

February 22, 2018

Michael C. Robinson

Admitted in Oregon

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VIA EMAIL

Mr. Joe Turner
City of West Linn Expedited Land Division Referee
c/o Shauna Shroyer, Administrative Assistant
22500 Salamo Road
West Linn, Oregon 97068

RE: City of West Linn File No. AP-108-1/SUB-17-04 (4096 Cornwall Street
Subdivision); Applicant Submittal Prior to End of Second Open Record Period on
February 22, 2018 at 5:00 PM

Dear Joe:

This office represents Icon Construction & Development (“Icon”), the Applicant. This letter is the Applicant’s timely submittal prior to the close of the second open record period on Thursday, February 22, 2018 at 5:00 PM.

1. Introduction.

The “Notice of Appeal of an Expedited Land Use decision” provides that the record will be open for a second week “for all parties to submit written comment in response to the issues raised during the first week.” The notice also provides that the Referee “will decide the appeal based on the City record and written comments submitted in response to the appeal period”. The notice otherwise generally provided for submission of written comments. To the extent the Referee intended to open the record for additional evidence as that term is defined in ORS 197.763(9)(b), Appellant now submits its Traffic Impact Analysis and an updated density analysis concerning the application. Had Appellant understood that evidence could have been submitted in the first open record period, it would have submitted this evidence then. Because the notice did not say that new evidence was allowed, Appellant did not submit such evidence then.

The Appellant respectfully requests that the Referee consider this evidence if the intent of the notice was to rely on an additional evidentiary record made after the close of the Planning Commission record. The Appellant raised issues concerning traffic and density and this evidence responds to those issues.

Mr. Joe Turner
City of West Linn
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2. Traffic Study.

The nineteen page traffic study (**Exhibit 1**) demonstrates that the net additional vehicle trips from the six-lot subdivision (less vehicle trips from the existing single-family residents) will not cause either Cornwall Street or Landis Street, or other street intersections, to fail or to operate at levels beyond their capacity. The traffic study also shows that traffic will operate safely. The Referee can find that is substantial evidence to address the basis for the denial by the West Linn Planning Commission regarding traffic.

The second evidentiary document is an updated density chart prepared by the Appellant's Planner (**Exhibit 2**). The updated density analysis explains why the proposed six-lot subdivision is consistent with the minimum density requirements for the property. The Referee can find that this is substantial evidence to address the basis for the denial by the West Linn Planning Commissioner regarding density.

3. Conclusion.

For these reasons, the Appellant respectfully requests that the Hearings Officer enter into the record the two enclosed documents and this letter and consider them in his decision on the appeal.

Sincerely,



Michael C. Robinson

MCR:gv
Enclosures

cc: Mr. Mark Handris (via email) (with encls.)
Mr. Darren Gusdorf (via email) (with encls.)
Mr. Rick Givens (via email) (with encls.)
Mr. John Boyd (via email) (with encls.)

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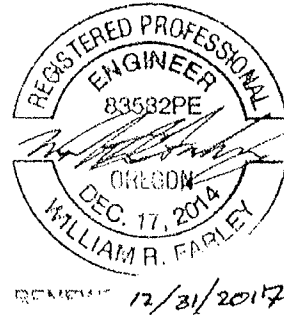
Technical Memorandum

To: Mark Handris
Icon Construction & Development LLC

From: Daniel Stumpf, EI
William Farley, PE

Date: December 13, 2017

Subject: Willow Ridge Subdivision – Transportation Study



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Introduction

This memorandum reports and evaluates the transportation impacts related to proposed Willow Ridge Subdivision, located at 4096 Cornwall Street in West Linn, Oregon. The proposed development will include the partitioning and development of a single property into six single-family houses, removing one existing house for a net increase of five.

The purpose of this memorandum is to examine the projected trip generation of the proposed development and assess the safety and operation of nearby intersections and vicinity roadways.

Location Description

Project Site Description

The project site is located east of Beacon Hill Drive, north of Fairhaven Drive, and southwest of Sunset Avenue in West Linn, Oregon. The site includes a single tax lot, lot 6300, which encompasses an approximate total of 2.17 acres. The site is currently developed with one single-family house, which will be removed upon construction of the six-lot subdivision. Access between the site and the greater transportation system will be provided via Landis Street, which currently ends as a stub along the northwestern edge of the site. Gated access will be provided to Cornwall Street for emergency services only.

Vicinity Roadways

The proposed development is expected to predominantly impact the following three nearby vicinity roadways: Landis Street, Stonegate Lane, and Beacon Hill Drive. Table 1 provides a description of each of the vicinity roadways.

Table 1 – Vicinity Roadway Descriptions

Roadway	Jurisdiction	Functional Classification	Cross-Section	Speed	On-street Parking	Bicycle Lanes	Curbs	Sidewalks
Landis Street	West Linn	Local Street	2 Lanes	25 mph Statutory	Permitted	None	Both Sides	Partial Both Sides
Stonegate Lane	West Linn	Local Street	2 Lanes	25 mph Statutory	Permitted	None	Both Sides	Partial Both Sides
Beacon Hill Drive	West Linn	Neighborhood Routes	2 Lanes	25 mph Statutory	Permitted	None	Both Sides	Both Sides

Vicinity Intersections

The intersection of Beacon Hill Drive at Stonegate Lane is a three-legged intersection that is stop-controlled for the westbound approach of Stonegate Lane. All three intersection approaches each have one shared lane for all turning-movements. Crosswalks are unmarked across all three intersection legs.

The intersection of Stonegate Lane at Landis Street is currently a 90-degree bend in the roadway with no intersection control. With future development of the property northeast of Stonegate Lane, the intersection is anticipated to be a three-legged intersection with Landis Street continuing northward.

Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow.

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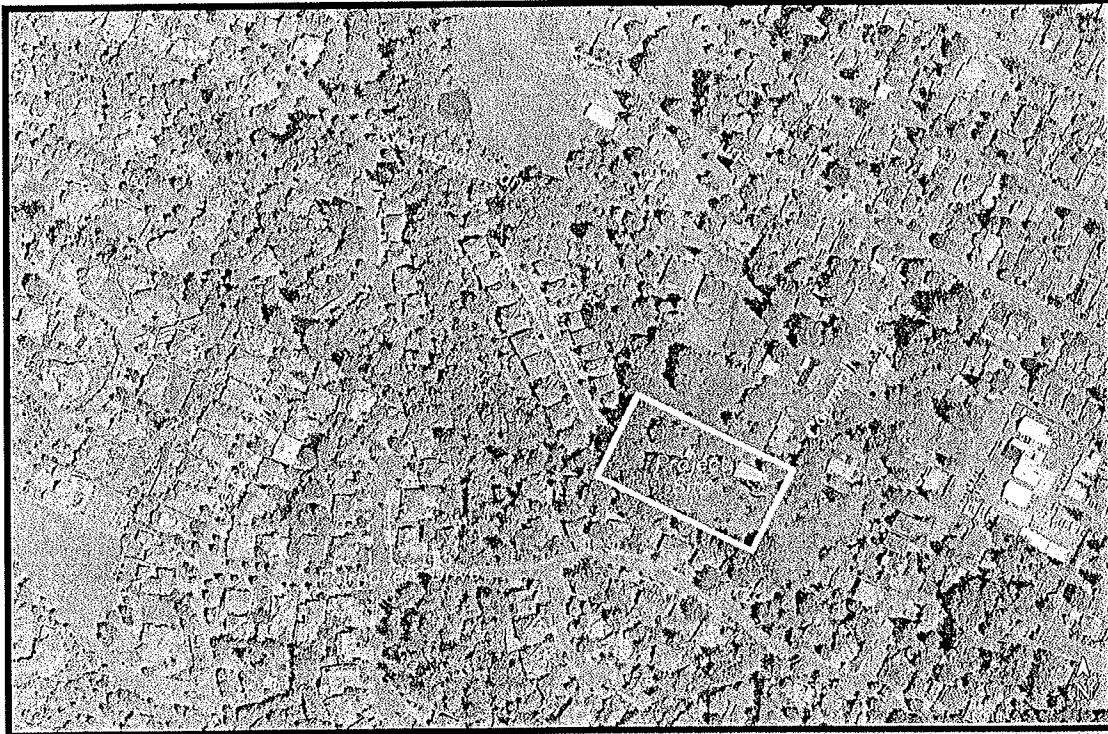


Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Trip Generation

The proposed Willow Drive Subdivision includes the construction of six single-family houses while removing one existing house of a net addition of five. To estimate the number of trips that will be generated by the proposed development, trip rates from the *TRIP GENERATION MANUAL*¹ were used. Data from land-use code 210, *Single-Family Detached Housing*, was used to estimate the current and proposed trip generation of the site based on the number of dwelling units.

The trip generation calculations show that the proposed development is projected to generate a net increase of 3 morning peak hour, 5 evening peak hour, and 46 average weekday site trips. The trip generation estimates are summarized in Table 2. Detailed trip generation calculations are included as an attachment to this study.

¹ Institute of Transportation Engineers (ITE), *TRIP GENERATION MANUAL*, 10th Edition, 2017.

Table 2 – Trip Generation Summary

	ITE Code	Size	Morning Peak Hour			Evening Peak Hour			Weekday
			Enter	Exit	Total	Enter	Exit	Total	Total
Existing Development	210	1 unit	0	1	1	1	0	1	10
Proposed Development	210	6 units	1	3	4	4	2	6	56
Net Additional Site Trips		5 units	1	2	3	3	2	5	46

Safety Analysis

Crash Data Analysis

Using data obtained from the Oregon Department of Transportation’s (ODOT) Crash Analysis and Reporting Unit, a review was performed for the most recent five years of available crash data (January 2011 through December 2015) at the nearby intersection of Beacon Hill Drive at Stonegate Lane and along the roadways of Stonegate Lane and Landis Street. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions at the nearby transportation facilities.

The roadway of Stonegate Lane had one reported crash during the analysis period. The crash was a fixed-object collision, where the driver of a passenger car was reported as traveling above the statutory speed, failed to maintain their lane of travel, and collided with a tree/stump/shrub. The crash was classified as “Property Damage Only” (PDO).

No other crashes were reported within the immediate site vicinity. Due to the low number of crashes and the low severity of collisions, there do not appear to be any significant safety hazards at the nearby transportation facilities. Furthermore, based on site observations, no design deficiencies which would impact the safety of the area roadways and intersections were noted. Accordingly, no safety mitigation is necessary or recommended.

Detailed information about crashes and crash reports for the nearby roadways and intersection are included as an attachment to this memorandum.

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Sight Distance Analysis

Sight distance was examined for the nearby intersection of Stonegate Lane at Landis Street. Since the northern intersection leg ends as a stub along the adjacent property to the north, the intersection currently operates as an unimpeded, contiguous through roadway between Landis Street and Stonegate Lane. However, upon redevelopment of the property with the subsequent extension of Landis Street to the north, the potential of safety issues related to intersection sight distance may occur between eastbound left-turning vehicles and northbound approaching vehicles.

Sight distance was measured and evaluated in accordance with standards established in *A Policy on Geometric Design of Highways and Streets*². According to AASHTO, the driver's eye is assumed to be 15 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The major-street approaching driver's eye height is assumed to be 3.5 feet above the cross-street pavement.

Per Section 5.0018 – *Design Speed* of the City of West Linn's *Public Works Design Standards*, Local Streets have a design speed of 25 mph or a speed based on a minimum of 150 to 200 feet of stopping sight distance. Sight distance at the intersection of Stonegate Lane at Landis Street was measured to be 201 feet to the south, limited by a retaining wall along the east side of Landis Street. Based on an average uphill grade of approximately 7.26 percent over a 200-foot braking distance from south to north, adequate stopping sight distance is available to safely accommodate a northbound approaching vehicle traveling at 32 mph (or 7 mph above the design/statutory residential speed of 25 mph).

Based on the detailed analysis, adequate sight distance is available to allow safe operation at the intersection of Stonegate Lane at Landis Street, including when Landis Street is extended to the north.

Operational Analysis

Intersection Capacity

To determine if the nearby transportation facilities can adequately accommodate future trips to and from the proposed development in addition to the existing uses within the site vicinity, peak hour observations of traffic conditions were conducted. Traffic observations were conducted at the intersection of Beacon Hill Drive at Stonegate Lane during the morning and evening peak periods on Thursday, December 7th, 2017, from 8:00 AM to 8:10 AM and from 4:55 PM to 5:05 PM, respectively.

² American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011.

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The level of service (LOS) of an intersection can range from LOS A, which indicates little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The City of West Linn requires unsignalized intersections operate at LOS D or better along non-arterial facilities. Detailed LOS descriptions are included as an attachment to this memorandum.

The intersection of Beacon Hill Drive at Stonegate Lane was observed to have five or less vehicles enter the intersection from any single intersection approach over the course of approximately 10 minutes during each of the morning and evening peak periods. Observed queuing on the minor-street approach never exceeded more than 1 vehicle during either peak period. Traffic volumes along Beacon Hill Drive were observed to be very low and in a state of free-flow during both peak periods. Gaps to enter the major-street traffic stream from the minor-street approach were available within an average control delay of 5 to 10 seconds during either peak period. Accordingly, the intersection was estimated to currently operate at LOS A during both peak periods.

The results of the capacity observations indicate that the intersection of Beacon Hill Drive at Stonegate Lane operates acceptably during the weekday morning and evening peak periods under existing conditions. Based on the low volumes of additional weekday morning and evening peak hour trips expected to be added to the transportation system, the intersection is projected to continue operating acceptably by the build-out year of the site. No mitigation is necessary or recommended with regard to intersection capacity or operation as part of the proposed development.

Roadway Capacity

To ensure the vicinity roadways of Stonegate Lane and Landis Street will operate acceptably upon build-out of the proposed development, an assessment of current and future roadway volumes was conducted.

Typically, local residential streets are designed and expected to serve traffic volumes between 1,000 and 1,500 vehicles per day. Volumes above this threshold can affect the safety and livability of the street and surrounding neighborhood. Based on the trip generation methodologies described in the *Trip Generation* section, Stonegate Lane and the north end of Landis Street currently serve 20 single-family houses which generate 188 weekday trips per the *TRIP GENERATION MANUAL*. Upon build-out of the proposed development, an additional 56 weekday trips will utilize the roadways, an increase of approximately 30 percent, for a total of 244 trips. Since the total daily trips generated by the existing and proposed uses are well below the desirable local street carrying capacity of approximately 1,500 vehicles per day, it is expected that the roadway will operate safely and the proposed development will not have a significant impact on the livability of the surrounding neighborhood.

Requirement of a Full Traffic Impact Analysis

Per the City of West Linn Community Code Section 85.170.B.2 – *Traffic Impact Analysis* (TIA), a TIA is required when the following conditions apply:

- 1) *The development application involves one or more of the following actions:*
 - (A) *A change in zoning or a plan amendment designation; or*
 - (B) *Any proposed development or land use action that ODOT states may have operational or safety concerns along a State highway; and*
 - (C) *The development shall cause one or more of the following effects, which can be determined by field counts, site observations, traffic impact analysis or study, field measurements, crash history, Institute of Transportation Engineers Trip Generation manual, and information and studies provided by the local reviewing jurisdiction and/or ODOT:*
 - (1) *An increase in site traffic volume generation by 250 average daily trips (ADT) or more (or as required by the City Engineer); or*
 - (2) *An increase in use of adjacent streets by vehicles exceeding the 20,000-pound gross vehicle weights by 10 vehicles or more per day; or*
 - (3) *The location of the access driveway does not meet minimum intersection sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State highway, creating a safety hazard; or*
 - (4) *The location of the access driveway does not meet the access spacing standard of the roadway on which the driveway is located; or*
 - (5) *A change in internal traffic patterns that may cause safety problems, such as backup onto the highway or traffic crashes in the approach area.*

Criterion A

The proposed development application does not change the zoning of the subject property or a plan amendment designation. Accordingly, Criterion A is not met.

Criterion B

The proposed development is projected to generate a low number of additional site trips and is located approximately 1.5 miles driving distance away from the nearest ODOT facility. Therefore, the proposed development is expected to have minimal impacts to ODOT facilities whereby Criterion B is not met.

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Criterion C

Regarding Criterion C, the proposed development (1) generates less than 250 additional average daily trips, (2) is expected to generate nominal heavy vehicle traffic, (3) provides adequate sight distance at individual lot driveways and existing nearby public intersections, (4) meets adequate access spacing standards, (5) and will not change internal traffic patterns or the residential nature of the surrounding area. Accordingly, Criterion C is not met.

Based on an evaluation of the City of West Linn's Community Code, a full TIA is not required for approval of the proposed development application.

Conclusions

Due to the low number of crashes and the low severity of collisions, there do not appear to be any significant safety hazards at the nearby transportation facilities. Furthermore, based on site observations, no design deficiencies which would impact the safety of the area roadways and intersections were noted. Accordingly, no safety mitigation is necessary or recommended.

Adequate sight distance is available at the intersection of Stonegate Lane at Landis Street to allow safe operation of the intersection viewing south, including when Landis Street is extended to the north in the future.

The intersection of Beacon Hill Drive at Stonegate Lane currently operates acceptably during the weekday morning and evening peak periods. Based on the low volumes of additional weekday morning and evening peak hour trips expected to be added to the transportation system, the intersection is projected to continue operating acceptably by the build-out year of the site. No mitigation is necessary or recommended with regard to intersection capacity or operation as part of the proposed development.

The total daily trips generated by the existing and proposed uses are projected to be well below the desirable local street carrying capacity of 1,500. Accordingly, upon build-out of the proposed development it is expected that the roadway will operate safely and will not have a significant impact on the livability of the surrounding neighborhood.

Based on an evaluation of the City of West Linn's Community Code, a full Transportation Impact Analysis is not required for approval of the proposed development application.

If you have any questions regarding this technical memorandum, please don't hesitate to contact us.

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TRIP GENERATION CALCULATIONS
Existing Development

Land Use: Single-Family Detached Housing
Land Use Code: 210
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Variable Value: 1

AM PEAK HOUR

Trip Rate: 0.74

	Enter	Exit	Total
Directional Distribution	25%	75%	
Trip Ends	0	1	1

PM PEAK HOUR

Trip Rate: 0.99

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	1	0	1

WEEKDAY

Trip Rate: 9.44

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	5	5	10

SATURDAY

Trip Rate: 9.54

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	5	5	10

Source: TRIP GENERATION, Tenth Edition

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TRIP GENERATION CALCULATIONS
Proposed Development

Land Use: Single-Family Detached Housing
Land Use Code: 210
Setting/Location General Urban/Suburban
Variable: Dwelling Units
Variable Value: 6

AM PEAK HOUR

Trip Rate: 0.74

	Enter	Exit	Total
Directional Distribution	25%	75%	
Trip Ends	1	3	4

PM PEAK HOUR

Trip Rate: 0.99

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	4	2	6

WEEKDAY

Trip Rate: 9.44

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	28	28	56

SATURDAY

Trip Rate: 9.54

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	29	29	58

Source: TRIP GENERATION, Tenth Edition

CDS150
12/11/2017

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE
STONEGATE LN at BEACON HILL DR, City of West Linn, Clackamas County, 01/01/2011 to 12/31/2015

Page: 1

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

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CDS150
12/11/2017

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

Page: 1

LANDIS ST and Intersectional Crashes at LANDIS ST, City of West Linn, Clackamas County, 01/01/2011 to 12/31/2015

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

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

STONEGATE LN and Intersectional Crashes at STONEGATE LN, City of West Linn, Clackamas County, 01/01/2011 to 12/31/2015

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

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WEST LINN, CLACKAMAS COUNTY

STONEGATE LN and Intersectional Crashes at STONEGATE LN, City of West Linn, Clackamas County, 01/01/2011 to 12/31/2015

1 - 1 of 1 Crash records shown.

SER#	P	R	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	ACT	EVENT	CRUSE																
INVEST	E	A	U	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE	A	S									
RD DPT	E	L	G	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDST	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED						
UNLOC1	D	C	S	L	K	LAT	LONG	LRS	LOCTN	(PLANES)	CONTE	DRVNY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CRUSE
02369	Y	N	N		07/06/2011	19	STONEGATE LN	STRGHT			N	Y	CLR	FIX	OBJ	01	NONE	0									062	30
CITY							WE	99	BEACON HILL DR	E	(NON-E)	NONE	N	DRY	FIX		PRVTE		W	-E							00	00
Y							10P		07			N	DLIT	PDO		PSNGR	CAR		01	DRVR	NONE	15	M	OR-Y		050.050	017	30
N							45 21				(02)																	
							32.9964318																					
							10.680081																					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

LEVEL OF SERVICE

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

Level of service A: Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.

Level of service B: Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.

Level of service C: Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.

Level of service D: Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.

Level of service E: Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.

Level of service F: Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.

1e

*LEVEL OF SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS*

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

*LEVEL OF SERVICE CRITERIA
FOR UNSIGNALIZED INTERSECTIONS*

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

Robinson, Michael C.

From: Rick Givens <rickgivens@gmail.com>
Sent: Wednesday, February 21, 2018 1:06 PM
To: Robinson, Michael C.
Subject: Fwd: Redwood Landing Subdivision Developable Land Calculations
Attachments: 4E84EE0B58E241EC906AB16DFE32D664.png

Mike,

Here is Bryan Brown's email acknowledging that he received the revised map and calculations and the he agrees with them.

Rick

----- Forwarded message -----

From: Bryan Brown <BrownB@canbyoregon.gov>
Date: Fri, Dec 15, 2017 at 12:11 PM
Subject: Re: Redwood Landing Subdivision Developable Land Calculations
To: rickgivens@gmail.com <rickgivens@gmail.com>
Cc: Mark Handris <mark@iconconstruction.net>, Darren GUSDORF <darren@iconconstruction.net>

Rick,
Perfect. Looks spot on to me. I never doubted it. Thanks.
Bryan

Sent from my iPhone

On Dec 14, 2017, at 5:33 PM, "rickgivens@gmail.com" <rickgivens@gmail.com> wrote:

Bryan,

I am attaching a letter containing updated density calculations as well as a map that should help to understand the various areas used in preparing the calculations. If you have any questions, please let me know. I'd be happy to meet with you to go over the calculations if they aren't clear.

Rick

From: Bryan Brown
Sent: Thursday, December 14, 2017 12:02 PM
To: rickgivens@gmail.com
Subject: Redwood Landing Subdivision Developable Land Calculations
Importance: High

Rick,

Those who are not happy with the quantity of 5,000 sf lots in this subdivision are looking for the calculations that were used for determining the developable area of the Park Land being dedicated and a map showing where those areas are located. We cannot seem to find any final map or calculation for this. We need to be able to confirm you transferred the right number of lots from the Park dedication area.

Can you clarify the boundary lines for Tract A, Tract B, and Track C. They are not clear as not everyone agrees where they are by the lines shown on the plat.

Can you provide us the “net area” of your actual platted lots.

Bryan

Bryan Brown | Planning Director

City of Canby | Development Services

222 NE 2nd Avenue | PO Box 930

Canby, OR 97013

ph: 503-266-0702 | fax: 503-266-1574

email: brownb@canbyoregon.gov ; website: www.canbyoregon.gov

Send applications to: PlanningApps@canbyoregon.gov

PUBLIC RECORDS LAW DISCLOSURE

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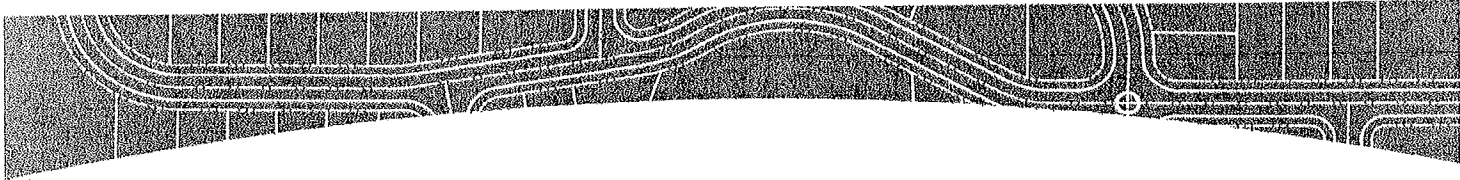
<Redwood Landing Density Calc Map.pdf>

<Density Calcs 12-14-17.pdf>

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Rick Givens
Planning Consultant
 18680 Sunblaze Dr.
 Oregon City, Oregon 97045

MEMORANDUM

To: Mike Robinson
 From: Rick Givens
 RE: Density Calculations for Willow Ridge Subdivision
 Date: February 21, 2018

Note: The table shown below is intended to clarify the density calculation table provided on page 12 of the application narrative with respect to compliance with maximum and minimum density standards:

Density Calculations:	Area in Sq. Ft.
Gross Site Area	94,808
Land in a boundary street right-of-way, water course, or planned open space where density transfer is not requested	0
Area in street rights-of-way:	19,068
Net Site Area:	75,740
Type 1 & II Slopes Developed: $20,587 \text{ sq.ft.} / 10,000 \times .5 =$	1.03 Units
Water Resource Area:	None
Open space (Type III and IV lands)	None
Type III & IV lands developed: $55,153 \text{ sq. ft.} / 10,000 =$	5.51 Units
Maximum Allowable Density (5.51 + 1.03 Units):	6 Units
Minimum density allowable (80 percent of maximum density):	5 Units
Density Proposed:	6 Units

The subdivision proposed provides 100% of the maximum allowable density and exceeds the minimum allowable density of 5 units.