

# City of Yelm EST. 1924 WASHINGTON

Case Number: 2022.0108

Applicant: Ben Fransua on behalf of Habitat for Humanity

711 Capitol Way South, Suite 401

Olympia, WA 98501

Request: 22-lot subdivision with a Planned Development Overlay

Public Hearing Date: September 21, 2023

City Staff: Gary Cooper, Planning & Building Manager

#### **PROPOSAL**

The applicant intends to use the Planned Residential Development process to subdivide a 2.3-acre parcel into 22 residential lots. Six detached single-family homes and sixteen attached townhomes, in addition to an internal street, will be built as part of this project. All of the homes in this development will be affordable, with prices ranging from 30 to 50% of the area median income (AMI).

The property is zoned Moderate Density Residential (R-6), which allows between 3 to 6 dwelling units per acre.

#### **PROPERTY CHARACTERISTICS**

The property is located at 407 Longmire Street NW, Yelm WA 98597 identified by Assessor's Tax parcel number 22719230700.

Surrounding properties to the east, and north and south are predominately moderate density residential. The property to the west of the subject site is zoned Commercial (C-1) district and is an Assisted Living Facility. The site is occupied by a single family home and a detached garage. A demolition permit for the house and the detached garage has been issued.

#### **NOTICE OF APPLICATION AND PUBLIC HEARING**

The Planning and Building Department mailed a Notice of Application on December 7, 2022, in accordance with Section 18.10.080 YMC, to regional, state, and nearby property owners. In addition, the NOA was advertised at the following times and locations:

City of Yelm Website, <a href="https://www.ci.yelm.wa.us">https://www.ci.yelm.wa.us</a>: 12/07/2022

➤ Nisqually Valley News: 12/15/2022

Owners of adjoining properties expressed concerns about the access off of Longmire Street NW, possible traffic impacts, safety concerns, the lack of enough parking, and high density of the proposed development. The comments from nearby property owners are all attached to this report [exhibit A].

The public hearing before the Hearing Examiner was announced at the following times and locations:

Project site: 9/05/2023

➤ Mailed to the interested parties and the property owners within 300 feet of the site: 9/05/2023

➤ Nisqually Valley News – Online edition: 9/01/2023

➤ Nisqually valley News: 9/07/2023

City of Yelm Website, <a href="https://www.ci.yelm.wa.us">https://www.ci.yelm.wa.us</a>: 9/05/2023

#### STATE ENVIRONMENTAL POLICY ACT

The City of Yelm SEPA Responsible Official issued a Determination of Non significance (DNS) based on Section 197-11-340 (2) WAC on July 20, 2023. The determination is final and fulfills the City's responsibility for disclosure of potential significant environmental impacts.

Comments were received from the Washington Department of Ecology (ECY), which noted that the project is subject to existing regulations regarding toxics and waste cleanup and solid waste management [exhibit B].

The Olympic Region Clean Air Agency (ORCAA) also commented, requiring a certified Asbestos Hazardous Emergency Response Act (AHERA) building inspector to undertake an asbestos survey on the structure [exhibit C]. If asbestos is found during the survey, an ORCAA Asbestos Removal Notification must be completed and all asbestos-containing material must be properly removed prior to the demolition. Also, an ORCAA Demolition Notification must be submitted regardless of the results of the asbestos survey.

In addition, the Squaxin Island Tribe Cultural Resources Department commented that if DAHP recommends a survey or any other additional recommendations, they would agree with DAHP's recommendations [exhibit D]. If any archaeological or cultural resources are discovered during

implementation, they have asked that work in the region be halted and that they contact DAHP and the Squaxin Island Tribe.

The comments are all attached to this report.

#### CONCURRENCY

The intent of the City's concurrency management program, as required by the Growth Management Act, is based on the maintenance of specified levels of service through capacity monitoring, allocation and reservation procedures.

Concurrency describes the situation in which water, sewer and/or transportation facilities are available when the impacts of development occur. [Section 18.16.010 YMC]

#### Water

The level of service for water infrastructure is the ability to provide potable water to the consumer for use and fire protection in accordance with adopted health and environmental regulations. [Section 18.16.030 (B) YMC]

Concurrency for subdivisions is met when, at the time of preliminary approval, the planned infrastructure identified in the six-year improvement program and water rights acquisition program of the water system plan are sufficient to provide for the proposed land division.

The State Subdivision Act, Chapter 58.17 RCW, requires that the City of Yelm make a written determination that appropriate provisions are made for potable water supplies as part of the preliminary land division process.

With the additional water rights granted to the City of Yelm in 2022, the City has the capacity to service the proposed subdivision.

The development is required to connect to and extend the main along the new proposed roadway within the subdivision. The improvements required to serve the project will be specifically identified during civil plan review. This satisfies the requirement for concurrency with

Any existing well(s) on the property must be decommissioned pursuant to Department of Ecology standards and any water rights associated with these wells shall be dedicated to the City of Yelm.

#### Sewer

The level of service for sewer infrastructure is the ability to treat and discharge wastewater in accordance with adopted health and environmental regulations. [Section 18.16.030 (C) YMC]

Concurrency with sewer infrastructure is achieved when, at the time of preliminary approval, the planned infrastructure identified in the six-year improvement program of the sewer system plan are sufficient to provide for the proposed land division and it is reasonably anticipated that the treatment plant has sufficient capacity to provide for the proposed land division.

The City's Sewer Comprehensive Plan identifies the property as being within the sewer service area. There are sewer mains located in Longmire Street NW.

The development is required to connect to and extend the main along the new proposed roadway within the subdivision. The improvements required to serve the project will be specifically identified during civil plan review. This satisfies the requirement for concurrency with sewer infrastructure.

Any existing step tank(s) on the property must be abandoned per Department of Ecology standards and the proof of that must be provided.

#### **Transportation**

Concurrency with transportation infrastructure is achieved pursuant to Section 18.16.050 (C)(3) YMC when the level of service at concurrency intersections will not drop below accepted levels of service due to new trips associated with the proposed land division unless the planned improvements identified in the six-year transportation improvement program would maintain levels of service.

Frontage improvements on the new road inside the subdivision and also Longmire Street NW are required. The frontage improvements along Longmire Street NW and the internal street must be constructed per City's adopted Local Access Residential standard as illustrated in Chapter 2 of Yelm's Engineering Specifications and Standards Details.

Based on the comments city staff received from the neighbors and the concern about having one access from Longmire Street, the City asked the applicant to conduct a traffic impact analysis, which has been attached to this report [exhibit E].

The City requested examination of additional access scenarios as part of TIA which included:

- 1. Access solely from Longmire St NW.
- 2. Access solely from Cullens Road.
- 3. New east/west roadway providing access to both Longmire Street and Cullens Road.

The traffic engineer conducted a functional classification study and recommended option one, having only one access from Longmire St NW. Per the traffic engineer, access connections are typically provided to the lowest classified fronting roadway whenever possible. Between these options, Longmire Street, a local access, is functionally lower classified when compared to Coates Street, a neighborhood collector.

Intersection spacing was also examined. Per City of Yelm Engineering Specifications and Standards Details, spacing between adjacent intersecting streets, whether crossing or "T" should be as follows:

- Neighborhood Collector (Cullens Road): 200 feet
- Local Access (Longmire St NW): 150 feet

The traffic engineer recommended option one, access from Longmire Street.

Baseline conditions for the study intersections of Coates Avenue intersecting with Cullens Road and Longmire Street operate at LOS C and LOS B, respectively. Accounting for in-process development and general background growth, the intersections are anticipated to continue operating at LOS C and LOS B conditions under the forecast 2026 horizon year without project traffic. Per submitted TIA, the 22 proposed dwelling units are estimated to add 158 daily trips and 13 PM peak hour trips. Adding project-generated traffic to the study intersection under forecast 2026 PM peak hour scenario indicates minimal change in Level of Service.

Taking into consideration the functional classification, traffic volumes, and intersection spacing, this analysis supports the access scenario to Longmire Street.

Finally, Traffic Facility Charges are applied at the time of building permit issuance. These conditions satisfy the requirement for concurrency with transportation infrastructure.

#### **Fire Protection**

Concurrency with fire protection is achieved pursuant to Section 18.16.090(C) YMC when the developer makes a contribution to the fire protection facilities as identified in the most current version of the capital facilities plan adopted by the SE Thurston Regional Fire Authority and endorsed by resolution of the Yelm City Council. This fee is subject to change and is collected at the time of building permit issuance. Payment of this fee satisfies the requirement for concurrency with fire protection.

#### School

Concurrency with school infrastructure is achieved pursuant to Section 18.16.090(B) YMC when the developer makes a contribution to school facilities as identified in the most current version of the capital facilities plan adopted by Yelm Community Schools, and endorsed by resolution of the Yelm City Council. This fee is subject to change and is collected at the time of building permit issuance. Payment of this fee satisfies the requirement for concurrency with school infrastructure.

#### CRITICAL AREAS

The Yelm Critical Areas Code, Chapter 18.21 YMC provides protection for wetlands, critical aquifer recharge areas, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat areas.

#### **Aquifer Recharge**

All of Yelm is identified as a critical aquifer recharge area. Compliance with Federal, State, and County water source protection regulations and with the City's adopted stormwater regulations are required to protect the aquifer [Section 18.21.070 (C) YMC].

#### Wetlands

Local environmental mapping and Thurston County GeoData shows no wetlands located in this area; vegetation does not indicate wetlands.

#### Fish and Wildlife habitat conservation areas, wetlands and flood zones

Important animal and plant species, their habitats of primary association, and other important habitats are protected under YMC 18.21, Critical Areas and Resource Lands.

On April 8, 2014, the U.S. Fish and Wildlife Service listed the Yelm subspecies of the Mazama Pocket Gopher (MPG) as threatened under the U.S. Endangered Species Act. It is the responsibility of the landowner to be aware of any species listed under the U.S. Endangered Species Act and comply with applicable federal regulations. Approval of this and other City permits may be superseded by federal law.

Endangered species cannot be harmed at any time, even after permit issuance. If any are found during development, the applicant should contact the U. S. Fish and Wildlife Services and the City of Yelm. Compliance with Yelm's requirements under the Critical Areas Code does not ensure compliance with the provisions of the Endangered Species Act. The applicant should contact the US Fish and Wildlife Service with any questions about compliance with Federal standards for threatened species.

This property is mapped with soils that often contain the presence of Mazama Pocket Gopher. Therefore, a Mazama Pocket Gopher study was conducted in 2021 by West Fork Environmental to evaluate the presence of MPG. The report states that there were no indicators for the Mazama Pocket Gopher.

#### **DESIGN STANDARDS**

#### Permitted Uses and development standards

The single family residential units, townhomes and Planned Residential Developments are permitted uses in R-6 zoning district.

Per section 18.32 of Yelm Municipal Code, maximum density in R-6 zone is six dwelling units per acre. However, a 20 percent density bonus is available for planned residential developments. (YMC 18.64.020 A (2))

When calculating the number of dwelling units allowed on a parcel, the gross area is used and the subsequent number of units is rounded to the first significant digit. Gross area includes all land within the exterior boundaries of the development, including but not limited to all land allocated for open space, critical areas, buffers, streets, roads, and public and private rights-of-way. (YMC 18.30 C)

Chapter 18.32 of YMC does not establish minimum or maximum lot size.

The R-6 zoning district has the following development requirements:

- Minimum Front Setback from local access street: 15 feet
- Minimum Front Setback from a collector street: 25 feet
- Minimum side yard setback: 5 feet
- Minimum flanking yard setback: 15 feet
- Minimum rear yard setback: 25 feet
- Minimum driveway approach: 20 feet
- Maximum Building Heights.
  - 1. Main building: 35 feet.
  - 2. Accessory building: 25 feet.

The proposal meets the requirement of the code.

#### **Building Design**

Chapter 18.61 YMC provides requirements for building design.

All buildings must adhere to the allowed materials and colors mentioned in section 18.61.050 of YMC, and roof-mounted mechanical equipment shall be screened.

Buildings over 3 stories or more than 100 feet wide along any façade facing a street shall include at least 3 approved elements described in Section 18.61.020 YMC.

Buildings over three stories up to 5,000 square feet in gross building footprint shall include at least one approved element from Section 18.61.030 YMC, and buildings over 5,000 square feet shall include two approved elements.

Buildings facing a public street or park shall be enhanced with at least one element of Section 18.61.040 YMC.

#### **Street Lighting**

Adequate street lighting is necessary to provide safety to pedestrians, vehicles, and homeowners. All walkways and paths shall be illuminated to a minimum of two foot candles, and entries to four foot candles. The lighting plan shall meet the requirements of section 18.59.050 of the YMC. Street lighting is reviewed at the time of civil plan review in order to assure adequate lighting.

#### **Mailboxes**

New residential developments shall coordinate with the U.S. Postal Service for the location of any mailbox(es). Mailboxes shall be cluster box units (CBU) spaced throughout the development on local access residential and private streets only. (YMC 18.59.080)

#### **Transit**

New residential developments shall coordinate with Intercity Transit to incorporate transit stops. Intercity Transit shall determine the type and location of new or upgraded transit stops. (YMC 18.59.070)

#### **Parking**

Residential uses require two spaces per dwelling unit. This is typically achieved within a standard driveway approach. (Section 18.54.030 (A)) Each unit has provided 2 parking spaces on the driveway. This meets the requirement of the code.

Since a parking lane on the internal road is not provided, on-street parking on the internal road is prohibited. A no-parking sign must be installed on the internal road.

#### Water

Chapter 13.04 YMC and Chapter 6 of the Development Guidelines establish requirements for connection to the City's water system.

The site is not currently connected to City water service. Water connections are based on Equivalent Residential Units (875 cubic feet of water consumption per month).

There is an 8-inch service main located on Mt. View Road, and a 10-inch main located on Killion Road.

These mains were required to be installed by developers of properties north of this site. For Mt. View Road there is a water latecomers' fee associated with parcel 21713430200 in the amount of \$18,204.27 plus interest.

For Killion Road there is a water latecomers' fee associated with parcel 21713430300 in the amount of \$14,685.82 plus interest. These latecomer fees are required to be paid at the time of connection to the water system.

The City implements a cross-connection and backflow control program pursuant to Title 43 RCW and Chapter 248-54 WAC. [Section 13.04.220 YMC] A backflow prevention device is required to protect Yelm's water system from cross-connections from any irrigation systems. [Section 13.04.220 (D)]

Fire hydrant locks are required to be installed, and paid for by the applicant.

There is history of a well located at the southern property line, near proposed lot 23. The stormwater report states that the well will be abandoned prior to final subdivision. Washington State Department of Ecology (ECY) website shows a well located at the northern property line as well. Any wells located onsite must be decommissioned pursuant to ECY standards, and water rights dedicated to the City. A well protection radius must be provided if offsite wells are not abandoned.

As stated in the concurrency section above, with a limited number of water connections and no application pending for additional water rights, it is not possible to find that water will be reasonably available at the time it is needed for new homes if the preliminary subdivision was approved at this time.

#### Sewer

Chapter 13.08 YMC and Chapter 7 of the Development Guidelines establish requirements for connection to the City's sewer system.

The property is located in the City of Yelm's S.T.E.P. sewer system service area, and is not connected to the City of Yelm's S.T.E.P. sewer system. Sewer connections are based on Equivalent Residential Unit (875 cubic feet of water consumption per month). There is a 3-inch sewer main located on Mt. View Road, and a 4-inch main located on Killion Road. Connection to City sewer service is required.

These mains were required to be installed by developers of properties north of this site. For Mt. View Road there is a sewer latecomers' fee associated with parcel 21713430200 in the amount of \$13,713.73 plus interest.

For Killion Road there is a sewer latecomers' fee associated with parcel 21713430300 in the amount of \$5,117.58 plus interest. These latecomer fees are required to be paid at the time of connection to the sewer system.

#### Stormwater

Impervious surfaces create stormwater runoff which, when uncontrolled and untreated can create health, safety, and environmental hazards. The City of Yelm has adopted the most current version of the Stormwater Management Manual for Western Washington, which requires all development to treat and control stormwater.

The applicant has submitted a preliminary stormwater report which includes a conceptual design for the treatment and infiltration of stormwater. The stormwater system proposed is a BayFilter treatment system which has a general use designation in the 2014 Stormwater Management Manual for Western Washington for source water protection.

Stormwater facilities require continued maintenance to ensure they remain in proper working condition.

#### Landscape

Section 18.55.020 YMC of the Unified Development Code requires landscaping for all new developments.

As part of the street frontage improvements, streetscape landscaping that meets the requirements of YMC section 18.55.020 (C) is required.

Also, per section 18.55.020 (E) stormwater facility landscaping is a required component of any stormwater facility.

The final landscape plan submitted with civil plans shall provide a detailed irrigation plan.

#### **Open Space**

The Unified Development Code at Section 18.56.010 YMC requires residential developments to include equal to or greater than five percent of the gross area of the development as qualified open space. The recreation/open space shall be dedicated for one or more of the following uses:

- 1. Environmental interpretation, protection, or other education;
- 2. Active recreation parks;
- Off-road footpaths or bicycle trails;
- 4. Any other use found by the city to further the purposes of this chapter

In order to serve the recreational needs of the public, at least 75 percent of dedicated recreation area associated with the development must be accessible to either the general public or to all residents of the associated development.

Tract C on the proposed plan shows 0.14 acre of open space. The final landscape plan must show how the open space area meets the requirement of section 18.56.020 of YMC.

#### **Subdivision Name and Addressing**

A subdivision name must be reserved with the Thurston County Auditor's Office prior to submitting for final subdivision approval.

Addressing and street naming within the subdivision will be assigned or approved by the Public Services Department prior to application for final subdivision approval.

#### STAFF RECOMMENDATION

Per section 18.14.080 of YMC, a Planned Residential Development shall be approved if:

- 1. It is consistent with the goals and policies of the city of Yelm comprehensive plan;
- 2. It meets minimum requirements for fire and life safety;
- 3. It provides adequate provisions for utilities and other public services, roads, streets and sidewalks necessary to serve the needs of the development;
- There are no unavoidable impacts to adjoining streets and neighborhoods;
- 5. The development creates no greater burden on present and public utilities and services than would result from traditional development;
- 6. The development is better than that resulting from traditional development

The City of Yelm recently completed a Housing Action Plan. As this subdivision provides housing with prices ranging from 30 to 50% of the area median income (AMI), and since it is one of the goals of the Comprehensive plan to provide a variety of housing for different income levels, therefore the Public Services Department recommends the approval of the preliminary subdivision with the following conditions:

- 1. Frontage improvements on the new road inside the subdivision and also Longmire Street NW are required. The frontage improvements along Longmire Street NW and the internal street must be constructed per City's adopted Local Access Residential standard as illustrated in Chapter 2 of Yelm's Engineering Specifications and Standards Details.
- 2. The final landscape plan submitted as part of the civil plan review shall include details of the street scape landscaping, stormwater landscaping and minimum five (5) percent of the gross land area as qualified open space, with active recreation component.
- 3. If irrigation is provided, an irrigation plan shall be submitted as part of the landscape plans, and compliant with Section 13.04.097 YMC.
- 4. Street lighting is required.
- 5. Pursuant to Chapter 18.16, the applicant shall pay School and Fire impact fees at the time of building permit issuance.
- 6. The civil engineering plans shall include an addressing map for approval by the Building Official.
- 7. The civil engineering plans shall include the proposed location and details for mailbox placement.
- 8. Prior to final subdivision application, a subdivision name must be reserved with the Thurston County Auditor's Office.
- 9. A no-parking sign must be installed on the internal road.
- 10. The applicant shall provide a performance assurance device in order to provide for maintenance of the required landscape for this subdivision, until the homeowners association becomes responsible for the landscaping maintenance. The performance assurance drive shall be 150 percent of the anticipated cost to maintain the landscaping for three years.
- 11. Stormwater facilities shall be located in separate recorded tracts owned and maintained by the homeowners association. The stormwater system shall be held in common by the Homeowners Association and the homeowner's agreement shall include provisions for the assessment of fees against individual lots for the maintenance and repair of the stormwater facilities. All roof drain runoff shall be infiltrated on each lot utilizing individual drywells.

- 12. The applicant shall submit a fire hydrant plan to the Community Development Department for review and approval as part of the civil engineering plans prior to final subdivision approval. The applicant shall submit fire flow calculations for all existing and proposed hydrants. All hydrants must meet minimum City standards. The applicant shall be responsible for the fee for hydrant locks on all fire hydrants required and installed as part of development. These fees shall be collected by the Community Development Department prior to final plat recording.
- 13. The civil engineering plans shall include a search and report of adjacent wells and their locations. Any onsite wells shall be decommissioned, and water rights dedicated to the City. Offsite wells within 100 feet of the property shall be identified, and well protection radius provided.



From: Margaret MacLeod <drmac98953@gmail.com>

Sent: Thursday, December 22, 2022 12:08 PM

To: Planning

Cc: YELMITE of Yelm, WA

Subject: [External] HABITAT to HUMANITY PROJECT: 407 Longmire St. NW, Yelm, WA

#### Project Manager, City Council:

I assume you have received copies of my letter/email to you of December 14, 2022 regarding the above project. As this project is tucked in to an existing neighborhood, we (I have spoken to several neighbors, are requesting a PUBLIC MEETING in order to have a real-time dialogue and opportunity to discuss our concerns. Because of the timing of your letter to the neighbors (Holiday time, many away) and its short duration, you should be very open to hearing from your constituents as requested. There is general agreement that the density and single access on Longmire Street NW are our primary concerns.

#### Regards,

Margaret A. MacLeod, MD 304 Longmire St. NW Yelm, WA 98597 509-901-3939

From: Margaret MacLeod <drmac98953@gmail.com>
Sent: Wednesday, December 14, 2022 12:58 PM

To: Planning

**Subject:** [External]PROJECT NAME: Habaitat for Humanity

RE: PROJECT LOCATION: 407 Longmire St. NW PROJECT PARCEL NUMBER: 22719230700 LAND USE CASE NUMBER: 2022.108

#### To Whom It May Concern:

My name is Margaret A. MacLeod, MD, and I reside at 304 Longmire St. NW. As such, I have an active interest in the above referenced project. As a longtime supporter of Habitat for Humanity, imagine my pleasure at learning that they owned the referenced parcel at the end of my little two block street. Prior to entering the medical profession, I worked for both structural engineers and architects. However, I have some specific concerns about the project as outlined in your notice of December 7, 2022.

- 1. To begin, a better plot map needs to be made available to us to be able to see the square footage of the residential units as proposed in order to assure that the proposed project designs maintain architectural integrity with the existing neighborhood. The square footage of housing units on my side of the street are 1150 to 1500sq ft.
- 2. Density. This needs to be consistent with the existing neighborhood density. Parking for 2-3 vehicles per unit needs to be included. This is consistent with current usage with almost all the existing street parking already used by "extra cars" owned by residents on Longmire St. NW. I would propose IF Habitat's original plan (please forward to all who received the 12/7 letter) for review was less dense (as I suspect), that an additional compromise between the two project plans be entered into. While DENSITY might be desirable to the CITY from a TAX-base perspective, ensuring a high quality and safe living environment is our obligation and top priority. Traffic is already very heavy with the new Middle School just around the block.
- 3, Access. This is my biggest concern. Making Longmire Street NW the sole access for 22 new housing units is absurd. We don't have that many units on our entire street! Cullens Street NW makes much more sense as the sole access, or, at the very least, as an additional access. This would allow for a more direct route to ALT 510 as traffic is generally considerably less on the Cullens side of the project with the SeaMar Medical Clinic and the Easthaven Facility taking up most of those 2 blocks to Yelm Avenue.
- 5. Safety. Sidewalks and curbs would be needed all along both sides of Longmire St. NW (they already exist on Cullens) to permit the safe walking of school children and seniors. A speed bump on Longmire St. NW has been needed for a long time as cars use our street as a "shortcut" to speed between Yelm Ave. and Coates Sts. in order to take Cullens to ALT 510 or to the Middle School.

Finally, a copy of this response to the above-mentioned Notice of Application, dated December 7, 2022 has been hand-delivered to neighbors and sent to Habitat for Humanity. As a retiree, I would greatly appreciate and welcome any opportunity to become more involved as a constructive member of the ongoing planning process at any time and place.

304 Longmire St. NW Yelm, WA 98597 509-901-3939 (cell and home) 253-363-6026 (temporary)

To: Planning

**Subject:** [External]Longmire St project

To whom it may concern,

I realize the comment period ended yesterday but I still wanted to share because as a close by resident I am concerned with this proposed development for many reasons.

Already we have countless developments and apartments popping up around the community that will majorly affect our already congested road system and the future zoning for our schools. Our elementaries are already at capacity and with the added developments it is only going to get worse. I am all for growing and moving forward but after the right steps have been taken.

Whether it is a city of Yelm issue or a Washington state issue but the bypass should have already been completed. We cannot continue to grow without the proper road systems to filter people through. The intersection at Cullen's rd and Coates Rd already gets congested with the traffic we have, I cannot imagine how it will be when you add a 22 lot community.

Please consider tabling this community until we can better service our current community.

Thank you in advance.

From: David Bell <dbell395@gmail.com>
Sent: David Bell <dbell395@gmail.com>
Monday, December 12, 2022 12:18 PM

To: Planning

**Subject:** [External] Habitat for Humanity Project 407 Longmire ST NW

I totally support this project. It is being done by a reputable organization with a long established and good moral character.

Construction will be an inconvenience but it is extremely necessary to increase housing. Generations ago, Faulkner said "Only yesterday was a wilderness ordinary"

Today that expression applies to open space, the housing need is so great that we need to build everywhere and I'm glad to see it.

Dave and Patty Bell 9524 Longmire CT SE Yelm, WA

**From:** YELMITE of Yelm, WA <yelmite@msn.com> **Sent:** Saturday, December 17, 2022 1:58 PM

To: Planning

**Subject:** [External]Fw: property on 407 Longmire St concerns

From: YELMITE of Yelm, WA

Sent: Saturday, December 17, 2022 12:17 PM

To: drmac98953@gmail.com

Subject: Fw: property on 407 Longmire St concerns

#### Subject: property on 407 Longmire St concerns

We received your card, thank you and your letter. There are other concerns no one has mentioned. The traffic for school buses, they cannot stop on the mail road to let kids cross the street which is good but that means they will be driving down Longmire St to let students off. You will have small buses if they have any kids with challenges plus bigger buses. The kids will probably go to Southworth, Middle school and High school but you might have kids with different challenges that could possibly be going to Ridgeline, Prairie, Fort Stephens and Mill Pond depending on the child's needs. And, if the child goes to school for behavioral problems, they might be in a VAN for out of district schools. This might greatly impact the volume of traffic . Yelm, as many should know by now, has a shortage just like all other schools for the need of bus drivers this will greatly impact the school district transportation. Just something many do not think about. I've been in contact with Ben the project manager and will send him a copy of your letter via email.

Kathy McGuire 458-5374 307 NW Longmire St. NW

From: Maryam Moeinian

**Sent:** Tuesday, January 17, 2023 7:38 AM **To:** 'Margaret MacLeod'; Ken Beckmann

Cc: Planning

**Subject:** RE: [External]Re: 407 longmire project

Attachments: RE: [External]PROJECT NAME: Habaitat for Humanity; [External]HABITAT to HUMANITY

PROJECT: 407 Longmire St. NW, Yelm, WA

#### Dear Margaret,

This is Maryam with the City of Yelm. I received two comment letters from you, dated December 14, 2022 and December 22, 2022. We communicated via email regarding the next steps of the project and I explained that we will schedule a public hearing for this project and I will notify you of the date of the hearing. Because the project is still being reviewed by city staff, no public hearing has been scheduled yet. But please know that as soon as we set a date for the public hearing, I will contact you and the neighbors within 300 feet of the subject property. I've attached both of your comment letters that we have received to this email. If you have any additional comments, please let me know.

#### Regards,

#### **Maryam Moeinian**

Associate Planner City of Yelm, WA **Tel**: 360.400.5001

Hours: Mon-Thurs 6:30 AM - 5:00 PM

www.yelmwa.gov



We are experiencing a significant increase in submissions of permit and development applications. Unfortunately, this has delayed our usual accelerated processing time for applications. Everything is reviewed in the order it is received and our team is reviewing as quickly as humanly possible. During this time, we appreciate your understanding and patience.

From: Margaret MacLeod

Sent: Saturday, January 14, 2023 9:50 AM

**To:** Ken Beckmann **Cc:** Planning

Subject: [External]Re: 407 longmire project

So here is what was sent and some of my response. The density and access make no sense in this older neighborhood. The City's main interest is generating to their tax revenue. Even now, I would email the City with you our own thoughts at: <a href="mailto:planning@yelmwa.gov">planning@yelmwa.gov</a>. Explain, as you did to me, how you are not able to represent yourself but have ideas and input into the process. The City did email me that they are planning a public meeting...but no idea when. Copy me with your thoughts so I could present them for you at a future meeting.

On Sat, Jan 14, 2023, 1:43 AM Ken Beckmann < placitasnm@gmail.com > wrote:

hi no have not seen it. conrad is not good at keeping us advised of mail he gets for us. thanks ken

On Fri, Jan 13, 2023 at 7:44 PM Margaret MacLeod < drace | drmac98953@gmail.com | wrote:

Will do, thanks. Did you get the original letter from the City announcing the project??

On Fri, Jan 13, 2023, 3:04 AM Ken Beckmann < placitasnm@gmail.com > wrote:

Hi we own the property at 317 Stella Ct NW YELM 98597 Hazel and Kenneth Beckmann our deaf son Conrad Spamer lives there. Please keep us in the loop as to whats happening or any petition regarding this project. We currently live in the Uk so not in yelm for any direct involvement.

Regards Ken and Hazel

From: Caitlin Messbarger <caitchristensen15@gmail.com>

Sent: Wednesday, December 21, 2022 11:43 PM

To: Planning

**Cc:** pete.messbarger@gmail.com; Amber McDonald

**Subject:** [External] Habitat for Humanity Project

Project Name: Habitat for Humanity Project Location: 407 Longmire St NW Project Parcel Numbers: 22719230700 Land Use Case Number: 2022.0108

To Whom it May Concern,

We are Pete and Caitlin Messbarger, and we own the home located at 608 Trump Avenue NW in Yelm. Our property is located adjacent to the lot that this proposed project it to be built upon. We are writing you in order to gain some further clarity on the project and to express our concerns.

Safety for our family and our neighbors is our main concern regarding this project.

- 1. Access concerns: From what can be observed on the rendering, it appears as though there is only one entrance into this new neighborhood. This means that traffic along Longmire St NW will increase significantly. At this time, there are a lack of sidewalks and curbs running along this street. An increase in traffic, without any additional sidewalks and curbing being added for pedestrians, is very dangerous. There are a number of children, families, and senior citizens in this neighborhood, whose safety needs to be considered. Considering adding an additional entrance or 2, along with adding in sidewalks and curbing to the plan, can help improve the safety of the neighborhood.
- 2. Density concerns: The number of projected homes to be included in this neighborhood is 22, which is more homes than what currently exists in over a full city block in this neighborhood. This project has a 2.3 acres lot to attempt to safely put 22 homes into, and an even greater number of people. The lot that this project is to be built on was zoned for 12 homes, OR 7 duplexes, OR 4 fourplexes, all of which the project exceeds. Placing 22 homes in a small area means these homes will be very close together, which increases the risks associated with house fires spreading through neighborhoods. When homes are spread further apart, it is proven that the likelihood of adjacent homes catching fire during an incident is decreased substantially. Being sure the homes have the appropriate fire separation distance is vital. A conversation with the local fire department may help determine a truly appropriate distance needed between homes to mitigate this risk.
- 3. Parking concerns: This influx of individuals residing in the proposed 22 homes will increase an already limited parking situation in the area, potentially placing more vehicles on the side streets, causing obstructed views for drivers, and putting others at risk. Decreasing the number of homes to be built in the 2.3 acre lot to allow for more adequate parking within the purchased lot, can help maintain safety for all.

While an increase in population density is important to the city, and while we understand that people need homes, we also need to lookout for our family and our neighbors. We are not opposed to homes being built in the lot behind our house, however we are concerned with the number of homes and the number of people that will reside in those homes. We need to maintain and even improve safety within our neighborhood. We hope

that our concerns will be taken into consideration, and that there can be open dialogue for more opinions and further discussion in the future.

We are also asking that the following information would be sent to us and our neighbors:

- -Time line for the project, start to finish. We, personally, will be listing our home for sale in the very near future, and will need to provide prospective buyers with this information.
- -Hours during which construction may be occurring.
- -Proximity of construction to adjacent homes. We have both small children and pets, so this is very concerning for us.
- -Contact information for the project if any concerns or issues arise during the construction process.

Thank you Pete and Caitlin Messbarger 608 Trump Avenue Northwest Yelm, WA 98597

From: Sara Williams

Sent: Friday, December 16, 2022 2:02 PM

To: Megan Barry

**Cc:** Amber McDonald; Planning

Subject: RE: [External]Project Name: Habitat for Humanity Inquiry

We do not have an exact timeline on the approval or the start of construction for this project at the current time.

Thanks,

Sara Williams, Assistant Planner Cell 360.584.4204 Desk 360.458.8496 Tues-Fri 6 AM – 4:30 PM www.yelmwa.gov



From: Megan Barry [mailto:megan@rallypointp.com]

Sent: Friday, December 16, 2022 1:44 PM

To: Sara Williams

Cc: Amber McDonald; Planning

Subject: Re: [External]Project Name: Habitat for Humanity Inquiry

Thank you so much for the information. Have you been provided or are you aware of a timeline on when this project may be approved or begun?

On Fri, Dec 16, 2022 at 12:20 PM Sara Williams < Sara W@yelmwa.gov> wrote:

Good Afternoon Megan,

I will answer your questions in the bullet point format you have provided:

• Any comments or concerns are specifically only regarding this project, this would include comments regarding any part of the site plan that has been received. Anyone is welcome to provide a comment on the single-family homes and/or townhomes if they so wish, this comment can be in favor or not in favor.

- We cannot guarantee 15 years down the road something else will not be built at the property, the site plan received is what will be at the site that has been applied for. Any future development must be applied for and everyone in the City is held to this standard.
- Just because a project is contested through a public hearing does not mean it will cancel the project. There would need to be a reason that is based upon facts and laws as to why this project cannot be built. Comments that are based on opinions and likes or dislikes do not hold up much in a hearing.

• As to how to trigger a public hearing I would like to refer you to RCW 58.17.095 (3) this can better help you understand what can trigger a public hearing.

Thanks,

Sara Williams, Assistant Planner

Cell 360.584.4204

Desk 360.458.8496

Tues-Fri 6 AM - 4:30 PM

www.yelmwa.gov



From: Megan Barry [mailto:megan@rallypointp.com]

**Sent:** Friday, December 16, 2022 12:06 PM

To: Planning

Cc: Megan Barry <megan@rallypointp.com>; Amber McDonald <amber@rallypointp.com>

**Subject:** [External]Project Name: Habitat for Humanity Inquiry

Hi,

Thank you!

Our business is built on referrals and positive recommendations from people like you. If you know of someone thinking of buying or selling their home, who would appreciate the kind of quality service

we offer, we'd love to help them. Simply give me a call and we will treat them as special VIP's with the finest service possible.	

From: Sandy Nehl <sanehl49@gmail.com>
Sent: Thursday, December 22, 2022 7:57 AM

To: Planning

**Subject:** [External] Habitat for Humanitly 407 Longmire St NW

Comments on Proposed Habitat for Humanity Project, Land Use Case Number 22719230700

- The proposed layout of the high density, low income housing project is poorly designed. 1) all traffic from the project will exit onto Longmire Street NW. Longmire Street is an extremely narrow side street that does not allow opposing vehicles to pass without one of them stopping to allow the other vehicle to safely pass. 2) Many residents that live on Longmire Street park their vehicles in front of their houses crowding an already narrow road or park on Trump Avenue narrowing that entrance. 3) A high percentage of vehicles leaving from the proposed development would exit Longmire Street onto Coates Avenue (which is a high traffic area during commuting hours, in addition to school buses and children walking to/from school). 4) An equally high percentage of vehicles will be exiting Longmire Street through Trump Avenue (an existing neighborhood). Trump Avenue is a wider street but also has many vehicles parked on the street.
- The proposed project would affect the character of the existing neighborhoods and homes. 1) An open "green space" with fruit trees will be gone. 2) Traffic will increase significantly through existing neighborhoods and traffic increases the noise level as most residences have an average of two vehicles. 3) The crowded layout of a high density housing development does not match the "residential look" of all the neighborhoods in this immediate area as well as the surrounding areas further in both directions on Coates Avenue

Has a public hearing been scheduled? I'm assuming that the 15-day comment period is not considered to be a public hearing.

Sandy Nehl 610 Trump Avenue NW Yelm

From: Shailie Steele <shailiesteele@gmail.com>
Sent: Wednesday, December 28, 2022 11:30 AM

To: Planning

**Subject:** [External] Habitat for Humanity 407 Longmire St. NW

Hello,

My name is Shailie Steele. I reside at 301 Longmire St. NW. I understand that the deadline to submit comment on this project was December 23rd however, we have been out of town for the holidays and still wish to submit concern.

One of my biggest concerns about this project is access to and from this neighborhood. Longmire is a very narrow road and there are no sidewalks on the end of the road where this neighborhood would be located. We already have cars that speed on Longmire which is an issue in itself. If each home in the new neighborhood has 2 vehicles each we would be adding 44 more cars to Longmire's traffic. Not only would I suggest that Longmire road be widened and made safer by adding sidewalks, I would also suggest that there be another entrance to the neighborhood from Coates road.

Another issue that I see is that there is an open space listed. Generally speaking, I think that open space is much needed. Especially with the large number of families that would be living in this neighborhood. However, The open space next to my home has been left to be taken over by weeds and is never taken care of. It is a huge eyesore and causes issues such as mice, moles, and obnoxious weeds growing through the fence. I worry that by having this open space it will be left to do the same and will be another problem that this neighborhood has.

I am also concerned about the density of the neighborhood. I believe that there are far too many townhomes in this area. As mentioned above, we could be adding approximately 44 more cars to the neighborhood. The current plans do not look as if there will be ample driveway parking space. Although backyard space would be more limited, I feel that the units should be pushed back in order to allow residents to park in the driveway rather than on the street. The neighborhood is far more dense than the rest of the surrounding neighborhood.

Regards, Shailie Steele





## STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

#### **Southwest Region Office**

PO Box 47775, Olympia, WA 98504-7775 • 360-407-6300

August 2, 2023

Maryam Moeinian, SEPA Contact City of Yelm Community Development Department PO Box 479 Yelm, WA 98597

Dear Maryam Moeinian:

Thank you for the opportunity to comment on the determination of nonsignificance for the Habitat for Humanity Subdivision Project (2022.0108) located at 407 Longmire Street Northwest as proposed by South Puget Sound Habitat for Humanity. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

#### SOLID WASTE MANAGEMENT: Derek Rockett (360) 407-6287

The applicant proposes to demolish an existing structure(s). In addition to any required asbestos abatement procedures, the applicant should ensure that any other potentially dangerous or hazardous materials present are removed prior to demolition. It is important that these materials and wastes are removed and appropriately managed prior to demolition. It is equally important that demolition debris is also safely managed, especially if it contains painted wood or concrete, treated wood, or other possibly dangerous materials. Please review the "Dangerous Waste Rules for Demolition, Construction, and Renovation Wastes," on Ecology's website at: Construction & Demolition Guidance. All removed debris resulting from this project must be disposed of at an approved site. All grading and filling of land must utilize only clean fill. All other materials may be considered solid waste and permit approval may be required from your local jurisdictional health department prior to filling. Contact the local jurisdictional health department for proper management of these materials.

#### TOXICS CLEANUP: Thomas Middleton (360) 999-9594

If contamination is suspected, discovered, or occurs during the proposed SEPA action, testing of the potentially contaminated media must be conducted. If contamination of soil or groundwater is readily apparent, or is revealed by testing, Ecology must be notified. Contact the Environmental Report Tracking System Coordinator for the Southwest Regional Office (SWRO) at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required, contact Thomas Middleton with the SWRO, Toxics Cleanup Program at the phone number provided above.

Maryam Moeinian August 2, 2023 Page 2

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology Southwest Regional Office

(JKT:202303478)

cc: Derek Rockett, SWM Thomas Middleton, TCP



From: Lauren Whybrew <lauren.whybrew@orcaa.org>

**Sent:** Monday, July 24, 2023 9:22 AM

To: Maryam Moeinian

**Cc:** Bryson Downs; Debbie Moody; ben@spshabitat.org

Subject: [External]ORCAA Comment on SEPA# 202303478; File# 2022.0108 Habitat for

**Humanity Subdivision** 

**Attachments:** Determination of Non-Significance - Habitat for Humanity.pdf

#### Good morning,

Olympic Region Clean Air Agency (ORCAA) recently reviewed a notice regarding the Habitat for Humanity Subdivision project proposal for 407 Longmire Street NW in Yelm, Washington. The project proposes the demolition of all existing structures, including a detached single-family home and detached garage. Olympic Region Clean Air Agency (ORCAA) has the following comments for the applicant:

ORCAA regulations require an asbestos survey for all demolition projects. Demolition projects by definition also include renovations performed to load-bearing structural members on the current building as part of a remodel. Prior to any demolition project, the following must be completed:

- A good faith asbestos survey must be conducted on the structure by a certified Asbestos Hazardous Emergency Response Act (AHERA) building inspector;
- If asbestos is found during the survey, an ORCAA Asbestos Removal Notification must be completed and all asbestos-containing material must be properly removed prior to the demolition; and,
- If the structure is 120 sq. ft. or greater, an ORCAA Demolition Notification must be submitted regardless of the results of the asbestos survey. There is a mandatory 14-day waiting period after ORCAA receives notification, so we recommend the applicant complete the Demolition Notification promptly after receiving the survey.

#### Helpful Links:

A list of certified asbestos contractors is available at https://smex-

ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2fwww.orcaa.org%2fasbestos%2ddemolition%2fasbestos%2dservice%2dproviders%2f&umid=b1c7082a-ea69-4dff-89c1-

20addfbe3378&auth=bc21d8ac6afe3205692fe0095e437a27b99ee6e6-

2311ad52b4a9acc506b691ada34b6ff0b15c4d2c

The Demolition Notification form is available at https://smex-

ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2fwww.orcaa.org%2fasbestos%2d demolition%2fasbestos%2dforms%2dresources%2fdemolition%2dnotification%2dform%2f&umid=b1c 7082a-ea69-4dff-89c1-20addfbe3378&auth=bc21d8ac6afe3205692fe0095e437a27b99ee6e6-ed349c882b4fc324d43561b9ed65931809a3288d

<sup>\*</sup>These requirements are specific to ORCAA and are not synonymous with any city or county permitting jurisdiction requirements

If applicable, the Contractor Asbestos Removal Application is available at https://smex-ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2fwww.orcaa.org%2fasbestos%2d demolition%2fasbestos%2dforms%2dresources%2fdemolition%2dnotification%2dform%2f&umid=b1c 7082a-ea69-4dff-89c1-20addfbe3378&auth=bc21d8ac6afe3205692fe0095e437a27b99ee6e6-ed349c882b4fc324d43561b9ed65931809a3288d

If you have any questions or concerns regarding the process, please contact Bryson Downs at bryson.downs@orcaa.org or by calling our main office at 360-539-7610.

Thank you,

#### Lauren Whybrew, Engineer II

Olympic Region Clean Air Agency - "Clean Air is Everyone's Business!" 2940 Limited Lane NW · Olympia WA 98502 · www.orcaa.org (360) 539-7610 ext. 107 · 1-800-422-5623

Please take notice that any records or communications with ORCAA are subject to public disclosure under the Public Records Act (RCW 42.56) unless exempt under applicable law.

Please consider the environment before printing this email. Thank you.



From: Shaun Dinubilo <sdinubilo@squaxin.us>

**Sent:** Monday, July 31, 2023 1:59 PM

**To:** Maryam Moeinian

**Subject:** [External]RE: Determination of Non-Significance- South Puget Sound Habitat for

Humanity #2022.0108

Hello Maryam,

Thank you for contacting the Squaxin Island Tribe Cultural Resources Department regarding the above listed project for our review and comment. We have no specific cultural resource concerns for this project. However, if DAHP recommends a survey, or any other additional recommendations, we concur with DAHP's recommendations. We would prefer to receive an electronic copy by email once completed. If any archaeological or cultural resources are uncovered during implementation, please halt work in the area of discovery and contact DAHP and the Squaxin Island Tribe's Archaeologist, Shaun Dinubilo via email at sdinubilo@squaxin.us.



Shaun Dinubilo
Archaeologist
FAA Certified (Section 107) sUAS Remote Pilot
Cultural Resource Department
Squaxin Island Tribe
200 S.E. Billy Frank Jr. Way
Shelton, WA 98584

Phone: 360-432-3998

Email: sdinubilo@squaxin.us

Email is my perferred method of communication.

As per 43 CFR 7.18[a][1]) of the Archaeological Resource Protection Act, Section 304 of the National Historic Preservation Act, and RCW 42.56.300 of the Washington State Public Records Act-Archaeological Sites, all information concerning the location, character, and ownership of any cultural resource must be withheld from public disclosure.

From: Maryam Moeinian

Sent: Thursday, July 20, 2023 8:29 AM

To: Maryam Moeinian

Subject: Determination of Non-Significance- South Puget Sound Habitat for Humanity #2022.0108

Importance: High

<u>Click here</u> to view the Determination of Non-Significance for the South Puget Sound Habitat for Humanity project (City of Yelm Project # 2022.0108) located at 407 Longmire St NW, Yelm, WA 98597 (Parcel number: 22719230700).

Comments will be accepted until August 3, 2023 at 5 PM.

#### **Maryam Moeinian**

Senior Planner City of Yelm, WA **Tel**: 360.400.5001

**Hours**: Mon- Thurs 6:30 AM - 5:00 PM

www.yelmwa.gov



We are experiencing a significant increase in submissions of permit and development applications. Unfortunately, this has delayed our usual accelerated processing time for applications. Everything is reviewed in the order it is received and our team is reviewing as quickly as humanly possible. During this time, we appreciate your understanding and patience.



## HABITAT FOR HUMANITY

Yelm, WA

TRAFFIC IMPACT ASSESSMENT (TIA) April 20, 2023





Transportation Planning & Engineering

## HABITAT FOR HUMANITY TRAFFIC IMPACT ANALYSIS

### Prepared for:

South Puget Sound Habitat for Humanity Attn: Ben Fransua 711 Capital Way South, Suite 401 Olympia, WA 98501 c/o LDC Engineering

## Prepared by:

Heath & Associates PO Box 397 Puyallup, WA 98371 (253) 770 1401 Heathtraffic.com

#### License:





# HABITAT FOR HUMANITY TRAFFIC IMPACT ANALYSIS

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# HABITAT FOR HUMANITY TRAFFIC IMPACT ANALYSIS

### 1. INTRODUCTION

Heath & Associates has been retained to prepare a Traffic Impact Analysis (TIA) for a proposed residential development within the city of Yelm limits. This analysis will evaluate baseline conditions within the study area, project new trips created from the development, and reevaluate operations to ensure mobility standards meet adopted Level of Service (LOS) standards.

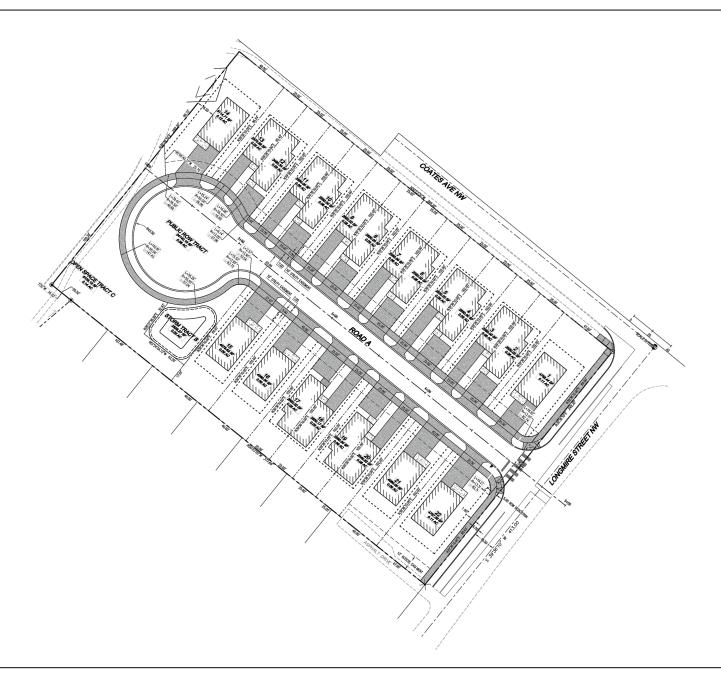
## 2. PROJECT DESCRIPTION

Habitat for Humanity - Yelm is a proposed residential project comprised of 22 income-restricted single-family dwelling units located within the city of Yelm. The subject site has a site address of 407 Longmire Street NW and is comprised of 2.3-acres within tax parcel #: 22719230700. Units are a mix of cottage to duplex as illustrated in the provided site plan. Access is proposed via a single private driveway from Longmire Street NW. However, the City requested examination of additional access scenarios including: a single access to Cullens Road; and a new public roadway through the site whereby access to both Cullens Road and Longmire Street would be achieved. A vicinity map is provided below which highlights the subject site in red. Figure 2 on the following page illustrates the proposed site plan with the preferred access alternative (Longmire Street).











SITE PLAN FIGURE 2

## 3. EXISTING CONDITIONS

## 3.1 Existing Street System

The primary roadways serving the project are described below.

Cullens Road SE: is a north-south, two-lane neighborhood collector bordering the subject site to the west. The roadway's cross-section consists of one travel lane in each direction and a four-foot shoulder along the east side. Sidewalks are discontinuous but are available along the subject frontage. The posted speed limit is 25-mph.

Coates Road SE: is an east-west, two-lane neighborhood collector bordering the subject site to the north. The roadways cross section consists of one travel lane in each direction and four-foot paved shoulders along either side. Curb, gutter, and sidewalk is provided along either side of the roadway east of the intersection with Cullens Road SE. The posted speed limit is 25-mph.

*NW Longmire Street:* is a northeast-southwest, two-lane local access residential roadway bordering the subject site to the east. The posted speed limit is 25-mph. Sidewalk is generally unavailable with the exception of a short ~300-foot segment along the west side between Coates Avenue NW and SR 510.

### 3.2 Roadway Improvements

The city of Yelm's most recent (2022-2027) Transportation Improvement Plan and the Washington State STIP (Statewide Transportation Improvement program) (2023-2026) were both reviewed and indicates improvements are planned in the vicinity of the project. Each project is listed and describes below.

# **City of Yelm:**

Coates Ave NW (ID #: WA-10293): This project entails the reconstruction of Coates Road SE from Cullens Road to Killion Road. The roadway will include sidewalks, curb, gutter, full utilities, streetlights, stormwater, water, sewer, septic, power, gas, and future fiber system.

Longmire / SR 510 Intersection (ID #: Yelm5B 16): This project entails the construction of a signal at the intersection of Longmire Street SE & SR 510.



### 3.3 Transit Service

A review of the Intercity Transit regional bus schedule indicates that transit is available within walking distance (under 1.0-mile) for future project residents. The closest stop in relation to the subject site is located along SR 510 between Cullens Street and Longmire Street at approximately 1,200 feet measured via walking routes.

The bus route served at the intersection is Route 94 - Boulevard Road/Yelm. Route 94 provides service from the Olympia Transit Center to the Yelm Walmart. Weekday service is provided from 6:04 AM - 9:45 PM with approximately 60-minute headways during peak travel times. Weekend service is provided from 7:15 AM - 9:45 PM with approximately 60-minute headways. Refer to the Intercity Transit website for more detailed information.

### 3.4 Existing Peak Hour Volumes and Travel Patterns

Field data for this study were collected in April 2023 at the following study intersections:

- 1. Cullens Road & Coates Avenue
- 2. Longmire Street & Coates Avenue

Counts were administered between the commute peak period from 4:00-6:00 p.m. to establish baseline volume conditions in the vicinity.

**Table 1: Existing PM Peak Hour Volumes** 

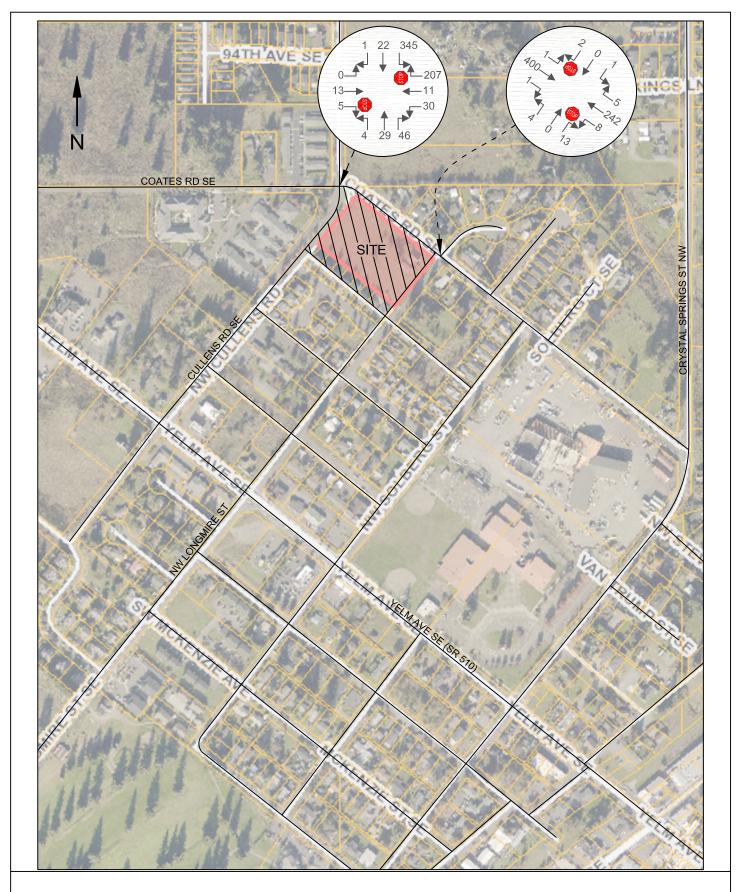
Intersection	Control Type	Peak Hour	Total Entering Volumes
Cullens Road & Coates Avenue	Two-way Stop	4:00-5:00 p.m.	713
Longmire Street & Coates Avenue	Two-way Stop	4:00-5:00 p.m.	677

Figure 3 on the following page illustrates the turning movement volumes for each study intersection. Full count sheets are available within the appendix.

# 3.5 Non-Motorist Activity

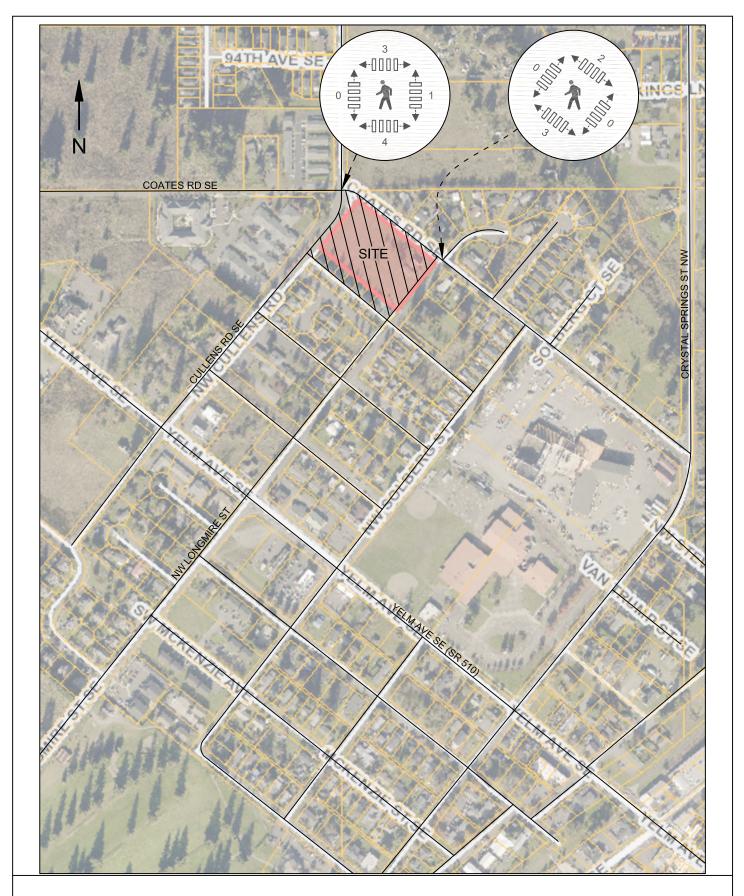
Pedestrian and bicycle activity were observed at the study intersection studied for this project during routine PM peak hour field counts. Pedestrians were noted crossing each study intersection. No bicycles were observed traversing the intersection. See Figure 4 for pedestrian activity at the two outlying study intersections.







EXISTING PM PEAK HOUR VOLUMES FIGURE 3





PM PEAK HOUR PEDESTRIAN VOLUMES FIGURE 4

### 3.6 Existing Level of Service

Peak hour delays were determined through methodologies prescribed in the *Highway Capacity Manual* 6th Edition. Capacity analysis is used to determine level of service (LOS) which is an established measure of congestion for transportation facilities. The range¹ for intersection level of service is LOS A to LOS F with the former indicating the best operating conditions with low control delays and the latter indicating saturated conditions with heavy control delays. Detailed descriptions of intersection LOS are given in the 2016 Highway Capacity Manual. Level of service calculations were made through the use of the *Synchro 11* analysis program. For sidestreet stop-controlled intersections, LOS is determined by the movement with the highest delay. Table 2 below summarizes existing LOS delays for the study intersection.

**Table 2: Existing PM Peak Hour Level of Service** 

Delays Given in Seconds per Vehicle

Intersection	Control	Critical Movement	LOS	Delay
Cullens Rd &	Two-Way	EB	С	19.3
Coates Ave	Stop	WB	В	14.8
Longmire St &	Two-Way	NB	В	12.3
Coates Ave	Stop	SB	В	11.9

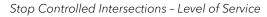
**City Level of Service Standards<sup>2</sup>:** Yelm has an adopted a Level of Service Standard D.

Existing PM peak hour level of service is shown to meet city standards operating with LOS B conditions.

<sup>1</sup> Signalized Intersections - Level of Service

	Control Delay per
Level of Service	<u>Vehicle (sec)</u>
А	<b>≤</b> 10
В	>10 and ≤20
С	>20 and ≤35
D	>35 and ≤55
Е	>55 and ≤80
F	>80

Highway Capacity Manual, 6th Edition <sup>2</sup> Yelm Comprehensive Plan.



	Control Delay per
Level of Service	Vehicle (sec)
А	≤10
В	> 10 and ≤15
С	> 15 and ≤25
D	> 25 and ≤35
Е	>35 and ≤50
F	>50



## 4. FORECAST TRAFFIC DEMAND & ANALYSIS

### 4.1 Project Trip Generation

Trip generation is defined as the number of vehicle movements that enter or exit the respective project site during a designated time period, such as a specific peak hour (AM or PM) or an entire day. Trip estimates for the project have been derived through the Institute of Transportation Engineers (ITE) publication, *Trip Generation Manual*, 11th Edition. Land Use Code (LUC) 215 - Single-Family Attached Housing was applied given the townhouse style units being proposed. It should also be taken into consideration that the units will all be income-restricted which could influence trip rates potentially lower. Average rates were applied against the number of proposed dwelling units (22). Table 3 below summarizes the trip generation.

**Table 3: Project Trip Generation** 

	Land Use	Dwelling	AWDT -	AM F	Peak-Hou	r Trips	PM Peak-Hour Trips			
	Land Use	Units	AVVDI	In	Out	Total	In	Out	Total	
Γ	LUC - 215									
	Single-Family	22	158	3	8	11	7	6	13	
	Attached									

Based on ITE data, the project is estimated to generate 158 average weekday daily trips with 11 trips occurring in the AM peak hour and 13 trips occurring in the PM peak hour.

### 4.2 Site Access

Per the provided site plan, a single access is proposed via a new private roadway extending west from Longmire Street. The City has requested examination of additional access scenarios which include: access solely to Cullens Road; and a new east/west public roadway providing access to both Longmire Street and Cullens Road.

### **Functional Classification**

Typically, access connections are provided to the lowest classified fronting roadway whenever possible. Between the two options, Longmire Street, a local access, is functionally lower classified when compared to Coates Street, a neighborhood collector.

Advantage: Longmire Street



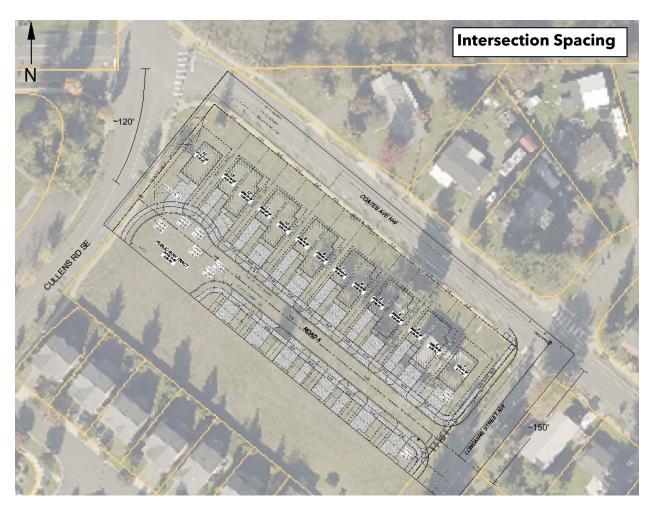
## **Intersection Spacing**

Per City of Yelm Engineering Standards, the following intersections spacing requirements are identified:

Neighborhood Collector (Cullens) - 200 feet

Local Access (Longmire) - 150 feet

Advantage: Longmire Street





### **Sight Distance**

Both Longmire Street and Cullens Road have posted speed limits of 25-mph. Per AASHTO Standards<sup>3</sup>, a minimum of 280 feet of unobstructed view is needed to meet entering sight distance (ESD) and 155-feet of stopping sight distance (SSD). Preliminary review of the access points indicates sight distance requirements appear to be met under either scenario.

Advantage: Tie

### 4.2 Distribution & Assignment

Trip distribution describes the process by which project generated trips are dispersed on the roadway network surrounding the site. Trip distribution percentages are based on Thurston Regional Planning Council (TRPC) TAZ Map 744. The following scenarios have been included:

- 1. Access to Longmire Street Only (Preferred Alternative) (A)
- 2. Access to Cullens Road Only (B)
- 3. New Local Roadway Providing Connectivity Between Longmire & Cullens (C)

Figures 5A, 5B, and 5C reflect the trip assignment for respective access scenarios above. Scenario 3 with a new east/west public route may generate some background traffic. However, given the existing volumes along both Cullens and Longmire, background traffic is estimated to be minimal. Background volumes using the new connection have been inserted to present conservative analysis.

### 4.3 Future Peak Hour Volumes

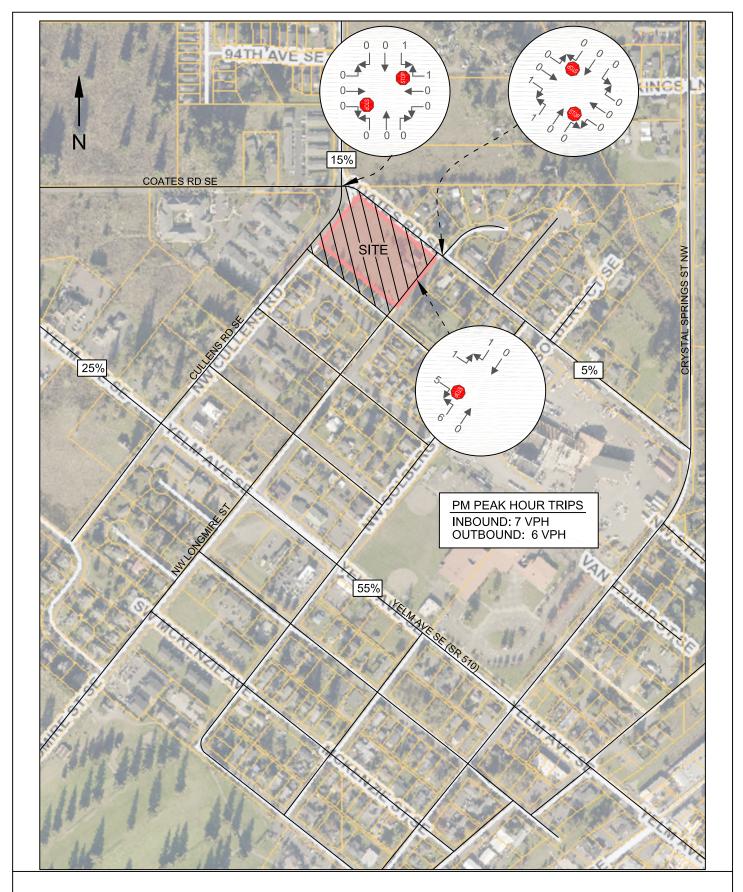
A 3-year horizon of 2026 was used for future traffic delay analysis. Forecast 2026 background traffic volumes were derived by applying a one percent compound annual growth rate to the existing volumes shown in Figure 3. This growth rate is considered conservative as WSDOT volumes along SR 510 just northwest of NW 1st Street are shown to decrease from 2016 (ADT – 17,000) to 2019 (ADT – 16,000) (pre-COVID conditions). Moreover, also taken into consideration are in-process developments within the city which includes: The Hutch, Durant Street Plat, Alpine Estates, Tahoma Boulevard Apartments, El Rey Burro, The Summit at Thompson Creek, and Samantha Ridge. Each development was examined and accounted for; however, given the site's location, pipeline traffic is expected to be nominal as shown in Figure 5.

Forecast 2026 PM peak hour volumes without the project (background growth plus pipeline) are shown in Figure 6 while Figure 7 illustrates forecast 2026 volumes with the addition of project-generated traffic.

<sup>&</sup>lt;sup>3</sup> AASHTO Green Book (pg. 4.13)

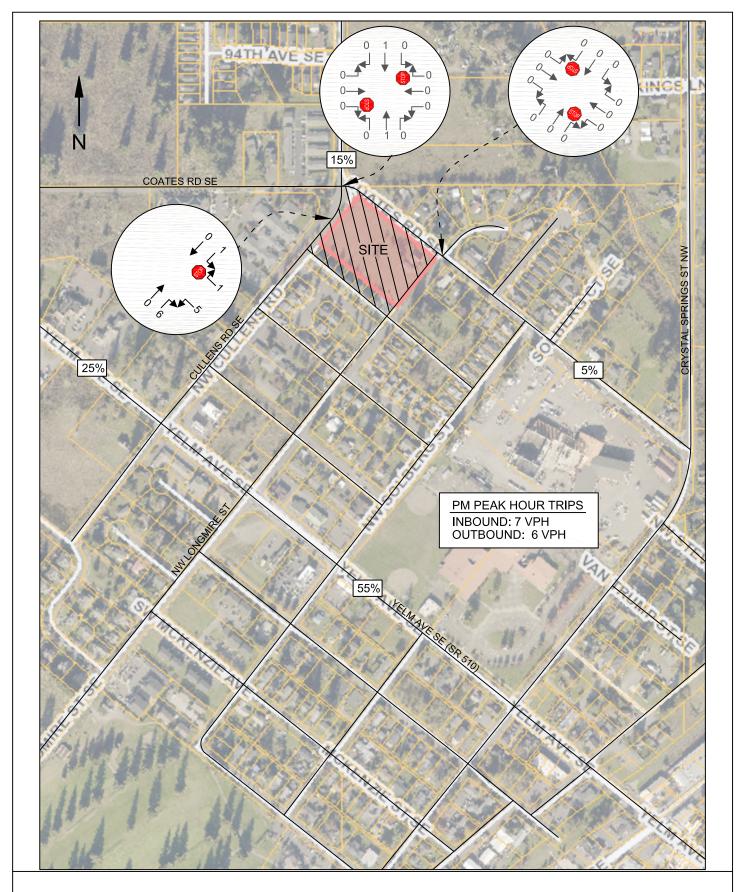


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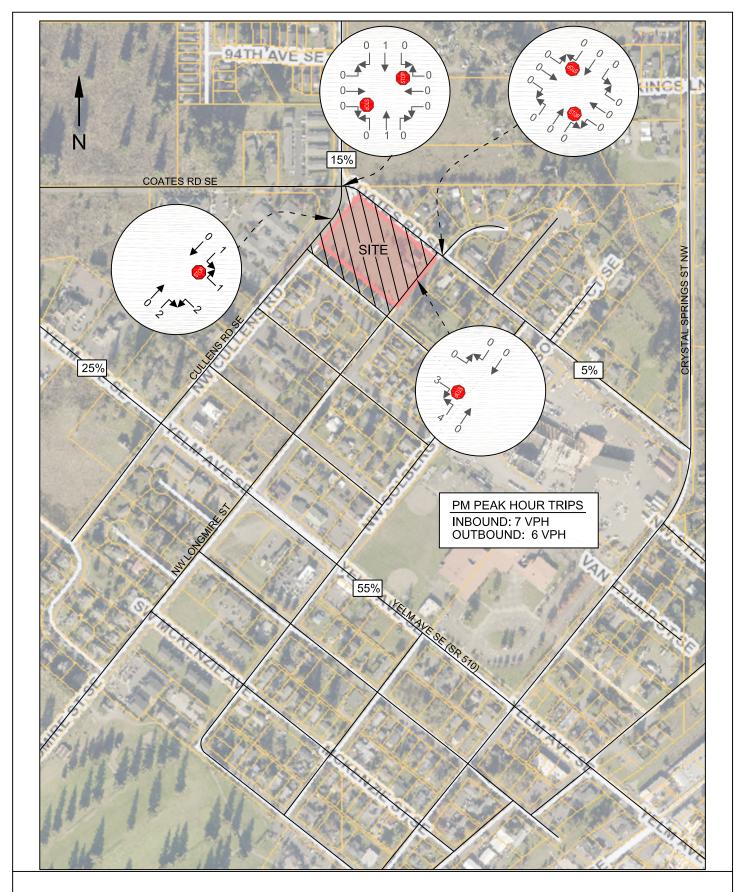


PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT - SCENARIO 1 FIGURE 5A



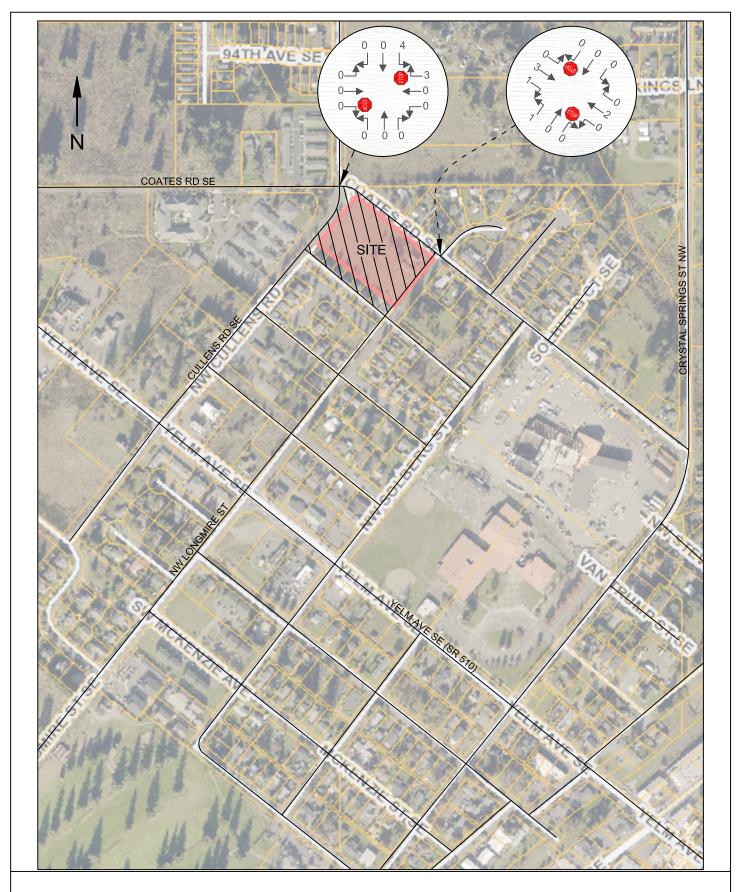


PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT - SCENARIO 2 FIGURE 5B



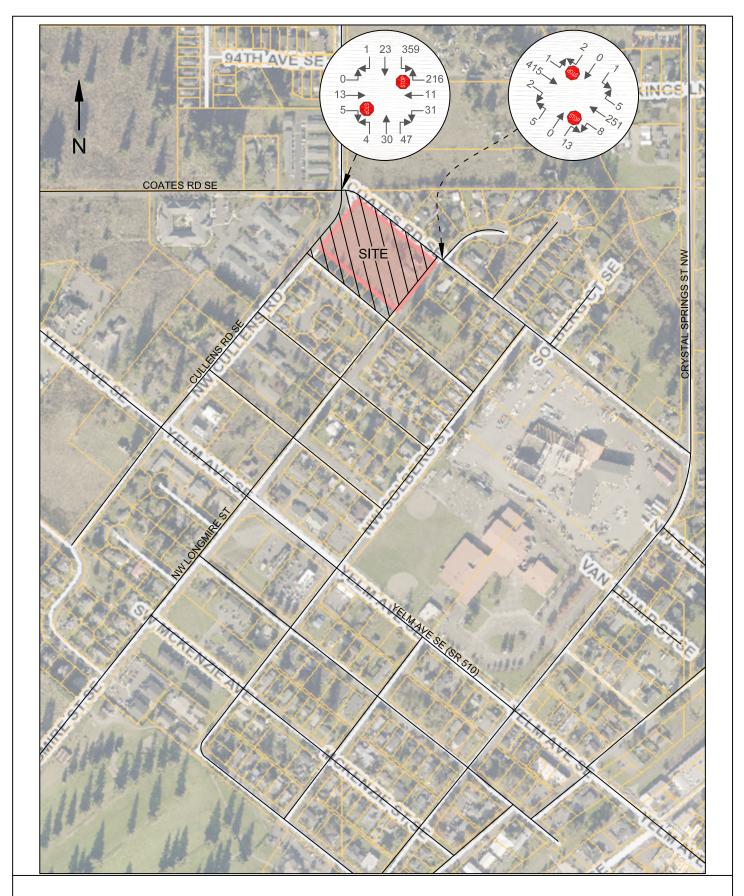


PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT - SCENARIO 2 FIGURE 5B



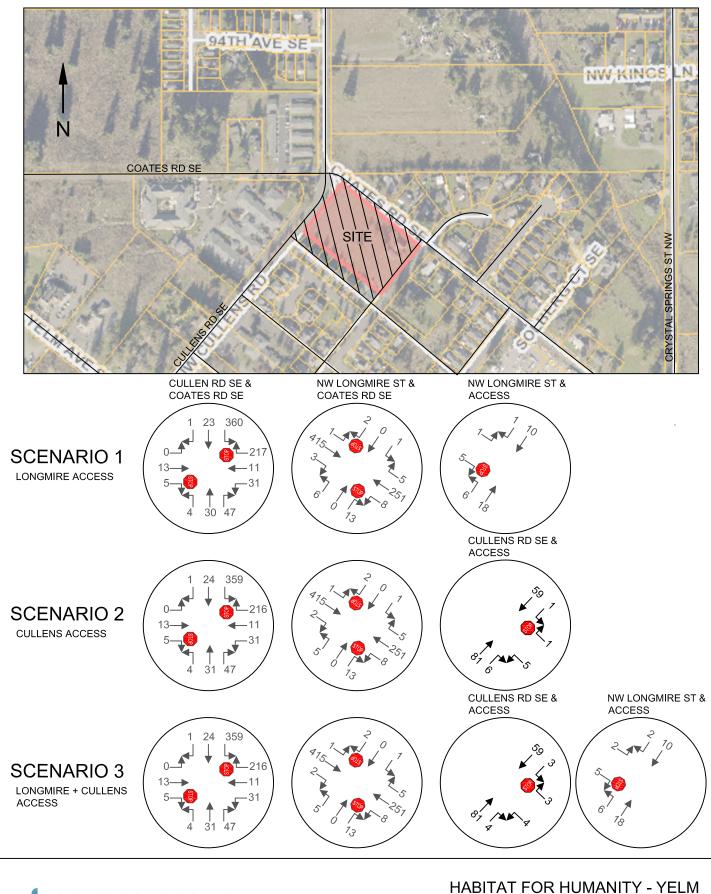


PM PEAK HOUR PIPELINE VOLUMES FIGURE 6





FORECAST 2026 PM PEAK HOUR VOLUMES WITHOUT PROJECT FIGURE 7





FORECAST 2026 PM PEAK HOUR VOLUMES WITH PROJECT FIGURE 8

### 4.4 Future Level of Service

Level of service analyses were made of the future peak hour volumes without (background) and with project related trips added to the key roadways and intersections. This analysis once again involved the use of the *Synchro 11* analysis program. Delays for the study and access intersections under future 2026 PM peak hour conditions without project generated traffic are shown below in Table 4. Table 5 displays the forecast 2026 PM peak hour volumes with the project generated traffic doe each access scenario.

Table 4: Forecast 2026 Weekday PM Peak Hour Level of Service Without Project

Delays Given in Seconds per Vehicle

Intersection	Control	Critical Movement	LOS	Delay
Cullens Rd &	Two-Way	EB	С	20.2
Coates Ave	Stop	WB	С	15.6
Longmire St &	Two-Way	NB	В	12.8
Coates Ave	Stop	SB	В	12.1

Table 5: Forecast 2026 Weekday PM Peak Hour Level of Service With Project

Delays Given in Seconds per Vehicle

Intersection	Control	Scenario	Critical Movement	LOS	Delay
		Scenario 1	EB	С	20.2
			WB	С	15.6
Cullens Rd &	Two-Way	Scenario 2	EB	С	20.3
Coates Ave	Stop	Scenario 2	WB	С	15.6
		Scenario 3	EB	С	20.3
		Scenario S	WB	С	15.6
		Scenario 1	NB	В	13.1
		Scenario i	SB	В	12.1
Longmire St &	Two-Way	Scenario 2	NB	В	12.8
Coates Ave	Stop	Scenario 2	SB	В	12.1
		Scenario 3	NS	В	12.8
		Scenario 3	SB	В	12.1
NW Longmire St &	One-Way	Scenario 1	EB	Α	8.5
Access	Stop	Scenario 3	EB	Α	8.5
Cullens Rd SE &	One-Way	Scenario 2	WB	А	9.7
Access	Stop	Scenario 3	WB	А	9.4

Forecast 2026 PM peak hour level of service (LOS) is shown to operate with LOS C conditions or better with or without project generated traffic for either scenario. All LOS analysis is shown to meet City LOS standards. Given the relatively minor trip generation from the project (13 peak hour trips), no significant impact is identified and each scenario results in only modest changes in delay.

### 4.5 Left-Turn Warrant Analysis

Left turn lanes are a means of providing necessary storage space for left turning vehicles at intersections. Based on low volumes along both Cullens Road SE and NW Longmire Street at the point of each proposed access, a left turn lane would not be warranted at either access during any forecast 2026 PM peak hour scenario.



## 5. CONCLUSIONS & MITIGATION

Habitat For Humanity is proposing for the construction of 22 single-family, incomerestricted dwelling units within the city of Yelm. The subject property is bounded to the north by Coates Avenue, to the east by Longmire Street, and to the east by Cullens Road. The site is contained within 2.3-acres. Access is proposed via a single private roadway from Longmire Street. However, additional scenarios were examined which includes access to Cullens Street only and access to both Longmire and Cullens via a new public roadway.

Baseline conditions for the study intersections of Coates Avenue intersecting with Cullens Road and Longmire Street operate and LOS C and LOS B, respectively. Accounting for in-process development and general background growth, the intersections are anticipated to continue operating LOS C and LOS B conditions under the forecast 2026 horizon year without project traffic. Per ITE data, the 22 proposed dwelling units are estimated to add 158 daily trips and 13 PM peak hour trips. Adding project-generated traffic to the study intersection under forecast 2026 PM peak hour scenario indicates minimal change in LOS.

Taking into consideration the functional classification, traffic volumes, and intersection spacing, this analysis supports the access scenario to Longmire Street.

Based on the analysis above, recommended mitigation is as follows:

1. The subject development would be subject for Transportation Facilities Charge per city of Yelm requirements. The city imposes a fee of \$1,497.00 per PM peak hour trip. Initial fees are estimated as follows:

13 PM Peak Hour Trips x \$1,497.00 = \$19,461.00.

Please feel free to contact me should you have any questions.

Aaron Van Aken, P.E., PTOE



# HABITAT FOR HUMANITY TRAFFIC IMPACT ANALYSIS

**APPENDIX** 



File Name : 5119a Site Code : 00005119 Start Date : 4/11/2023

Page No : 1

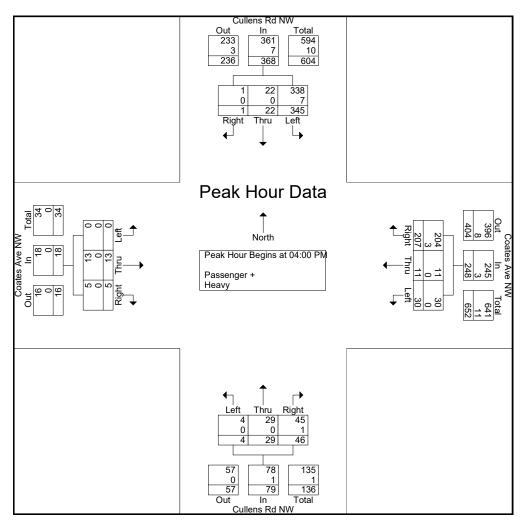
Groups Printed- Passenger + - Heavy

	(	Cullens	Rd N	Ν		Coates	Ave NV	V		Cullens	Rd NV	V		Coates	Ave N	N	
	04:00 PM         0         5         90           04:15 PM         0         6         79           04:30 PM         1         7         93           04:45 PM         0         4         83           Total         1         22         345           05:00 PM         0         6         86           05:15 PM         0         1         90           05:30 PM         1         2         92           Total         2         11         358           Grand Total         3         33         703           Apprch %         0.4         4.5         95.1           Total %         0.2         2.4         52.1           Passenger +         3         33         692           % Passenger +         100         100         98.4           Heavy         0         0         11					West	bound			North	bound		Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
04:00 PM	0	5	90	95	68	1	7	76	12	11	1	24	0	4	0	4	199
04:15 PM	0	6	79	85	51	4	5	60	12	4	1	17	2	2	0	4	166
04:30 PM	1	7	93	101	39	3	9	51	7	8	1	16	2	0	0	2	170
04:45 PM	0	4	83	87	49	3	9	61	15	6	1	22	1	7	0	8	178
Total	1	22	345	368	207	11	30	248	46	29	4	79	5	13	0	18	713
								,									
05:00 PM	0	6	86	92	43	2	1	46	10	8	1	19	0	1	0	1	158
05:15 PM	0	1	90	91	43	4	4	51	9	11	0	20	0	1	0	1	163
05:30 PM	1	2	90	93	34	1	5	40	4	6	0	10	1	3	0	4	147
05:45 PM	1	2	92	95	44	10	5	59	7	6	1	14	0	1	0	1	169
Total	2	11	358	371	164	17	15	196	30	31	2	63	1	6	0	7	637
'																	
<b>Grand Total</b>	3	33	703	739	371	28	45	444	76	60	6	142	6	19	0	25	1350
Apprch %	0.4	4.5	95.1		83.6	6.3	10.1		53.5	42.3	4.2		24	76	0		
	0.2	2.4	52.1	54.7	27.5	2.1	3.3	32.9	5.6	4.4	0.4	10.5	0.4	1.4	0	1.9	
Passenger +	3	33	692	728	368	28	45	441	74	60	6	140	6	19	0	25	1334
% Passenger +	100	100	98.4	98.5	99.2	100	100	99.3	97.4	100	100	98.6	100	100	0	100	98.8
Heavy	0	0	11	11	3	0	0	3	2	0	0	2	0	0	0	0	16
% Heavy	0	0	1.6	1.5	0.8	0	0	0.7	2.6	0	0	1.4	0	0	0	0	1.2

File Name : 5119a Site Code : 00005119 Start Date : 4/11/2023

Page No : 2

		Cullens	Rd NV	V	(	Coates	Ave N\	V		Cullens	Rd NV	V	-	Coates	Ave N\	N	
	ak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 ak Hour for Entire Intersection Begins at 04:00 PM 04:00 PM 04:00 PM 0								North	bound		Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
							f1		•				•				
Peak Hour for	Entire In	ntersec	tion Be	gins at 04	4:00 PM												
04:00 PM	0	5	90	95	68	1	7	76	12	11	1	24	0	4	0	4	199
04:15 PM	0	6	79	85	51	4	5	60	12	4	1	17	2	2	0	4	166
04:30 PM	1	7	93	101	39	3	9	51	7	8	1	16	2	0	0	2	170
04:45 PM	0	4	83	87	49	3	9	61	15	6	1	22	1	7	0	8	178
Total Volume	1	22	345	368	207	11	30	248	46	29	4	79	5	13	0	18	713
% App. Total	0.3	6	93.8		83.5	4.4	12.1		58.2	36.7	5.1		27.8	72.2	0		
PHF	.250	.786	.927	.911	.761	.688	.833	.816	.767	.659	1.00	.823	.625	.464	.000	.563	.896
Passenger +	1	22	338	361	204	11	30	245	45	29	4	78	5	13	0	18	702
% Passenger +	100	100	98.0	98.1	98.6	100	100	98.8	97.8	100	100	98.7	100	100	0	100	98.5
Heavy	0	0	7	7	3	0	0	3	1	0	0	1	0	0	0	0	11
% Heavy	0	0	2.0	1.9	1.4	0	0	1.2	2.2	0	0	1.3	0	0	0	0	1.5



PO Box 397 Puyallup, WA 98371

File Name : 5119a Site Code : 00005119 Start Date : 4/11/2023

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Groups Printed- Passenger + - Heavy

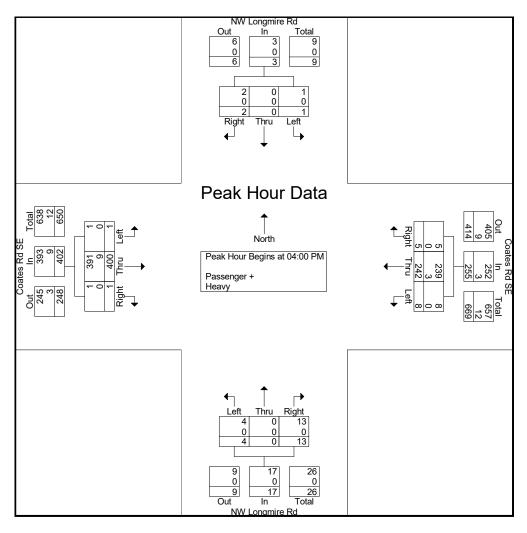
	NW Longmire Rd Coates Rd SE NW Longmire Rd Coates Rd SE																
	N	W Lon	gmire l	Rd		Coates	s Rd SI		١	VW Lor	igmire l	Rd	Coates Rd SE				
			bound			West	tbound		Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
04:00 PM	1	0	0	1	2	77	1	80	2	0	1	3	0	104	0	104	188
04:15 PM	0	0	0	0	0	56	1	57	4	0	0	4	1	89	0	90	151
04:30 PM	1	0	0	1	2	49	3	54	4	0	1	5	0	103	0	103	163
04:45 PM	0	0	1	1	1	60	3	64	3	0	2	5	0	104	1	105	175
Total	2	0	1	3	5	242	8	255	13	0	4	17	1	400	1	402	677
'	•																'
05:00 PM	0	0	3	3	0	45	0	45	2	0	0	2	0	100	0	100	150
05:15 PM	0	0	0	0	0	47	3	50	4	0	1	5	0	95	0	95	150
05:30 PM	0	0	0	0	1	40	0	41	2	0	0	2	0	93	1	94	137
05:45 PM	0	0	0	0	0	59	0	59	0	0	0	0	0	99	0	99	158
Total	0	0	3	3	1	191	3	195	8	0	1	9	0	387	1	388	595
,	•																'
<b>Grand Total</b>	2	0	4	6	6	433	11	450	21	0	5	26	1	787	2	790	1272
Apprch %	33.3	0	66.7		1.3	96.2	2.4		80.8	0	19.2		0.1	99.6	0.3		
Total %	0.2	0	0.3	0.5	0.5	34	0.9	35.4	1.7	0	0.4	2	0.1	61.9	0.2	62.1	
Passenger +	2	0	4	6	6	430	11	447	21	0	5	26	1	769	2	772	1251
% Passenger +	100	0	100	100	100	99.3	100	99.3	100	0	100	100	100	97.7	100	97.7	98.3
Heavy	0	0	0	0	0	3	0	3	0	0	0	0	0	18	0	18	21
% Heavy	0	0	0	0	0	0.7	0	0.7	0	0	0	0	0	2.3	0	2.3	1.7

PO Box 397 Puyallup, WA 98371

File Name : 5119a Site Code : 00005119 Start Date : 4/11/2023

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	N	W Lon	gmire F	Rd		Coates	Rd SE		N	IW Lon	gmire I	₹d		Coates	Rd SI	Ē	
	Hour Analysis From 04:00 PM Hour for Entire Intersection Be 1:00 PM					West	bound			North	bound		Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour And	alysis Fi	rom 04:	00 PM	to 05:45	PM - Pe	eak 1 of	1										
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	0	0	1	2	77	1	80	2	0	1	3	0	104	0	104	188
04:15 PM	0	0	0	0	0	56	1	57	4	0	0	4	1	89	0	90	151
04:30 PM	1	0	0	1	2	49	3	54	4	0	1	5	0	103	0	103	163
04:45 PM	0	0	1	1	1	60	3	64	3	0	2	5	0	104	1	105	175
Total Volume	2	0	1	3	5	242	8	255	13	0	4	17	1	400	1	402	677
% App. Total	66.7	0	33.3		2	94.9	3.1		76.5	0	23.5		0.2	99.5	0.2		
PHF	.500	.000	.250	.750	.625	.786	.667	.797	.813	.000	.500	.850	.250	.962	.250	.957	.900
Passenger +	2	0	1	3	5	239	8	252	13	0	4	17	1	391	1	393	665
% Passenger +	100	0	100	100	100	98.8	100	98.8	100	0	100	100	100	97.8	100	97.8	98.2
Heavy	0	0	0	0	0	3	0	3	0	0	0	0	0	9	0	9	12
% Heavy	0	0	0	0	0	1.2	0	1.2	0	0	0	0	0	2.3	0	2.2	1.8



# **Single-Family Attached Housing** (215)

Vehicle Trip Ends vs: **Dwelling Units** Weekday On a:

Setting/Location: General Urban/Suburban

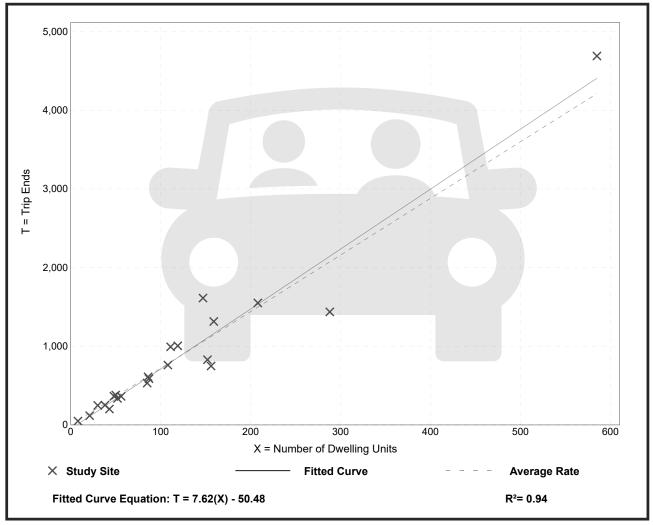
Number of Studies: 22 Avg. Num. of Dwelling Units: 120

Directional Distribution: 50% entering, 50% exiting

### **Vehicle Trip Generation per Dwelling Unit**

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

### **Data Plot and Equation**



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

# Single-Family Attached Housing

(215)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

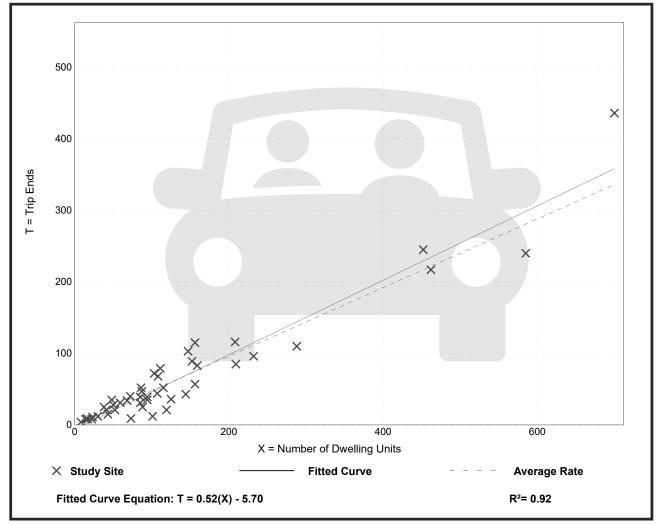
Number of Studies: 46 Avg. Num. of Dwelling Units: 135

Directional Distribution: 31% entering, 69% exiting

### **Vehicle Trip Generation per Dwelling Unit**

-	<u> </u>	
Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

### **Data Plot and Equation**



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# Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

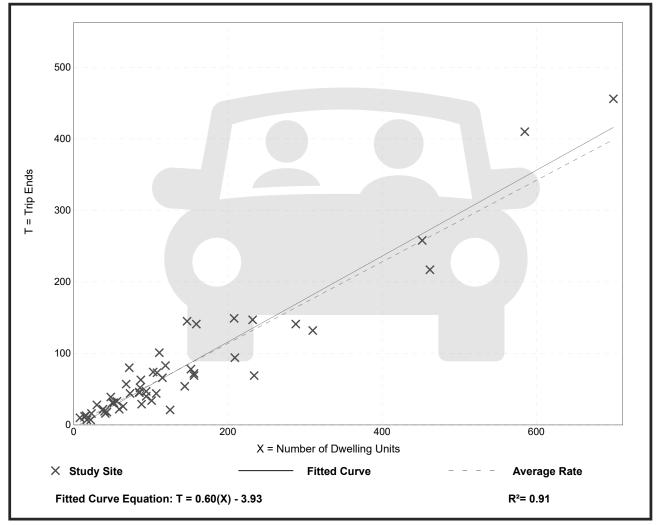
Number of Studies: 51 Avg. Num. of Dwelling Units: 136

Directional Distribution: 57% entering, 43% exiting

### **Vehicle Trip Generation per Dwelling Unit**

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

### **Data Plot and Equation**



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Heath & Associates, Inc. Pipeline Volumes - Habitat for Humanity TIA 4-20-23

### Coates Rd SE & Cullen Rd SE

PM Peak Hour

**Pipeline Volume Summations** 

	$\Box$	<b>\</b>	L,	<u>†</u>	<b>←</b>	<b>↓</b>	7	<b>†</b>	<b>←</b>	<b>-</b>	<b>→</b>	<b>_</b>
1. The Hutch												
2. Durant St Plat												
3. Alpine Estates												
4. Tahoma Blvd Apartments												
5. El Rey Burro			1	1								
6. The Summit At Thompson Creek												
7. Samantha Ridge			3	2								
	1	<b>+</b>	ጏ	<u>,</u>	ţ	Ļ	1	<b>†</b>	Ţ,	1	<b>†</b>	
Totals	0	0	4	3	0	0	0	0	0	0	0	0

# Coates Rd SE & NW Longmire St PM Peak Hour

**Pipeline Volume Summations** 

	1	<b>+</b>	<b>_</b>	<u></u>	<b> </b>	Ļ	1	<b>†</b>	Ţ		<b>→</b>	
1. The Hutch												
2. Durant St Plat												
3. Alpine Estates												
4. Tahoma Blvd Apartments												
5. El Rey Burro									1	1		
6. The Summit At Thompson Creek												
7. Samantha Ridge					2						3	
	1	<b>+</b>	ጏ	ľ	ţ	Ļ	1	1	Ţ	1	<b>†</b>	
Totals	0	0	0	0	2	0	0	0	1	1	3	0

### **PM Peak Hour Forecast Intersection Volumes**

Annual Growth Rate: 1 %

2026

# of Years to Horizon: 3

### Scenario 1

#### 1. Cullens Rd SE & Coates Rd SE

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	1	22	345	207	11	30	46	29	4	5	13	0
Project Trips	0	0	1	1	0	0	0	0	0	0	0	0
Pipeline	0	0	4	3	0	0	0	0	0	0	0	0
Without	1	23	359	216	11	31	47	30	4	5	13	0
With	1	23	360	217	11	31	47	30	4	5	13	0

### 2. NW Longmire St & Coates Rd SE

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	2	0	1	5	242	8	13	0	4	1	400	1
<b>Project Trips</b>	0	0	0	0	0	0	0	0	1	1	0	0
Pipeline	0	0	0	0	2	0	0	0	1	1	3	0
Without	2	0	1	5	251	8	13	0	5	2	415	1
With	2	0	1	5	251	8	13	0	6	3	415	1

### Scenario 2

### 1. Cullens Rd SE & Coates Rd SE

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	1	22	345	207	11	30	46	29	4	5	13	0
Project Trips	0	1	0	0	0	0	0	1	0	0	0	0
Pipeline	0	0	4	3	0	0	0	0	0	0	0	0
Without	1	23	359	216	11	31	47	30	4	5	13	0
With	1	24	359	216	11	31	47	31	4	5	13	0

#### 2. NW Longmire St & Coates Rd SE

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	2	0	1	5	242	8	13	0	4	1	400	1
Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pipeline	0	0	0	0	2	0	0	0	1	1	3	0
Without	2	0	1	5	251	8	13	0	5	2	415	1
With	2	0	1	5	251	8	13	0	5	2	415	1

### Scenario 3

### 1. Cullens Rd SE & Coates Rd SE

	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	1	22	345	207	11	30	46	29	4	5	13	0
Project Trips	0	1	0	0	0	0	0	1	0	0	0	0
Pipeline	0	0	4	3	0	0	0	0	0	0	0	0
Without	1	23	359	216	11	31	47	30	4	5	13	0
With	1	24	359	216	11	31	47	31	4	5	13	0

#### 2. NW Longmire St & Coates Rd SE

giiiii e se a coa	ics na .	<i>,</i> ,										
	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
Existing	2	0	1	5	242	8	13	0	4	1	400	1
Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pipeline	0	0	0	0	2	0	0	0	1	1	3	0
Without	2	0	1	5	251	8	13	0	5	2	415	1
With	2	0	1	5	251	8	13	0	5	2	415	1

#### **Pipeline Projects**

- 1. The Hutch No trips anticipated to pass study intersection
- 2. Durant Street Plat No trips anticipated to pass study intersection
- 3. Apline Estates No trips anticipated to pass study intersection
- 4. Tahoma Blvd Apartments No trips anticipated to pass study intersection
- 5. El Rey Burro 2 trips anticipated to pass study & access intersection
- 6. The Summit At thompson Creek No trips anticipated to pass study intersection
- 7. Samantha Ridge 5 trips anticipated to use study intersection

Intersection												
Int Delay, s/veh	9.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ች	f)			4			4	7		4	
Traffic Vol, veh/h	0	13	5	30	11	207	4	29	46	345	22	1
Future Vol, veh/h	0	13	5	30	11	207	4	29	46	345	22	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	70	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage	, # -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	6	33	12	230	4	32	51	383	24	1
Major/Minor N	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	978	882	25	841	831	32	25	0	0	83	0	0
Stage 1	791	791	-	40	40	-	-	-	-	-	-	-
Stage 2	187	91	-	801	791	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	230	285	1051	284	305	1042	1589	-	-	1514	-	-
Stage 1	383	401	-	975	862	-	-	-	-	-	-	-
Stage 2	815	820	-	378	401	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	138	211	1051	215	226	1042	1589	-	-	1514	-	-
Mov Cap-2 Maneuver	138	211	-	215	226	-	-	-	-	-	-	-
Stage 1	382	298	-	972	859	-	-	-	-	-	-	-
Stage 2	624	818	-	266	298	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	19.3			14.8			0.4			7.7		
HCM LOS	С			В								
Minor Lane/Major Mvm	nt	NBL	NBT	NBR	EBLn1	EBLn2V	VBLn1	SBL	SBT	SBR		
Capacity (veh/h)		1589		-			641	1514				
HCM Lane V/C Ratio		0.003	_	_		0.074		0.253	_	_		
HCM Control Delay (s)		7.3	0	-	0	19.3	14.8	8.2	0	-		
HCM Lane LOS		A	A	-	A	С	В	A	A	_		
HCM 95th %tile Q(veh)	)	0	-	-	-	0.2	2.2	1	-	-		

Movement   EBL   EBT   EBR   WBL   WBT   WBR   NBL   NBT   NBR   SBL   SBT   SBR	Intersection												
Canal Configurations	Int Delay, s/veh	0.5											
Traffic Vol, veh/h	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h			43-									43-	
Future Vol, veh/h Conflicting Peds, #/hr O O O O O O O O O O O O O O O O O O O	Traffic Vol., veh/h	1		1	8		5	4		13	1		2
Conflicting Peds, #/hr	,	1											
Sign Control   Free   Stop   Stop   Stop   Stop   Storange   Storange   Length	<u> </u>	0											
RT Channelized - None -	•			Free			Free			Stop	Stop		
Storage Length	RT Channelized												
Veh in Median Storage, # - 0	Storage Length	-	_	-	-	-	-	-	-	-	-	-	-
Grade, % - 0 0 0 0 0 - 0 0 0 0 0 0 0 0		,# -	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor         90	Grade, %	_	0	-	_	0	-	-	0	-	-	0	-
Mynt Flow         1         444         1         9         269         6         4         0         14         1         0         2           Major/Minor         Major1         Major2         Minor1         Minor2           Conflicting Flow All         275         0         0         445         0         0         738         740         445         744         737         272           Stage 1         -         -         -         -         -         447         447         -         290         290         -           Stage 2         -         -         -         -         -         -         447         447         -         290         290         -           Critical Hdwy Stg 1         -         -         -         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12         5.52         -         6.12	Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Mynt Flow         1         444         1         9         269         6         4         0         14         1         0         2           Major/Minor         Major1         Major2         Minor1         Minor2         Minor2         Minor2         Minor2         Minor2         Minor2         Minor2         Minor3         740         445         744         737         272         Stage 1         -         -         -         -         447         447         -         290         290         -         Stage 2         -         -         -         -         447         -         290         290         -         Stage 2         - </td <td>Heavy Vehicles, %</td> <td>2</td>	Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Conflicting Flow All   275   0   0   445   0   0   738   740   445   744   737   272	Mvmt Flow	1	444	1	9	269	6	4	0	14	1	0	
Conflicting Flow All   275   0   0   445   0   0   738   740   445   744   737   272													
Conflicting Flow All   275   0   0   445   0   0   738   740   445   744   737   272	Major/Minor N	Major1		1	Major2		1	Minor1		1	Minor2		
Stage 1	Conflicting Flow All	275	0	0	445	0	0	738	740	445	744	737	272
Stage 2         -         -         -         -         291         293         -         454         447         -           Critical Hdwy         4.12         -         -         4.12         -         -         7.12         6.52         6.22         7.12         6.52         6.22           Critical Hdwy Stg 1         -         -         -         -         6.12         5.52         -         6.12         5.52         -           Critical Hdwy Stg 2         -         -         -         -         6.12         5.52         -         6.12         5.52         -           Follow-up Hdwy         2.218         -         2.218         -         3.518         4.018         3.318         3.518         4.018         3.318           Pot Cap-1 Maneuver         1288         -         1115         -         334         345         613         331         346         767           Stage 1         -         -         -         -         717         670         -         586         573         -           Plate on blocked, %         -         -         -         -         330         341         613         320		-	-	-	-	-	-	447	447	-	290	290	-
Critical Hdwy       4.12       -       4.12       -       7.12       6.52       6.22       7.12       6.52       6.22         Critical Hdwy Stg 1       -       -       -       -       6.12       5.52       -       6.12       5.22       1.23       1.23		-	-	-	-	-	-	291	293	-	454	447	-
Critical Hdwy Stg 1       -       -       -       -       -       6.12       5.52       -       6.12       5.52       -         Critical Hdwy Stg 2       -       -       -       -       6.12       5.52       -       6.12       5.52       -         Follow-up Hdwy       2.218       -       -       2.218       -       -       3.518       4.018       3.318       3.518       4.018       3.318         Pot Cap-1 Maneuver       1288       -       -       1115       -       -       334       345       613       331       346       767         Stage 1       -       -       -       -       -       717       670       -       586       573       -         Platoon blocked, %       - <t< td=""><td>Critical Hdwy</td><td>4.12</td><td>-</td><td>-</td><td>4.12</td><td>-</td><td>-</td><td>7.12</td><td>6.52</td><td>6.22</td><td>7.12</td><td>6.52</td><td>6.22</td></t<>	Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 2         -         -         -         -         6.12         5.52         -         6.12         5.52         -           Follow-up Hdwy         2.218         -         -         2.218         -         -         3.518         4.018         3.318         3.518         4.018         3.218         3.218         4.018         3.218         3.218         4	Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy 2.218 2.218 3.518 4.018 3.318 3.518 4.018 3.318 Pot Cap-1 Maneuver 1288 1115 334 345 613 331 346 767 Stage 1 591 573 - 718 672 - Stage 2 591 573 - 718 672 - Stage 2 717 670 - 586 573 - Platoon blocked, % 330 341 613 320 342 767 Mov Cap-1 Maneuver 1288 1115 330 341 613 320 342 767 Mov Cap-2 Maneuver 330 341 320 342 - Stage 1 590 572 - 717 665 - Stage 2 708 663 - 572 572 572 Stage 2 1115 708 663 - 572 572 572	Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Stage 1         -         -         -         -         591         573         -         718         672         -           Stage 2         -         -         -         -         717         670         -         586         573         -           Platoon blocked, %         -<	Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Stage 1         -         -         -         -         591         573         -         718         672         -           Stage 2         -         -         -         -         717         670         -         586         573         -           Platoon blocked, %         -<	Pot Cap-1 Maneuver	1288	-	-	1115	-	-	334	345	613	331	346	767
Stage 2       -       -       -       -       717       670       -       586       573       -         Platoon blocked, %       - <t< td=""><td>•</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>591</td><td>573</td><td>-</td><td>718</td><td>672</td><td>-</td></t<>	•	-	-	-	-	-	-	591	573	-	718	672	-
Mov Cap-1 Maneuver         1288         -         -         1115         -         -         330         341         613         320         342         767           Mov Cap-2 Maneuver         -         -         -         -         -         330         341         -         320         342         -           Stage 1         -         -         -         -         -         590         572         -         717         665         -           Stage 2         -         -         -         -         -         708         663         -         572         572         -           Approach         EB         WB         NB         SB         B         B         B         HCM         B         B         B         B         B         B         B         B         B         B         B         B         B         B         B         B         B         B         A         A         - </td <td></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>717</td> <td>670</td> <td>-</td> <td>586</td> <td>573</td> <td>-</td>		-	-	-	-	-	-	717	670	-	586	573	-
Mov Cap-2 Maneuver         -         -         -         -         330         341         -         320         342         -           Stage 1         -         -         -         -         -         590         572         -         717         665         -           Stage 2         -         -         -         -         -         708         663         -         572         572         -           Approach         EB         WB         NB         NB         SB           HCM Control Delay, s         0         0.3         12.3         11.9           HCM Lane/Major Mvmt         NBLn1         EBL         EBT         EBR         WBL         WBT         WBR SBLn1           Capacity (veh/h)         510         1288         -         -         1115         -         -         523           HCM Lane V/C Ratio         0.037         0.001         -         -         0.008         -         -         0.006           HCM Control Delay (s)         12.3         7.8         0         -         8.3         0         -         11.9           HCM Control Delay (s)	Platoon blocked, %		-	-		-	-						
Stage 1         -         -         -         -         590         572         -         717         665         -           Stage 2         -         -         -         -         -         708         663         -         572         572         -           Approach         EB         WB         NB         SB           HCM Control Delay, s         0         0.3         12.3         11.9           HCM LOS         B         B         B         B           Minor Lane/Major Mvmt         NBLn1         EBL         EBT         EBR         WBL         WBT         WBR SBLn1           Capacity (veh/h)         510         1288         -         -         1115         -         -         523           HCM Lane V/C Ratio         0.037         0.001         -         -         0.006         -         -         0.006           HCM Control Delay (s)         12.3         7.8         0         -         8.3         0         -         11.9           HCM Lane LOS         B         A         A         -         A         A         -         B	Mov Cap-1 Maneuver	1288	-	-	1115	-	-			613			767
Stage 2         -         -         -         -         -         708         663         -         572         572         -           Approach         EB         WB         NB         SB           HCM Control Delay, s         0         0.3         12.3         11.9           HCM LOS         B         B         B           Minor Lane/Major Mvmt         NBLn1         EBL         EBT         EBR         WBL         WBT         WBR SBLn1           Capacity (veh/h)         510         1288         -         -         1115         -         -         523           HCM Lane V/C Ratio         0.037         0.001         -         -         0.006         -         -         0.006           HCM Control Delay (s)         12.3         7.8         0         -         8.3         0         -         11.9           HCM Lane LOS         B         A         A         -         A         A         -         B	Mov Cap-2 Maneuver	-	-	-	-	-	-			-			-
Approach EB WB NB SB  HCM Control Delay, s 0 0.3 12.3 11.9  HCM LOS B B  Minor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1  Capacity (veh/h) 510 1288 1115 523  HCM Lane V/C Ratio 0.037 0.001 0.008 0.006  HCM Control Delay (s) 12.3 7.8 0 - 8.3 0 - 11.9  HCM Lane LOS B A A - A A - B	Stage 1	-	-	-	-	-	-			-			-
HCM Control Delay, s   0   0.3   12.3   11.9     HCM LOS	Stage 2	-	-	-	-	-	-	708	663	-	572	572	-
HCM Control Delay, s													
Minor Lane/Major Mvmt   NBLn1   EBL   EBT   EBR   WBL   WBT   WBR SBLn1	Approach	EB						NB			SB		
Minor Lane/Major Mvmt NBLn1 EBL EBT EBR WBL WBT WBR SBLn1  Capacity (veh/h) 510 1288 1115 523  HCM Lane V/C Ratio 0.037 0.001 0.008 0.006  HCM Control Delay (s) 12.3 7.8 0 - 8.3 0 - 11.9  HCM Lane LOS B A A - A A - B	HCM Control Delay, s	0			0.3			12.3			11.9		
Capacity (veh/h) 510 1288 1115 523  HCM Lane V/C Ratio 0.037 0.001 0.008 0.006  HCM Control Delay (s) 12.3 7.8 0 - 8.3 0 - 11.9  HCM Lane LOS B A A - A A - B	HCM LOS							В			В		
Capacity (veh/h) 510 1288 1115 523  HCM Lane V/C Ratio 0.037 0.001 0.008 0.006  HCM Control Delay (s) 12.3 7.8 0 - 8.3 0 - 11.9  HCM Lane LOS B A A - A A - B													
HCM Lane V/C Ratio 0.037 0.001 0.008 0.006 HCM Control Delay (s) 12.3 7.8 0 - 8.3 0 - 11.9 HCM Lane LOS B A A - A A - B		t N			EBT	EBR		WBT	WBR:				
HCM Control Delay (s) 12.3 7.8 0 - 8.3 0 - 11.9 HCM Lane LOS B A A - A A - B	Capacity (veh/h)				-	-		-	-				
HCM Lane LOS B A A - A A - B						-			-				
						-		-	-				
HCM 95th %tile Q(veh) 0.1 0 0 0					Α	-		Α	-				
	HCM 95th %tile Q(veh)		0.1	0	-	-	0	-	-	0			

Intersection												
Int Delay, s/veh	10											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
			LDK	VVDL		WDK	INDL			ODL		אמט
Lane Configurations Traffic Vol, veh/h	<b>ሻ</b>	<b>1</b> 3	_	24	4) 11	216	4	4	47	359	<b>4</b>	1
Future Vol, veh/h	0	13	5	31	11	216	4	30	47 47	359	23	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	Stop	Stop -	None	Stop -	Stop -	None	-	-	None	-	-	None
Storage Length	70	_	-	<u>-</u>	_	TNOTIC	_	_	60	_	_	INOITE
Veh in Median Storage		0	_		0	_	_	0	-		0	_
Grade, %	-, π	0	<u>-</u>	<u>-</u>	0	_	_	0	<u>-</u>	_	0	_
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	6	34	12	240	4	33	52	399	26	1
minici ion	v	• • •	•	01			•	00	V_	000		
Major/Mina-	N 41: O			\			N 4 = 1 = 4			Mais =0		
	Minor2	040		Minor1	000		Major1			Major2		
Conflicting Flow All	1018	918	27	876	866	33	27	0	0	85	0	0
Stage 1	825	825	-	41	41	-	-	-	-	-	-	-
Stage 2	193	93	-	835	825	- 0.00	1.40	-	-	4.40	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52 5.52	-	6.12 6.12	5.52 5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Follow-up Hdwy	3.518 216	4.018	1048	269	291	1041	1587	-	-	1512	-	-
Pot Cap-1 Maneuver	367	387	1046	974	861	1041	1307	-	-	1312	-	-
Stage 1 Stage 2	809	818	_	362	387	-	-	-	-	-	-	-
Platoon blocked, %	009	010	-	302	301	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	126	199	1048	201	212	1041	1587	-	-	1512	<u>-</u>	-
Mov Cap-1 Maneuver	126	199	1040	201	212	1041	1001		_	1012	_	_
Stage 1	366	283		971	858			_	_	_	_	_
Stage 2	612	816	_	250	283	_	_	_	_	_	_	_
Glago Z	012	310		200	200							
A				14.5			NE			0.0		
Approach	EB			WB			NB			SB		
HCM Control Delay, s	20.2			15.6			0.4			7.7		
HCM LOS	С			С								
Minor Lane/Major Mvm	nt	NBL	NBT	NBR	EBLn1	EBLn2V	VBLn1	SBL	SBT	SBR		
Capacity (veh/h)		1587	-	-	-	257	624	1512	-	-		
HCM Lane V/C Ratio		0.003	-	-	-	0.078	0.459	0.264	-	-		
HCM Control Delay (s)		7.3	0	-	0	20.2	15.6	8.2	0	-		
HCM Lane LOS		Α	Α	-	Α	С	С	Α	Α	-		
HCM 95th %tile Q(veh)	)	0	-	-	-	0.3	2.4	1.1	-	-		

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	LDL	4	LDIX	VVDL	4	WDIX	INDL	4	HUIT	ODL	4	ODIT
Traffic Vol, veh/h	1	415	2	8	251	5	5	0	13	1	0	2
Future Vol, veh/h	1	415	2	8	251	5	5	0	13	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	_	_	None	_	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	461	2	9	279	6	6	0	14	1	0	2
Major/Minor N	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	285	0	0	463	0	0	765	767	462	771	765	282
Stage 1	-	-	-	-	-	-	464	464	-	300	300	-
Stage 2	-	-	-	-	-	-	301	303	-	471	465	-
Critical Hdwy	4.12	-	-	4.12	_	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1277	-	-	1098	-	-	320	332	600	317	333	757
Stage 1	-	-	-	-	-	-	578	564	-	709	666	-
Stage 2	-	-	-	-	-	-	708	664	-	573	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	1098	-	-	316	328	600	307	329	757
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	328	-	307	329	-
Stage 1	-	-	-	-	-	-	577	563	-	708	659	-
Stage 2	-	-	-	-	-	-	699	657	-	559	562	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			12.8			12.1		
HCM LOS							В			В		
Minor Lane/Major Mvm	t	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)		480				1098	-	-	509			
HCM Lane V/C Ratio		0.042		_		0.008	_		0.007			
HCM Control Delay (s)		12.8	7.8	0	-	8.3	0	_	12.1			
HCM Lane LOS		В	A	A	_	A	A	-	В			
HCM 95th %tile Q(veh)		0.1	0	-	_	0	-	-	0			

Intersection												
Int Delay, s/veh	10											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	f.			4			ર્ન	7		4	
Traffic Vol, veh/h	0	13	5	31	11	217	4	30	47	360	23	1
Future Vol, veh/h	0	13	5	31	11	217	4	30	47	360	23	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	70	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	6	34	12	241	4	33	52	400	26	1
Major/Minor	Minor2		I	Minor1			Major1		1	Major2		
Conflicting Flow All	1021	920	27	878	868	33	27	0	0	85	0	0
Stage 1	827	827	-	41	41	-	-	-	-	-	-	-
Stage 2	194	93	-	837	827	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	_	2.218	-	-
Pot Cap-1 Maneuver	215	271	1048	268	290	1041	1587	-	-	1512	-	-
Stage 1	366	386	-	974	861	-	-	-	-	-	-	-
Stage 2	808	818	-	361	386	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	198	1048	200	211	1041	1587	-	-	1512	-	-
Mov Cap-2 Maneuver	125	198	-	200	211	-	-	-	-	-	-	-
Stage 1	365	282	-	971	858	-	-	-	-	-	-	-
Stage 2	610	816	-	249	282	-	-	-	-	-	-	-
Ŭ												
Approach	EB			WB			NB			SB		
HCM Control Delay, s	20.3			15.6			0.4			7.7		
HCM LOS	С			С								
Minor Lane/Major Mvn	nt	NBL	NBT	NBR	EBLn1	EBLn2V	VBLn1	SBL	SBT	SBR		
Capacity (veh/h)		1587			_	256	623	1512	_			
HCM Lane V/C Ratio		0.003	-	-	-		0.462		_	-		
HCM Control Delay (s	)	7.3	0	-	0	20.3	15.6	8.2	0	-		
HCM Lane LOS		Α	A	-	A	С	С	A	A	-		
HCM 95th %tile Q(veh	1)	0	-	_	_	0.3	2.4	1.1	_	-		
(1011	,					J.J						

Intersection						
Int Delay, s/veh	2.3					
					05-	055
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	A			4	1	
Traffic Vol, veh/h	1	5	6	18	10	1
Future Vol, veh/h	1	5	6	18	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	e, # 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	5	7	20	11	1
	_		•			
	Minor2		Major1		//ajor2	
Conflicting Flow All	46	12	12	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	964	1069	1607	-	-	-
Stage 1	1011	-	_	-	-	-
Stage 2	988	_	_	-	_	-
Platoon blocked, %				_	_	_
Mov Cap-1 Maneuver	960	1069	1607	_	_	_
Mov Cap-1 Maneuver	960	1000	1001	_	_	
Stage 1	1007				-	-
Stage 2	988	_	-		_	-
Slaye 2	300	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	8.5		1.8		0	
HCM LOS	A					
3 = 0						
Minor Lane/Major Mvm	nt	NBL		EBLn1	SBT	SBR
Capacity (veh/h)		1607		1049	-	-
HCM Lane V/C Ratio		0.004	-	0.006	-	-
HCM Control Delay (s)		7.2	0	8.5	-	-
HCM Lane LOS		Α	Α	Α	-	-
HCM 95th %tile Q(veh)	)	0	-	0	-	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	LDL	4	LDIX	VVDL	4	WDIX	INDL	4	NDIN	ODL	4	ODIT
Traffic Vol, veh/h	1	415	3	8	251	5	6	0	13	1	0	2
Future Vol, veh/h	1	415	3	8	251	5	6	0	13	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	_	None	_	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	461	3	9	279	6	7	0	14	1	0	2
Major/Minor N	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	285	0	0	464	0	0	766	768	463	772	766	282
Stage 1		-	-	-	-	-	465	465	-	300	300	
Stage 2	-	-	-	-	-	-	301	303	-	472	466	-
Critical Hdwy	4.12	-	-	4.12	_	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1277	-	-	1097	-	-	320	332	599	317	333	757
Stage 1	-	-	-	-	-	-	578	563	-	709	666	-
Stage 2	-	-	-	-	-	-	708	664	-	573	562	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	1097	-	-	316	328	599	307	329	757
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	328	-	307	329	-
Stage 1	-	-	-	-	-	-	577	562	-	708	659	-
Stage 2	_	-	-	-	-	-	699	657	-	559	561	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			13.1			12.1		
HCM LOS							В			В		
Minor Lane/Major Mvm	t	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)		467		-		1097	-	-	509			
HCM Lane V/C Ratio		0.045		_		0.008	_		0.007			
HCM Control Delay (s)		13.1	7.8	0	-	8.3	0	_	12.1			
HCM Lane LOS		В	Α	A	_	A	A	_	В			
HCM 95th %tile Q(veh)		0.1	0	-	_	0	-	-	0			

Intersection   Int Delay, s/veh   9.9   9.9   9.9   9.9   9.9   9.0
Movement   EBL   EBT   EBR   WBL   WBT   WBR   NBL   NBT   NBR   SBL   SBT   SBR   SBL   SBT   SBR   SBR   Configurations   Taraffic Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   Stop   Stop
Lane Configurations
Traffic Vol, veh/h
Future Vol, veh/h
Conflicting Peds, #/hr
Sign Control   Stop   Stop   Stop   Stop   Stop   Stop   Stop   Free   Free
RT Channelized
Storage Length   70
Veh in Median Storage, #         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         0         -         0         -         0         -         0         -         0         9
Grade, %         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         90         80
Peak Hour Factor   90   90   90   90   90   90   90   9
Mymt Flow         0         14         6         34         12         240         4         34         52         399         27         1           Major/Minor         Minor2         Minor1         Major1         Major2           Conflicting Flow All         1020         920         28         878         868         34         28         0         0         86         0         0           Stage 1         826         826         -         42         42         -
Major/Minor         Minor2         Minor1         Major1         Major2           Conflicting Flow All         1020         920         28         878         868         34         28         0         0         86         0         0           Stage 1         826         826         -         42         42         -
Conflicting Flow All 1020 920 28 878 868 34 28 0 0 86 0 0 Stage 1 826 826 - 42 42 Stage 2 194 94 - 836 826 Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 - 4.12 Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52 Critical Hdwy Stg 2 6.12 5.52 - 6.12 5.52 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.518  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.518  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.518
Conflicting Flow All         1020         920         28         878         868         34         28         0         0         86         0         0           Stage 1         826         826         -         42         42         - </td
Conflicting Flow All 1020 920 28 878 868 34 28 0 0 86 0 0 Stage 1 826 826 - 42 42 Stage 2 194 94 - 836 826 Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 4.12 Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52 Critical Hdwy Stg 2 6.12 5.52 - 6.12 5.52 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Stage 1 366 387 - 972 860 Stage 2 808 817 - 362 387  Platoon blocked, %  Mov Cap-1 Maneuver 125 198 1047 200 212 1039 1585 - 1510 Stage 1 365 283 - 969 857 Stage 2 611 815 - 250 283  Approach EB WB NB SB  HCM Control Delay, s 20.3 15.6 0.4 7.7
Stage 1       826       826       -       42       42       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -
Stage 2         194         94         -         836         826         -
Critical Hdwy       7.12       6.52       6.22       7.12       6.52       6.22       4.12       -       4.12       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       - </td
Critical Hdwy Stg 2       6.12       5.52       -       6.12       5.52       -
Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Pot Cap-1 Maneuver 215 271 1047 268 290 1039 1585 - 1510 Stage 1 366 387 - 972 860
Pot Cap-1 Maneuver         215         271         1047         268         290         1039         1585         -         -         1510         -
Stage 1       366       387       -       972       860       -
Stage 2       808       817       -       362       387       -
Platoon blocked, %  Mov Cap-1 Maneuver 125 198 1047 200 212 1039 1585 1510  Mov Cap-2 Maneuver 125 198 - 200 212  Stage 1 365 283 - 969 857  Stage 2 611 815 - 250 283  Approach EB WB NB SB  HCM Control Delay, s 20.3 15.6 0.4 7.7
Mov Cap-1 Maneuver         125         198         1047         200         212         1039         1585         -         -         1510         -         -           Mov Cap-2 Maneuver         125         198         -         200         212         -
Mov Cap-2 Maneuver         125         198         -         200         212         - </td
Stage 1       365       283       -       969       857       -
Stage 2         611         815         -         250         283         -
Approach         EB         WB         NB         SB           HCM Control Delay, s         20.3         15.6         0.4         7.7
HCM Control Delay, s 20.3 15.6 0.4 7.7
HCM Control Delay, s 20.3 15.6 0.4 7.7
•
HCM LOS C C
Minor Lane/Major Mvmt NBL NBT NBR EBLn1 EBLn2WBLn1 SBL SBT SBR
Capacity (veh/h) 1585 256 622 1510
HCM Lane V/C Ratio 0.003 0.078 0.461 0.264
HCM Control Delay (s) 7.3 0 - 0 20.3 15.6 8.2 0 -
HCM Lane LOS A A - A C C A A -
HCM 95th %tile Q(veh) 0 0.3 2.4 1.1

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Vol, veh/h	1	415	2	8	251	5	5	0	13	1	0	2
Future Vol, veh/h	1	415	2	8	251	5	5	0	13	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	e,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	461	2	9	279	6	6	0	14	1	0	2
Major/Minor	Major1		N	Major2			Minor1		ľ	Minor2		
Conflicting Flow All	285	0	0	463	0	0	765	767	462	771	765	282
Stage 1	-	-	-	-	-	-	464	464	-	300	300	-
Stage 2	-	-	-	-	-	-	301	303	-	471	465	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1277	-	-	1098	-	-	320	332	600	317	333	757
Stage 1	-	-	-	-	-	-	578	564	-	709	666	-
Stage 2	-	-	-	-	-	-	708	664	-	573	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	1098	-	-	316	328	600	307	329	757
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	328	-	307	329	-
Stage 1	-	-	-	-	-	-	577	563	-	708	659	-
Stage 2	-	-	-	-	-	-	699	657	-	559	562	-
·												
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			12.8			12.1		
HCM LOS							В			В		
Minor Lane/Major Mvm	nt 1	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR :	SBLn1			
Capacity (veh/h)		480		_		1098	-	-	509			
HCM Lane V/C Ratio		0.042		_		0.008	_		0.007			
HCM Control Delay (s)		12.8	7.8	0	-	8.3	0	_				
HCM Lane LOS		12.0 B	Α.	A	_	Α	A	_	В			
HCM 95th %tile Q(veh)	)	0.1	0	-	_	0	-	-	0			
		<b>.</b>										

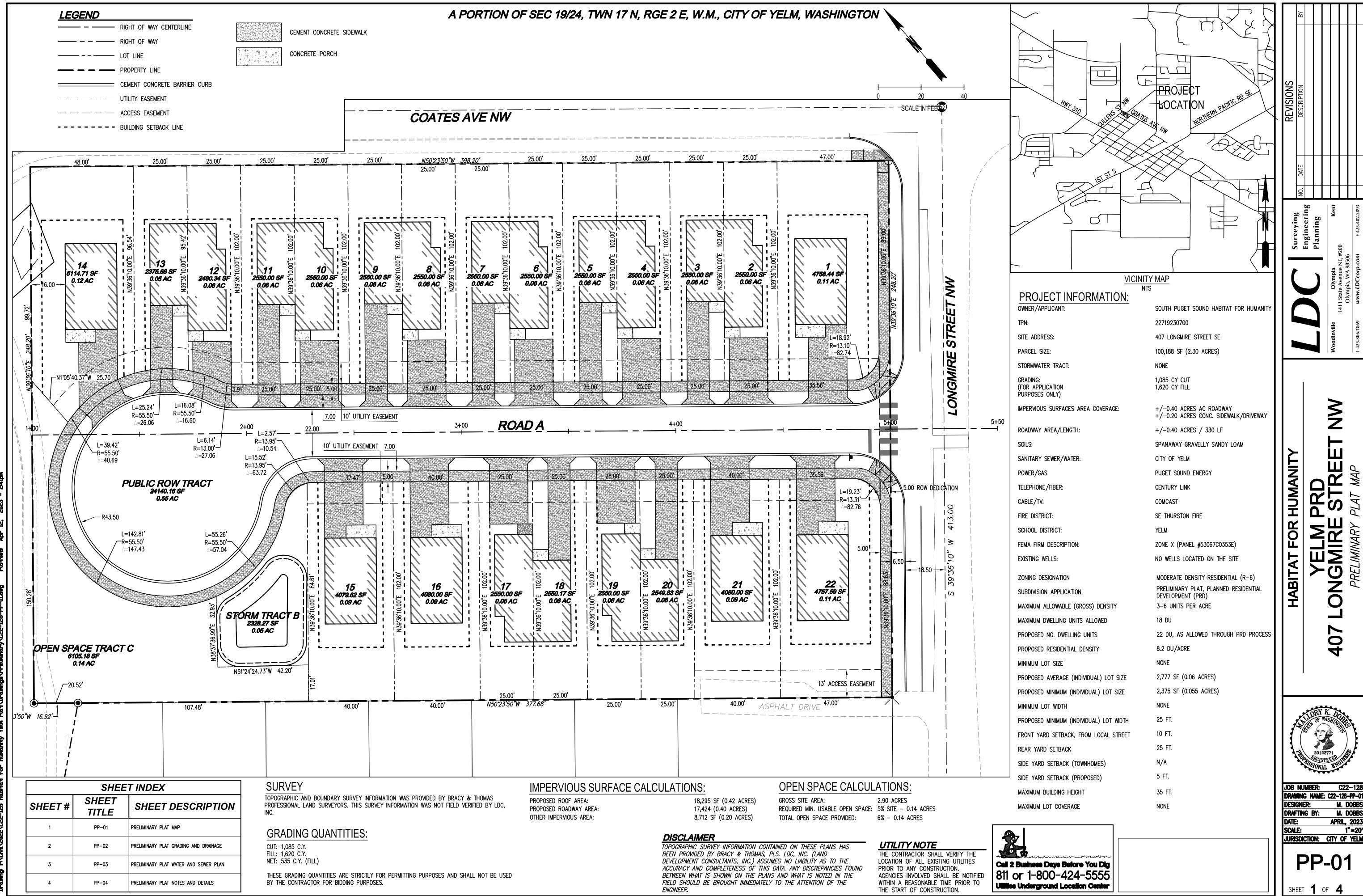
Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		1			स
Traffic Vol, veh/h	5	1	81	6	59	1
Future Vol, veh/h	5	1	81	6	59	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-		-	None
Storage Length	0	-	_	-	-	-
Veh in Median Storage		_	0	-	-	0
Grade, %	0	_	0	_	_	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	5	1	88	7	64	1
MALL LIOM	5	ı	00	1	04	l l
Major/Minor	Minor1	N	Major1	1	Major2	
Conflicting Flow All	221	92	0	0	95	0
Stage 1	92	-	_	_	-	_
Stage 2	129	_	_	_	_	_
Critical Hdwy	6.42	6.22	_	_	4.12	_
Critical Hdwy Stg 1	5.42	-	_	_		_
Critical Hdwy Stg 2	5.42	_	_	_	_	_
Follow-up Hdwy	3.518		_	_	2.218	_
Pot Cap-1 Maneuver	767	965	_	_	1499	_
Stage 1	932	303	_		1433	
	897		-	_	_	
Stage 2	697	-	-	-	-	-
Platoon blocked, %	704	005	-	-	4.400	-
Mov Cap-1 Maneuver	734	965	-	-	1499	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	932	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Approach	WB		NB		SB	
	9.7		0		7.4	
HCM Control Delay, s HCM LOS			U		7.4	
HCIVI LOS	Α					
Minor Lane/Major Mvn	nt	NBT	NBRV	WBLn1	SBL	SBT
Capacity (veh/h)		-	-		1499	-
HCM Lane V/C Ratio		_		0.009		_
HCM Control Delay (s)		_	_	9.7	7.5	0
HCM Lane LOS		_	_	A	A	A
HCM 95th %tile Q(veh	)	_	_	0	0.1	-
	,				J. 1	

Intersection   Int Delay, s/veh   9.9   9.9   9.9   9.9   9.9   9.0
Movement   EBL   EBT   EBR   WBL   WBT   WBR   NBL   NBT   NBR   SBL   SBT   SBR   SBL   SBT   SBR   SBR   Configurations   Taraffic Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   13   5   31   11   216   4   31   47   359   24   1   Tuture Vol, veh/h   0   Stop   Stop
Lane Configurations
Traffic Vol, veh/h
Future Vol, veh/h
Conflicting Peds, #/hr
Sign Control   Stop   Stop   Stop   Stop   Stop   Stop   Stop   Free   Free
RT Channelized
Storage Length   70
Veh in Median Storage, #         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         0         -         0         -         0         -         0         -         0         9
Grade, %         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         -         -         0         90         80
Peak Hour Factor   90   90   90   90   90   90   90   9
Mymt Flow         0         14         6         34         12         240         4         34         52         399         27         1           Major/Minor         Minor2         Minor1         Major1         Major2           Conflicting Flow All         1020         920         28         878         868         34         28         0         0         86         0         0           Stage 1         826         826         -         42         42         -
Major/Minor         Minor2         Minor1         Major1         Major2           Conflicting Flow All         1020         920         28         878         868         34         28         0         0         86         0         0           Stage 1         826         826         -         42         42         -
Conflicting Flow All 1020 920 28 878 868 34 28 0 0 86 0 0 Stage 1 826 826 - 42 42 Stage 2 194 94 - 836 826 Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 - 4.12 Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52 Critical Hdwy Stg 2 6.12 5.52 - 6.12 5.52 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.518  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.518  Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.518
Conflicting Flow All         1020         920         28         878         868         34         28         0         0         86         0         0           Stage 1         826         826         -         42         42         - </td
Conflicting Flow All 1020 920 28 878 868 34 28 0 0 86 0 0 Stage 1 826 826 - 42 42 Stage 2 194 94 - 836 826 Critical Hdwy 7.12 6.52 6.22 7.12 6.52 6.22 4.12 4.12 Critical Hdwy Stg 1 6.12 5.52 - 6.12 5.52 Critical Hdwy Stg 2 6.12 5.52 - 6.12 5.52 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Stage 1 366 387 - 972 860 Stage 2 808 817 - 362 387  Platoon blocked, %  Mov Cap-1 Maneuver 125 198 1047 200 212 1039 1585 - 1510 Stage 1 365 283 - 969 857 Stage 2 611 815 - 250 283  Approach EB WB NB SB  HCM Control Delay, s 20.3 15.6 0.4 7.7
Stage 1       826       826       -       42       42       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -
Stage 2         194         94         -         836         826         -
Critical Hdwy       7.12       6.52       6.22       7.12       6.52       6.22       4.12       -       4.12       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       -       -       -       -       -       -       -       -        -       -       -       -       -       -       -       - </td
Critical Hdwy Stg 2         6.12         5.52         -         6.12         5.52         - <t< td=""></t<>
Follow-up Hdwy 3.518 4.018 3.318 3.518 4.018 3.318 2.218 2.218 Pot Cap-1 Maneuver 215 271 1047 268 290 1039 1585 - 1510 Stage 1 366 387 - 972 860
Pot Cap-1 Maneuver         215         271         1047         268         290         1039         1585         -         -         1510         -
Stage 1       366       387       -       972       860       -
Stage 2       808       817       -       362       387       -
Platoon blocked, %  Mov Cap-1 Maneuver 125 198 1047 200 212 1039 1585 1510  Mov Cap-2 Maneuver 125 198 - 200 212  Stage 1 365 283 - 969 857  Stage 2 611 815 - 250 283  Approach EB WB NB SB  HCM Control Delay, s 20.3 15.6 0.4 7.7
Mov Cap-1 Maneuver         125         198         1047         200         212         1039         1585         -         -         1510         -         -           Mov Cap-2 Maneuver         125         198         -         200         212         -
Mov Cap-2 Maneuver         125         198         -         200         212         - </td
Stage 1       365       283       -       969       857       -
Stage 2         611         815         -         250         283         -
Approach         EB         WB         NB         SB           HCM Control Delay, s         20.3         15.6         0.4         7.7
HCM Control Delay, s 20.3 15.6 0.4 7.7
HCM Control Delay, s 20.3 15.6 0.4 7.7
•
HCM LOS C C
Minor Lane/Major Mvmt NBL NBT NBR EBLn1 EBLn2WBLn1 SBL SBT SBR
Capacity (veh/h) 1585 256 622 1510
HCM Lane V/C Ratio 0.003 0.078 0.461 0.264
HCM Control Delay (s) 7.3 0 - 0 20.3 15.6 8.2 0 -
HCM Lane LOS A A - A C C A A -
HCM 95th %tile Q(veh) 0 0.3 2.4 1.1

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	LDL	4	LDIX	VVDL	4	WDIX	INDL	4	HUIT	ODL	4	ODIT
Traffic Vol, veh/h	1	415	2	8	251	5	5	0	13	1	0	2
Future Vol, veh/h	1	415	2	8	251	5	5	0	13	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	_	_	None	_	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage	,# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	461	2	9	279	6	6	0	14	1	0	2
Major/Minor N	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	285	0	0	463	0	0	765	767	462	771	765	282
Stage 1	-	-	-	-	-	-	464	464	-	300	300	-
Stage 2	-	-	-	-	-	-	301	303	-	471	465	-
Critical Hdwy	4.12	-	-	4.12	_	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1277	-	-	1098	-	-	320	332	600	317	333	757
Stage 1	-	-	-	-	-	-	578	564	-	709	666	-
Stage 2	-	-	-	-	-	-	708	664	-	573	563	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	1098	-	-	316	328	600	307	329	757
Mov Cap-2 Maneuver	-	-	-	-	-	-	316	328	-	307	329	-
Stage 1	-	-	-	-	-	-	577	563	-	708	659	-
Stage 2	-	-	-	-	-	-	699	657	-	559	562	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			12.8			12.1		
HCM LOS							В			В		
Minor Lane/Major Mvm	t	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)		480				1098	-	-	509			
HCM Lane V/C Ratio		0.042		_		0.008	_		0.007			
HCM Control Delay (s)		12.8	7.8	0	-	8.3	0	_	12.1			
HCM Lane LOS		В	A	A	_	A	A	-	В			
HCM 95th %tile Q(veh)		0.1	0	-	_	0	-	-	0			

Intersection						
Int Delay, s/veh	2.4					
		E85	ND	NDT	ODT	000
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y	_		ન	4	
Traffic Vol, veh/h	2	5	6	18	10	2
Future Vol, veh/h	2	5	6	18	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage	e,# 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	5	7	20	11	2
				_,		
		_		_		
	Minor2		Major1		//ajor2	
Conflicting Flow All	46	12	13	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	_	-	_	-
Follow-up Hdwy		3.318	2.218	-	-	_
Pot Cap-1 Maneuver	964	1069	1606	_	_	_
Stage 1	1011	-	-	_	_	_
Stage 2	988	_	_	_	_	_
Platoon blocked, %	300			_	_	_
Mov Cap-1 Maneuver	960	1069	1606	-		_
		1009	1000	-		-
Mov Cap-2 Maneuver		-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	8.5		1.8		0	
HCM LOS	Α		1.0		U	
HOW LOS						
Minor Lane/Major Mvn	nt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1606		1035	-	-
HCM Lane V/C Ratio		0.004		0.007	-	_
HCM Control Delay (s	)	7.3	0	8.5	_	_
HCM Lane LOS		A	A	A	_	_
HCM 95th %tile Q(veh	)	0	-	0	_	_
TOWN JOHN JUHIC Q(VOI	7	J		U		

Intersection						
Int Delay, s/veh	3.3					
		WDD	NDT	NDD	ODI	ODT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		1			र्स
Traffic Vol, veh/h	4	3	81	4	59	3
Future Vol, veh/h	4	3	81	4	59	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storag	e,# 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	3	88	4	64	3
	•					
	Minor1		Major1		Major2	
Conflicting Flow All	221	90	0	0	92	0
Stage 1	90	-	-	-	-	-
Stage 2	131	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	_	_	_	-	-
Follow-up Hdwy	3.518	3.318	_	_	2.218	-
Pot Cap-1 Maneuver	767	968	_	_	1503	-
Stage 1	934	-	_	_		_
Stage 2	895	_	_	_	_	_
Platoon blocked, %	300		_	_		_
Mov Cap-1 Maneuver	734	968			1503	
Mov Cap-1 Maneuver		900	_		1000	_
		-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	9.4		0		7.1	
HCM LOS	A		· ·			
TIOWI LOO	Α					
Minor Lane/Major Mvr	nt	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-	819	1503	-
HCM Lane V/C Ratio		-	-	0.009		-
HCM Control Delay (s	)	-	-		7.5	0
HCM Lane LOS	,	-	-	Α	Α	A
HCM 95th %tile Q(veh	1)	-	_	0	0.1	-
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**APRIL, 2023** 

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