*APPENDIX J*

# PROJECT
# TRAFFIC AND PARKING STUDY

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# The Valhalla

# Traffic and Parking Study

Prepared for
The Valhalla Project
Prepared by
Robert L. Harrison Transportation Planning
November 2013

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# Introduction

This is a traffic and parking impact study for The Valhalla. This study is intended to satisfy the requirements of the City of Sausalito.

**Project Description.** The Valhalla is a seven unit condominium project to be located on the northeast corner of the intersection of Second and Main Streets in Sausalito. The project location is shown on Figure 1, the project site plan.

The project includes six units with two or more bedrooms and one one-bedroom unit. On-site project parking is provided in three garage buildings for 12 vehicles and two uncovered parking spaces for a total of 14 parking spaces. Access to the parking would be provided via a one-way inbound 12-foot wide driveway from Main Street and a 24-foot wide parking aisle that leads to an exit driveway back onto Main Street. The exit driveway will require a new curb-cut and will remove one existing on-street parking space from the north side of Main Street.

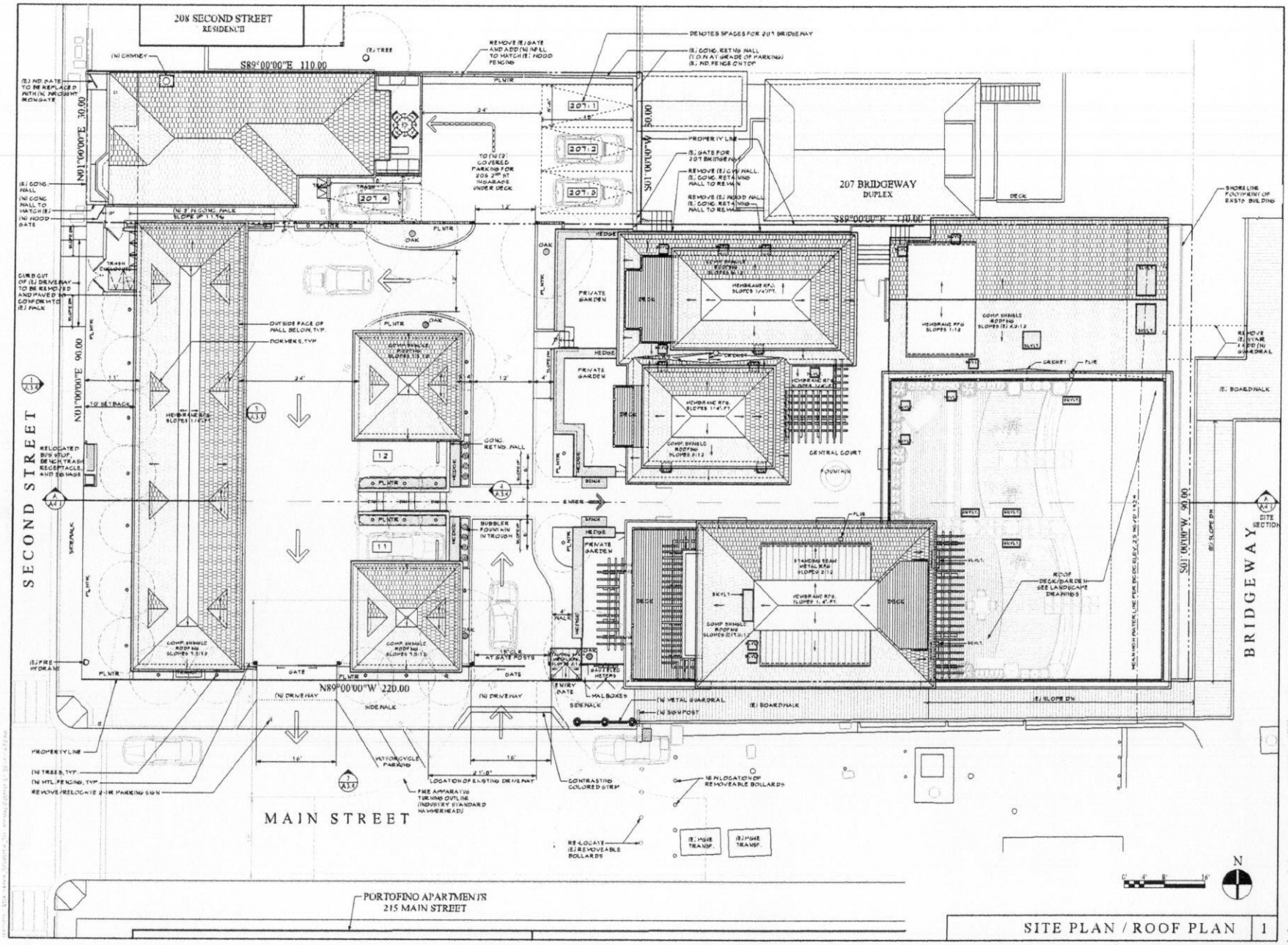
The project site also includes an existing single family dwelling unit at 206 Second Street. Parking for the on-site dwelling unit and for the neighboring property at 207 Bridgeway would be provided via an access route across the project site to the property at 206 Second Street.

The project would replace the existing restaurant building that has been vacant for several years. The restaurant use of the project site is approved for 200 seats and 50 parking spaces, 28 on-site and 22 off-site valet spaces.

# Existing Conditions

**Access.** The project site is located on Sausalito's "main street". Second Street, while just three blocks in length, connects with other streets and with Bridgeway to form the main north-south local street route through the City. Regional access is provided to this major local route via interchanges with the Highway 101 freeway and the Golden Gate Bridge to the south of the City limits.

***Second Street*** is a 25 mile per hour (mph) two lane arterial that serves an annual average daily traffic (AADT) volume of 5,500 motor vehicles on weekdays and 7,500 motor vehicles on weekend days. The street is also used by a significant number of non-motorized vehicles. On a weekend day for example, as many as 3,000 bicycles use Second Street to connect from the Golden Gate Bridge to downtown Sausalito.

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# THE VALHALLA

201 BRIDGEWAY & 206 SECOND STREET
SAUSALITO, CALIFORNIA
APN 065-242-06 & 65-242-17

| | |
|---|---|
| DESIGN REVIEW | |
| 22 MAY 2018 | |
| DES. REV. RESUBMIT | |
| 26 JULY 2018 | |
| BCDC RESUBMITTAL | |
| 30 SEPTEMBER 2018 | |
| RESPONSE TO BCDC | |
| 21 OCTOBER 2018 | |

DRAWN BY: BTC
DESIGNED BY: MRA
SCALE: 1/8" = 1'-0"

SITE PLAN
ROOF PLAN

SHEET

A1.2

According to City engineering staff the peak traffic volume near the project site occurs at midday on Fridays and Saturdays. The impact analysis presented in this report is based on these hours of peak traffic volumes.

The bicycle traffic volume is significant at midday on Second Street. On the Friday and Saturday counted in May 2012, the midday peak one hour count of northbound bicycles on Second Street at the project site was 229 and 378 respectively. On Saturday, the peak one hour count of bicycles exceeded the count of motor vehicles on Second Street by 378 bicycles vs. 366 motor vehicles.

There are no separate bike routes or lanes on Second Street so this heavy bicycle flow mixes in with the motor vehicle traffic. The lanes on Second Street are relatively narrow, 10 feet wide northbound and 11 feet wide southbound. The flow of motorized and non-motorized traffic is thus forced to move together. Because there is a significant northbound downgrade on Second Street from South to Main Streets most bicyclists keep pace with the speed of the motor vehicle traffic. With no separate lane, the bicycles become part of the total traffic flow. There is a moderate downgrade southbound on Second Street from Richardson to Main Street permitting bicycles to operate at speeds approaching motorized traffic. Again, the bicycles become part of the total traffic flow on Second Street at Main Street.

Second Street provides sidewalks on both sides near the project. Crosswalks are marked on all four legs of the intersection of Second with Main Streets. There is no parking permitted on the street adjacent to the project. A bus stop with a turnout is provided for southbound buses just south of the intersection with Main Street. A bus stop with no turnout is located on northbound Second Street adjacent to the project site.

***Main Street*** serves both the inbound and outbound driveways at the project site. There are fewer than 300 vehicles per day using the block of Main Street adjacent to the project site. Sidewalks are provided on both sides of the street and parking is permitted adjacent to the project site. This parking space located between the intersection with Second Street and the project driveway is 58 feet in length. It is usually occupied by three vehicles. These parallel parking spaces are not striped on the pavement. Vehicles occasionally park too close to the existing project site driveway.

**Second Street at Main Street Intersection**. These two streets intersect at a four legged intersection, with Second Street being the through north-south street and Main Street the stop controlled legs of the intersection. Both streets are two lanes wide with no turning lanes. Pedestrian crosswalks are provided on all four legs of this intersection.

***Traffic Counts***. According to City engineering staff, the peak traffic hours at this intersection occur at midday. Thus peak period traffic was counted at the intersection of Second and Main Streets on Friday May 4, 2012 from 11:00 a.m. to 1:00 p.m. and on Saturday May 5, 2012 from 12 noon to 2:00 p.m. Current traffic counts are provided in the Appendix to this report.

***Level of Service***. The quality of traffic operations at intersections is typically reported in terms of Level of Service (LOS). At LOS A and B there is little delay or congestion experienced by motorists. At LOS E and F traffic at the intersection experiences significant delay and congestion. The definition of LOS for stop controlled intersections is shown in Table 1.

Table 1
**Definition of Level of Service**
**Unsignalized Intersections**

| Level of Service | Description | Delay per Vehicle (Sec.) |
|---|---|---|
| A | Little or no traffic delay. | <10.0 |
| B | Short traffic delay | >10.0 to 15.0 |
| C | Average traffic delay. | >15.0 to 25.0 |
| D | Long traffic delay. (Acceptable in many jurisdictions). | >25.0 to 35.0 |
| E | Very long traffic delay. (Unacceptable in most jurisdictions). | >35.0 to 50.0 |
| F | Excessive unacceptable traffic delay. | >50.0 |

Source: Transportation Research Board. *Highway Capacity Manual 2010.*

The City of Sausalito General Plan has established LOS C as its standard for all signal controlled intersections. There is no LOS standard established for unsignalized intersections. Many jurisdictions set LOS D as an acceptable minimum standard for these intersections. In this analysis, the degradation of LOS from level D or better to level E or F due to the addition of project traffic would be considered a significant adverse impact of the project.

The intersection studied in this report is defined as a two-way stop control (TWSC) intersection. This means that the through traffic on Second Street does not stop and experiences no control delay. The LOS for the intersection is established by the delay for those traffic turning movements that must stop or yield. The specific LOS letter grade is defined by the length of delay for the turning movement that experiences the greatest delay.

The LOS is shown in Table 2 for both Friday and Saturday midday peak hour conditions. As was discussed above, the flow of bicycle traffic is fully mixed with motor vehicles on Second Street and is thus included in the calculation of LOS at this intersection. Under existing traffic flow, including both motor vehicles and bicycles, the existing intersection LOS is LOS C on Friday and LOS D on Saturday. LOS C and D at an unsignalized intersection are acceptable conditions. The calculation of LOS is shown in the Appendix to this report.

The 2010 Highway Capacity Manual (HCM) provides a procedure to estimate LOS for bicycle traffic. The existing Saturday northbound peak hour bicycle flow on Second Street operates at bicycle LOS E. The primary cause for the low bicycle service level is the narrow lane shared with motor vehicle traffic.

# Impact on Traffic Operations

**Project Trip Generation.** The trips that would be generated by The Valhalla are estimated using the research compiled by the Institute of Transportation Engineers (ITE) in the publication ***Trip Generation***, 8th Ed. and by the Urban Land Institute (ULI) in the publication ***Shared Parking***, 2nd Ed. The estimated trip generation for the project is shown in Table 2. The project would generate 41 daily trips and 4 AM, 4 Midday and 4 PM peak hour trips on an average Friday. On a typical Saturday project trip generation would be 40 daily, 3 midday peak hour and 4 late afternoon peak hour trips.

Table 2
**The Valhalla Trip Generation**
Restaurant Use vs The Valhalla Use

| | **Friday** | | | **Saturday** | | |
|---|---|---|---|---|---|---|
| **Time Period** | **The Valhalla** | Restaurant 200 Seats | The Valhalla vs Restaurant | **The Valhalla** | Restaurant 200 Seats | The Valhalla vs Restaurant |
| Daily | **41** | 572 | -531 | **40** | 562 | -522 |
| AM Peak Hour | **4** | 6 | -2 | **N/A** | N/A | N/A |
| Midday Peak Hour | **4** | 52 | -48 | **3** | 61 | -58 |
| PM Peak Hour | **4** | 52 | -48 | **4** | 66 | -62 |

Sources: Institute of Transportation Engineers, *Trip Generation*, 8th Ed. Land Use 230 and 931.
Urban Land Institute, Shared Parking, 2nd Ed. Tables 2-5 and 2-6.
Robert L. Harrison Transportation Planning

The estimate of The Valhalla trip generation is added to existing traffic at Second and Main Streets and the resultant intersection LOS is calculated. The impact of the project is measured in terms of the degradation of LOS due the addition of project trips. The project's impact on LOS is shown in Table 3.

**Trip Generation for the Previous Restaurant Use of the Project Site.** As shown in Table 2, a 200 seat restaurant is estimated to generate 572 daily, 6 AM peak hour, 52 midday peak hour and 52 late afternoon peak hour trips on Friday. On Saturday the restaurant would generate 562 daily, 61 midday peak hour and 66 late afternoon peak hour trips.

A comparison of project trips with the trips that would be generated by a 200 seat restaurant is also shown on Table 2 . On a Friday, The Valhalla would generate 531 fewer daily, 2 fewer AM peak hour, 48 fewer midday and 48 fewer PM peak hour trips as compared to a 200 seat restaurant.

On a Saturday, the project would generate 522 fewer daily, 58 fewer midday and 62 fewer PM peak hour trips as compared to a 200 seat restaurant. In summary, The Valhalla would generate significantly less traffic as compared to a 200 seat restaurant that was previously approved for the project site.

To measure the impact of the restaurant on traffic operations, the trips that would be generated by a 200 seat restaurant are added to the count of existing traffic and a resultant LOS is calculated for the Second at Main Streets intersection. This impact of a 200 seat restaurant on LOS is compared with the potential impact of The Valhalla in Table 3.

Table 3
**Intersection Level of Service (LOS)**
**Second Street at Main Street**

| | **Friday Peak Hour** 12 noon – 1:00 p.m. | | **Saturday Peak Hour** 12:15 p.m. -- 1:15 p.m. | |
|---|---|---|---|---|
| **Condition** | LOS | Delay[1] | LOS | Delay[1] |
| Existing (May 2012) | C | 20.1 | D | 27.3 |
| Existing Plus The Valhalla | C | 20.5 | D | 27.6 |
| Existing Plus Restaurant | C | 21.5 | D | 29.2 |

Note 1 – Average delay per vehicle in seconds.

Source: Robert L. Harrison Transportation Planning.

**Impact on Intersection Operations.** The impact of the trips generated by a development on the project site is measured in terms of the degradation of the existing LOS at the intersection of Second and Main Streets. The impact of the project and of a 200 seat restaurant is shown in Table 3. Neither development would degrade intersection operations by a full LOS letter grade. The intersection would continue to operate at an acceptable LOS C on Friday and LOS D on Saturday. The project would have no significant adverse impact on the operation of this intersection.

The trips generated by a 200 seat restaurant would cause a somewhat greater delay at the intersection of Second and Main Streets as compared to the project. The Valhalla trips would increase average delay for vehicles waiting at the stop sign on Main Street by a theoretical 0.3 to 0.4 seconds per vehicle. The trips generated by a 200 seat restaurant would increase average delay by 1.4 and 1.9 seconds per vehicle on Friday and Saturday respectively.

# Project Driveway and Intersection Sight Distance

The project driveways are shown on the project site plan above. A 12-foot wide inbound driveway is proposed from Main Street and a 16-foot wide exit driveway would be provided at a new curb-cut onto Main Street. There would be a one-way traffic flow through the property from the entry driveway to the exit driveway. Both driveways would be gated and would provide a 16-foot wide gate opening to accommodate larger vehicles such as fire apparatus and refuse trucks as needed.

**Sight Distance.** The sight distance for a vehicle departing the project site was studied to determine if visibility would be adequate at the project exit driveway and at the intersection of Main Street with Second Street. Sight distance is used to describe the ability of a driver to see or to be seen. The Caltrans Highway Design Manual defines sight distance as "the continuous length of a highway ahead visible to the driver. .... Sight distance is measured from the driver's eyes, which are assumed to be 3.5 feet above the pavement surface, to an object 0.5-foot high on the road."

***Stopping Sight Distance.*** For a local street intersection in an urban location the pertinent sight distance would be "stopping sight distance". Stopping sight distance is used to determine if a driver approaching a driveway or a hazard in the roadway will be able to apply the brakes and safely come to a complete stop. The minimum stopping sight distance is the length of roadway needed by the driver to stop after an object becomes visible. The derivation of stopping sight distance is the sum of two factors: the distance traveled from the time the driver first sees a hazard and applies the brakes; and, the distance required for the vehicle to stop after the brakes are applied.

The required stopping sight distance is based on the design speed of traffic on the through street. The design speed is set to the actual measured speed of traffic or to a factor set at least 5 mph over the speed limit. The speed limit on Second Street is 25 mph. The design speed would be 30 mph for Second Street and the required stopping sight distance would therefore be 200 feet[1]. Traffic speed on Main Street is estimated at 15 mph and design speed would be 20 mph. The stopping sight distance for a 20 mph design speed is 125 feet.

***Available Sight Distance***. The available sight distance to and from the right at the proposed exit driveway onto Main Street would need to be just the distance to the intersection with Second Street. This distance, approximately 50 feet, would be available whether or not a vehicle were parked on Main Street near the corner with Second Street.

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[1] American Association of State Highway and Transportation Officials. *A Policy on the Geometric Design of Highways and Streets.* 2004. Exhibit 3-1, Page 112.

Sight distance to the left from the exit driveway would be fully open to the easterly end of the pavement on Main Street or about 180 feet. There would be fully adequate sight distance to and from the proposed exit driveway.

At the intersection of Main with Second Streets, the project would have no impact on sight distance to and from the south. As is the case currently, drivers would pull across the pedestrian cross-walk to be near the edge of the traveled way on Second Street. From this position available sight distance for drivers is over 200 feet to and from the south.

To and from the stop line on Main Street to the north sight distance would also be over 200 feet. The project proposes a garage building set back 11 feet from the property line on Second Street. The design proposed by the project architect for landscaping along the project's Second Street frontage would provide low plant material no more than two feet in height. Also proposed are five small trees trimmed so that the bottom of their crowns would provide a minimum clear height six feet above the pavement. When drivers on Main Street pull forward toward the edge of the traveled way on Second Street, the proposed plant materials would not impinge on sight distance to and from the north of over 200 feet.

With the construction of the project, the sight distance at the project driveways and at the intersection of Main and Second Streets would be fully adequate.

# Parking

**Parking Supply.** The project parking plan for The Valhalla would provide 12 spaces in three garage buildings and two uncovered spaces for a total of 14 on-site parking spaces. The on-site single family dwelling unit at 206 Second Street would have two additional spaces. The project would also provide access to four parking spaces for the adjacent duplex dwelling unit at 207 Bridgeway. These spaces would be located on the 206 Second Street property. There would be no accessible parking spaces provided on the project site.[2]

**Required Number of Parking Spaces.** The City of Sausalito Zoning Ordinance requires two on-site spaces for each dwelling unit with two or more bedrooms and 1.5 spaces for each unit with one bedroom. Thus The Valhalla would require 12 spaces for the six larger units and 1.5 spaces for the single one bedroom unit or a total of 13.5 spaces, rounded to 14 on-site spaces. The 14 on-site spaces proposed for use by the project would fulfill the number of spaces required under the Sausalito Zoning Code.

**Parking Space Dimensions.** The largest of the Valhalla proposed garages would provide eight parking spaces 10 feet-4.5 inches wide by 18 feet in length. The smaller garages would provide four spaces 9 feet wide by 18 feet in length. The two uncovered spaces would be 8 feet-6 inches wide by 18 feet in length.

The City of Sausalito Zoning Code requires all on-site parking spaces to be 9 feet by 19 feet. Other jurisdictions, including the County of Marin, use similar but slightly distinct parking space size requirements as compared to Sausalito. The parking space size requirements of Sausalito are compared with size requirements of the Marin County in Table 5.

Table 5
**Parking Space Dimensional Standards**

| | Sausalito Zoning Code[1] | | | County of Marin Municipal Code | | |
|---|---|---|---|---|---|---|
| Type of Parking | Head-In 90 degree | Parallel | Garage | Head-In 90 degree | Parallel | Garage |
| Width (feet) | 9 | 9 | 9 | 8.5 | 8 | 9 |
| Length (feet) | 19 | 19 | 19 | 18 | 20[2] | 20 |

Notes:
1 – The Code specifies a single set of dimensions for all parking spaces.
2 -- In parking lots, the length of a parallel parking space may be 18 feet when the space abuts a no parking area such as a walkway or planter.

Sources: City of Sausalito and Marin County Codes.

[2] Accessibility standards do not apply to the project per report from Margen + Associates, Disability Policy + Universal Design Consultants, dated April 16, 2013.

The Valhalla proposed uncovered parking space dimensions would meet the requirements of the Marin County code. The minimum 9 feet width of the garage spaces would meet the required dimensions of both the Sausalito and Marin County codes. However, the length of the proposed garage spaces, 18 feet, would be one-foot shorter than as required in the Sausalito Municipal Code.

It is understood that the design concept for the garages accounts for the average length of personal vehicles which is about 16 feet. SUVs such as the Chevrolet Tahoe and large vans such as the Dodge Grand Caravan are nearly 17 feet in length. The largest pick-up trucks and luxury vehicles such as a Rolls Royce are longer than 18 feet. The garages at an 18-foot length would be long enough to accommodate most commonly used personal vehicles.

While the garages are expected to be fully adequate for the majority of personal vehicles, the fact that the proposed 18-foot length does not meet the Sausalito or Marin County code requirements is considered an impact of the project.

## Mitigation Measures

**Impact:** Length of garages would not meet the requirements of the Sausalito Municipal Code.

**Mitigation:** Redesign the garages and adjacent driveway areas to meet the requirements of the Code.

Or

Accept the design as proposed understanding that the 18-foot garage length would be adequate to accommodate most current personal vehicles.

**Potential Impact:** Vegetation along the Second Street frontage of the project grows to a height that impairs driver sight distance to and from Main Street.

**Mitigation:** To maintain fully adequate sight distance from the stop line on Main Street to the north, the project sponsor should ensure that the project landscaping along the Second Street frontage uses plant materials no more than two feet in height and that a landscaping maintenance plan is implemented to manage the height of this landscape material.

# APPENDIX

# The Valhalla Trip Assignment
# Midday Peak Hour

## Vehicle Traffic Only

| Main Street at Second Street | Weekday (Friday - 12N to 1:00PM) Existing - May 4, 2012 Vehicles | Bikes | V + B | Valhalla Vehicles | Existing + Valhalla Vehicles | Restaurant Vehicles | Existing + Restaurant Vehicles | Weekend Day (Satruday - 12:15 to 1:15PM) Existing - May 5, 2012 Veh. | Bikes | V+B | Valhalla Vehicles | Existing + Valhalla Vehicles | Restaurant Vehicles | Existing + Restaurant Vehicles |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northbound | | | | | | | | | | | | | | |
| Right | 5 | | | 1 | 6 | 0 | 5 | 4 | 2 | | 1 | 5 | 0 | 4 |
| Thru | 287 | | | 0 | 287 | 0 | 287 | 357 | 376 | | 0 | 357 | 0 | 357 |
| Left | 2 | | | 0 | 2 | 13 | 15 | 5 | 0 | | 0 | 5 | 16 | 21 |
| Eastbound | | | | | | | | | | | | | | |
| Right | 10 | | | 0 | 10 | 0 | 10 | 14 | 1 | | 0 | 14 | 0 | 14 |
| Thru | 0 | | | 0 | 0 | 0 | 0 | 1 | 0 | | 0 | 1 | 0 | 1 |
| Left | 25 | | | 0 | 25 | 0 | 25 | 13 | 2 | | 0 | 13 | 0 | 13 |
| Southbound | | | | | | | | | | | | | | |
| Right | 20 | | | 0 | 20 | 13 | 33 | 25 | 1 | | 0 | 25 | 15 | 40 |
| Thru | 257 | | | 0 | 257 | 0 | 257 | 288 | 185 | | 0 | 288 | 0 | 288 |
| Left | 5 | | | 2 | 7 | 0 | 5 | 11 | 2 | | 2 | 13 | 0 | 11 |
| Westbound | | | | | | | | | | | | | | |
| Right | 6 | | | 1 | 7 | 0 | 6 | 10 | 5 | | 1 | 11 | 0 | 10 |
| Thru | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| Left | 0 | | | 1 | 1 | 0 | 0 | 1 | 0 | | 1 | 2 | 0 | 1 |
| Totals | 617 | | | 5 | 622 | 26 | 643 | 729 | 574 | | 5 | 734 | 31 | 760 |

## Vehicle + Bicycle Traffic

| Main Street at Second Street | Weekday (Friday - 12N to 1:00PM) Existing - May 4, 2012 Vehicles | Bikes | V + B | Valhalla Vehicles | Existing + Valhalla Veh.+Bikes | Restaurant Vehicles | Existing + Restaurant Veh.+Bikes | Weekend Day (Satruday - 12:15 to 1:15PM) Existing - May 5, 2012 Veh. | Bikes | V+B | Valhalla Vehicles | Existing + Valhalla Veh.+Bikes | Restaurant Vehicles | Existing + Restaurant Veh.+Bikes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northbound | | | | | | | | | | | | | | |
| Right | 5 | 0 | 5 | 1 | 6 | 0 | 5 | 4 | 2 | 6 | 1 | 7 | 0 | 6 |
| Thru | 287 | 229 | 516 | 0 | 516 | 0 | 516 | 357 | 376 | 733 | 0 | 733 | 0 | 733 |
| Left | 2 | 0 | 2 | 0 | 2 | 13 | 15 | 5 | 0 | 5 | 0 | 5 | 16 | 21 |
| Eastbound | | | | | | | | | | | | | | |
| Right | 10 | 1 | 11 | 0 | 11 | 0 | 11 | 14 | 1 | 15 | 0 | 15 | 0 | 15 |
| Thru | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| Left | 25 | 2 | 27 | 0 | 27 | 0 | 27 | 13 | 2 | 15 | 0 | 15 | 0 | 15 |
| Southbound | | | | | | | | | | | | | | |
| Right | 20 | 0 | 20 | 0 | 20 | 13 | 33 | 25 | 1 | 26 | 0 | 26 | 15 | 41 |
| Thru | 257 | 33 | 290 | 0 | 290 | 0 | 290 | 288 | 185 | 473 | 0 | 473 | 0 | 473 |
| Keft | 5 | 0 | 5 | 2 | 7 | 0 | 5 | 11 | 2 | 13 | 2 | 15 | 0 | 13 |
| Westbound | | | | | | | | | | | | | | |
| Right | 6 | 0 | 6 | 1 | 7 | 0 | 6 | 10 | 5 | 15 | 1 | 16 | 0 | 15 |
| Thru | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Left | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 1 |
| Totals | 617 | 265 | 882 | 5 | 887 | 26 | 908 | 729 | 574 | 1,303 | 5 | 1,308 | 31 | 1,334 |

Sources: Marks Traffic Data
Robert L. Harrison Transportation Planning

1-May-13

# Valhalla Trip Generation and Parking Study

## Land Use

| Existing (Previous) Use | | | Valhalla | | |
|---|---|---|---|---|---|
| Restaurant | 200 | Seats | Condominium | 7 | Dw. Units |
| Residential | 1 | S.F. Dw.Unit | Residential | 1 | S.F. Dw.Unit |

## Trip Generation

Source: Institute of Transportation Engineers (ITE) Trip Generation, 8th Ed.

| | | Trip Rate / Seat | Trips | Trip Rate / Dw.Unit Condominium | Trips (ITE 230) | Trip Rate / Dw.Unit SingleFamily | Trips (ITE 210) |
|---|---|---|---|---|---|---|---|
| Restaurant (ITE Quality Restaurant - 931) | | | | | | | |
| **Weekday** | Daily | 2.86 | 572 | 5.81 | 41 | 9.57 | 10 |
| | AM Pk Hr | 0.03 | 6 | 0.44 | 4 | 0.75 | 1 |
| | PM Pk Hr | 0.26 | 52 | 0.52 | 4 | 1.01 | 1 |
| **Saturday** | Daily | 2.81 | 562 | 5.67 | 40 | 10.08 | 10 |
| | Peak Hour | 0.33 | 66 | 0.47 | 4 | 0.93 | 1 |

| | | Total Trips Existing (Previous) Use | Valhalla Total Trips (Condo's + Ex. S.F. Dw.Unit) |
|---|---|---|---|
| **Weekday** | Daily | **582** | **51** |
| | AM Pk Hr | **7** | **5** |
| | PM Pk Hr | **53** | **5** |
| **Saturday** | Daily | **572** | **50** |
| | Peak Hour | **67** | **5** |

## Parking*

Source: Institute of Transportation Engineers (ITE) Parking Generation, 4th Ed.

| | | Parking/Seat | Spaces | Parking / Condominium | Spaces (ITE 230) | Parking / SingleFamily | Spaces (ITE 210) |
|---|---|---|---|---|---|---|---|
| Restaurant (ITE Quality Restaurant - 931) | | | | | | | |
| **Friday** | Avg.Daily | 0.49 | 98 | 1.38 | 10 | 1.83 | 2 |
| | 85th Percentile | 0.61 | 122 | 1.52 | 11 | 2.14 | 3 |
| **Saturday** | Avg.Daily | 0.46 | 92 | 1.38 | 10 | 1.83 | 2 |
| | 85th Percentile | 0.48 | 96 | 1.52 | 11 | 2.14 | 3 |

| | | Total Spaces Existing (Previous) Use | Valhalla Total Spaces |
|---|---|---|---|
| Residential (ITE 210) | | | |
| **Weekday** | Avg.Daily | **100** | **12** |
| | 85th Percentile | **125** | **14** |
| **Saturday** | Avg.Daily | **94** | **12** |
| | 85th Percentile | **99** | **14** |

## Parking on the Project Site

Source: City of Sausalito Zoning Ordinance. Table 10.40-1

| | | | | | |
|---|---|---|---|---|---|
| Restaurant | 1 per 4 person occupancy of dining area + | | | **50** | |
| | 1 per 60 sq.ft. of area for portable seats/tables. | | | **N/A** | |
| Residential | 2 per Unit w/2B.R. or S.F. | 7 | Units | **2** | **14** |
| | 1 per Condo Unit w/ 1B.R. | 1 | Unit | | **1** |
| | | | **Total Spaces** | **52** | **Total Spaces** **15** |

Source: Robert L. Harrison Transportation Planning

1-May-13

The Valhalla
Existing + Project -- Vehicles + Bicycles
Saturday Midday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Second Street at Main Street

Average Delay (sec/veh): 27.6 Worst Case Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | |
| Volume Module: | | | | | | | | | | | | |
| Base Vol: | 5 | 733 | 7 | 15 | 473 | 26 | 15 | 1 | 15 | 2 | 0 | 16 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5 | 733 | 7 | 15 | 473 | 26 | 15 | 1 | 15 | 2 | 0 | 16 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume: | 5 | 788 | 8 | 16 | 509 | 28 | 16 | 1 | 16 | 2 | 0 | 17 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 5 | 788 | 8 | 16 | 509 | 28 | 16 | 1 | 16 | 2 | 0 | 17 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 7.1 | 6.5 | 6.2 | 7.1 | xxxx | 6.2 |
| FollowUpTim: | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | 3.5 | xxxx | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 537 | xxxx | xxxxx | 796 | xxxx | xxxxx | 1366 | 1361 | 523 | 1366 | xxxx | 792 |
| Potent Cap.: | 1042 | xxxx | xxxxx | 835 | xxxx | xxxxx | 126 | 149 | 558 | 126 | xxxx | 392 |
| Move Cap.: | 1042 | xxxx | xxxxx | 835 | xxxx | xxxxx | 118 | 146 | 558 | 119 | xxxx | 392 |
| Level Of Service Module: | | | | | | | | | | | | |
| Stopped Del: | 8.5 | xxxx | xxxxx | 9.3 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | A | * | * | A | * | * | * | * | * | * | * | * |
| Movement: | LT | - LTR | - RT | LT | - LTR | - RT | LT | - LTR | - RT | LT | - LTR | - RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 193 | xxxxx | xxxx | 313 | xxxxx |
| Shrd StpDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 27.6 | xxxxx | xxxxx | 17.3 | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | D | * | * | C | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 27.6 | | | 17.3 | | |
| ApproachLOS: | * | | | * | | | D | | | C | | |

The Valhalla
Existing Vehicles + Bicycles
Saturday Midday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

**********
Intersection #1 Second Street at Main Street
**********
Average Delay (sec/veh): 27.3 Worst Case Level Of Service: D
**********

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 |
| Volume Module: >> Count Date: 5 May 2012 << | | | | | | | | | | | | |
| Base Vol: | 5 | 733 | 6 | 13 | 473 | 26 | 15 | 1 | 15 | 1 | 0 | 15 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 5 | 733 | 6 | 13 | 473 | 26 | 15 | 1 | 15 | 1 | 0 | 15 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume: | 5 | 788 | 6 | 14 | 509 | 28 | 16 | 1 | 16 | 1 | 0 | 16 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 5 | 788 | 6 | 14 | 509 | 28 | 16 | 1 | 16 | 1 | 0 | 16 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 7.1 | 6.5 | 6.2 | 7.1 | xxxx | 6.2 |
| FollowUpTim: | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | 3.5 | xxxx | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 537 | xxxx | xxxxx | 795 | xxxx | xxxxx | 1361 | 1356 | 523 | 1361 | xxxx | 791 |
| Potent Cap.: | 1042 | xxxx | xxxxx | 836 | xxxx | xxxxx | 127 | 151 | 558 | 127 | xxxx | 393 |
| Move Cap.: | 1042 | xxxx | xxxxx | 836 | xxxx | xxxxx | 119 | 147 | 558 | 120 | xxxx | 393 |
| Level Of Service Module: | | | | | | | | | | | | |
| Stopped Del: | 8.5 | xxxx | xxxxx | 9.3 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | A | * | * | A | * | * | * | * | * | * | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 195 | xxxxx | xxxx | 344 | xxxxx |
| Shrd StpDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 27.3 | xxxxx | xxxxx | 16.0 | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | D | * | * | C | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 27.3 | | | 16.0 | | |
| ApproachLOS: | * | | | * | | | D | | | C | | |

The Valhalla
Existing + Restaurant -- Vehicles + Bicycles
Weekday (Friday) Midday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Second Street at Main Street

Average Delay (sec/veh): 21.5 Worst Case Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 0 0 1 | | |
| **Volume Module:** | | | | | | | | | | | | |
| Base Vol: | 15 | 516 | 5 | 5 | 290 | 33 | 27 | 0 | 11 | 0 | 0 | 6 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 15 | 516 | 5 | 5 | 290 | 33 | 27 | 0 | 11 | 0 | 0 | 6 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| PHF Volume: | 18 | 607 | 6 | 6 | 341 | 39 | 32 | 0 | 13 | 0 | 0 | 7 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 18 | 607 | 6 | 6 | 341 | 39 | 32 | 0 | 13 | 0 | 0 | 7 |
| **Critical Gap Module:** | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 7.1 | xxxx | 6.2 | xxxxx | xxxx | 6.2 |
| FollowUpTim: | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | xxxx | 3.3 | xxxxx | xxxx | 3.3 |
| **Capacity Module:** | | | | | | | | | | | | |
| Cnflict Vol: | 380 | xxxx | xxxxx | 613 | xxxx | xxxxx | 1021 | xxxx | 361 | xxxx | xxxx | 610 |
| Potent Cap.: | 1190 | xxxx | xxxxx | 976 | xxxx | xxxxx | 217 | xxxx | 688 | xxxx | xxxx | 498 |
| Move Cap.: | 1190 | xxxx | xxxxx | 976 | xxxx | xxxxx | 210 | xxxx | 688 | xxxx | xxxx | 498 |
| **Level Of Service Module:** | | | | | | | | | | | | |
| Stopped Del: | 8.0 | xxxx | xxxxx | 8.7 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 12.3 |
| LOS by Move: | A | * | * | A | * | * | * | * | * | * | * | B |
| Movement: | LT | - LTR | - RT | LT | - LTR | - RT | LT | - LTR | - RT | LT | - LTR | - RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 263 | xxxxx | xxxx | xxxx | xxxxx |
| Shrd StpDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 21.5 | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | C | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 21.5 | | | 12.3 | | |
| ApproachLOS: | * | | | * | | | C | | | B | | |

The Valhalla
Existing + Restaurant -- Vehicles + Bicycles
Saturday Midday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Second Street at Main Street

Average Delay (sec/veh): 29.2 Worst Case Level Of Service: D

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L - | T - | R | L - | T - | R | L - | T - | R | L - | T - | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 | 0 0 | 1! 0 | 0 |
| **Volume Module:** | | | | | | | | | | | | |
| Base Vol: | 21 | 733 | 6 | 13 | 473 | 41 | 15 | 1 | 15 | 1 | 0 | 15 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 21 | 733 | 6 | 13 | 473 | 41 | 15 | 1 | 15 | 1 | 0 | 15 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| PHF Volume: | 23 | 788 | 6 | 14 | 509 | 44 | 16 | 1 | 16 | 1 | 0 | 16 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 23 | 788 | 6 | 14 | 509 | 44 | 16 | 1 | 16 | 1 | 0 | 16 |
| **Critical Gap Module:** | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 7.1 | 6.5 | 6.2 | 7.1 | xxxx | 6.2 |
| FollowUpTim: | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | 4.0 | 3.3 | 3.5 | xxxx | 3.3 |
| **Capacity Module:** | | | | | | | | | | | | |
| Cnflict Vol: | 553 | xxxx | xxxxx | 795 | xxxx | xxxxx | 1403 | 1398 | 531 | 1404 | xxxx | 791 |
| Potent Cap.: | 1028 | xxxx | xxxxx | 836 | xxxx | xxxxx | 118 | 142 | 552 | 118 | xxxx | 393 |
| Move Cap.: | 1028 | xxxx | xxxxx | 836 | xxxx | xxxxx | 110 | 136 | 552 | 111 | xxxx | 393 |
| **Level Of Service Module:** | | | | | | | | | | | | |
| Stopped Del: | 8.5 | xxxx | xxxxx | 9.3 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | A | * | * | A | * | * | * | * | * | * | * | * |
| Movement: | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT | LT - | LTR - | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 182 | xxxxx | xxxx | 339 | xxxxx |
| Shrd StpDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 29.2 | xxxxx | xxxxx | 16.2 | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | D | * | * | C | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 29.2 | | | 16.2 | | |
| ApproachLOS: | * | | | * | | | D | | | C | | |

The Valhalla
Existing Vehicles + Bicycles
Weekday (Friday) Midday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Second Street at Main Street

Average Delay (sec/veh): 20.1 Worst Case Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 0 0 1 | | |
| Volume Module: >> Count Date: 4 May 2012 << | | | | | | | | | | | | |
| Base Vol: | 2 | 516 | 5 | 5 | 290 | 8 | 27 | 0 | 11 | 0 | 0 | 6 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 2 | 516 | 5 | 5 | 290 | 8 | 27 | 0 | 11 | 0 | 0 | 6 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| PHF Volume: | 2 | 607 | 6 | 6 | 341 | 9 | 32 | 0 | 13 | 0 | 0 | 7 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 2 | 607 | 6 | 6 | 341 | 9 | 32 | 0 | 13 | 0 | 0 | 7 |
| Critical Gap Module: | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 7.1 | xxxx | 6.2 | xxxxx | xxxx | 6.2 |
| FollowUpTim: | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | xxxx | 3.3 | xxxxx | xxxx | 3.3 |
| Capacity Module: | | | | | | | | | | | | |
| Cnflict Vol: | 351 | xxxx | xxxxx | 613 | xxxx | xxxxx | 976 | xxxx | 346 | xxxx | xxxx | 610 |
| Potent Cap.: | 1219 | xxxx | xxxxx | 976 | xxxx | xxxxx | 232 | xxxx | 702 | xxxx | xxxx | 498 |
| Move Cap.: | 1219 | xxxx | xxxxx | 976 | xxxx | xxxxx | 228 | xxxx | 702 | xxxx | xxxx | 498 |
| Level Of Service Module: | | | | | | | | | | | | |
| Stopped Del: | 8.0 | xxxx | xxxxx | 8.7 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | 12.3 |
| LOS by Move: | A | * | * | A | * | * | * | * | * | * | * | B |
| Movement: | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | | LT - LTR - RT | | |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 283 | xxxxx | xxxx | xxxx | xxxxx |
| Shrd StpDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 20.1 | xxxxx | xxxxx | xxxx | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | C | * | * | * | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 20.1 | | | 12.3 | | |
| ApproachLOS: | * | | | * | | | C | | | B | | |

The Valhalla
Existing + Project -- Vehicles + Bicycles
Weekday (Friday) Midday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Second Street at Main Street

Average Delay (sec/veh): 20.5 Worst Case Level Of Service: C

| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement: | L | T | R | L | T | R | L | T | R | L | T | R |
| Control: | Uncontrolled | | | Uncontrolled | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Lanes: | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | | 0 0 1! 0 0 | | |
| **Volume Module:** | | | | | | | | | | | | |
| Base Vol: | 2 | 516 | 6 | 7 | 290 | 20 | 27 | 0 | 11 | 1 | 0 | 7 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 2 | 516 | 6 | 7 | 290 | 20 | 27 | 0 | 11 | 1 | 0 | 7 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| PHF Volume: | 2 | 607 | 7 | 8 | 341 | 24 | 32 | 0 | 13 | 1 | 0 | 8 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Vol.: | 2 | 607 | 7 | 8 | 341 | 24 | 32 | 0 | 13 | 1 | 0 | 8 |
| **Critical Gap Module:** | | | | | | | | | | | | |
| Critical Gp: | 4.1 | xxxx | xxxxx | 4.1 | xxxx | xxxxx | 7.1 | xxxx | 6.2 | 7.1 | xxxx | 6.2 |
| FollowUpTim: | 2.2 | xxxx | xxxxx | 2.2 | xxxx | xxxxx | 3.5 | xxxx | 3.3 | 3.5 | xxxx | 3.3 |
| **Capacity Module:** | | | | | | | | | | | | |
| Cnflict Vol: | 365 | xxxx | xxxxx | 614 | xxxx | xxxxx | 989 | xxxx | 353 | 991 | xxxx | 611 |
| Potent Cap.: | 1205 | xxxx | xxxxx | 975 | xxxx | xxxxx | 228 | xxxx | 695 | 227 | xxxx | 498 |
| Move Cap.: | 1205 | xxxx | xxxxx | 975 | xxxx | xxxxx | 222 | xxxx | 695 | 221 | xxxx | 498 |
| **Level Of Service Module:** | | | | | | | | | | | | |
| Stopped Del: | 8.0 | xxxx | xxxxx | 8.7 | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx |
| LOS by Move: | A | * | * | A | * | * | * | * | * | * | * | * |
| Movement: | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT | LT | LTR | RT |
| Shared Cap.: | xxxx | xxxx | xxxxx | xxxx | xxxx | xxxxx | xxxx | 277 | xxxxx | xxxx | 430 | xxxxx |
| Shrd StpDel: | xxxxx | xxxx | xxxxx | xxxxx | xxxx | xxxxx | xxxxx | 20.5 | xxxxx | xxxxx | 13.6 | xxxxx |
| Shared LOS: | * | * | * | * | * | * | * | C | * | * | B | * |
| ApproachDel: | xxxxxx | | | xxxxxx | | | 20.5 | | | 13.6 | | |
| ApproachLOS: | * | | | * | | | C | | | B | | |