TRAFFIC ANALYSIS REPORT

FOR

# CEDAR HILLS PARK/WALKER ELEMENTARY SCHOOL

SW CEDAR HILLS BLVD & WALKER ROAD

**CITY OF BEAVERTON & WASHINGTON COUNTY** 

SUBMITTED BY



September 2015

Project 14-44

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**Prepared By** 

CHARBONNEAU Engineering LLC



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### **INTRODUCTION**

This traffic study has been prepared to document and evaluate the traffic operation and safety conditions associated with the replacement of William Walker Elementary School and redevelopment of Cedar Hills Park in the City of Beaverton & Washington County. Walker Elementary School is within the Beaverton School District #48 and is located at 11940 SE Lynnfield Lane. Cedar Hills Park is under the ownership of Tualatin Hills Park & Recreation District (THPRD) and is addressed at 2300 SW Cedar Hill Blvd.

Replacement of the school will consist of rebuilding the existing structure with new two-story buildings having a capacity for 750 students in grades K-5<sup>th</sup>. The school currently has an existing capacity for 590 students. The Tualatin Hills Park & Recreation District (THPRD) will upgrade the park site to provide expanded parking, lighted synthetic turf multi-use sports field, splash pad, restrooms, picnic shelter, play equipment, and other amenities.

The study area was defined as the surrounding neighborhood and intersections including Cedar Hills Blvd and SW Walker Road and the intersections located on Cedar Hills Blvd at Huntington Avenue and Walker Road at Cedar Hills Blvd, 123<sup>rd</sup> Avenue, Lynnfield Lane, and Mayfield Avenue. Additionally, an array of site access alternatives were considered as described later in this report. These included establishing future access connections between the park and the school based upon an Intergovernmental Agreement (IGA) implemented between the Beaverton School District and THPRD in May 2013.

The project location is highlighted on the vicinity map (Figure 'a') in the appendix. Figure 'b' illustrates the school boundary and Figure 'c' serves as the project site plan.

### TRAFFIC ANALYSIS CONSIDERATIONS

The project scoping was established based on discussions with Beaverton School District, THPRD, City of Beaverton, and Washington County. Subsequent to the draft report completed in June an agency review meeting was held on June 16<sup>th</sup> to discuss the traffic report. The study has now been updated in response to the meeting's review comments.

The following major elements were considered in the traffic study.

- Inventory and record pertinent information such as traffic control devices, circulation patterns, lane configuration, pedestrian & bicycle facilities, parking conditions, and street characteristics.
- Collect updated data on typical weekdays during the AM and PM peak traffic hours.
- Consideration of alternative site access scenarios.
- Conduct traffic counts on Cedar Hills Blvd at Huntington Avenue and on Walker Road at Cedar Hills Blvd, 123<sup>rd</sup> Avenue, Lynnfield Lane, and Mayfield Avenue.
- Application of a 1% per year growth rate for five years to establish the background traffic volumes.
- Review the peak hour signal warrant for the stop controlled intersections of Cedar Hills Blvd at Huntington Avenue and Walker Road at 123<sup>rd</sup> Avenue to verify if signalization criteria is met.



- Level of service (LOS) analysis of the study intersections to measure the vehicular delays and volume/capacity ratios.
- Verification of intersection sight distance at the site access locations.
- Review of traffic accident data furnished by ODOT and determination of the intersection crash rates at the study intersections.
- Additional elements noted and addressed based on the agency review meeting included;
  - Based on discussion at the agency meeting it was decided to advance three (C1, C2, and LL1) of the original 13 access alternatives. All of the original 13 access alternatives are fully described and included in this report.
  - Re-run LOS analysis for Walker Road/Lynnfield Lane and compare results to County's analysis.
  - Prepare new flow maps illustrating the school bus trip distribution & assignments.
  - Illustrate the traffic changes (reduction) at Walker Road & Lynnfield Lane occurring in association with the C1 & C2 access alternatives.

### SITE DESCRIPTION, STREETS, AND CRITICAL INTERSECTIONS

The park is located at 2300 SW Cedar Hills Blvd in the City of Beaverton. The park's area measures 11.87 acres and has 30 existing parking spaces. Existing park amenities include two small parking lots, an ADA accessible trail/path, picnic tables and grills, playground equipment, decommissioned restroom shelter, lighted tennis courts, sand volleyball courts, bocce courts, combined baseball and soccer field, community garden, and tree grove. The main traffic access to the park is located on Cedar Hills Blvd opposite Huntington Avenue. A secondary access exists on Cedar Hills Blvd near the park's northwesterly property boundary adjacent to the tennis courts. Limited parking for approximately five vehicles is available on the dirt-surfaced lot from the secondary access.

William Walker Elementary School is located at 11940 SW Lynnfield Lane in Beaverton (tax map #1S1 10BB600/lot #10BD 600. The school property covers 9.2 acres and has several buildings totaling 51,092 square feet plus seven portable classroom units. There are 85 parking spaces. Access to the school occurs on Lynnfield Lane which is control by signalization at Walker Road. Replacement of the school will include new buildings totaling 97,860 square feet providing a capacity for 750 students in grades K-5<sup>th</sup>. The school currently has an existing capacity for 590 students.

The surrounding area is developed as a mixture of retail establishments and businesses (Pet Smart store, Circle K store & Union-76 gas station, Office Depot, Rite Aid), residential neighborhood, and West Hills Racquet & Fitness Club. The park property is situated on the southeast side of Cedar Hills Blvd between the West Hills Racquet Club and Pet Smart properties. The elementary school is located adjacent to the park immediately to the east. Currently there is no access connection for traffic between the park and school properties, although park patrons are allowed shared use of the school's westerly overflow parking lot to access the park.



The park's access and the Huntington Avenue approach to Cedar Hills Blvd are controlled with stop signing. The intersections on Walker Road at Cedar Hills Blvd, Lynnfield Lane, and Mayfield Avenue are controlled by signalization. The intersection of Walker Road at 123<sup>rd</sup> Avenue is controlled by stop signing on the side street approach. Figure 'd' illustrates the existing lane configuration and traffic control.

**Walker Road** is a two lane arterial east of 123<sup>rd</sup> Avenue that widens to five lanes with bike lanes and sidewalk in advance of the Cedar Hills Blvd intersection. East of 123<sup>rd</sup> Avenue there are no bike lanes with the shoulder width varying from one to four feet wide. The posted travel speed is 35 MPH.

**Cedar Hills Blvd** between Walker Road and Huntington Avenue is a five lane road (center left turn lane) with sidewalk and bike lanes tapering to four lanes at Huntington Avenue. Northeast of Huntington Avenue the road is four lanes without a center left turn lane. The posted travel speed is 35 MPH.

**Cedar Hills Blvd at Huntington Avenue** and the Cedar Hills Park driveway is a four-way intersection with stop-control on the side approaches (Huntington Avenue and park access). There are no separate turn lanes at the intersection. There is a Tri-Met bus stop (Line #20) adjacent to the parks access. Parking is not permitted on Cedar Hills Blvd.

**Walker Road at Cedar Hills Blvd** is a four-way intersection controlled by signalization. The signal operates with eight phases and provides protected left turn phasing on each approach. There are crosswalks on all intersection sides with pedestrian signals and pushbuttons. The Cedar Hills Blvd approaches contain separate left turn lanes, two through lanes, and separate right turn lanes. The Walker Road approaches consist of separate left turn lanes with one through and one combination through/right lane on each approach.

**Walker Road at 123<sup>rd</sup> Avenue** is a stop controlled intersection with 123<sup>rd</sup> approaching from the south. There are no lane markings on 123<sup>rd</sup> Avenue and the speed is posted at 25MPH. The street serves single-family housing.

**Walker Road at Lynnfield Lane** is configured as a tee-shaped intersection controlled by signalization. Lynnfield Lane terminates at a cul-de-sac just north of William Walker Elementary School and provides access to the school and residences along Lynnfield Lane. The travel speed is posted on Lynnfield Lane with a School Speed Limit 20 MPH sign. The traffic signal operates with two phases and provides a pedestrian crossing on Walker Road activated by pushbuttons. There are no separate turn lanes at the intersection and each approach lane is a single lane. Due to the existing volume conditions at this intersection with 48 eastbound left turn vehicles on Walker and over 1,000 opposing westbound vehicles during the AM peak hour a separate eastbound left turn lane is currently needed.

**Walker Road at Mayfield Avenue** is a four-way intersection controlled by signalization. The signal operates with five phases and provides protected left turn phasing on Walker Road and a common north/south phase for the Mayfield Avenue approaches. There are crosswalks on all intersection sides with pedestrian signals and pushbuttons. The Walker Road approaches contain



separate left turn lanes and shared through/right lanes. On Mayfield Avenue the northbound approach consist of a separate right turn lane with a shared through/left lane and the southbound approach consists of one shared right/through/left movement lane. The speed is posted at 25MPH on Mayfield Avenue.

### ACCESS PLANS

Currently the Cedar Hills Park site is served by a main access on Cedar Hills Blvd located across from Huntington Avenue. A second access on Cedar Hills Blvd located near the site's northwesterly boundary serves a small unimproved parking area near the tennis courts. Walker Elementary School is served by Lynnfield Lane. This street currently dead-ends at a cul-de-sac approximately 0.16 mile northerly of Walker Road at the school's driveway and 119<sup>th</sup> Place.

Under THPRD's IGA with the Beaverton School District the school will have access through the park to the school property for car and bus loading and unloading and the park will also have access to Lynnfield Lane across the school property, with specific locations to be determined. A new access connection to Lynnfield Lane from the park would enhance traffic circulation and therefore has been incorporated into the traffic flow analysis options.

Candidate access alternatives were developed based on input received through THPRD and the School District. In total 13 access alternatives were prepared for the analysis including five with access to Cedar Hills Blvd, five with access to Walker Road, two with access to both Cedar Hills Blvd and Walker Road, and one with access at Lynnfield Lane only. All of the access alternatives are illustrated on maps (reference Figures e1-e13 in appendix). Three of the access alternatives including C1, C2, & LL1 are being advanced for further consideration. Listed below is a description of all 13 access alternatives.

## Cedar Hills Blvd Access Option C1

For this option the intersection at Cedar Hills Road and Huntington Avenue will be upgraded to add separate left turn lanes on Cedar Hills Blvd and include signalization. Access to the park will permit full traffic movements. There will be a through traffic connection to Lynnfield Lane. Reference Figure e1 in the appendix.

## Cedar Hills Blvd Access Option C2

For this option the intersection at Cedar Hills Road and Huntington Avenue will be upgraded to add separate left turn lanes on Cedar Hills Blvd and include signalization. All vehicles including busses will have access through the park from the new signal at Cedar Hills Blvd/Huntington Avenue to a turnaround for school loading/unloading along the west end of the school property. There will be no traffic connection to Lynnfield Lane from Cedar Hills Blvd. Reference Figure e2 in the appendix.

## Cedar Hills Blvd Access Option C3

For this option the intersection at Cedar Hills Road and Huntington Avenue will retain stop sign control on the Huntington Avenue and park driveway approach. The park's access will be modified to allow only right turn ingress and egress. There will be a through traffic connection to Lynnfield Lane. Reference Figure e3 in the appendix.



### Cedar Hills Blvd Access Option C4

For this option the intersection at Cedar Hills Road and Huntington Avenue will be upgraded to add separate left turn lanes on Cedar Hills Blvd. The intersection will retain stop control and the park access will be modified to restrict egress to right turn turns. There will be a through traffic connection to Lynnfield Lane. Reference Figure e4 in the appendix.

### Cedar Hills Blvd Access Option C5

For this option the intersection at Cedar Hills Road and Huntington Avenue will be upgraded to add northbound and southbound left turn lanes. Stop sign control will be retained. The park's access will be modified to restrict egress to right turns. All vehicles including busses will have access through the park from Cedar Hills Blvd to a turnaround for school loading/unloading along the west end of the school property. There will be no traffic connection to Lynnfield Lane from Cedar Hills Blvd. Reference Figure e5 in the appendix.

### Walker Road Access Option W1

The intersection of Walker Road at 123<sup>rd</sup> Avenue will be upgraded to install a traffic signal with a new access to the park allowing all traffic movements. An eastbound left turn lane on Walker Road will be constructed. There will be a through traffic connection to Lynnfield Lane. Reference Figure e6 in the appendix.

### Walker Road Access Option W2

The intersection of Walker Road at 123<sup>rd</sup> Avenue will be upgraded to install a traffic signal with a new access to the park allowing all traffic movements. An eastbound left turn lane on Walker Road will be constructed. All vehicles including busses will have access through the park from the new signal at Walker Road/123<sup>rd</sup> Avenue to a turnaround for school loading/unloading along the west end of the school property. There will be no traffic connection to Lynnfield Lane through the new signal at Walker Road/123<sup>rd</sup> Avenue. Reference Figure e7 in the appendix.

## Walker Road Access Option W3

The intersection of Walker Road at 123<sup>rd</sup> Avenue will be modified to provide a new access to the park permitting only right turn ingress and egress. The side street approaches will be stop controlled. There will be a through traffic connection to Lynnfield Lane from the Walker Road/123<sup>rd</sup> Avenue intersection. Reference Figure e8 in the appendix.

## Walker Road Access Option W4

The intersection of Walker Road at 123<sup>rd</sup> Avenue will be modified to provide a new access to the park that restricts egress to right turns. An eastbound left turn lane on Walker Road will be constructed. The side street approaches will be stop controlled. There will be a through traffic connection to Lynnfield Lane from the Walker Road/123<sup>rd</sup> Avenue intersection. Reference Figure e9 in the appendix.

## Walker Road Access Option W5

The intersection of Walker Road at 123<sup>rd</sup> Avenue will be modified to provide a new access to the park that restricts egress to right turns. An eastbound left turn lane on Walker Road will be constructed. The side street approaches will be stop controlled. All vehicles including busses will have access through the park from Walker Road at 123<sup>rd</sup> Avenue to a turnaround for school





loading/unloading along the west end of the school property. There will be no traffic connection to Lynnfield Lane. Reference Figure e10 in the appendix.

### Cedar Hills Blvd/Walker Road Access Option CW1

For this option the intersection at Cedar Hills Road and Huntington Avenue will be upgraded to add northbound and southbound left turn lanes. Stop sign control will be retained. The park's access will be modified to restrict egress to right turns. The intersection of Walker Road at 123<sup>rd</sup> Avenue will be modified to provide a new access to the park permitting only right turn ingress and egress. The side street approaches will be stop controlled. All vehicles including busses will have access through the park to a turnaround for school loading/unloading along the west end of the school property. There will be no traffic connection to Lynnfield Lane. Reference Figure e11 in the appendix.

## Cedar Hills Blvd/Walker Road Access Option CW2

For this option the intersection at Cedar Hills Road and Huntington Avenue will retain stop sign control on the Huntington Avenue and park driveway approach. The park's access will be modified to allow only right turn ingress and egress. The intersection of Walker Road at 123<sup>rd</sup> Avenue will be modified to provide a new access to the park that restricts egress to right turns. An eastbound left turn lane on Walker Road will be constructed. The side street approaches will be stop controlled. All vehicles including busses will have access to the school's parking lot. There will be no traffic connection to Lynnfield Lane. Reference Figure e12 in the appendix.

## Lynnfield Lane Access Option LL1

The signalized intersection at Lynnfield Lane and Walker Road will be upgraded with a new traffic signal and eastbound left turn lane on Walker Road in order to serve as the only access point for school and park traffic. No other access to the sites will be provided. Reference Figure e13 in the appendix.

## TRAFFIC OPERATIONAL ANALYSIS

In order to evaluate traffic flow and delay in the area five intersections were analyzed for level of service (LOS) conditions including vehicular delay, volume/capacity, and safety. The intersections analyzed included Cedar Hills Blvd at Huntington Avenue & the park's access, and Walker Road at Cedar Hills Blvd, 123<sup>rd</sup> Avenue, Lynnfield Lane, and Mayfield Avenue. Volume to Capacity (v/c) and level of service (LOS) analyses were completed in the weekday AM & PM peak hours. A Saturday mid-day traffic study was previously prepared covering the impacts associated with the upgraded park.

The following scenarios are covered in this traffic study.

- Year 2014 Existing Traffic
- 2019 Background Traffic
- 2019 Total Traffic



In order to perform the LOS analysis at the study intersections video traffic counts were conducted during the weekday morning peak (7:00-9:00 AM) and afternoon peak (4:00-6:00 PM) traffic hours. The traffic count data is included in the report's appendix. The turning movement flow maps for the existing traffic is illustrated on Figure 1.

Background growth is comprised of the existing traffic factored with a traffic growth rate. For this project a traffic growth rate of 1.0% per year over a five-year buildout scenario was applied. Year 2019 background traffic volumes (the sum of existing and growth traffic) are illustrated in Figure 2.

The year 2019 total traffic is the summation of background traffic volumes and site generated traffic. The peak hour total traffic is presented on Figures 9a - 9m for the access scenarios analyzed.

## **VEHICULAR TRIP GENERATION**

Trip generation for the existing park was obtained from traffic counts conducted at the park access in September 2009, December 2010, & December 2013. The following table is based on averages of the historical data and documents the existing number of vehicles accessing the 30-car parking lot access on Cedar Hills Blvd.

|                            | Existing Par | k Trip | Generation |
|----------------------------|--------------|--------|------------|
| Peak Hour Period           | Enter        | Exit   | Total      |
| Weekday AM Peak Hour       | 2            | 2      | 4          |
| Weekday PM Peak Hour       | 5            | 4      | 9          |
| Saturday Mid-Day Peak Hour | 4            | 4      | 8          |

For the redeveloped park that will provide upgraded amenities and the lighted sports fields the trip generation was established based on discussions with THPRD staff and consideration of the programs planned at the site. Trip rates presented in the Institute of Transportation Engineers (ITE) <u>Trip Generation</u> Manual, 9<sup>th</sup> Edition were reviewed and determined to be insufficient for application of the park's trips in the study.

The new ancillary uses including the splash pad, picnic shelter, and play equipment are anticipated to draw an increased number of trips in the weekday and Saturday peak hours. The lighted multi-purpose sports field with turf surfacing will host team practices and games and will also generate additional traffic.

In establishing the number of trips associated with the sports fields, picnic area, and splash pad the following factors were considered.

- The fields will accommodate either two youth soccer fields or one baseball diamond at one time as the two uses cannot be combined at the same time.
- Since soccer teams have more players than baseball the trip generation for soccer was used in establishing the number of trips generated by the sports fields.



- For two soccer events staged at the same time a total of 15 players per team was considered. With two players per team carpooling there will be 13 entering and 13 exiting trips per team per field. Practices on weekdays in the PM peak hour will produce 26 entering and 26 exiting trips. With games scheduled on Saturdays the number of peak hour trips is based on two games occurring simultaneously with a total of four teams arriving during the peak hour. This equates to 52 entering and no exiting trips. Game duration was considered to be 1.5 hours.
- The sheltered picnic area may be reserved for groups up to 60 people with parking for approximately 20 to 25 cars. On weekdays in the summer months the PM peak hour from 5-6PM is likely to generate a fairly even mix of exit and entry trips. The trip generation was based on 50% of the total number of cars that park for the picnic shelter or 13 trip ends (six enter & seven exit trips for the weekday PM peak hour). On Saturdays there will be high use of the picnic area and the hour between 1-2PM will likely generate a high number of trips as the early reservation time ends at 2PM. Therefore, 75% of the parked capacity for the shelter area was used yielding 19 trip ends. Of this total 15 exit trips and four entering trips were estimated.
- Based on discussions with THPRD the splash pad will typically generate from 60 to 120 trip ends with the visitors staying anywhere from one to four hours. It is anticipated that only a portion of these trips will occur in any single hour. As there are no specific records available for the peak hour trip rates it was assumed that for the weekday PM peak hour 30% of the median number of trip ends occur or 0.30 x 90 trip ends = 27 trip ends. The split will be nearly even and 14 entering and 13 exiting trips were used. On Saturdays it was assumed that 50% of the median number of trip ends occur or 0.50 x 90 trip ends = 45 trip ends. A split of 23 entering trips and 22 exit trips was applied.

Table 1 summarizes the trip generation for the improved Cedar Hills Park.

|                                    |            |        | Peak  | Hour   |                    |           |  |
|------------------------------------|------------|--------|-------|--------|--------------------|-----------|--|
| Park Facility                      | Weeko      | day AM | Weeko | day PM | Saturday           | Afternoon |  |
|                                    | Enter      | Exit   | Enter | Exit   | Enter              | Exit      |  |
| ADA Accessible Trail               | 1          | 1      | 0     | 1      | 1                  | 1         |  |
| Bocce Ball Courts                  |            |        | 1     | 1      | 2                  | 2         |  |
| Picnic Tables                      |            |        | 6     | 7      | 4                  | 15        |  |
| Playground                         |            |        | 0     | 2      | 4                  | 4         |  |
| Tennis Courts                      | 2          | 2      | 8     | 0      | 8                  | 8         |  |
| Splash Pad                         |            |        | 14    | 13     | 23                 | 22        |  |
| Soccer/Sports Field <sup>1,2</sup> |            |        | 26    | 26     | 52                 | 0         |  |
| Community Garden                   |            |        | 1     | 0      | 3                  | 2         |  |
| Total Trips Constand               | Weekday AM |        | Weeko | day PM | Saturday Afternoon |           |  |
| Total Thps Generated               | 3          | 3      | 56    | 50     | 97                 | 54        |  |

#### Table 1 Trip Generation Summary for Cedar Hills Park

<sup>1</sup> Soccer use trips includes reduction of 2 trips entering & exiting per team to account for carpooling.

<sup>2</sup> With game duration of 1.5 hours there will be only entering trips during the Saturday peak hour.



As a result the redeveloped park will generate six trips in the weekday AM peak hour and 106 trips during the weekday PM peak hour. On Saturdays there will be 97 entering and 54 exiting trips in the peak hour.

Trips generated by Walker Elementary School (reference Table 1A) were based on the school's capacity increase compared to the existing facility. For 160 additional students the school will generate 206 trips per day with 72 trips in the AM peak hour and 24 trips in the PM peak hour.

|                              | Lipite     |      |       |        | Weekda | ау    |          |      |
|------------------------------|------------|------|-------|--------|--------|-------|----------|------|
| ITE Land Use                 | (Studente) |      | AM    | Peak H | our    | PN    | I Peak H | our  |
|                              | (Students) | ADT  | Total | Enter  | Exit   | Total | Enter    | Exit |
| Elementary School (#520)     | 160        |      |       |        |        |       |          |      |
| Generation Rate <sup>2</sup> |            | 1.29 | 0.45  | 55%    | 45%    | 0.15  | 49%      | 51%  |
| Site Trips                   |            | 206  | 72    | 40     | 32     | 24    | 12       | 12   |

 Table 1A Trip Generation Summary for Walker Elementary School

<sup>2</sup> Source: *Trip Generation*, 9th Edition, ITE, 2012, average rates.

Trip distribution used in the analysis was based on existing traffic patterns, traffic counts at the existing site access, engineering judgment, and the applicable access considerations. Figures 3a - 8L illustrate the trip distribution pattern and trip assignment for each scenario.

### CAPACITY ANALYSIS

Capacity analyses were performed to determine the levels of service for the weekday peak hours. Highway Capacity Software (HCS) was used to determine the level of service for all of the study intersections. The program is based on the Highway Capacity Manual methodology.

According to the City of Beaverton's Development Code (Special Requirements, Transportation Facilities, section 60.55.10) the maximum allowable average delay for signalized intersections is 65 seconds per vehicle in the peak hour. The maximum acceptable volume-to-capacity (v/c) ratio is 0.98. For stop controlled intersections the maximum allowable peak hour average delay is 45 seconds per vehicle.

Table 2A summarizes the year 2014 existing traffic and year 2019 background traffic LOS results. Copies of the capacity analysis calculations are included in the appendix.



| Interse       | ction       | Huntington Ave.<br>& Cedar Hills Blvd. |          | Cedar H<br>& Walk | Cedar Hills Blvd.<br>& Walker Road |       | SW 123rd Avenue<br>& Walker Road |      | Lynnfield Lane<br>& Walker Road |         | Mayfield Avenue<br>& Walker Road |  |
|---------------|-------------|--|----------|-------------------|------------------------------------|-------|----------------------------------|------|---------------------------------|---------|----------------------------------|--|
| Type of 0     | Control     | Two-w                                  | /ay Stop | Sig               | gnal                               | Two-v | vay Stop                         | Sig  | nal                             | al Sigi |                                  |  |
| Scenario      | Peak Hour   | our AM PM                              |          | AM                | PM                                 | AM    | PM                               | AM   | PM                              | AM      | PM                               |  |
|               | Crit. Mov't | EB                                     | EB       | -                 | -                                  | NB    | NB                               | -    | -                               | -       | -                                |  |
| 2014 Existing | LOS         | С                                      | С        | С                 | D                                  | E     | F                                | Α    | А                               | А       | В                                |  |
|               | Delay       | 18.7                                   | 19.5     | 26.6              | 36.1                               | 36.2  | 53.8                             | 7.6  | 5.2                             | 8.3     | 16.0                             |  |
|               | v/c         | -                                      | -        | 0.83              | 0.87                               | -     | -                                | 0.76 | 0.70                            | 0.72    | 0.85                             |  |
|               | Crit. Mov't | EB                                     | EB       | -                 | -                                  | NB    | NB                               | -    | -                               | -       | -                                |  |
| 2019          | LOS         | С                                      | С        | С                 | D                                  | E     | F                                | Α    | А                               | А       | В                                |  |
| Background    | Delay       | 20.1                                   | 21.3     | 28.9              | 40.4                               | 42.6  | 70.8                             | 8.0  | 5.8                             | 9.2     | 18.9                             |  |
|               | v/c         | -                                      | -        | 0.88              | 0.91                               | -     | -                                | 0.78 | 0.74                            | 0.76    | 0.89                             |  |

 Table 2A. Summary of capacity analysis for study intersections.

Through the year 2019 background traffic conditions the study intersections with the exception of 123<sup>rd</sup> Avenue at Walker Road will operate within the acceptable standards. Currently and for the year 2019 background scenario the intersection of 123<sup>rd</sup> Avenue at Walker Road exceeds the allowable average vehicle delay in the PM peak hour with delays of 53.8 seconds and 70.8 seconds in the existing and background periods, respectively.

Tables 2B-2N present the results for the year 2019 total traffic access alternatives.



|            |                | Hunting             | on Ave.  |         |             | SW <sup>2</sup> | 123rd  |         |          |                 |      |
|------------|----------------|---------------------|----------|---------|-------------|-----------------|--------|---------|----------|-----------------|------|
| Inters     | ection         | & Ceda              | ar Hills | Cedar H | lills Blvd. | Aver            | nue &  | Lynnfie | eld Lane | Mayfield Avenue |      |
|            |                | Blv                 | /d.      | & Walk  | er Road     | Walke           | r Road | & Walk  | er Road  | & Walker Roa    |      |
| Type of    | Control Signal |                     | nal      | Signal  |             | Two-way Stop    |        | Signal  |          | Signal          |      |
| Scenario   | Peak Hour      | АМ                  | PM       | АМ      | PM          | АМ              | PM     | АМ      | PM       | АМ              | PM   |
|            | Crit. Mov't    | <u>AM PM</u><br>/'t |          | -       | -           | NB              | NB     | -       | -        | -               | -    |
| 2019 Total | LOS            | А                   | А        | С       | D           | Е               | F      | А       | А        | А               | В    |
| Option C1  | Delay          | 5.1                 | 6.3      | 28.7    | 40.7        | 39.0            | 70.3   | 5.4     | 4.1      | 6.6             | 13.3 |
|            | V/C (          |                     | 0.46     | 0.88    | 0.92        | -               | -      | 0.74    | 0.69     | 0.70            | 0.83 |

Table 2B. Summary of capacity analysis for study intersections - Option C1.

#### Table 2C. Summary of capacity analysis for study intersections - Option C2.

| Inters     | ection      | Huntingt<br>& Ceda<br>Blv | ton Ave.<br>ar Hills<br>/d. | Cedar Hills Blvd.<br>& Walker Road |      | SW <sup>2</sup><br>Aver<br>Walke | 123rd<br>iue &<br>r Road | Lynnfie<br>& Walk | eld Lane<br>er Road | Mayfield Avenue<br>& Walker Road |      |
|------------|-------------|---------------------------|-----------------------------|------------------------------------|------|----------------------------------|--------------------------|-------------------|---------------------|----------------------------------|------|
| Type of    | Control     | Signal                    |                             | Signal                             |      | Two-way Stop                     |                          | Signal            |                     | Signal                           |      |
| Scenario   | Peak Hour   | AM PM                     |                             | AM                                 | PM   | AM                               | PM                       | AM                | PM                  | AM                               | PM   |
|            | Crit. Mov't | -                         | -                           | -                                  | -    | NB                               | NB                       | -                 | -                   | -                                | -    |
| 2019 Total | LOS         | А                         | А                           | С                                  | D    | Е                                | F                        | А                 | А                   | А                                | В    |
| Option C2  | Delay       | Delay 5.1 8.9             |                             | 28.7                               | 41.6 | 39.2                             | 74.4                     | 5.1               | 3.5                 | 6.6                              | 13.2 |
|            | v/c         | 0.46                      | 0.46                        | 0.88                               | 0.92 | -                                | -                        | 0.73              | 0.69                | 0.70                             | 0.83 |

#### Table 2D. Summary of capacity analysis for study intersections - Option C3.

|            |             | Huntingt      | on Ave.  |         |             | SW <sup>·</sup> | 123rd  |         |          |                 |      |
|------------|-------------|---------------|----------|---------|-------------|-----------------|--------|---------|----------|-----------------|------|
| Inters     | ection      | & Ceda        | ar Hills | Cedar H | lills Blvd. | Aver            | nue &  | Lynnfie | eld Lane | Mayfield Avenue |      |
|            |             | Blv           | /d.      | & Walk  | er Road     | Walke           | r Road | & Walk  | er Road  | & Walker Road   |      |
| Type of    | Control     | Two-way Stop  |          | Signal  |             | Two-way Stop    |        | Signal  |          | Signal          |      |
| Scenario   | Peak Hour   | AM PM         |          | ΔМ      | РM          | ΔМ              | PM     | ΔМ      | PM       | ΔМ              | PM   |
|            | Crit. Mov't | AM PM         |          | -       | -           | NB              | NB     | -       | -        | -               | -    |
| 2019 Total | LOS         | C             | C        | С       | D           | E               | F      | А       | А        | А               | В    |
| Option C3  | Delay       | lay 23.0 24.9 |          | 29.2    | 41.6        | 39.5            | 73.7   | 6.0     | 5.7      | 6.9             | 14.2 |
|            | v/c         | -             | -        | 0.87    | 0.93        | -               | -      | 0.75    | 0.73     | 0.71            | 0.84 |

#### Table 2E. Summary of capacity analysis for study intersections - Option C4.

|            |                           | Hunting        | on Ave.  |         |             | SW 123rd     |        |               |         |               |          |
|------------|---------------------------|----------------|----------|---------|-------------|--------------|--------|---------------|---------|---------------|----------|
| Inters     | ection                    | & Ceda         | ar Hills | Cedar H | lills Blvd. | Aver         | ue &   | Lynnfie       | ld Lane | Mayfiel       | d Avenue |
|            |                           | Blv            | /d.      | & Walk  | er Road     | Walke        | r Road | & Walker Road |         | & Walker Road |          |
| Type of    | be of Control Two-way Sto |                | ay Stop  | Signal  |             | Two-way Stop |        | Signal        |         | Signal        |          |
| Scenario   | Peak Hour                 | AM PM          |          | AM      | PM          | AM           | AM PM  |               | PM      | AM            | PM       |
|            | Crit. Mov't               | AM PM<br>EB EB |          | -       | -           | NB           | NB     | -             | -       | -             | -        |
| 2019 Total | LOS                       | F              | F        | С       | D           | Е            | F      | А             | А       | Α             | В        |
| Option C4  | C4 Delay 91.7 55.9        |                | 55.9     | 28.9    | 41.6        | 39.5         | 73.5   | 5.9           | 5.4     | 6.6           | 13.3     |
|            | v/c                       | -              | -        | 0.88    | 0.93        | -            | -      | 0.75          | 0.71    | 0.70          | 0.83     |



|            |                              | Hunting      | on Ave.     | Cedar H | lills Blvd. | SW 123rd     | d Avenue & | Lynnfie       | ld Lane | Mayfiel       | d Avenue |
|------------|------------------------------|--------------|-------------|---------|-------------|--------------|------------|---------------|---------|---------------|----------|
| Inters     | Intersection & Cedar Hills E |              | Hills Blvd. | & Walk  | er Road     | Walker Road  |            | & Walker Road |         | & Walker Road |          |
| Type of    | Control                      | Two-way Stop |             | Signal  |             | Two-way Stop |            | Signal        |         | Signal        |          |
| Scenario   | Peak Hour                    | AM           | PM          | AM      | PM          | AM           | PM         | AM            | PM      | AM            | PM       |
|            | Crit. Mov't                  | EB           | EB          | -       | -           | NB           | NB         | -             | -       | -             | -        |
| 2019 Total | LOS                          | F            | F           | С       | D           | Е            | F          | А             | Α       | А             | В        |
| Option C5  | Delay                        | 90.7         | 60.4        | 28.8    | 41.1        | 39.1         | 72.0       | 5.1           | 3.5     | 6.6           | 14.1     |
|            | v/c                          | -            | -           | 0.88    | 0.92        | -            | -          | 0.73          | 0.68    | 0.70          | 0.84     |

#### Table 2F. Summary of capacity analysis for study intersections - Option C5.

#### Table 2G. Summary of capacity analysis for study intersections - Option W1.

| Inters     | ection          | Huntingt<br>& Cedar I | on Ave.<br>Hills Blvd. | Cedar H<br>& Walk | lills Blvd.<br>ær Road | SW 123r<br>Walke | d Avenue &<br>er Road | Lynnfie<br>& Walk | ld Lane<br>er Road | Mayfiel<br>& Walk | Mayfield Avenue<br>& Walker Road |  |
|------------|-----------------|-----------------------|------------------------|-------------------|------------------------|------------------|-----------------------|-------------------|--------------------|-------------------|----------------------------------|--|
| Type of    | Type of Control |                       | ay Stop                | Siç               | ynal                   | Si               | gnal                  | Sig               | inal               | Signal            |                                  |  |
| Scenario   | Peak Hour       | AM                    | PM                     | AM                | PM                     | AM               | PM                    | AM                | PM                 | AM                | PM                               |  |
|            | Crit. Mov't     | EB                    | EB                     | -                 | -                      | -                | -                     | -                 | -                  | -                 | -                                |  |
| 2019 Total | LOS             | С                     | С                      | С                 | D                      | Α                | С                     | А                 | А                  | А                 | В                                |  |
| Option W1  | Delay           | 20.5                  | 21.7                   | 29.3              | 43.2                   | 7.1              | 23.5                  | 4.6               | 3.6                | 6.9               | 13.8                             |  |
| 1          | v/c             | -                     | -                      | 0.88              | 0.93                   | 0.71             | 0.99                  | 0.73              | 0.69               | 0.71              | 0.84                             |  |

#### Table 2H. Summary of capacity analysis for study intersections - Option W2.

| Inters            | ection      | Hunting      | ton Ave.    | Cedar H | Hills Blvd. | SW 123r | d Avenue & | Lynnfie | ld Lane | Mayfield Avenue |      |  |
|-------------------|-------------|--------------|-------------|---------|-------------|---------|------------|---------|---------|-----------------|------|--|
| Inters            | ection      | & Cedar      | Hills Blvd. | & Walk  | ker Road    | Walke   | er Road    | & Walk  | er Road | & Walker Road   |      |  |
| Type of           | Control     | Two-way Stop |             | Się     | gnal        | Si      | gnal       | Sig     | Inal    | Signal          |      |  |
| Sconario          | Peak Hour   |              |             |         |             |         |            |         |         |                 |      |  |
| Scenario Peak Hou |             | AM           | PM          | AM      | PM          | AM      | PM         | AM      | PM      | AM              | PM   |  |
|                   | Crit. Mov't | EB           | EB          | -       | -           | -       | -          | -       | -       | -               | -    |  |
| 2019 Total        | LOS         | С            | С           | С       | D           | Α       | С          | А       | А       | А               | В    |  |
| Option W2         | Delay       | 20.5         | 21.9        | 29.3    | 43.2        | 7.1     | 24.2       | 4.6     | 3.4     | 6.9             | 13.4 |  |
|                   | v/c         | -            | -           | 0.88    | 0.94        | 0.71    | 0.99       | 0.73    | 0.69    | 0.71            | 0.84 |  |

#### Table 21. Summary of capacity analysis for study intersections - Option W3.

| Intersection |             | Hunting             | ton Ave. | Cedar H       | lills Blvd. | SW 123r      | d Avenue & | Lynnfie       | ld Lane | Mayfield Avenue |      |
|--------------|-------------|---------------------|----------|---------------|-------------|--------------|------------|---------------|---------|-----------------|------|
| Intersection |             | & Cedar Hills Blvd. |          | & Walker Road |             | Walker Road  |            | & Walker Road |         | & Walker Road   |      |
| Type of      | Control     | Two-wa              | ay Stop  | Signal        |             | Two-way Stop |            | Signal        |         | Signal          |      |
| Scenario     | Peak Hour   | AM                  | PM       | AM            | PM          | AM           | PM         | AM            | PM      | AM              | PM   |
|              | Crit. Mov't | EB                  | EB       | -             | -           | NB           | NB         | -             | -       | -               | -    |
| 2019 Total   | LOS         | С                   | С        | С             | D           | F            | F          | Α             | А       | Α               | В    |
| Option W3    | Delay       | 20.4                | 21.5     | 29.3          | 42.8        | 76.3         | 175.6      | 5.6           | 5.5     | 6.9             | 14.2 |
|              | v/c         | -                   | -        | 0.88          | 0.93        | -            | -          | 0.74          | 0.76    | 0.71            | 0.84 |

#### Table 2J. Summary of capacity analysis for study intersections - Option W4.

| Intersection |             | Hunting   | Huntington Ave.     |      | Cedar Hills Blvd. |       | SW 123rd Avenue & |      | ld Lane       | Mayfield Avenue |               |  |
|--------------|-------------|-----------|---------------------|------|-------------------|-------|-------------------|------|---------------|-----------------|---------------|--|
|              |             | & Cedar I | & Cedar Hills Blvd. |      | & Walker Road     |       | Walker Road       |      | & Walker Road |                 | & Walker Road |  |
| Type of      | Control     | Two-wa    | Two-way Stop        |      | Signal            |       | Two-way Stop      |      | Signal        |                 | Signal        |  |
| Scenario     | Peak Hour   | AM        | PM                  | AM   | PM                | AM    | PM                | AM   | PM            | AM              | PM            |  |
|              | Crit. Mov't | EB        | EB                  | -    | -                 | NB    | NB                | -    | -             | -               | -             |  |
| 2019 Total   | LOS         | С         | С                   | С    | D                 | F     | F                 | А    | Α             | Α               | В             |  |
| Option W4    | Delay       | 20.5      | 21.7                | 29.3 | 43.4              | 114.0 | 233.3             | 5.2  | 4.3           | 6.9             | 13.8          |  |
|              | v/c         | -         | -                   | 0.88 | 0.93              | -     | -                 | 0.74 | 0.70          | 0.71            | 0.84          |  |



| Intersection    |             | Huntington Ave.     |      | Cedar Hills Blvd. |      | SW 123rd Avenue & |       | Lynnfield Lane |      | Mayfield Avenue |      |
|-----------------|-------------|---------------------|------|-------------------|------|-------------------|-------|----------------|------|-----------------|------|
|                 |             | & Cedar Hills Blvd. |      | & Walker Road     |      | Walker Road       |       | & Walker Road  |      | & Walker Road   |      |
| Type of Control |             | Two-way Stop        |      | Signal            |      | Two-way Stop      |       | Signal         |      | Signal          |      |
| Scopario        | Book Hour   |                     |      |                   |      |                   |       |                |      |                 |      |
| Scenario        | reak noui   | AM                  | PM   | AM                | PM   | AM                | PM    | AM             | PM   | AM              | PM   |
|                 | Crit. Mov't | EB                  | EB   | -                 | -    | NB                | NB    | -              | -    | -               | -    |
| 2019 Total      | LOS         | С                   | С    | С                 | D    | F                 | F     | А              | А    | Α               | В    |
| Option W5       | Delay       | 20.5                | 22.0 | 29.3              | 44.7 | 93.8              | 280.5 | 5.1            | 3.5  | 6.8             | 13.4 |
|                 | v/c         | -                   | -    | 0.88              | 0.95 | -                 | -     | 0.74           | 0.69 | 0.71            | 0.84 |

#### Table 2K. Summary of capacity analysis for study intersections - Option W5.

#### Table 2L. Summary of capacity analysis for study intersections - Option CW1.

| Intersection |             | Hunting<br>& Cedar          | gton Ave.<br>Hills Blvd. | e. Cedar Hills Bl<br>vd. & Walker Ro |      | SW 123rd Avenue & Walker Road |       | Lynnfield Lane<br>& Walker Road |      | Mayfield Avenue<br>& Walker Road |      |
|--------------|-------------|-----------------------------|--------------------------|--------------------------------------|------|-------------------------------|-------|---------------------------------|------|----------------------------------|------|
| Type of      | Control     | Control Two-way Stop Signal |                          | Two-way Stop                         |      | Signal                        |       | Signal                          |      |                                  |      |
| Scenario     | Peak Hour   | AM                          | PM                       | AM                                   | PM   | AM                            | PM    | AM                              | PM   | AM                               | PM   |
|              | Crit. Mov't | EB                          | EB                       | -                                    | -    | NB                            | NB    | -                               | -    | -                                | -    |
| 2019 Total   | LOS         | С                           | Е                        | С                                    | D    | F                             | F     | А                               | Α    | Α                                | В    |
| CW1          | Delay       | 23.2                        | 37.0                     | 29.2                                 | 41.8 | 77.1                          | 157.2 | 6.8                             | 3.9  | 6.9                              | 14.1 |
|              | v/c         | -                           | -                        | 0.88                                 | 0.93 | -                             | -     | 0.76                            | 0.70 | 0.71                             | 0.84 |

#### Table 2M. Summary of capacity analysis for study intersections - Option CW2.

| Intersection    |             | Huntington Ave.<br>& Cedar Hills Blvd. |      | Cedar Hills Blvd.<br>& Walker Road |      | SW 123rd Avenue &<br>Walker Road |       | Lynnfield Lane<br>& Walker Road |      | Mayfield Avenue<br>& Walker Road |      |
|-----------------|-------------|--|------|------------------------------------|------|----------------------------------|-------|---------------------------------|------|----------------------------------|------|
| Type of Control |             | Two-way Stop                           |      | Signal                             |      | Two-way Stop                     |       | Signal                          |      | Signal                           |      |
| Scenario        | Peak Hour   | AM                                     | PM   | AM                                 | PM   | AM                               | PM    | AM                              | PM   | АМ                               | PM   |
| 2010 Total      | Crit. Mov't | EB                                     | EB   | -                                  | -    | NB                               | NB    | -                               | -    | -                                | -    |
| 2019 Total      | LOS         | С                                      | D    | С                                  | D    | F                                | F     | А                               | А    | Α                                | В    |
| CW2             | Delay       | 23.1                                   | 26.1 | 29.2                               | 42.7 | 80.7                             | 179.9 | 6.8                             | 3.9  | 6.9                              | 14.1 |
| 0.112           | v/c         | -                                      | -    | 0.88                               | 0.94 | -                                | -     | 0.76                            | 0.70 | 0.71                             | 0.84 |

#### Table 2N. Summary of capacity analysis for study intersections - Option LL1.

| Intersection |              | Hunting      | ton Ave.            | Cedar H | ills Blvd.    | . SW 123rd Avenue & |             | Lynnfie | eld Lane      | Mayfield Avenue |               |  |
|--------------|--------------|--------------|---------------------|---------|---------------|---------------------|-------------|---------|---------------|-----------------|---------------|--|
| Inters       | Intersection |              | & Cedar Hills Blvd. |         | & Walker Road |                     | Walker Road |         | & Walker Road |                 | & Walker Road |  |
| Type of      | Control      | Two-way Stop |                     | Signal  |               | Two-way Stop        |             | Signal  |               | Signal          |               |  |
| Scenario     | Peak Hour    | AM           | PM                  | AM      | PM            | AM                  | PM          | AM      | PM            | АМ              | PM            |  |
|              | Crit. Mov't  | EB           | EB                  | -       | -             | NB                  | NB          | -       | -             | -               | -             |  |
| 2019 Total   | LOS          | С            | С                   | С       | D             | Е                   | F           | В       | В             | Α               | В             |  |
| Option LL1   | Delay        | 20.4         | 20.5                | 29.3    | 42.7          | 44.2                | 81.9        | 17.1    | 12.9          | 6.9             | 14.2          |  |
|              | v/c          | -            | -                   | 0.88    | 0.93          | -                   | -           | 0.89    | 0.83          | 0.71            | 0.84          |  |

The capacity analysis for all of the year 2019 total traffic access alternatives revealed the following results for the study intersections.

### Cedar Hills Blvd at Huntington Avenue

The intersection will experience acceptable levels of operation for all of the proposed access alternatives except Cedar Hills Blvd - Access Option C4 and Cedar Hills Blvd Access - Option C5. For both of these alternatives the stop controlled eastbound approach on Huntington Avenue will experience average vehicle delays exceeding 45 seconds. Therefore, the City's operational standard is not met for these options.



### Cedar Hills Blvd at Walker Road

The signalized intersection will meet the City's operational standard for all of the access options through the year 2019 total traffic scenario.

### Walker Road at 123rd Avenue

The intersection currently fails to the meet the City's standard of operation and will continue to fail for all of the access alternatives through the year 2019 total traffic scenario. For Walker Road Access - Option W1 and Walker Road Access - Option W2 the level of failure only slightly exceeds the maximum allowable v/c ratio of 0.98 in the PM peak hour with a value of 0.99. For each of the other Walker Road access options with stop control the delays far exceed the maximum average delay standard permitted by the City.

### Walker Road at Mayfield Avenue

The signalized intersection will meet the City's operational standard for all of the access alternatives through the year 2019 total traffic scenario.

### Walker Road at Lynnfield Lane

The initial capacity analysis results for this signalized intersection revealed that the City's level of service and operational standards are met for all of the access options through the year 2019 total traffic scenario. However, based on input received from Washington County staff and field observations it is known that the intersection operation is worse than initially projected. As a result a newer version of the Highway Capacity Software (Synchro, version 9) was used to remodel the intersection for the advancing access alternatives (C1, C2, & LL1). This program offers micro-simulation performance capabilities with a more detailed analysis using SimTraffic.

Tables 3a & 3b present the updated results. The AM and PM peak hour analyses show that the access alternatives meet the City's vehicular delay and v/c threshold standards (delay  $\leq 65$ " & v/c  $\leq 0.98$ ) except for the LL1 (without an eastbound left turn lane) access alternative when the intersection delay exceeds 65 seconds.

Despite meeting the City's operational standards there are long queues in the eastbound direction. The greatest queuing occurs during the morning peak hour when the eastbound to northbound left turn demand is the highest. Currently there is no turn lane on Walker Road and eastbound through traffic queue extends to approximately 325 feet. The traffic queues are projected to diminish for the C1 and C2 alternatives and the LL1 alternative (with a separate left turn lane).



|  | h   | ntersection l       |                     | SimTraffic Results       |                     |                    |                     |                  |
|--|-----|---------------------|---------------------|--------------------------|---------------------|--------------------|---------------------|------------------|
| Scenario   | LOS | Ave Delay<br>(secs) | Intersection<br>v/c | Worst<br>Approach<br>v/c | Ave Delay<br>(secs) | EB Delay<br>(secs) | EB<br>Queue<br>(ft) | WB<br>Queue (ft) |
| 1. Existing Year<br>2014                         | С   | 26                  | 0.79                | EB 0.96                  | 18                  | 42                 | 325                 | 200              |
| 2. Existing Year<br>2014 w/EB Left Lane          | С   | 25                  | 0.65                | WB 0.95                  | 17                  | 34                 | 50/275              | 225              |
| 3. Year 2019<br>Background                       | D   | 51                  | 0.86                | EB 1.14                  | 23                  | 60                 | 250                 | 225              |
| 4. Year 2019<br>Background w/EB<br>Left Lane     | С   | 30                  | 0.69                | WB 0.99                  | 16                  | 33                 | 175/250             | 250              |
| 5. Year 2019<br>Alternative C1                   | С   | 24                  | 0.80                | EB 0.90                  | 25                  | 134                | 300                 | 225              |
| 6. Year 2019<br>Alternative C1 w/EB<br>Left Lane | С   | 28                  | 0.67                | WB 0.98                  | 16                  | 40                 | 25/275              | 225              |
| 7. Year 2019<br>Alternative C2                   | С   | 24                  | 0.80                | EB 0.90                  | 25                  | 99                 | 300                 | 225              |
| 8. Year 2019<br>Alternative C2 w/EB<br>Left Lane | С   | 28                  | 0.67                | WB 0.98                  | 16                  | 40                 | 25/275              | 225              |
| 9. Year 2019<br>Alternative LL1                  | Е   | 77                  | 0.90                | EB 1.30                  | 18                  | 69                 | 250                 | 200              |
| 10. Year 2019<br>Alternative LL1 w/EB<br>Left Ln | D   | 40                  | 0.73                | WB 1.04                  | 16                  | 40                 | 175/250             | 250              |

Table 3a Walker Rd at Lynnfield Ln Signal LOS, Queue, & SimTraffic Analysis Results - AM Peak Hour

Results based on year 2010 HCM methodology, Synchro v9.



|  |     | Inte   | rsection Resu | ılts    | SimTraffic Results |        |      |      |  |
|--|-----|--------|---------------|---------|--------------------|--------|------|------|--|
| Connorio   |     |        | Intersection  | Worst   |                    |        | EB   | WB   |  |
| Scenano  | LOS | (secs) | v/c           | v/c     | (secs)             | (secs) | (ft) | (ft) |  |
| 1. Existing Year<br>2014                         | В   | 17     | 0.74          | EB 0.85 | 12                 | 11     | 300  | 200  |  |
| 2. Existing Year<br>2014 w/EB Left Lane          | В   | 17     | 0.70          | EB 0.84 | 12                 | 11     | 300  | 200  |  |
| 3. Year 2019<br>Background                       | С   | 20     | 0.78          | EB 0.89 | 14                 | 13     | 225  | 200  |  |
| 4. Year 2019<br>Background w/EB<br>Left Lane     | В   | 20     | 0.71          | EB 0.88 | 14                 | 14     | 225  | 225  |  |
| 5. Year 2019<br>Alternative C1                   | С   | 21     | 0.79          | EB 0.89 | 14                 | 14     | 225  | 250  |  |
| 6. Year 2019<br>Alternative C1 w/EB<br>Left Lane | С   | 20     | 0.76          | EB 0.88 | 14                 | 14     | 250  | 250  |  |
| 7. Year 2019<br>Alternative C2                   | С   | 21     | 0.79          | EB 0.90 | 14                 | 14     | 225  | 200  |  |
| 8. Year 2019<br>Alternative C2 w/EB<br>Left Lane | С   | 21     | 0.76          | EB 0.89 | 14                 | 14     | 225  | 225  |  |
| 9. Year 2019<br>Alternative LL1                  | Е   | 73     | 0.90          | EB 1.23 | 19                 | 51     | 250  | 200  |  |
| 10. Year 2019<br>Alternative LL1 w/EB<br>Left Ln | В   | 18     | 0.76          | WB 0.85 | 15                 | 59     | 250  | 225  |  |

Table 3b Walker Rd at Lynnfield Ln Signal LOS, Queue, & SimTraffic Analysis Results - PM Peak Hour

Results based on year 2010 HCM methodology, Synchro v9.



Generally, LOS 'A', 'B', 'C', and 'D' are desirable service levels ranging from no vehicle delays to average or longer than average delays in the peak hours. Level 'E' represents long delays indicating signalization warrants need to be reviewed and signals considered only if warrants are met. Level 'F' indicates that intersection improvements, such as widening and signalization, may be considered. According to the <u>Highway Capacity Manual (HCM)</u>, the following delay times are associated with the LOS at stop controlled unsignalized and signalized intersections.

| Level of Service criteria defined in the Highway Capacity Manual |                            |                            |  |  |  |  |  |
|--|----------------------------|----------------------------|--|--|--|--|--|
| Level of Service   | Unsignalized Control       | Signalized Control         |  |  |  |  |  |
| (LOS)  | Stopped Delay (sec/veh)    | Stopped Delay (sec/veh)    |  |  |  |  |  |
| А  | ≤ 10                       | ≤ 10                       |  |  |  |  |  |
| В  | $> 10 \text{ and } \le 15$ | $> 10 \text{ and } \le 20$ |  |  |  |  |  |
| С  | $> 15$ and $\leq 25$       | $> 20$ and $\le 35$        |  |  |  |  |  |
| D  | $> 25$ and $\leq 35$       | $>$ 35 and $\leq$ 55       |  |  |  |  |  |
| Ε  | $>$ 35 and $\leq$ 50       | $> 55$ and $\le 80$        |  |  |  |  |  |
| F  | > 50                       | > 80                       |  |  |  |  |  |

### TRAFFIC VOLUME COMPARISONS AT WALKER ROAD & LYNNFIELD LANE

The current peak hour counts (year 2014) at the intersection of Walker Road and Lynnfield Lane showed that a total of 1,830 vehicles enter the intersection during the AM peak hour. In the PM peak hour a total of 2,026 vehicles enter the intersection. In order to compare the volume impacts associated with the C1, C2, & LL1 access alternatives the following table was prepared. The volumes referenced are shown on Figure 1 (existing traffic), Figure 2 (year 2019 background), Figure 9a (year 2019 total, C1), Figure 9b (year 2019 total, C2) and Figure 9m (year 2019 total, LL1).

| Table 4         WALKER ROAD AT LYNNFIELD LANE TRAFFIC VOLUME COMPARISONS |                                    |  |                                    |  |  |  |  |  |
|--|------------------------------------|--|------------------------------------|--|--|--|--|--|
|  | AM Pe                              | ak Hour                                      | PM Peak Hour                       |  |  |  |  |  |
| Scenario   | Intersection<br>Entering<br>Volume | Percent Compared<br>to Background<br>Traffic | Intersection<br>Entering<br>Volume | Percent Compared<br>to Background<br>Traffic |  |  |  |  |
| Existing Traffic   | 1,830                              | 95%  | 2,026                              | 95%  |  |  |  |  |
| Year 2019 Background   | 1,930                              | 100%   | 2,126                              | 100%   |  |  |  |  |
| Alternative C1   | 1,907                              | 99%  | 2,163                              | 102%   |  |  |  |  |
| Alternative C2   | 1,909                              | 99%  | 2,160                              | 102%   |  |  |  |  |
| Alternative LL1  | 1,991                              | 103%   | 2,256                              | 106%   |  |  |  |  |

The traffic volume analysis has confirmed that in the AM peak access alternatives C1 & C2 result in a slight volume reduction at Walker Road and Lynnfield Lane compared to the year



2019 background traffic conditions. This situation is expected as a portion of the school traffic will divert to the new access on Cedar Hills Blvd at Huntington Avenue and there is very little park traffic occurring in the AM peak hour. Access alternative LL1 with no park or school access available on Cedar Hills Blvd will increase the volume at Walker Road and Lynnfield Lane.

In the PM peak hour when the park traffic is more significant with moderate school traffic the volumes are projected to increase at Walker Road and Lynnfield Lane. Table 4 illustrates that for access alternatives C1 & C2 there will be a 2% increase in the PM peak hour. For the LL1 alternative the percentage increases even more as anticipated.

The eastbound approach and left turn volumes at Walker Road and Lynnfield Lane are summarized in Table 5 (below) in the critical AM peak hour period for the existing, background, C1, C2, & LL1 alternative access scenarios. As expected the volumes will decrease for the C1 & C2 scenarios and increase for the LL1 alternative. Without adding a separate eastbound left turn lane the C1 & C2 scenarios are projected to operate at good LOS while the LL1 alternative fails. When a separate eastbound left turn lane is considered the background, C1, C2, and LL1 scenarios result in acceptable LOS & v/c's.

|            | Vol         | w/o EB Left Turn Lane |      |     | w/EB  | w/EB Left Turn Lane |     |       |
|------------|-------------|-----------------------|------|-----|-------|---------------------|-----|-------|
| Scenario   | EB Approach | EB Left Turn          | V/C  | LOS | Delay | V/C                 | LOS | Delay |
| Existing   | 749         | 48                    | 0.96 | D   | 39.1  |                     |     |       |
| Background | 784         | 48                    | 1.14 | F   | 95.4  | 0.47                | E   | 55.3  |
| C1         | 764         | 28                    | 0.90 | С   | 27.1  | 0.26                | D   | 45.5  |
| C2         | 765         | 28                    | 0.90 | С   | 27.3  | 0.26                | D   | 45.5  |
| LL1        | 808         | 72                    | 1.30 | F   | 163.6 | 0.72                | E   | 77.6  |

Table 5 WALKER ROAD at LYNNFIELD LANE EASTBOUND VOLUME & LOS COMPARRISONS - AM Pk Hr

## SCHOOL BUS ROUTING

The school bus data used in the traffic analysis was obtained in conversations with the School District's transportation staff and from the bus route maps they provided. The critical AM peak hour routes were analyzed and are illustrated on Figures 10a, 10b, 10c, and 10d.

Figure 10a shows the existing bus trips occurring in the AM peak hour within the study area. A total of eight busses enter the site and a total of eight busses depart the site. A few of the busses have overlapping routes in the surrounding neighborhood within the study period resulting in more that eight busses per direction on some street segments.

With the proposed school expansion two more busses will be added to serve the new facility increasing the number to 10 entering and 10 exiting busses.



Figures 10b, 10c, and 10d illustrate the AM peak hour bus trip assignments pertaining to the C1, C2, & LL1 access alternatives, respectively. Specifically at Walker Road and Lynnfield Lane the volume of bus traffic will decrease from 17 busses to 15 busses for the C1 & C2 alternatives. For the LL1 alternative the total increases to 21 busses at the intersection. The number of eastbound busses turning left from Walker Road to Lynnfield Lane will decrease from five to two busses for the C1 & C2 alternatives and remain the same for the LL1 alternative. The following table presents a summary of the bus trips occurring at Walker Road and Lynnfield Lane in the AM peak hour.

| Number of Busses at Walker/Lynnfield |                        |              |  |  |  |  |  |
|--------------------------------------|------------------------|--------------|--|--|--|--|--|
| Access Alternative                   | Accessing Intersection | Turn EB Left |  |  |  |  |  |
| Existing                             | 17                     | 5            |  |  |  |  |  |
| C1                                   | 15                     | 2            |  |  |  |  |  |
| C2                                   | 15                     | 2            |  |  |  |  |  |
| LL1                                  | 21                     | 5            |  |  |  |  |  |

### **QUEUING ANALYSIS**

Queue lengths at the study intersections were derived based on the left turn lane demand volumes and from the capacity analysis reports. The results are based on values representing the 95<sup>th</sup> percentile queuing conditions.

At the intersection of Cedar Hills Blvd at Huntington Avenue and the park access the northbound and southbound left turn lane volumes will require a storage length up to 200 feet in both directions. At Walker Road and 123<sup>rd</sup> Avenue an eastbound left turn lane with up to 200 feet of storage distance is needed. At Walker Road and Lynnfield Lane an eastbound left turn lane with 200 feet of storage distance is recommended.

### SIGHT DISTANCE

Intersection sight distance at the site access points was reviewed in the field in accordance with Washington County standards. Based on the posted speed on Cedar Hills Blvd and on Walker Road (35 MPH) a minimum sight distance of 350 feet is required from the driveways in each direction.

At the existing site access on Cedar Hills Blvd the available intersection sight distance is over 1,000 feet to the northeast and 500 feet to the southwest. Therefore, this location currently meets the standard for sight distance. At the alternative site access location on Walker Road at 123<sup>rd</sup> Avenue over 400 feet of sight distance is available in both directions and the standard is met.

## TRAFFIC SIGNAL WARRANTS

The peak hour signal warrant described in the <u>Manual on Uniform Traffic Control Devices</u> (MUTCD) was reviewed in order to document the signal warrant status on Cedar Hills Blvd at Huntington Avenue and on Walker Road at 123<sup>rd</sup> Avenue. At the Huntington Avenue intersection the results indicated the signal warrant is met for the existing, background, and total



traffic conditions. At Walker Road and 123<sup>rd</sup> Avenue the signal warrant is not met as the side street volumes are lower than the required minimum threshold of 100 vehicles.

## ACCIDENT HISTORY

Accident data for the study intersections was requested from Oregon Department of Transportation, Washington County, and City of Beaverton staff and has been summarized using the available historical data. Listed in the following table are the crash rate averages for the study intersections.

| Intersection                                | Accident<br>History<br>(Years) | Number of<br>Accidents | Accidents<br>per year | Annual<br>Traffic<br>Entering<br>(veh/yr) | Accident<br>rate per<br>M.E.V.* |
|---|--------------------------------|------------------------|-----------------------|---|---------------------------------|
| Huntington Avenue and Cedar Hills Boulevard | 5                              | 4                      | 0.8                   | 9017776                                   | 0.09                            |
| Walker Road and Cedar Hills Boulevard       | 5                              | 32                     | 6.4                   | 16245875                                  | 0.39                            |
| SW 123rd Avenue and Walker Road             | 5                              | 5                      | 1.0                   | 7929360                                   | 0.13                            |
| Lynnfield Lane and Walker Road              | 5                              | 6                      | 1.2                   | 7900141                                   | 0.15                            |
| Mayfield Avenue and Walker Road             | 5                              | 7                      | 1.4                   | 8630621                                   | 0.16                            |

### Table 6 Crash Summary Results

\* M.E.V. - million entering vehicles.

A five-year history within the period of January 2009 through December 2013 (latest available published data) was researched. The results indicated that the intersection of Walker Road and Cedar Hills Blvd had the highest crash frequency and rate with an average of 0.39 crashes per million entering vehicles per year (M.E.V.). At Walker Road and Lynnfield Lane a total of five crashes were reported by ODOT and one crash was reported by Washington County for a total of six crashes resulting in a rate of 0.15 M.E.V. If other crashes occurred and not reported they are not counted in the crash rate analysis.

At each location all of the crash rates are well below the critical rate of 1.0 M.E.V. which is typically considered the threshold rate for considering safety improvements.

## PEDESTRIANS, BICYCLES, & TRANSIT BUS SERVICE

Continuous sidewalks and bike lanes are provided along both sides of Cedar Hills Blvd and on Walker Road from 123<sup>rd</sup> Avenue to the west. East of 123<sup>rd</sup> Avenue Walker Road transitions into a two-lane road (without curbs and sidewalks) with narrow one to three-foot wide shoulders. From approximately 100 feet west of Lynnfield Lane to the east there is a three-foot wide separated paved sidewalk on the south side of Walker Road adjoining with the pedestrian crossing provided at the signalized intersection with Lynnfield Lane.



Transit bus service is provided by Tri-Met (line #20 - Cedar Hills) in the vicinity. There are bus stops located on both sides of Cedar Hills Blvd at the intersection with Huntington Avenue and the park access. Walker Road does not have a Tri-Met route available in the area.

### SUMMARY AND RECOMMENDATIONS

The traffic study for the Cedar Hills Park & Walker Elementary School development project has been prepared to determine the potential impacts to Cedar Hills Blvd and Walker Road at several study intersections. Redevelopment of the park is expected to generate six trips in the weekday AM peak hour and 106 trips in the weekday PM peak hour. Replacement of the elementary school is projected to generate 72 AM peak hour trips and 24 PM peak hour trips. The park will be upgraded to provide expanded parking, lighted turf multi-use sports field, splash pad, restrooms, picnic shelter, play equipment, and other amenities. The existing playground area and community garden (garden to be relocated, final size to be determined) that are currently available will be retained and the Walker Elementary School playground will be upgraded and park visitors will be allowed shared use per the IGA. The conceptual site plan is shown on Figure 'c'. Replacement of the school will consist of rebuilding the existing structure with new two-story buildings having a capacity for 750 students in grades K-5<sup>th</sup>. The school currently has an existing capacity for 590 students.

The study area was defined as the surrounding neighborhood including Cedar Hills Blvd and SW Walker Road and the intersections located at Cedar Hills Blvd/Huntington Avenue, and Walker Road at Cedar Hills Blvd, 123<sup>rd</sup> Avenue, Lynnfield Lane and Mayfield Avenue.

A set of access alternatives were identified based on input received through THPRD and the School District. In total 13 access alternatives were prepared for the analysis including five with access to Cedar Hills Blvd, five with access to Walker Road, two with access to both Cedar Hills Blvd and Walker Road, and one alternative with access through Lynnfield Lane only. The associated flow mapping is included in the report's appendix as Access Options e1-e13. Each access alternative was evaluated for traffic circulation, impacts to the streets, and operation of the study intersections. Three of the access alternatives including C1, C2, & LL1 are being advanced for further consideration based on discussions with the agencies.

Intersection sight distance at the site access points was reviewed in the field in accordance with Washington County standards. Based on the posted speed on Cedar Hills Blvd and on Walker Road (35 MPH) a minimum sight distance of 350 feet is required from the driveways in each direction. At the existing site access on Cedar Hills Blvd the available intersection sight distance is over 1,000 feet to the northeast and 500 feet to the southwest. Therefore, this location currently meets the standard for sight distance. At the alternative site access location on Walker Road at 123<sup>rd</sup> Avenue over 400 feet of sight distance is available in both directions and the standard is met. As the park and school sites are redeveloped it is important to realize that improvements created in the general access areas such as landscaping, signing, parking, fencing, structures, or other features should not result in obstructions to sight distance.

The peak hour signal warrant described in the <u>Manual on Uniform Traffic Control Devices</u> (MUTCD) was reviewed in order to document the signal warrant status on Cedar Hills Blvd at



Huntington Avenue and on Walker Road at 123<sup>rd</sup> Avenue. At the Huntington Avenue intersection the results indicated the signal warrant is met for the existing, background, and total traffic conditions. At Walker Road and 123<sup>rd</sup> Avenue the signal warrant is not met as the side street volumes are lower than the required minimum threshold of 100 vehicles.

Capacity analyses were performed to determine the levels of service for the weekday AM & PM peak hours. The results were established for year 2014 existing traffic, year 2019 background traffic, and the year 2019 total traffic conditions. Through the year 2019 background traffic conditions the study intersections with the exception of 123<sup>rd</sup> Avenue at Walker Road will operate within the acceptable standards. For the existing and year 2019 background scenarios the intersection of 123<sup>rd</sup> Avenue at Walker Road exceeds the allowable average vehicle delay time in the PM peak hour with delays of 53.8 seconds and 70.8 seconds for the existing and background periods, respectively.

For the year 2019 total traffic scenarios the intersections of Walker Road at Cedar Hills Blvd and at Mayfield Avenue will meet the City's standard of operation for all of the access alternatives considered. The intersection of Walker Road at Lynnfield Lane meets the City's standards except the LL1 alternative with no eastbound left turn lane. With a left turn lane the LL1 alternative meets the operational standard.

The intersection of Cedar Hills Blvd at Huntington Avenue will experience acceptable levels of operation for all the proposed access alternatives except for Cedar Hills Blvd - Access Option C4 and Cedar Hills Blvd Access - Option C5. In both cases the stop controlled eastbound approach on Huntington Avenue will experience vehicle delays exceeding 45 seconds and not meet the City's operational standard.

At Walker Road and 123<sup>rd</sup> Avenue the intersection currently fails to the meet the City's standard of operation and will continue to fail for all of the access alternatives through the year 2019 total traffic scenario. For Walker Road Access - Option W1 and Walker Road Access - Option W2 the level of failure only slightly exceeds the maximum allowable v/c ratio of 0.98 in the PM peak hour with a value of 0.99. For each of the other Walker Road access options with stop control the delays far exceed the maximum average delay standard permitted by the City.

The analysis has determined that 6 of the 13 alternative access alternatives studied will effectively meet the City's vehicle delay and volume/capacity standards. These access options are listed below.

- -- Cedar Hills Blvd Access Alternative C1 (reference Figure e1)
- -- Cedar Hills Blvd Access Alternative C2 (reference Figure e2)
- -- Cedar Hills Blvd Access Alternative C3 (reference Figure e3)
- -- Walker Road Access Alternative W1 (reference Figure e6)
- -- Walker Road Access Alternative W2 (reference Figure e7)
- -- Lynnfield Lane Access Alternative LL1 (reference Figure e13)

It is noted that for the two Walker Road Access alternatives (W1 & W2) listed above the proposed traffic signal at  $123^{rd}$  Avenue and the park access does not meet the signal warrant.



At the signalized intersection of Walker Road and Lynnfield Lane an eastbound left turn lane is a current need and it is recommended that Washington County consider making this improvement regardless of the park and school developments.

At the agency review meeting held on June 16<sup>th</sup> the list of candidate access alternatives was further reduced from six to three that will be considered with the final access plan. The three selected alternatives include C1, C2, & LL1.

### APPENDIX

Figure 'a'

Figure 'b'

Figure 'c'

- Vicinity Map
- School Boundary Map
- Site Plan
- Existing Lane Configurations and Control Figure 'd'
- Traffic Flow Diagrams
  - Figure e1Access Option C1Figure e2Access Option C2
  - Figure e2 Access Option C2 Figure e3 Access Option C3
  - Figure e4 Access Option C4
  - Figure e5 Access Option C5
  - Figure e6 Access Option W1
  - Figure e7 Access Option W2
  - Figure e8 Access Option W3
  - Figure e9 Access Option W4
  - Figure e10 Access Option W5
  - Figure e11 Access Option CW1
  - Figure e12 Access Option CW2
  - Figure e13 Access Option LL1
  - Figure 1 Year 2014 Existing Traffic, AM & PM Peak Hours
  - Figure 2 Year 2019 Background Traffic
  - Figures 3a-8LTrip Distribution & Assignment (not attached, 78 pages available upon request)Figures 9a-9mYear 2019 Total Traffic for all Access Options C1-LL1
  - Figures 10a-10d AM Peak Hour School Bus Trip Assignments
- Traffic Count Data
- Peak Hour Signal Warrant
- Accident History Data (provided by ODOT)
- Capacity Analysis Worksheets (not included, 193 pages available upon request)



The following trip distribution and trip assignment figures (total 78 figures) are listed for content purposes only and are not attached to this report. These figures will be available upon request.

Figure 3a Trip Distribution for Cedar Hills Park – AM Peak & PM Peak – Option C1 Figure 3b Trip Distribution for Cedar Hills Park – AM Peak & PM Peak – Option C2 Figure 3c Trip Distribution for Cedar Hills Park – AM Peak & PM Peak – Option C3 Figure 3d Trip Distribution for Cedar Hills Park - AM Peak & PM Peak - Option C4 Figure 3e Trip Distribution for Cedar Hills Park - AM Peak & PM Peak - Option C5 Figure 3f Trip Distribution for Cedar Hills Park - AM Peak & PM Peak - Option W1 Figure 3g Trip Distribution for Cedar Hills Park - AM Peak & PM Peak - Option W2 Figure 3h Trip Distribution for Cedar Hills Park - AM Peak & PM Peak - Option W3 Figure 3i Trip Distribution for Cedar Hills Park - AM Peak & PM Peak - Option W4 Figure 3j Trip Distribution for Cedar Hills Park – AM Peak & PM Peak – Option W5 Figure 3k Trip Distribution for Cedar Hills Park - AM Peak & PM Peak - Option CW1 Figure 31 Trip Distribution for Cedar Hills Park – AM Peak & PM Peak – Option CW2 Figure 3m Trip Distribution for Cedar Hills Park – AM Peak & PM Peak – Option LL1 Figure 4a Trip Distribution for Walker ES - AM Peak & PM Peak - Option C1 Figure 4b Trip Distribution for Walker ES – AM Peak & PM Peak – Option C2 Figure 4c Trip Distribution for Walker ES - AM Peak & PM Peak - Option C3 Figure 4d Trip Distribution for Walker ES – AM Peak & PM Peak – Option C4 Figure 4e Trip Distribution for Walker ES - AM Peak & PM Peak - Option C5 Figure 4f Trip Distribution for Walker ES - AM Peak & PM Peak - Option W1 Figure 4g Trip Distribution for Walker ES - AM Peak & PM Peak - Option W2 Figure 4h Trip Distribution for Walker ES - AM Peak & PM Peak - Option W3 Figure 4i Trip Distribution for Walker ES – AM Peak & PM Peak – Option W4 Figure 4j Trip Distribution for Walker ES – AM Peak & PM Peak – Option W5 Figure 4k Trip Distribution for Walker ES - AM Peak & PM Peak - Option CW1 Figure 41 Trip Distribution for Walker ES - AM Peak & PM Peak - Option CW2 Figure 4m Trip Distribution for Walker ES - AM Peak & PM Peak - Option LL1 Figure 5a Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option C1 Figure 5b Trip Assignment for Cedar Hills Park – AM Peak & PM Peak – Option C2 Figure 5c Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option C3 Figure 5d Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option C4 Figure 5e Trip Assignment for Cedar Hills Park – AM Peak & PM Peak – Option C5 Figure 5f Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option W1 Figure 5g Trip Assignment for Cedar Hills Park – AM Peak & PM Peak – Option W2 Figure 5h Trip Assignment for Cedar Hills Park – AM Peak & PM Peak – Option W3 Figure 5i Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option W4 Figure 5j Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option W5 Figure 5k Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option CW1 Figure 51 Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option CW2 Figure 5m Trip Assignment for Cedar Hills Park - AM Peak & PM Peak - Option LL1 Figure 6a Trip Assignment for Walker ES – AM Peak & PM Peak – Option C1 Figure 6b Trip Assignment for Walker ES – AM Peak & PM Peak – Option C2 Figure 6c Trip Assignment for Walker ES – AM Peak & PM Peak – Option C3 Figure 6d Trip Assignment for Walker ES – AM Peak & PM Peak – Option C4 Figure 6e Trip Assignment for Walker ES – AM Peak & PM Peak – Option C5 Figure 6f Trip Assignment for Walker ES – AM Peak & PM Peak – Option W1 Figure 6g Trip Assignment for Walker ES – AM Peak & PM Peak – Option W2 Figure 6h Trip Assignment for Walker ES - AM Peak & PM Peak - Option W3 Figure 6i Trip Assignment for Walker ES - AM Peak & PM Peak - Option W4 Figure 6j Trip Assignment for Walker ES – AM Peak & PM Peak – Option W5



| Figure 6k | Trip Assignment for Walker ES – AM Peak & PM Peak – Option CW1  |
|-----------|---|
| Figure 61 | Trip Assignment for Walker ES – AM Peak & PM Peak – Option CW2  |
| Figure 6m | Trip Assignment for Walker ES – AM Peak & PM Peak – Option LL1  |
| Figure 7a | Walker ES Reroute Distribution – AM Peak & PM Peak – Option C1  |
| Figure 7b | Walker ES Reroute Distribution – AM Peak & PM Peak – Option C2  |
| Figure 7c | Walker ES Reroute Distribution – AM Peak & PM Peak – Option C3  |
| Figure 7d | Walker ES Reroute Distribution – AM Peak & PM Peak – Option C4  |
| Figure 7e | Walker ES Reroute Distribution – AM Peak & PM Peak – Option C5  |
| Figure 7f | Walker ES Reroute Distribution – AM Peak & PM Peak – Option W1  |
| Figure 7g | Walker ES Reroute Distribution – AM Peak & PM Peak – Option W2  |
| Figure 7h | Walker ES Reroute Distribution – AM Peak & PM Peak – Option W3  |
| Figure 7i | Walker ES Reroute Distribution – AM Peak & PM Peak – Option W4  |
| Figure 7j | Walker ES Reroute Distribution – AM Peak & PM Peak – Option W5  |
| Figure 7k | Walker ES Reroute Distribution – AM Peak & PM Peak – Option CW1 |
| Figure 71 | Walker ES Reroute Distribution – AM Peak & PM Peak – Option CW2 |
| Figure 8a | Walker ES Reroute Assignment – AM Peak & PM Peak – Option C1    |
| Figure 8b | Walker ES Reroute Assignment – AM Peak & PM Peak – Option C2    |
| Figure 8c | Walker ES Reroute Assignment – AM Peak & PM Peak – Option C3    |
| Figure 8d | Walker ES Reroute Assignment – AM Peak & PM Peak – Option C4    |
| Figure 8e | Walker ES Reroute Assignment – AM Peak & PM Peak – Option C5    |
| Figure 8f | Walker ES Reroute Assignment – AM Peak & PM Peak – Option W1    |
| Figure 8g | Walker ES Reroute Assignment – AM Peak & PM Peak – Option W2    |
| Figure 8h | Walker ES Reroute Assignment – AM Peak & PM Peak – Option W3    |
| Figure 8i | Walker ES Reroute Assignment – AM Peak & PM Peak – Option W4    |
| Figure 8j | Walker ES Reroute Assignment – AM Peak & PM Peak – Option W5    |
| Figure 8k | Walker ES Reroute Assignment – AM Peak & PM Peak – Option CW1   |
| Figure 81 | Walker ES Reroute Assignment – AM Peak & PM Peak – Option CW2   |





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<u>Note</u>: The Cedar Hills Park layout will be finalized once the preferred access option is selected.

NOTES:

NO SCALE

CHARBONNEAU ENGINEERING LLC

PROJECT: 14-44

SITE PLAN CEDAR HILLS PARK & WALKER E.S. FIGURE

С



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| CHARBONNEAU                       | NOTES: | ACCESS OPTION CW1              | FIGURE |
|-----------------------------------|--------|--------------------------------|--------|
| ENGINEERING LLC<br>PROJECT: 14-44 |        | CEDAR HILLS PARK & WALKER E.S. | e11    |



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# PLOT DATE 06 03 15

| CHARBONNEAU    | NOTES: | ACCESS OPTION CW2              | FIGURE |
|----------------|--------|--------------------------------|--------|
| PROJECT: 14-44 |        | CEDAR HILLS PARK & WALKER E.S. | e12    |



PLOT DATE: 06.03.15

































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PLOT DATE 08 03 15

















# **Total Vehicle Summary**



# SW 123rd Ave & SW Walker Rd

Wednesday, December 17, 2014 4:00 PM to 6:00 PM



### **15-Minute Interval Summary 4:00 PM to 6:00 PM**

| Interval        |    | North | hound   |       | South | hound   | 1 | Easth | ound     |       |     | Maatk | aund     |          | 1     | Dodor | triana |      |
|-----------------|----|-------|---------|-------|-------|---------|---|-------|----------|-------|-----|-------|----------|----------|-------|-------|--------|------|
| Interval        |    | North | bound   |       | South | bound   |   | Easin | ouna     |       |     | west  | Jouna    |          |       | reues | sunans |      |
| Start           |    | SW 12 | 3rd Ave |       | SW 12 | 3rd Ave |   | SW Wa | ilker Rd |       |     | SW Wa | alker Rd | Interval |       | Cros  | swalk  |      |
| Time            | L  |       | R       | Bikes |       | Bikes   |   | Т     | R        | Bikes | L   | Т     | Bikes    | Total    | North | South | East   | West |
| 4:00 PM         | 3  |       | 11      | 0     |       | 0       |   | 253   | 18       | 0     | 25  | 222   | 0        | 532      | 0     | 1     | 0      | 0    |
| 4:15 PM         | 1  |       | 12      | 0     |       | 0       |   | 228   | 16       | 0     | 29  | 204   | 0        | 490      | 0     | 0     | 0      | 0    |
| 4:30 PM         | 3  |       | 8       | 0     |       | 0       |   | 258   | 20       | 0     | 21  | 190   | 1        | 500      | 0     | 0     | 0      | 0    |
| 4:45 PM         | 5  |       | 11      | 0     |       | 0       |   | 241   | 16       | 0     | 25  | 214   | 0        | 512      | 0     | 1     | 0      | 0    |
| 5:00 PM         | 1  |       | 9       | 0     |       | 0       |   | 242   | 13       | 0     | 30  | 215   | 0        | 510      | 0     | 0     | 0      | 0    |
| 5:15 PM         | 2  |       | 11      | 0     |       | 0       |   | 245   | 30       | 0     | 30  | 220   | 0        | 538      | 0     | 0     | 0      | 0    |
| 5:30 PM         | 5  |       | 8       | 0     |       | 0       |   | 260   | 13       | 0     | 18  | 222   | 0        | 526      | 0     | 0     | 0      | 0    |
| 5:45 PM         | 4  |       | 7       | 0     |       | 0       |   | 230   | 21       | 0     | 22  | 243   | 0        | 527      | 0     | 0     | 0      | 0    |
| Total<br>Survey | 24 |       | 77      | 0     |       | 0       |   | 1,957 | 147      | 0     | 200 | 1,730 | 1        | 4,135    | 0     | 2     | 0      | 0    |

# Peak Hour Summary

## 5:00 PM to 6:00 PM

| By        |    | North  | bound   |       |    | South  | bound   |       |       | Eastb   | ound     |       |       | West    | oound    |       | Total |       | Pedes | trians |      |
|-----------|----|--------|---------|-------|----|--------|---------|-------|-------|---------|----------|-------|-------|---------|----------|-------|-------|-------|-------|--------|------|
| Ammunanah |    | 3VV 12 | SIG AVE |       |    | 200 12 | Slu Ave |       |       | 200 005 | liker Ru |       |       | 200 009 | iiker Ru |       | Total |       | Cross | swark  |      |
| Approach  | In | Out    | Total   | Bikes | In | Out    | Total   | Bikes | In    | Out     | Total    | Bikes | In    | Out     | Total    | Bikes |       | North | South | East   | West |
| Volume    | 47 | 177    | 224     | 0     | 0  | 0      | 0       | 0     | 1,054 | 912     | 1,966    | 0     | 1,000 | 1,012   | 2,012    | 0     | 2,101 | 0     | 0     | 0      | 0    |
| %HV       |    | 0.     | 0%      |       |    | 0.0    | 0%      |       |       | 0.7     | 7%       |       |       | 0.5     | 5%       |       | 0.6%  |       |       |        |      |
| PHF       |    | 0.     | .90     |       |    | 0.     | 00      |       |       | 0.9     | 96       |       |       | 0.9     | 94       |       | 0.98  |       |       |        |      |

| By        |      | North<br>SW 12 | <b>bound</b><br>3rd Ave |       |    | South | <b>bound</b><br>3rd Ave |       |    | Eastb<br>SW Wa | ound<br>alker Rd |       |      | Westa<br>SW Wa | <b>oound</b><br>alker Rd |       | Total |
|-----------|------|----------------|-------------------------|-------|----|-------|-------------------------|-------|----|----------------|------------------|-------|------|----------------|--------------------------|-------|-------|
| wovernern | L    |                | R                       | Total |    |       |                         | Total |    | Т              | R                | Total | L    | Т              |                          | Total |       |
| Volume    | 12   |                | 35                      | 47    |    |       |                         | 0     |    | 977            | 77               | 1,054 | 100  | 900            |                          | 1,000 | 2,101 |
| %HV       | 0.0% | NA             | 0.0%                    | 0.0%  | NA | NA    | NA                      | 0.0%  | NA | 0.7%           | 0.0%             | 0.7%  | 0.0% | 0.6%           | NA                       | 0.5%  | 0.6%  |
| PHF       | 0.60 |                | 0.80                    | 0.90  |    |       |                         | 0.00  |    | 0.94           | 0.64             | 0.96  | 0.83 | 0.93           |                          | 0.94  | 0.98  |

### Rolling Hour Summary 4:00 PM to 6:00 PM

| Interval<br>Start |    | North<br>SW 12 | <b>bound</b><br>3rd Ave |       | South<br>SW 12 | <b>bound</b><br>3rd Ave |       | Eastb<br>SW Wa | ound<br>Iker Rd |       |     | West<br>SW Wa | <b>bound</b><br>alker Rd |       | Interval |       | Pedes<br>Cross | trians<br>swalk |      |
|-------------------|----|----------------|-------------------------|-------|----------------|-------------------------|-------|----------------|-----------------|-------|-----|---------------|--------------------------|-------|----------|-------|----------------|-----------------|------|
| Time              | L  |                | R                       | Bikes |                |                         | Bikes | Т              | R               | Bikes | L   | Т             |                          | Bikes | Total    | North | South          | East            | West |
| 4:00 PM           | 12 |                | 42                      | 0     |                |                         | 0     | 980            | 70              | 0     | 100 | 830           |                          | 1     | 2,034    | 0     | 2              | 0               | 0    |
| 4:15 PM           | 10 |                | 40                      | 0     |                |                         | 0     | 969            | 65              | 0     | 105 | 823           |                          | 1     | 2,012    | 0     | 1              | 0               | 0    |
| 4:30 PM           | 11 |                | 39                      | 0     |                |                         | 0     | 986            | 79              | 0     | 106 | 839           |                          | 1     | 2,060    | 0     | 1              | 0               | 0    |
| 4:45 PM           | 13 |                | 39                      | 0     |                |                         | 0     | 988            | 72              | 0     | 103 | 871           |                          | 0     | 2,086    | 0     | 1              | 0               | 0    |
| 5:00 PM           | 12 |                | 35                      | 0     |                |                         | 0     | 977            | 77              | 0     | 100 | 900           |                          | 0     | 2,101    | 0     | 0              | 0               | 0    |

# **Heavy Vehicle Summary**



### ш 0 0ui 0 ୶∔५ Ł Out 5 **4** 5 ln 7 **6** 0 ۵ Ĵ ħ t 0 0 Out 0 In 0 Peak Hour Summary 5:00 PM to 6:00 PM

# SW 123rd Ave & SW Walker Rd

Wednesday, December 17, 2014 4:00 PM to 6:00 PM

Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

| Interval        |   | North | bound   |       | South | bound   |       | Eastb | ound     |       |   | Westl | bound    |       |          |
|-----------------|---|-------|---------|-------|-------|---------|-------|-------|----------|-------|---|-------|----------|-------|----------|
| Start           |   | SW 12 | 3rd Ave |       | SW 12 | 3rd Ave |       | SW Wa | alker Rd |       |   | SW Wa | alker Rd |       | Interval |
| Time            | L |       | R       | Total |       |         | Total | Т     | R        | Total | L | Т     |          | Total | Total    |
| 4:00 PM         | 0 |       | 1       | 1     |       |         | 0     | 6     | 0        | 6     | 1 | 2     |          | 3     | 10       |
| 4:15 PM         | 0 |       | 0       | 0     |       |         | 0     | 3     | 0        | 3     | 0 | 1     |          | 1     | 4        |
| 4:30 PM         | 0 |       | 0       | 0     |       |         | 0     | 1     | 0        | 1     | 1 | 0     |          | 1     | 2        |
| 4:45 PM         | 0 |       | 0       | 0     |       |         | 0     | 0     | 0        | 0     | 0 | 2     |          | 2     | 2        |
| 5:00 PM         | 0 |       | 0       | 0     |       |         | 0     | 1     | 0        | 1     | 0 | 0     |          | 0     | 1        |
| 5:15 PM         | 0 |       | 0       | 0     |       |         | 0     | 5     | 0        | 5     | 0 | 1     |          | 1     | 6        |
| 5:30 PM         | 0 |       | 0       | 0     |       |         | 0     | 1     | 0        | 1     | 0 | 3     |          | 3     | 4        |
| 5:45 PM         | 0 |       | 0       | 0     |       |         | 0     | 0     | 0        | 0     | 0 | 1     |          | 1     | 1        |
| Total<br>Survey | 0 |       | 1       | 1     |       |         | 0     | 17    | 0        | 17    | 2 | 10    |          | 12    | 30       |

# Heavy Vehicle Peak Hour Summary 5:00 PM to 6:00 PM

| By       |      | North<br>SW 12 | <b>bound</b><br>3rd Ave |      | South<br>SW 12 | <b>bound</b><br>3rd Ave |      | Eastb<br>SW Wa | oound<br>alker Rd |      | Westl<br>SW Wa | oound<br>alker Rd | Total |
|----------|------|----------------|-------------------------|------|----------------|-------------------------|------|----------------|-------------------|------|----------------|-------------------|-------|
| Approach | In   | Out            | Total                   | In   | Out            | Total                   | In   | Out            | Total             | In   | Out            | Total             |       |
| Volume   | 0    | 0              | 0                       | 0    | 0              | 0                       | 7    | 5              | 12                | 5    | 7              | 12                | 12    |
| PHF      | 0.00 |                |                         | 0.00 |                |                         | 0.18 |                |                   | 0.25 |                |                   | 0.19  |

| By       |      | North<br>SW 123 | bound<br>3rd Ave |       | South<br>SW 12 | <b>bound</b><br>3rd Ave |       | Eastb<br>SW Wa | ound<br>Iker Rd |       |      | Westa<br>SW Wa | <b>bound</b><br>alker Rd |       | Total |
|----------|------|-----------------|------------------|-------|----------------|-------------------------|-------|----------------|-----------------|-------|------|----------------|--------------------------|-------|-------|
| Movement | Ц    |                 | R                | Total |                |                         | Total | Т              | R               | Total |      | Т              |                          | Total |       |
| Volume   | 0    |                 | 0                | 0     |                |                         | 0     | 7              | 0               | 7     | 0    | 5              |                          | 5     | 12    |
| PHF      | 0.00 |                 | 0.00             | 0.00  |                |                         | 0.00  | 0.18           | 0.00            | 0.18  | 0.00 | 0.25           |                          | 0.25  | 0.19  |

### Heavy Vehicle Rolling Hour Summary 4:00 PM to 6:00 PM

| Interval<br>Start |   | North<br>SW 12 | <b>bound</b><br>3rd Ave |       | South<br>SW 12 | <b>bound</b><br>3rd Ave |       | Eastb<br>SW Wa | ound<br>Iker Rd |       |   | Westl<br>SW Wa | <b>oound</b><br>alker Rd |       | Interval |
|-------------------|---|----------------|-------------------------|-------|----------------|-------------------------|-------|----------------|-----------------|-------|---|----------------|--------------------------|-------|----------|
| Time              | L |                | R                       | Total |                |                         | Total | Т              | R               | Total | L | Т              |                          | Total | Total    |
| 4:00 PM           | 0 |                | 1                       | 1     |                |                         | 0     | 10             | 0               | 10    | 2 | 5              |                          | 7     | 18       |
| 4:15 PM           | 0 |                | 0                       | 0     |                |                         | 0     | 5              | 0               | 5     | 1 | 3              |                          | 4     | 9        |
| 4:30 PM           | 0 |                | 0                       | 0     |                |                         | 0     | 7              | 0               | 7     | 1 | 3              |                          | 4     | 11       |
| 4:45 PM           | 0 |                | 0                       | 0     |                |                         | 0     | 7              | 0               | 7     | 0 | 6              |                          | 6     | 13       |
| 5:00 PM           | 0 |                | 0                       | 0     |                |                         | 0     | 7              | 0               | 7     | 0 | 5              |                          | 5     | 12       |


















































# Figure 4C-3. Warrant 3, Peak Hour



VEHICLES PER HOUR (VPH)

\*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

## Peak hour volume warrant for signalization data.

| Interportion         | Analysis Davied                          | Major<br>Street | Major S         | treet        | Minor Stre<br>Volume Ap | et High<br>oproach | Signal     |
|----------------------|--|-----------------|-----------------|--------------|-------------------------|--------------------|------------|
| Intersection         | Analysis Penod                           | Speed<br>(mph)  | Volume<br>(vph) | Lanes<br>(#) | Volume<br>(vph)         | Lanes<br>(#)       | Warranted? |
| Huntington Avenue    | 2014 Existing Traffic - AM Peak          | 25              | 1,685           | 0            | 100                     | 1                  | Yes        |
| nd Cedar Hills Blvd. | 2014 Existing Traffic - PM Peak          | - 55            | 2,147           | 2            | 120                     | I                  | Yes        |
|                      | 2019 Total Traffic - Option W1 - AM Peak |                 | 1,824           |              | 54                      |                    | No         |
| SW 123rd Avenue      | 2019 Total Traffic - Option W1 - PM Peak | 35              | 2,157           | 1            | 65                      | 1                  | No         |
| and Walker Road      | 2019 Total Traffic - Option W2 - AM Peak | - 55            | 1,824           | 1            | 54                      | 1                  | No         |
|                      | 2019 Total Traffic - Option W2 - AM Peak |                 | 2,163           |              | 65                      |                    | No         |

Source: Manual on Uniform Traffic Control Devices (MUTCD), 2003 Edition.



Charbonneau Engineering LLC

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Cedar Hills Boulevard & SW Huntington Avenue January 1, 2009 through December 31, 2013

| SER#<br>INVEST  | F R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF<br>TRAF- RND<br>CONTL DRV | -RD WTHR<br>BT SURF<br>WY LIGH | CRASH TYP<br>COLL TYP<br>F SVRTY | V# | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | ₽# | PRTC INJ<br>TYPE SVRT | A<br>G<br>Y E | S<br>E LICNS<br>X RES | PED<br>LOC | ERROR   | ACTN EVENT        | CAUSE          |
|-----------------|--|--------------------------|-----------------------|--|----------------------------|---|---------------------------------------|--------------------------------|----------------------------------|----|---|--------------------|----|-----------------------|---------------|-----------------------|------------|---------|-------------------|----------------|
| 04747<br>COUNTY | N N N N N                                      | 09/03/2011<br>Sat<br>6P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW HUNTINGTON AVE     | INTER<br>SW<br>06          | 3-LEG<br>O                              | N<br>STOP SIGN                        | N CLR<br>N DRY<br>N DAY        | S-1STOP<br>REAR<br>INJ           | 01 | POLCE 0<br>PUBLC<br>PSNGR CAR             | STRGHT<br>SW NE    | 01 | DRVR NONE             | 34            | M OR-Y<br>OR<25       |            | 016,026 | 000<br>038        | 27<br>00<br>27 |
|                 |  |                          |                       |  |                            |   |                                       |                                |                                  | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SW NE      | 01 | DRVR INJC             | 57            | M OR-Y<br>OR<25       |            | 000     | 011<br>000        | 00000          |
| 06065<br>NO RPT | N N N  | 11/06/2010<br>Sat<br>12P | 16<br>0               | SW CEDAR HILLS BLVD<br>SW HUNTINGTON AVE     | INTER<br>CN<br>01          | 3-leg<br>O                              | N<br>UNKNOWN                          | N CLR<br>N DRY<br>N DAY        | BIKE<br>TURN<br>INJ              | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-R<br>NE NW    | 01 | DRVR NONE             | 18            | F OTH-Y<br>N-RES      |            | 027     | 110<br>000<br>000 | 02<br>00<br>02 |
|                 |  |                          |                       |  |                            |   |                                       |                                |                                  |    |   | STRGHT<br>NE SW    | 01 | BIKE INJB             | 41            | М                     | 02         | 000     | 039               | 00             |
| 06494<br>NO RPT | N N N  | 11/19/2012<br>Mon<br>5P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW HUNTINGTON AVE     | INTER<br>CN<br>01          | 3-LEG<br>0                              | N<br>STOP SIGN                        | N RAIN<br>N WET<br>N DLIT      | ANGL-OTH<br>TURN<br>INJ          | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 | DRVR INJB             | 42            | F OR-Y<br>OR<25       |            | 000     | 000<br>000        | 02<br>00<br>00 |
|                 |  |                          |                       |  |                            |   |                                       |                                |                                  | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-L<br>NW NE    | 01 | DRVR INJC             | 28            | M OR-Y<br>OR<25       |            | 028     | 015<br>000        | 00<br>02       |
| 02158<br>NO RPT | N N N  | 04/28/2013<br>Sun<br>4P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW HUNTINGTON AVE     | INTER<br>CN<br>04          | CROSS<br>0                              | N<br>TRF SIGNAL                       | N CLR<br>N DRY<br>N DAY        | O-1TURN<br>TURN<br>PDO           | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 | DRVR NONE             | 16            | M OR-Y<br>OR<25       |            | 000     | 000               | 02<br>00<br>00 |
|                 |  |                          |                       |  |                            |   |                                       |                                |                                  | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-L<br>NE SE    | 01 | DRVR NONE             | 44            | M OR-Y<br>OR<25       |            | 028,004 | 000               | 00<br>02       |

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CITY OF BEAVERTON, WASHINGTON COUNTY

SW Cedar Hills Boulevard & SW Walker Road January 1, 2009 through December 31, 2013

| 0111 | ~ <u>-</u> | DELIVERCEON | 111011110101010 | 000111 |
|------|------------|-------------|-----------------|--------|
|      |            |             |                 |        |
|      |            |             |                 |        |

| SER#<br>INVEST  | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF-<br>TRAF- RNDE<br>CONTL DRVW | RD WTHR<br>ST SURF<br>Y LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | V# | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | PRTC<br>P# TYPE | INJ<br>SVRTY | A S<br>G E LICNS<br>E X RES | PED<br>LOC ERROR | ACTN EVENT | CAUSE          |
|-----------------|---|--------------------------|-----------------------|--|----------------------------|---|--|-------------------------------|--------------------------------|----|---|--------------------|-----------------|--------------|-----------------------------|------------------|------------|----------------|
| 01361<br>NO RPT | N N N   | 03/25/2009<br>Wed<br>1P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY       | S-1STOP<br>REAR<br>INJ         | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR         | NONE         | 18 M OR-Y<br>OR<25          | 026              | 000<br>000 | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR         | INJC         | 49 M OR-Y<br>OR<25          | 000              | 011<br>000 | 0 0<br>0 0     |
| 06540<br>NONE   | N N N   | 11/23/2010<br>Tue<br>3P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY       | O-OTHER<br>BACK<br>PDO         | 01 | NONE 0<br>UNKN<br>PSNGR CAR               | BACK<br>SW NE      | 01 DRVR         | NONE         | 18 M OR-Y<br>OR<25          | 011              | 000<br>000 | 10<br>00<br>10 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR         | NONE         | 33 F OR-Y<br>OR<25          | 000              | 011<br>000 | 0 0<br>0 0     |
| 03069<br>NONE   | N N N   | 06/11/2011<br>Sat<br>6P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY       | S-1STOP<br>REAR<br>INJ         | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR         | NONE         | 20 F OR-Y<br>OR<25          | 026              | 000<br>000 | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR         | INJC         | 50 F OR-Y<br>OR<25          | 000              | 011<br>000 | 0 0<br>0 0     |
| 00299<br>NONE   | N N N   | 01/18/2012<br>Wed<br>11A | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N RAIN<br>N WET<br>N DAY      | S-1STOP<br>REAR<br>PDO         | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR         | NONE         | 19 M OR-Y<br>OR<25          | 026              | 001<br>000 | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR         | NONE         | 83 M OR-Y<br>OR<25          | 000              | 011<br>000 | 0 0<br>0 0     |
| 05631<br>NONE   | N N N   | 10/19/2012<br>Fri<br>UNK | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N RAIN<br>N WET<br>N DAY      | S-1STOP<br>REAR<br>PDO         | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR         | NONE         | 00 M OR-Y<br>OR<25          | 026              | 000<br>000 | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 | NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR         | NONE         | 24 M OR-Y<br>OR<25          | 000              | 011<br>000 | 0 0<br>0 0     |
| 06096<br>NONE   | N N N   | 11/04/2012<br>Sun<br>5P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DLIT      | S-1STOP<br>REAR<br>PDO         | 01 | NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR         | NONE         | 17 M OR-Y<br>OR<25          | 014,026          | 000<br>088 | 10<br>00<br>10 |

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#### SW Cedar Hills Boulevard & SW Walker Road January 1, 2009 through December 31, 2013

| SER#<br>INVEST  | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF-<br>TRAF- RNDE<br>CONTL DRVV | RD WTHR<br>ST SURF        | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | PRTC INJ<br>P# TYPE SVRTY | A S<br>G E LICNS PH<br>E X RES LO | ED<br>DC ERROR | ACTN EVENT        | CAUSE                |
|-----------------|---|--------------------------|-----------------------|--|----------------------------|---|--|---------------------------|--------------------------------|--|--------------------|---------------------------|-----------------------------------|----------------|-------------------|----------------------|
|                 |   |                          |                       |  |                            |   |  |                           |                                | 02 NONE 0<br>UNKN<br>PSNGR CAR               | STOP<br>NE SW      | 01 DRVR NONE              | 00 M UNK<br>UNK                   | 000            | 011<br>000        | 0 0<br>0 0           |
| 01634<br>NO RPT | N N N   | 04/03/2013<br>Wed<br>6P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY   | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR NONE              | 33 F OR-Y<br>OR<25                | 026            | 000<br>000        | 07<br>00<br>07       |
|                 |   |                          |                       |  |                            |   |  |                           |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR NONE              | 34 F OR-Y<br>OR<25                | 000            | 011<br>000        | 0 0<br>0 0           |
| 07108<br>NONE   | N N N   | 12/06/2013<br>Fri<br>9A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N RAIN<br>N ICE<br>N DAY  | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR NONE              | 23 F OR-Y<br>OR<25                | 026            | 000               | 07<br>00<br>07       |
|                 |   |                          |                       |  |                            |   |  |                           |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR NONE              | 50 F OR-Y<br>OR<25                | 000            | 011<br>000        | 0 0<br>0 0           |
| 07507<br>NO RPT | N N N   | 12/21/2013<br>Sat<br>1P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY   | S-1STOP<br>REAR<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR NONE              | 27 M OR-Y<br>OR<25                | 016,026        | 013<br>000<br>038 | 27,07<br>00<br>27,07 |
|                 |   |                          |                       |  |                            |   |  |                           |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR NONE              | 47 M OR-Y<br>OR<25                | 000            | 011 013<br>000    | 0 0<br>0 0           |
|                 |   |                          |                       |  |                            |   |  |                           |                                | 03 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NE SW      | 01 DRVR INJC              | 50 M OR-Y<br>OR<25                | 000            | 011<br>000        | 00<br>00             |
| 04805<br>NONE   | N N N   | 08/29/2013<br>Thu<br>12P | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>E<br>06           | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLD<br>N WET<br>N DAY   | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>E W      | 01 DRVR NONE              | 42 F OR-Y<br>OR<25                | 026            | 000               | 07<br>00<br>07       |
|                 |   |                          |                       |  |                            |   |  |                           |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>E W        | 01 DRVR NONE              | 00 F UNK<br>OR<25                 | 000            | 011<br>000        | 0 0<br>0 0           |
| 01072<br>NONE   | N N N   | 03/09/2009<br>Mon<br>7P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N RAIN<br>N WET<br>N DLIT | S-OTHER<br>TURN<br>PDO         | 01 UNKN 9<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 DRVR NONE              | 00 F OR-Y<br>OR<25                | 026            | 004<br>000<br>000 | 07<br>00<br>07       |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Cedar Hills Boulevard & SW Walker Road January 1, 2009 through December 31, 2013

| SER#<br>INVEST  | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF<br>TRAF- RND<br>CONTL DRV | F-RD WTHR<br>DBT SURF<br>WY LIGH | CRASH TYP<br>COLL TYP<br>F SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | P# 1 | PRTC INJ<br>IYPE SVRTY | A S<br>G E LICNS<br>E X RES | PED<br>LOC ERROR | ACTN EVENT     | CAUSE          |
|-----------------|---|--------------------------|-----------------------|--|----------------------------|---|---------------------------------------|----------------------------------|----------------------------------|--|--------------------|------|------------------------|-----------------------------|------------------|----------------|----------------|
|                 |   |                          |                       |  |                            |   |                                       |                                  |                                  | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 I | DRVR NONE              | 51 F OR-Y<br>OR<25          | 000              | 013 004<br>000 | 00<br>00       |
| 05633<br>NONE   | N N N   | 10/16/2009<br>Fri<br>10P | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                       | N RAIN<br>N WET<br>N DARK        | S-1STOP<br>REAR<br>PDO           | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 I | DRVR NONE              | 00 M OR-Y<br>OR<25          | 016,026          | 000            | 27<br>00<br>27 |
|                 |   |                          |                       |  |                            |   |                                       |                                  |                                  | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 I | DRVR NONE              | 46 M OR-Y<br>OR<25          | 000              | 012<br>000     | 0 0<br>0 0     |
| 02408<br>NO RPT | N N N   | 05/20/2010<br>Thu<br>6A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SE<br>06          | CROSS<br>0                              | N<br>L-GRN-SIG                        | N RAIN<br>N WET<br>N DAY         | S-1STOP<br>REAR<br>PDO           | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 I | DRVR NONE              | 46 M OTH-Y<br>N-RES         | 043,026          | 001<br>000     | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |                                       |                                  |                                  | 02 UNKN 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 I | DRVR NONE              | 33 F OR-Y<br>OR<25          | 000              | 012<br>000     | 0 0<br>0 0     |
| 04400<br>NONE   | N N N   | 08/22/2012<br>Wed<br>9A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                       | N CLR<br>N DRY<br>N DAY          | S-1STOP<br>REAR<br>INJ           | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 I | DRVR INJB              | 40 M OR-Y<br>OR<25          | 026              | 000            | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |                                       |                                  |                                  | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 I | DRVR NONE              | 24 M OR-Y<br>OR<25          | 000              | 012<br>000     | 0 0<br>0 0     |
| 05277<br>NONE   | N N N   | 09/19/2013<br>Thu<br>5A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                       | N CLR<br>N DRY<br>N DLIT         | S-1STOP<br>REAR<br>PDO           | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 I | DRVR NONE              | 35 M OR-Y<br>OR<25          | 026              | 000            | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |                                       |                                  |                                  | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 I | DRVR NONE              | 25 M OTH-Y<br>N-RES         | 000              | 011<br>000     | 0 0<br>0 0     |
| 07131<br>NONE   | N N N   | 12/06/2013<br>Fri<br>8A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SE<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                       | N SLT<br>N SNO<br>N DAY          | S-1STOP<br>REAR<br>PDO           | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 I | DRVR NONE              | 00 M UNK<br>UNK             | 026              | 000            | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |                                       |                                  |                                  | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 I | DRVR NONE              | 60 M OR-Y<br>OR<25          | 000              | 011<br>000     | 00<br>00       |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

SW Cedar Hills Boulevard & SW Walker Road January 1, 2009 through December 31, 2013

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|         |     |           |                  |         |
|         |     |           |                  |         |

| SER#<br>INVEST  | P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF-<br>TRAF- RNDB'<br>CONTL DRVW | RD WTHR<br>I SURF<br>Y LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | PRTC INJ<br>P# TYPE SVRT | A S<br>G E LICNS PH<br>Y E X RES LO | ED<br>DC ERROR | ACTN EVENT | CAUSE                |
|-----------------|--|--------------------------|-----------------------|--|----------------------------|---|---|------------------------------|--------------------------------|--|--------------------|--------------------------|-------------------------------------|----------------|------------|----------------------|
| 00710<br>NONE   | N N N  | 02/12/2010<br>Fri<br>6P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                           | N RAIN<br>N WET<br>N DLIT    | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE             | 28 M OR-Y<br>OR<25                  | 026            | 000<br>000 | 07<br>00<br>07       |
|                 |  |                          |                       |  |                            |   |   |                              |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SW NE      | 01 DRVR NONE             | 52 M OR-Y<br>OR<25                  | 000            | 011<br>000 | 00000                |
| 03303<br>NO RPT | N N N  | 07/08/2010<br>Thu<br>12P | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SW<br>06          | CROSS<br>0                              | N<br>UNKNOWN                              | N CLR<br>N DRY<br>N DAY      | S-1STOP<br>REAR<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE             | 25 F OR-Y<br>OR<25                  | 026            | 000<br>000 | 07<br>00<br>07       |
|                 |  |                          |                       |  |                            |   |   |                              |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SW NE      | 01 DRVR INJC             | 33 M OR-Y<br>OR<25                  | 000            | 011<br>000 | 0 0<br>0 0           |
| 07063<br>NONE   | N N N  | 12/15/2010<br>Wed<br>6P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                           | N UNK<br>N UNK<br>N DARK     | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE             | 00 F UNK<br>UNK                     | 026            | 000<br>000 | 07<br>00<br>07       |
|                 |  |                          |                       |  |                            |   |   |                              |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SW NE      | 01 DRVR NONE             | 38 F OR-Y<br>OR<25                  | 000            | 011<br>000 | 0 0<br>0 0           |
| 07129<br>NO RPT | N N N  | 12/17/2010<br>Fri<br>7A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>SW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                           | N RAIN<br>N WET<br>N DAY     | S-1STOP<br>REAR<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE             | 34 M OR-Y<br>OR<25                  | 052,026        | 000<br>000 | 32,07<br>00<br>32,07 |
|                 |  |                          |                       |  |                            |   |   |                              |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SW NE      | 01 DRVR INJC             | 55 F OR-Y<br>OR<25                  | 000            | 011<br>000 | 00000                |
| 06089<br>CITY   | N N N N N                                      | 10/21/2013<br>Mon<br>8A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>W<br>05           | CROSS<br>0                              | N<br>TRF SIGNAL                           | N CLR<br>N DRY<br>N DAY      | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 DRVR NONE             | 33 M OR-Y<br>OR<25                  | 043,026        | 000<br>000 | 07<br>00<br>07       |
|                 |  |                          |                       |  |                            |   |   |                              |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 DRVR NONE             | 00 U UNK<br>UNK                     | 000            | 011<br>000 | 0 0<br>0 0           |
| 02425<br>NO RPT | N N N  | 05/22/2009<br>Fri<br>9A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NW<br>05          | CROSS<br>0                              | N<br>TRF SIGNAL                           | N CLR<br>N DRY<br>N DAY      | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 DRVR NONE             | 47 F OR-Y<br>OR<25                  | 026            | 000<br>000 | 07<br>00<br>07       |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Cedar Hills Boulevard & SW Walker Road January 1, 2009 through December 31, 2013

| SER#<br>INVEST  | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF<br>TRAF- RNDI<br>CONTL DRVI | -RD WTHR<br>BT SURF<br>WY LIGHI | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | PRTC INJ<br>P# TYPE SVRT | A S<br>G E LICNS P<br>Z E X RES L | ED<br>OC ERROR | ACTN EVENT                | CAUSE                |
|-----------------|---|--------------------------|-----------------------|--|----------------------------|---|---|---------------------------------|--------------------------------|--|--------------------|--------------------------|-----------------------------------|----------------|---------------------------|----------------------|
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>SE NW      | 01 DRVR NONE             | 58 M OR-Y<br>OR<25                | 000            | 011<br>000                | 0 0<br>0 0           |
| 02342<br>NO RPT | N Y N   | 05/16/2009<br>Sat<br>6P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DAY         | S-1STOP<br>REAR<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NW SE    | 01 DRVR NONE             | 33 M OR-Y<br>OR<25                | 052,026        | 013,093<br>000<br>000 093 | 32<br>00<br>32       |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NW SE      | 01 DRVR INJB             | 23 F OR-Y<br>OR>25                | 000            | 011 013<br>000            | 0 0<br>0 0           |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 03 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NW SE      | 01 DRVR NONE             | 37 M OR-Y<br>OR<25                | 000            | 022<br>000                | 0 0<br>0 0           |
| 06475<br>NO RPT | N N N   | 11/17/2011<br>Thu<br>7A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                         | N RAIN<br>N WET<br>N DAY        | S-1STOP<br>REAR<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NW SE    | 01 DRVR NONE             | 25 M OR-Y<br>OR<25                | 026,052        | 001<br>000                | 32,07<br>00<br>32,07 |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>NW SE      | 01 DRVR INJC             | 30 F OR-Y<br>OR<25                | 000            | 011<br>000                | 00<br>00             |
| 04293<br>NO RPT | N N N   | 08/06/2013<br>Tue<br>11A | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>NW<br>06          | CROSS<br>0                              | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DAY         | S-STRGHT<br>REAR<br>PDO        | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NW SE    | 01 DRVR NONE             | 17 F UNK<br>OR<25                 | 042            | 000                       | 07<br>00<br>07       |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NW SE    | 01 DRVR NONE             | 74 M OR-Y<br>OR<25                | 000            | 000                       | 0 0<br>0 0           |
| 01466<br>NO RPT | N N N   | 03/21/2012<br>Wed<br>8P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>CN<br>01          | CROSS<br>0                              | N<br>TRF SIGNAL                         | N SNOW<br>N SNO<br>N DLIT       | O-1TURN<br>TURN<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR NONE             | 32 M OR-Y<br>OR<25                | 020            | 000                       | 0 4<br>0 0<br>0 4    |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-L<br>SW NW    | 01 DRVR NONE             | 47 M OR-Y<br>OR>25                | 000            | 000<br>000                | 0 0<br>0 0           |
| 05868<br>NONE   | N N N   | 10/27/2012<br>Sat<br>9P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>CN<br>01          | CROSS<br>0                              | N<br>TRF SIGNAL                         | N RAIN<br>N WET<br>N DLIT       | O-1TURN<br>TURN<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-L<br>SW NW    | 01 DRVR NONE             | 87 F OR-Y<br>OR<25                | 097            | 000                       | 04<br>00<br>00       |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Cedar Hills Boulevard & SW Walker Road January 1, 2009 through December 31, 2013

| SER#<br>INVEST  | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF-<br>TRAF- RNDE<br>CONTL DRVW | RD WTHR<br>ST SURF<br>Y LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | PRTC INJ<br>P# TYPE SVRTY | A S<br>G E LICNS<br>Z E X RES | PED<br>LOC ERROR | ACTN EVENT | CAUSE          |
|-----------------|---|--------------------------|-----------------------|--|----------------------------|---|--|-------------------------------|--------------------------------|--|--------------------|---------------------------|-------------------------------|------------------|------------|----------------|
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR NONE              | 48 F OR-Y<br>OR<25            | 097              | 000        | 00<br>00       |
| 06087<br>NO RPT | N N N   | 11/30/2009<br>Mon<br>9A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>CN<br>02          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY       | ANGL-OTH<br>ANGL<br>PDO        | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE              | 73 F OR-Y<br>OR<25            | 000              | 000        | 04<br>00<br>00 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 DRVR NONE              | 64 M OR-Y<br>OR<25            | 020              | 000        | 0 0<br>0 4     |
| 05488<br>NONE   | N N N   | 10/06/2011<br>Thu<br>5A  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>CN<br>02          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N RAIN<br>N WET<br>N DLIT     | ANGL-OTH<br>TURN<br>PDO        | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE              | 41 M OTH-Y<br>UNK             | 097              | 000        | 04<br>00<br>00 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-R<br>SE NE    | 01 DRVR NONE              | 52 F OR-Y<br>OR>25            | 097              | 000        | 00<br>00       |
| 01526<br>NO RPT | N N N   | 03/26/2013<br>Tue<br>3P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>CN<br>03          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY       | ANGL-OTH<br>ANGL<br>INJ        | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>NE SW    | 01 DRVR NONE              | 70 M OR-Y<br>OR<25            | 097              | 000        | 04<br>00<br>00 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SE NW    | 01 DRVR INJB              | 21 F OR-Y<br>OR<25            | 097              | 000        | 00<br>00       |
| 03072<br>NO RPT | N N N   | 06/21/2010<br>Mon<br>12P | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>CN<br>04          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N CLR<br>N DRY<br>N DAY       | ANGL-OTH<br>ANGL<br>INJ        | 01 NONE 0<br>PRVTE<br>MTRCYCLE               | STRGHT<br>NW SE    | 01 DRVR INJB              | 24 M OTH-Y<br>OR<25           | 000              | 000        | 04<br>00<br>00 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE              | 79 M OR-Y<br>OR<25            | 020              | 000        | 0 0<br>0 4     |
| 01149<br>NONE   | N N N   | 03/05/2012<br>Mon<br>3P  | 16<br>0               | SW CEDAR HILLS BLVD<br>SW WALKER RD          | INTER<br>CN<br>04          | CROSS<br>0                              | N<br>TRF SIGNAL                          | N UNK<br>N UNK<br>N DAY       | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>SW NE    | 01 DRVR NONE              | 50 F OR-Y<br>OR>25            | 026              | 000        | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |  |                               |                                | 02 UNKN 0<br>UNKN<br>UNKNOWN                 | STOP<br>SW NE      | 01 DRVR NONE              | 00 M UNK                      | 000              | 012<br>000 | 00000          |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Walker Road & SW 123rd Avenue January 1, 2009 through December 31, 2013

| SER#<br>INVEST  | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF-<br>TRAF- RNDF<br>CONTL DRV | -RD WTHR<br>3T SURF<br>VY LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | PRTC INJ<br>P# TYPE SVRT | A S<br>G E LICNS PI<br>Y E X RES LO | ED<br>DC ERROR | ACTN EVENT        | CAUSE          |
|-----------------|---|--------------------------|-----------------------|--|----------------------------|---|---|---------------------------------|--------------------------------|--|--------------------|--------------------------|-------------------------------------|----------------|-------------------|----------------|
| 02792<br>NO RPT | N N N   | 05/30/2012<br>Wed<br>5P  | 16<br>0               | SW WALKER RD<br>SW 123RD AVE                 | INTER<br>W<br>06           | 3-LEG<br>O                              | N<br>STOP SIGN                          | N CLR<br>N DRY<br>N DAY         | S-1STOP<br>REAR<br>PDO         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>W E      | 01 DRVR NONE             | 23 M OR-Y<br>OR<25                  | 043,026        | 013<br>000<br>000 | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>W E        | 01 DRVR NONE             | 00 M OR-Y<br>OR<25                  | 000            | 011 013<br>000    | 0 0<br>0 0     |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 03 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>W E        | 01 DRVR NONE             | 48 M OR-Y<br>OR<25                  | 000            | 022<br>000        | 0 0<br>0 0     |
| 03274<br>NO RPT | N N N   | 06/20/2013<br>Thu<br>4P  | 16<br>0               | SW WALKER RD<br>SW 123RD AVE                 | INTER<br>W<br>06           | 3-LEG<br>O                              | N<br>STOP SIGN                          | N CLR<br>N DRY<br>N DAY         | S-1STOP<br>REAR<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>W E      | 01 DRVR NONE             | 33 M OR-Y<br>OR<25                  | 026            | 013<br>000<br>000 | 07<br>00<br>07 |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>W E        | 01 DRVR INJB             | 53 M OR-Y<br>OR<25                  | 000            | 011 013<br>000    | 0 0<br>0 0     |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 03 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>W E        | 01 DRVR NONE             | 27 F OR-Y<br>OR>25                  | 000            | 011 013<br>000    | 0 0<br>0 0     |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 04 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>W E        | 01 DRVR NONE             | 31 F OR-Y<br>OR<25                  | 000            | 011<br>000        | 0 0<br>0 0     |
| 04588<br>NO RPT | N N N   | 09/03/2010<br>Fri<br>10A | 16<br>0               | SW WALKER RD<br>SW 123RD AVE                 | INTER<br>CN<br>03          | 3-LEG<br>0                              | N<br>STOP SIGN                          | N CLR<br>N DRY<br>N DAY         | O-1TURN<br>TURN<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | STRGHT<br>W E      | 01 DRVR INJC             | 20 F OR-Y<br>OR<25                  | 000            | 013<br>000<br>000 | 02<br>00<br>00 |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 02 NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-L<br>E S      | 01 DRVR INJC             | 68 F OR-Y<br>OR>25                  | 004,028        | 000 013<br>000    | 00<br>02       |
|                 |   |                          |                       |  |                            |   |   |                                 |                                | 03 NONE 0<br>PRVTE<br>PSNGR CAR              | STOP<br>S N        | 01 DRVR INJC             | 34 F OR-Y<br>OR<25                  | 000            | 011<br>000        | 0 0<br>0 0     |
| 00235<br>COUNTY | N N N   | 01/16/2012<br>Mon<br>7P  | 16<br>0               | SW WALKER RD<br>SW 123RD AVE                 | INTER<br>CN<br>03          | 3-LEG<br>O                              | N<br>STOP SIGN                          | N RAIN<br>N WET<br>N DARK       | O-1TURN<br>TURN<br>INJ         | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | TURN-L<br>E S      | 01 DRVR NONE             | 33 M NONE<br>OR<25                  | 004,028        | 000               | 02<br>00<br>02 |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Walker Road & SW 123rd Avenue January 1, 2009 through December 31, 2013

| S D<br>P R S U<br>E A U C (<br>SER# E L G H I<br>INVEST D C S L I | V<br>D DATE<br>R DAY<br>K TIME | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL<br>TRAF-<br>CONTL | OFF-RD<br>RNDBT<br>DRVWY | WTHR<br>SURF<br>LIGHT | CRASH TYP<br>COLL TYP<br>SVRTY | ∨#       | SPCL USE<br>TRLR QTY<br>OWNER<br>VEH TYPE | MOVE<br>FROM<br>TO | 1<br>P# 1 | PRTC I | INJ<br>SVRTY | A S<br>G E<br>E X | LICNS<br>RES  | PED<br>LOC | ERROR | ACTN EVENT | CAUSE          |
|---|--------------------------------|-----------------------|--|----------------------------|---|---------------------------|--------------------------|-----------------------|--------------------------------|----------|---|--------------------|-----------|--------|--------------|-------------------|---------------|------------|-------|------------|----------------|
|   |                                |                       |  |                            |   |                           |                          |                       |                                | 02<br>P  | NONE 0<br>PRVTE<br>SNGR CAR               | STRGHT<br>W E      | 01 I      | orvr : | INJB         | 23 M              | OR-Y<br>OR<25 |            | 000   | 000<br>000 | 0 0<br>0 0     |
| 02298 N N N<br>NO RPT   | 05/04/2012<br>Fri<br>5P        | 16<br>0               | SW WALKER RD<br>SW 123RD AVE                 | INTER<br>CN<br>04          | 3-LEG<br>O                              | N<br>STOP SI              | N<br>GN N<br>N           | RAIN<br>WET<br>DAY    | ANGL-OTH<br>TURN<br>PDO        | 01<br>P: | NONE 0<br>PRVTE<br>SNGR CAR               | STRGHT<br>W E      | 01 I      | DRVR 1 | IONE         | 43 F              | OR-Y<br>OR<25 |            | 000   | 000        | 02<br>00<br>00 |
|   |                                |                       |  |                            |   |                           |                          |                       |                                | 02<br>P: | NONE 0<br>PRVTE<br>SNGR CAR               | TURN-L<br>S W      | 01 I      | DRVR 1 | IONE         | 22 F              | OR-Y<br>OR<25 |            | 028   | 015<br>000 | 00<br>02       |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Walker Road & SW Lynnfield Lane January 1, 2009 through December 31, 2013

| SER#<br>INVEST | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME      | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF<br>TRAF- RNE<br>CONTL DRV | -RD WTHR<br>BT SURF<br>WY LIGH | CRASH TYP<br>COLL TYP<br>F SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | PRTC INJ<br>P# TYPE SVRT | A S<br>G E LICNS<br>Y E X RES | PED<br>LOC ERROR | ACTN EVENT                    | CAUSE          |
|----------------|---|--------------------------|-----------------------|--|----------------------------|---|---------------------------------------|--------------------------------|----------------------------------|--|--------------------|--------------------------|-------------------------------|------------------|-------------------------------|----------------|
| 06859<br>NONE  | N N N   | 12/08/2010<br>Wed<br>3P  | 16<br>0               | SW LYNNFIELD LN<br>SW WALKER RD              | INTER<br>E<br>06           | 3-LEG<br>O                              | N<br>TRF SIGNAL                       | N CLD<br>N WET<br>N DAY        | S-1STOP<br>REAR<br>PDO           | 01 NONE C<br>UNKN<br>PSNGR CAR               | ) STRGHT<br>E W    | 01 DRVR NONE             | 00 M OR-Y<br>OR>25            | 026              | 000<br>000                    | 07<br>00<br>07 |
|                |   |                          |                       |  |                            |   |                                       |                                |                                  | 02 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR NONE             | 75 M OR-Y<br>OR<25            | 000              | 011<br>000                    | 0 0<br>0 0     |
| 06849<br>CITY  | N N N   | 12/04/2011<br>Sun<br>9A  | 16<br>0               | SW LYNNFIELD LN<br>SW WALKER RD              | INTER<br>W<br>05           | 3-LEG<br>O                              | N<br>TRF SIGNAL                       | Y CLR<br>N DRY<br>N DAY        | FIX OBJ<br>FIX<br>PDO            | 01 NONE ()<br>PRVTE<br>PSNGR CAR             | ) STRGHT<br>E W    | 01 DRVR NONE             | 34 M OR-Y<br>OR<25            | 052,080          | 058,088<br>000 058,088<br>028 | 32<br>00<br>32 |
| 01729<br>NONE  | N N N   | 04/05/2012<br>Thu<br>8A  | 16<br>0               | SW LYNNFIELD LN<br>SW WALKER RD              | INTER<br>W<br>06           | 3-LEG<br>O                              | N<br>TRF SIGNAL                       | N RAIN<br>N WET<br>N DAY       | S-1STOP<br>REAR<br>PDO           | 01 NONE (<br>PRVTE<br>PSNGR CAR              | ) STRGHT<br>W E    | 01 DRVR NONE             | 37 M OR-Y<br>OR<25            | 026              | 000<br>000                    | 07<br>00<br>07 |
|                |   |                          |                       |  |                            |   |                                       |                                |                                  | 02 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>W E      | 01 DRVR NONE             | 56 F OR-Y<br>OR<25            | 000              | 011<br>000                    | 0 0<br>0 0     |
| 03096<br>NONE  | N N N   | 06/15/2012<br>Fri<br>2P  | 16<br>0               | SW LYNNFIELD LN<br>SW WALKER RD              | INTER<br>W<br>06           | 3-LEG<br>O                              | N<br>TRF SIGNAL                       | N CLR<br>N DRY<br>N DAY        | S-1STOP<br>REAR<br>PDO           | 01 NONE 0<br>PRVTE<br>PSNGR CAR              | ) STRGHT<br>W E    | 01 DRVR NONE             | 50 M OR-Y<br>OR>25            | 026              | 000<br>000                    | 07<br>00<br>07 |
|                |   |                          |                       |  |                            |   |                                       |                                |                                  | 02 NONE (<br>UNKN<br>PSNGR CAR               | ) STOP<br>W E      | 01 DRVR NONE             | 00 U OR-Y<br>UNK              | 000              | 011<br>000                    | 00<br>00       |
| 02849<br>NONE  | N N N   | 05/31/2013<br>Fri<br>10A | 16<br>0               | SW LYNNFIELD LN<br>SW WALKER RD              | INTER<br>W<br>06           | 3-LEG<br>O                              | N<br>TRF SIGNAL                       | N CLR<br>N DRY<br>N DAY        | S-1STOP<br>REAR<br>INJ           | 01 NONE (<br>PRVTE<br>PSNGR CAR              | ) STRGHT<br>W E    | 01 DRVR NONE             | 00 M UNK<br>UNK               | 026              | 000<br>000                    | 07<br>00<br>07 |
|                |   |                          |                       |  |                            |   |                                       |                                |                                  | 02 NONE C<br>PRVTE<br>PSNGR CAR              | ) STOP<br>W E      | 01 DRVR INJC             | 41 M OR-Y<br>OR<25            | 000              | 011<br>000                    | 0 0<br>0 0     |
|                |   |                          |                       |  |                            |   |                                       |                                |                                  |  |                    | 02 PSNG INJC             | 00 F                          | 000              | 000                           | 0 0            |

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

CITY OF BEAVERTON, WASHINGTON COUNTY

#### SW Walker Road & SW Mayfield Avenue January 1, 2009 through December 31, 2013

| SER#<br>INVEST  | S D<br>P R S W<br>E A U C O<br>E L G H R<br>D C S L K | DATE<br>DAY<br>TIME     | CLASS<br>DIST<br>FROM | CITY STREET<br>FIRST STREET<br>SECOND STREET | RD CHAR<br>DIRECT<br>LOCTN | INT-TYP<br>(MEDIAN)<br>LEGS<br>(#LANES) | INT-REL OFF-<br>TRAF- RNDF<br>CONTL DRV | -RD WTHR<br>3T SURF<br>VY LIGH | CRASH TYP<br>COLL TYP<br>T SVRTY | SPCL USE<br>TRLR QTY<br>OWNER<br>V# VEH TYPE | MOVE<br>FROM<br>TO | PRTC INJ<br>P# TYPE SVRTY    | A S<br>G E LICNS PE<br>E X RES LO | D<br>C ERROR | ACTN EVENT        | CAUSE                |
|-----------------|---|-------------------------|-----------------------|--|----------------------------|---|---|--------------------------------|----------------------------------|--|--------------------|------------------------------|-----------------------------------|--------------|-------------------|----------------------|
| 05263<br>NONE   | N N N   | 09/26/2011<br>Mon<br>5P | 16<br>0               | SW MAYFIELD AVE<br>SW WALKER RD              | INTER<br>E<br>06           | CROSS<br>0                              | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DAY        | S-1STOP<br>REAR<br>INJ           | 01 NONE (<br>PRVTE<br>PSNGR CAR              | ) STRGHT<br>E W    | 01 DRVR NONE                 | 00 M UNK<br>OR<25                 | 026          | 013<br>000<br>000 | 07<br>00<br>07       |
|                 |   |                         |                       |  |                            |   |   |                                |                                  | 02 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR NONE                 | 00 F OR-Y<br>OR<25                | 000          | 011 013<br>000    | 0 0<br>0 0           |
|                 |   |                         |                       |  |                            |   |   |                                |                                  | 03 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR INJC                 | 57 M OR-Y<br>OR<25                | 000          | 022<br>000        | 00<br>00             |
| 03462<br>NO RPT | N N N   | 07/06/2012<br>Fri<br>3P | 16<br>0               | SW MAYFIELD AVE<br>SW WALKER RD              | INTER<br>E<br>06           | CROSS<br>0                              | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DAY        | S-1STOP<br>REAR<br>INJ           | 01 NONE (<br>PRVTE<br>PSNGR CAR              | ) STRGHT<br>E W    | 01 DRVR NONE                 | 23 F OR-Y<br>OR<25                | 026          | 013<br>000<br>000 | 07<br>00<br>07       |
|                 |   |                         |                       |  |                            |   |   |                                |                                  | 02 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR INJC<br>02 PSNG INJC | 81 M OR-Y<br>OR<25<br>79 F        | 000          | 011 013<br>000    | 00<br>00<br>00       |
|                 |   |                         |                       |  |                            |   |   |                                |                                  | 03 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR NONE                 | 43 M OR-Y<br>OR<25                | 000          | 022<br>000        | 00000                |
| 02285<br>NO RPT | ΥΝΝ   | 05/15/2009<br>Fri<br>5P | 16<br>0               | SW MAYFIELD AVE<br>SW WALKER RD              | INTER<br>W<br>05           | CROSS<br>0                              | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DAY        | S-1STOP<br>REAR<br>INJ           | 01 NONE (<br>PRVTE<br>PSNGR CAR              | ) STRGHT<br>E W    | 01 DRVR INJB                 | 45 M OR-Y<br>OR<25                | 052,047,026  | 013<br>000<br>000 | 32,01<br>00<br>32,01 |
|                 |   |                         |                       |  |                            |   |   |                                |                                  | 02 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR NONE                 | 19 F OR-Y<br>OR<25                | 000          | 011 013<br>000    | 0 0<br>0 0           |
|                 |   |                         |                       |  |                            |   |   |                                |                                  | 03 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR NONE                 | 54 F OR-Y<br>OR<25                | 000          | 022<br>000        | 0 0<br>0 0           |
| 05317<br>COUNTY | N N N N N   | 09/29/2011<br>Thu<br>4P | 16<br>0               | SW MAYFIELD AVE<br>SW WALKER RD              | INTER<br>W<br>05           | CROSS<br>0                              | N<br>TRF SIGNAL                         | N CLR<br>N DRY<br>N DAY        | S-1STOP<br>REAR<br>INJ           | 01 NONE (<br>PRVTE<br>PSNGR CAR              | ) STRGHT<br>E W    | 01 DRVR NONE                 | 60 F OR-Y<br>OR<25                | 016,026      | 013<br>000<br>038 | 27<br>00<br>27       |
|                 |   |                         |                       |  |                            |   |   |                                |                                  | 02 NONE (<br>PRVTE<br>PSNGR CAR              | ) STOP<br>E W      | 01 DRVR INJC                 | 33 F OR-Y<br>OR<25                | 000          | 011 013<br>000    | 0 0<br>0 0           |
CDS380 12/17/2014

SER#

NONE

## OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT URBAN NON-SYSTEM CRASH LISTING SW Walker Road & SW Mayfield Avenue

CITY OF BEAVERTON, WASHINGTON COUNTY

January 1, 2009 through December 31, 2013 S D PRSW INT-TYP SPCL USE RD CHAR (MEDIAN) INT-REL OFF-RD WTHR CRASH TYP TRLR QTY MOVE E A U C O DATE CLASS CITY STREET A S PRTC INJ G E LICNS PED ELGHR DAY DIST FIRST STREET DIRECT LEGS TRAF- RNDBT SURF COLL TYP OWNER FROM INVEST D C S L K TIME FROM SECOND STREET LOCTN (#LANES) CONTL DRVWY LIGHT SVRTY V# VEH TYPE TO P# TYPE SVRTY E X RES LOC ERROR ACTN EVENT CAUSE 03 NONE 0 STOP PRVTE E W 022 00 PSNGR CAR 01 DRVR NONE 37 M OTH-Y 000 00 N-RES 03769 N N N 07/19/2011 16 SW MAYFIELD AVE CROSS N N CLR 01 NONE 0 STRGHT 02 INTER O-1TURN PRVTE E W 0 SW WALKER RD CN TRF SIGNAL N DRY TURN 000 00 THE 02 N DAY PDO PSNGR CAR 12P 0 01 DRVR NONE 34 M OR-Y 000 000 00 OR<25 02 NONE 0 TURN-L PRVTE W N 000 00 PSNGR CAR 01 DRVR NONE 20 M OR-Y 004,028 000 02 OR<25 05526 NNNN 10/16/2010 16 01 NONE 0 STRGHT SW MAYFIELD AVE INTER CROSS N N CLR O-1TURN 04 COUNTY PRVTE NW SE Sat 0 SW WALKER RD L-GRN-SIG N DRY TURN 000 CN 00 9A 03 Y DAY INJ PSNGR CAR 01 DRVR INJC 63 M OR-Y 000 0 097 00 OR<25 02 NONE 0 TURN-L PRVTE SE SW 000 00 PSNGR CAR 01 DRVR INJC 50 F OR-Y 097 000 00 OR<25 07013 N N N 12/13/2010 16 SW MAYFIELD AVE INTER N RAIN ANGL-OTH 01 NONE 0 STRGHT 04 CROSS N SW WALKER RD TRF SIGNAL N WET ANGL PRVTE W E COUNTY Mon 0 CN 000 00 2P 04 N DAY INJ PSNGR CAR 01 DRVR NONE 20 M OTH-Y 020 000 0.4 0 N-RES 02 NONE 0 STRGHT PRVTE S N 000 00 PSNGR CAR 01 DRVR INJB 89 F OR-Y 000 000 00

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OR<25