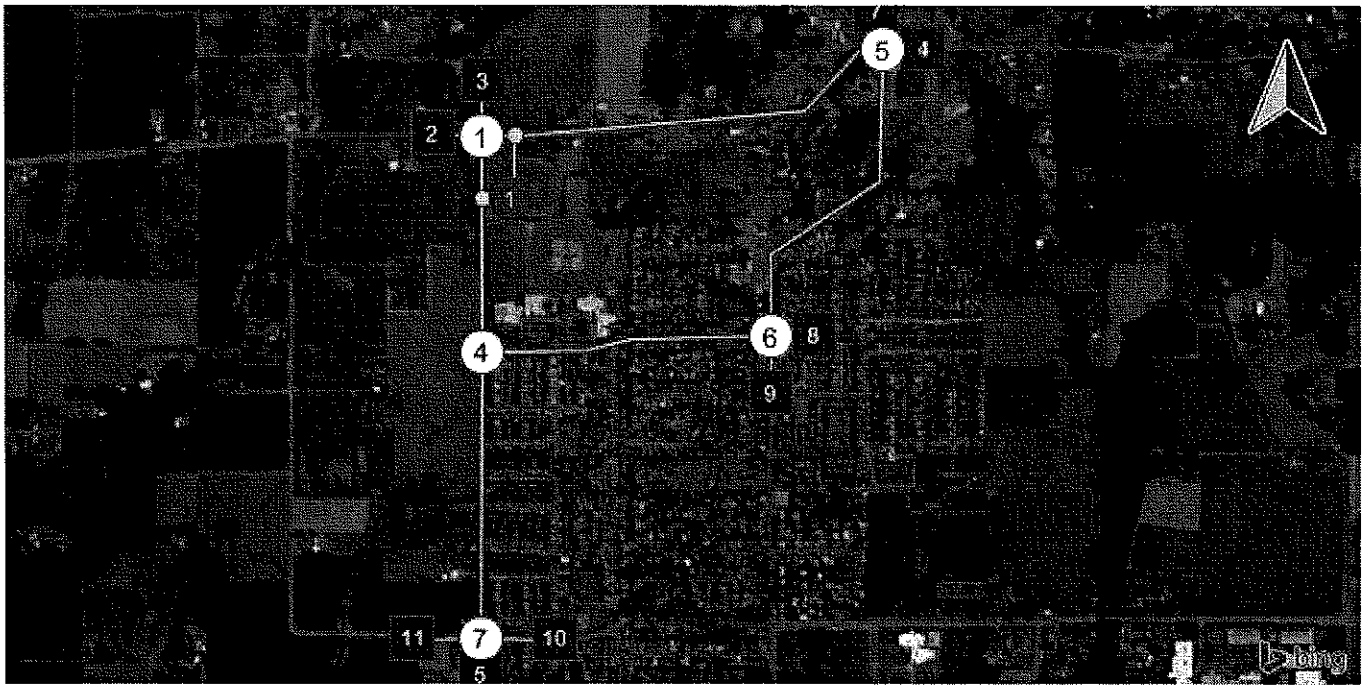
Hwy 219 at Foothills



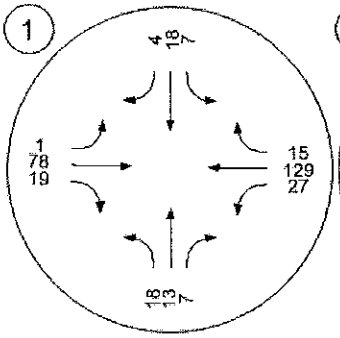
Chehalem Dr at Mountainvie



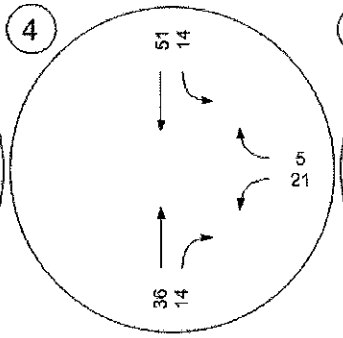
Report Figure 3a: Traffic Volume - Base Volume



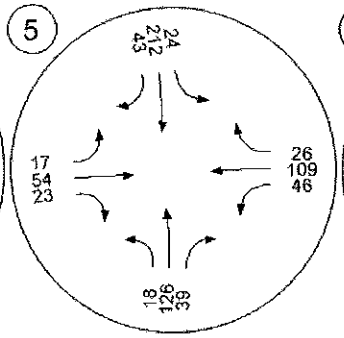
Chehalem Dr at N Valley Rd



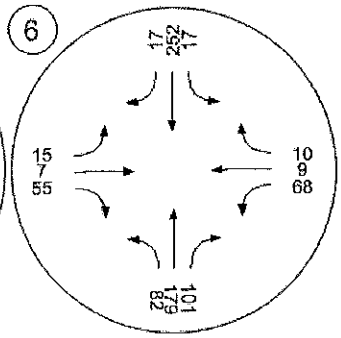
Chehalem Dr at Foothills Dr



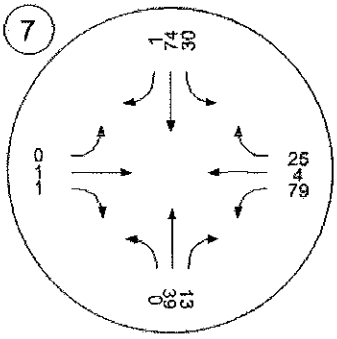
N Valley Rd at Hwy 219



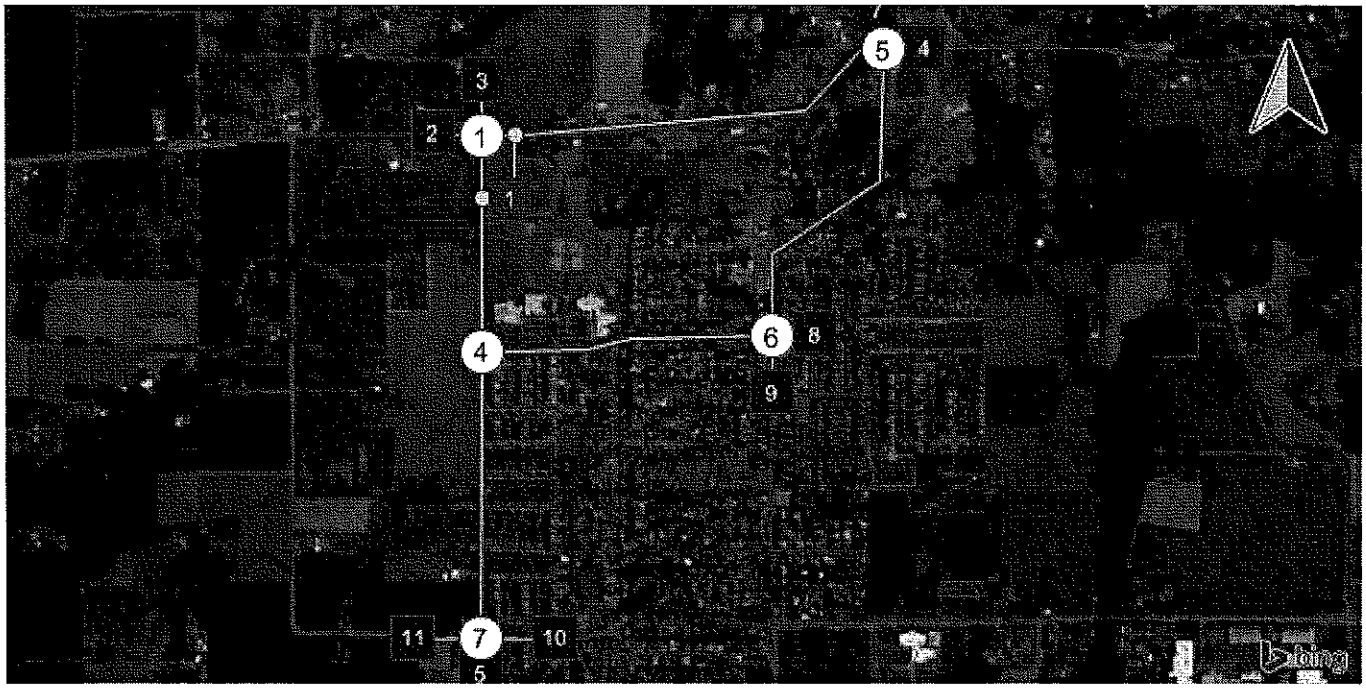
Hwy 219 at Foothills



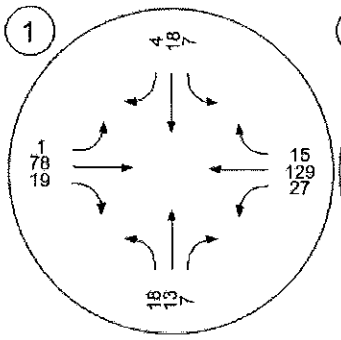
Chehalem Dr at Mountainvie



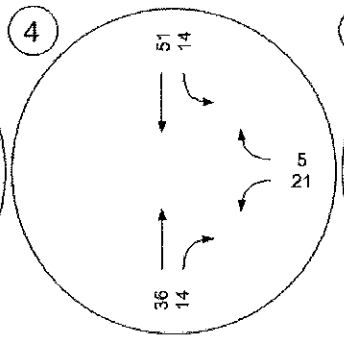
Report Figure 3e: Traffic Volume - Future Total Volume



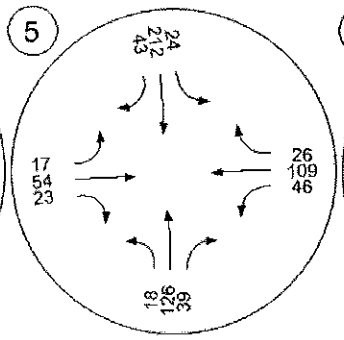
Chehalem Dr at N Valley Rd



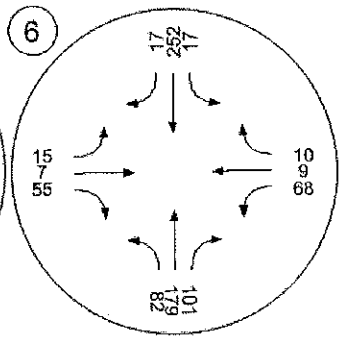
Chehalem Dr at Foothills Dr



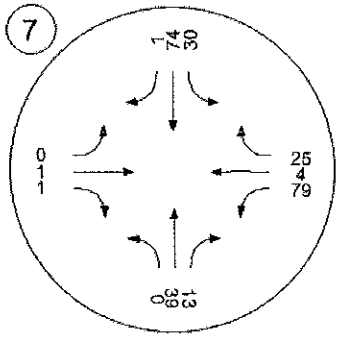
N Valley Rd at Hwy 219



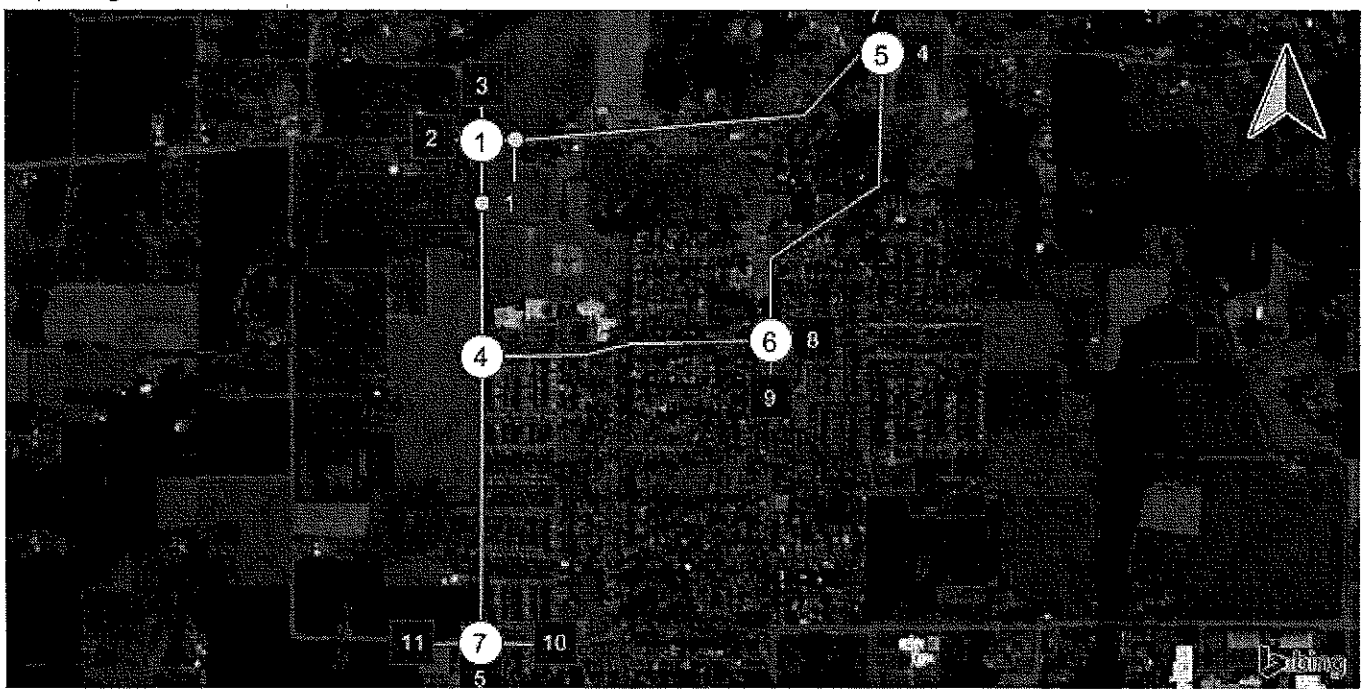
Hwy 219 at Foothills

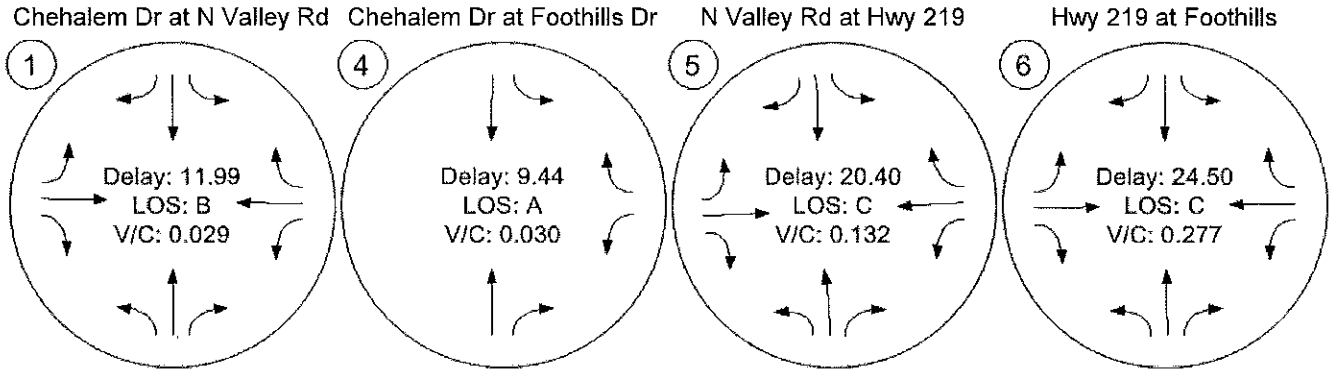


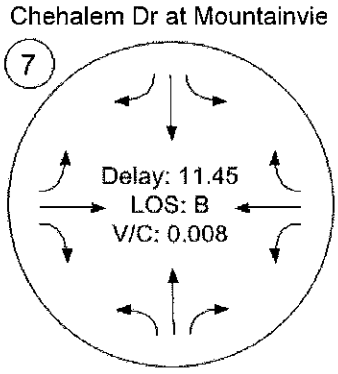
Chehalem Dr at Mountainvie



Report Figure 4: Traffic Conditions







Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 AM Dev. Traffic.pdf

Scenario 3: 2017 AM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	SBT	0.016	10.6	B
2	N Valley Rd Entrance	Two-way stop	HCM2010	NBL	0.010	9.8	A
3	Chehalem Dr Access	Two-way stop	HCM2010	WBL	0.022	9.0	A
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.006	9.2	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.089	14.9	B
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.188	14.9	B
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.001	10.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Chehalem Dr at N Valley Rd

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Base Volume Input [veh/h]	13	8	8	18	10	8	3	97	14	4	46	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	5	0	0	0	0	1	0	6	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	8	13	18	10	8	3	99	14	10	48	2
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	4	2	4	5	3	2	1	28	4	3	13	1
Total Analysis Volume [veh/h]	17	9	14	20	11	9	3	110	16	11	53	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	no	no		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	no	no		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.02	0.03	0.02	0.01	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	10.26	10.53	9.14	10.30	10.59	8.85	7.35	0.00	0.00	7.51	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.16	0.16	0.16	0.17	0.17	0.17	0.28	0.28	0.28	0.14	0.14	0.14
95th-Percentile Queue Length [ft]	4.10	4.10	4.10	4.20	4.20	4.20	6.89	6.89	6.89	3.59	3.59	3.59
d_A, Approach Delay [s/veh]	9.93			10.05			0.17			1.25		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	3.29											
Intersection LOS	B											

Intersection Level Of Service Report
#2: N Valley Rd Entrance

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name			N Valley Rd		Bell Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name			N Valley Rd		Bell Rd	
Base Volume Input [veh/h]	0	0	123	0	0	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.82	4.82	4.82	4.82	4.82	4.82
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	13	3	2	5	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	13	127	2	5	54
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	2	4	35	1	1	15
Total Analysis Volume [veh/h]	8	14	141	2	6	60
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.82	9.12	0.00	0.00	7.54	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.08	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft]	2.00	2.00	0.00	0.00	3.65	3.65
d_A, Approach Delay [s/veh]	9.38		0.00		0.69	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.09					
Intersection LOS	A					

Intersection Level Of Service Report
#3: Chehalem Dr Access

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Chehalem Dr		Chehalem Dr			
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Chehalem Dr		Chehalem Dr			
Base Volume Input [veh/h]	29	0	0	28	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.82	4.82	4.82	4.82	4.82	4.82
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	6	2	4	18	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	6	2	32	18	5
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	8	2	1	9	5	1
Total Analysis Volume [veh/h]	33	7	2	36	20	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.32	0.00	9.03	8.61
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.08	0.08	0.09	0.09
95th-Percentile Queue Length [ft]	0.00	0.00	1.88	1.88	2.13	2.13
d_A, Approach Delay [s/veh]	0.00		0.39		8.93	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.37					
Intersection LOS	A					

Intersection Level Of Service Report
#4: Chehalem Dr at Foothills Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Base Volume Input [veh/h]	19	9	4	28	4	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	8	14	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	9	12	42	4	7
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	7	3	4	13	1	2
Total Analysis Volume [veh/h]	28	11	15	51	5	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.29	0.00	9.15	8.50
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.13	0.13	0.04	0.04
95th-Percentile Queue Length [ft]	0.00	0.00	3.26	3.26	1.09	1.09
d_A, Approach Delay [s/veh]	0.00		1.66		8.73	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.95					
Intersection LOS	A					

Intersection Level Of Service Report
#5: N Valley Rd at Hwy 219

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Base Volume Input [veh/h]	12	150	50	17	84	13	25	76	15	33	29	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	3	8	8	0	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	152	51	17	85	16	33	85	15	33	32	13
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	3	44	15	5	25	5	10	25	4	10	9	4
Total Analysis Volume [veh/h]	14	177	59	20	99	19	38	99	17	38	37	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.08	0.19	0.02	0.09	0.07	0.02
d_M, Delay for Movement [s/veh]	7.49	0.00	0.00	7.77	0.00	0.00	14.90	14.72	11.52	14.93	13.37	10.87
Movement LOS	A	A	A	A	A	A	B	B	B	B	B	B
95th-Percentile Queue Length [veh]	0.62	0.62	0.62	0.35	0.35	0.35	1.18	1.18	1.18	0.64	0.64	0.64
95th-Percentile Queue Length [ft]	15.47	15.47	15.47	8.75	8.75	8.75	29.53	29.53	29.53	15.96	15.96	15.96
d_A, Approach Delay [s/veh]	0.42			1.13			14.41			13.61		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	5.86											
Intersection LOS	B											

Intersection Level Of Service Report
#6: Hwy 219 at Foothills

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.188

Intersection Setup

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Base Volume Input [veh/h]	31	179	38	5	129	10	8	1	38	78	1	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	0	0	0	8	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	181	38	5	130	10	8	1	46	79	1	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	9	49	10	1	35	3	2	0	13	22	0	7
Total Analysis Volume [veh/h]	37	197	41	5	142	11	9	1	50	86	1	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.06	0.19	0.00	0.03
d_M, Delay for Movement [s/veh]	7.61	0.00	0.00	7.74	0.00	0.00	12.96	13.00	9.40	14.90	14.49	11.42
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	B
95th-Percentile Queue Length [veh]	0.72	0.72	0.72	0.41	0.41	0.41	0.25	0.25	0.25	0.85	0.85	0.85
95th-Percentile Queue Length [ft]	17.95	17.95	17.95	10.17	10.17	10.17	6.23	6.23	6.23	21.34	21.34	21.34
d_A, Approach Delay [s/veh]	1.02			0.24			10.00			14.05		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	4.17											
Intersection LOS	B											

Intersection Level Of Service Report
#7: Chehalem Dr at Mountainview Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Base Volume Input [veh/h]	1	22	16	24	30	0	0	2	0	12	1	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	10	4	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	23	16	34	34	0	0	2	0	12	1	9
Peak Hour Factor	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700	0.7700
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	0	8	5	11	11	0	0	1	0	4	0	3
Total Analysis Volume [veh/h]	1	31	21	46	46	0	0	3	0	16	1	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01
d_M, Delay for Movement [s/veh]	7.31	0.00	0.00	7.39	0.00	0.00	9.87	10.32	8.55	9.92	10.38	8.66
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh]	0.11	0.11	0.11	0.19	0.19	0.19	0.01	0.01	0.01	0.11	0.11	0.11
95th-Percentile Queue Length [ft]	2.64	2.64	2.64	4.73	4.73	4.73	0.33	0.33	0.33	2.66	2.66	2.66
d_A, Approach Delay [s/veh]	0.14			3.70			10.32			9.41		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	3.68											
Intersection LOS	B											

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 AM Dev. Traffic.pdf

Scenario 3: 2017 AM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	15	8	13	18	10	8	3	99	14	10	48	2	248

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	N Valley Rd Entrance	7	13	127	2	5	54	208

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
3	Chehalem Dr Access	30	6	2	32	18	5	93

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	23	9	12	42	4	7	97

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	12	152	51	17	85	16	33	85	15	33	32	13	544

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	34	181	38	5	130	10	8	1	46	79	1	26	559

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	1	23	16	34	34	0	0	2	0	12	1	9	132

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 AM Dev. Traffic.pdf

Scenario 3: 2017 AM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	Final Base	13	8	8	18	10	8	3	97	14	4	46	2	231
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	0	5	0	0	0	0	1	0	6	2	0	16
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**15**	**8**	**13**	**18**	**10**	**8**	**3**	**99**	**14**	**10**	**48**	**2**	**248**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	N Valley Rd Entrance	Final Base	0	0	123	0	0	52	175
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	7	13	3	2	5	1	31
		Other	0	0	0	0	0	0	0
		Future Total	**7**	**13**	**127**	**2**	**5**	**54**	**208**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
3	Chehalem Dr Access	Final Base	29	0	0	28	0	0	57
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	1	6	2	4	18	5	36
		Other	0	0	0	0	0	0	0
		Future Total	**30**	**6**	**2**	**32**	**18**	**5**	**93**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	Final Base	19	9	4	28	4	4	68
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	4	0	8	14	0	3	29
		Other	0	0	0	0	0	0	0
		Future Total	**23**	**9**	**12**	**42**	**4**	**7**	**97**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	Final Base	12	150	50	17	84	13	25	76	15	33	29	13	517
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	3	8	8	0	0	3	0	22
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**12**	**152**	**51**	**17**	**85**	**16**	**33**	**85**	**15**	**33**	**32**	**13**	**544**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	Final Base	31	179	38	5	129	10	8	1	38	78	1	26	544
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	3	0	0	0	0	0	0	0	8	0	0	0	11
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**34**	**181**	**38**	**5**	**130**	**10**	**8**	**1**	**46**	**79**	**1**	**26**	**559**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	Final Base	1	22	16	24	30	0	0	2	0	12	1	6	114
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	10	4	0	0	0	0	0	0	3	18
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**1**	**23**	**16**	**34**	**34**	**0**	**0**	**2**	**0**	**12**	**1**	**9**	**132**

Signal Warrants Report For Intersection #1: Chehalem Dr at N Valley Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	1	2	1	1
2	1	2	1	1
3	2	3	1	1
4	2	3	1	1
5	2	5	1	1
6	6	12	4	4
7	7	13	4	4
8	12	23	7	7
9	21	41	13	13
10	22	42	13	13
11	22	42	13	13
12	23	45	14	14
13	26	50	15	15
14	27	52	16	16
15	27	52	16	16
16	29	56	17	17
17	36	70	22	22
18	38	73	23	23
19	41	79	24	24
20	46	88	27	27
21	48	93	29	29
22	56	109	34	34
23	58	111	35	35
24	60	116	36	36

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	3	2	2	No	No	No	No	No	No	No	No	No	No
2	2	3	2	2	No	No	No	No	No	No	No	No	No	No
3	2	5	2	2	No	No	No	No	No	No	No	No	No	No
4	2	5	2	2	No	No	No	No	No	No	No	No	No	No
5	2	7	2	2	No	No	No	No	No	No	No	No	No	No
6	2	18	2	8	No	No	No	No	No	No	No	No	No	No
7	2	20	2	8	No	No	No	No	No	No	No	No	No	No
8	2	35	2	14	No	No	No	No	No	No	No	No	No	No
9	2	62	2	26	No	No	No	No	No	No	No	No	No	No
10	2	64	2	26	No	No	No	No	No	No	No	No	No	No
11	2	64	2	26	No	No	No	No	No	No	No	No	No	No
12	2	68	2	28	No	No	No	No	No	No	No	No	No	No
13	2	76	2	30	No	No	No	No	No	No	No	No	No	No
14	2	79	2	32	No	No	No	No	No	No	No	No	No	No
15	2	79	2	32	No	No	No	No	No	No	No	No	No	No
16	2	85	2	34	No	No	No	No	No	No	No	No	No	No
17	2	106	2	44	No	No	No	No	No	No	No	No	No	No
18	2	111	2	46	No	No	No	No	No	No	No	No	No	No
19	2	120	2	48	No	No	No	No	No	No	No	No	No	No
20	2	134	2	54	No	No	No	No	No	No	No	No	No	No
21	2	141	2	58	No	No	No	No	No	No	No	No	No	No
22	2	165	2	68	No	No	No	No	No	No	No	No	No	No
23	2	169	2	70	No	No	No	No	No	No	No	No	No	No
24	2	176	2	72	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9	10.1
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:05	0:06
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	36	36
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	248	248
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	188	1	20	No	No	No	No	No	No	No	No	No	No
2	2	181	1	19	No	No	No	No	No	No	No	No	No	No
3	2	176	1	19	No	No	No	No	No	No	No	No	No	No
4	2	150	1	16	No	No	No	No	No	No	No	No	No	No
5	2	143	1	15	No	No	No	No	No	No	No	No	No	No
6	2	128	1	14	No	No	No	No	No	No	No	No	No	No
7	2	118	1	13	No	No	No	No	No	No	No	No	No	No
8	2	112	1	12	No	No	No	No	No	No	No	No	No	No
9	2	90	1	10	No	No	No	No	No	No	No	No	No	No
10	2	85	1	9	No	No	No	No	No	No	No	No	No	No
11	2	85	1	9	No	No	No	No	No	No	No	No	No	No
12	2	80	1	9	No	No	No	No	No	No	No	No	No	No
13	2	73	1	8	No	No	No	No	No	No	No	No	No	No
14	2	67	1	7	No	No	No	No	No	No	No	No	No	No
15	2	67	1	7	No	No	No	No	No	No	No	No	No	No
16	2	66	1	7	No	No	No	No	No	No	No	No	No	No
17	2	38	1	4	No	No	No	No	No	No	No	No	No	No
18	2	20	1	2	No	No	No	No	No	No	No	No	No	No
19	2	19	1	2	No	No	No	No	No	No	No	No	No	No
20	2	7	1	1	No	No	No	No	No	No	No	No	No	No
21	2	6	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	1	No	No	No	No	No	No	No	No	No	No
23	2	4	1	0	No	No	No	No	No	No	No	No	No	No
24	2	4	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	20
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	208
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection #3: Chehalem Dr Access

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	34	36	23
2	33	35	22
3	32	34	22
4	27	29	18
5	26	27	17
6	23	24	16
7	21	23	14
8	20	22	14
9	16	17	11
10	15	16	10
11	15	16	10
12	15	15	10
13	13	14	9
14	12	13	8
15	12	13	8
16	12	13	8
17	7	7	5
18	4	4	3
19	3	4	2
20	1	1	1
21	1	1	1
22	1	1	1
23	1	1	0
24	1	1	0

Signal Warrants Report For Intersection #4: Chehalem Dr at Foothills Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	54	32	11
2	52	31	11
3	51	30	10
4	43	26	9
5	41	24	8
6	37	22	7
7	34	20	7
8	32	19	7
9	26	15	5
10	24	14	5
11	24	14	5
12	23	14	5
13	21	12	4
14	19	12	4
15	19	12	4
16	19	11	4
17	11	6	2
18	6	4	1
19	5	3	1
20	2	1	0
21	2	1	0
22	2	1	0
23	1	1	0
24	1	1	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	86	1	11	No	No	No	No	No	No	No	No	No	No
2	2	83	1	11	No	No	No	No	No	No	No	No	No	No
3	2	81	1	10	No	No	No	No	No	No	No	No	No	No
4	2	69	1	9	No	No	No	No	No	No	No	No	No	No
5	2	65	1	8	No	No	No	No	No	No	No	No	No	No
6	2	59	1	7	No	No	No	No	No	No	No	No	No	No
7	2	54	1	7	No	No	No	No	No	No	No	No	No	No
8	2	51	1	7	No	No	No	No	No	No	No	No	No	No
9	2	41	1	5	No	No	No	No	No	No	No	No	No	No
10	2	38	1	5	No	No	No	No	No	No	No	No	No	No
11	2	38	1	5	No	No	No	No	No	No	No	No	No	No
12	2	37	1	5	No	No	No	No	No	No	No	No	No	No
13	2	33	1	4	No	No	No	No	No	No	No	No	No	No
14	2	31	1	4	No	No	No	No	No	No	No	No	No	No
15	2	31	1	4	No	No	No	No	No	No	No	No	No	No
16	2	30	1	4	No	No	No	No	No	No	No	No	No	No
17	2	17	1	2	No	No	No	No	No	No	No	No	No	No
18	2	10	1	1	No	No	No	No	No	No	No	No	No	No
19	2	8	1	1	No	No	No	No	No	No	No	No	No	No
20	2	3	1	0	No	No	No	No	No	No	No	No	No	No
21	2	3	1	0	No	No	No	No	No	No	No	No	No	No
22	2	3	1	0	No	No	No	No	No	No	No	No	No	No
23	2	2	1	0	No	No	No	No	No	No	No	No	No	No
24	2	2	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	11
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	97
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection #5: N Valley Rd at Hwy 219

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	118	215	78	133
2	113	206	75	128
3	111	202	73	125
4	94	172	62	106
5	90	163	59	101
6	80	146	53	90
7	74	135	49	84
8	71	129	47	80
9	57	103	37	64
10	53	97	35	60
11	53	97	35	60
12	51	92	34	57
13	46	84	30	52
14	42	77	28	48
15	42	77	28	48
16	41	75	27	47
17	24	43	16	27
18	13	24	9	15
19	12	22	8	13
20	5	9	3	5
21	4	6	2	4
22	4	6	2	4
23	2	4	2	3
24	2	4	2	3

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	333	2	211	No	No	No	No	No	No	No	No	No	No
2	2	319	2	203	No	No	No	No	No	No	No	No	No	No
3	2	313	2	198	No	No	No	No	No	No	No	No	No	No
4	2	266	2	168	No	No	No	No	No	No	No	No	No	No
5	2	253	2	160	No	No	No	No	No	No	No	No	No	No
6	2	226	2	143	No	No	No	No	No	No	No	No	No	No
7	2	209	2	133	No	No	No	No	No	No	No	No	No	No
8	2	200	2	127	No	No	No	No	No	No	No	No	No	No
9	2	160	2	101	No	No	No	No	No	No	No	No	No	No
10	2	150	2	95	No	No	No	No	No	No	No	No	No	No
11	2	150	2	95	No	No	No	No	No	No	No	No	No	No
12	2	143	2	91	No	No	No	No	No	No	No	No	No	No
13	2	130	2	82	No	No	No	No	No	No	No	No	No	No
14	2	119	2	76	No	No	No	No	No	No	No	No	No	No
15	2	119	2	76	No	No	No	No	No	No	No	No	No	No
16	2	116	2	74	No	No	No	No	No	No	No	No	No	No
17	2	67	2	43	No	No	No	No	No	No	No	No	No	No
18	2	37	2	24	No	No	No	No	No	No	No	No	No	No
19	2	34	2	21	No	No	No	No	No	No	No	No	No	No
20	2	14	2	8	No	No	No	No	No	No	No	No	No	No
21	2	10	2	6	No	No	No	No	No	No	No	No	No	No
22	2	10	2	6	No	No	No	No	No	No	No	No	No	No
23	2	6	2	5	No	No	No	No	No	No	No	No	No	No
24	2	6	2	5	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.6	14.4
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:17	0:31
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	78	133
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	544	544
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #6: Hwy 219 at Foothills

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	253	145	106	55
2	243	139	102	53
3	238	136	100	52
4	202	116	85	44
5	192	110	81	42
6	172	99	72	37
7	159	91	67	35
8	152	87	64	33
9	121	70	51	26
10	114	65	48	25
11	114	65	48	25
12	109	62	46	24
13	99	57	41	21
14	91	52	38	20
15	91	52	38	20
16	89	51	37	19
17	51	29	21	11
18	28	16	12	6
19	25	15	11	6
20	10	6	4	2
21	8	4	3	2
22	8	4	3	2
23	5	3	2	1
24	5	3	2	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	398	2	161	No	No	No	Yes	No	No	No	No	No	No
2	2	382	2	155	No	No	No	Yes	No	No	No	No	No	No
3	2	374	2	152	No	No	No	Yes	No	No	No	No	No	No
4	2	318	2	129	No	No	No	No	No	No	No	No	No	No
5	2	302	2	123	No	No	No	No	No	No	No	No	No	No
6	2	271	2	109	No	No	No	No	No	No	No	No	No	No
7	2	250	2	102	No	No	No	No	No	No	No	No	No	No
8	2	239	2	97	No	No	No	No	No	No	No	No	No	No
9	2	191	2	77	No	No	No	No	No	No	No	No	No	No
10	2	179	2	73	No	No	No	No	No	No	No	No	No	No
11	2	179	2	73	No	No	No	No	No	No	No	No	No	No
12	2	171	2	70	No	No	No	No	No	No	No	No	No	No
13	2	156	2	62	No	No	No	No	No	No	No	No	No	No
14	2	143	2	58	No	No	No	No	No	No	No	No	No	No
15	2	143	2	58	No	No	No	No	No	No	No	No	No	No
16	2	140	2	56	No	No	No	No	No	No	No	No	No	No
17	2	80	2	32	No	No	No	No	No	No	No	No	No	No
18	2	44	2	18	No	No	No	No	No	No	No	No	No	No
19	2	40	2	17	No	No	No	No	No	No	No	No	No	No
20	2	16	2	6	No	No	No	No	No	No	No	No	No	No
21	2	12	2	5	No	No	No	No	No	No	No	No	No	No
22	2	12	2	5	No	No	No	No	No	No	No	No	No	No
23	2	8	2	3	No	No	No	No	No	No	No	No	No	No
24	2	8	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	3	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	14	10
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:24	0:09
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	106	55
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	559	559
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #7: Chehalem Dr at Mountainview Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	40	68	22	2
2	38	65	21	2
3	38	64	21	2
4	32	54	18	2
5	30	52	17	2
6	27	46	15	1
7	25	43	14	1
8	24	41	13	1
9	19	33	11	1
10	18	31	10	1
11	18	31	10	1
12	17	29	9	1
13	16	27	9	1
14	14	24	8	1
15	14	24	8	1
16	14	24	8	1
17	8	14	4	0
18	4	7	2	0
19	4	7	2	0
20	2	3	1	0
21	1	2	1	0
22	1	2	1	0
23	1	1	0	0
24	1	1	0	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	108	2	24	No	No	No	No	No	No	No	No	No	No
2	2	103	2	23	No	No	No	No	No	No	No	No	No	No
3	2	102	2	23	No	No	No	No	No	No	No	No	No	No
4	2	86	2	20	No	No	No	No	No	No	No	No	No	No
5	2	82	2	19	No	No	No	No	No	No	No	No	No	No
6	2	73	2	16	No	No	No	No	No	No	No	No	No	No
7	2	68	2	15	No	No	No	No	No	No	No	No	No	No
8	2	65	2	14	No	No	No	No	No	No	No	No	No	No
9	2	52	2	12	No	No	No	No	No	No	No	No	No	No
10	2	49	2	11	No	No	No	No	No	No	No	No	No	No
11	2	49	2	11	No	No	No	No	No	No	No	No	No	No
12	2	46	2	10	No	No	No	No	No	No	No	No	No	No
13	2	43	2	10	No	No	No	No	No	No	No	No	No	No
14	2	38	2	9	No	No	No	No	No	No	No	No	No	No
15	2	38	2	9	No	No	No	No	No	No	No	No	No	No
16	2	38	2	9	No	No	No	No	No	No	No	No	No	No
17	2	22	2	4	No	No	No	No	No	No	No	No	No	No
18	2	11	2	2	No	No	No	No	No	No	No	No	No	No
19	2	11	2	2	No	No	No	No	No	No	No	No	No	No
20	2	5	2	1	No	No	No	No	No	No	No	No	No	No
21	2	3	2	1	No	No	No	No	No	No	No	No	No	No
22	2	3	2	1	No	No	No	No	No	No	No	No	No	No
23	2	2	2	0	No	No	No	No	No	No	No	No	No	No
24	2	2	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4	10.3
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03	0:00
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	22	2
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	132	132
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 AM Dev. Traffic.pdf

Scenario 3: 2017 AM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Zone	Single Family Homes	ITE 210	Single Family Homes	0.750	75.000	25.00	75.00	14	42	56	100.00
					Added Trips Total			14	42	56	100.00

Chehalem at N Valley TIA

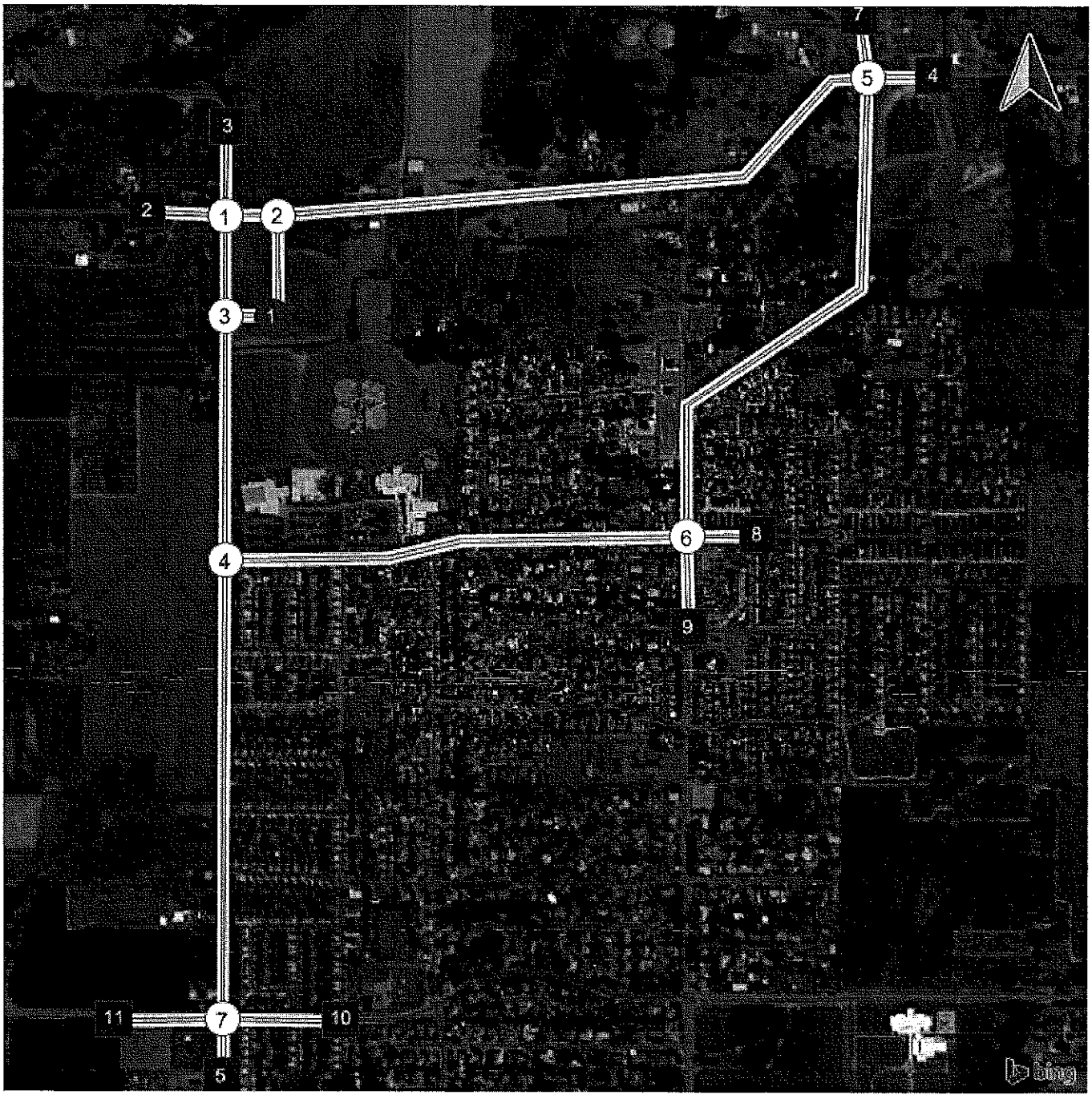
Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 AM Dev. Traffic.pdf

Scenario 3: 2017 AM Peak
4/21/2016

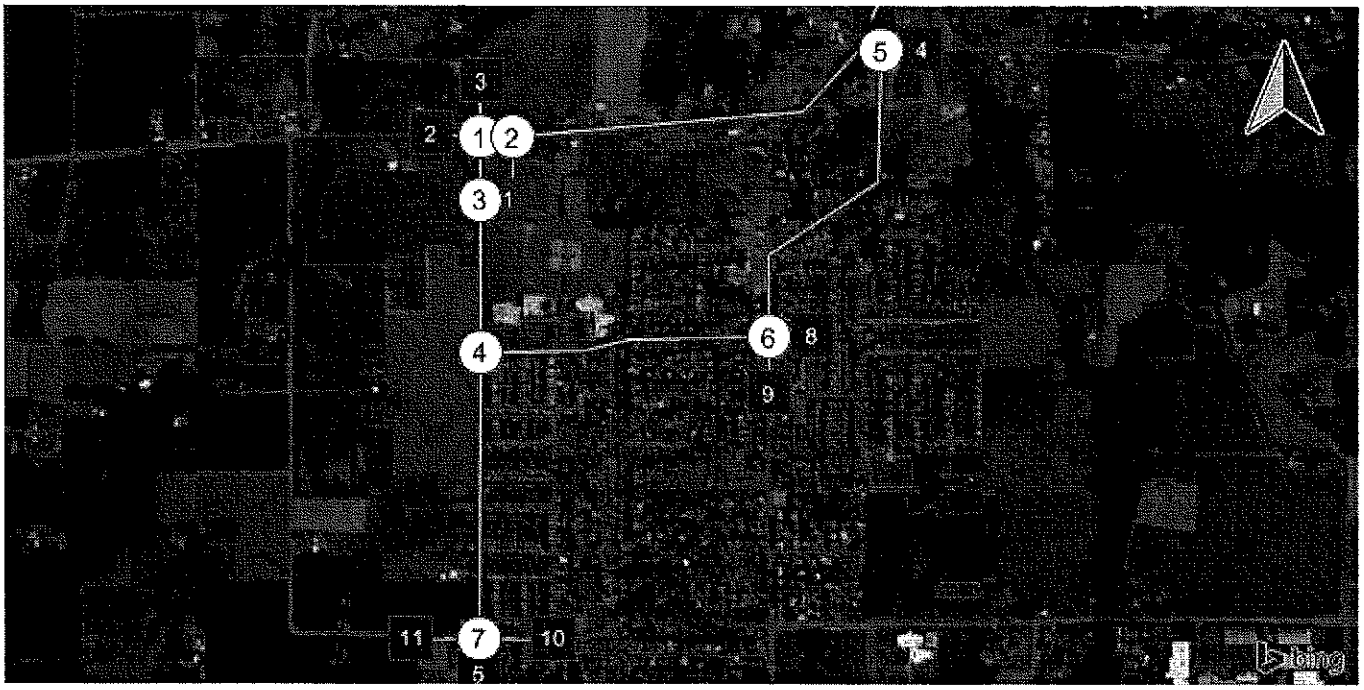
Trip distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	1	10.00	4
3: Gate	0.00	0	0.00	0
4: Gate	20.00	3	20.00	8
5: Gate	10.00	1	10.00	4
7: Gate	20.00	3	20.00	8
8: Gate	0.00	0	0.00	0
9: Gate	20.00	3	20.00	8
10: Gate	20.00	3	20.00	10
11: Gate	0.00	0	0.00	0
Total	**100.00**	**14**	**100.00**	**42**

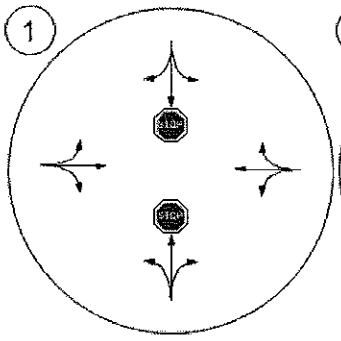
Report Figure 1: Study Intersections



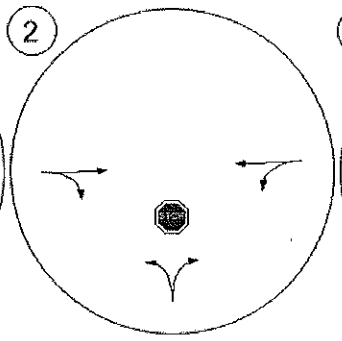
Report Figure 2: Lane Configuration and Traffic Control



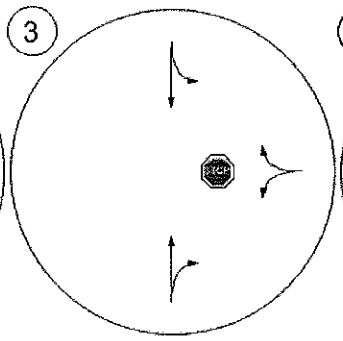
Chehalem Dr at N Valley Rd



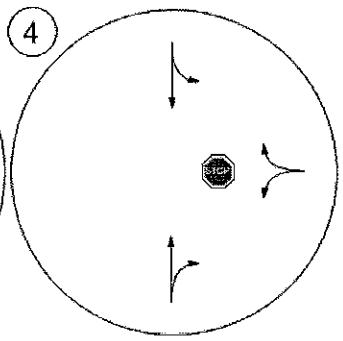
N Valley Rd Entrance



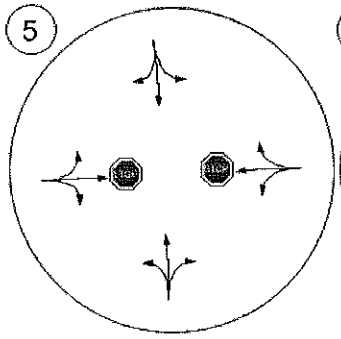
Chehalem Dr Access



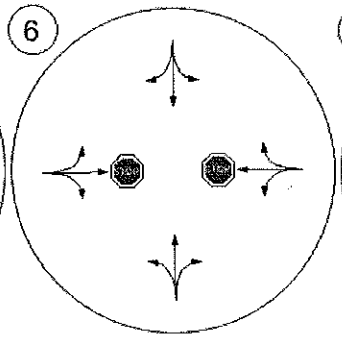
Chehalem Dr at Foothills Dr



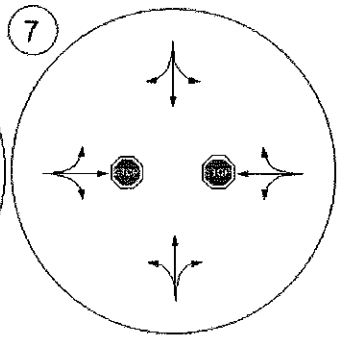
N Valley Rd at Hwy 219



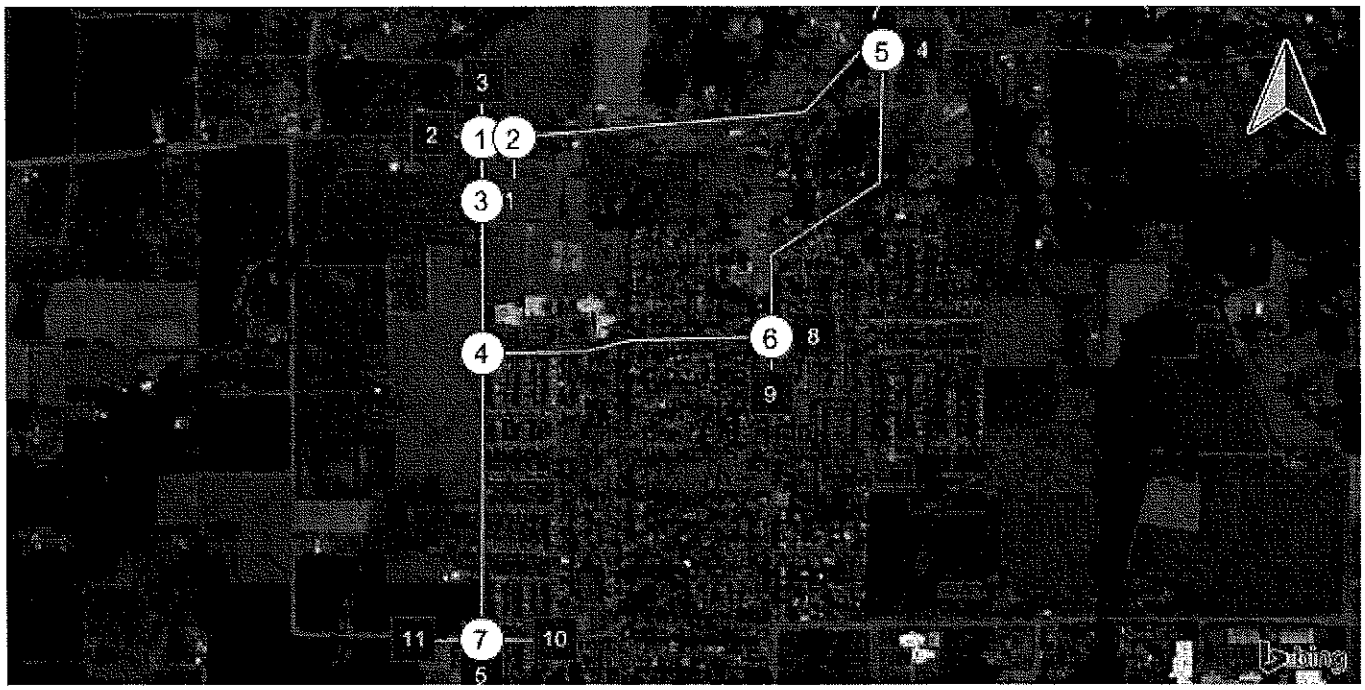
Hwy 219 at Foothills

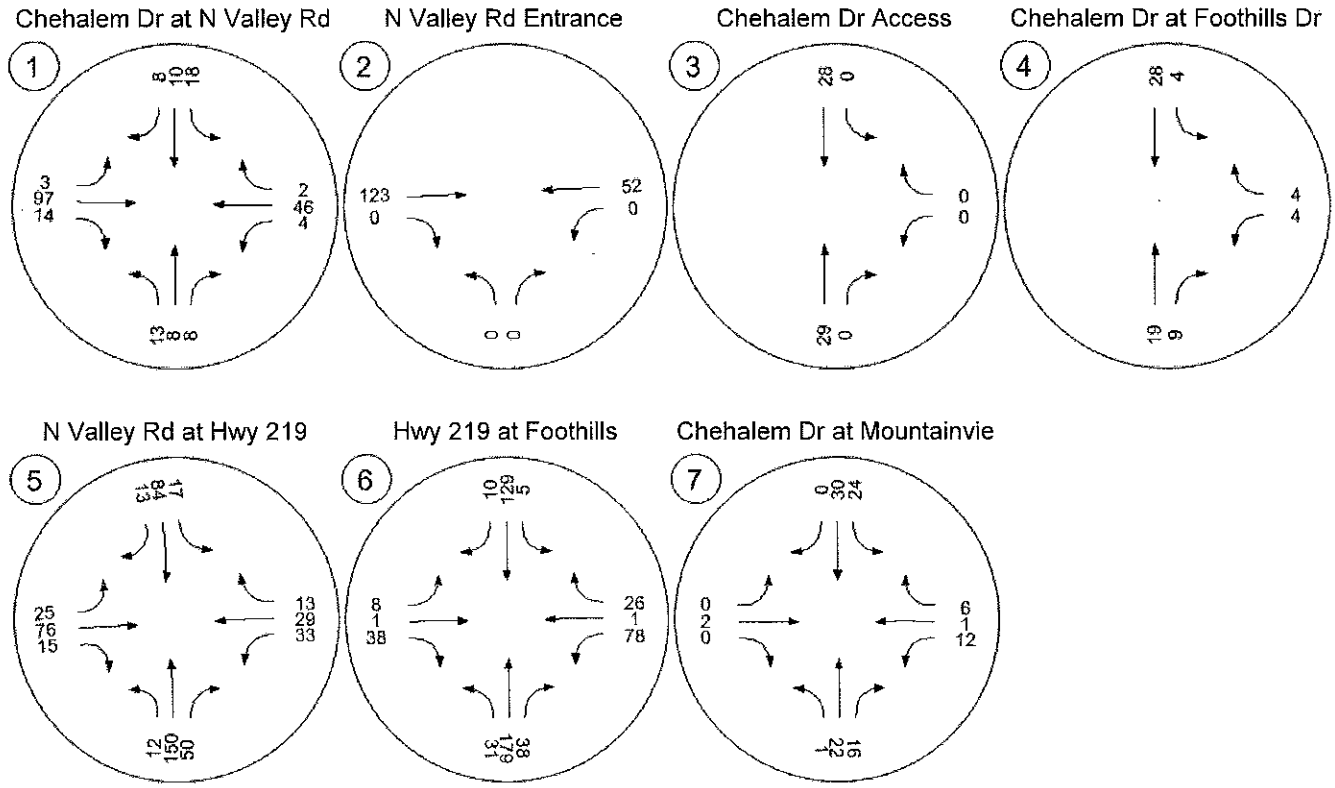


Chehalem Dr at Mountainvie

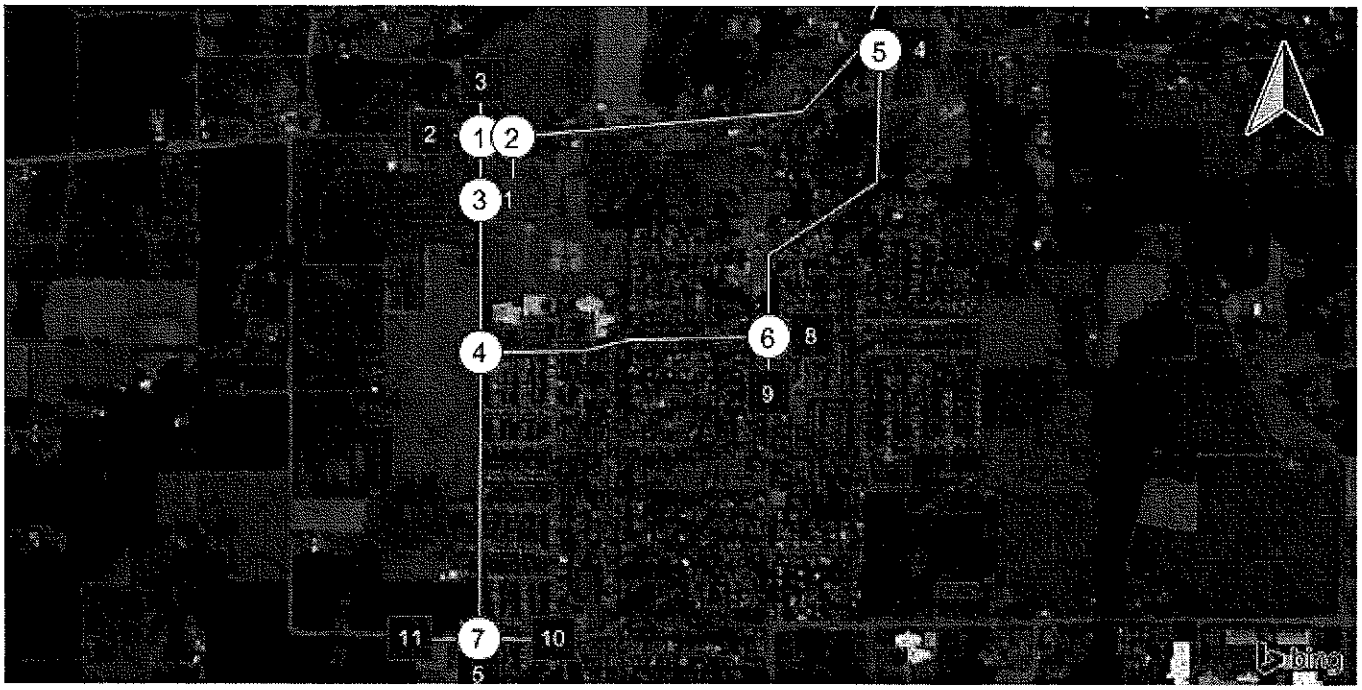


Report Figure 3a: Traffic Volume - Base Volume

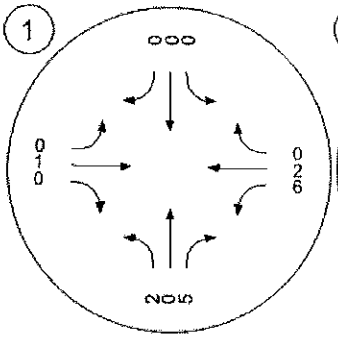




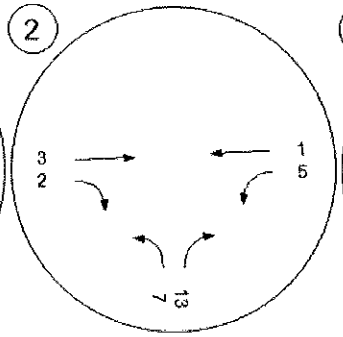
Report Figure 3c: Traffic Volume - Net New Site Trips



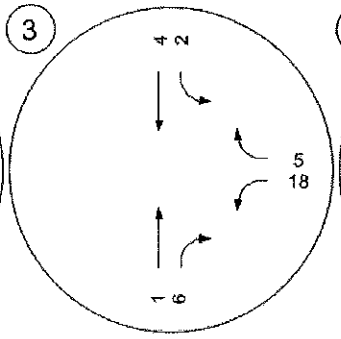
Chehalem Dr at N Valley Rd



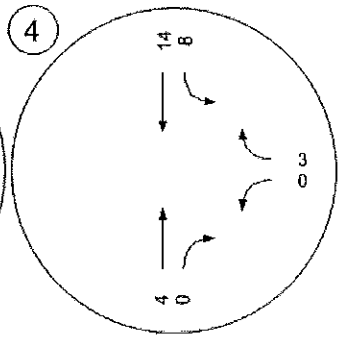
N Valley Rd Entrance



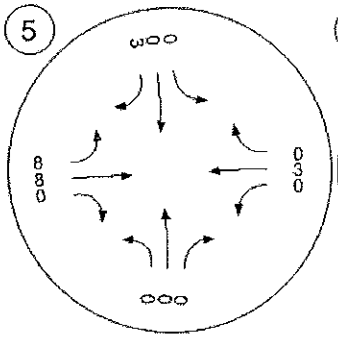
Chehalem Dr Access



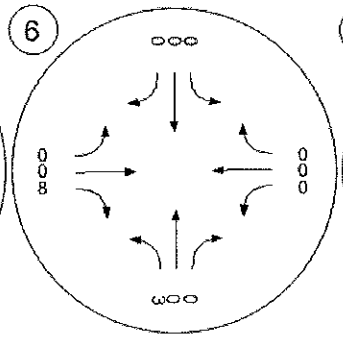
Chehalem Dr at Foothills Dr



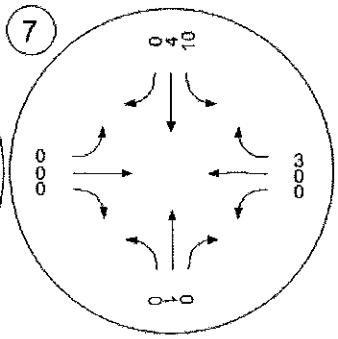
N Valley Rd at Hwy 219



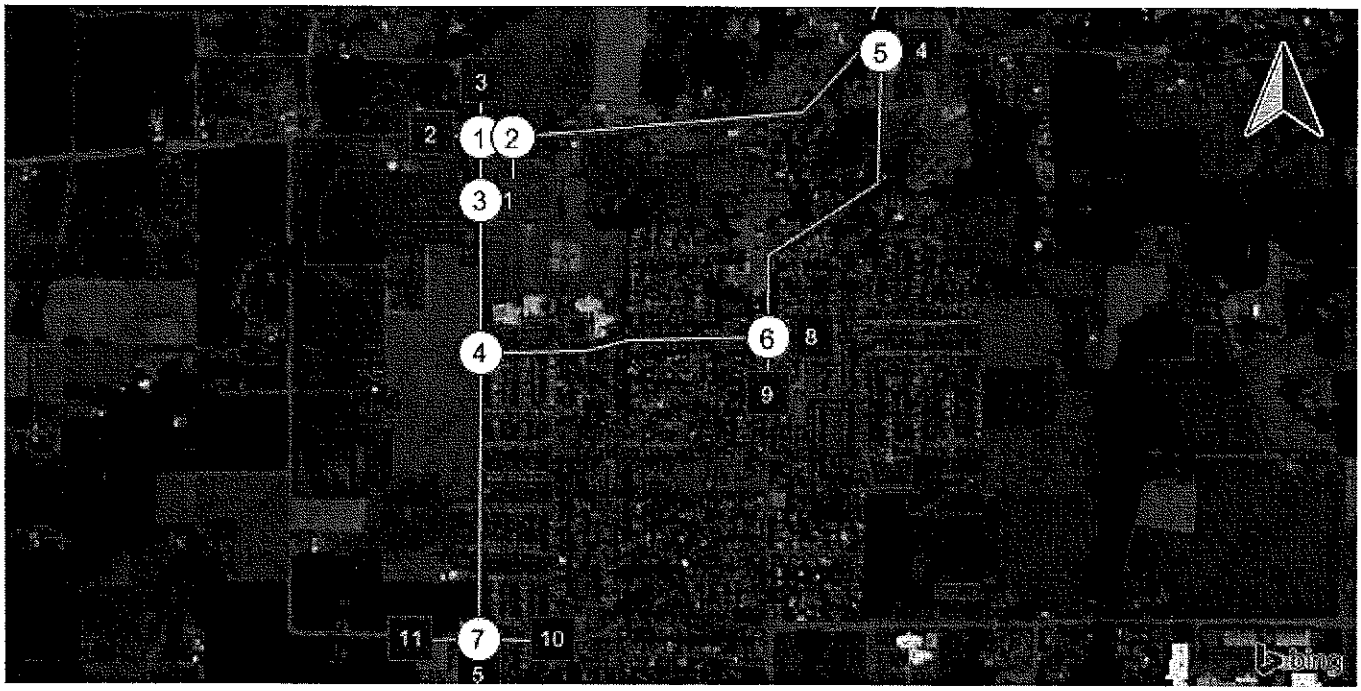
Hwy 219 at Foothills

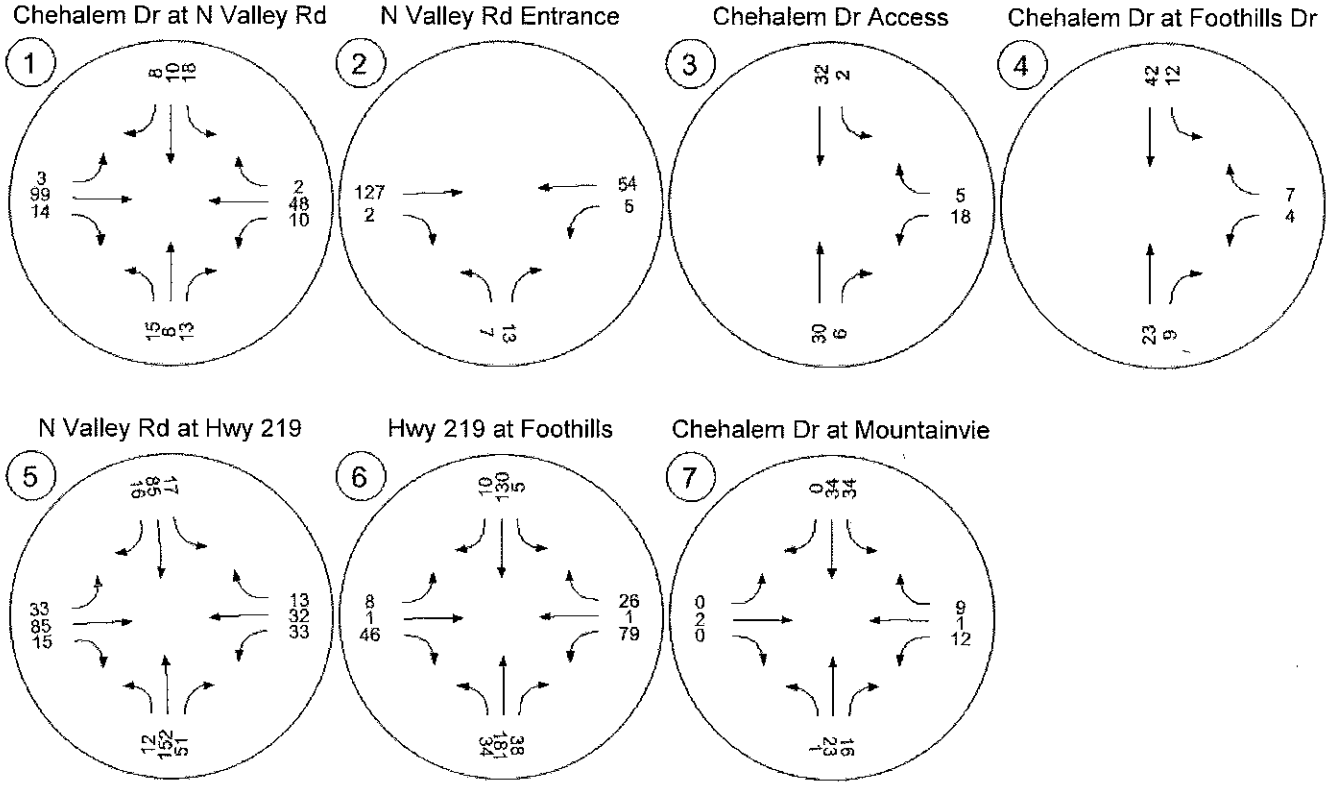


Chehalem Dr at Mountainvie

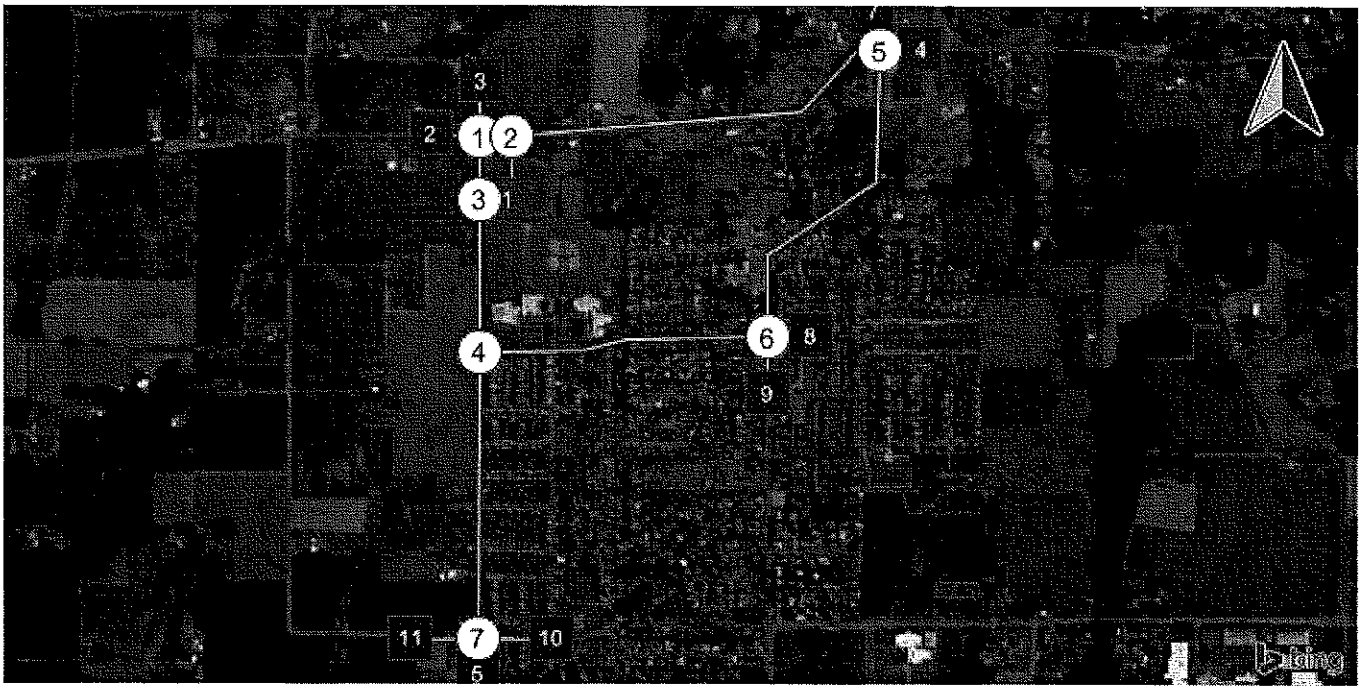


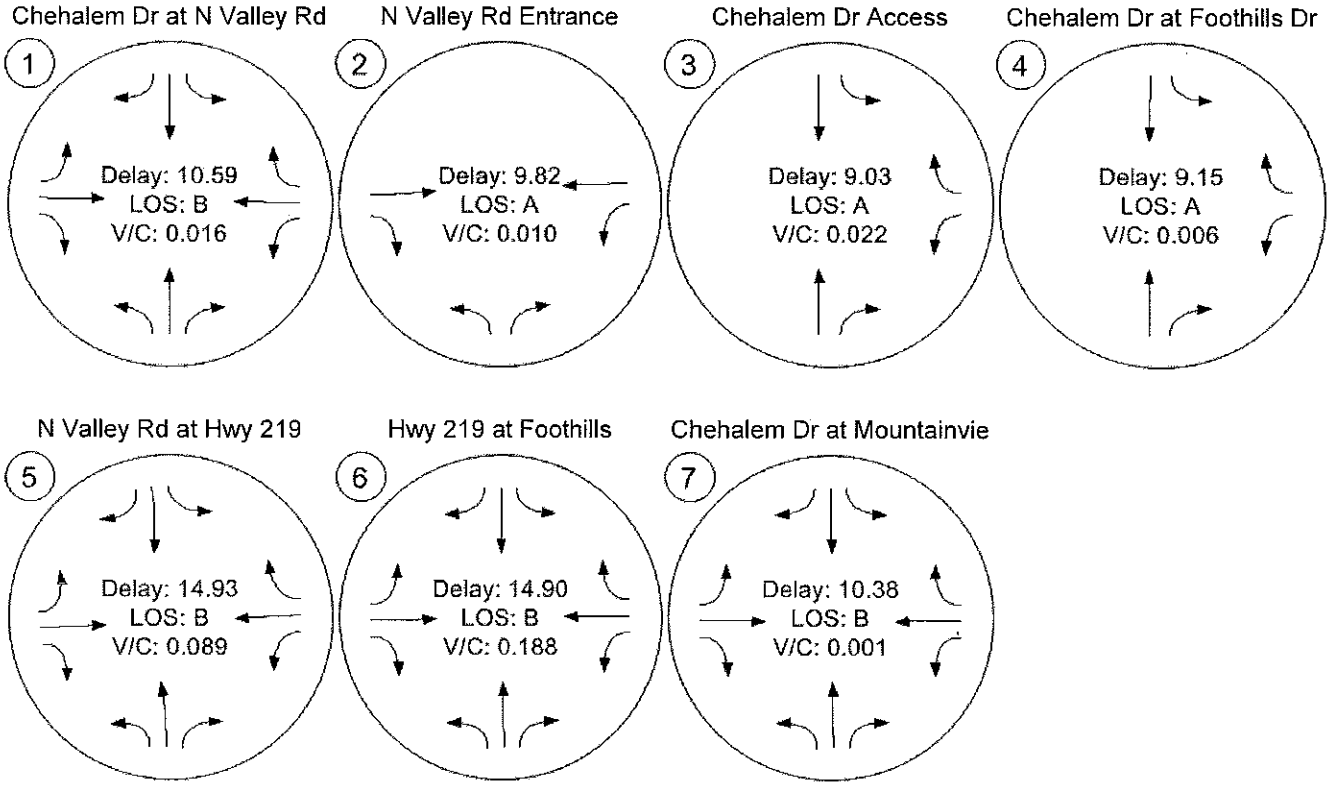
Report Figure 3e: Traffic Volume - Future Total Volume





Report Figure 4: Traffic Conditions





Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 PM Dev. Traffic.pdf

Scenario 4: 2017 PM Peak
4/21/2016

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Chehalem Dr at N Valley Rd	Two-way stop	HCM2010	NBT	0.030	12.3	B
2	N Valley Rd Entrance	Two-way stop	HCM2010	NBL	0.006	9.2	A
3	Chehalem Dr Access	Two-way stop	HCM2010	WBL	0.015	9.6	A
4	Chehalem Dr at Foothills Dr	Two-way stop	HCM2010	WBL	0.032	9.8	A
5	N Valley Rd at Hwy 219	Two-way stop	HCM2010	WBL	0.136	21.7	C
6	Hwy 219 at Foothills	Two-way stop	HCM2010	WBL	0.302	26.6	D
7	Chehalem Dr at Mountainview Dr	Two-way stop	HCM2010	WBT	0.008	11.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value; for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
#1: Chehalem Dr at N Valley Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

Intersection Setup

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr						N Valley Rd			N Valley Rd		
Base Volume Input [veh/h]	18	13	7	7	18	4	1	78	19	27	129	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	7	0	0	0	0	3	2	6	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	13	14	7	18	4	1	82	21	33	132	15
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	6	4	4	2	6	1	0	26	7	10	41	5
Total Analysis Volume [veh/h]	24	16	17	9	22	5	1	102	26	41	165	19
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	no	no		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	no	no		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.03	0.02	0.02	0.04	0.01	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	12.28	12.33	9.42	12.17	12.21	9.57	7.58	0.00	0.00	7.53	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.30	0.30	0.30	0.20	0.20	0.20	0.30	0.30	0.30	0.54	0.54	0.54
95th-Percentile Queue Length [ft]	7.62	7.62	7.62	5.11	5.11	5.11	7.61	7.61	7.61	13.56	13.56	13.56
d_A, Approach Delay [s/veh]	11.44			11.83			0.06			1.37		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.12											
Intersection LOS	B											

Intersection Level Of Service Report
#2: N Valley Rd Entrance

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name			N Valley Rd		Bell Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name			N Valley Rd		Bell Rd	
Base Volume Input [veh/h]	0	0	28	0	0	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.50	2.50	2.50	2.50	2.50	2.50
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	10	2	8	14	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	10	30	8	14	30
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	1	3	9	2	4	9
Total Analysis Volume [veh/h]	5	12	35	9	16	35
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	no		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	no		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	9.15	8.56	0.00	0.00	7.33	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.05	0.05	0.00	0.00	0.10	0.10
95th-Percentile Queue Length [ft]	1.32	1.32	0.00	0.00	2.53	2.53
d_A, Approach Delay [s/veh]	8.73		0.00		2.30	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.37					
Intersection LOS	A					

Intersection Level Of Service Report
#3: Chehalem Dr Access

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Chehalem Dr		Chehalem Dr			
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Chehalem Dr		Chehalem Dr			
Base Volume Input [veh/h]	50	0	0	72	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.50	2.50	2.50	2.50	2.50	2.50
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	18	6	3	10	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	18	6	76	10	4
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	16	5	2	22	3	1
Total Analysis Volume [veh/h]	66	21	7	89	12	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	9.56	8.75
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.20	0.20	0.06	0.06
95th-Percentile Queue Length [ft]	0.00	0.00	5.10	5.10	1.53	1.53
d_A, Approach Delay [s/veh]	0.00		0.54		9.32	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.05					
Intersection LOS	A					

Intersection Level Of Service Report
#4: Chehalem Dr at Foothills Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	yes		yes		yes	

Volumes

Name	Chehalem Dr		Chehalem Dr		Foothills Dr	
Base Volume Input [veh/h]	36	14	14	51	21	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.50	2.50	2.50	2.50	2.50	2.50
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	6	7	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	14	20	59	21	14
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	15	4	6	17	6	4
Total Analysis Volume [veh/h]	59	16	24	69	25	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			no
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			no
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.03	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	9.76	8.83
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.20	0.20	0.15	0.15
95th-Percentile Queue Length [ft]	0.00	0.00	4.88	4.88	3.75	3.75
d_A, Approach Delay [s/veh]	0.00		1.91		9.40	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.69					
Intersection LOS	A					

Intersection Level Of Service Report
#5: N Valley Rd at Hwy 219

Control Type:	Two-way stop	Delay (sec / veh):	21.7
Analysis Method:	HCM2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

Intersection Setup

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Bell Rd			Bell Rd		
Base Volume Input [veh/h]	18	126	39	24	212	43	17	54	23	46	109	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	9	6	6	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	127	39	24	214	52	23	61	23	46	119	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	5	35	11	7	58	14	6	17	6	13	32	7
Total Analysis Volume [veh/h]	20	138	42	26	233	57	25	66	25	50	130	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.00	0.08	0.15	0.03	0.14	0.30	0.03
d_M, Delay for Movement [s/veh]	7.86	0.00	0.00	7.61	0.00	0.00	19.81	16.20	12.56	21.72	20.26	15.97
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	C
95th-Percentile Queue Length [veh]	0.55	0.55	0.55	0.87	0.87	0.87	1.06	1.06	1.06	2.44	2.44	2.44
95th-Percentile Queue Length [ft]	13.83	13.83	13.83	21.63	21.63	21.63	26.42	26.42	26.42	60.98	60.98	60.98
d_A, Approach Delay [s/veh]	0.79			0.63			16.19			20.03		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	7.62											
Intersection LOS	C											

Intersection Level Of Service Report
#6: Hwy 219 at Foothills

Control Type:	Two-way stop	Delay (sec / veh):	26.6
Analysis Method:	HCM2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.302

Intersection Setup

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Hwy 219			Hwy 219			Foothills Dr			Foothills Dr		
Base Volume Input [veh/h]	82	179	101	17	252	17	15	7	55	68	9	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	0	0	6	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	181	102	17	255	17	15	7	62	69	9	10
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	25	49	27	5	69	5	4	2	17	19	2	3
Total Analysis Volume [veh/h]	99	195	110	18	275	18	16	8	67	74	10	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.01	0.00	0.00	0.06	0.03	0.09	0.30	0.03	0.01
d_M, Delay for Movement [s/veh]	8.08	0.00	0.00	7.91	0.00	0.00	19.54	19.60	11.25	26.65	24.31	16.53
Movement LOS	A	A	A	A	A	A	C	C	B	D	C	C
95th-Percentile Queue Length [veh]	1.38	1.38	1.38	0.98	0.98	0.98	0.63	0.63	0.63	1.51	1.51	1.51
95th-Percentile Queue Length [ft]	34.58	34.58	34.58	24.47	24.47	24.47	15.82	15.82	15.82	37.78	37.78	37.78
d_A, Approach Delay [s/veh]	1.98			0.46			13.44			25.23		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	5.06											
Intersection LOS	D											

Intersection Level Of Service Report
#7: Chehalem Dr at Mountainview Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	yes			yes			yes			yes		

Volumes

Name	Chehalem Dr			Chehalem Dr			Mountain View Dr			Mountain View Dr		
Base Volume Input [veh/h]	0	39	13	30	74	1	0	1	1	79	4	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53
Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	4	3	0	0	0	0	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	44	13	34	78	1	0	1	1	80	4	34
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345	1.0345
Total 15-Minute Volume [veh/h]	0	14	4	10	24	0	0	0	0	25	1	10
Total Analysis Volume [veh/h]	0	54	16	42	96	1	0	1	1	99	5	42
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			no	no
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			no	no
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.04
d_M, Delay for Movement [s/veh]	7.41	0.00	0.00	7.42	0.00	0.00	10.65	10.70	8.77	11.34	11.77	9.73
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.30	0.30	0.30	0.01	0.01	0.01	0.71	0.71	0.71
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	7.50	7.50	7.50	0.20	0.20	0.20	17.75	17.75	17.75
d_A, Approach Delay [s/veh]	0.00			2.24			9.74			10.89		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	5.38											
Intersection LOS	B											

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 PM Dev. Traffic.pdf

Scenario 4: 2017 PM Peak
4/21/2016

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	19	13	14	7	18	4	1	82	21	33	132	15	359

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	N Valley Rd Entrance	4	10	30	8	14	30	96

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
3	Chehalem Dr Access	56	18	6	76	10	4	170

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	50	14	20	59	21	14	178

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	18	127	39	24	214	52	23	61	23	46	119	26	772

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	92	181	102	17	255	17	15	7	62	69	9	10	836

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	0	44	13	34	78	1	0	1	1	80	4	34	290

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 PM Dev. Traffic.pdf

Scenario 4: 2017 PM Peak
4/21/2016

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Chehalem Dr at N Valley Rd	Final Base	18	13	7	7	18	4	1	78	19	27	129	15	336
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	1	0	7	0	0	0	0	3	2	6	2	0	21
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**19**	**13**	**14**	**7**	**18**	**4**	**1**	**82**	**21**	**33**	**132**	**15**	**359**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	N Valley Rd Entrance	Final Base	0	0	28	0	0	26	54
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	4	10	2	8	14	4	42
		Other	0	0	0	0	0	0	0
		Future Total	**4**	**10**	**30**	**8**	**14**	**30**	**96**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
3	Chehalem Dr Access	Final Base	50	0	0	72	0	0	122
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	5	18	6	3	10	4	46
		Other	0	0	0	0	0	0	0
		Future Total	**56**	**18**	**6**	**76**	**10**	**4**	**170**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
4	Chehalem Dr at Foothills Dr	Final Base	36	14	14	51	21	5	141
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	14	0	6	7	0	9	36
		Other	0	0	0	0	0	0	0
		Future Total	**50**	**14**	**20**	**59**	**21**	**14**	**178**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
5	N Valley Rd at Hwy 219	Final Base	18	126	39	24	212	43	17	54	23	46	109	26	737
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	9	6	6	0	0	9	0	30
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**18**	**127**	**39**	**24**	**214**	**52**	**23**	**61**	**23**	**46**	**119**	**26**	**772**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6	Hwy 219 at Foothills	Final Base	82	179	101	17	252	17	15	7	55	68	9	10	812
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	9	0	0	0	0	0	0	0	6	0	0	0	15
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**92**	**181**	**102**	**17**	**255**	**17**	**15**	**7**	**62**	**69**	**9**	**10**	**836**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7	Chehalem Dr at Mountainview Dr	Final Base	0	39	13	30	74	1	0	1	1	79	4	25	267
		Growth Rate	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	5	0	4	3	0	0	0	0	0	0	9	21
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**0**	**44**	**13**	**34**	**78**	**1**	**0**	**1**	**1**	**80**	**4**	**34**	**290**

Signal Warrants Report For Intersection #1: Chehalem Dr at N Valley Rd

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	Yes
Population < 10,000	Yes
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	4	2	1	1
2	4	2	1	1
3	5	3	1	1
4	5	3	1	1
5	7	4	2	1
6	18	10	5	3
7	20	11	5	3
8	36	21	9	6
9	63	36	16	10
10	65	37	17	10
11	65	37	17	10
12	70	41	18	11
13	77	45	20	12
14	81	47	21	13
15	81	47	21	13
16	86	50	22	14
17	108	62	28	17
18	113	66	29	18
19	122	71	31	20
20	137	79	35	22
21	144	83	37	23
22	169	98	43	27
23	173	100	44	28
24	180	104	46	29

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	6	2	2	No	No	No	No	No	No	No	No	No	No
2	2	6	2	2	No	No	No	No	No	No	No	No	No	No
3	2	8	2	2	No	No	No	No	No	No	No	No	No	No
4	2	8	2	2	No	No	No	No	No	No	No	No	No	No
5	2	11	2	3	No	No	No	No	No	No	No	No	No	No
6	2	28	2	8	No	No	No	No	No	No	No	No	No	No
7	2	31	2	8	No	No	No	No	No	No	No	No	No	No
8	2	57	2	15	No	No	No	No	No	No	No	No	No	No
9	2	99	2	26	No	No	No	No	No	No	No	No	No	No
10	2	102	2	27	No	No	No	No	No	No	No	No	No	No
11	2	102	2	27	No	No	No	No	No	No	No	No	No	No
12	2	111	2	29	No	No	No	No	No	No	No	No	No	No
13	2	122	2	32	No	No	No	No	No	No	No	No	No	No
14	2	128	2	34	No	No	No	No	No	No	No	No	No	No
15	2	128	2	34	No	No	No	No	No	No	No	No	No	No
16	2	136	2	36	No	No	No	No	No	No	No	No	No	No
17	2	170	2	45	No	No	No	No	No	No	No	No	No	No
18	2	179	2	47	No	No	No	No	No	No	No	No	No	No
19	2	193	2	51	No	No	No	No	No	No	No	No	No	No
20	2	216	2	57	No	No	No	No	No	No	No	No	No	No
21	2	227	2	60	No	No	No	No	No	No	No	No	No	No
22	2	267	2	70	No	No	No	No	No	No	No	No	No	No
23	2	273	2	72	No	No	No	No	No	No	No	No	No	No
24	2	284	2	75	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.4	11.8
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:08	0:05
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	46	29
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	359	359
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #4: Chehalem Dr at Foothills Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	E
1	79	64	35
2	76	61	34
3	74	60	33
4	63	51	28
5	60	49	27
6	54	44	24
7	50	40	22
8	47	38	21
9	38	31	17
10	36	29	16
11	36	29	16
12	34	28	15
13	31	25	14
14	28	23	13
15	28	23	13
16	28	22	12
17	16	13	7
18	9	7	4
19	8	6	4
20	3	3	1
21	2	2	1
22	2	2	1
23	2	1	1
24	2	1	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	143	1	35	No	No	No	No	No	No	No	No	No	No
2	2	137	1	34	No	No	No	No	No	No	No	No	No	No
3	2	134	1	33	No	No	No	No	No	No	No	No	No	No
4	2	114	1	28	No	No	No	No	No	No	No	No	No	No
5	2	109	1	27	No	No	No	No	No	No	No	No	No	No
6	2	98	1	24	No	No	No	No	No	No	No	No	No	No
7	2	90	1	22	No	No	No	No	No	No	No	No	No	No
8	2	85	1	21	No	No	No	No	No	No	No	No	No	No
9	2	69	1	17	No	No	No	No	No	No	No	No	No	No
10	2	65	1	16	No	No	No	No	No	No	No	No	No	No
11	2	65	1	16	No	No	No	No	No	No	No	No	No	No
12	2	62	1	15	No	No	No	No	No	No	No	No	No	No
13	2	56	1	14	No	No	No	No	No	No	No	No	No	No
14	2	51	1	13	No	No	No	No	No	No	No	No	No	No
15	2	51	1	13	No	No	No	No	No	No	No	No	No	No
16	2	50	1	12	No	No	No	No	No	No	No	No	No	No
17	2	29	1	7	No	No	No	No	No	No	No	No	No	No
18	2	16	1	4	No	No	No	No	No	No	No	No	No	No
19	2	14	1	4	No	No	No	No	No	No	No	No	No	No
20	2	6	1	1	No	No	No	No	No	No	No	No	No	No
21	2	4	1	1	No	No	No	No	No	No	No	No	No	No
22	2	4	1	1	No	No	No	No	No	No	No	No	No	No
23	2	3	1	1	No	No	No	No	No	No	No	No	No	No
24	2	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:05
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	35
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	178
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection #5: N Valley Rd at Hwy 219

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	290	184	191	107
2	278	177	183	103
3	273	173	180	101
4	232	147	153	86
5	220	140	145	81
6	197	125	130	73
7	183	116	120	67
8	174	110	115	64
9	139	88	92	51
10	131	83	86	48
11	131	83	86	48
12	125	79	82	46
13	113	72	74	42
14	104	66	69	39
15	104	66	69	39
16	102	64	67	37
17	58	37	38	21
18	32	20	21	12
19	29	18	19	11
20	12	7	8	4
21	9	6	6	3
22	9	6	6	3
23	6	4	4	2
24	6	4	4	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	474	2	298	No	No	Yes	Yes	No	No	No	No	No	No
2	2	455	2	286	No	No	Yes	Yes	No	No	No	No	No	No
3	2	446	2	281	No	No	Yes	Yes	No	No	No	No	No	No
4	2	379	2	239	No	No	No	Yes	No	No	No	No	No	No
5	2	360	2	226	No	No	No	Yes	No	No	No	No	No	No
6	2	322	2	203	No	No	No	No	No	No	No	No	No	No
7	2	299	2	187	No	No	No	No	No	No	No	No	No	No
8	2	284	2	179	No	No	No	No	No	No	No	No	No	No
9	2	227	2	143	No	No	No	No	No	No	No	No	No	No
10	2	214	2	134	No	No	No	No	No	No	No	No	No	No
11	2	214	2	134	No	No	No	No	No	No	No	No	No	No
12	2	204	2	128	No	No	No	No	No	No	No	No	No	No
13	2	185	2	116	No	No	No	No	No	No	No	No	No	No
14	2	170	2	108	No	No	No	No	No	No	No	No	No	No
15	2	170	2	108	No	No	No	No	No	No	No	No	No	No
16	2	166	2	104	No	No	No	No	No	No	No	No	No	No
17	2	95	2	59	No	No	No	No	No	No	No	No	No	No
18	2	52	2	33	No	No	No	No	No	No	No	No	No	No
19	2	47	2	30	No	No	No	No	No	No	No	No	No	No
20	2	19	2	12	No	No	No	No	No	No	No	No	No	No
21	2	15	2	9	No	No	No	No	No	No	No	No	No	No
22	2	15	2	9	No	No	No	No	No	No	No	No	No	No
23	2	10	2	6	No	No	No	No	No	No	No	No	No	No
24	2	10	2	6	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	3	5	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	20	16.2
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	1:03	0:28
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	191	107
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	772	772
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #6: Hwy 219 at Foothills

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	375	289	88	84
2	360	277	84	81
3	353	272	83	79
4	300	231	70	67
5	285	220	67	64
6	255	197	60	57
7	236	182	55	53
8	225	173	53	50
9	180	139	42	40
10	169	130	40	38
11	169	130	40	38
12	161	124	38	36
13	146	113	34	33
14	135	104	32	30
15	135	104	32	30
16	131	101	31	29
17	75	58	18	17
18	41	32	10	9
19	38	29	9	8
20	15	12	4	3
21	11	9	3	3
22	11	9	3	3
23	8	6	2	2
24	8	6	2	2

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	664	2	172	No	No	No	Yes	No	No	Yes	Yes	No	No
2	2	637	2	165	No	No	No	Yes	No	No	Yes	Yes	No	No
3	2	625	2	162	No	No	No	No	No	No	No	Yes	No	No
4	2	531	2	137	No	No	No	No	No	No	No	Yes	No	No
5	2	505	2	131	No	No	No	No	No	No	No	Yes	No	No
6	2	452	2	117	No	No	No	No	No	No	No	No	No	No
7	2	418	2	108	No	No	No	No	No	No	No	No	No	No
8	2	398	2	103	No	No	No	No	No	No	No	No	No	No
9	2	319	2	82	No	No	No	No	No	No	No	No	No	No
10	2	299	2	78	No	No	No	No	No	No	No	No	No	No
11	2	299	2	78	No	No	No	No	No	No	No	No	No	No
12	2	285	2	74	No	No	No	No	No	No	No	No	No	No
13	2	259	2	67	No	No	No	No	No	No	No	No	No	No
14	2	239	2	62	No	No	No	No	No	No	No	No	No	No
15	2	239	2	62	No	No	No	No	No	No	No	No	No	No
16	2	232	2	60	No	No	No	No	No	No	No	No	No	No
17	2	133	2	35	No	No	No	No	No	No	No	No	No	No
18	2	73	2	19	No	No	No	No	No	No	No	No	No	No
19	2	67	2	17	No	No	No	No	No	No	No	No	No	No
20	2	27	2	7	No	No	No	No	No	No	No	No	No	No
21	2	20	2	6	No	No	No	No	No	No	No	No	No	No
22	2	20	2	6	No	No	No	No	No	No	No	No	No	No
23	2	14	2	4	No	No	No	No	No	No	No	No	No	No
24	2	14	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	2	0	0	2	5	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	25.2	13.4
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:37	0:18
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	88	84
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	836	836
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection #7: Chehalem Dr at Mountainview Dr

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	57	113	118	2
2	55	108	113	2
3	54	106	111	2
4	46	90	94	2
5	43	86	90	2
6	39	77	80	1
7	36	71	74	1
8	34	68	71	1
9	27	54	57	1
10	26	51	53	1
11	26	51	53	1
12	25	49	51	1
13	22	44	46	1
14	21	41	42	1
15	21	41	42	1
16	20	40	41	1
17	11	23	24	0
18	6	12	13	0
19	6	11	12	0
20	2	5	5	0
21	2	3	4	0
22	2	3	4	0
23	1	2	2	0
24	1	2	2	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	170	2	120	No	No	No	No	No	No	No	No	No	No
2	2	163	2	115	No	No	No	No	No	No	No	No	No	No
3	2	160	2	113	No	No	No	No	No	No	No	No	No	No
4	2	136	2	96	No	No	No	No	No	No	No	No	No	No
5	2	129	2	92	No	No	No	No	No	No	No	No	No	No
6	2	116	2	81	No	No	No	No	No	No	No	No	No	No
7	2	107	2	75	No	No	No	No	No	No	No	No	No	No
8	2	102	2	72	No	No	No	No	No	No	No	No	No	No
9	2	81	2	58	No	No	No	No	No	No	No	No	No	No
10	2	77	2	54	No	No	No	No	No	No	No	No	No	No
11	2	77	2	54	No	No	No	No	No	No	No	No	No	No
12	2	74	2	52	No	No	No	No	No	No	No	No	No	No
13	2	66	2	47	No	No	No	No	No	No	No	No	No	No
14	2	62	2	43	No	No	No	No	No	No	No	No	No	No
15	2	62	2	43	No	No	No	No	No	No	No	No	No	No
16	2	60	2	42	No	No	No	No	No	No	No	No	No	No
17	2	34	2	24	No	No	No	No	No	No	No	No	No	No
18	2	18	2	13	No	No	No	No	No	No	No	No	No	No
19	2	17	2	12	No	No	No	No	No	No	No	No	No	No
20	2	7	2	5	No	No	No	No	No	No	No	No	No	No
21	2	5	2	4	No	No	No	No	No	No	No	No	No	No
22	2	5	2	4	No	No	No	No	No	No	No	No	No	No
23	2	3	2	2	No	No	No	No	No	No	No	No	No	No
24	2	3	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.9	9.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:21	0:00
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	118	2
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	290	290
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Chehalem at N Valley TIA

Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 PM Dev. Traffic.pdf

Scenario 4: 2017 PM Peak
4/21/2016

Trip generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total trips	% of Total Trips
1: Zone	Single Family Homes	ITE 210	Single Family Homes	1.000	75.000	63.00	37.00	47	28	75	100.00
					Added Trips Total			47	28	75	100.00

Chehalem at N Valley TIA

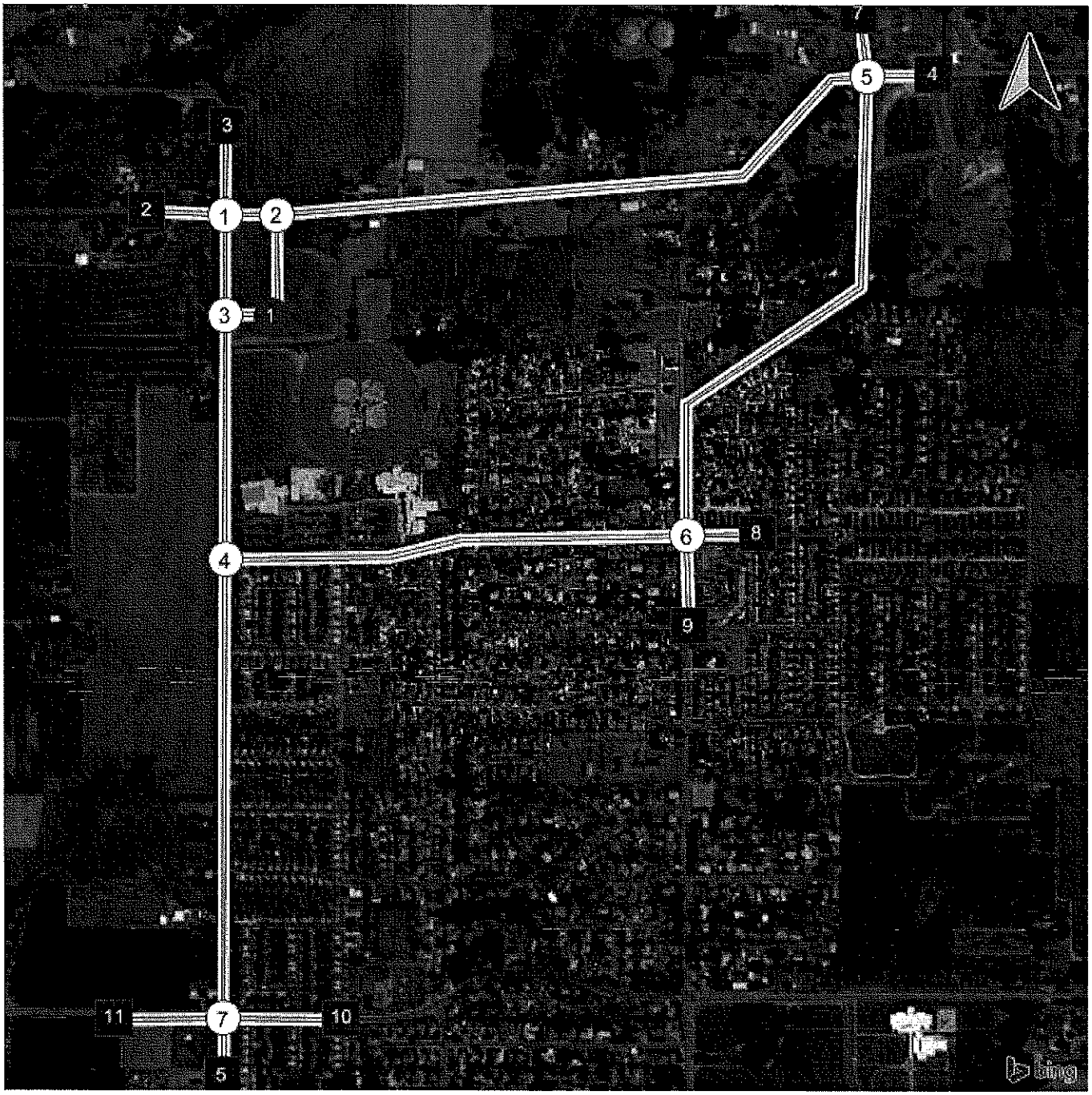
Vistro File: J:\...\Del Boca Vista N Valley Rd.vistro
Report File: J:\...\2017 PM Dev. Traffic.pdf

Scenario 4: 2017 PM Peak
4/21/2016

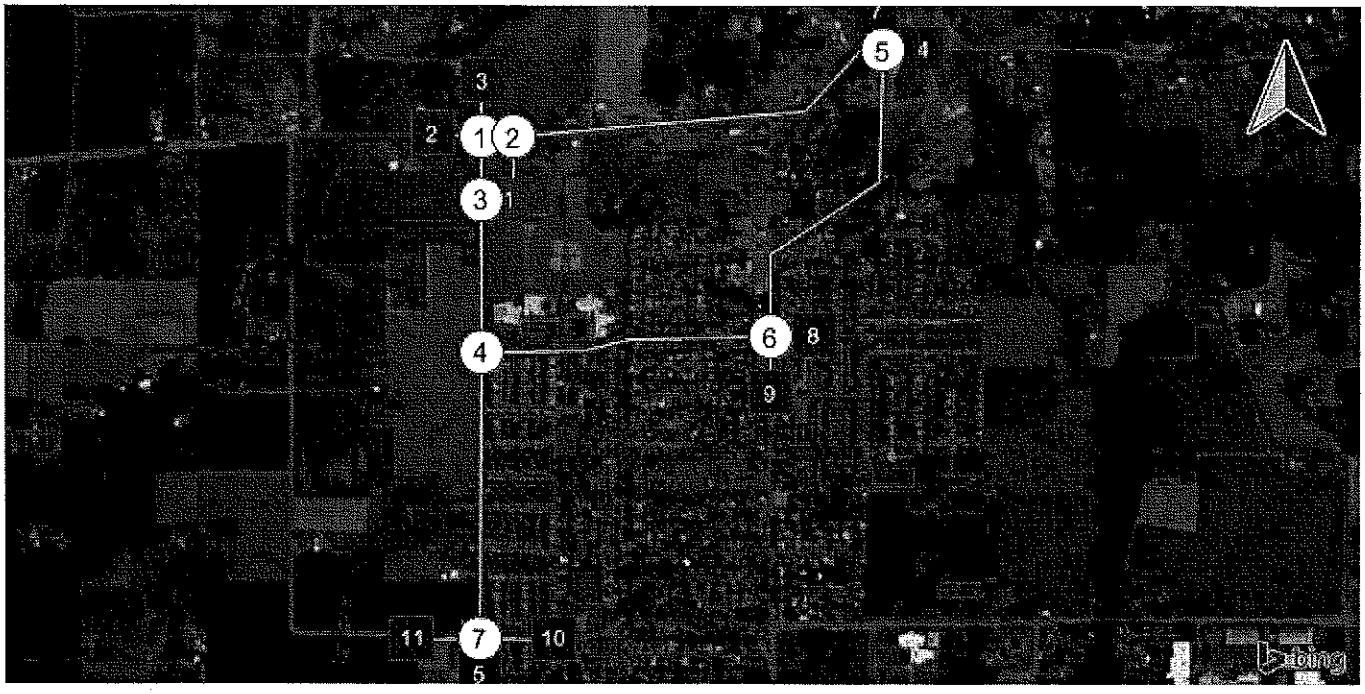
Trip distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	5	10.00	3
3: Gate	0.00	0	0.00	0
4: Gate	20.00	9	20.00	6
5: Gate	10.00	5	10.00	3
7: Gate	20.00	9	20.00	6
8: Gate	0.00	0	0.00	0
9: Gate	20.00	9	20.00	6
10: Gate	20.00	9	20.00	4
11: Gate	0.00	0	0.00	0
Total	**100.00**	**46**	**100.00**	**28**

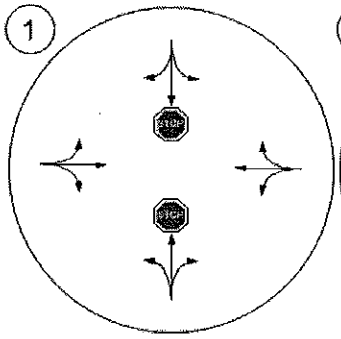
Report Figure 1: Study Intersections



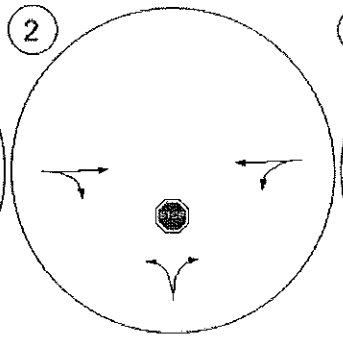
Report Figure 2: Lane Configuration and Traffic Control



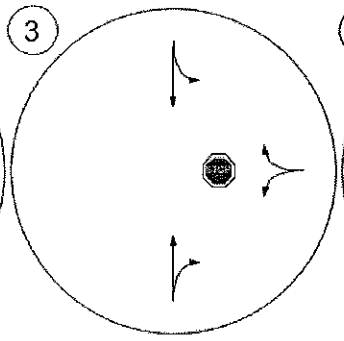
Chehalem Dr at N Valley Rd



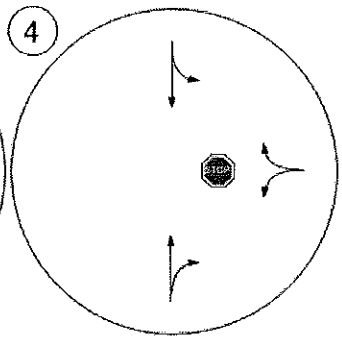
N Valley Rd Entrance



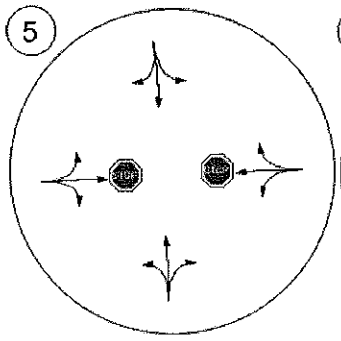
Chehalem Dr Access



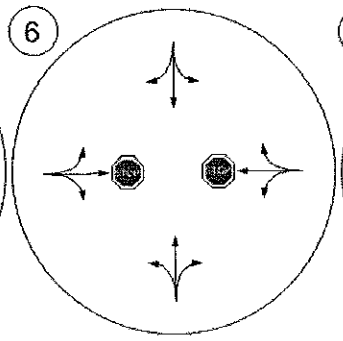
Chehalem Dr at Foothills Dr



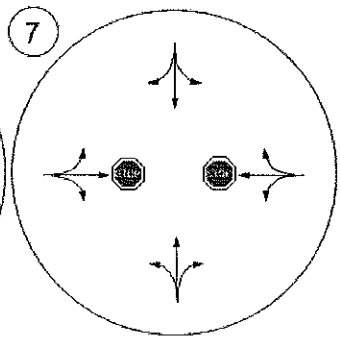
N Valley Rd at Hwy 219



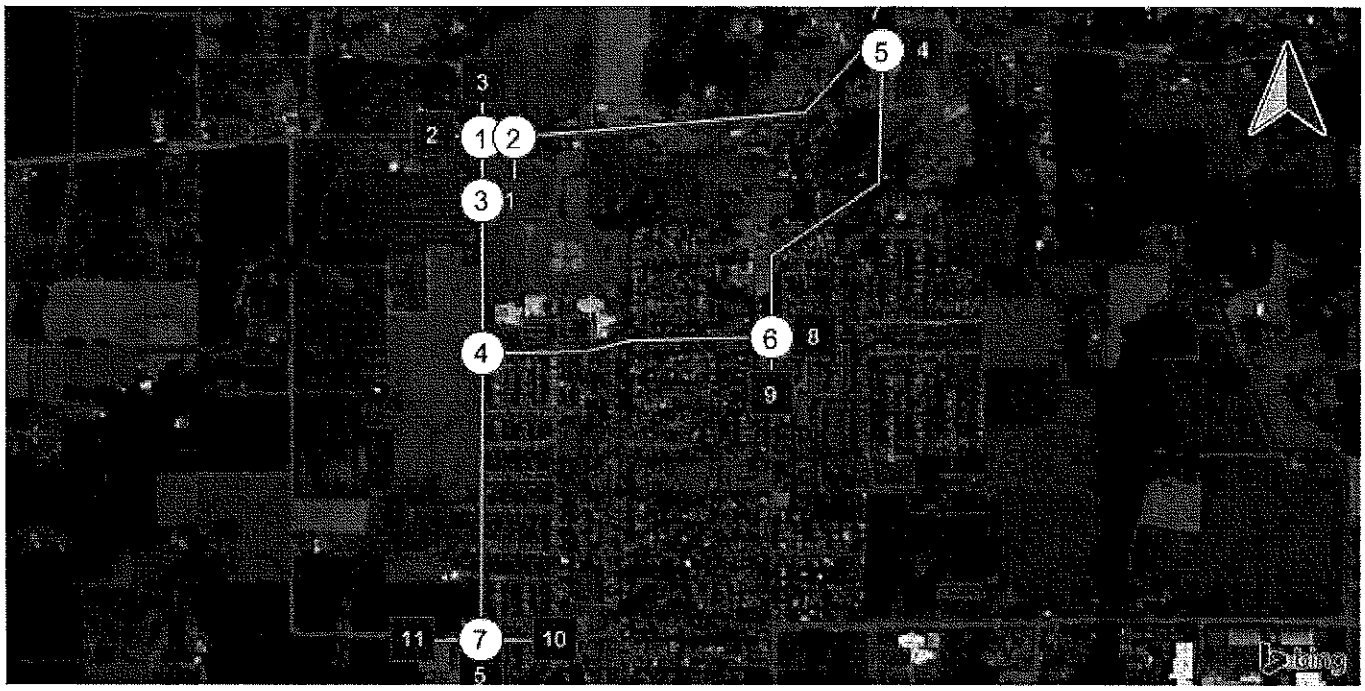
Hwy 219 at Foothills



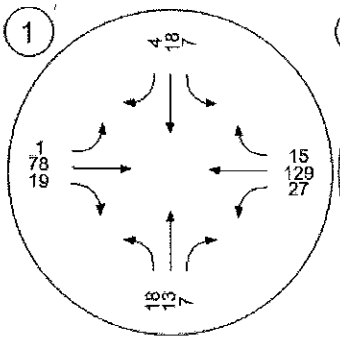
Chehalem Dr at Mountainvie



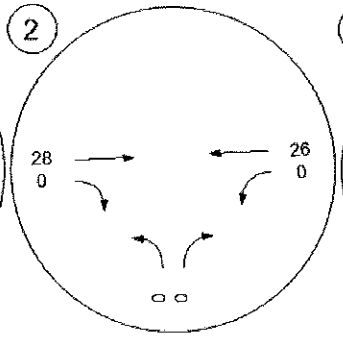
Report Figure 3a: Traffic Volume - Base Volume



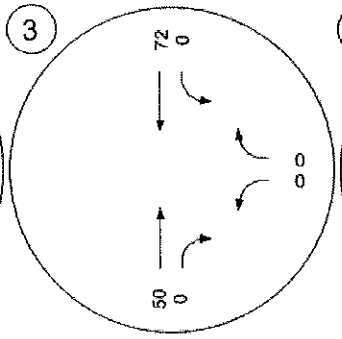
Chehalem Dr at N Valley Rd



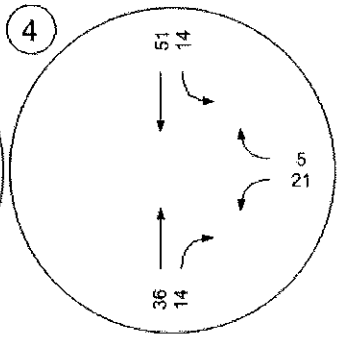
N Valley Rd Entrance



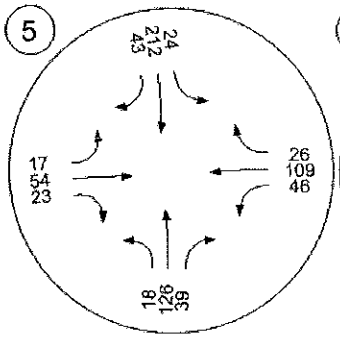
Chehalem Dr Access



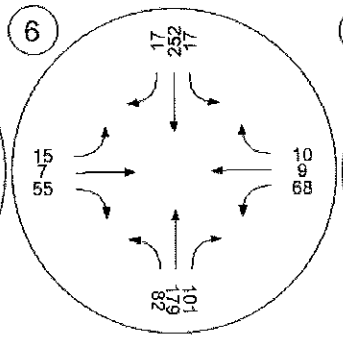
Chehalem Dr at Foothills Dr



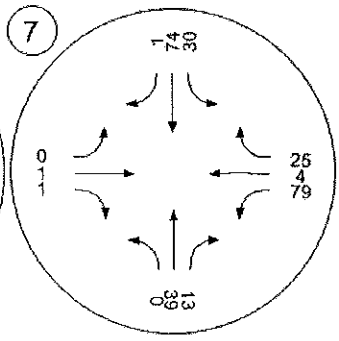
N Valley Rd at Hwy 219



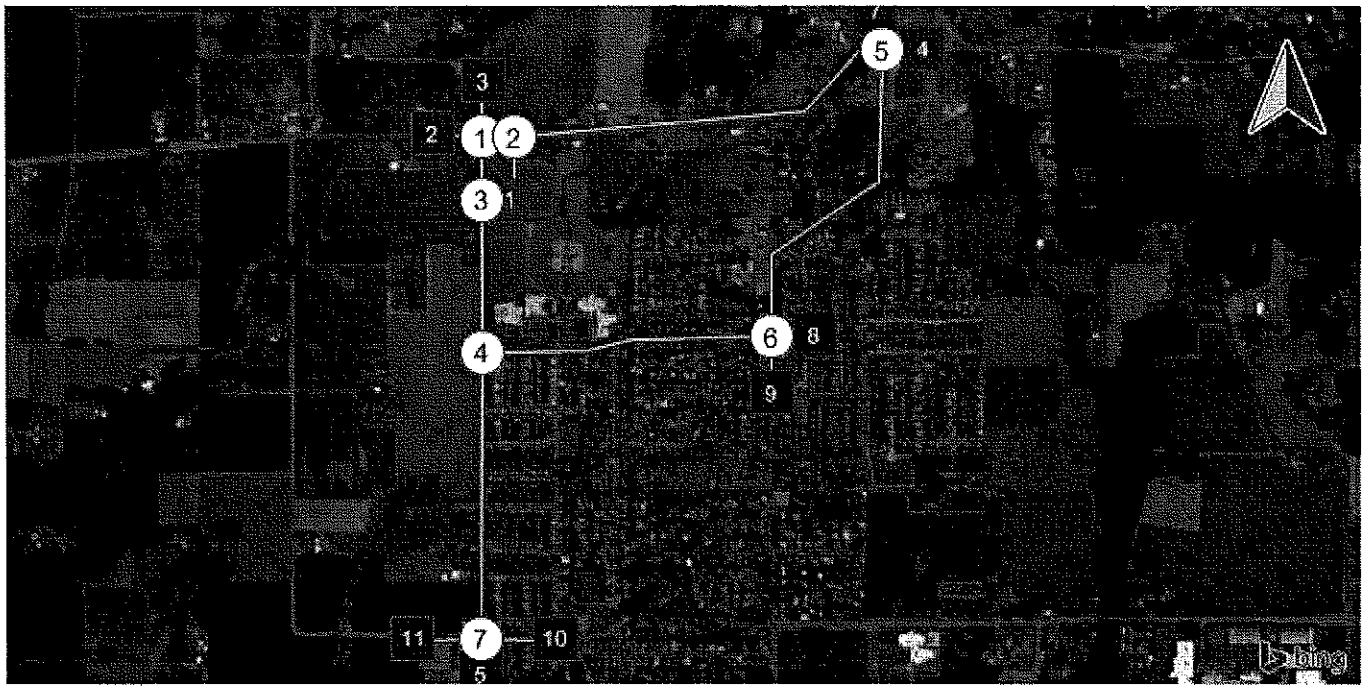
Hwy 219 at Foothills

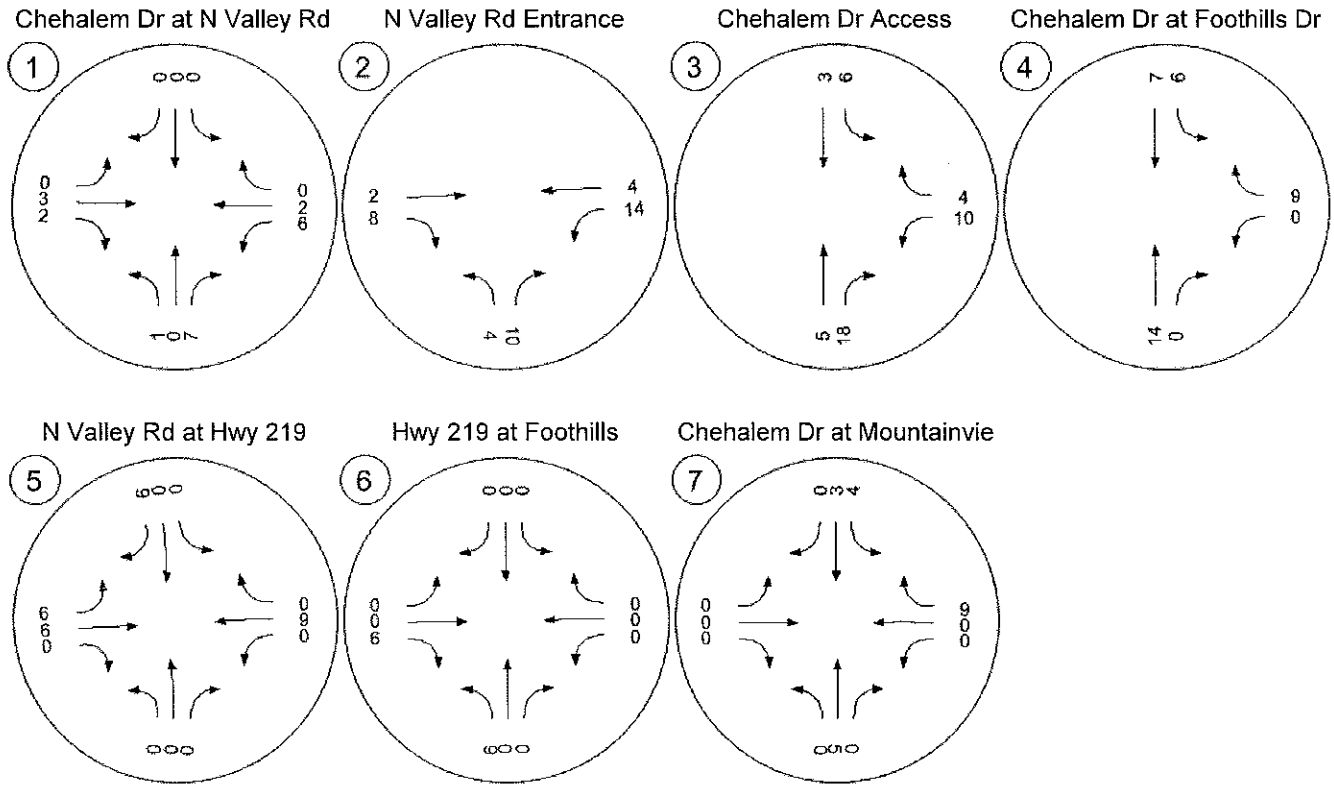


Chehalem Dr at Mountainvie

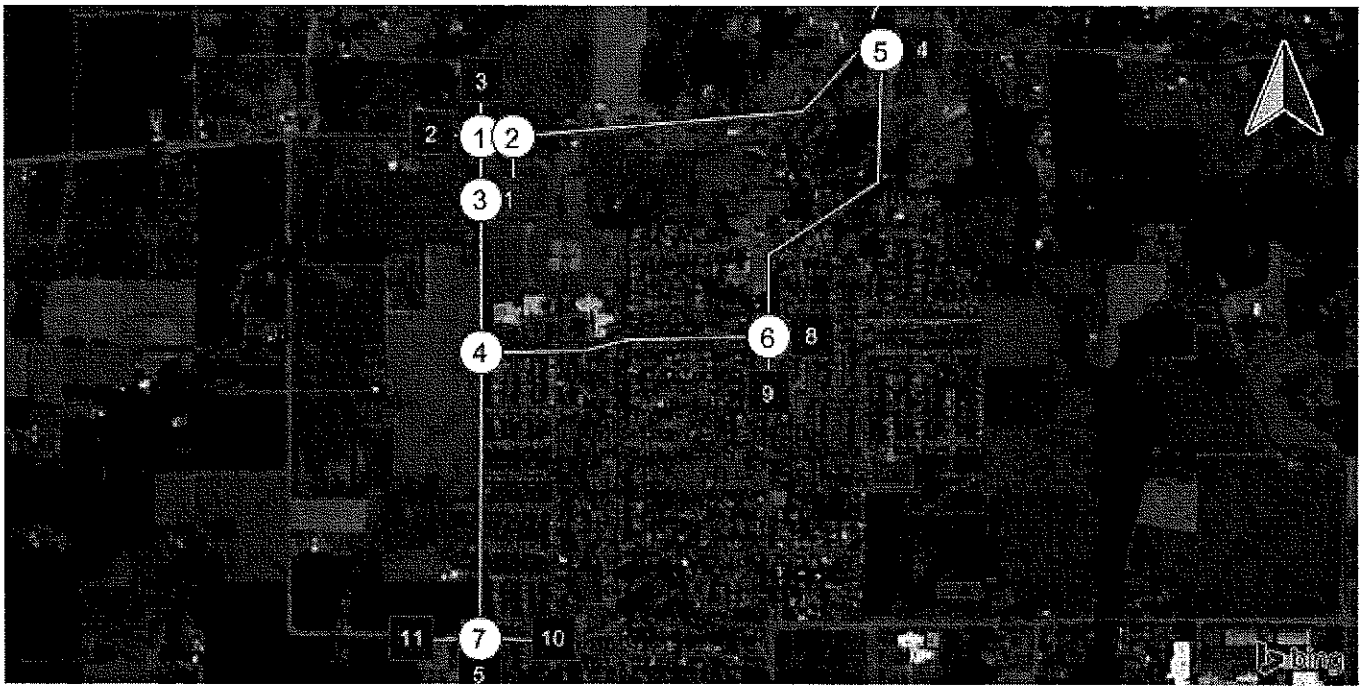


Report Figure 3c: Traffic Volume - Net New Site Trips

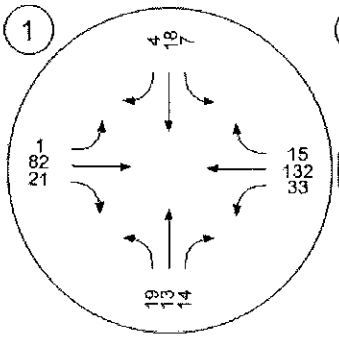




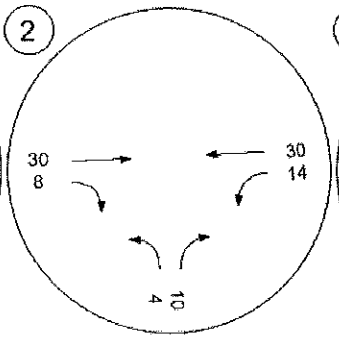
Report Figure 3e: Traffic Volume - Future Total Volume



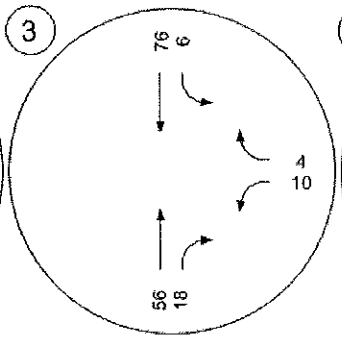
Chehalem Dr at N Valley Rd



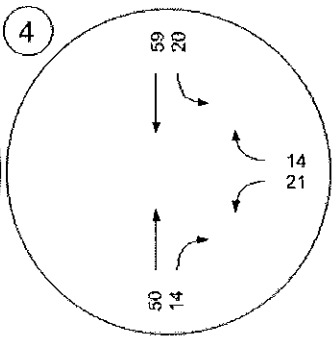
N Valley Rd Entrance



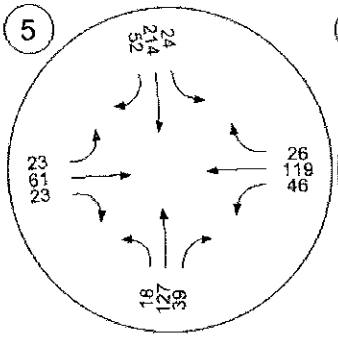
Chehalem Dr Access



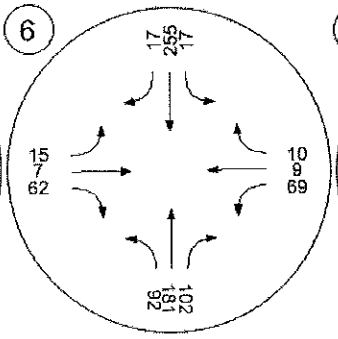
Chehalem Dr at Foothills Dr



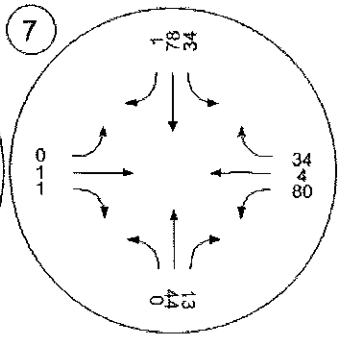
N Valley Rd at Hwy 219



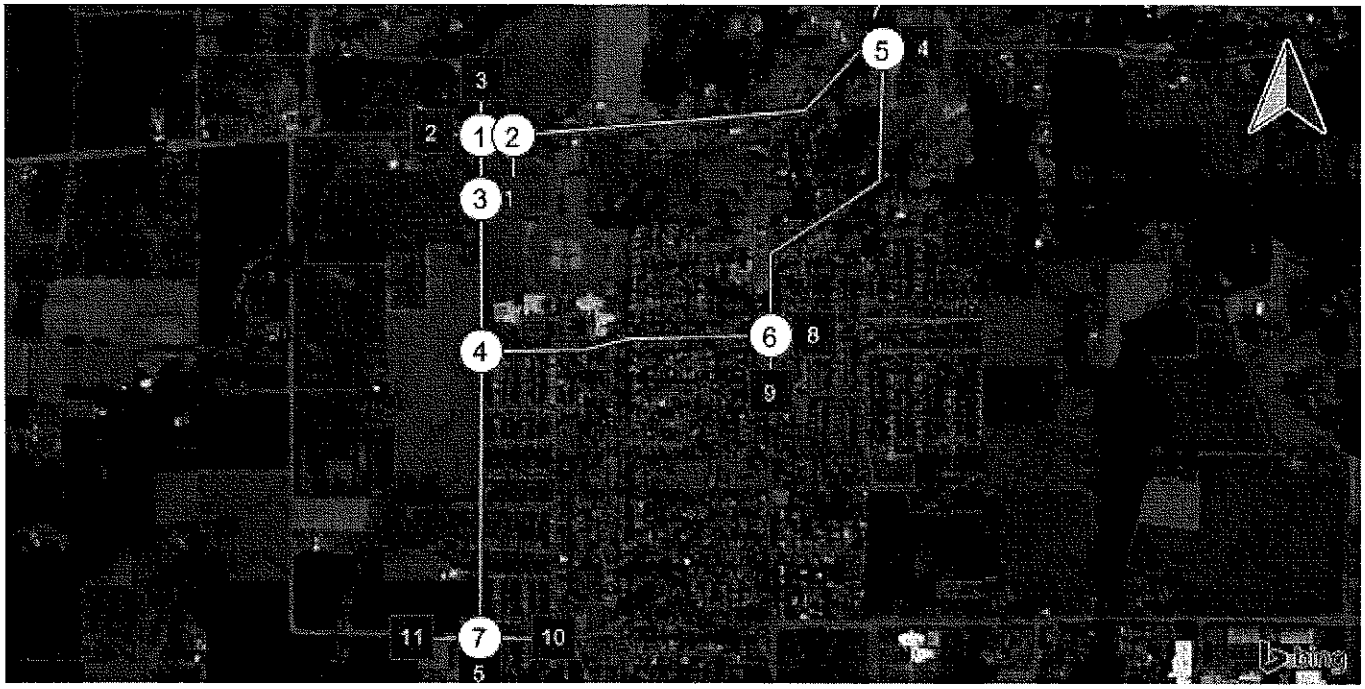
Hwy 219 at Foothills

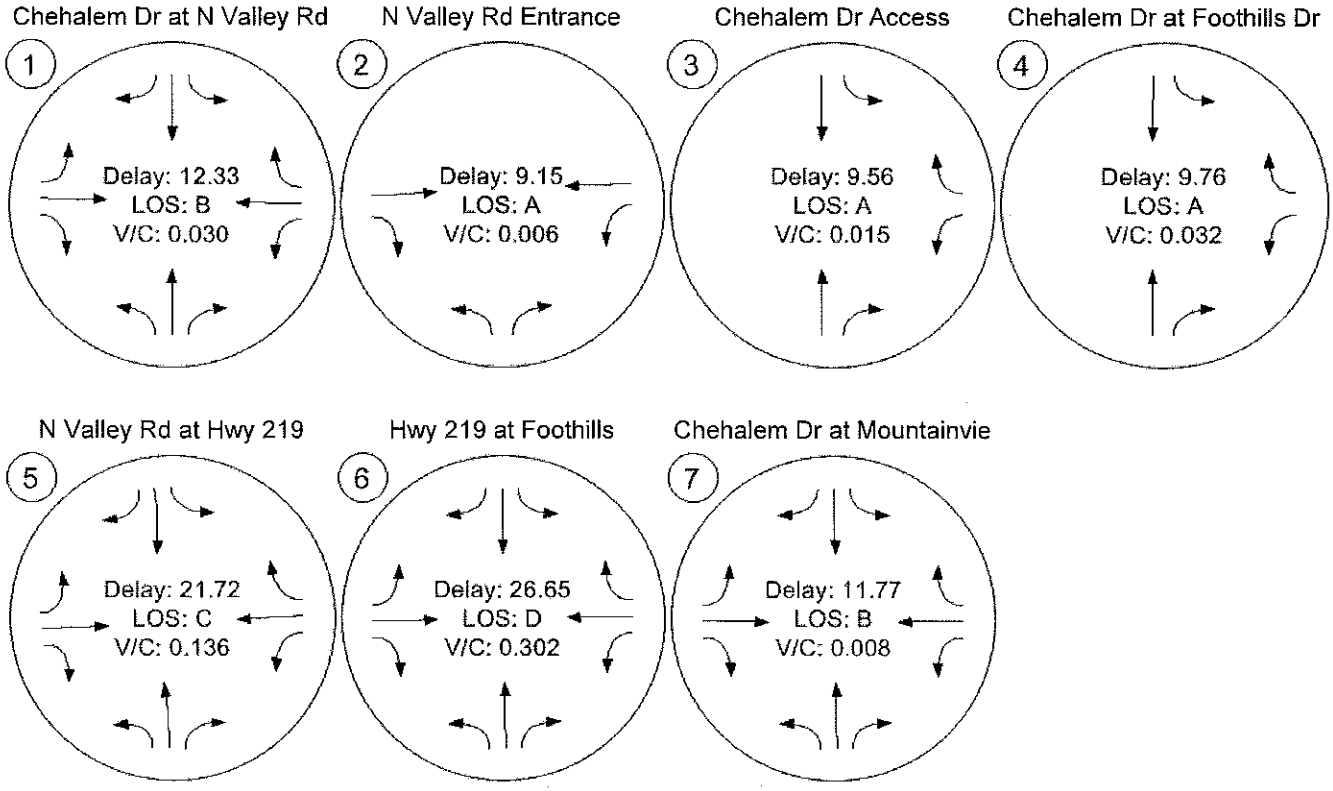


Chehalem Dr at Mountainvie



Report Figure 4: Traffic Conditions





Gracie's Landing Subdivision

Exhibit G

Current Title Report

Ticor Title Company
105 NE 4th Street, McMinnville, OR 97128
(503)472-6101 FAX (503)434-5311

PRELIMINARY REPORT

ESCROW OFFICER: April Ciulla
TITLE OFFICER: Deborah Clark

ORDER NO.: 471816048940-TTMIDWIL16
Supp1 Eff date

TO: Ticor Title Company of Oregon
Attn: April Ciuilla
1505 Portland Rd, Ste 210
Newberg, OR 97132

OWNER/SELLER: Newberg First Baptist Church

BUYER/BORROWER: Del Boca Vista, LLC

PROPERTY ADDRESS: 24950 NE North Valley Road
Newberg, Oregon 97132

EFFECTIVE DATE: June 29, 2016, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	AMOUNT	PREMIUM
Owner's Standard	2,500,000.00	$ 4,350.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   The First Baptist Church of Newberg, an Oregon non-profit corporation, which acquired title as Newberg First Baptist Church

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF YAMHILL, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

   SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

PRELIMINARY REPORT
(Continued)

Order No.: 471816048940-TTMIDWIL16

EXHIBIT "A"

A tract of land in Yamhill County, Oregon, and being more particularly described as follows:

Being a part of the Donation Land Claim of James Morris and Lydia Morris, husband and wife, Notification No. 478, Claim No. 46 in Section 7, Township 3 South, Range 2 West of the Willamette Meridian in said County and State, and more particularly described as beginning at a point 1467.16 feet South of the Northwest corner of said Donation Land Claim in Section 7 of said Township and Range, County and State, said point also being the Northwest corner of that tract of land described in Judgment, Antonia Crater vs. Ovy D. Pratt et ux, et al, in Circuit Court, Yamhill County, Oregon, Case No. 82-1390, in which Judgment was entered October 31, 1983; thence North 86°32'30" East 642.35 feet along a fence now there (July 1982), passing an iron rod at 30.06 feet, to an iron rod; thence North 11.33 chains, more or less, to center of county road; thence South 86°20' West 9.72 chains, more or less, to a point exactly North of the true place of beginning of the tract herein described; and thence South 11.61 chains, more or less, to the true point of beginning.

AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:

GENERAL EXCEPTIONS:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.

5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

SPECIFIC ITEMS AND EXCEPTIONS:

6. Rights of the public to any portion of the Land lying within the area commonly known as

   streets, roads and highways.

7. Development Agreement with Consent to Annexation Agreement, including the terms and provisions thereof,

   Executed by: The First Baptist Church of Newberg and the City of Newberg
   Recording Date: July 8, 2003
   Recording No.: 200316344

8. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.

9. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:

   a) The rights of tenants holding under unrecorded leases or tenancies
   b) Any facts which would be disclosed by an accurate survey of the Land
   c) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.

10. Property taxes in an undetermined amount, which are a lien but not yet payable, including any assessments collected with taxes to be levied for the fiscal year 2016-17.

Account No.: 23334

ADDITIONAL REQUIREMENTS / nOTES:

A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year: 2015-2016
Amount: $1688.33
Levy Code: 29.2
Account No.: 23334
Map No.: R3207 00900

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

B. NOTE: In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA policy unless removed prior to issuance.

C. NOTE: No search has been made or will be made for water, sewer, or storm drainage charges unless the city/service district claims them as liens (i.e., foreclosable) and reflects them on its lien docket at the date of closing. Buyers should check with the appropriate city bureau or water/service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.

D. The Company will require the following in order to insure title vested in, or a conveyance from, the entity named below

Name: First Baptist Church of Newberg

a) Proof of incorporation from the state or other place of incorporation.

b) A copy of the Articles of Incorporation and By-law.

c) A copy of the resolution authorizing the purchase, sale or encumbrance of real property and designating appropriate officers to execute same.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

E. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below.

Limited Liability Company: Dela Boca Vista, LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

c) If the Limited Liability Company is member-managed a full and complete current list of members certified by the appropriate manager or member.

d) If the Limited Liability Company was formed in a foreign jurisdiction, evidence, satisfactory to the Company, that it was validly formed, is in good standing and authorized to do business in the state of origin.

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

F. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

G. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:

Parties: Del Boca Vista, LLC

H. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Marion	$46.00	$5.00
Benton	$68.00	$5.00
Polk	$51.00	$5.00
Linn	$65.00	$5.00
Yamhill	$41.00	$5.00

Note: When possible the company will record electronically. An additional charge of $5.00 applies to each document that is recorded electronically.

I. For many real estate transactions, Federal law requires that a settlement statement show the allocation of title insurance charges between title insurer and title insurance agent. For the transaction that is the subject of this report, the allocation is as follows:

Ticor Title Company of Oregon (agent): 88%
Chicago Title Insurance Company, a Nebraska corporation (insurer): 12%

J. Note: Effective January 1, 2008, Oregon law (ORS 314.258) mandates withholding of Oregon income taxes from sellers who do not continue to be Oregon residents or qualify for an exemption. Please contact your Escrow Closer for further information.

K. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

L. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

EXHIBIT ONE

2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

SCHEDULE B- GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

SCHEDULE B- GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) that arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
5. Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

FIDELITY NATIONAL FINANCIAL, INC.
PRIVACY NOTICE

At Fidelity National Financial, Inc. and its majority-owned subsidiary companies (collectively, "FNF", "our" or "we"), we value the privacy of our customers. This Privacy Notice explains how we collect, use, and protect your information and explains the choices you have regarding that information. A summary of our privacy practices is below. We also encourage you to read the complete Privacy Notice following the summary.

Types of Information Collected. You may provide us with certain personal information, like your contact information, social security number (SSN), driver's license, other government ID numbers, and/or financial information. We may also receive information from your Internet browser, computer and/or mobile device.	**How Information is Collected.** We may collect personal information directly from you from applications, forms, or communications we receive from you, or from other sources on your behalf, in connection with our provision of products or services to you. We may also collect browsing information from your Internet browser, computer, mobile device or similar equipment. This browsing information is generic and reveals nothing personal about the user.
Use of Your Information. We may use your information to provide products and services to you (or someone on your behalf), to improve our products and services, and to communicate with you about our products and services. We do not give or sell your personal information to parties outside of FNF for their use to market their products or services to you.	**Security Of Your Information.** We utilize a combination of security technologies, procedures and safeguards to help protect your information from unauthorized access, use and/or disclosure. We communicate to our employees about the need to protect personal information.
Choices With Your Information. Your decision to submit personal information is entirely up to you. You can opt-out of certain disclosures or use of your information or choose to not provide any personal information to us.	**When We Share Information.** We may disclose your information to third parties providing you products and services on our behalf, law enforcement agencies or governmental authorities, as required by law, and to parties with whom you authorize us to share your information.
Information From Children. We do not knowingly collect information from children under the age of 13, and our websites are not intended to attract children.	**Privacy Outside the Website.** We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.
Access and Correction. If you desire to see the information collected about you and/or correct any inaccuracies, please contact us in the manner specified in this Privacy Notice.	**Do Not Track Disclosures.** We do not recognize "do not track" requests from Internet browsers and similar devices.
The California Online Privacy Protection Act. Certain FNF websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	**International Use.** By providing us with your information, you consent to the transfer, processing and storage of such information outside your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
Your Consent To This Privacy Notice. By submitting information to us and using our websites, you are accepting and agreeing to the terms of this Privacy Notice.	**Contact FNF.** If you have questions or wish to contact us regarding this Privacy Notice, please use the contact information provided at the end of this Privacy Notice.

FIDELITY NATIONAL FINANCIAL, INC.
PRIVACY NOTICE

FNF respects and is committed to protecting your privacy. We pledge to take reasonable steps to protect your Personal Information (as defined herein) and to ensure your information is used in compliance with this Privacy Notice.

This Privacy Notice is only in effect for information collected and/or owned by or on behalf of FNF, including collection through any FNF website or online services offered by FNF (collectively, the "Website"), as well as any information collected offline (e.g., paper documents). The provision of this Privacy Notice to you does not create any express or implied relationship, nor create any express or implied duty or other obligation, between FNF and you.

Types of Information Collected

We may collect two types of information: Personal Information and Browsing Information.

Personal Information. The types of personal information FNF collects may include, but are not limited to:

- contact information (*e.g.*, name, address, phone number, email address);
- social security number (SSN), driver's license, and other government ID numbers; and
- financial account or loan information.

Browsing Information. The types of browsing information FNF collects may include, but are not limited to:

- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language;
- browser type;
- domain name system requests;
- browsing history;
- number of clicks;
- hypertext transfer protocol headers; and
- application client and server banners.

How Information is Collected

In the course of our business, we may collect *Personal Information* about you from the following sources:

- applications or other forms we receive from you or your authorized representative, whether electronic or paper;
- communications to us from you or others;
- information about your transactions with, or services performed by, us, our affiliates or others; and
- information from consumer or other reporting agencies and public records that we either obtain directly from those entities, or from our affiliates or others.

We may collect *Browsing Information* from you as follows:

- Browser Log Files. Our servers automatically log, collect and record certain Browsing Information about each visitor to the Website. The Browsing Information includes only generic information and reveals nothing personal about the user.
- Cookies. From time to time, FNF may send a "cookie" to your computer when you visit the Website. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit the Website again, the cookie allows the Website to recognize your computer, with the goal of providing an optimized user experience. Cookies may store user preferences and other information. You can choose not to accept cookies by changing the settings of your Internet browser. If you choose not to accept cookies, then some functions of the Website may not work as intended.

Use of Collected Information

Information collected by FNF is used for three main purposes:

- To provide products and services to you, or to one or more third party service providers who are performing services on your behalf or in connection with a transaction involving you;
- To improve our products and services; and
- To communicate with you and to inform you about FNF's products and services.

When We Share Information

We may share your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information with certain individuals and companies, as permitted by law, without first obtaining your authorization. Such dsclosures may include, without limitation, the following:

- to agents, representatives, or others to provide you with services or products you have requested, and to enable us to detect or prevent criminal activity, fraud, or material misrepresentation or nondisclosure;
- to third-party contractors or service providers who provide services or perform other functions on our behalf;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders; and/or
- to other parties authorized to receive the information in connection with services provided to you or a transaction involving you.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We make efforts to ensure third party contractors and service providers who provide services or perform functions on our behalf protect your information. We limit use of your information to the purposes for which the information was provided. We do not give or sell your information to third parties for their own direct marketing use.

We reserve the right to transfer your Personal Information, Browsing Information, as well as any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of this information in connection with any of the above-described proceedings. We cannot and will not be responsible for any breach of security by any third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit your information to FNF is entirely up to you. If you decide not to submit your information, FNF may not be able to provide certain products or services to you. You may choose to prevent FNF from using your information under certain circumstances ("opt out"). You may opt out of receiving communications from us about our products and/or services.

Security And Retention Of Information

FNF is committed to protecting the information you share with us and utilizes a combination of security technologies, procedures and safeguards to help protect it from unauthorized access, use and/or disclosure. FNF trains its employees on privacy practices and on FNF's privacy and information security policies. FNF works hard to retain information related to you only as long as reasonably necessary for business and/or legal purposes.

Information From Children

The Website is meant for adults. The Website is not intended or designed to attract children under the age of thirteen (13). We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian.

Privacy Outside the Website

The Website may contain links to other websites, including links to websites of third party service providers. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

Because FNF's headquarters is located in the United States, we may transfer your Personal Information and/or Browsing Information to the United States. By using our website and providing us with your Personal Information and/or Browsing Information, you understand and consent to the transfer, processing and storage of such information outside your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.

Do Not Track Disclosures

Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

The California Online Privacy Protection Act

For some websites which FNF or one of its companies owns, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer, including:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- security questions and answers; and
- IP address.

The information you submit is then transferred to your mortgage loan servicer by way of CCN. **The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.**

CCN does not share consumer information with third parties, other than those with which the mortgage loan servicer has contracted to interface with the CCN application. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled Choices with Your Information, and Access and Correction. If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, contact your mortgage loan servicer.

Access and Correction

To access your Personal Information in the possession of FNF and correct any inaccuracies, please contact us by email at privacy@fnf.com or by mail at:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of information by FNF in compliance with this Privacy Notice. We reserve the right to make changes to this Privacy Notice. If we change this Privacy Notice, we will post the revised version on the Website.

Contact FNF

Please send questions and/or comments related to this Privacy Notice by email at privacy@fnf.com or by mail at:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

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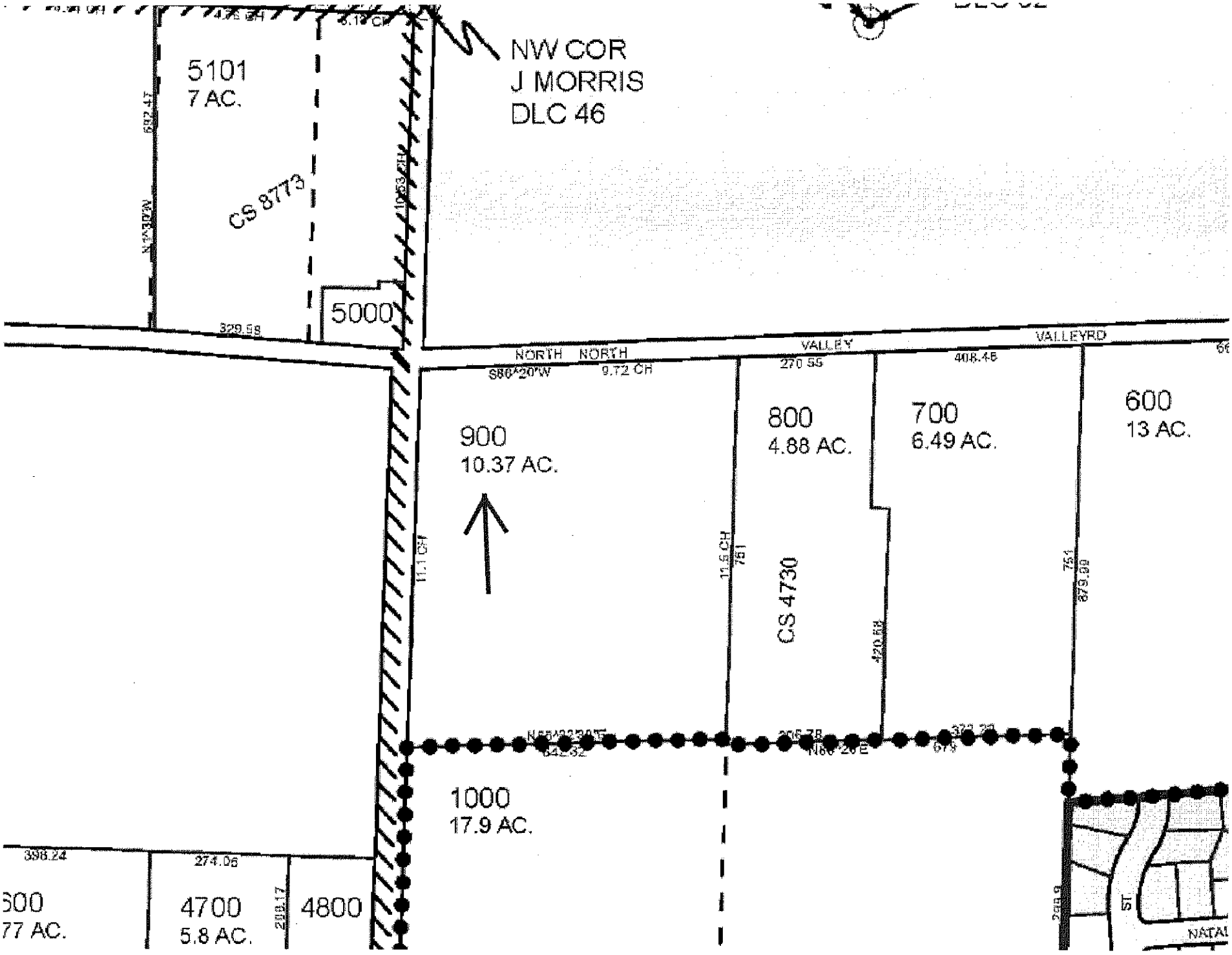
EFFECTIVE AS OF APRIL 1, 2016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Gracie's Landing Subdivision

Exhibit H

Public Notice Information

DRAFT POSTED NOTICE

Land Use Notice

FILE

PROPOSAL: Subdivision Tentative Plan
to develop 53 lot subdivision

FOR FURTHER INFORMATION, CONTACT:

City of Newberg
Community Development Department
414 E First Street
Phone: 503-537-1240

2'

3'

Notice must be white with black letters, and must be landscape orientation, as shown above.
The notice must be lettered using block printing or a "sans-serif" font, such as Arial.

City of Newberg

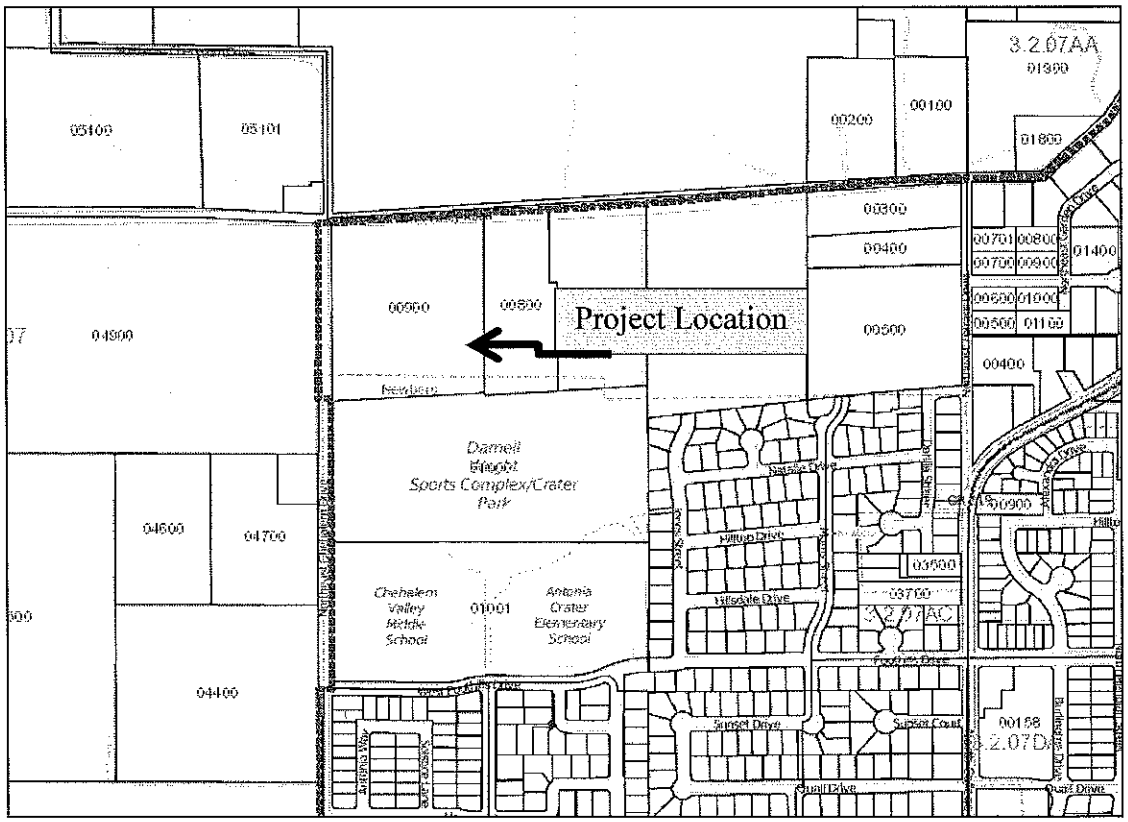
Community Development Department
P.O. Box 970 • 414 E First Street • Newberg, Oregon 97132
503-537-1240. Fax 503-537-1272 www.newbergoregon.gov

WE WANT YOUR COMMENTS ON A PROPOSED NEW DEVELOPMENT IN YOUR NEIGHBORHOOD

A property owner in your neighborhood submitted an application to the City of Newberg to subdivide a parcel of land from one lot into 53 separate lots. You are invited to take part in the City's review of this project by sending in your written comments. You also may request that the Planning Commission hold a hearing on the application. For more details about giving comments, please see the back of this sheet.

The application would divide one tax lot into a 53 lot subdivision.

APPLICANT:	***Del Boca Vista, LLC***
TELEPHONE:	***971-706-2058***
PROPERTY OWNERS:	***Newberg First Baptist Church***
LOCATION:	***24950 North Valley Road, Newberg***
TAX LOT NUMBER:	***Yamhill County Tax Map and Lot Number 3207-0900***



We are mailing you information about this project because you own land within 500 feet of the proposed new project. We invite you to send any written comments for or against the proposal within 14 days from the date this notice is mailed. You also may request that the Newberg Planning Commission hold a hearing on the application by sending a written request during this 14-day period and identifying the issues you would like the Planning Commission to address.

If you mail your comments to the City, please put the following information on the outside of the envelope:

Written Comments: File No.XX
City of Newberg
Planning & Building Department
PO Box 970
Newberg, OR 97132

All written comments must be turned in by 4:30 p.m. on enter date two weeks from date you mailed notice. Any issue which might be raised in an appeal of this case to the Land Use Board of Appeals (LUBA) must be submitted to the City in writing before this date. You must include enough detail to enable the decision maker an opportunity to respond. The applicable criteria used to make a decision on this application for preliminary subdivision plan approval are found in Newberg Development Code 15.235.060(A).

You can look over all the information about this project or drop comments off at Newberg City Hall, 414 E. First Street. You can also buy copies of the information for a cost of 25 cents a page. If you have any questions about the project, you can call the Newberg Planning Division at 503-537-1240.

The City Planning director will make a decision at the end of a 14-day comment period. If you send in written comments about this project, you will be sent information about any decision made by the City relating to this project.

Date Mailed: Date notice is mailed

Thomas & Diane Kjersten
25155 North Valley Rd
Newberg, OR 97132

Kenneth Kjersten
25025 North Valley Rd
Newberg, OR 97132

Ruben V & Jenna Lucescu
25240 North Valley Rd
Newberg, OR 97132

Robert E Phillips Jr
25020 North Valley Rd
Newberg, OR 97132

Newberg First Baptist Church
PO Box 1
Newberg, OR 97132

Chehalem Park & Recreation District
501 E 1st St
Newberg, OR 97132

William & Frances Roth
3113 NE Chehalem Dr
Newberg, OR 97132

Randolph & Lisa Peltier
3701 NE Chehalem Dr
Newberg, OR 97132

Jar 2 LLC
7090 SW Benham Ct
Portland, OR 97225

Paul & Kristine Jellum
15925 NE Chehalem Dr
Newberg, OR 97132

Gracie's Landing Subdivision

Exhibit I

Sewer Availability Report

Westlake consultants, inc | PLANNING | ENGINEERING | SURVEYING

March 4, 2016

City of Newberg
Planning Department
414 E. 1st St.
Newberg, OR 97132

RE: Memo for Sewer Availability – Proposed Annexation of 24950 NE North Valley Road, Newberg OR 97132 (Tax Map R3207, Tax Lot 00900)

To the City of Newberg:

The purpose of this memorandum is to address the availability of municipal sanitary sewer service to the subject property. Documents reviewed include:

- City of Newberg Preliminary Engineer's Report for Crater Lane LID, dated December 2001.
- City of Newberg Technical Memorandum Regarding Parcels Adjacent to Crater Lane LID, dated February 18, 2002.
- City of Newberg Chehalem Drive Pump Station Project Summary, dated May 9, 2003.
- GIS Mapping available on the City of Newberg Website.

The subject property is located approximately 2,600 feet north of the Chehalem Drive pump station on Chehalem Drive. The pump station is located approximately 1,300 feet south of Foothills Drive. An existing gravity sewer that drains to the pump station is located approximately 1,300 feet south of the subject property. The proposed annexation site consisting of approximately 10.37 acres could be served by an extension of the gravity sanitary sewer line in Chehalem Drive. An extension of the gravity sanitary sewer line is anticipated to occur at the time of development of the subject property.

According to the City of Newberg Chehalem Drive Pump Station Project Summary, dated May 9, 2003, the pump station pump capacity is 630 gpm with a peak design flow of 554 gpm. The design flow of 554 gpm is consistent with the design flow stated in the City of Newberg Preliminary Engineer's Report for Crater Lane LID, dated December 2001. A design flow of 554 gpm compared to the pump capacity of 630 gpm indicates that there is an available additional capacity of 72 gpm at the Chehalem Drive Pump Station. The City of Newberg Technical Memorandum Regarding Parcels Adjacent to Crater Lane LID, dated February 18, 2002 indicates that seven parcels north of the LID could be served by the Crater Lane LID (Chehalem Drive) pump station, provided there was an extension of the gravity sewer in Chehalem Drive and a larger capacity pump were installed. No changes to the pump station wet well depth were anticipated to serve adjacent lots to the north.

The subject property is the western most of the seven lots referenced in the Technical Memorandum of February 18, 2002, utilizing design assumptions listed in the referenced City of Newberg documents, the approximately 10.37 acre site proposed for annexation could yield approximately 50 to 55 lots when developed. Utilizing these design assumptions preliminary estimates are for sanitary sewer flows from the developed site to be 60 to 65

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gpm with an available capacity of 72 gpm at the Chehalem Drive Pump Station. Thus, based on the design assumptions listed in the referenced 2002 and 2003 documents, the Chehalem Drive Pump Station could accommodate the subject site without major modifications. Utilizing a more current density ratio the subject site could yield to 60 to 70 lots when developed. Preliminary estimates are for sanitary sewer flows from the developed site with a potential 60 to 70 lots to be 65 to 80 gpm. Development of the site at the current density ratio yielding more lots than anticipated in the City of Newberg Technical Memorandum Regarding Parcels Adjacent to Crater Lane LID, dated February 18, 2002, would likely require an upgraded pump size to be installed at the Chehalem Drive Pump Station.

At the time of development of the subject property a detailed analysis of the pump station's available capacity and developed sanitary sewer flows from the subject site is anticipated as part of infrastructure designs. At that time, a final determination of any needed upgrade in pump size could be made based on the final lot count at the time of development.

Sincerely,
WESTLAKE CONSULTANTS, INC.

Brett E Musick

Brett Musick, PE
Project Manager

BEM/mrd