AH Consulting, Limited

July 29, 2015

Wendy Farley Campbell
City of Florence Community Development
250 Hwy. 101, Florence, OR 97439

Greetings,

Maybe it would be best to start with what we hope to achieve with the property that has, at times, been known as Sandpines Resort Oak Street Town homes, East Bank PUD and now will become Sandpines East. We propose to build 54 single-family homes, mainly single story, in the median price range for Florence. We will increase the open space even more. And maybe, most importantly, clean everything up and change it from a blight to a bouquet.

Because of the spotted history it is sometimes difficult to be sure what we believe needs to be done to correct the past mistakes and what has been requested by the City. So in reviewing past documents we believe we are correcting, complying, changing and addressing everything that we have found. Specifically, Resolution PU 05 05, East Bank PUD Final Plat PC 07 24 DFP 02, a City letter dated 8/21/09 (updated 6/7/10, an email from Ms. Pezley to Columbia Bank 12/6/10 and items discussed with Wendy and Mike Miller. And what we would like to do to improve the development.

For simplicity I'll first address the items in East Bank PUD Final Plat PC 07 24 DFP 02.

3) **Subdivision Approval:** It is an approved and recorded subdivision
4) **PUD Approval:** It is a completed PUD with 99 lots
5) **Town home Approval:** We will not be building town homes
6) **Height:** Building height will be reviewed with building permits
7) **Building Offsets:** See changes to CC&R's
8) **PUD gate:** Installed and operational
9) **Vision clearance:** On plat
10) **Parking:** Addressed in CC&R's and at time of permits
11) **Interior road:** Nandina Drive in and accepted
12) **Public improvement plan:** Completed
13) **Signs:** None anticipated
14) **Hwy 101/Munsel Lake Road intersection improvements:** See new Traffic Study

 EXHIBIT D

15) **Hwy 101/46th St. intersection improvements:** See new Traffic Study
16) **Secondary access:** Not required with new hammerhead that is being installed
17) **Temporary dead end on internal access road:** This changed to a cul-de-sac and a sidewalk to the cart path on hole #9 which is now being installed along with the hammerhead.
18) **Oak street sidewalks:** City called bond and is now installed
19) **Oak stree/43rd entryway:** Sandpines East has completed redoing all of the mess and improved it along with making a turnout at the entry for community mailboxes
20) **Utility plan:** Completed
21) **Water improvements:** Completed but will now need 4 new meters installed and 2 caped
22) **Storm water management:** Completed
23) **Drainage easement:** On plat
24) **Pre-design investigation:** Completed
25) **Hold harmless:** Completed
26) **Site disturbance:** Completed
27) **Mailboxes:** Changed to community mailboxes on order and will be at entry
28) **Building design:** Will now be single-family homes and reviewed at permit time
29) **Tree preservation on Oak street:** Completed
Streetlights: Completed
30) **Required common open space:** Completed but will now be increased
31) **Landscaping and Common Open space:** Originally approved but new one will be submitted before 8/11/15 for the new entry
32) **Utility easements:** Completed
33) **Pedestrian/bike connection:** Completed
34) **Homeowners association:** Will be established prior to issuance of occupancy.
35) **Legal entity:** Completed. Sandpines East is registered with the state
36) **Entrance/Exit Improvements:** Completed
37) **Grading plan:** Completed
38) **Street naming:** Welcome to Nandina Drive!
39) **Phasing plan and Financial assurances:** There is still one outstanding bond that should be called by the City
40) **Acceptance agreement:** Not sure if that was done or now needs to be done with us but we are in agreement with whatever needs to be done.

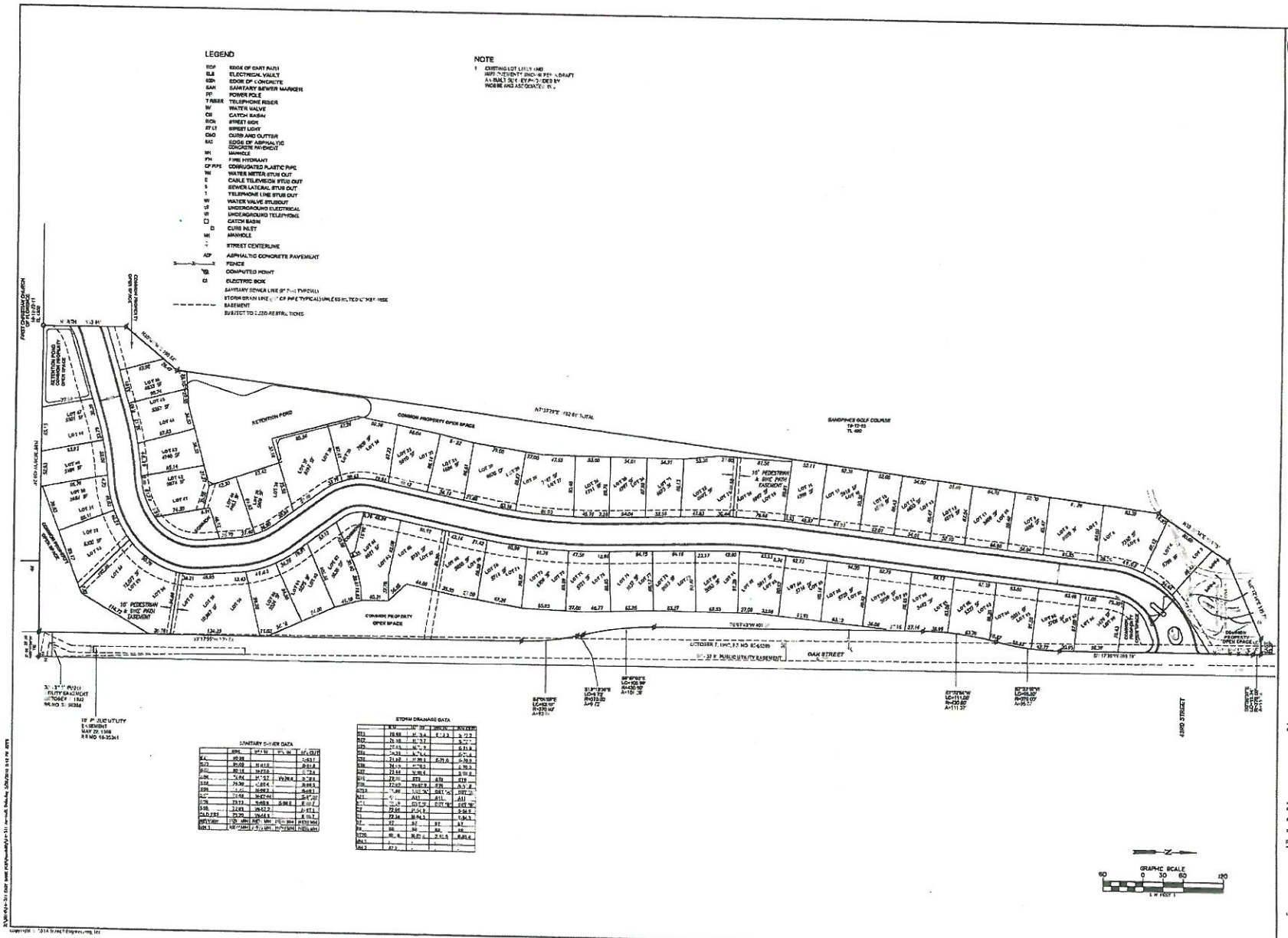
Other items that need to be addressed or you might be interested in with this modification request:

1) A new Traffic Impact Study has been done and has been submitted for peer review.
2) We are combining some lots to make new parcels and taking 2 lots (#1 & 2 and adding them to the open space) to create 54 home parcels. This will require deed restrictions. See attached items. Also the capping or adding of some water (add 4, cap 2) and sewer (cap 45) services. This has been worked out with the help of Mike Miller.

3) We have redone the CC&R's to reflect the new ownership and name and make them acceptable to single family homes and clean up some items we just didn't like. They are also attached.
4) The hammerhead and sidewalk to #9 cart path will remove approximately 880 sq. ft. of open space but the addition of lots 1 & 2 to the open space will add approximately 5,789 sq. ft. for a net increase of about 4,900 sq. ft.
5) For the past 12 years, or so, I had a home on the 2nd hole at Sandpines. We really enjoy Florence and the area and when East Bank came available we thought it would be nice to fix the problems as we saw them and make something that folks would want to be part of. Cross your fingers, we plan to make this work when others haven't. No, we don't think we are crazy but who knows?

Thank you for your consideration,

Byron Roberts
Manager for S&C Investments, LLC



SANITARY SEWER DATA

STORM DRAINAGE DATA

EXHIBIT E

Branch ENGINEERING INC
Since 1997
civil • transportation
structural • geotechnical
SURVEYING

PRELIMINARY
NOT FOR CONSTRUCTION

Project Title

EAST BANK PUD

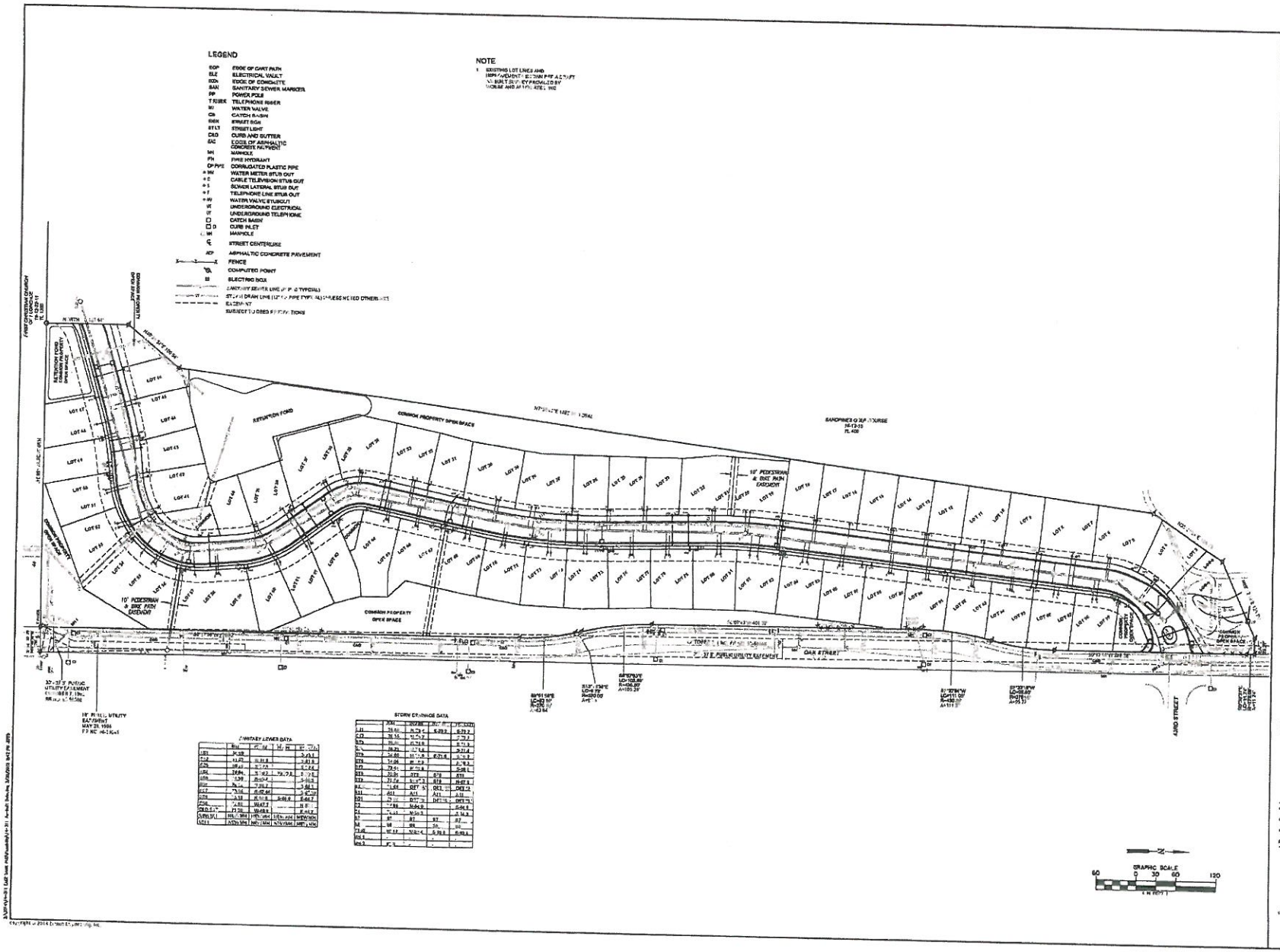
FEASIBILITY ANALYSIS
FLORENCE, OREGON

Revisions

Date MARCH 20, 2015
Drawn By JLB
Designer RDC
Project # 14-311

LOT LAYOUT

Sheet 1



Branch ENGINEERING Inc.

civil · transportation
structural · geotechnical
SURVEYING

www.BranchEngineering.com

PRELIMINARY
NOT FOR CONSTRUCTION

EAST BANK PUD

FEASIBILITY ANALYSIS
FLORENCE, OREGON

revisions

date MARCH 20, 2015
drawn by JLB
designed RDC
project # 14-311

UTILITY LAYOUT

sheet

2

EAST BANK
PLANNED UNIT DEVELOPMENT
TRAFFIC IMPACT ANALYSIS
FLORENCE, Oregon

BEI Project 14-311

Prepared for:
S & C Investments, LLC
34794 Matthews Road
Eugene, OR 97405

Branch ENGINEERING inc
Since 1977

civil · transportation
structural · geotechnical
SURVEYING

www.BranchEngineering.com

July 17, 2015

310 5th Street
Springfield, OR 97477
p: 541.746.0637
f: 541.746.0389

EXHIBIT F

EAST BANK
PLANNED UNIT DEVELOPMENT
TRAFFIC IMPACT ANALYSIS
FLORENCE, Oregon

BEI Project 14-311

Prepared for:
S & C Investments, LLC
34794 Matthews Road
Eugene, OR 97405

Digitally signed by Damien Gilbert
'Date: 2015.07.20 16:20:35 -07'00

EXPIRES: JUNE 30, 2017

Branch ENGINEERING inc
Since 1977
civil · transportation
structural · geotechnical
SURVEYING
www.BranchEngineering.com

July 17, 2015

310 5th Street
Springfield, OR 97477
p: 541.746.0637
f: 541.746.0389

Contents

		Page No.
1.0	**EXECUTIVE SUMMARY**	**1**
1.1	Description	1
1.2	Safety	1
1.3	Traffic	1
1.4	Results	1
2.0	**INTRODUCTION**	**2**
3.0	**EXISTING CONDITIONS**	**3**
3.1	Project Site	3
3.2	Roadway Network	3
3.2.1	US Highway 101	3
3.2.2	43rd Street	4
3.2.3	35th Street	4
3.2.4	Oak Street	4
3.3	Transit and Non-Motorized Facilities	6
3.4	Existing Traffic Volumes	6
3.5	Seasonal Adjustment	8
3.7	Crash Analysis	10
4.0	**DEVELOPMENT LEVEL TRAFFIC CONDITIONS**	**10**
4.1	Development	10
4.2	Intersection Sight Distance	11
4.3	Trip Generation	11
4.4	Alternative Trip Generation	12
4.5	Trip Distribution and Assignment	12
4.6	Intersection Performance	15
4.7	Vehicle Queuing	16
4.8	Transportation System Development Charges	17
5.0	**RECOMENDATIONS AND CONCLUSION**	**19**
5.1	Safety	19
5.2	Performance Analysis	19
5.3	Transportation System Improvements	19
5.4	Conclusion	19

LIST OF TABLES

Table 1: Intersection Crash Histories 10
Table 2: Trip Generation 12
Table 3: Level of Service Criteria 15
Table 4: 30th Highest Hour Intersection Performances 16
Table 5: 30th Highest Hour Vehicle Queue Lengths 17

LIST OF FIGURES

Figure 1: Existing Lane Configurations and Intersection Controls 5
Figure 2: Year 2015 Observed Peak Hour Traffic Volumes 7
Figure 3: 'Existing' Year 2015 30th Highest Hour Traffic Volumes 9
Figure 4: East Bank PUD Development Trip Distribution 13
Figure 5: Year 2015 30th Highest Hour 'Build' Traffic Volumes 14

LIST OF APPENDICES

APPENDIX A: EAST BANK PUD SITE PLAN
APPENDIX B: TRAFFIC COUNT SUMMARIES
Appendix C: SEASONAL ADJUSTMENT FACTOR CALCULATIONS
APPENDIX D: ODOT CRASH DATA
APPENDIX E: ITE TRIP GENERATION DATA
APPENDIX F: ODOT AND CITY OF FLORENCE MOBILITY STANDARDS
APPENDIX G: SYNCHRO INTERSECTION PERFORMANCE CALCULATIONS
APPENDIX H: SIMTRAFFIC QUEUE LENGTH CALCULATIONS
APPENDIX I: TRAFFIC VOLUMES TABLES

1.0 EXECUTIVE SUMMARY

1.1 Description

The subject site is within the City of Florence, Oregon and is generally located west of Oak Street and east of Sand Pines Golf Links with most of the land between 35th and 43rd streets. The site is identified on multiple tax lots on assessor's maps 18-12-15-44 and 18-12-14-32. The current development proposal includes construction of 54 single family detached residential dwelling units on the site. The zoning of the land supports multi-family residential development, which includes planned unit development (PUD) applications. Development of single family detached housing is permitted in the multi-family district with conditional use permissions per City zoning Regulations, Chapters 4, 13, and 23.

1.2 Safety

A review of the intersection crash histories revealed that there were no identifiable crash patterns occurring over the three year period of complete available crash data. Additional traffic loading from build-out will not be added to any known facilities with identified safety concerns.

1.3 Traffic

Traffic generated by the site is planned to access the local transportation system at an existing private access road at the west side of the intersection of 43rd and Oak Streets. The private access road will be the only access between the site and the transportation system. The intersection sight distance was evaluated at the existing site driveway on Oak Street, and it was determined that use of the existing driveway will provide adequate sight distance on Oak Street.

The site is expected to generate a total of 514 average daily trips (ADT), with 54 of those trips occurring during the PM peak hour. The expected trip generation assumes the site will be developed with 54 single family dwelling units at full build-out. Since the site will add 25 or more single family dwellings that generate greater than 250 ADT, a Traffic Impact Analysis (TIA) is required by the City of Florence per Florence City Code (FCC) Title 10-1-1-4-D.

Intersection operational performances were evaluated for the PM peak hour traffic conditions to be consistent with the 30th highest hour and Analysis Methodology and Performance Standards section of the current City of Florence Transportation System Plan (2012). The current year 2015 conditions were evaluated with and without the proposed development in one single phase. The year 2015 analysis scenario year is consistent with the ODOT recommendations for a single phase of development with up to 999 ADT, per Table 3.3.2 of the ODOT Traffic Impact Analysis Review Guidelines. (August 7, 2014). A TIA is not required by ODOT since the site does not have direct access to a state highway, however, the City of Florence Traffic Impact Analysis standards do not provide horizon years for assessing development impacts.

1.4 Results

In summary, the proposed development will not cause significant adverse impact to the performance of a transportation facility as defined per city of Florence and/or ODOT standards. No mitigation is required to accommodate the potential traffic generated by the proposed land use applications.

2.0 INTRODUCTION

Branch Engineering Inc. has been retained by S & C Investments, LLC to evaluate post development traffic conditions associated with the East Bank PUD and development applications. This report strives to meet the traffic analysis requirements and objectives identified by the City of Florence's current Transportation System Plan (TSP) and City Code. Included in the analyses are summaries of existing and proposed transportation infrastructure, documentation of observed traffic volumes, projected post development 'build' traffic volumes, an intersection performance evaluation for the identified intersections, an evaluation of crash histories and a sight distance evaluation at the proposed to remain site driveway on Oak Street. A site plan for development is included as Appendix A.

Analyses of the 30th highest hour (PM peak hour or 30th highest hour) were performed for the following years:

- Year 2015 'Existing Conditions';
- Year 2015 'Build Conditions';

The illustration below shows the location of the site.

Site Location *(Photo Courtesy of Lane County Maps)*

3.0 EXISTING CONDITIONS

3.1 Project Site

The East Bank Site has prior land use approval for a planned unit development (PUD) with 99 parcels. The previous application(s) included development with multi-family residences. At the time of the previous land use application(s), a private road and road approach were constructed that provided access to 43rd and Oak Street as the west leg of the intersection and to 35th Street via Sand Pines Golf Links' private drive. The site's private drive/access is currently improved with an asphalt surface, concrete curb and gutter and utilities. The existing roadway through the site is planned to be utilized for the current land use and development applications. The existing private drive does not provide through street connectivity between 35th Street and 43rd/Oak Street and is not planned to provide connectivity in the future. An existing gate prohibits through street connectivity between the site and Sand Pines private drive and Sand Pines Golf Links private property. The south gate to Sand Pines private property is planned to remain, but may be utilized as a secondary fire access to the site if reconstructed with a public works lock or break away features. The north entrance currently has a gate that is planned to remain after development that will limit access to residents of the site.

3.2 Roadway Network

The relevant roadways receiving traffic from development included in this study include:

- US Highway 101 (Oregon Coast Highway);
- 43rd Street;
- Oak Street, and;
- 35th Street.

The studied intersections include:

- 43rd Street and Highway 101;
- 43rd Street and Oak Street;
- 35th Street and Highway 101, and;
- 35th Street and Oak Street.

Details of the study area roadways and intersections are included in the following sections.

3.2.1 US HIGHWAY 101

Highway 101 is an Oregon Department of Transportation (ODOT) owned and maintained principal arterial roadway that provides the main thoroughfare in the City of Florence. Highway 101 stretches through the state from Washington to California and is the State of Oregon's primary coastal route. In the study area, the roadway is considered a statewide highway and a scenic by-way and is part of the National Highway System. Highway 101 features two striped southbound travel lanes, one northbound travel lane and a center two-way left-turn lane at 43rd Street. The intersection of 43rd Street is two-way stop controlled intersection with free movements north and south on Highway 101. The intersection at 43rd Street has a private driveway at the westbound approach (Bi-Mart) that is slightly offset to the north.

There are four striped travel lanes (two per direction) and exclusive northbound and southbound left-turn lanes at the signalized intersection of 35th Street. Striped bike lanes are present throughout the study area and curb and gutter and curbside sidewalks are present on both sides of the street south of 37th Street. Highway 101 transitions from two northbound travel lanes to one lane north of 37th Street. Highway 101 has a posted speed of 40 MPH at the study area intersections.

3.2.2 43RD STREET

43rd Street is a City of Florence owned and maintained collector street that provides east and west connectivity between Oak Street and Highway 101. 43rd Street is improved with curb and gutter and is unstriped throughout the study area. 43RD Street offers adequate paving width to accommodate on street parking. There are curbside sidewalks present on the south side of the street near a covered Rhody Express bus stop near the intersection of Oak Street. The speed limit on 43rd Street is unposted, but the assumed the statutory speed would be 25 MPH based on existing residential developments at the south side of the street.

3.2.3 35TH STREET

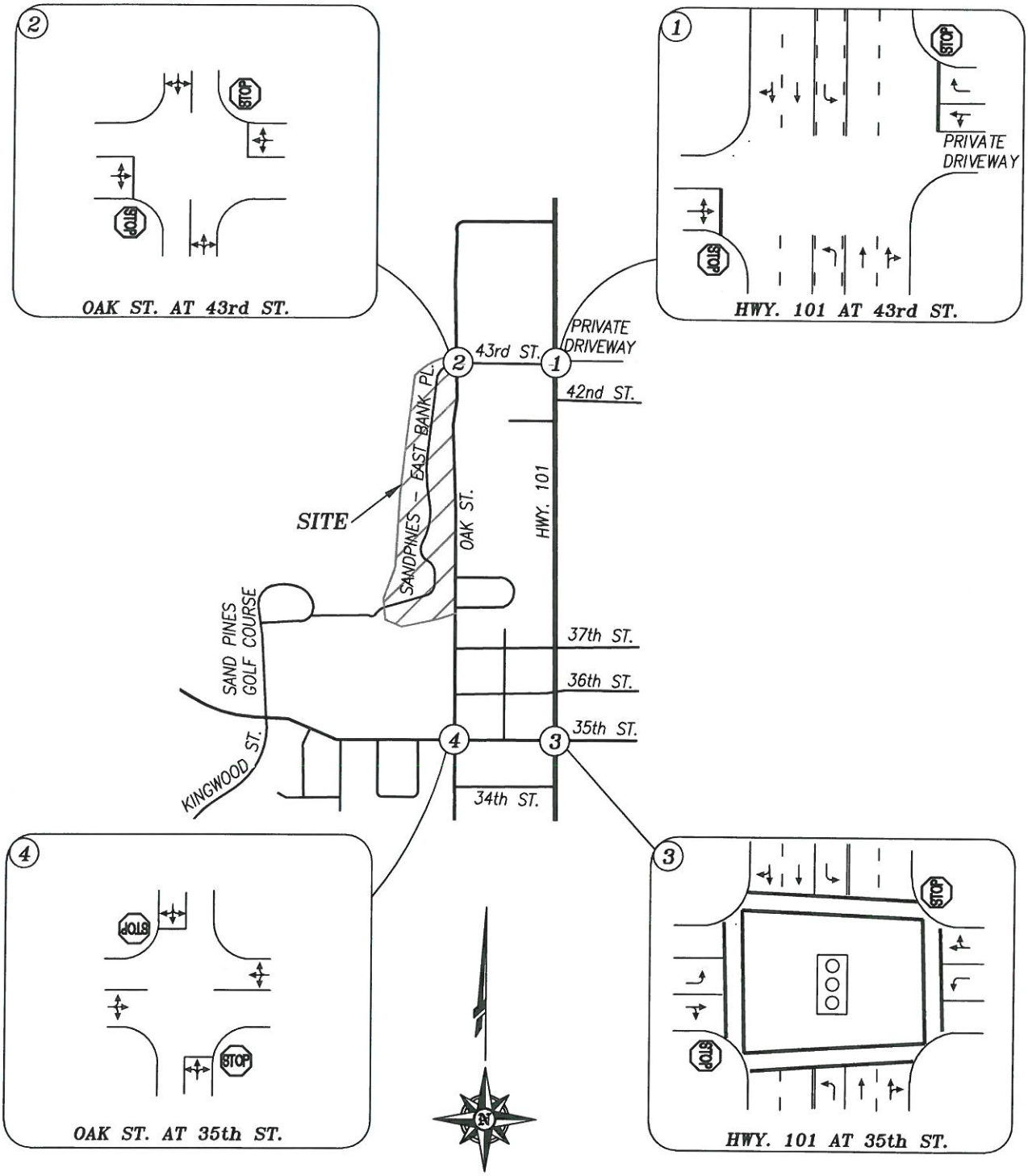
35th Street is a City of Florence owned and maintained collector street that provides access to multiple residential neighborhoods. 35th Street provides connectivity between Highway 101 and Rhododendron Drive. 35th Streets also provides connectivity to Kingwood Drive, Sand Pines Golf Links, Oak Street and several local residential streets. 35th Street provides a significant access to Rhododendron Drive, which is a route to ocean beaches and to the north Jetty Recreation Area. 35th Street is striped with one travel lane in each direction and is improved with curb and gutter and striped bike lanes. Sidewalks are intermittent between Oak Street and Highway 101. The posted speed on 35th Street is 25 MPH.

3.2.4 OAK STREET

Oak Street is a City of Florence owned and maintained collector street that runs parallel north and south to US Highway 101. The intersection of 43rd and Oak Street features two-way stop controls on the westbound 43rd Street approach and at the eastbound site driveway approach at the west leg. Oak Street features two striped travel lanes with a striped bike lane north and south of 43rd Street. Oak Street is fully developed with curbs and gutters throughout the study area and does not feature designated on street parking. There are curbside sidewalks present north of 37th Street on both sides of the street. South of 37th Street there is sidewalk present on the west side of the street. Near the intersection at 35th Street, Oak Street has curbside sidewalks present on both sides of the street north of the intersection, but no sidewalks are present south of the intersection at the east side of the street. The intersection of 35th and Oak streets is two-way stop controlled on the north and southbound Oak Street approaches. The posted speed on Oak Street is 30 miles/hour (MPH) north of 35th Street and 25 MPH to the south.

Existing lane configurations and intersection controls at the studied area intersections are illustrated in Figure 1 on the following page.

EXISTING LANE CONFIGURATIONS & INTERSECTION CONTROLS



SCALE: NTS

FIGURE 1

EAST BANK PUD

TRAFFIC IMPACT ANALYSIS

JULY 17, 2015

Branch ENGINEERING Inc
Since 1977

310 5th Street, Springfield OR 97477 | p: 541.746.0637 | www.branchengineering.com

Project No: 14-311

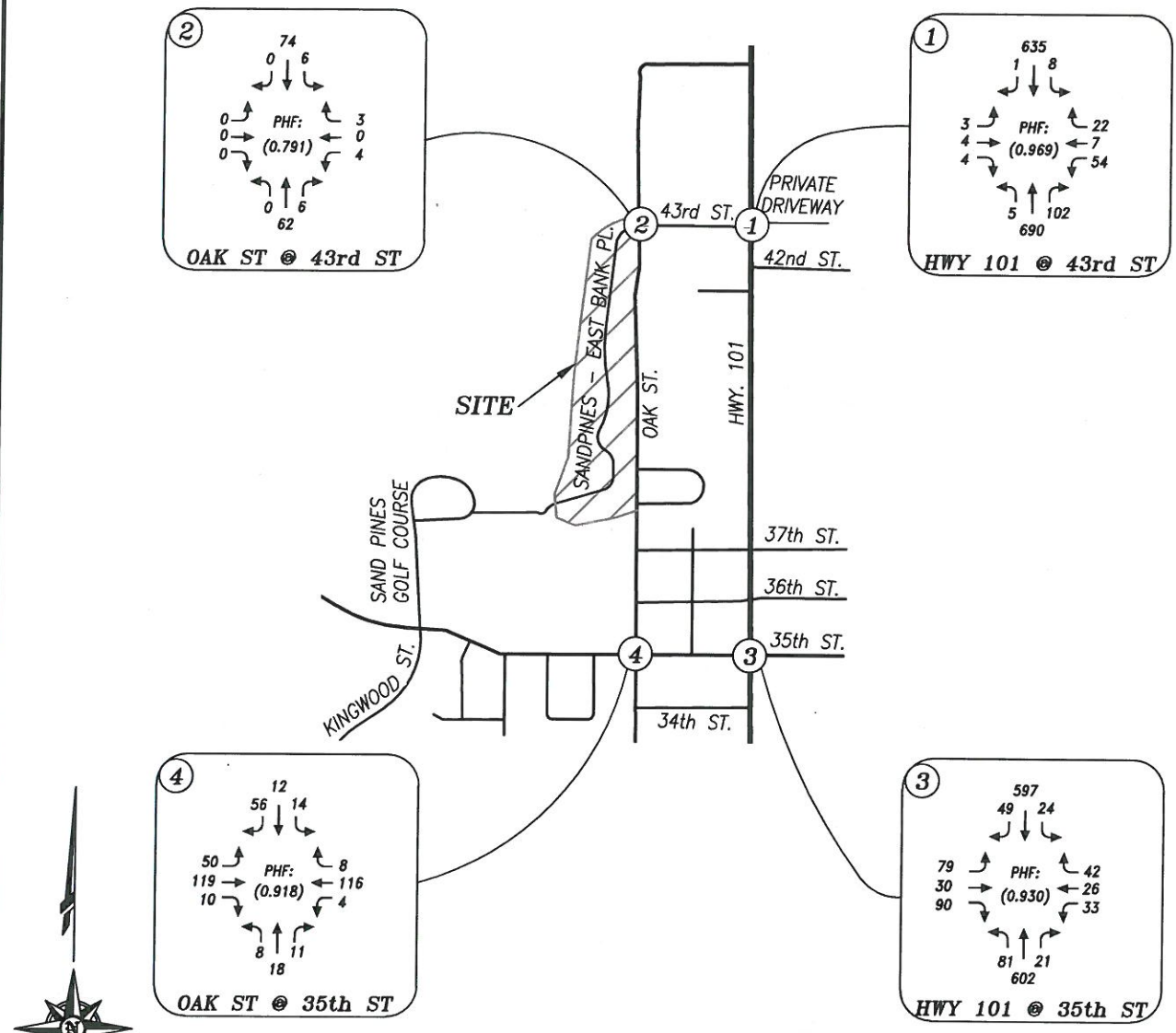
3.3 Transit and Non-Motorized Facilities

There is currently a Rhody Express bus stop near the southeast quadrant of the intersection of 43rd Street and Oak Street, which is also near the East Bank PUD entrance on Oak Street. Rhody Express is a subsidiary of Lane Transit District. Rhody Express makes two route loops in Florence, with one north loop and one south loop that meet along 21st Street. The Rhody express operates on a 60 minute circuit around the loop Tuesday through Friday from 10:00AM through 6:00PM. The routes provide public transportation to key parts of Florence, including retail centers, schools, food share, the Old Town district, the hospital and several city parks. The availability of transit, pedestrian and bicycle facilities can help to reduce the reliance on single occupant motorized vehicles.

3.4 Existing Traffic Volumes

Existing peak hour traffic volumes were determined by manual traffic counts conducted by Gary's Traffic Data and by Branch Engineering staff in June 2015. Count summaries are included as Appendix B. Traffic counts were collected during the 3:00 PM to 6:00 PM period to capture peak hour traffic volumes. All traffic counts were taken on typical interior weekdays, which were Tuesday, Wednesday or Thursday. Based on the traffic count data, the peak hour was determined to occur between 3:00PM and 4:00PM within the study area. The studied intersections were several blocks from one another with a number of streets between them, therefore; the observed traffic volumes were not balanced between intersections. The existing year 2015 observed peak hour traffic volumes and calculated peak hour factors are shown in Figure 2.

YEAR 2015 OBSERVED PEAK HOUR TRAFFIC VOLUMES



SCALE: NTS

FIGURE 2

EAST BANK PUD

TRAFFIC IMPACT ANALYSIS

JULY 17, 2015

Branch ENGINEERING Inc
Since 1977
310 5th Street, Springfield OR 97477 | p: 541.746.0637 | www.branchengineering.com

Project No: 14-311

Z:\2014\14-311 EAST BANK PUD\Traffic\Figures\14-311 TRAFFIC FIGURES.dwg FIG2 7/14/2015 12:05 PM DANH 19.0s (LMS Tech)

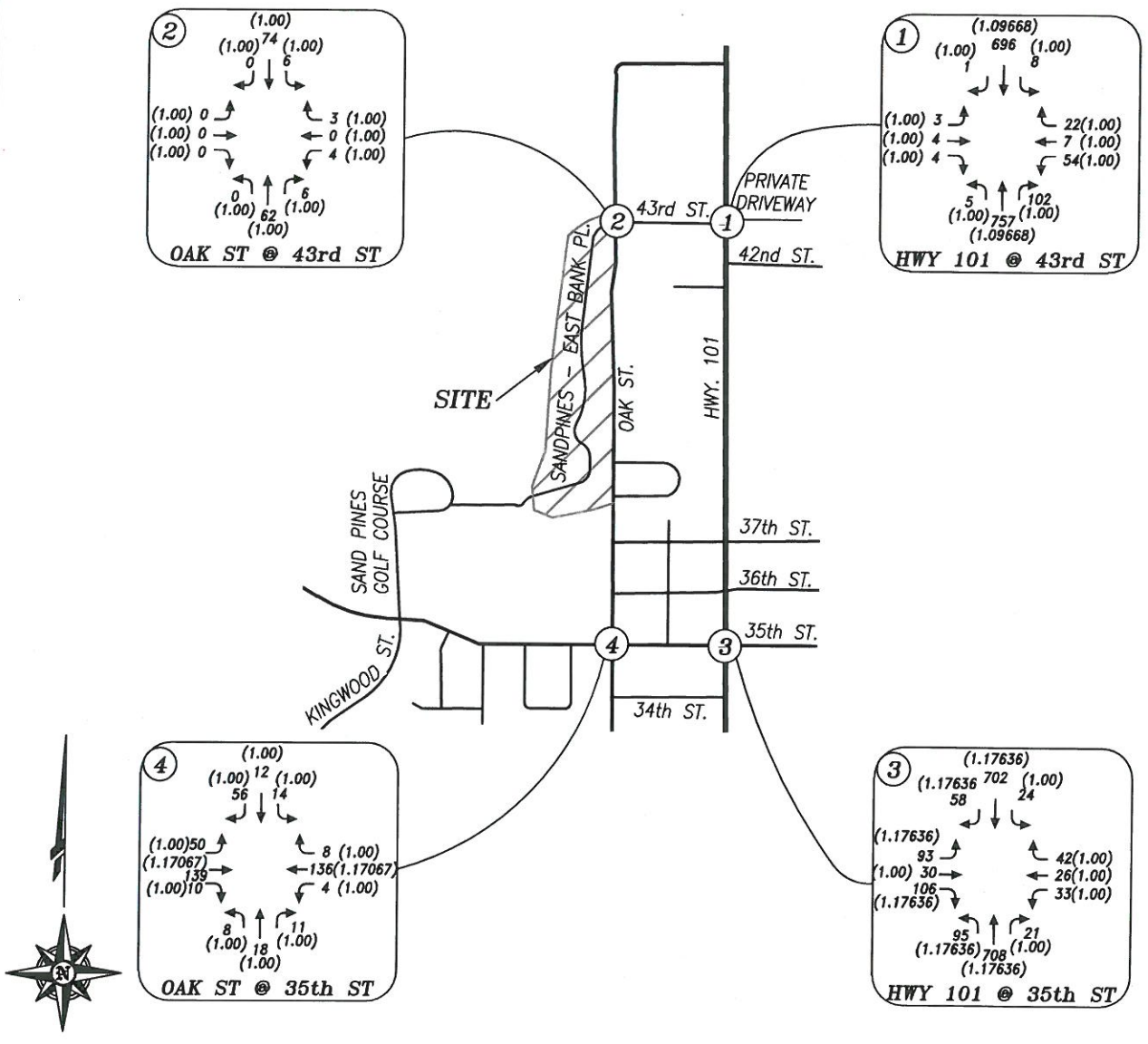
3.5 Seasonal Adjustment

Calculation of seasonal adjustment factors was necessary to adjust collected traffic count volumes to represent 30th highest hour design traffic conditions. Highway 101 in the study area is considered a statewide highway with a recreational summer seasonal traffic trend per current year 2014 ATR characteristic table reported north of the site at ODOT's Automatic Traffic Recorder (ATR) 20-026. ODOT ATR 20-026 is located 0.77 miles north of Heceta Beach Road and is outside of the City's Urban Growth Boundary Area. The traffic volumes and number of travel lanes are not similar enough to the study area to use the ATR data directly to calculate a seasonal adjustment factor to apply to the collected traffic count data in the study area. The seasonal adjustment factor for through movements on Highway 101 at 43rd Street and for 35th Street inflows and outflows was calculated utilizing ODOT's Seasonal Trend Method from Section 5.4.4 of the current ODOT Analysis Procedures Manual (APM). Since 35th Street accesses the North Jetty Recreation area, a county park and the beach at the north spit of the Siuslaw River, the recreational summer trend was assumed appropriate for application to 35th Street inflows and outflows at Highway 101 and through movements at Oak Street. Utilizing the seasonal trend table with the recreational summer trend, which has a peak seasonal factor of 0.65995 with the peak period occurring during the month of July, the calculated seasonal adjustment factors are:

- 1.17636 for a June 16, 2015 count date at Highway 101 and 35th Street;
- 1.17067 for a June 17, 2015 count date at 43rd and Oak Streets and at 35th and Oak Streets, and;
- 1.09668 for a June 30, 2015 count date at 43rd Street and Highway 101.

The calculated count date seasonal adjustment factors were applied to observed traffic volumes, resulting in year 2015 30th highest hour traffic volumes. Also considered was the coastal destination seasonal trend, which was used in the current transportation system plan and traffic analysis. The coastal destination trend would yield similar results, with slightly lower seasonal adjustment factors. The applied seasonal adjustment factors and adjusted traffic volumes are displayed on figure 3 on the following page. ODOT's Seasonal Trend Table and seasonal adjustment factor calculations are provided as Appendix C.

EXISTING YEAR 2015
30th HIGHEST HOUR TRAFFIC VOLUMES



N.T.S.

LEGEND
xx = 30th HIGHEST HOUR TRAFFIC VOLUME
(xx) = APPLIED SEASONAL ADJUSTMENT FACTOR

SCALE: NTS

FIGURE 3

EAST BANK PUD

TRAFFIC IMPACT ANALYSIS ANALYSIS

JULY 17, 2015

Branch ENGINEERING Inc
Since 1977
310 5th Street, Springfield OR 97477 | p: 541.746.0637 | www.branchengineering.com

Project No: 14-311

3.7 Crash Analysis

To investigate existing operational safety a request for the most recent three years of complete available crash data was made to ODOT's Crash Analysis and Reporting Unit (CARU). ODOT provided crash histories at each of the studied intersections for the period from January 1, 2011 through December 31, 2013. There was no available data for the intersection of 43rd and Oak Street. A summary of the crash data is provided in the following table. Detailed crash =data provided ODOT is provided in Appendix D.

Table 1: Intersection Crash Histories (Jan 2011-Dec 2013)

Year	Crashes	ADT	Crash Rate*	Crashes	ADT	Crash Rate	Crashes	ADT	Crash Rate*	Crashes	ADT	Crash Rate*
	43rd St and HWY 101			43rd St and Oak St			35th St and HWY 101			35th St and Oak St		
2011	0	13,200	0.0	0	1,300	0.00	1	13,200	0.0	0	1,600	0.00
2012	0	13,300	0.0	0	1,300	0.00	1	13,300	0.0	0	1,600	0.00
2013	2	13,500	0.0	0	1,300	0.00	0	13,500	0.0	0	1,600	0.00
Total:	2	40,000	0.045	0**	3,900	0.00	2	40,000	0.045	0	1,600	0.00

*Crash Rate =CPMEV = crashes per million entering vehicles
**No Crash Data available for 43rd and Oak. It is assumed that no crashes occurred at this location

As shown in the table, there were minimal crashes occurring at study area intersections over the three year period of available data. No discernable crash patterns or elevated crash frequencies/rates were identified that would be due to roadway geometry, sight distances, or other mitigatable conditions. There was one fatal crash that occurred at the intersection of 43rd Street and Highway 101 in year 2013 when a departing driver from 43rd Street making a left-turn from eastbound onto Highway 101 northbound failed to see an approaching motorcycle traveling southbound on Highway 101 that resulted in the motorcycle rider's death. The crash is considered an unfortunate occurrence resulting from a driver's error.

4.0 DEVELOPMENT LEVEL TRAFFIC CONDITIONS

4.1 Development

The East Bank PUD site contains approximately 12.7 acres of land that was previously approved for a 99 lot subdivision with development of multi-family residences (town homes) on the site. Multi-family residences were not constructed on the site after the year 2006 land use approval, and the land has remained vacant since. The current development plan and land use applications plan to modify the PUD approval to develop 54 single family residences on the site. The single family residences will occupy more land area with necessary property line setbacks than most of the previously approved PUD lot sizes, therefore; the modification will include deed restrictions where necessary to maintain contiguous ownership of two (or more) tax lots where the parcel sizes will need be increased to accommodate single family dwelling units and necessary setbacks. Much of the infrastructure was constructed to accommodate residential development, and there is an existing paved asphalt private access road through the site with the primary access at the intersection of 43rd and Oak streets.

4.2 Intersection Sight Distance

Existing intersection sight distance was reviewed at the stop controlled driveway approach to the intersection of 43rd and Oak Street to determine if existing conditions provide adequate line of sight for departing vehicles to maneuver from the stopped approach into traffic on the approaching roadway and to cross Oak Street to 43rd Street. The sight distance evaluation was performed consistent with the methodology of the American Association of State Highways and Transportation Officials (AASHTO) A Policy on Geometric Design of Roadways and Streets, 6th Edition (2011). The AASHTO methodology includes measuring the sight distance along the roadway from an observation point located 14.5 feet from the edge of the approaching road's nearest traveled way at an observer's eye height of 3.5 feet in the stopped vehicle to an approaching vehicle (or object) with a height of 4.35 feet. The 14.5 feet setback from the traveled way to the observation point is intended to overlap any designated on street parking areas and/or bike lane widths between the driveway and the near edge of traveled way. The measurement at East Bank PUD includes the projected bike lane across the driveway. Intersection sight distance design criteria is based on a formula that accounts for perception reaction distance and braking distance between an approaching vehicle and the departing vehicle and to provide adequate distance for the departing driver to accelerate from a stop to the posted or design speed without causing a disruption of the traffic flow on the major road or unstopped approach.

Based on a design speed of 30 mph on Oak Street the required AASHTO intersection sight distance for right-turn or crossing maneuvers from the minor street (driveway) approach is 290 feet when looking to the left. The AASHTO standard for left-turn maneuvers from the minor street approach stopped movement onto a 30 mph roadway when looking to the right is 335 feet. Each of the intersection sight distances available at the East Bank PUD site driveway meets the minimum sight distance criteria and has adequate line of sight available for vehicles departing from the stopped position in the driveway maneuvering onto one of the public roadways.

4.3 Trip Generation

To determine the level of traffic generated by the site during average daily traffic conditions and during 30th highest hour traffic conditions, a reference was made to the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition*, 2012. Trip generation during the PM peak hour of adjacent street traffic for the proposed development scenario with 54 single family detached dwelling units was determined to be the most appropriate since the current City of Florence Transportation System Plan (year 2012) identifies with analysis during the PM peak hour period and the single family detached housing land use is a conservative trip generator compared to other residential uses. The referenced ITE trip generation data for the proposed use are included as Appendix E.

The following table summarizes the estimated ADT and PM peak hour trip generation of the site.

Table 2: Trip Generation							
Land Use:	Rate/Unit	Number of Dwelling Units	Total Trips	Trips Entering		Trips Leaving	
				#	%	#	%
PM Peak Hour of Adjacent Street Traffic							
Single Family Detached Housing (ITE Code 210)	1.00	54	54	34	63%	20	37%
Average Daily Trips (ADT)							
Single Family Detached Housing (ITE Code 210)	9.52	54	514	257	50%	257	50%

As shown in the table, the proposed development of 54 single family dwelling units will generate 514 average daily trips, with 54 of those trips occurring during the PM peak hour (30th highest hour).

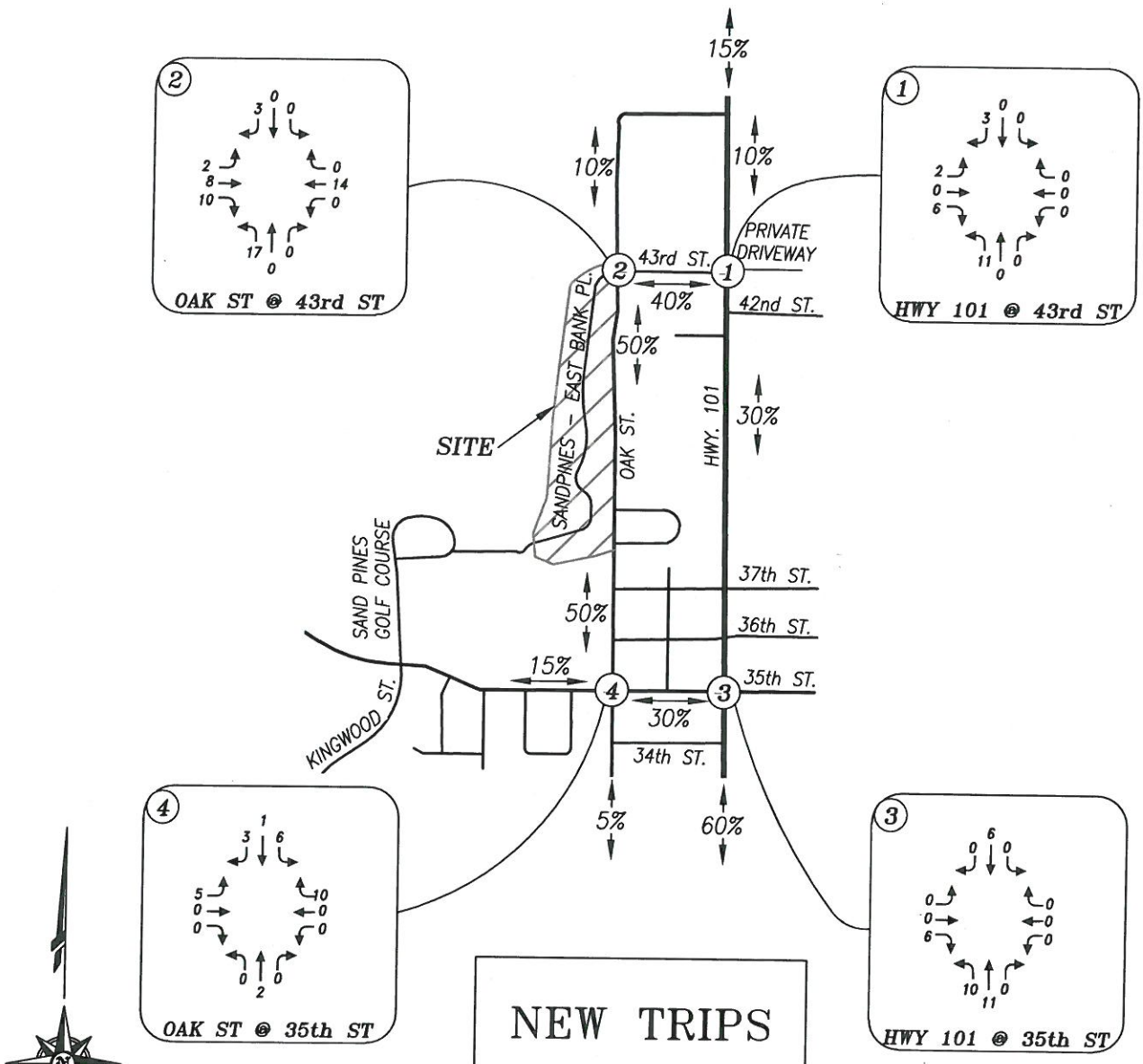
4.4 Alternative Trip Generation

As an alternative to the single family dwelling unit trip generation, the ITE also has a number of trip generation studies performed for Residential Planned Unit Development (PUD) that may be applicable to the uses of the site. The Residential PUD land use (ITE Code 270) is a lower trip generator than single family residential detached housing, and is described as any mix of residential uses. The ITE cautions about using the PUD rate if all specific dwelling unit types are known. Some of the units at the East Bank PUD site will likely be utilized as secondary or recreational homes, and early estimates are that it could be as many as 15 to 20 percent (8 - 11 dwelling units). Secondary/recreational homes would not be as consistent of an average daily or peak hour trip generator as single family attached housing dwelling units, which are typically owner occupied year round. Trip generation rates for recreational homes include 3.16 daily trips/unit and 0.26 PM peak hour trips/unit. The trip generation from the residential PUD rate would be 7.50 daily trips/unit (405 daily trips with 54 units), of which 0.62 trips/unit occur during PM peak hour (~34 PM trips). This would be a reduction from the single family residential land use trip generation previously described. The site's entry gate and other features may have additional trip reducing effects as well. The traffic analysis will consider the potential for impacts from all of the units developed as single family detached housing as a worst case scenario.

4.5 Trip Distribution and Assignment

As discussed previously, access to the site will be from the existing intersection at 43rd and Oak Streets. Ingress and egress traffic to/from the site will be distributed via primary collector and arterial street routes at Highway 101 and Oak Street north and south of the site, and 35th Street east and west. The trip distribution for the site generated traffic considered likely trip origin and destination pairs from surrounding and nearby area land uses. New trips generated by build-out are included on the following pages with Figure 4 showing trip distribution and Figure 5 showing 30th highest hour 'build' total traffic volumes with the addition of the proposed development traffic.

EAST BANK PUD DEVELOPMENT TRIP DISTRIBUTION



NEW TRIPS		
	IN	OUT
PM	34	20

LEGEND
xx = PM PEAK HOUR TRAFFIC VOLUME

SCALE: NTS

FIGURE 4

EAST BANK PUD

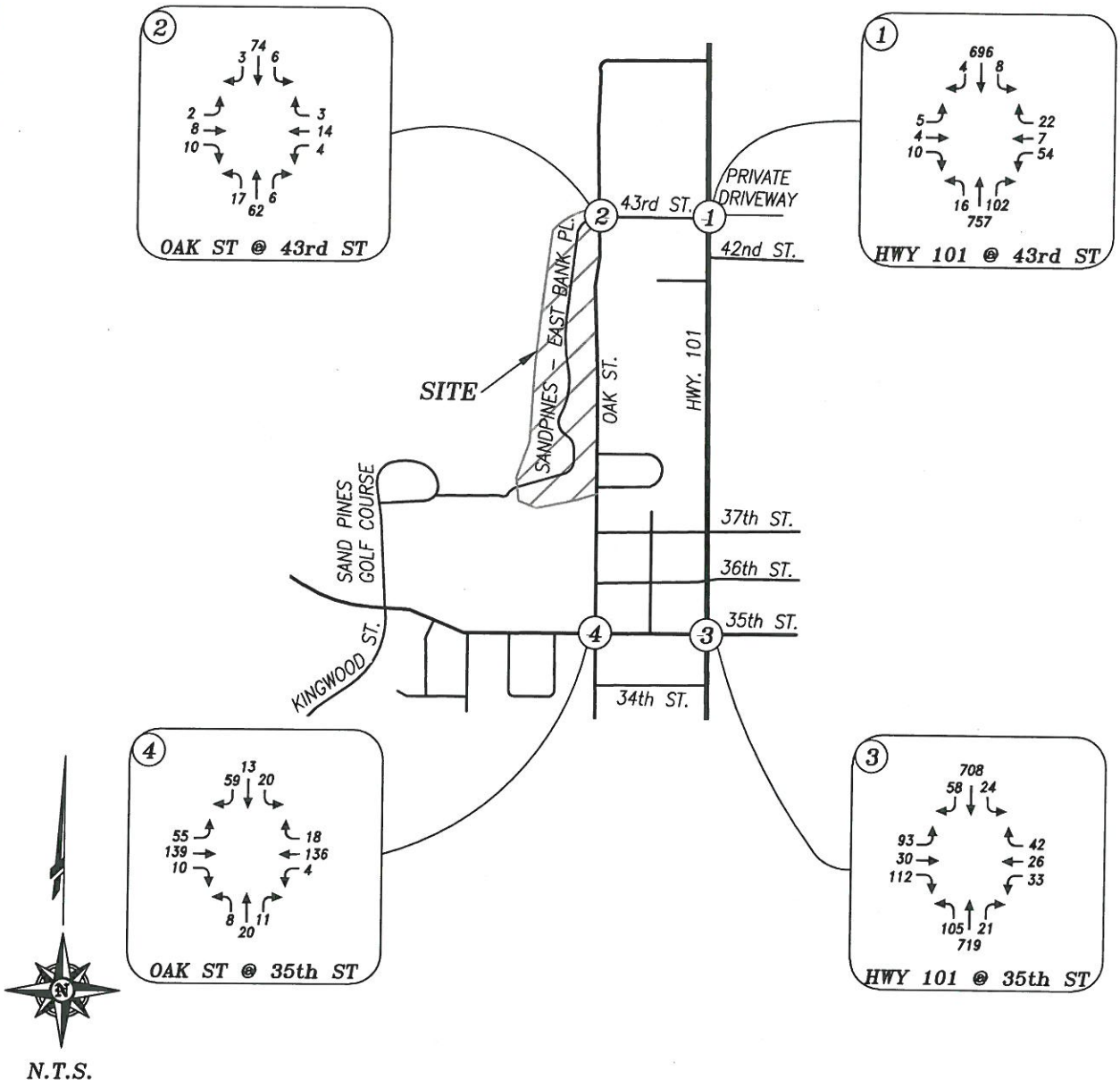
TRAFFIC IMPACT ANALYSIS

JULY 17, 2015

Branch ENGINEERING Inc. Since 1977
310 5th Street, Springfield OR 97477 | p: 541.746.0637 | www.branchengineering.com

Project No: 14-311

YEAR 2015 30th HIGHEST HOUR 'BUILD' TRAFFIC VOLUMES



LEGEND
xx = PM PEAK HOUR TRAFFIC VOLUME

SCALE: NTS

FIGURE 5

EAST BANK PUD

TRAFFIC IMPACT ANALYSIS

JULY 17, 2015

Branch ENGINEERING Inc
Since 1977
310 5th Street, Springfield OR 97477 | p: 541.746.0637 | www.branchengineering.com

Project No: 14-311

4.6 Intersection Performance

Relevant intersections were evaluated to determine Volume-to-Capacity (v/c) ratio and Level of Service (LOS) based on average delay. Calculations of intersection performances were made utilizing the computer program SYNCHRO 7, by TrafficWare.

The PM peak hour period is consistent with the Analysis Methodology and Performance Standards of the current City of Florence Transportation System Plan (2012). The scenario year of the year of application is consistent with the ODOT recommendations for a single phase of development with up to 999 average daily trips, per Table 3.3.2 of the *Traffic Impact Analysis Review Guidelines,* (August 7, 2014). A TIA is not required by the Oregon Department of Transportation, since the site does not have direct access to a state highway and will not generate 100 or more peak hour trips or greater than 1000 average daily trips (3-lane highway), however, the City of Florence Traffic Impact Analysis standards do not provide horizon years for assessing development impacts.

Study area intersections were evaluated to determine Level of Service (LOS) based on average delay. Level of service is classified by a letter scale from 'A' to 'F'. LOS 'A' represents optimum operating conditions and minimal delay. LOS 'F' indicates over capacity conditions causing unacceptable delay. The current transportation system plan identifies with LOS 'D' at signalized and all-way stopped controlled intersections and LOS 'E' at two-way stop controlled intersections. LOS 'F' is allowed in situations where a traffic signal is not warranted. Mitigation measures may be necessary when level of service falls below these thresholds at intersections under city jurisdiction, as the result of a development, or when a failing facility is projected to be further degraded by a development involving a zone change or plan amendment. The following table lists the applicable criteria for determining LOS.

Table 3: Level of Service Criteria

Level of Service	Unsignalized Intersections	Signalized Intersections
A	< 10 sec	< 10 sec
B	>10 and ≤ 15 sec	>10 and ≤ 20 sec
C	>15 and ≤ 25 sec	>20 and ≤ 35 sec
D	>25 and ≤ 35 sec	>35 and ≤ 55 sec

Volume to capacity (v/c) ratio is another measurement of congestion and is estimated by dividing the number of vehicles utilizing a transportation facility by the calculated capacity of the facility. Based on the 1999 Oregon Highway Plan (revised December 21, 2011), the mobility standard for state owned highways outside of an MPO area within an urban growth boundary with a non-freeway speed limit greater than 35 MPH is 0.80 for a statewide highway, and is applicable to the non-stopped controlled Highway 101 approaches to 43rd Street and to the signalized intersection of 35th Street.

Copies of ODOT and City of Florence Mobility Standards are included as Appendix F.

Results of the intersection performance analysis calculations are documented in Appendix G, and are summarized in the following table.

Table 4: 30th Highest Hour Intersection Performances

INTERSECTION	Mobility Standard	2015 'Existing Conditions'	2015 'Build
43rd Street and HWY 101	v/c 0.80 LOS D	NB V/C=0.52 EB LOS C	NB V/C=0.52 EB LOS C
43rd/Site and Oak St	LOS D	WB LOS A	WB LOS B
35th St and HWY 101	v/c 0.80 LOS D	V/C=0.50 LOS B	V/C=0.50 LOS B
35th and Oak St	LOS D	NB LOS B	NB LOS B

LOS= Level of Service of stopped movement at unsignalized intersection or overall LOS at signalized intersection
EB= eastbound, SB= southbound, NB=northbound

As shown in the table, the intersection performances during the 30th highest hour with the additional traffic from the East Bank PUD development continue to meet the minimum level of service and volume to capacity ratio criteria for signalized and unsignalized intersections within the study area, and no mitigation is required to improve intersection performance(s) as a result of the projected post development traffic conditions.

4.7 Vehicle Queuing

To simulate and evaluate vehicle queuing with the additional traffic from development, the software program SimTraffic 7 was utilized to determine pre- and post-development vehicle queue lengths. The results of the simulations at stopped controlled approaches and signalized intersections are provided in the following table. Queue length calculations are provided as Appendix H. Reported queues at unstopped approaches are not shown.

Table 5: 30th Highest Hour Vehicle Queue Lengths				
Intersection	Link*	Available Storage	Average Queue	95th Percentile Queue
43rd Street and HWY 101	EBLTR	400+	25	50
	NBL	150+/-	25	50
43rd/Site and Oak St	EBLTR	300+	25	50
	WBLTR	200+/-	25	50
35th St and HWY 101	EBL	250**	75	125
	EBTR	250	75	150
	WBL	140	25	75
	WBTR	500+	50	100
	NBL	150+	50	100
	NBT/TR**	250+	100	175
	SBL	100	25	50
	SBT/TR	250	100	175
35th and Oak St	NBLTR	250	25	75
	SBLTR	250	50	75

*EB= Eastbound, WB=Westbound, SB= Southbound, NB=Northbound
L=Left, T=Through, R=Right
**Longest queue shown for SBT and NBT, including reported shared lane queue lengths

As shown in the table, existing available queue storages at study area intersection approaches are adequate to accommodate additional traffic from post development conditions during the 30th highest hour conditions.

4.8 Transportation System Development Charges

The purpose of a traffic impact analysis (TIA) is to project traffic conditions with and without development traffic to identify potential transportation system impacts directly caused by development and determine if the post development traffic conditions require mitigation to return the facilities' performance measures back to the identified performance/mobility standards identified in the TSP or to pre-existing conditions. The results of this TIA do not identify any facilities projected to fail to meet the City or ODOT's performance/mobility standards within the applicable study area.

A previous land use decision (Resolution PC 07 24 SFP 02) at the East Ridge PUD site included conditions of approval for proportional shares of intersection improvements at Highway 101 and Munsel Lake Road and at Highway 101 and 46th Street for new traffic signal installations. At the time the local improvements were identified, there was significant growth forecasted in the area and the traffic studies performed for this site and other nearby developments identified improvements to those intersections as mitigation for projected traffic conditions with the development. Traffic volumes in the area on Highway 101 have decreased in recent years since the conditions of approval for the land use were issued. At mile-point 188.63, which is 0.01 miles south of 36th Street, the average annual daily traffic (AADT) volume from the ODOT Traffic

Volumes Table (TVT) was reported as 15100 daily trips in year 2006. The most recent year 2013 TVT reported 13500 AADT at mile point 188.64 (0.02 mile south of 36th Street), which indicates negative growth occurring over the seven year period. The current ODOT Future Volumes Table (FVT), which reflects forecasted land use and transportation trends in the area, shows continued modest growth in the study area with 14700 AADT projected for year 2033 conditions. The forecasted year 2033 AADT is lower than the reported year 2006 AADT. The referenced TVT and FVT tables are included as Appendix I.

The current City of Florence Transportation System Development Charge (TSDC) methodology applies the daily trip generation rate from the ITE publications to the number of units of development to calculate the site's chargeable TSDCs. TSDCs are typically applied to new developments based on trip generation to compensate the road authority or local agency for the development's proportional share of planned transportation system capacity improvements identified within the applicable agency's Transportation System Plan. Generally TSDCs are required by state law to be spent by the local agency on capacity increasing transportation projects local to the development site. The TSP identifies several projects within the site's vicinity that are outside of the study area that were previously identified for a proportional share for financing of improvements by the East Bank PUD site that are not projected to be impacted by the development. Additionally, these improvements may no longer be necessary in future years, as projected traffic volumes have significantly decreased since these improvements were identified and are not forecast to exceed the 2006 traffic levels when the improvements were identified. The projected traffic loading from the East Bank PUD is considered insignificant when compared to the approaching traffic volumes at these intersections, since the site traffic accounts for less than the typical day-to day fluctuation in existing approaching traffic volumes during average and peak hour conditions.

It is recommended that the previous conditions of approval for the land use at the East bank PUD site that included a proportionate share of financing for intersection improvements based on identified impacts at Highway 101 and 46th Street and at Highway 101 and Munsel Lake Road be removed. Retaining the conditions of approval requiring proportional financing of these improvements would result in double charging this development after TSDCs are assessed. Transportation SDCs are intended to finance transportation system capacity improvements and should be paid at the time of building permit issuance.

5.0 RECOMENDATIONS AND CONCLUSION

5.1 Safety

Crash histories were reviewed and evaluated at the study area intersections to determine if there were any identifiable safety deficiencies that need mitigation prior to increasing traffic loading from development of the site at the studied intersections and roadways. The evaluation of crash history revealed that a fatal crash occurred at the intersection of 43rd Street and Highway 101. The crash was a result of a departing driver turning left from eastbound 43rd Street onto northbound Highway 101 who failed to see an approaching motorcycle traveling from north to south on Highway 101. The crash was a result of a driver error that was unrelated to roadway geometry and is not considered a mitigatable condition. There were no significant or unusual crash patterns identified in the study area.

The safety analysis also included an evaluation of the available intersection sight distance at the site driveway. The sight distance evaluation revealed that there is adequate line of sight available based on the posted speed of the Oak Street approaches to the driveway to safely accommodate maneuvers from the driveway onto the public street network.

5.2 Performance Analysis

An analysis of the projected 30th highest hour traffic conditions with and without post-development traffic from the East Bank site revealed that the potential additional traffic will not significantly degrade the level of service (LOS) or volume to capacity ratios calculated at the study area intersection approaches to a level below the City of Florence's or ODOT's acceptable mobility/performance standards.

Intersection queuing was evaluated and it was verified that existing available storages at stopped controlled movements and signalized intersection approaches were adequate for post development traffic conditions.

5.3 Transportation System Improvements

The traffic from development was not shown to impact facilities in the study area by degrading the levels of service and/or volume to capacity ratios to less than the identified road authorities' standards or to add traffic to facilities identified to be failing to meet the standards without the development. Further, the applicability of transportation system development charges was discussed, and it is recommended that the site pay for their proportionate share of transportation system improvements through the application of Transportation System Development Charges, per applicable City of Florence Development Code criteria at the time of building permit issuance. The previously issued conditions of approval for the land use application should be removed, since traffic conditions identified through previous analyses have improved and the financing of the improvements would result in double charging this development for capacity increasing transportation system improvements that are typically payable through transportation system development charges.

5.4 Conclusion

In summary, the result of this analysis indicates the increase in traffic loading resulting from development at the East Bank PUD site will not have a significant impact to the existing adjacent or nearby roadway or intersection capacities or other applicable transportation system facilities.

APPENDIX A

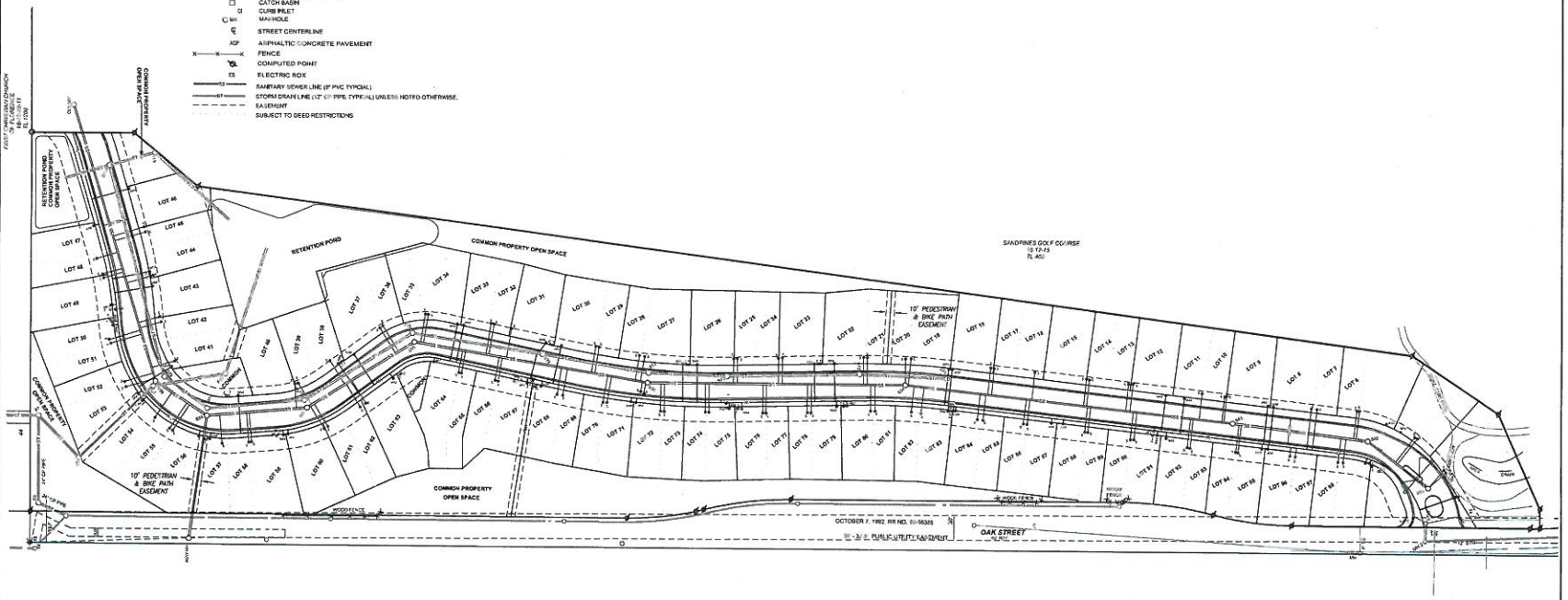
EAST BANK PUD SITE PLAN

LEGEND

ECP	EDGE OF CART PATH
ELE	ELECTRICAL VAULT
EOW	EDGE OF CONCRETE
SAN	SANITARY SEWER MARKER
PP	POWER POLE
T-RISER	TELEPHONE RISER
WV	WATER VALVE
CB	CATCH BASIN
SIGN	STREET SIGN
ST LT	STREET LIGHT
C&G	CURB AND GUTTER
EAC	EDGE OF ASPHALTIC CONCRETE PAVEMENT
MH	MANHOLE
FH	FIRE HYDRANT
CP PIPE	CORRUGATED PLASTIC PIPE
WM	WATER METER STUB OUT
C	CABLE TELEVISION STUB OUT
S	SEWER LATERAL STUB OUT
T	TELEPHONE LINE STUB OUT
WV	WATER VALVE STUBOUT
UE	UNDERGROUND ELECTRICAL
UT	UNDERGROUND TELEPHONE
	CATCH BASIN
CI	CURB INLET
MH	MANHOLE
	STREET CENTERLINE
ACP	ASPHALTIC CONCRETE PAVEMENT
	FENCE
	COMPUTED POINT
ES	ELECTRIC BOX
	SANITARY SEWER LINE (8" PVC TYPICAL)
	STORM DRAIN LINE (12" CP PIPE TYPICAL) UNLESS NOTED OTHERWISE.
	EASEMENT
	SUBJECT TO DEED RESTRICTIONS

NOTE

1. EXISTING LOT LINES AND IMPROVEMENTS SHOWN PER A DRAFT AS-BUILT SURVEY PROVIDED BY WEBB AND ASSOCIATES, INC.



Branch ENGINEERING Since 1977
civil · transportation
structural · geotechnical
SURVEYING

PRELIMINARY
NOT FOR CONSTRUCTION

project title:

EAST BANK PUD
PRELIMINARY SITE PLAN
TRAFFIC IMPACT ANALYSIS
FLORENCE, OREGON

revisions:

date: MARCH 20, 2015
drawn by: JLB
designer: RDC
project no: 14-311

PRELIMINARY SITE PLAN

sheet: 1

APPENDIX B

TRAFFIC COUNT SUMMARIES

Branch ENGINEERING INC
Since 1977
civil • transportation
structural • geotechnical
SURVEYING
310 5th Street
Springfield, OR 97477
p: 541.746.0637
f: 541.746.0389
www.BranchEngineering.com
Springfield OR | Salem OR

File Name : HWY 101 at 43rd
Site Code : 14-311
Start Date : 6/30/2015
Page No : 1

Groups Printed- PASSENGER VEHICLES - TRUCKS - BICYCLES

	HWY101 SOUTHBOUND					43RD WESTBOUND					HWY101 NORTHBOUND					43RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
03:00 PM	4	152	0	0	156	13	4	9	0	26	1	177	31	0	209	1	3	1	0	5	396
03:15 PM	3	160	0	0	163	14	1	5	0	20	2	172	22	0	196	1	1	1	0	3	382
03:30 PM	1	165	0	0	166	13	1	3	0	17	2	179	20	0	201	0	0	1	0	1	385
03:45 PM	0	158	1	0	159	14	1	5	0	20	0	162	29	0	191	1	0	1	0	2	372
Total	8	635	1	0	644	54	7	22	0	83	5	690	102	0	797	3	4	4	0	11	1535
04:00 PM	4	157	1	0	162	12	0	3	0	15	2	154	28	0	184	1	0	2	0	3	364
04:15 PM	2	144	1	0	147	15	0	4	0	19	4	150	24	0	178	0	0	1	0	1	345
04:30 PM	1	146	1	0	148	7	0	1	0	8	5	140	19	0	164	2	2	5	0	9	329
04:45 PM	2	141	0	1	144	10	1	6	0	17	1	146	13	0	160	1	0	2	0	3	324
Total	9	588	3	1	601	44	1	14	0	59	12	590	84	0	686	4	2	10	0	16	1362
05:00 PM	2	127	2	0	131	8	0	2	0	10	1	175	24	0	200	0	1	3	0	4	345
05:15 PM	1	121	1	1	124	10	0	7	0	17	2	141	13	0	156	0	0	0	0	0	297
05:30 PM	0	141	0	0	141	7	1	1	0	9	3	141	14	0	158	1	1	1	0	3	311
05:45 PM	3	133	0	0	136	7	2	6	0	15	1	117	9	0	127	2	0	0	0	2	280
Total	6	522	3	1	532	32	3	16	0	51	7	574	60	0	641	3	2	4	0	9	1233
Grand Total	23	1745	7	2	1777	130	11	52	0	193	24	1854	246	0	2124	10	8	18	0	36	4130
Apprch %	1.3	98.2	0.4	0.1		67.4	5.7	26.9	0		1.1	87.3	11.6	0		27.8	22.2	50	0		
Total %	0.6	42.3	0.2	0	43	3.1	0.3	1.3	0	4.7	0.6	44.9	6	0	51.4	0.2	0.2	0.4	0	0.9	
PASSENGER VEHICLES	23	1722	7	2	1754	130	11	52	0	193	24	1838	246	0	2108	10	8	17	0	35	4090
% PASSENGER VEHICLES	100	98.7	100	100	98.7	100	100	100	0	100	100	99.1	100	0	99.2	100	100	94.4	0	97.2	99
TRUCKS	0	18	0	0	18	0	0	0	0	0	0	12	0	0	12	0	0	1	0	1	31
% TRUCKS																					
BICYCLES	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
% BICYCLES	0	0.3	0	0	0.3	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.2

	HWY101 SOUTHBOUND					43RD WESTBOUND					HWY101 NORTHBOUND					43RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	**4**	152	0	0	156	13	**4**	**9**	0	**26**	1	177	**31**	0	**209**	**1**	**3**	**1**	0	**5**	**396**
03:15 PM	3	160	0	0	163	**14**	1	5	0	20	**2**	172	22	0	196	1	1	1	0	3	382
03:30 PM	1	**165**	0	0	**166**	13	1	3	0	17	2	**179**	20	0	201	0	0	1	0	1	385
03:45 PM	0	158	**1**	0	159	14	1	5	0	20	0	162	29	0	191	1	0	1	0	2	372
Total Volume	8	635	1	0	644	54	7	22	0	83	5	690	102	0	797	3	4	4	0	11	1535
% App. Total	1.2	98.6	0.2	0		65.1	8.4	26.5	0		0.6	86.6	12.8	0		27.3	36.4	36.4	0		
PHF	.500	.962	.250	.000	.970	.964	.438	.611	.000	.798	.625	.964	.823	.000	.953	.750	.333	1.00	.000	.550	.969

Branch ENGINEERING
civil • transportation
structural • geotechnical
SURVEYING
310 5th Street
Springfield, OR 97477
p: 541.746.8637
f: 541.746.0389
www.BranchEngineering.com
Springfield OR | Salem OR

File Name : FLRNC Oak @ 43rd
Site Code : Flrnc
Start Date : 6/17/2015
Page No : 1

Groups Printed- Unshifted

	OAK ST SOUTHBOUND					43RD ST. WESTBOUND					OAK ST NORTHBOUND					SANDPINES Gated Dwy. EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	3	15	0	0	18	2	0	1	0	3	0	24	4	0	28	0	0	0	0	0	49
03:15 PM	2	28	0	0	30	1	0	1	2	4	0	13	0	0	13	0	0	0	0	0	47
03:30 PM	0	17	0	0	17	0	0	0	0	0	0	15	1	0	16	0	0	0	0	0	33
03:45 PM	1	14	0	0	15	1	0	1	0	2	0	10	1	0	11	0	0	0	0	0	28
Total	6	74	0	0	80	4	0	3	2	9	0	62	6	0	68	0	0	0	0	0	157
04:00 PM	0	17	0	0	17	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	26
04:15 PM	0	13	0	0	13	2	0	3	0	5	0	14	3	0	17	0	0	0	0	0	35
04:30 PM	0	16	0	0	16	1	0	1	0	2	0	17	1	0	18	0	0	0	0	0	36
04:45 PM	0	15	0	0	15	2	0	1	0	3	0	14	2	0	16	0	0	0	0	0	34
Total	0	61	0	0	61	6	0	5	0	11	0	53	6	0	59	0	0	0	0	0	131
05:00 PM	1	19	0	0	20	2	0	2	0	4	0	13	3	0	16	0	0	0	0	0	40
05:15 PM	0	13	0	0	13	2	0	0	4	6	0	16	1	0	17	0	0	0	0	0	36
05:30 PM	0	12	0	1	13	1	0	0	4	5	0	7	1	0	8	0	0	0	2	2	28
05:45 PM	0	14	0	0	14	2	0	0	0	2	0	8	3	0	11	0	0	0	0	0	27
Total	1	58	0	1	60	7	0	2	8	17	0	44	8	0	52	0	0	0	2	2	131
Grand Total	7	193	0	1	201	17	0	10	10	37	0	159	20	0	179	0	0	0	2	2	419
Apprch %	3.5	96	0	0.5		45.9	0	27	27		0	88.8	11.2	0		0	0	0	100		
Total %	1.7	46.1	0	0.2	48	4.1	0	2.4	2.4	8.8	0	37.9	4.8	0	42.7	0	0	0	0.5	0.5	

	OAK ST SOUTHBOUND					43RD ST. WESTBOUND					OAK ST NORTHBOUND					SANDPINES Gated Dwy. EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	**3**	15	0	0	18	**2**	0	**1**	0	3	0	**24**	**4**	0	**28**	0	0	0	0	0	**49**
03:15 PM	2	**28**	0	0	**30**	1	0	1	**2**	**4**	0	13	0	0	13	0	0	0	0	0	47
03:30 PM	0	17	0	0	17	0	0	0	0	0	0	15	1	0	16	0	0	0	0	0	33
03:45 PM	1	14	0	0	15	1	0	1	0	2	0	10	1	0	11	0	0	0	0	0	28
Total Volume	6	74	0	0	80	4	0	3	2	9	0	62	6	0	68	0	0	0	0	0	157
% App. Total	7.5	92.5	0	0		44.4	0	33.3	22.2		0	91.2	8.8	0		0	0	0	0		
PHF	.500	.661	.000	.000	.667	.500	.000	.750	.250	.563	.000	.646	.375	.000	.607	.000	.000	.000	.000	.000	.801

Branch ENGINEERING Inc
Since 1977
civil • transportation
structural • geotechnical
SURVEYING
310 5th Street
Springfield, OR 97477
p: 541.746.0637
f: 541.746.0389
www.BranchEngineering.com
Springfield OR | Salem OR

File Name : FLRNC Hwy 101@35th
Site Code : Flrnc
Start Date : 6/16/2015
Page No : 1

Groups Printed- Unshifted

	HWY 101 SOUTHBOUND					35TH ST WESTBOUND					HWY 101 NORTHBOUND					35TH ST EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	7	156	10	0	173	11	11	16	0	38	17	155	7	0	179	22	13	25	1	61	451
03:15 PM	5	166	11	0	182	12	3	9	1	25	24	151	5	0	180	16	4	19	0	39	426
03:30 PM	6	139	10	0	155	7	8	8	0	23	24	174	2	1	201	18	6	22	0	46	425
03:45 PM	6	136	18	0	160	3	4	9	0	16	16	122	7	0	145	23	7	24	0	54	375
Total	24	597	49	0	670	33	26	42	1	102	81	602	21	1	705	79	30	90	1	200	1677
04:00 PM	5	125	5	1	136	6	5	8	0	19	21	170	4	2	197	20	5	17	1	43	395
04:15 PM	8	137	9	2	156	7	7	11	1	26	18	166	6	1	191	15	3	22	2	42	415
04:30 PM	5	152	9	0	166	4	5	10	0	19	26	150	4	0	180	20	6	31	0	57	422
04:45 PM	2	145	15	1	163	4	5	6	0	15	22	143	6	0	171	16	2	19	0	37	386
Total	20	559	38	4	621	21	22	35	1	79	87	629	20	3	739	71	16	89	3	179	1618
05:00 PM	6	153	13	0	172	11	10	4	1	26	24	149	6	0	179	20	6	15	2	43	420
05:15 PM	1	105	6	0	112	3	4	5	0	12	22	145	10	0	177	18	6	22	0	46	347
05:30 PM	7	123	9	0	139	3	8	10	0	21	20	138	8	0	166	10	6	18	0	34	360
05:45 PM	4	150	16	0	170	5	6	3	0	14	13	113	3	0	129	14	3	13	0	30	343
Total	18	531	44	0	593	22	28	22	1	73	79	545	27	0	651	62	21	68	2	153	1470
Grand Total	62	1687	131	4	1884	76	76	99	3	254	247	1776	68	4	2095	212	67	247	6	532	4765
Apprch %	3.3	89.5	7	0.2		29.9	29.9	39	1.2		11.8	84.8	3.2	0.2		39.8	12.6	46.4	1.1		
Total %	1.3	35.4	2.7	0.1	39.5	1.6	1.6	2.1	0.1	5.3	5.2	37.3	1.4	0.1	44	4.4	1.4	5.2	0.1	11.2	

	HWY 101 SOUTHBOUND					35TH ST WESTBOUND					HWY 101 NORTHBOUND					35TH ST EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	**7**	156	10	0	173	11	**11**	**16**	0	**38**	17	155	**7**	0	179	22	**13**	**25**	**1**	**61**	**451**
03:15 PM	5	**166**	11	0	**182**	**12**	3	9	**1**	25	**24**	151	5	0	180	16	4	19	0	39	426
03:30 PM	6	139	10	0	155	7	8	8	0	23	24	**174**	2	**1**	**201**	18	6	22	0	46	425
03:45 PM	6	136	**18**	0	160	3	4	9	0	16	16	122	7	0	145	**23**	7	24	0	54	375
Total Volume	24	597	49	0	670	33	26	42	1	102	81	602	21	1	705	79	30	90	1	200	1677
% App. Total	3.6	89.1	7.3	0		32.4	25.5	41.2	1		11.5	85.4	3	0.1		39.5	15	45	0.5		
PHF	.857	.899	.681	.000	.920	.688	.591	.656	.250	.671	.844	.865	.750	.250	.877	.859	.577	.900	.250	.820	.930

Branch ENGINEERING Inc.
Since 1997
civil • transportation
structural • geotechnical
SURVEYING
310 5th Street
Springfield, OR 97477
p: 541.746.0637
f: 541.746.0389
www.BranchEngineering.com
Springfield OR | Salem OR

File Name : FLRNC Oak @ 35th
Site Code : Flrnc
Start Date : 6/17/2015
Page No : 1

Groups Printed- Unshifted

	OAK ST SOUTHBOUND					35TH ST WESTBOUND					OAK ST NORTHBOUND					35TH ST EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	3	3	12	0	18	0	29	4	0	33	1	6	4	0	11	17	27	2	0	46	108
03:15 PM	5	3	21	1	30	1	34	2	1	38	3	1	3	0	7	13	28	2	0	43	118
03:30 PM	3	1	16	0	20	2	31	1	1	35	4	6	1	0	11	10	28	3	0	41	107
03:45 PM	3	5	7	0	15	1	22	1	0	24	0	5	3	0	8	10	36	3	0	49	96
Total	14	12	56	1	83	4	116	8	2	130	8	18	11	0	37	50	119	10	0	179	429
04:00 PM	1	6	11	0	18	0	41	1	0	42	6	6	5	0	17	5	39	4	0	48	125
04:15 PM	1	3	8	0	12	2	42	3	0	47	5	5	3	0	13	9	38	4	0	51	123
04:30 PM	1	3	19	0	23	2	36	0	0	38	6	5	4	2	17	13	28	3	0	44	122
04:45 PM	4	5	13	0	22	2	36	2	0	40	4	1	1	0	6	18	48	6	0	72	140
Total	7	17	51	0	75	6	155	6	0	167	21	17	13	2	53	45	153	17	0	215	510
05:00 PM	2	3	20	0	25	1	44	0	0	45	4	5	4	0	13	10	29	3	0	42	125
05:15 PM	0	2	12	0	14	0	33	2	0	35	1	8	1	0	10	11	39	1	0	51	110
05:30 PM	1	0	11	0	12	0	24	1	0	25	6	3	2	0	11	6	26	2	0	34	82
05:45 PM	3	2	13	0	18	0	26	3	0	29	4	5	1	0	10	8	25	3	0	36	93
Total	6	7	56	0	69	1	127	6	0	134	15	21	8	0	44	35	119	9	0	163	410
Grand Total	27	36	163	1	227	11	398	20	2	431	44	56	32	2	134	130	391	36	0	557	1349
Apprch %	11.9	15.9	71.8	0.4		2.6	92.3	4.6	0.5		32.8	41.8	23.9	1.5		23.3	70.2	6.5	0		
Total %	2	2.7	12.1	0.1	16.8	0.8	29.5	1.5	0.1	31.9	3.3	4.2	2.4	0.1	9.9	9.6	29	2.7	0	41.3	

	OAK ST SOUTHBOUND					35TH ST WESTBOUND					OAK ST NORTHBOUND					35TH ST EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	1	**6**	11	0	18	0	41	1	0	42	**6**	**6**	**5**	0	**17**	5	39	4	0	48	125
04:15 PM	1	3	8	0	12	**2**	**42**	**3**	0	**47**	5	5	3	0	13	9	38	4	0	51	123
04:30 PM	1	3	**19**	0	**23**	2	36	0	0	38	6	5	4	**2**	17	13	28	3	0	44	122
04:45 PM	**4**	5	13	0	22	2	36	2	0	40	4	1	1	0	6	**18**	**48**	**6**	0	**72**	**140**
Total Volume	7	17	51	0	75	6	155	6	0	167	21	17	13	2	53	45	153	17	0	215	510
% App. Total	9.3	22.7	68	0		3.6	92.8	3.6	0		39.6	32.1	24.5	3.8		20.9	71.2	7.9	0		
PHF	.438	.708	.671	.000	.815	.750	.923	.500	.000	.888	.875	.708	.650	.250	.779	.625	.797	.708	.000	.747	.911

Milepoint	2011 AADT All Vehicles		Location Description
			OREGON COAST HIGHWAY NO. 9 (Continued)
140.91	*18000*		0.02 mile north of Abbey Street
140.95	*16700*		0.02 mile south of Abbey Street
141.37	*16500*		0.02 mile south of S.W. Waterline Drive
142.16	*14900*		0.05 mile south of S.E. Pacific Way
142.28	*12800*		0.06 mile north of Ferry Slip Road
142.45	*12200*		0.05 mile south of Ferry Slip Road
144.40	*5000*		0.10 mile south of Airport Road
145.74	*8900*		0.10 mile south of S.E. 98th Street
146.46	*8900*		South city limits of Newport, 0.04 mile north of S.E. 116th Street
148.98	*8000*		0.02 mile south of Beaver Creek Road
154.05	*8000*		0.02 mile south of Legion Road
155.07	*9200*		0.02 mile south of Bayview Road
155.92	*8400*		0.02 mile south of Alsea Highway (OR34)
156.36	*7300*		South city limits of Waldport
157.24	*5800*		On Patterson Creek Bridge
158.99	*6200*		0.02 mile south of Wakonda Beach Road
162.24	*5600*		On Vingie Creek Bridge
163.41	*5900*		North city limits of Yachats
164.10	*6000*		0.02 mile north of 7th Street
164.45	*5500*		0.01 mile northwest of Yachats River Road
164.48	*4600*		0.02 mile southeast of Yachats River Road
165.48	*3800*		South city limits of Yachats
167.61	*3500*		Lincoln-Lane County Line
171.40	*3600*		0.02 mile south of Tenmile Creek Road
174.40	*3700*		On Rock Creek Bridge
178.36	*3700*		0.20 mile south of entrance to Devils Elbow State Park
184.78	*4800*		On Sutton Creek Bridge
186.46	*6200*	*	Florence Automatic Traffic Recorder, Sta. 20-026, 0.77 mile north of Heceta Beach Road
187.58	*8800*		0.18 mile north of Munsel Lake Road
187.79	*9200*		0.03 mile south of Munsel Lake Road
188.64	*13200*		0.02 mile south of 36th Street
189.05	*14600*		0.02 mile south of 29th Street
189.46	*16100*		0.02 mile south of 22nd Street
189.75	*17000*		0.02 mile south of 17th Street
189.99	*16700*		0.02 mile south of 13th Street
190.14	*14700*		0.02 mile north of connection to Florence-Eugene Highway (OR126/10th Street)
190.25	*13600*		0.01 mile south of Florence-Eugene Highway (OR126/9th Street)
190.51	*13200*		0.02 mile north of Rhododendron Drive
190.55	*13600*		0.02 mile south of Rhododendron Drive
190.65	*11100*		0.02 mile south of Maple Street
190.74	*10900*		0.02 mile south of 2nd Street
190.98	*10300*		South city limits of Florence
191.37	*9400*		0.02 mile south of Glenada Road
193.45	*7700*		0.02 mile north of entrance to Honeyman State Park and Cleawox Lake
193.51	*5700*		0.04 mile south of entrance to Honeyman State Park and Cleawox Lake
196.00	*4600*		0.02 mile south of Clear Lake Road
196.73	*4000*		0.02 mile south of Pacific Avenue
198.58	*4000*		Lane-Douglas County Line
202.72	*4600*		On Tahkenitch Creek Bridge
209.06	*4400*		0.10 mile north of Old Highway 101
209.48	*4600*		0.02 mile north of Spring Street
209.51	*4600*		0.01 mile south of Spring Street

2012
TRAFFIC VOLUMES ON STATE HIGHWAYS

Milepoint	2012 AADT All Vehicles	ATR AVC	Location Description
			OREGON COAST HIGHWAY NO. 9 (Continued)
140.40	*19600*		0.04 mile south of Corvallis-Newport Highway (US20)
140.54	*18000*		0.02 mile southwest of Angle Street
140.64	*18100*		0.02 mile northeast of Hurbert Street
140.68	*17800*		0.02 mile southwest of Hurbert Street
140.91	*18800*		0.02 mile north of Abbey Street
140.95	*17700*		0.02 mile south of Abbey Street
141.37	*17300*		0.02 mile south of S.W. Waterline Drive
142.16	*14500*		0.05 mile south of S.E. Pacific Way
142.28	*13200*		0.06 mile north of Ferry Slip Road
142.45	*12600*		0.05 mile south of Ferry Slip Road
144.40	*9800*		0.10 mile south of Airport Road
145.74	*9100*		0.10 mile south of S.E. 98th Street
146.46	*9300*		South city limits of Newport, 0.04 mile north of S.E. 116th Street
148.98	*9600*		0.02 mile south of Beaver Creek Road
154.05	*9400*		0.02 mile south of Legion Road
155.07	*9900*		0.02 mile south of Bayview Road
155.92	*9500*		0.02 mile south of Alsea Highway (OR34)
156.36	*8100*		South city limits of Waldport
157.24	*6900*		On Patterson Creek Bridge
158.99	*6100*		0.02 mile south of Wakonda Beach Road
162.24	*5200*		On Vingie Creek Bridge
163.41	*5500*		North city limits of Yachats
164.10	*5500*		0.02 mile north of 7th Street
164.45	*4500*		0.01 mile northwest of Yachats River Road
164.48	*4300*		0.02 mile southeast of Yachats River Road
165.48	*3500*		South city limits of Yachats
167.61	*2900*		Lincoln-Lane County Line
171.40	*3100*		0.02 mile south of Tenmile Creek Road
174.40	*3100*		On Rock Creek Bridge
178.36	*3400*		0.20 mile south of entrance to Devils Elbow State Park
184.78	*4500*		On Sutton Creek Bridge
186.46	*6100*	*	Florence Automatic Traffic Recorder, Sta. 20-026, 0.77 mile north of Heceta Beach Road
187.58	*8700*		0.18 mile north of Munsel Lake Road
187.79	*9400*		0.03 mile south of Munsel Lake Road
188.64	*13300*		0.02 mile south of 36th Street
189.05	*14900*		0.02 mile south of 29th Street
189.46	*16400*		0.02 mile south of 22nd Street
189.75	*17100*		0.02 mile south of 17th Street
189.99	*17100*		0.02 mile south of 13th Street
190.14	*16500*		0.02 mile north of connection to Florence-Eugene Highway (OR126/10th Street)
190.25	*15600*		0.01 mile south of Florence-Eugene Highway (OR126/9th Street)
190.51	*14100*		0.02 mile north of Rhododendron Drive
190.55	*13700*		0.02 mile south of Rhododendron Drive
190.65	*11200*		0.02 mile south of Maple Street
190.74	*11200*		0.02 mile south of 2nd Street
190.98	*10800*		South city limits of Florence
191.37	*9900*		0.02 mile south of Glenada Road
193.45	*8200*		0.02 mile north of entrance to Honeyman State Park and Cleawox Lake
193.51	*6200*		0.04 mile south of entrance to Honeyman State Park and Cleawox Lake

2013 TRAFFIC VOLUMES ON STATE HIGHWAYS

Milepoint	2013 AADT All Vehicles	ATR AVC	Location Description
			OREGON COAST HIGHWAY NO. 9 (Continued)
127.16	*9100*		0.30 mile north of Collins Street
128.57	*8000*		0.39 mile north of S.W. Oceana Street
132.43	*7600*		0.02 mile north of Otter Rock Highway
136.53	*8800*		North city limits of Newport, 0.02 mile north of Iron Mountain Beach Road (N.E. 73rd. Street)
137.29	*13900*		0.03 mile north of N.E. 58th Street
138.48	*16900*		0.10 mile south of N.W. Ocean View Drive
139.11	*17400*	*	North Newport Automatic Traffic Recorder, Sta. 21-009, At 25th Street, in Newport
139.56	*24800*		0.02 mile south of N.W. 15th Street
140.07	*22800*		0.02 mile north of N.E. 6th Street
140.14	*23700*		0.05 mile south of N.E. 6th Street
140.26	*23700*		0.01 mile south of N.E. 3rd Street
140.34	*22400*		0.02 mile north of Corvallis-Newport Highway (US20)
140.40	*19600*		0.04 mile south of Corvallis-Newport Highway (US20)
140.54	*17900*		0.02 mile southwest of Angle Street
140.64	*18100*		0.02 mile northeast of Hurbert Street
140.68	*17700*		0.02 mile southwest of Hurbert Street
140.91	*18800*		0.02 mile north of Abbey Street
140.95	*17700*		0.02 mile south of Abbey Street
141.37	*17300*		0.02 mile south of S.W. Waterline Drive
142.16	*14400*		0.05 mile south of S.E. Pacific Way
142.28	*13200*		0.06 mile north of Ferry Slip Road
142.45	*12600*		0.05 mile south of Ferry Slip Road
144.40	*9800*		0.10 mile south of Airport Road
145.74	*9100*		0.10 mile south of S.E. 98th Street
146.46	*9300*		South city limits of Newport, 0.04 mile north of S.E. 116th Street
148.98	*9600*		0.02 mile south of Beaver Creek Road
154.05	*9400*		0.02 mile south of Legion Road
155.07	*9800*		0.02 mile south of Bayview Road
155.92	*9700*		0.02 mile south of Alsea Highway (OR34)
156.36	*8200*		South city limits of Waldport
157.24	*7000*		On Patterson Creek Bridge
158.99	*6200*		0.02 mile south of Wakonda Beach Road
162.24	*5300*		On Vingie Creek Bridge
163.41	*5600*		North city limits of Yachats
164.10	*5600*		0.02 mile north of 7th Street
164.45	*4600*		0.01 mile northwest of Yachats River Road
164.48	*4400*		0.02 mile southeast of Yachats River Road
165.48	*3600*		South city limits of Yachats
167.61	*2900*		Lincoln-Lane County Line
171.40	*3200*		0.02 mile south of Tenmile Creek Road
174.40	*3200*		On Rock Creek Bridge
178.36	*3500*		0.20 mile south of entrance to Devils Elbow State Park
184.78	*4600*		On Sutton Creek Bridge
186.46	*6200*	*	Florence Automatic Traffic Recorder, Sta. 20-026, 0.77 mile north of Heceta Beach Road
187.58	*8900*		0.18 mile north of Munsel Lake Road
187.79	*9600*		0.03 mile south of Munsel Lake Road
188.64	*13500*		0.02 mile south of 36th Street
189.05	*15100*		0.02 mile south of 29th Street

APPENDIX C

SEASONAL ADJUSTMENT FACTOR CALCULATIONS

ASONAL TREND TABLE (Printed: 9/18/14)

TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Peak Period Seasonal Factor
INTERSTATE URBANIZED	1.0548	1.0560	1.0260	0.9959	0.9820	0.9681	0.9578	0.9474	0.9532	0.9590	0.9381	0.9173	0.9176	0.9179	0.9148	0.9116	0.9308	0.9499	0.9523	0.9546	0.9708	0.9870	1.0091	1.0312	0.9116
INTERSTATE NONURBANIZED	1.2721	1.3532	1.2954	1.2376	1.1703	1.1030	1.0858	1.0686	1.0324	0.9961	0.9501	0.9041	0.8703	0.8366	0.8385	0.8403	0.8886	0.9369	0.9851	1.0333	1.0542	1.0751	1.1530	1.2309	0.8366
COMMUTER	1.0672	1.0591	1.0228	0.9866	0.9783	0.9701	0.9497	0.9292	0.9306	0.9320	0.9202	0.9084	0.9083	0.9082	0.9041	0.9001	0.9136	0.9271	0.9251	0.9231	0.9465	0.9699	1.0012	1.0325	0.9001
COASTAL DESTINATION	1.2053	1.2202	1.1868	1.1533	1.1125	1.0718	1.0677	1.0636	1.0581	1.0526	1.0109	0.9692	0.8989	0.8285	0.8289	0.8292	0.8788	0.9283	0.9863	1.0443	1.0951	1.1459	1.1884	1.2310	0.8285
COASTAL DESTINATION ROUTE	1.4151	1.4667	1.3738	1.2808	1.1890	1.0973	1.1018	1.1063	1.0454	0.9845	0.9301	0.8757	0.7870	0.6983	0.6932	0.6881	0.7842	0.8804	0.9570	1.0336	1.1248	1.2160	1.3121	1.4081	0.6881
AGRICULTURE	1.4260	1.4779	1.3827	1.2876	1.2224	1.1573	1.1035	1.0498	0.9889	0.9281	0.8947	0.8613	0.8422	0.8230	0.8159	0.8088	0.8055	0.8021	0.8574	0.9127	1.0131	1.1135	1.2487	1.3838	0.8021
RECREATIONAL SUMMER	1.7073	1.7826	1.6613	1.5399	1.4173	1.2946	1.2512	1.2079	1.0731	0.9384	0.8593	0.7801	0.7200	0.6600	0.6684	0.6769	0.7392	0.8015	0.8945	0.9875	1.1300	1.2725	1.4174	1.5623	0.6600
RECREATIONAL SUMMER WINTER	0.9109	0.9127	0.9411	0.9694	1.0029	1.0365	1.1568	1.2772	1.2402	1.2032	1.0645	0.9257	0.8052	0.6848	0.7057	0.7266	0.8793	1.0320	1.1571	1.2822	1.3853	1.4883	1.3013	1.1142	0.6848
RECREATIONAL WINTER	0.6013	0.5628	0.5964	0.6300	0.7116	0.7932	0.9908	1.1883	1.4630	1.7377	1.4552	1.1726	1.0219	0.8713	0.9163	0.9614	1.0794	1.1974	1.3376	1.4778	1.8326	2.1874	1.6217	1.0560	0.5628
SUMMER	1.2124	1.2343	1.1921	1.1498	1.1112	1.0727	1.0434	1.0142	0.9899	0.9656	0.9313	0.8970	0.8673	0.8376	0.8434	0.8492	0.8845	0.9198	0.9513	0.9827	1.0206	1.0585	1.1110	1.1635	0.8376
SUMMER < 2500	1.2894	1.2971	1.2324	1.1676	1.1234	1.0792	1.0362	0.9932	0.9577	0.9222	0.8936	0.8650	0.8369	0.8089	0.8201	0.8314	0.8422	0.8530	0.8999	0.9468	1.0032	1.0595	1.1417	1.2238	0.8089

*Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.
*Grey shading indicates months were seasonal factor is greater than 30%
*Seasonal Trend Table factors are based on previous year ATR data and the table is updated yearly.

ATR Characteristic table: Recreational Summer Trend Peak Season= 0.6600

Recreational Summer

Highway 101 Count Date

	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul
Count Date	0.7801	0.776344	0.772588	0.768831	0.765075	0.76131875	0.757563	0.753806	0.75005	0.746294	0.742538	0.738781	0.735025	0.731269	0.727513	0.723756	0.72
Days Since Table Value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seasonal Factor	1.182051	1.176359	1.170668	1.164976	1.159284	1.153592706	1.147901	1.142209	1.136518	1.130826	1.125134	1.119443	1.113751	1.108059	1.102368	1.096676	1.090984

ATR CHARACTERISTIC TABLE (Printed: 09/18/14)										
SEASONAL TRAFFIC TREND	AREA TYPE	# OF LANES	WEEKLY TRAFFIC TREND	AADT	OHP CLASSIFICATION	ATR	COUNTY	HIGHWAY ROUTE, NAME, & LOCATION	MP	STATE HWY NUMBER
RECREATIONAL SUMMER	RURAL	2	WEEKEND	6200	STATEWIDE HWY	20-026	LANE	US101, OREGON COAST HIGHWAY, 0.77 MILE NORTH OF HECETA BEACH ROAD	186.46	9

APPENDIX D

ODOT CRASH DATA

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

43rd Street & US 101 Oregon Coast Highway (Hwy 101)
January 1, 2011 through December 31, 2013

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2013														
TURNING MOVEMENTS	1	1	0	2	1	1	0	2	0	2	0	2	0	0
2013 TOTAL	1	1	0	2	1	1	0	2	0	2	0	2	0	0
FINAL TOTAL	1	1	0	2	1	1	0	2	0	2	0	2	0	0

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

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

009 OREGON COAST

35th Street & US 101 Oregon Coast Highway (Hwy 101)
January 1, 2011 through December 31, 2013

SER# INVEST	S P E D E A U C O L G H R S L K W	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# FC COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
04112	N N N	12/28/2011	LANE	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NO RPT		Wed	FLORENCE	0 0	OREGON COAST HY	N		TRF SIGNAL	N	WET	REAR		PRVTE	N S									000	00
		5P	FLORENCE UA	188.68	35TH ST	06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR>25		016,026	000	07
															02	PSNG	INJB	16	F			000	000	00
												02	NONE 0	STOP										
													PRVTE	N S									011	00
													PSNGR CAR		01	DRVR	INJC	28	M	OR-Y OR<25		000	000	00
02084	N N N	07/12/2012	LANE	1 14		INTER	CROSS	N	N	CLR	O-1TURN	01	NONE 0	STRGHT										02
NO RPT		Thu	FLORENCE	0 0	OREGON COAST HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N S									000	00
		2P	FLORENCE UA	188.68	35TH ST	01	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJA	60	M	OR-Y OR>25		000	000	00
												02	NONE 0	TURN-L										
													PUBLC	S W									000	00
													PSNGR CAR		01	DRVR	NONE	63	M	OR-Y OR>25		004,028	000	02

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

35th Street & US 101 Oregon Coast Highway (Hwy 101)
January 1, 2011 through December 31, 2013

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2012														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2012 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2011														
REAR-END	0	1	0	1	0	2	0	0	1	0	1	1	0	0
2011 TOTAL	0	1	0	1	0	2	0	0	1	0	1	1	0	0
FINAL TOTAL	0	2	0	2	0	3	0	1	1	1	1	2	0	0

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

009 OREGON COAST

35th Street & US 101 Oregon Coast Highway (Hwy 101)
January 1, 2011 through December 31, 2013

SER# INVEST	S P E D E A U C O L G H R C S L K	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# FC COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
04112	N N N	12/28/2011	LANE	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NO RPT		Wed	FLORENCE	0 0	OREGON COAST HY	N		TRF SIGNAL	N	WET	REAR		PRVTE	N S									000	00
		5P	FLORENCE UA	188.68	35TH ST	06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR>25		016,026	000	07
															02	PSNG	INJB	16	F			000	000	00
												02	NONE 0	STOP										
													PRVTE	N S									011	00
													PSNGR CAR		01	DRVR	INJC	28	M	OR-Y OR<25		000	000	00
02084	N N N	07/12/2012	LANE	1 14		INTER	CROSS	N	N	CLR	O-1TURN	01	NONE 0	STRGHT										02
NO RPT		Thu	FLORENCE	0 0	OREGON COAST HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N S									000	00
		2P	FLORENCE UA	188.68	35TH ST	01	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJA	60	M	OR-Y OR>25		000	000	00
												02	NONE 0	TURN-L										
													PUBLC	S W									000	00
													PSNGR CAR		01	DRVR	NONE	63	M	OR-Y OR>25		004,028	000	02

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

Oak Street & 35th Street
January 1, 2011 through December 31, 2013

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

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

CITY OF FLORENCE, LANE COUNTY

Oak Street & 35th Street

January 1, 2011 through December 31, 2013

SER# / INVEST	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRWWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01512	N	N	N	N	N	05/20/2013	17	OAK ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NO RPT						Mon	0	35TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	E W											00
						11A			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	63	F	OR-Y		000	000	000	00
																								OR<25				
															02	NONE 0	STRGHT										015	00
																PRVTE	N S											
																PSNGR CAR		01	DRVR	NONE	26	F	OR-Y		028	000		02
																								OR<25				

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO.
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NOT VISIBLE: DARK / NON-REFLECTIVE CLOTHING
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1TURN	FROM OPPOSITE DIRECTION - ONE TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAYON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHI(
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

APPENDIX E

ITE TRIP GENERATION DATA

Land Use: 210
Single-Family Detached Housing

Description

Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.

Additional Data

The number of vehicles and residents had a high correlation with average weekday vehicle trip ends. The use of these variables was limited, however, because the number of vehicles and residents was often difficult to obtain or predict. The number of dwelling units was generally used as the independent variable of choice because it was usually readily available, easy to project and had a high correlation with average weekday vehicle trip ends.

This land use included data from a wide variety of units with different sizes, price ranges, locations and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Single-family detached units had the highest trip generation rate per dwelling unit of all residential uses because they were the largest units in size and had more residents and more vehicles per unit than other residential land uses; they were generally located farther away from shopping centers, employment areas and other trip attractors than other residential land uses; and they generally had fewer alternative modes of transportation available because they were typically not as concentrated as other residential land uses.

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

The sites were surveyed between the late 1960s and the 2000s throughout the United States and Canada.

Source Numbers

1, 4, 5, 6, 7, 8, 11, 12, 13, 14, 16, 19, 20, 21, 26, 34, 35, 36, 38, 40, 71, 72, 84, 91, 98, 100, 105, 108, 110, 114, 117, 119, 157, 167, 177, 187, 192, 207, 211, 246, 275, 283, 293, 300, 319, 320, 357, 384, 435, 550, 552, 579, 598, 601, 603, 611, 614, 637, 711, 735

Single-Family Detached Housing
(210)

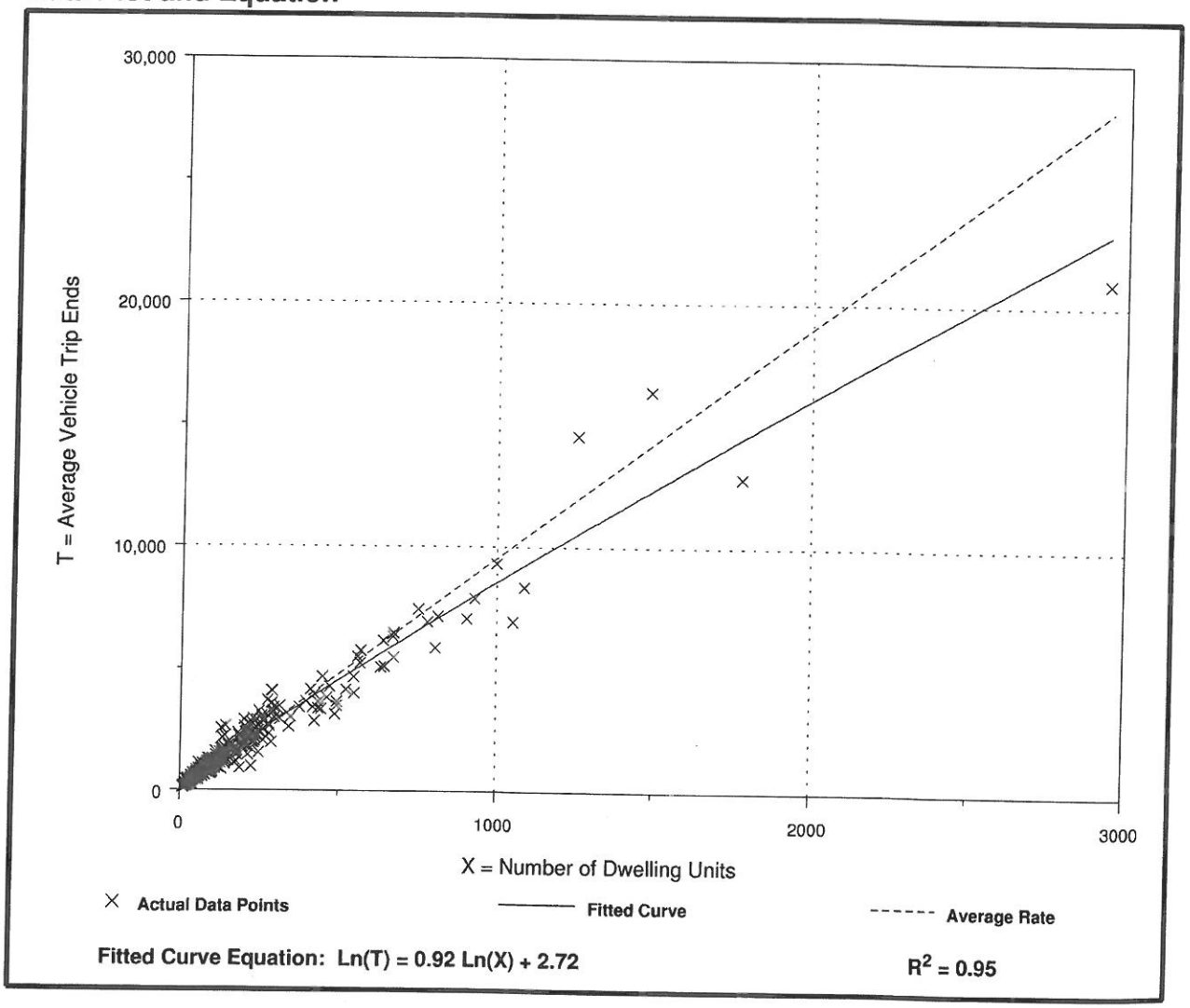
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Number of Studies: 355
Avg. Number of Dwelling Units: 198
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.52	4.31 - 21.85	3.70

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.72

R^2 = 0.95

Single-Family Detached Housing
(210)

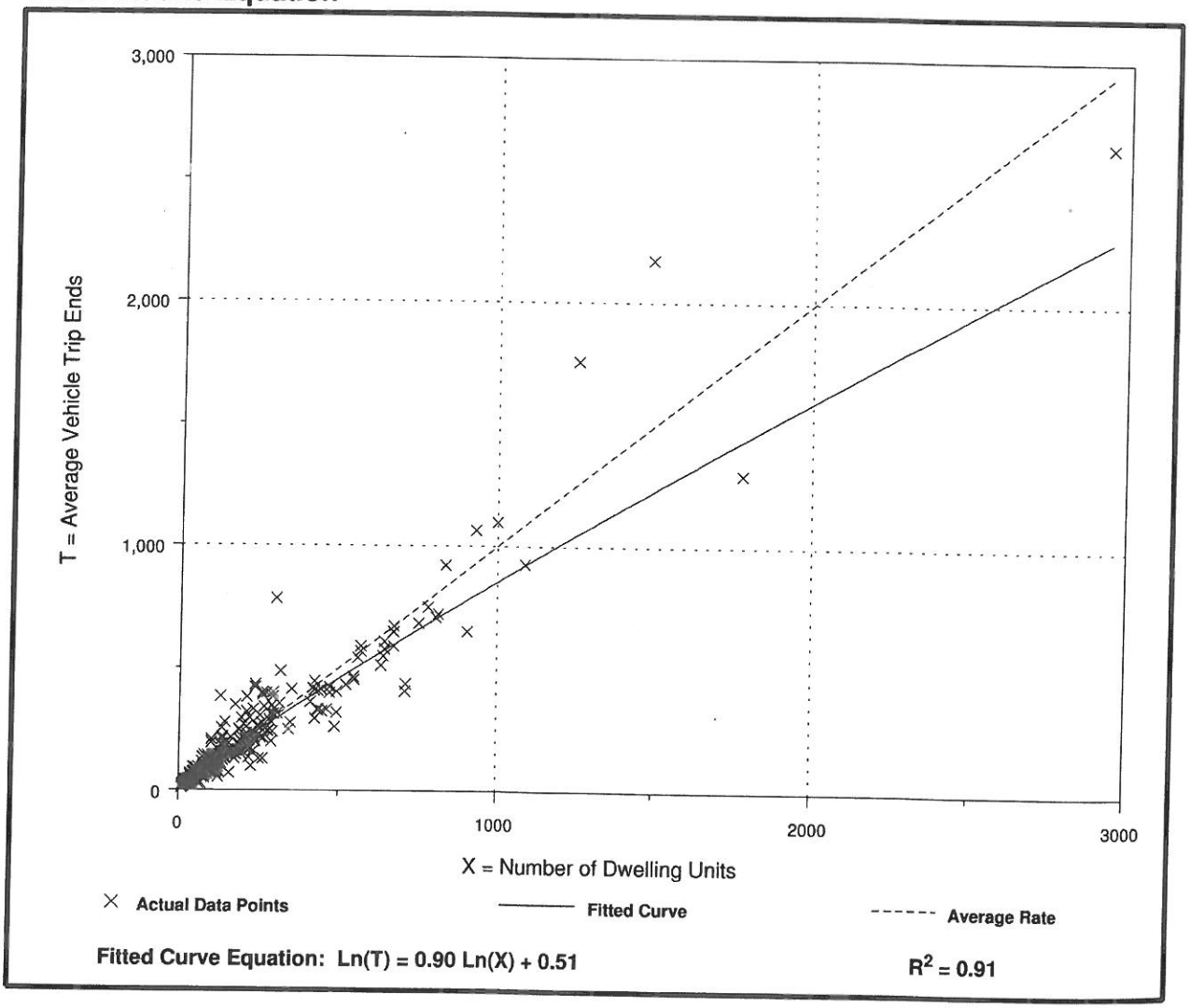
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 321
Avg. Number of Dwelling Units: 207
Directional Distribution: 63% entering, 37% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
1.00	0.42 - 2.98	1.05

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.90 Ln(X) + 0.51

R^2 = 0.91

Land Use: 270
Residential Planned Unit Development

Description

Residential planned unit developments (PUD), for the purposes of trip generation, are defined as containing any combination of residential land uses. These developments might also contain supporting services such as limited retail and recreational facilities.

Additional Data

Caution—The description of a PUD is general in nature because these developments vary by density and type of dwelling. It is therefore recommended that when information on the number and type of dwellings is known, trip generation should be calculated on the basis of the known type of dwellings rather than on the basis of Land Use 270. Data for this land use are provided as general information and would be applicable only when the number of dwellings is known.

The sites were surveyed between the late 1970s and the mid-1990s throughout the United States.

Source Numbers

6, 11, 13, 16, 26, 95, 110, 111, 119, 165, 169, 192, 193, 357

Residential Planned Unit Development
(270)

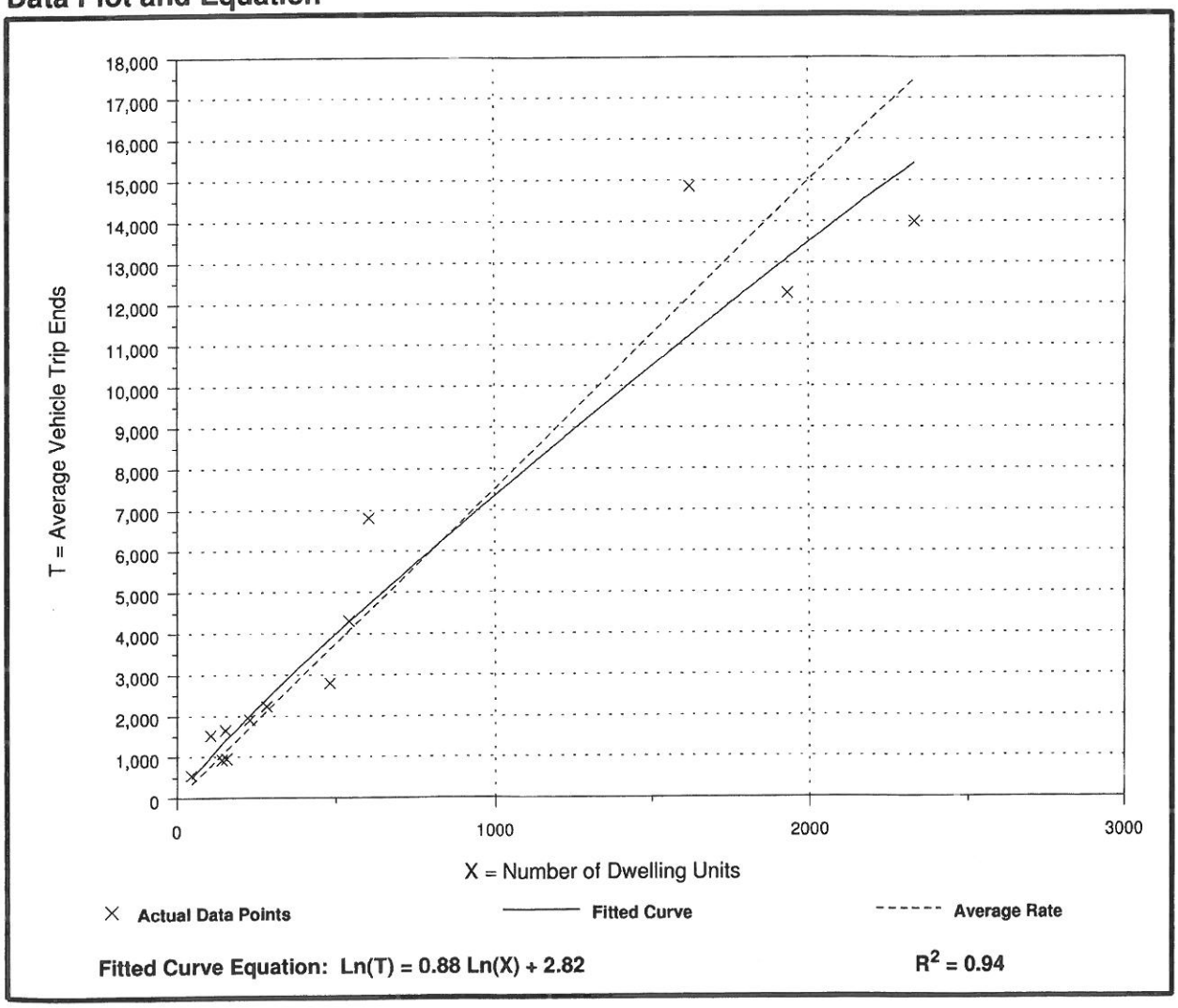
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Number of Studies: 13
Avg. Number of Dwelling Units: 664
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.50	5.79 - 14.38	3.32

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.88 Ln(X) + 2.82

R^2 = 0.94

Residential Planned Unit Development
(270)

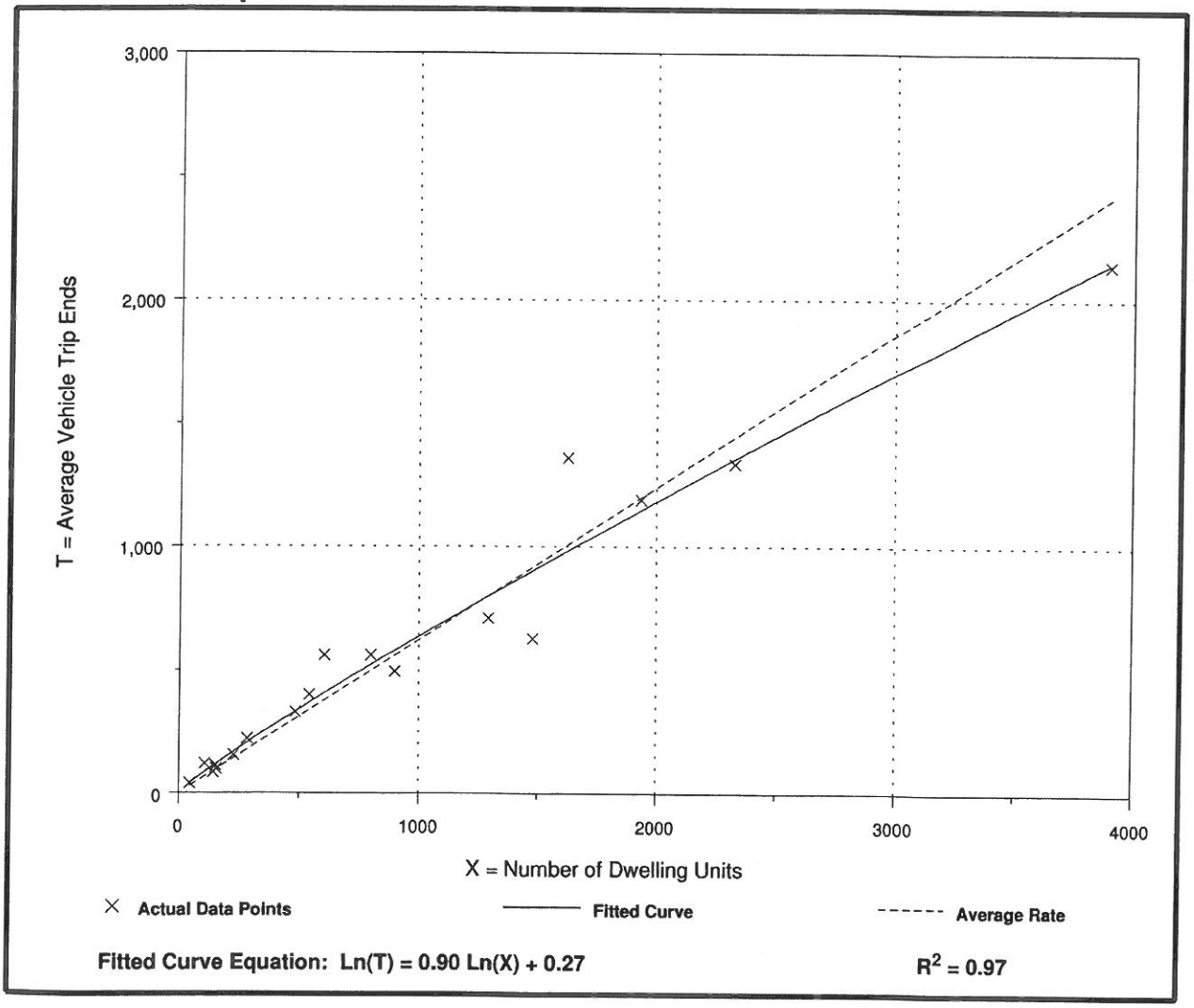
Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 18
Avg. Number of Dwelling Units: 945
Directional Distribution: 65% entering, 35% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.62	0.43 - 1.13	0.80

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.90 Ln(X) + 0.27

R^2 = 0.97

Land Use: 260
Recreational Homes

Description

Recreational homes are usually located in a resort containing local services and complete recreational facilities. These dwellings are often second homes used by the owner periodically or rented on a seasonal basis. Timeshare (Land Use 265) is a related land use.

Additional Data

A large number of internal trips were made for recreational purposes in resort communities containing recreational homes.

The sites were surveyed between the late 1970s and the mid-1980s.

Source Numbers

95, 187

Recreational Homes
(260)

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

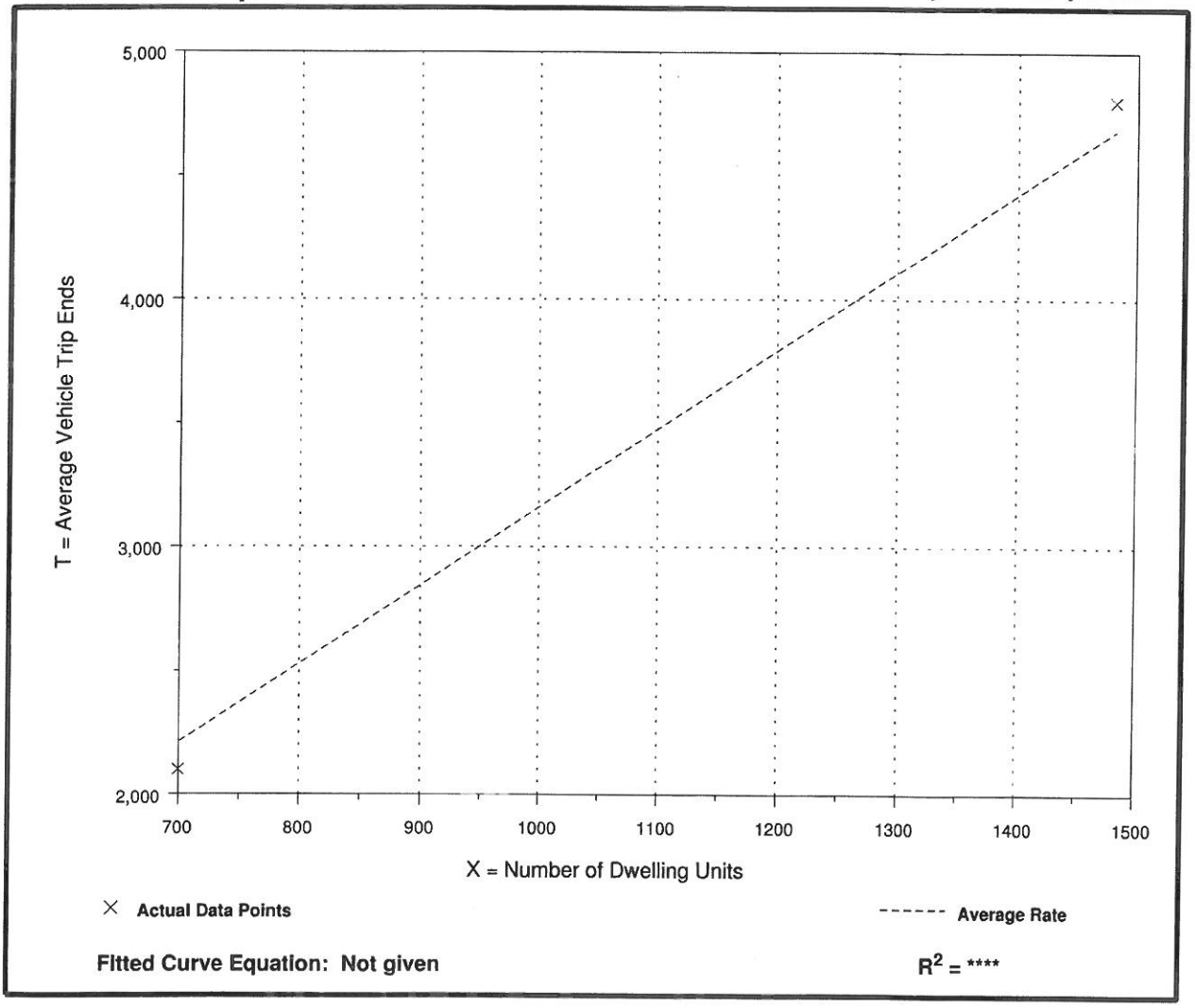
Number of Studies: 2
Avg. Number of Dwelling Units: 1,091
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
3.16	3.00 - 3.24	*

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: Not given

R^2 = ****

Recreational Homes
(260)

Average Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

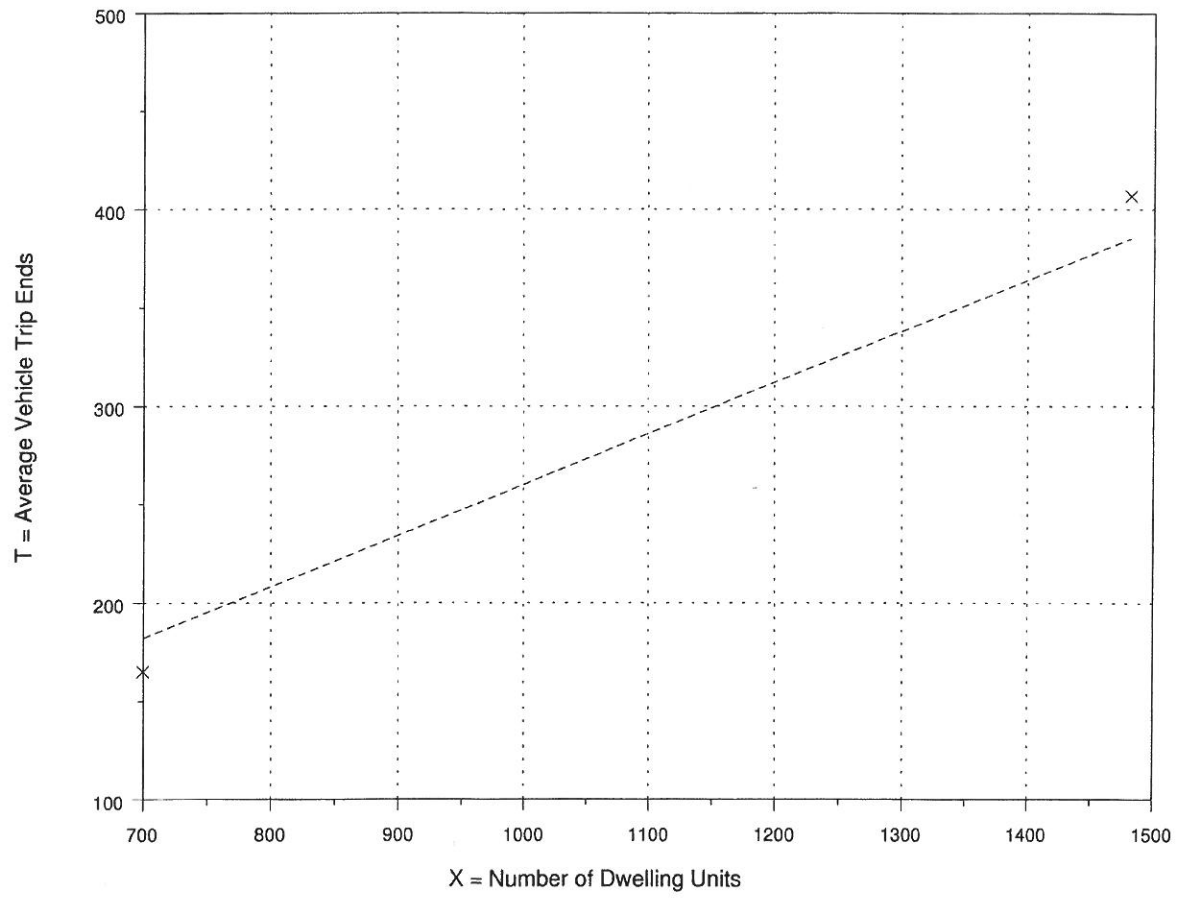
Number of Studies: 2
Avg. Number of Dwelling Units: 1,091
Directional Distribution: 41% entering, 59% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.26	0.24 - 0.27	*

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: Not given

R^2 = ****

APPENDIX F

ODOT AND CITY OF FLORENCE MOBILITY STANDARDS

City Intersections

The City of Florence plans to adopt level-of-service (LOS) or volume-to-capacity (V/C) ratio standards for signalized or unsignalized intersections as part of this TSP update and as required by the Oregon Transportation Planning Rule (TPR).

Therefore, the following proposed minimum operating standards were applied to City intersections:

- LOS "D" is considered acceptable at signalized and all-way stop controlled intersections if the V/C ratio is not higher than 1.0 for the sum of critical movements.
- LOS "E" is considered acceptable for the poorest operating approach at two-way stop intersections. LOS "F" is allowed in situations where a traffic signal is not warranted.

A summary of the performance standards at each of the study intersections under City jurisdiction is included in Table 4-5. *A description of level of service and the criteria by which they are determined is presented in Attachment "E" of Technical Memorandum #4 in Volume II of the Technical Appendix. Attachment "E" also indicates how level of service is measured and what is generally considered the acceptable range of level of service.*

Table 4-5 Performance Standards for City Intersections

Intersection	Traffic Control	Performance Standard
Rhododendron Drive/35th Street	TWSC[1]	LOS "D"
Rhododendron Drive/9th Street	TWSC	LOS "D"
Kingwood Street/15th Street	TWSC	LOS "D"
Kingwood Street/9th Street	TWSC	LOS "D"

[1] TWSC: Two-way stop-controlled (unsignalized)

The operational analysis results shown later in this report were compared with the mobility standards used by ODOT and the City to assess performance and potential areas for improvement.

Traffic Volumes

Manual turning-movement counts were conducted at 12 study intersections in late August and early September 2009. Supplemental counts were conducted at four study intersections in early August 2010. All counts were conducted on a typical summertime mid-week day and include vehicle turning movements, pedestrian movements, bicycle movements, and heavy vehicle percentages. *Attachment "F" of Technical Memorandum #4 in Volume II of the Technical Appendix contains the traffic count worksheets used in the TSP update.*

- *Evaluating the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-060); and*

- *Guiding operations decisions such as managing access and traffic control systems to maintain acceptable highway performance.*

Mobility targets for state highways, as established in this policy or as otherwise adopted by the Oregon Transportation Commission as alternative mobility targets, are considered the highway system performance standards in compliance with the TPR (OAR 660-012), including applicability for actions that fall under Section -0060 of the TPR.

Where it is infeasible or impractical to meet the mobility targets, acceptable and reliable levels of mobility for a specific facility, corridor or area will be determined through an efficient, collaborative planning process between ODOT and the local jurisdiction(s) with land use authority. The resulting mobility targets will reflect the balance between relevant objectives related to land use, economic development, social equity, and mobility and safety for all modes of transportation. Alternative mobility targets for the specific facility shall be adopted by the Oregon Transportation Commission as part of the OHP.

Oregon Transportation Commission adoption of alternative mobility targets through system and facility plans should be accompanied by acknowledgement in local policy that state highway improvements to further reduce congestion and improve traffic mobility conditions in the subject area are not expected.

Traffic mobility exemptions in compliance with the TPR do not obligate state highway improvements that further reduce congestion and improve traffic mobility conditions in the subject area.

Action 1F.1

Mobility targets are the measure by which the state assesses the existing or forecasted operational conditions of a facility and, as such, are a key component ODOT uses to determine the need for or feasibility of providing highway or other transportation system improvements. These mobility targets are shown in Table 6 and Table 7. For purposes of assessing state highway performance:

- Use the mobility targets below and in Table 6 when initially assessing all state highway sections located outside of the Portland metropolitan area urban growth boundary.

- Use the mobility targets below and in Table 7 when initially assessing all state highway sections located within the Portland metropolitan area urban growth boundary.

- For highways segments where there are no intersections, achieving the volume to capacity ratios in Tables 6 and 7 for either direction of travel on the highway demonstrates that state mobility targets are being met.

- For unsignalized intersections, achieving the volume to capacity ratios in Tables 6 and 7 for the state highway approaches indicates that state mobility targets are being met. In order to maintain safe operation of the intersection, non-state highway approaches are expected to meet or not to exceed the volume to capacity ratios for District/Local Interest Roads in Table 6, except within the Portland metropolitan area UGB where non-state highway approaches are expected to meet or not to exceed a v/c of 0.99.

- At signalized intersections other than interchange ramp terminals (see below), the overall intersection v/c ratio is expected to meet or not to exceed the volume to capacity ratios in Tables 6 and 7. Where Tables 6 and 7 v/c ratios differ by legs of the intersection, the more restrictive of the volume to capacity ratios in the tables shall apply. Where a state highway intersects with a local road or street, the volume to capacity ratio for the state highway shall apply.

- Although an interchange serves both the mainline and the crossroad to which it connects, it is important that the interchange be managed to maintain safe and efficient operation of the mainline through the interchange area. The main objective is to avoid the formation of traffic queues on off-ramps which back up into the portions of the ramps needed for safe deceleration from mainline speeds or onto the mainline itself. This is a significant traffic safety concern. The primary cause of traffic queuing at off-ramps is inadequate capacity at the intersections of the ramps with the crossroad. These intersections are referred to as ramp terminals. In many instances where ramp terminals connect with another state highway, the mobility target for the connecting highway will generally signify that traffic backups onto the mainline can be avoided. However, in some instances where the crossroad is another state highway or a local road, the mobility target will not be a good indicator of possible future queuing problems. Therefore, the better indication is a maximum volume to capacity ratio for the ramp terminals of interchange ramps that is the more restrictive volume to capacity ratio for the crossroad, or 0.85.

- At an interchange within an urban area the mobility target used may be increased to as much as 0.90 v/c, but no higher than the target for the crossroad, if:

  1. It can be determined, with a probability equal to or greater than 95 percent, that vehicle queues would not extend onto the mainline or into the portion of the ramp needed to safely accommodate deceleration; and

  2. An adopted Interchange Area Management Plan (IAMP) is present, or through an IAMP adoption process, which must be approved by the Oregon Transportation Commission.

Table 6: Volume to Capacity Ratio Targets for Peak Hour Operating Conditions

VOLUME TO CAPACITY RATIO TARGETS OUTSIDE METRO[A,B,C,D]							
Highway Category	**Inside Urban Growth Boundary**					**Outside Urban Growth Boundary**	
	STA[E]	**MPO**	**Non-MPO Outside of STAs where non-freeway posted speed <= 35 mph, or a Designated UBA**	**Non-MPO outside of STAs where non-freeway speed > 35 mph, but <45 mph**	**Non-MPO where non-freeway speed limit >= 45 mph**	**Unincorporated Communities[F]**	**Rural Lands**
Interstate Highways	N/A	0.85	N/A	N/A	0.80	0.70	0.70
Statewide Expressways	N/A	0.85	0.80	0.80	0.80	0.70	0.70
Freight Route on a Statewide Highway	0.90	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (not a Freight Route)	0.95	0.90	0.90	0.85	0.80	0.75	0.70
Freight Route on a Regional or District Highway	0.95	0.90	0.90	0.85	0.85	0.75	0.70
Expressway on a Regional or District Highway	N/A	0.90	N/A	0.85	0.85	0.75	0.70
Regional Highways	1.0	0.95	0.90	0.85	0.85	0.75	0.70
District / Local Interest Roads	1.0	0.95	0.95	0.90	0.90	0.80	0.75

Notes for Table 6

[A] Unless the Oregon Transportation Commission has adopted an alternative mobility target for the impacted facility, the mobility targets in Tables 6 are considered standards for purposes of determining compliance with OAR 660-012, the Transportation Planning Rule.

[B] For the purposes of this policy, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas. Alternatives to the 30th highest annual hour may be considered and established through alternative mobility target processes.

[C] Highway design requirements are addressed in the Highway Design Manual (HDM).

[D] See Action 1F.1 for additional technical details.

[E] Interstates and Expressways shall not be identified as Special Transportation Areas.

[F] For unincorporated communities inside MPO boundaries, MPO mobility targets shall apply.

APPENDIX G

SYNCHRO INTERSECTION PERFORMANCE CALCULATIONS

HCM Unsignalized Intersection Capacity Analysis
1: 43rd Street & HWY 101

7/13/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	4	4	54	7	22	5	757	102	8	696	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	3	4	4	56	7	23	5	780	105	8	718	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1552	1630	359	1225	1578	833	719			886		
vC1, stage 1 conf vol	735	735		843	843							
vC2, stage 2 conf vol	817	896		381	735							
vCu, unblocked vol	1552	1630	359	1225	1578	833	719			886		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	81	98	93	99			99		
cM capacity (veh/h)	236	277	637	295	290	312	879			760		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	63	23	5	886	8	478	240
Volume Left	3	56	0	5	0	8	0	0
Volume Right	4	0	23	0	105	0	0	1
cSH	329	294	312	879	1700	760	1700	1700
Volume to Capacity	0.03	0.21	0.07	0.01	0.52	0.01	0.28	0.14
Queue Length 95th (ft)	3	20	6	0	0	1	0	0
Control Delay (s)	16.3	20.5	17.4	9.1	0.0	9.8	0.0	0.0
Lane LOS	C	C	C	A		A		
Approach Delay (s)	16.3	19.7		0.1		0.1		
Approach LOS	C	C						

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	4	0	3	0	62	6	6	74	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	0	5	0	4	0	78	8	8	94	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	195	195	94	191	191	82	94			86		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	195	195	94	191	191	82	94			86		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	100	100			99		
cM capacity (veh/h)	758	697	963	766	700	977	1501			1510		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	9	86	101
Volume Left	0	5	0	8
Volume Right	0	4	8	0
cSH	1700	844	1501	1510
Volume to Capacity	0.00	0.01	0.00	0.01
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	0.0	9.3	0.0	0.6
Lane LOS	A	A		A
Approach Delay (s)	0.0	9.3	0.0	0.6
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	30	106	33	26	42	95	708	21	24	702	58
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.91		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1515		1630	1557		1630	3245		1630	3223	
Flt Permitted	0.71	1.00		0.66	1.00		0.29	1.00		0.35	1.00	
Satd. Flow (perm)	1217	1515		1139	1557		491	3245		598	3223	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	100	32	114	35	28	45	102	761	23	26	755	62
RTOR Reduction (vph)	0	94	0	0	37	0	0	3	0	0	8	0
Lane Group Flow (vph)	100	52	0	35	36	0	102	781	0	26	809	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	10.7	10.7		10.7	10.7		38.8	35.7		34.6	33.6	
Effective Green, g (s)	10.2	10.2		10.2	10.2		37.8	35.2		33.6	33.1	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.64	0.59		0.57	0.56	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	209	260		196	267		362	1923		347	1796	
v/s Ratio Prot		0.03			0.02		c0.01	0.24		0.00	c0.25	
v/s Ratio Perm	c0.08			0.03			0.17			0.04		
v/c Ratio	0.48	0.20		0.18	0.13		0.28	0.41		0.07	0.45	
Uniform Delay, d1	22.2	21.1		21.0	20.9		4.5	6.5		5.7	7.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.4		0.4	0.2		0.4	0.6		0.1	0.8	
Delay (s)	23.9	21.5		21.5	21.1		5.0	7.1		5.8	8.6	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		22.5			21.2			6.9			8.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	139	10	4	136	8	8	18	11	14	12	56
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	151	11	4	148	9	9	20	12	15	13	61
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					671							
pX, platoon unblocked												
vC, conflicting volume	157			162			493	430	157	448	432	152
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	157			162			493	430	157	448	432	152
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			98	96	99	97	97	93
cM capacity (veh/h)	1423			1417			430	496	889	483	495	894

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	216	161	40	89
Volume Left	54	4	9	15
Volume Right	11	9	12	61
cSH	1423	1417	550	708
Volume to Capacity	0.04	0.00	0.07	0.13
Queue Length 95th (ft)	3	0	6	11
Control Delay (s)	2.2	0.2	12.1	10.8
Lane LOS	A	A	B	B
Approach Delay (s)	2.2	0.2	12.1	10.8
Approach LOS			B	B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: 43rd Street & HWY 101

7/13/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	4	10	54	7	22	16	757	102	8	696	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	4	10	56	7	23	16	780	105	8	718	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1576	1655	361	1254	1604	833	722			886		
vC1, stage 1 conf vol	736	736		866	866							
vC2, stage 2 conf vol	840	919		388	738							
vCu, unblocked vol	1576	1655	361	1254	1604	833	722			886		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	98	98	80	97	93	98			99		
cM capacity (veh/h)	228	270	636	281	280	312	876			760		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	20	63	23	16	886	8	478	243
Volume Left	5	56	0	16	0	8	0	0
Volume Right	10	0	23	0	105	0	0	4
cSH	362	281	312	876	1700	760	1700	1700
Volume to Capacity	0.05	0.22	0.07	0.02	0.52	0.01	0.28	0.14
Queue Length 95th (ft)	4	21	6	1	0	1	0	0
Control Delay (s)	15.5	21.5	17.4	9.2	0.0	9.8	0.0	0.0
Lane LOS	C	C	C	A		A		
Approach Delay (s)	15.5	20.4		0.2		0.1		
Approach LOS	C	C						

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	67.9%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	6	10	4	14	3	17	62	6	6	74	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	8	13	5	18	4	22	78	8	8	94	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	249	240	96	253	238	82	97			86		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	249	240	96	253	238	82	97			86		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	99	99	97	100	99			99		
cM capacity (veh/h)	677	649	961	675	650	977	1496			1510		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	27	108	105
Volume Left	3	5	22	8
Volume Right	13	4	8	4
cSH	796	688	1496	1510
Volume to Capacity	0.03	0.04	0.01	0.01
Queue Length 95th (ft)	2	3	1	0
Control Delay (s)	9.7	10.4	1.6	0.6
Lane LOS	A	B	A	A
Approach Delay (s)	9.7	10.4	1.6	0.6
Approach LOS	A	B		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	20.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	30	112	33	26	42	105	719	21	24	708	58
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.91		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1513		1630	1557		1630	3246		1630	3223	
Flt Permitted	0.71	1.00		0.65	1.00		0.27	1.00		0.35	1.00	
Satd. Flow (perm)	1217	1513		1110	1557		467	3246		602	3223	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	100	32	120	35	28	45	113	773	23	26	761	62
RTOR Reduction (vph)	0	100	0	0	38	0	0	2	0	0	9	0
Lane Group Flow (vph)	100	52	0	35	36	0	113	794	0	26	814	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	10.7	10.7		10.7	10.7		41.8	37.5		35.2	34.2	
Effective Green, g (s)	10.2	10.2		10.2	10.2		40.8	37.0		34.2	33.7	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.67	0.60		0.56	0.55	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	203	252		185	260		384	1962		345	1775	
v/s Ratio Prot		0.03			0.02		c0.02	0.24		0.00	c0.25	
v/s Ratio Perm	c0.08			0.03			0.18			0.04		
v/c Ratio	0.49	0.21		0.19	0.14		0.29	0.40		0.08	0.46	
Uniform Delay, d1	23.2	22.0		21.9	21.7		4.2	6.3		6.1	8.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.4		0.5	0.2		0.4	0.6		0.1	0.9	
Delay (s)	25.0	22.4		22.4	22.0		4.7	7.0		6.1	9.1	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		23.5			22.1			6.7			9.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	139	10	4	136	18	8	20	11	20	13	59
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	151	11	4	148	20	9	22	12	22	14	64
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					671							
pX, platoon unblocked												
vC, conflicting volume	167			162			514	452	157	465	448	158
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	167			162			514	452	157	465	448	158
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			98	95	99	95	97	93
cM capacity (veh/h)	1410			1417			413	480	889	467	483	888

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	222	172	42	100
Volume Left	60	4	9	22
Volume Right	11	20	12	64
cSH	1410	1417	531	675
Volume to Capacity	0.04	0.00	0.08	0.15
Queue Length 95th (ft)	3	0	6	13
Control Delay (s)	2.3	0.2	12.4	11.3
Lane LOS	A	A	B	B
Approach Delay (s)	2.3	0.2	12.4	11.3
Approach LOS			B	B

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX H

SIMTRAFFIC QUEUE LENGTH CALCULATIONS

Intersection: 1: 43rd Street & HWY 101, Interval #1

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	28	99	45	34	27
Average Queue (ft)	13	54	25	11	6
95th Queue (ft)	40	114	57	37	24
Link Distance (ft)	596	337	337		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				100	100
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: 43rd Street & HWY 101, Interval #2

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	LT	R	L	TR	L
Maximum Queue (ft)	51	91	40	51	5	32
Average Queue (ft)	18	50	17	12	0	5
95th Queue (ft)	49	87	45	41	4	24
Link Distance (ft)	596	337	337		1486	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				100		100
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 1: 43rd Street & HWY 101, All Intervals

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	LT	R	L	TR	L
Maximum Queue (ft)	51	106	50	51	5	33
Average Queue (ft)	17	51	19	12	0	5
95th Queue (ft)	47	94	49	40	4	24
Link Distance (ft)	596	337	337		1486	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				100		100
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 2: 43rd Street & Oak Street, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	40	21	7
Average Queue (ft)	17	27	5	1
95th Queue (ft)	45	55	24	11
Link Distance (ft)	209	596	2473	868
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 43rd Street & Oak Street, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	41	19	7
Average Queue (ft)	16	18	1	0
95th Queue (ft)	44	46	12	6
Link Distance (ft)	209	596	2473	868
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 43rd Street & Oak Street, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	46	33	7
Average Queue (ft)	16	20	2	0
95th Queue (ft)	44	49	15	7
Link Distance (ft)	209	596	2473	868
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 35th Street & HWY 101, Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	138	120	48	65	117	207	114	46	150	200
Average Queue (ft)	64	66	22	40	51	106	47	20	82	107
95th Queue (ft)	130	126	55	74	109	199	120	50	150	198
Link Distance (ft)		596		608		1450	1450		928	928
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110		150		145			90		
Storage Blk Time (%)	1	2				2			2	
Queuing Penalty (veh)	2	2				3			1	

Intersection: 3: 35th Street & HWY 101, Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	140	181	73	110	119	172	115	49	133	170
Average Queue (ft)	53	66	22	38	51	87	29	14	60	93
95th Queue (ft)	101	133	58	84	92	151	79	42	114	158
Link Distance (ft)		596		608		1450	1450		928	928
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110		150		145			90		
Storage Blk Time (%)	0	3		0	0	1			1	
Queuing Penalty (veh)	0	3		0	0	1			0	

Intersection: 3: 35th Street & HWY 101, All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	166	185	73	110	139	212	143	51	165	223
Average Queue (ft)	55	66	22	39	51	92	33	16	65	96
95th Queue (ft)	109	131	58	82	96	165	91	44	125	169
Link Distance (ft)		596		608		1450	1450		928	928
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110		150		145			90		
Storage Blk Time (%)	1	3		0	0	1			2	
Queuing Penalty (veh)	1	3		0	0	1			0	

Intersection: 4: 35th Street & Oak Street, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	59	66	71
Average Queue (ft)	16	29	45
95th Queue (ft)	55	68	69
Link Distance (ft)	1237	1196	2473
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: 35th Street & Oak Street, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	71	7	56	81
Average Queue (ft)	15	0	24	40
95th Queue (ft)	50	6	55	67
Link Distance (ft)	1237	596	1196	2473
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: 35th Street & Oak Street, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	75	7	72	88
Average Queue (ft)	15	0	25	41
95th Queue (ft)	51	5	58	67
Link Distance (ft)	1237	596	1196	2473
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

APPENDIX I

TRAFFIC VOLUMES TABLES

Intersection: 1: 43rd Street & HWY 101, Interval #1

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	28	99	45	34	27
Average Queue (ft)	13	54	25	11	6
95th Queue (ft)	40	114	57	37	24
Link Distance (ft)	596	337	337		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				100	100
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: 43rd Street & HWY 101, Interval #2

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	LT	R	L	TR	L
Maximum Queue (ft)	51	91	40	51	5	32
Average Queue (ft)	18	50	17	12	0	5
95th Queue (ft)	49	87	45	41	4	24
Link Distance (ft)	596	337	337		1486	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				100		100
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 1: 43rd Street & HWY 101, All Intervals

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	LT	R	L	TR	L
Maximum Queue (ft)	51	106	50	51	5	33
Average Queue (ft)	17	51	19	12	0	5
95th Queue (ft)	47	94	49	40	4	24
Link Distance (ft)	596	337	337		1486	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				100		100
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 2: 43rd Street & Oak Street, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	40	21	7
Average Queue (ft)	17	27	5	1
95th Queue (ft)	45	55	24	11
Link Distance (ft)	209	596	2473	868
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 43rd Street & Oak Street, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	41	19	7
Average Queue (ft)	16	18	1	0
95th Queue (ft)	44	46	12	6
Link Distance (ft)	209	596	2473	868
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 43rd Street & Oak Street, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	46	33	7
Average Queue (ft)	16	20	2	0
95th Queue (ft)	44	49	15	7
Link Distance (ft)	209	596	2473	868
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 35th Street & HWY 101, Interval #1

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	138	120	48	65	117	207	114	46	150	200
Average Queue (ft)	64	66	22	40	51	106	47	20	82	107
95th Queue (ft)	130	126	55	74	109	199	120	50	150	198
Link Distance (ft)		596		608		1450	1450		928	928
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110		150		145			90		
Storage Blk Time (%)	1	2				2			2	
Queuing Penalty (veh)	2	2				3			1	

Intersection: 3: 35th Street & HWY 101, Interval #2

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	140	181	73	110	119	172	115	49	133	170
Average Queue (ft)	53	66	22	38	51	87	29	14	60	93
95th Queue (ft)	101	133	58	84	92	151	79	42	114	158
Link Distance (ft)		596		608		1450	1450		928	928
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110		150		145			90		
Storage Blk Time (%)	0	3		0	0	1			1	
Queuing Penalty (veh)	0	3		0	0	1			0	

Intersection: 3: 35th Street & HWY 101, All Intervals

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	166	185	73	110	139	212	143	51	165	223
Average Queue (ft)	55	66	22	39	51	92	33	16	65	96
95th Queue (ft)	109	131	58	82	96	165	91	44	125	169
Link Distance (ft)		596		608		1450	1450		928	928
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	110		150		145			90		
Storage Blk Time (%)	1	3		0	0	1			2	
Queuing Penalty (veh)	1	3		0	0	1			0	

Intersection: 4: 35th Street & Oak Street, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	59	66	71
Average Queue (ft)	16	29	45
95th Queue (ft)	55	68	69
Link Distance (ft)	1237	1196	2473
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: 35th Street & Oak Street, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	71	7	56	81
Average Queue (ft)	15	0	24	40
95th Queue (ft)	50	6	55	67
Link Distance (ft)	1237	596	1196	2473
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: 35th Street & Oak Street, All Intervals

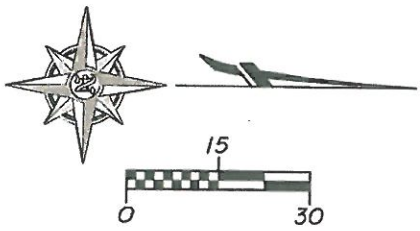
Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	75	7	72	88
Average Queue (ft)	15	0	25	41
95th Queue (ft)	51	5	58	67
Link Distance (ft)	1237	596	1196	2473
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

EXHIBIT MAP

TURNAROUND DETAIL
MAY 1, 2015
SCALE: 1"=30"

Branch ENGINEERING inc
Since 1977

310 5th Street
Springfield, OR 97477
p: 541.746.0637
www.BranchEngineering.com



REGISTERED PROFESSIONAL ENGINEER
#62780PE
PRELIMINARY
OREGON
JULY 13, 2004
DAMIEN GILBERT

EXPIRES: JUNE 30, 2017

RECEIVED
City of Florence
AUG 2 3 2015
By: gdfc

PROJECT No. 14-311

EXHIBIT G

APPENDIX D
FIRE APPARATUS ACCESS ROADS

The provisions contained in this appendix are adopted by the State of Oregon.

SECTION D101
GENERAL

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*. The *fire code official* may be guided by the Oregon Department of Land and Conservation and Development's Neighborhood Street Design Guidelines, June 2001.

SECTION D102
REQUIRED ACCESS

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an *approved* fire apparatus access road with an asphalt, concrete or other *approved* driving surface capable of supporting the imposed load of fire apparatus weighing at least 60,000 pounds (27 240 kg).

Exception: The minimum weight specified in Section D102.1 may be increased by the *fire code official* based upon the actual weight of fire apparatus vehicles serving the jurisdiction that provides structural fire protection services to the location, including fire apparatus vehicles that respond under automatic and mutual aid agreements.

D102.1.1 Access in wildland-urban interface areas. For egress and access concerns in wildland-urban interface locations, the *fire code official* may be guided by the *International Wildland-Urban Interface Code*.

SECTION D103
MINIMUM SPECIFICATIONS

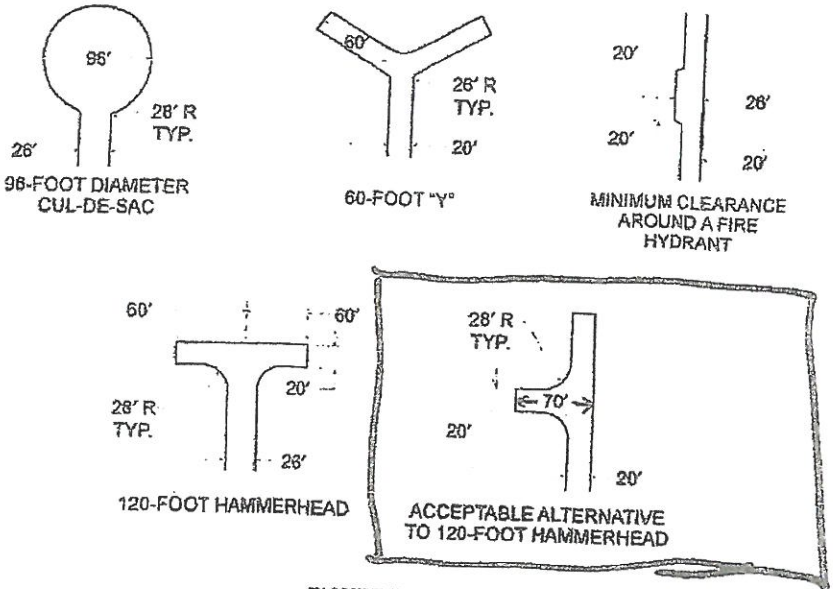
D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure D103.1).

Exception: The *fire code official* is authorized to modify the provisions of Section D103.1 when:

1. In accordance with Oregon Administrative Rule (OAR) 918-480-0100, all buildings are completely protected with an approved automatic fire sprinkler system;
2. Provisions are made for the emergency use of sidewalks by such means as rolled or mountable curbs capable of supporting the fire department's apparatus;
3. Streets or roadways are identified for one-way circulating flow of traffic or pullouts are provided every 150 feet (45 720 mm) on streets or roadways identified for two-way traffic; or
4. A grid system for traffic flow is provided and streets or roadways in the grid do not exceed 300 feet (91 400 mm) in length but are accessible at each end from approved access roadways or streets.

D103.2 Grade. Fire apparatus access roads shall not exceed 10 percent in grade.

Exception: Grades steeper than 10 percent as *approved* by the fire chief.



For SI: 1 foot = 304.8 mm.

FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

AH Consulting, Limited

Byron Roberts, President

MEMO

DATE: 7/29/15

TO: Mike Miller, Wendy Campbell, Byron

ITEM: Utility changes to Sandpines East

I believe that these are the items that will need to be changed as we redo East Bank.

Water meters: needed for 13-14, 15, 16-17, 24-25 for a total of 4. And maybe for 40. There is one close to the property line but it may be for the common area, which would make the total 5, obviously. And need to cap on 57, 61-62 for a total of 2.

Sewer laterals that need to be caped (capped?) are 1, 2, 3, 6, 8, 11, 13, 16, 19, 22, 25, 27, 30, 33, 35, 37, 38, 41, 45, 47, 51, 52, 55, 56, 58, 59, 62, 64, 67, 68, 71, 72, 75, 76, 79, 80, 83, 84, 87, 89, 91, 93, 94, 96, 99 for a total of 45.

Do you agree?

Thanks for your help.

EXHIBIT H

From:	Matt Wadlington
To:	Mike Miller
Cc:	Wendy Farley-Campbell
Subject:	East Bank TIA,
Date:	Friday, August 21, 2015 1:46:06 PM

Good afternoon Mike,

I have reviewed the East Bank TIA. In general I dion't have any major comments but do have the following minor comments:

- Page 4, 2nd paragraph: There is an extra "the" in the last sentence. Between "assumed" and "statutory".
- Page 15, 3rd paragraph: 5th Sentence seems awkward. Maybe "identifies" is not the correct word.

The author suggests that the previous conditions (intersection improvements) of approval should be removed based on the capacity analysis showing that this development will not decrease the level of service to a point those improvements are necessary. I concur that based on the evaluation presented, the impact will not warrant offsite improvements.

Also, although the TIA does not include a specific plan for internal roadway improvements, I noticed that there are no considerations in the original layout for vehicles turning around. Per Title 10, Chapter 36 of the City Code, 10-36-2-6, "The cul-de-sac shall not exceed a length of 400 feet...". This private, single access street is in essence a very long cul-de-sac.

Please let me know if you have any questions or concerns regarding this review,

-Matt

--
Matt Wadlington, P.E.
Civil West Engineering Services, Inc.
486 E Street • Coos Bay, OR • 97420
541-266-8601 • Fax 541-266-8681
mwadlington@civilwest.net
www.civilwest.com
Like us on Facebook

EXHIBIT I

Oregon
Theodore R. Kulongoski, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 378-3805
FAX (503) 378-4844
www.oregonstatelands.us.

July 17, 2006

Bob Bailey
Pacific Lifestyle Homes, Inc.
11815 NE 99th Street, Ste. 1200
Vancouver, WA 98682

Re: Wetland Delineation for Proposed Oak Street Townhouses, Florence, Lane County; T18S R12W Sec. 15, Portion of TL 400; DSL WD #06-0073

Dear Mr. Bailey:

The Department of State Lands has reviewed the wetland delineation report prepared by Wilbur and Matthew Ternyik for the site referenced above. Based upon our review and a site visit, we concur with their delineation. The seven wetland areas as mapped and surveyed are subject to permit requirements of the state Removal-Fill Law. A state permit is required for fill and/or excavation of 50 cubic yards or more of material in the wetland areas.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local wetland permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination for purposes of Section 404 of the Clean Water Act.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). A request for reconsideration of this determination may be submitted in writing by the applicant, landowner, or agent within 60 calendar days of the date of this letter.

Thank you for having the site evaluated. Please phone me at extension 236 if you have any questions.

Sincerely,

Janet C. Morlan

Janet C. Morlan, PWS
Wetlands Program Manager

cc: Wilbur Ternyik
John Otsyula, DSL
City of Florence Planning Department (map enclosed)

J:\Wetlands\Det - WN Letters\2006\06-0073.doc

EXHIBIT J

WETLAND DELINEATION AND TOPOGRAPHIC MAP

Prepared By: Matthew J. Ternyik
LEGEND

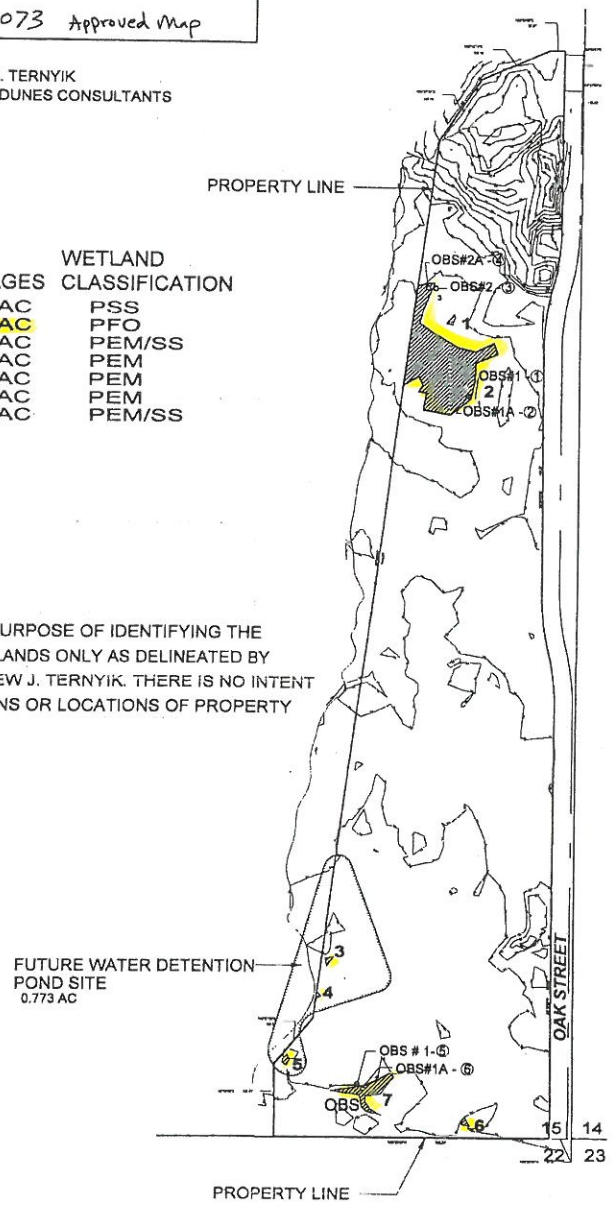
= PHOTO LOCATION/NUMBER/DIRECTION
OBS "A" = OBSERVATION POINT/LOCATION/NUMBER
WETLAND

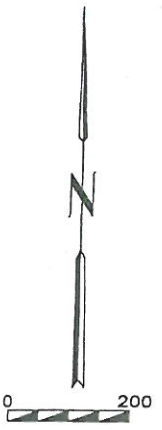
DSL # WD 06-0073 Approved Map

WETLAND DELINEATED BY
WILBUR E. AND MATTHEW J. TERNYIK
WETLANDS, BEACHES AND DUNES CONSULTANTS

WETLAND	ACREAGES	WETLAND CLASSIFICATION
1 -----	0.002 AC	PSS
2 -----	0.320 AC	PFO
3 -----	0.002 AC	PEM/SS
4 -----	0.001 AC	PEM
5 -----	0.003 AC	PEM
6 -----	0.002 AC	PEM
7 -----	0.039 AC	PEM/SS

THIS MAP IS FOR THE PURPOSE OF IDENTIFYING THE LOCATION OF THE WETLANDS ONLY AS DELINEATED BY WILBUR E. AND MATTHEW J. TERNYIK. THERE IS NO INTENT TO PROVIDE DIMENSIONS OR LOCATIONS OF PROPERTY OWNERSHIP LINES





LONGITUDE 124°06'25"
LATITUDE 44°00'02"

TOTAL SITE SIZE = 12.36 ACRES +-
TOTAL WETLANDS = .369 ACRES + -
TOTAL WETLANDS = 16,073 SQ. FT. + -

18-12-15

F88-43K2005WLX

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 30, 1976
EUGENE M. WOBBE
1093
P.L.S. EXPIRATION DATE: 6-30-2006

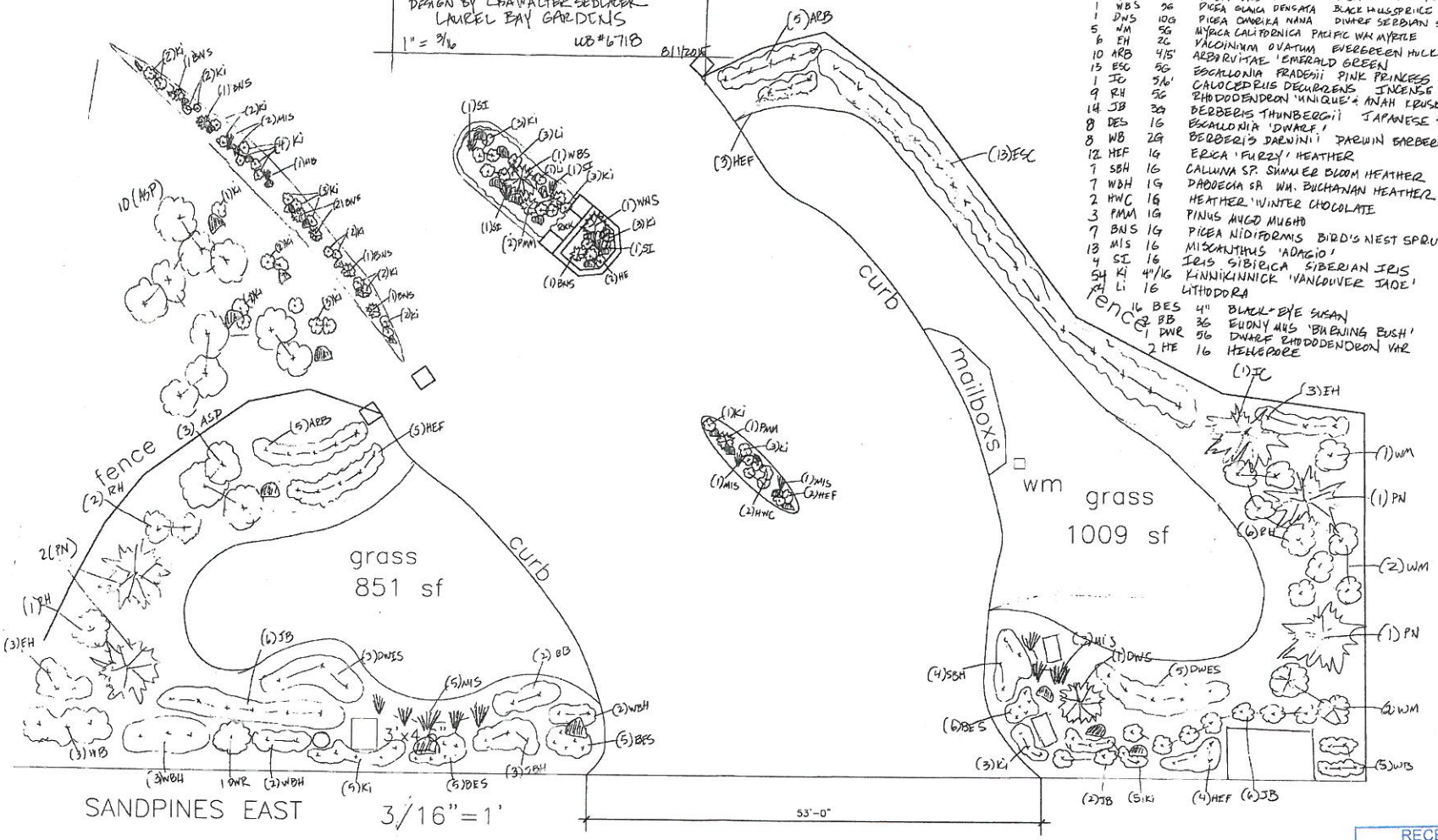
WOBBE & ASSOCIATES, INC.
510 KINGWOOD ST. / P.O. BOX 3093
FLORENCE, OR 97439

WETLANDS MAP FOR:
BOB BAILEY
PACIFIC LIFESTYLE HOMES, INC.
SEC. 15, T18S, R12W, W.M.
FLORENCE, LANE COUNTY, OREGON
JANUARY 24, 2006
DRAWN BY: EMW/sw

G:\DC\DC2005\8843K2005WLX.DC

4300 Nandina Drive

LANDSCAPE DESIGN
SANDPINES EAST
BYRON ROBERTS/AH CONSULTING
DESIGN BY LISA WALTER SEDLACEK
LAUREL BAY GARDENS
1" = 3/16 WB #6718 8/1/2015



SANDPINES EAST 3/16"=1'

PLANT LIST

13	ASP	10G	POPULUS TREMULOIDES	QUAKING ASPEN
4	PN	5/6'	PINUS NIGRA	AUSTRIAN PINE
1	WNS	10G	PICEA ABIES PENDULA	WEEPING NORWAY SPRUCE
1	WBS	5G	PICEA GLAUCA DENSATA	BLACK HILLS SPRUCE
1	DWS	10G	PICEA OMORIKA NANA	DWARF SERBIAN SPRUCE
5	WM	5G	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE
6	EH	2G	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY
10	ARB	4/5'	ARBORVITAE 'EMERALD GREEN'	
13	ESC	5G	ESCALLONIA FRADESII	PINK PRINCESS
1	JC	5/6'	CALOCEDRUS DECURRENS	INCENSE CEDAR
9	RH	5G	RHODODENDRON 'UNIQUE' & 'ANAH KRUSE'	
14	JB	3G	BERBERIS THUNBERGII	JAPANESE BARBERRY
8	DES	1G	ESCALLONIA 'DWARF'	
8	WB	2G	BERBERIS DARWINII	DARWIN BARBERRY
12	HEF	1G	ERICA 'FURZY'	HEATHER
7	SBH	1G	CALLUNA SP. SUMMER BLOOM	HEATHER
7	WDH	1G	DABOECIA SP. WM. BUCHANAN	HEATHER
2	HWC	1G	HEATHER 'WINTER CHOCOLATE'	
3	PMM	1G	PINUS MUGO MUGHO	
7	BNS	1G	PICEA NIDIFORMIS	BIRD'S NEST SPRUCE
13	MIS	1G	MISCANTHUS 'ADAGIO'	
4	SI	1G	IRIS SIBIRICA	SIBERIAN IRIS
54	Ki	4"/1G	KINNIKINNICK 'VANCOUVER JADE'	
24	Li	1G	LITHODORA	
	16	BES	4"	BLACK-EYE SUSAN
2	BB	3G	EUONY MUS 'BURNING BUSH'	
1	DWR	5G	DWARF RHODODENDRON VAR	
	2	HE	1G	HELLEBORE

lawn - 1,860 ± +/-
landscape - 3,818 +/-

RECEIVED
City of Florence
AUG 10 2015
By: gafc

EXHIBIT K

CITY OF FLORENCE
PLANNING COMMISSION

RESOLUTION PUD 05 05

IN THE MATTER OF AN APPLICATION FOR A REQUEST FOR A 99 LOT PLANNED UNIT DEVELOPMENT WITH TOWNHOMES AT MAP REFERENCE 18-12-15-00, TAX LOTS 400; LOCATED EAST OF SANDPINES GOLF COURSE; SOUTH OF 43RD STREET; WEST OF OAK STREET; AND NORTH OF 37th STREET, AS APPLIED FOR BY MYHRE GROUP ARCHITECTS AS AGENT FOR PACIFIC LIFESTYLES.

WHEREAS, application was made by Myhre Group Architects as Agent for Pacific Lifestyes for a Planned Unit Development; and

WHEREAS, the Planning Commission/Design Review Board met in a public hearing on August 30th, 2005 to consider the application, evidence in the record and testimony received, and

WHEREAS, the Planning Commission/Design Review Board determined, after review of the application, testimony and evidence in the record, that the application meets the applicable criteria, or can meet the criteria through compliance with certain Conditions of Approval; and

WHEREAS, the Planning Commission/Design Review Board of the City of Florence finds, based on the Findings of Fact, staff recommendation and evidence and testimony presented to them, that the following conditions are required for full compliance with applicable criteria:

NOW THEREFORE BE IT RESOLVED by the Planning Commission/Design Review Board of the City of Florence finds, based on the Findings of Fact and the evidence in record that:

1. Approval shall be shown on:

"A" Findings of Fact	"E" Floor Plans
"B" Map and Tax Lot Designation	"F" Land Use Application
"C" Site Plan	"G" Technical Comments
"D" Elevations	"H" Resolutions

2. **Findings of Fact:** attached as Exhibit "A" are incorporated by reference and adopted in support of this decision. Any modifications to the approved plans or changes of use, except those changes relating to the criteria regulated by the Uniform Building Code,

EXHIBIT L

will require approval by the Community Services Director (CSD) or the Planning Commission/Design Review Board.

3. **Subdivision Approval:** Unless appealed, the Planning Commission approval of the Tentative Subdivision Plan shall become effective 30 days after the resolution is signed. The property owner shall submit to the Community Services Department a signed "Agreement of Acceptance" of all conditions of approval. The signed agreement must be received by the Community Development Department within this 30-day period.

4. **PUD Approval:** This PUD is approved is to allow 99 town home lots that range in size from 2.368 sq. ft. to 10, 455 sq. ft.

5. **Town home Approval**: The town home designs are approved as submitted and reviewed by the Planning Commission. These units included up to a two story buildings, wood siding, divided windows, roof overhangs and eaves and other architectural detailing

6. **Height:** All buildings shall comply with the 28' maximum building height restriction.

7. **Building Offsets:** Buildings with a front entry facing into side yards shall have a minimum 20' separation. All other buildings shall comply with the standards of the RM (Multiple Family Residential District)

8. **Planned Unit Development Gate:** The applicant proposes a side retractable security gate at the main entrance. The gate shall be operated remotely as well as by keypad. The applicant shall insure that there is a minimum of 40' entrance stacking distance from Oak Street.

9. **Vision Clearance:** The applicant shall ensure the vision clearance requirements are met in which the vision clearance area shall be measured from 10' from each driveway intersection, 20' from each street intersection, and contain "no planting, walls, structures or temporary or permanent obstruction from two and one-half (2 ½') above the street grade to a height of eight feet (8').

10. **Parking:** Each proposed unit shall provide a minimum of 2 garage parking spaces and area for 2 vehicles to park on the driveway apron for each unit. A minimum of 20' shall be provided for driveways to allow for vehicles to be parked on the driveway and not extend out onto the sidewalk or roadway. No dedicated on-street parking is proposed.

11. **Interior Road Improvement:** The public improvement plans shall be revised to provide for a minimum pavement width of 32' within a 50' right-of-way for the interior roadway. The road shall be constructed to city standards and improved with curbs, gutters and sidewalks on one side of the road. The road may be constructed in phases provided that compliance is maintained with city standards regarding maximum cul-de-sac length and/or secondary access requirements. Phasing approval shall be at the discretion of the Community Services Department.

12. **Public Improvement Plan:** Prior to any site disturbance, a complete public improvement plan shall be submitted for review and approval by the Community Services Department

for all public utilities. The developer shall provide all utilities needed to serve the development. All utilities shall be installed underground.

13. **Signs:** Permits shall be required for all signs in accordance with Title 10, Chapter 26 of this Code, and amendments thereto.

14. **Hwy 101/Munsel Lake Road Intersection Improvements:** The Hwy 101/ Munsel Lake Road intersection was found to meet signal warrants. As mitigation the applicant shall contribute 10% of the cost of signalization improvements (based on the identified impact) of the improvement in the amount of $20,000. The funds shall be deposited to the City as a lump sum upon issuance of the first building permit for the town homes. The City shall establish an escrow fund to receive such funds.

15. **Hwy 101/46th Street Intersection Improvements:** The Hwy 101/46th Street Intersection was found to meet signal warrants. As mitigation the applicant shall contribute of 20% of the cost of signalization improvements (based on the identified impact) of the improvement in the amount of $40,000. The funds shall be deposited to the City as a lump sum upon issuance of the forty-fifth (45) town home dwelling unit. The City shall combine these funds with the already established escrow fund for signalization improvements.

16. **Secondary Access:** To comply with FCC requirements, a second connection to Oak Street is required until such time there is a permanent connection to Rhododendron Drive. The temporary access should be 24' wide located near the south end of the project. The precise location shall be identified and submitted for review and approval by the Community Services Department prior to any site disturbance.

17. **Temporary dead-end of internal access road:** The applicant shall either provide a paved cul-de-sac in accordance with city standard requirements if the road extension is not planned for construction within two years or install the planned club house connection roadway at this time. If the applicant chooses to install the roadway, it shall be a minimum width of 28 feet, if no residential units are located adjacent to the street and 32' if there are residential units. Improvements also include curb, gutter and sidewalks on both sides. All roadways shall be paved to comply with city standards.

18. **Oak Street Sidewalks**: The applicant shall construct a 6' wide sidewalk along the west side of Oak Street along the site's frontage from the Sandpines maintenance building through to the southern edge of the town homes project. Sidewalks shall be installed prior to issuance of certificate of occupancy.

19. **Oak Street/43rd Entryway**: Prior to any site disturbance, the applicant shall submit for review and approval a detailed plan showing the Oak Street/43rd Street entryway. This plan shall provide adequate sight distance, stacking room and if needed based on further review by a traffic engineer, improvements on Oak Street such as a left turn pocket, traffic calming, etc to assure that the entryway is developed in a safe and attractive manner.

20. **Utility Plan:** A detailed utility plan shall be submitted for review and approval by the City of Florence Community Services Department for all public utilities (sewer, water, drainage, etc) prior to any site disturbance.

21. **Water Improvements:** A revised utility plan shall be prepared for water service showing the location and looping of all water lines. The water utility plan shall show all hydrant locations and ensure that adequate fire flow is provided for all units.

22. **Stormwater Management**: The proposed stormwater plan for the project shall be revised ~~for~~ to include on-site stormwater infiltration and the development of off-site improvements to accommodate storm events through the 25 year event. The improvements shall include connection to the culvert on 35th Street near the Laurelwood Intersection or other conveyance through the church site, such that stormwater from the development is conveyed to the City's improved drainage facility.

23. **Drainage Easement:** A 15-feet wide public drainage easement along the southern 50 feet of the Oak Street frontage, and along the southern property line for the easterly 120 feet, shall be recorded on the final plat for possible future extension of the existing 24-inch diameter storm pipe.

24. **Pre-Design Investigation:** Prior to any site disturbance activities or final plat approval, the applicant shall submit a comprehensive pre-design investigation report showing the stormwater relationship, if any, between the project site and all other Sandpines phases.

25. **Site Disturbance:** Prior to any site disturbance, the applicant shall submit to the Community Services Department, for review and approval, a sand management plan for any area that is disturbed by construction activities. The sand management plan shall be consistent with FCC requirements. Additionally, if the total area of disturbance for the grading plan will exceed one acre, then the developer will secure an NPDES 1200-C stormwater permit from Oregon Department of Environmental Quality (DEQ). This permit requires a surface water management plan and a comprehensive set of erosion and sediment control Best Management Practices (BMP) to be in place prior to initiation of any grading operations. These erosion and sediment control BMP's will be included on the detailed civil engineering plans for site improvements.

26. **Mailboxes:** Before a mailbox location is chosen, the applicant shall coordinate location of mailboxes with the postmaster.

27. **Building Design:** Building design shall be consistent with the elevations submitted to the Planning Commission for review and approval. Significant features include a mixture of two stories buildings with multiple pitched roof lines, building materials of wood lap and shingle siding with rock veneer, tri-window panels, attic vent trim, and wood balcony railings.

28. **Tree Preservation on Oak Street**: The mature trees along Oak Street shall be preserved as a vegetative screen. A vegetative screen and tree preservation plan shall be submitted prior to any site disturbance that shows all trees that will remain post-construction. Only those trees that conflict with building locations or are unhealthy may be removed.

29. **Street Lights:** The applicant shall submit for review and approval a street lighting plan consistent with the Florence City Code (FCC). Street lights shall be installed consistent with the approved plan prior to final plat approval. The street lights shall be the responsibility of the applicant to install and all utilities shall be located underground. This 20% open space area should be protected under an easement, which may include the detention facility.

30. **Required Common Open Space**: Prior to any site disturbance, the applicant shall be required to submit, to the Community Services Department for review and approval, a revised site plan indicating at least 20% of the site as common open space as defined by the Florence City Code.

31. **Landscaping and Common Open Space:** Prior to any site work, the applicant shall be required to submit for Community Services Department approval a landscaping plan for all common open space areas. Landscaping shall be installed per the approved landscaping plan prior to issuance of a certificate of occupancy. Landscaping and open space improvements may be phased based on a phasing plan approved by the Community Services Department. All landscaping shall be consistent with the vision clearance requirements.

32. **Utility Easements**: The subdivision plat shall identify all proposed easements and note those that are to be dedicated to the public. All utilities shall be located underground and within easements.

33. **Pedestrian/Bike Connection:** The applicant shall install a 5' walkway from the interior street to Oak Street between the two street entrances to allow for pedestrian/bike path connectivity.

34. **Homeowner Association:** The applicant shall create an association of owners or tenants, created as a nonprofit corporation under the laws of the state, which shall adopt and impose articles of incorporation and bylaws and adopt and impose a declaration of covenants and restrictions (CCR) for the protection and maintenance of property, buildings, structures, and the common open spaces that is acceptable to the Planning Commission as providing for the continuing care of the above.

35. **Legal Entity:** Prior to the issuance of any certificate of occupancy, the applicant shall file for, and be approved for, a Planned Community consistent with ORS Chapter 94, and shall file for a subdivision of the subject property consistent with the creation of the proposed Planned Community .

36. **Entrance/Exit Improvements:** The applicant shall submit for review and approval, a plan showing the details of the gated entry/exits. The plan shall identify the type and location of the gates, manner of operation and include the ability to operate remotely by emergency service providers.

37. **Grading Plan**: A street construction plan and a grading plan shall be submitted to the Community Services Department and approved prior to any site work. The grading plan

will show soil stabilization measures during construction as well as proposed grades and any filling. The grading plan shall delineate any proposed cut or fill areas on a topographic survey as necessary to construct a street with a 2% cross-slope.

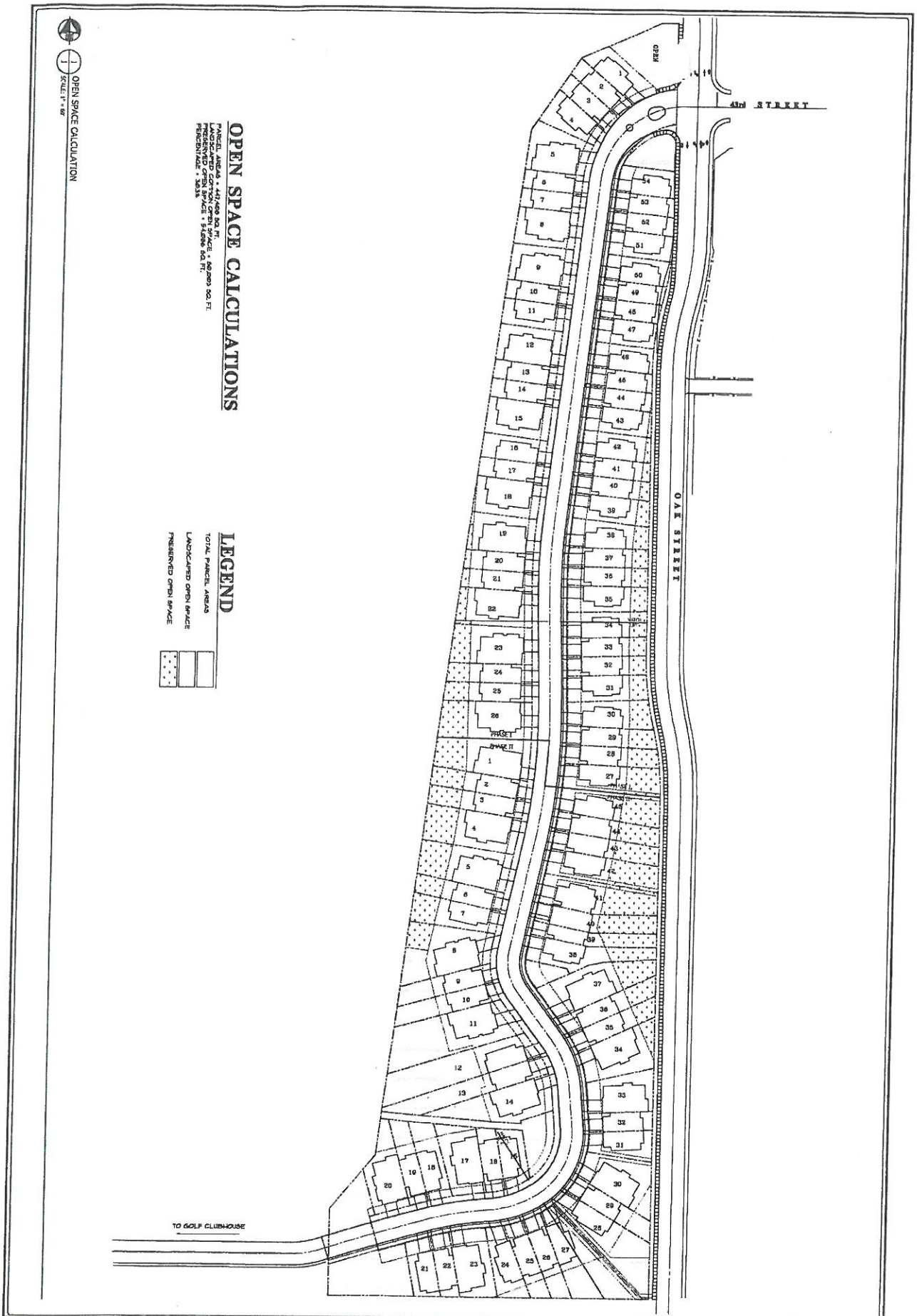
38. **Street Naming:** Street naming shall conform to established street naming practices. The applicant proposes a private drive. No street name duplication is allowed except with street extensions.

39. **Phasing Plan and Financial Assurances:** Prior to final plat approval, a phasing plan shall be submitted to the Community Services Department for review and approval identifying the timing of all proposed public improvements. For those improvements that are not installed at the time of the final plat, the City may require that the development provide a bond or other adequate assurances that the buildings, structures, and/or improvements will be completed.

40. **Acceptance Agreement:** The applicants will present to the Community Development Department a signed "Acceptance Agreement" of all conditions prior to issuance of building permits.

ADOPTED BY THE FLORENCE PLANNING COMMISSION/DESIGN REVIEW BOARD the 30th day of August, 2005.

WAYNE PAUL, Chairman
Florence Planning Commission



SHEET	1
Dwg. 1 of 1	

Sandpines Resort Oak Street Townhouses

Open Space Calculation

FRED WRIGHT, P.E.
CONSULTING ENGINEERS, INC.
101 SW WESTERN BOULEVARD
CORVALLIS, OREGON 97333
TEL: 541-753-5644 FAX: 541-753-9640

	BY	DATE
Designed	FW	
Drawn	JH	
Checked	FW	
Rev.	FW	

Tree preservation Plan

EXHIBIT M

CITY OF FLORENCE
PLANNING COMMISSION

RESOLUTION PC 07 24 SFP 02

A REQUEST FOR APPROVAL OF A FINAL PLAT FOR THE EAST BANK PUD AT SANDPINES, LOCATED AT MR 18-12-15-20, TL 1800 AND 2000, NORTH OF 35TH STREET AND WEST OF OAK STREET; AS APPLIED FOR BY WOBBE & ASSOCIATES.

WHEREAS, application was submitted by Wobbe & Associates as required by FCC 11-4-1; and

WHEREAS, the Planning Commission met on August 28, 2007 to consider the application and evidence in the record as per FCC 11-4-4, and

WHEREAS, the Planning Commission determined per FCC 11-4-4, after review of the application and evidence in the record, that the application meets the applicable criteria, or can meet the criteria through compliance with certain Conditions of Approval; and

WHEREAS, the Planning Commission of the City of Florence finds, based on the Findings of Fact in Exhibit A, and evidence presented to them, that the following conditions are required for full compliance with applicable criteria:

NOW THEREFORE BE IT RESOLVED that the Planning Commission of the City of Florence finds, based on the Findings of Fact and the evidence in record that:

The application, as presented, meets or can meet the applicable City codes and requirements, provided that the following Conditions of Approval are met.

1. Approval shall be shown on the following Exhibits:

   "A" Findings of Fact to Resolution PC 07 24 SFP 02
   "B" Submitted Final East Bank Plat
   "C" Performance Agreement

   Findings of Fact attached as Exhibit "A" are incorporated by reference and adopted in support of this decision. Any modifications to the approved plans or changes of use will require approval by the Community Development Director or the Planning Commission.

   The property owner shall submit to the Community Development Department a signed "Agreement of Acceptance" of all conditions of approval before the Chairperson and Community Development Director will sign the final plat.

2. Regardless of the content of material presented for this Planning Commission

EXHIBIT N

decision, including application text and exhibits, staff reports, and/or discussions, the Applicant and the Property Owner agree to comply with all regulations and requirements of the Florence City Code which are current on this date, EXCEPT where variance or deviation from such regulations and requirements has been specifically approved by formal Planning Commission action as documented by the record of this meeting and/or the associated Conditions of Approval.

3 Within 6 months of the effective date of the approval of Resolution PC 07 24 SFP 02, the applicant shall record the East Bank Final Plat with the office of the County Recording Officer. The applicant shall provide the City one exact reproducible copy of the East Bank PUD plat, composed of the same materials as required by the County Surveyor within two (2) working days of recordation.

4. Financial Security: The applicant shall submit financial security in from of a bond or cash for the cost of the sidewalks and any other outstanding items prior to the Planning Commission Chairperson and Community Development Director signing the Final Plat. The applicant is also required to sign performance agreement which will outline the conditions that need to be met before the City of Florence will release the financial security. (See Exhibit C)

5. Warranty Bond and Performance Agreement: The developer shall sign a Warranty Bond to assure that utilities will work properly after a year prior to the Planning Commission Chairperson and Community Development Director signing the final plat. The Performance Agreement will outline the timeframe of construction and be agreed by the applicant and Public Works Department. The developer shall also sign the Performance Agreement at the same time as the Warranty Bond.

The following Conditions of Approval are carried forth from the PUD 05 05:

6. Town Home Approval: The town home designs are approved as submitted and reviewed by the Planning Commission. These units included up to a two story buildings, wood siding, divided windows, roof overhangs and eaves and other architectural detailing.

7. Height: All buildings shall comply with the 28' maximum building height restriction.

8. Building Offsets: Buildings shall have a minimum 20' separation.

9. Vision Clearance: The applicant shall ensure the vision clearance requirements are met in which the vision clearance area shall be measured from 10' from each driveway intersection, 20' from each street intersection, and contain "no planting, walls, structures or temporary or permanent obstruction from two and one-half (2 ½') above the street grade to a height of eight feet (8').

10. Parking: Each proposed unit shall provide a minimum of 2 garage parking spaces and area for 2 vehicles to park on the driveway apron for each unit. A minimum of 20' shall be provided for driveways to allow for vehicles to be parked on the driveway and not extend out onto the sidewalk or roadway. No dedicated on-street parking is proposed.

11. Signs: Permits shall be required for all signs in accordance with Title 10, Chapter 26 of this Code, and amendments thereto.

12. Hwy 101/Munsel Lake Road Intersection Improvements: The Hwy 101/ Munsel Lake Road intersection was found to meet signal warrants. As mitigation the applicant shall contribute 10% of the cost of signalization improvements (based on the identified impact) of the improvement in the amount of $20,000. The funds shall be deposited to the City as a lump sum upon issuance of the first building permit for the town homes. The City shall establish an escrow fund to receive such funds.

13. Hwy 101/46th Intersection Improvements: The Hwy 101/46th Street Intersection was found to meet signal warrants. As mitigation the applicant shall contribute of 20% of the cost of signalization improvements (based on the identified impact) of the improvement in the amount of $40,000. The funds shall be deposited to the City as a lump sum upon issuance of the forty-fifth (45) town home dwelling unit. The City shall combine these funds with the already established escrow fund for signalization improvements.

14. Hold Harmless: The applicant shall take full responsibility for designing and constructing drainage improvements that effectively control all water drainage leaving the site. The applicant shall sign a hold harmless agreement relieving the city of any responsibility for this water or any resulting damages prior to the Planning Commission Chairperson signing the Final Plat.

15. Mailboxes: Before a mailbox location is chosen, the applicant shall coordinate location of mailboxes with the postmaster. Public Works Department recommends that the mailboxes will not block any public utilities.

16. Building Design: Building design shall be consistent with the elevations submitted to the Planning Commission for review and approval. Significant features include a mixture of two stories buildings with multiple pitched roof lines, building materials of wood lap and shingle siding with rock veneer, tri-window panels, attic vent trim, and wood balcony railings.

17. Landscaping: Landscaping shall be installed per the approved landscaping plan prior to issuance of a certificate of occupancy. All landscaping shall be consistent with the vision clearance requirements.

18. Legal Entity: Prior to the issuance of any certificate of occupancy, the applicant shall file for, and be approved for, a Planned Community consistent with ORS Chapter 94, and shall file for a subdivision of the subject property consistent with the creation of the proposed Planned Community.

19. Homeowner Association: The applicant shall create an association of owners or tenants, created as a nonprofit corporation under the laws of the state, which shall adopt and impose articles of incorporation and bylaws and adopt and impose a declaration of covenants and restrictions for the protection and maintenance of property, buildings, structures, and the common open spaces that is acceptable to the Planning Commission as providing for the continuing care of the above.

20. Planned Unit Development Gate: The applicant proposes a side retractable security gate at the main entrance. The gate shall be operated remotely as well as by keypad. The applicant shall insure that there is a minimum of 40' entrance stacking distance from Oak Street.

21. Pedestrian/Bike Connection: The applicant shall install a 5' walkway from the interior street to Oak Street between the two street entrances to allow for pedestrian/bike path connectivity.

22. Oak Street Sidewalks: The applicant shall construct a 6' wide sidewalk along the west side of Oak Street along the site's frontage from the Sandpines maintenance building through to the southern edge of the town homes project. Sidewalks shall be installed prior to issuance of certificate of occupancy.

The following Conditions of Approval are amended from PUD 05 05

23. Compliance: The applicant will provide evidence of compliance with all of the requirements in the Conditions of Approval in Resolution PUD 05 05 and PC 07 24 SFP 02 as applicable to the East Bank PUD.

24. Tree Preservation on Oak Street: The Mature trees along Oak Street shall be preserved as vegetative screen. Only those trees that conflict with building locations or are unhealthy may be removed. Prior to issuing the first building permit, the Community Development Department shall approve the techniques that will be used to protect the mature trees along Oak Street.

25. Open Space: On the plat, the applicant will place all the open space into common open space areas deeded to the homeowners association as common property. Lot lines shall be squared off on lots 37, 40, and 42.

26. Connector to Clubhouse Sidewalk: The applicant shall construct a sidewalk though the common open space, common area adjacent to lot 46 that connects Nandina Drive to the golf cart trail by the ninth hole. The sidewalk shall be

developed to City Standards.

27. CC & Rs for signs need to be amended to comply with City Sign Code.

28. Dranage easement between lots 40 and 41 shall be amended to include an access easement unless it is included in a common area.

ADOPTED BY THE FLORENCE PLANNING COMMISSION the 14h day of August, 2007.

Donna Lee
DONNA LEE, Chairperson
Florence Planning Commission

9-9-07
DATE

East Bank Lot Grouping

Lots, Open Space & Street

West of Nandina			East of Nandina				
Lot #	Sq. ft.	Tax Lot(s)	Lot #	Sq. ft.	Tax Lot(s)		
3 & 4	5789	3700/3800	47 & 48	5501	3500/3600		
5 & 6	7310	3900/4000	49	5104	3700		
7 & 8	6885	4100/4200	50 & 51	5684	3800/3900		
9	4556	4300	52 & 53	6300	4000/4100		
10 & 11	5609	4400/4500	54, 55 & 56	12077	4200/4300/4400		
12	4575	4600	57, 58, & 59	10867	4500/4600/4700		
13 & 14	4803	100/200	60	5524	4800		
15	4674	300	61 & 62	5275	5900/5000		
16 & 17	5616	400/500	63	5638	5100		
18	4789	600	64 & 65	6521	5200/5300		
19 & 20	6967	700/800	66 & 67	6731	5400/5500		
21 & 22	6992	900/1000	68 & 69	5655	5600/5700		
23	4673	1100	70 & 71	5714	5800/5900		
24 & 25	4797	1200/1300	72 & 73	5709	6000/6100		
26	4791	1400	74 & 75	5721	6200/6300		
27 & 28	7187	1500/1600	76 & 77	5637	6400/6500		
29 & 30	6970	1700/1800	78 & 79	5683	6600/6700		
31	4684	1900	80 & 81	5853	6800/6900		
32 & 33	5510	2000/2100	82 & 83	5917	7000/7100		
34 & 35	7809	2200/2300	84 & 85	5716	7200/7300		
36 & 37	8197	2400/2500	86 & 87	5729	7400/7500		
38 & 39	5609	2600/2700	88 & 89	5659	7600/7700		
40	4463	2800	90 & 91	5462	7800/4700		
41 & 42	5874	2900/3000	92 & 93	5327	4800/4900		
43	4740	3100	94 & 95	5681	5000/5100		
44 & 45	5357	3200/3300	96 & 97	5708	5200/5300		
46	4533	3400	98 & 99	5476	5400/5500		
	153759			165869	NET Dev. Area		319,628
					Avg. Lot Size		5,919
Open Space							
1 & 2	6278	3500, 3600	D	7106	8200		
F	5832	5600	C	11956	8100		
G	3038	8400	B	32857	8000		
A	44991	7900	H	1444	8500		
E*	2975	8300	I	2721	5700		
	63114			56084	Total OS		119,198
					20% of NET		63,925
Street							
North	23087	8600			*E-Counted in OS		
South	77101	8700			and Streets totals		
E*	2975	8300			but once in Gross		
	103163				Total Street		103,163
					Gross Sq. Ft.		539,014

EXHIBIT O