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MEMORANDUM

Date: December 2, 2015 Project #: 19210

To: Ken Rencher and Jabra Khasho, City of Beaverton
Jinde Zhu, Washington County

CC: Wally Remmers & Dan Grimberg, West Hills Land Development, LLC
Mike Peebles and Jerry Offer, OTAK

From: Julia Kuhn, PE, Chris Brehmer, PE and Zachary Bugg, PhD

Project: Russell Property Development

Subject: Traffic Impact Analysis – Revised

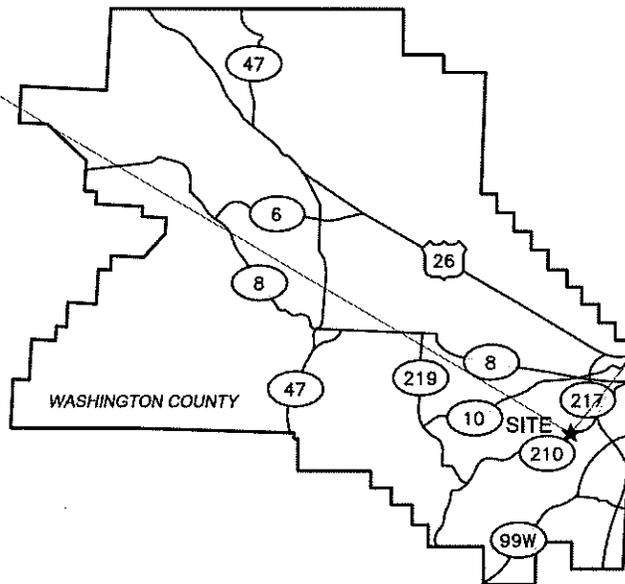
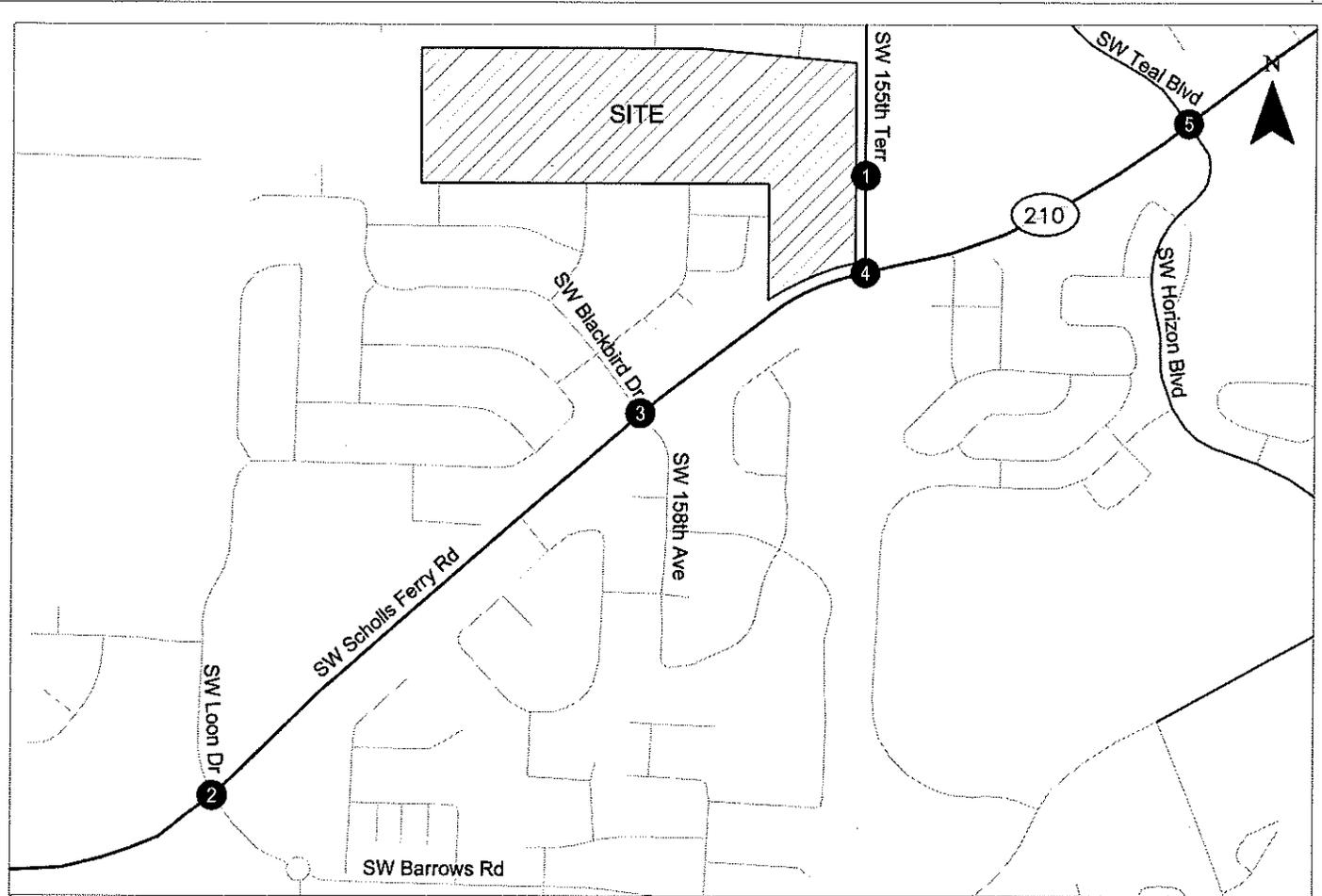
West Hills Land Development, LLC is proposing to develop up to 130 single family homes on the Russell property, which is located northwest of the SW 155th Terrace/SW Scholls Ferry Road intersection. This report documents the transportation impacts of the proposed neighborhood and finds that:

- All study intersections are forecast to operate within City of Beaverton and Washington County operational standards under all scenarios studied.
- Landscaping, above ground utilities, and signing within the neighborhood should be located and maintained in a manner that preserves adequate intersection sight distance.

DESCRIPTION OF PROPOSED DEVELOPMENT

At the time this report was prepared, the Russell Property neighborhood was proposed to include up to 130 single family homes. Two houses are constructed on the site today. West Hills proposes to construct a series of streets to serve the new neighborhood. Two east-west streets will intersect with SW 155th Terrace. Two north-south streets will connect with the neighborhood to the north and three north-south connections will be provided to the neighborhoods to the south.

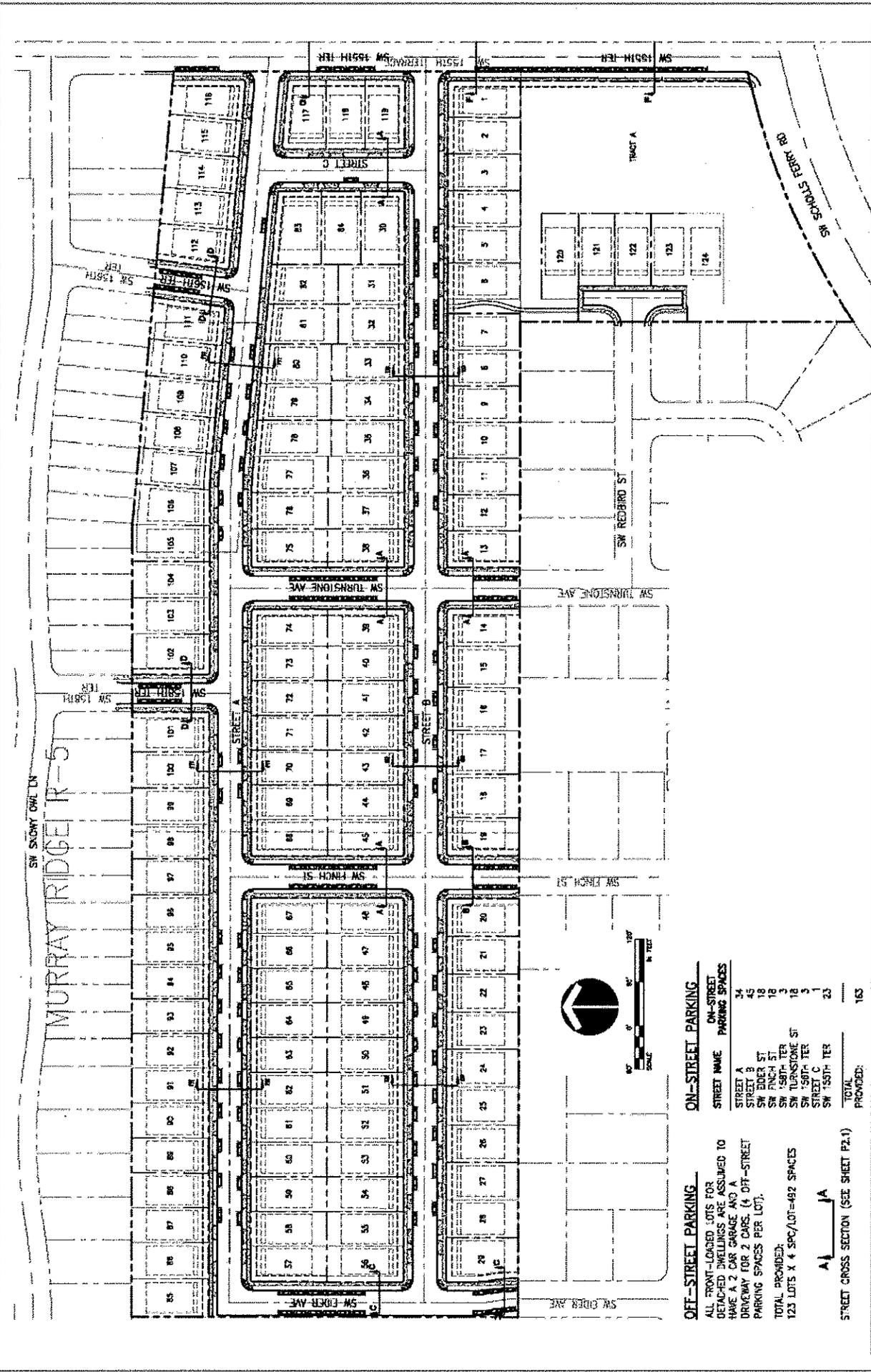
The site location and overall vicinity are shown in Figure 1; a conceptual site plan is shown in Figure 2.



Site Vicinity Map
Beaverton, Oregon

Figure
1

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OFF-STREET PARKING
 ALL FRONT-LOADED LOTS FOR DETACHED DWELLINGS ARE ASSUMED TO HAVE A 2 CAR GARAGE AND A DRIVEWAY FOR 2 CARS. (4 OFF-STREET PARKING SPACES PER LOT).
 TOTAL PROVIDED:
 123 LOTS X 4 SPC/LOT=492 SPACES

ON-STREET PARKING

STREET NAME	ON-STREET PARKING SPACES
STREET A	24
STREET B	44
SW ELDER ST	18
SW FINCH ST	9
SW 150TH TER	18
SW TURNSTONE ST	3
SW 150TH TER	1
STREET C	23
SW 155TH TER	163
TOTAL PROVIDED:	163

A | JA

STREET CROSS SECTION (SEE SHEET P2.1)

Proposed Site Plan
 Beaverton, Oregon

Figure 2

SCOPE OF THE REPORT

This report identifies the transportation-related impacts associated with the proposed development and was prepared in accordance with City of Beaverton Development Code Section 60.55.20. The study intersections and scope were selected in consultation with City staff and include all intersections of neighborhood routes, collectors, and arterials within 1,000 feet of the site, as well as intersections immediately adjacent to the proposed site access. Per conversations with City and County staff, operational analyses were performed at the following study intersection during the weekday AM and PM peak periods:

- SW Blackbird Drive/SW Scholls Ferry Road;
- SW Loon/SW Barrows Road/SW Scholls Ferry Road;
- SW 155th Terrace/SW Scholls Ferry Road; and,
- SW Teal Boulevard/SW Horizon Boulevard/SW Scholls Ferry Road.

This report evaluates the following transportation issues:

- Year 2015 existing land use and transportation system conditions within the site vicinity during the weekday AM and PM peak periods;
- Forecast year 2016 background traffic conditions during the weekday AM and PM peak periods, considering developments and transportation improvements planned in the study area;
- Trip generation and distribution estimates for the proposed neighborhood;
- Forecast year 2016 total traffic conditions during the weekday AM and PM peak periods with build-out of the site; and,
- Recommended improvements/intersection considerations.

Analysis Methodology

All level-of-service analyses described in this report were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual (HCM)*. A description of level of service and the criteria by which they are determined is presented in *Appendix A*. Appendix A also indicates how level of service is measured and what is generally considered the acceptable range of level of service. The peak 15-minute flow rates were used in the evaluation of all intersection levels of service (LOS) and volume-to-capacity ratios. For this reason, the analyses reflect conditions that are only likely to occur for 15 minutes out of each average peak hour. Traffic conditions during typical weekday hours are expected to operate with lower levels of delay than those described in this report. The operations and queuing analyses presented in this report were completed using Synchro 9 software.

City of Beaverton Operating Standards

The City of Beaverton's *Development Code* sets operating standards for signalized and unsignalized intersections, found in Section 60.55.10. The standards require an average control delay of no more than 65 seconds per vehicle for signalized intersections. In addition, the volume-to-capacity ratio for each lane group must not exceed 0.98. For two-way and all-way stop controlled intersections, the City of Beaverton standards require an average control delay of no more than 45 seconds per vehicle.

Washington County requires a volume-to-capacity (v/c) ratio of less than 0.99. All of the intersections along SW Scholls Ferry Road are maintained by the County.

EXISTING CONDITIONS

This section summarizes the existing characteristics of the transportation system and adjacent land uses in the vicinity of the proposed development, including an inventory of the existing multi-modal transportation facilities and options, an evaluation of existing intersection operations for motor vehicles at the study intersections, and a summary of recent crash history.

Site Conditions and Adjacent Land Uses

The proposed site is located in the southwest part of the City of Beaverton and is surrounded on all sides by residential neighborhoods. The site is vacant today.

Transportation Facilities

Table 1 summarizes the attributes of key roadways in the vicinity. Figure 3 illustrates the existing lane configurations and traffic control at the study intersections.

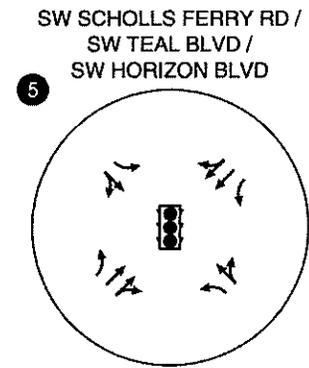
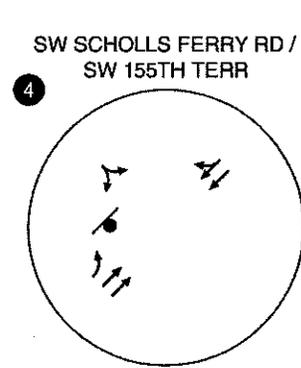
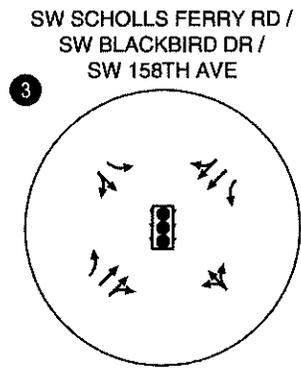
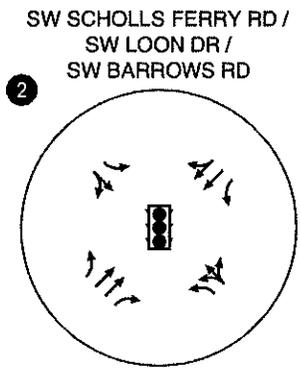
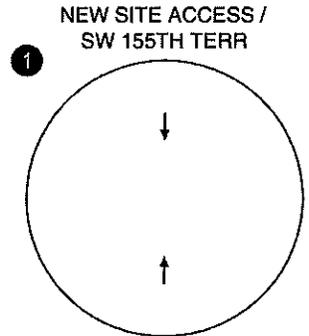
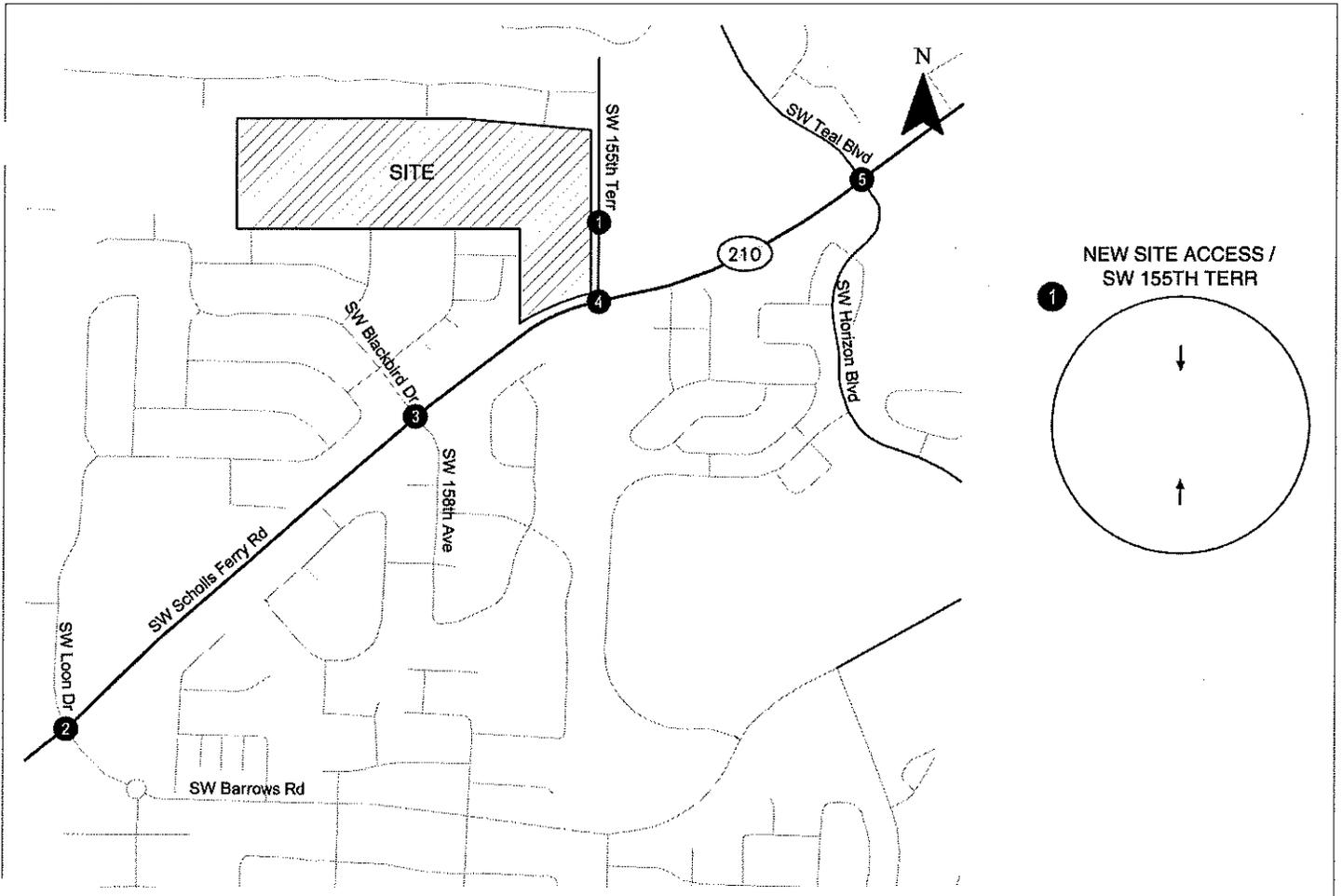
Table 1: Street Characteristics in Site Vicinity

Street	Classification ¹	Motor Vehicle Travel Lanes	Posted Speed	Sidewalks	Striped Bicycle Lanes	On-Street Parking
SW 155 th Terrace	Local Street ³	2	NP ²	No	No	No
SW Scholls Ferry Road	Arterial	5	40	Yes	Yes	No
SW Blackbird Drive	Neighborhood Route	2	25	Yes	No	No
SW Teal Boulevard	Collector	3	35	Yes	Yes	No

¹Per the *City of Beaverton Transportation System Plan (TSP)*.

²NP = not posted; assumed speed of 25 miles per hour consistent with neighborhood streets.

³SW 155th Terrace is classified as a local street in the TSP but there is a future northwest to southeast oriented neighborhood route shown intersecting SW Scholls Ferry Road at the same location as SW 155th Terrace.



-  - STOP SIGN
-  - TRAFFIC SIGNAL

**Existing Lane Configurations and Traffic Control Devices
Beaverton, Oregon**

Figure 3

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Pedestrian Facilities

Pedestrians can access the proposed neighborhood via the sidewalks along SW Scholls Ferry Road and will be provided access to the adjacent neighborhoods through the north-south connections proposed as part of site development. These connections are consistent with the local street plan included in the *City of Beaverton Transportation System Plan (TSP, 2010 – 2035)*.

Bicycle Facilities

Bicycle access to the proposed neighborhood is available via SW Scholls Ferry Road.

Transit Facilities

The nearest transit stop is located at the SW Scholls Ferry Road/SW Teal Boulevard intersection, approximately ¼ mile from the site. TriMet operates *Line 92 - South Beaverton Express* along SW Scholls Ferry Road and SW Teal Boulevard. Line 92 provides express service on weekdays between 5:38 and 8:06 AM and between 4:21 and 7:00 PM. No service is provided on the weekends.

Crash History Analysis

Washington County maintains a database of intersection crashes and ranks the listing on a biennial cycle. This database, known as the *Washington County Safety Priority Index System (SPIS)* list (2011-2013), identifies intersections that experience higher frequency, rate, or severity of crashes compared to other intersections in the county. The SW 155th Terrace and SW Blackbird Drive intersections are not included on the County's SPIS list. Two of the intersections are included: SW Teal Boulevard/SW Scholls Ferry Road (ranked #150) and SW Loon/SW Barrows Road/SW Scholls Ferry Road (ranked #185). Per the SPIS, both of these intersections were improved as part of the County's SW Scholls Ferry Road MSTIP project from SW Teal to SW 175th that was completed in 2014. The County should continue to monitor the crashes at the intersections that are reflective of the recent changes made.

In addition to review of the SPIS list, crash history for the SW 155th Terrace and SW Teal Boulevard intersections was reviewed. The Oregon Department of Transportation provided crash history for the five year period from 2009 to 2013. Table 2 summarizes the data for each intersection. No safety-based intersection mitigation needs were identified based on the crash data review. *Appendix B provides detailed crash history at the study intersections.*

Table 2. Reported Crash History (2009 – 2013)

Intersection	Collision Type			Severity			Total Crashes	Crash Rate ¹
	Angle	Turning	Rear End	PDO	Injury	Fatality		
SW 155 th Terrace/ SW Scholls Ferry Road	0	2	0	0	2	0	2	0.07
SW Teal Boulevard/ SW Scholls Ferry Road	1	8	2	4	7	0	11	0.26

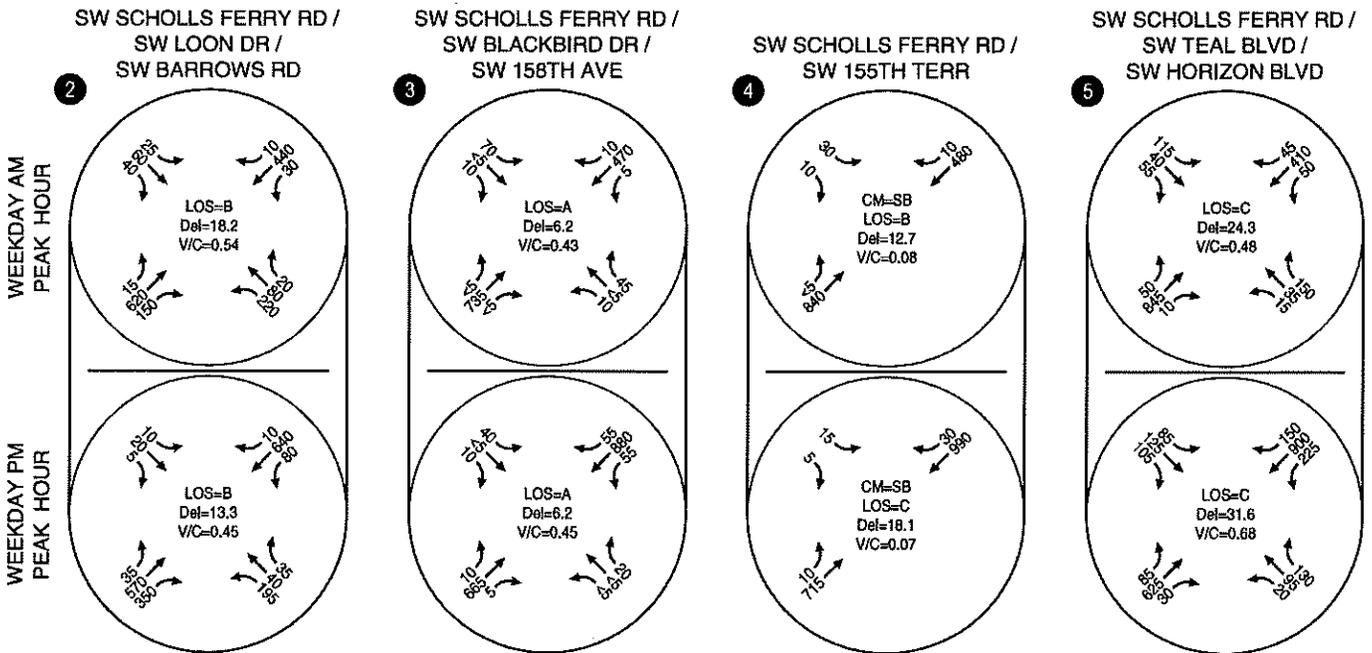
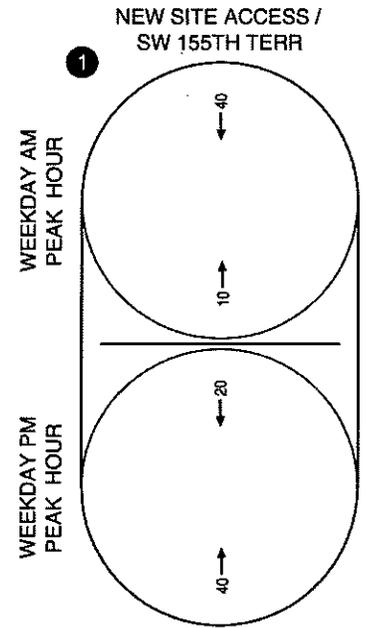
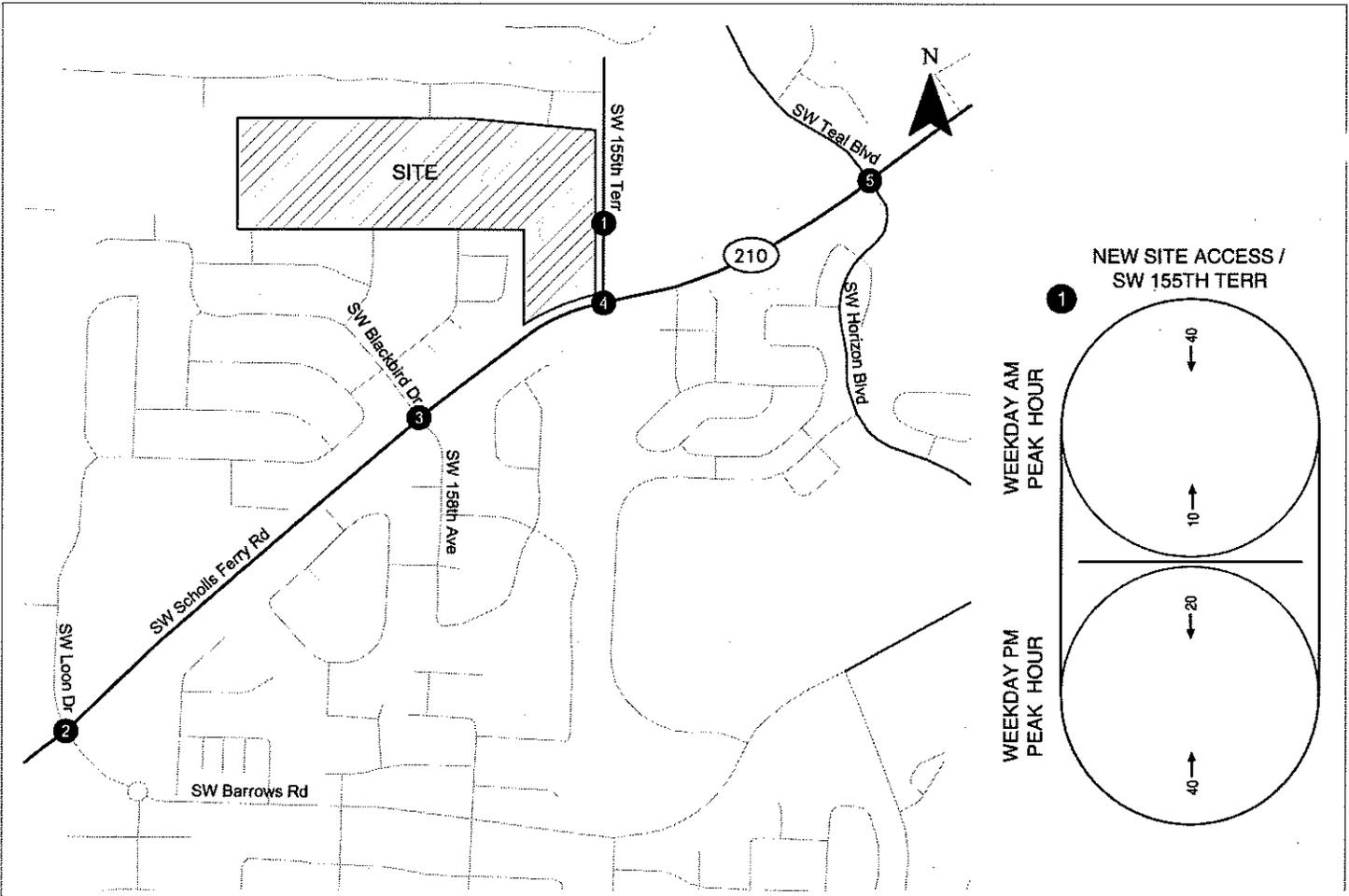
¹Crash Rate reported as crashes per million entering vehicles (crashes/MEV).

Existing Conditions Operational Analysis

Manual turning movement counts were collected at the study intersections in July 2015. Traffic counts were collected for three mid-week days, in accordance with the City of Beaverton’s Traffic Impact Analysis requirements, for the morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak time periods. The day experiencing the highest volumes along SW Scholls Ferry Road during the peak hours was selected for the operational analysis. Washington County provided signal phasing and signal cycle length information for the signalized intersections.

Per the traffic counts collected, morning and evening operations were evaluated using a system-wide peak hour from 7:15 AM to 8:15 AM and from 4:55 PM to 5:55 PM. *Appendix C contains the traffic count worksheets.*

Figure 4 summarizes the operational analysis at the two study intersections during the weekday AM and PM peak hour existing traffic conditions. As shown in Figure 4, all intersections operate within City of Beaverton and Washington County standards during the AM and PM peak hours. The intersection operations reported at the SW Scholls Ferry Road/SW Teal Boulevard intersection are indicative of recent changes that Washington County has made to the signal timing at this location. *Appendix D includes the operations analysis worksheets for the Existing Conditions analysis.*



CM = CRITICAL MOVEMENT (TWSC)
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**Existing Traffic Conditions
 Weekday AM and PM Peak Hours
 Beaverton, Oregon**

**Figure
 4**

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TRAFFIC IMPACT ANALYSIS

The traffic impact analysis identifies how the study area's transportation system will operate in the horizon year 2016 when the neighborhood is proposed for construction. This section of the report includes analysis of 2016 background traffic volumes and operations, an estimate of site-generated trips, and analysis of 2016 total traffic volumes and operations with the proposed neighborhood.

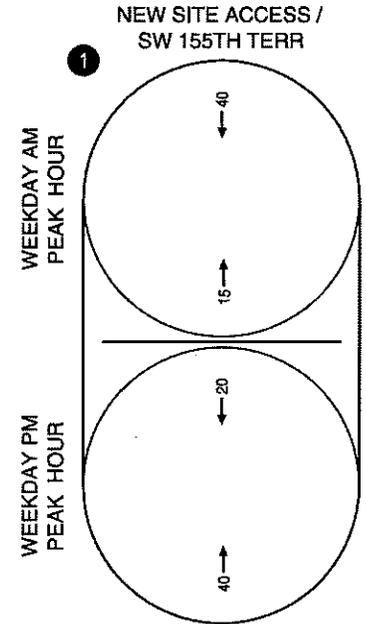
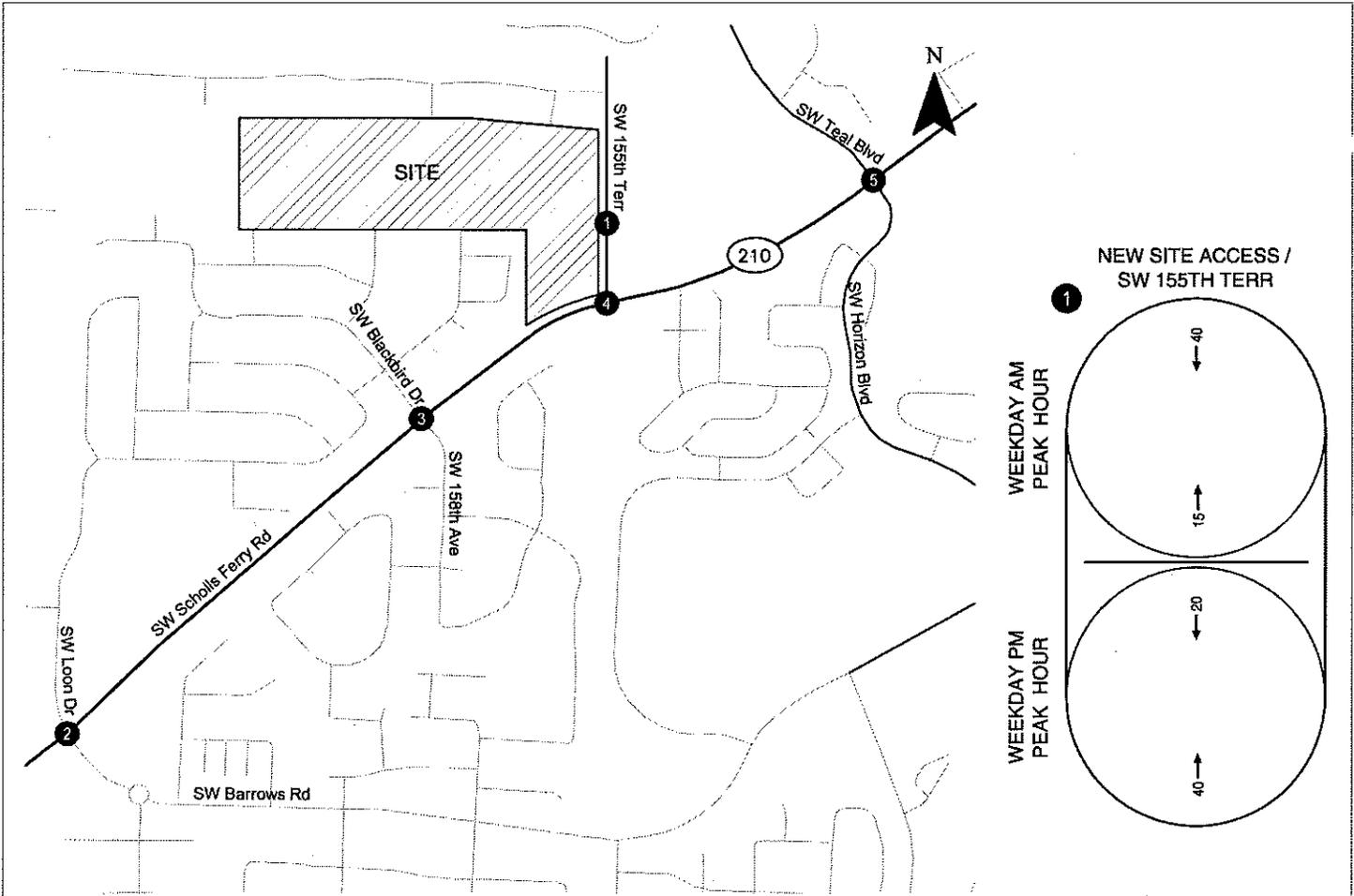
2016 Background Operational Analysis

Background traffic volumes include changes in volumes due to added trips from new development in the vicinity as well as general regional growth. City of Beaverton staff identified three in-process developments to include in the analysis:

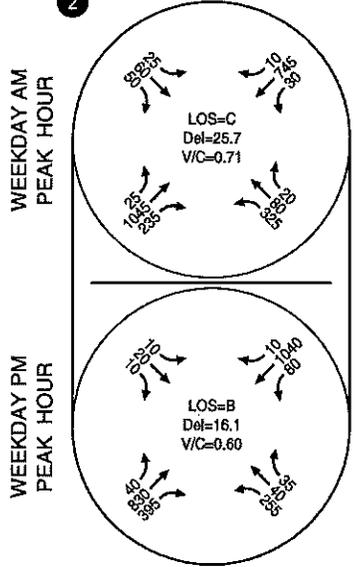
- Beaverton High School in South Cooper Mountain;
- West Hills South Cooper Mountain Heights Neighborhood (which includes up to 682 residential units)
- Polygon River Terrace neighborhoods (which include approximately 800 new homes).

In addition to including in-process trips, a two-percent annual growth rate was applied. No funded transportation improvements were identified by the City or County that would affect intersection operations within the study area.

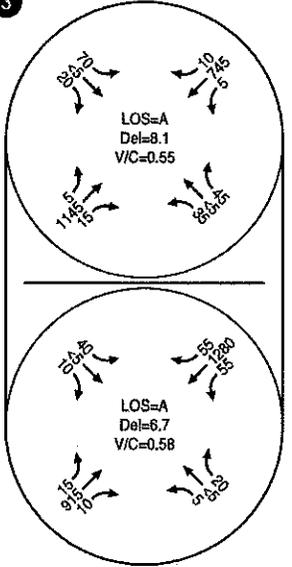
Figure 5 illustrates the 2016 background traffic volumes and corresponding operational analysis. As shown, all of the intersections continue to meet City and County standards under background conditions.



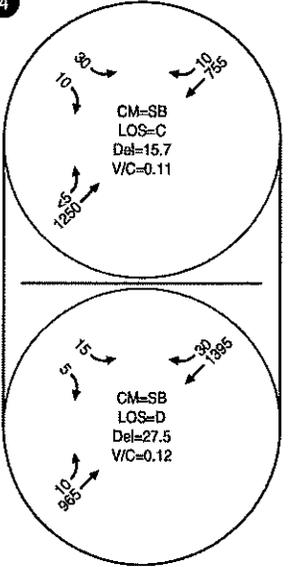
2 SW SCHOLLS FERRY RD / SW LOON DR / SW BARROWS RD



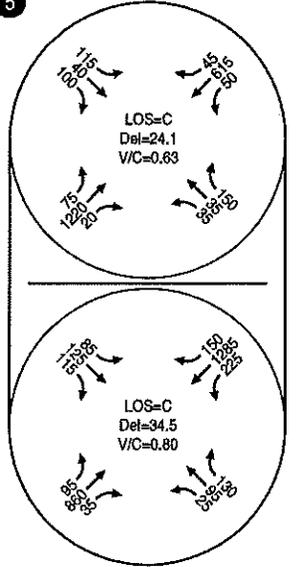
3 SW SCHOLLS FERRY RD / SW BLACKBIRD DR / SW 158TH AVE



4 SW SCHOLLS FERRY RD / SW 155TH TERR



5 SW SCHOLLS FERRY RD / SW TEAL BLVD / SW HORIZON BLVD



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**Year 2016 Background Traffic Conditions
 Weekday AM and PM Peak Hours
 Beaverton, Oregon**

Figure 5

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PROPOSED DEVELOPMENT PLAN

West Hills Development Company is proposing to develop up to 130 single family homes on the study site. Today, the site is occupied by two homes and is surrounded by other single family neighborhoods.

West Hills proposes to construct a series of streets to serve the new neighborhood. Two east-west streets will intersect with SW 155th Terrace. Two north-south streets will connect with the neighborhood to the north and three north-south connections will be provided to the neighborhoods to the south. The connections to the south will be provided via SW Eider Avenue, SW Finch Street and SW Turnstone Avenue, which all connect to SW Scholls Ferry Road via SW Blackbird Drive.

Trip Generation Estimate

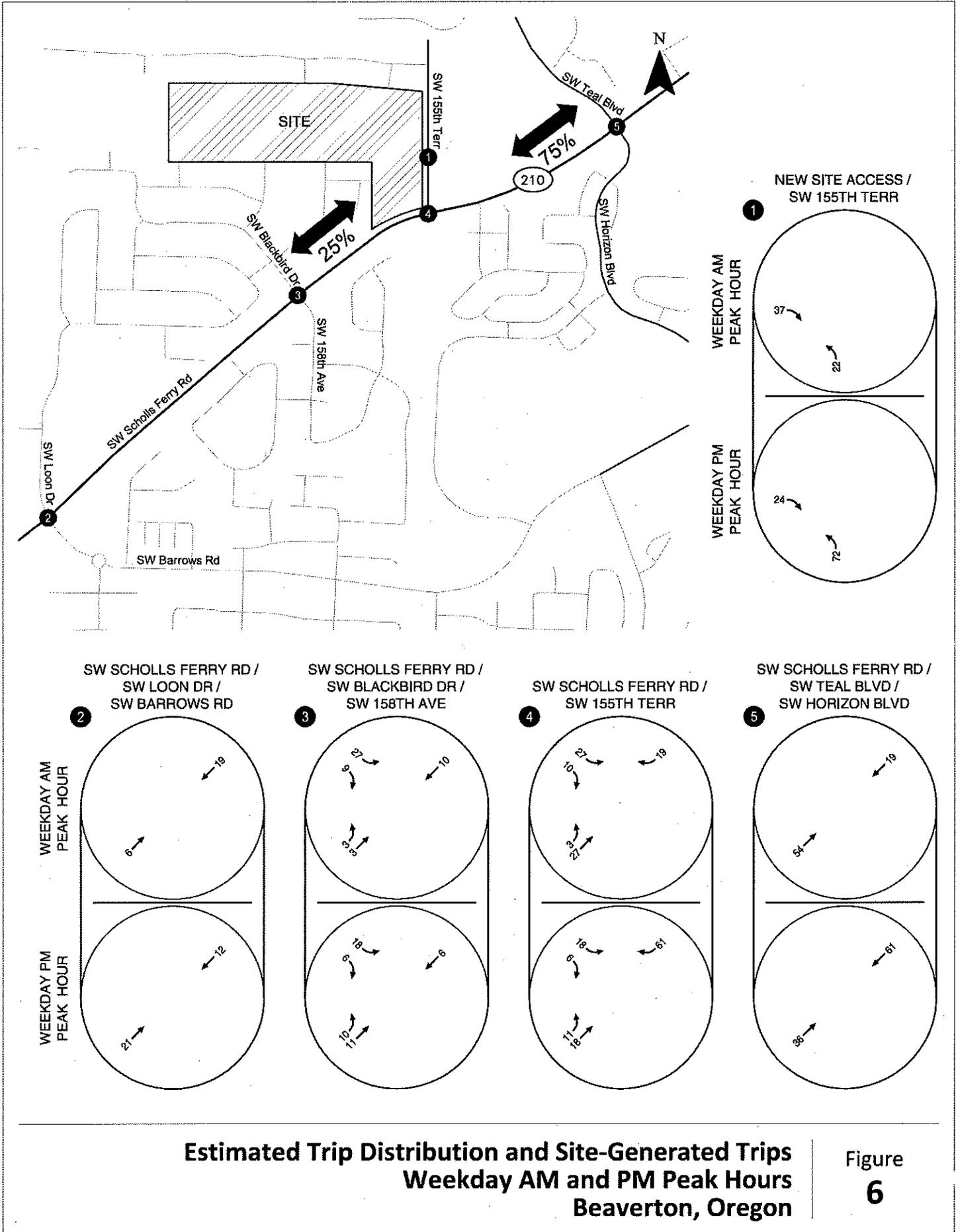
The estimated trip generation is shown in Table 3. We calculated the trip generation based on the rates included in the *Trip Generation Manual*, 9th Edition (Institute of Transportation Engineers, 2012) and rounded daily trips to the nearest 10.

Table 3. Estimated Trip Generation

	ITE Code	Dwelling Units	Total Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total Trips	In	Out	Total Trips	In	Out
Single Family Homes	210	130	1,240	98	25	73	130	82	48

Trip Distribution/Assignment

A trip distribution pattern was identified for the site using existing traffic patterns at the study intersections. Site-generated traffic was assigned to the study intersections based on the estimated distribution pattern. Figure 6 show both the proposed trip distribution pattern and the site-generated trips at each study intersection for the weekday AM and PM peak hours, respectively.



**Estimated Trip Distribution and Site-Generated Trips
Weekday AM and PM Peak Hours
Beaverton, Oregon**

**Figure
6**

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YEAR 2016 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts the operation of the study area's transportation system with the inclusion of traffic generated by the proposed site development. Total traffic conditions were determined by adding the estimated site-generated traffic to the year 2016 background volumes for the weekday AM and PM peak hours. Figure 7 illustrates the 2016 total traffic conditions and corresponding operational analysis. As shown in this figure, the intersections are projected to operate within the City and County's operational standards. No off-site capacity-based mitigation measures are needed to accommodate the new neighborhood.

Trips Using Sterling Park Streets

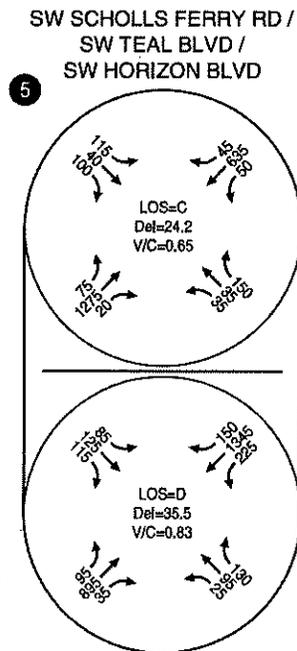
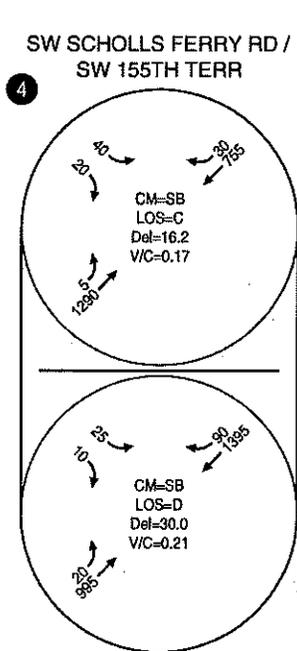
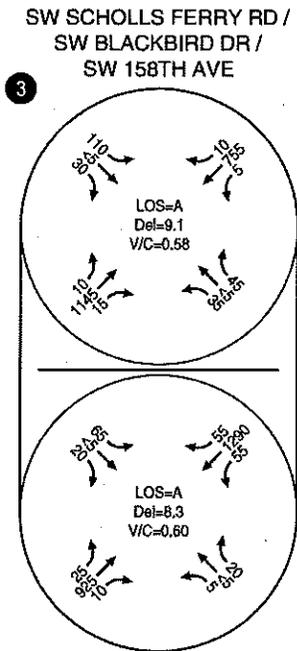
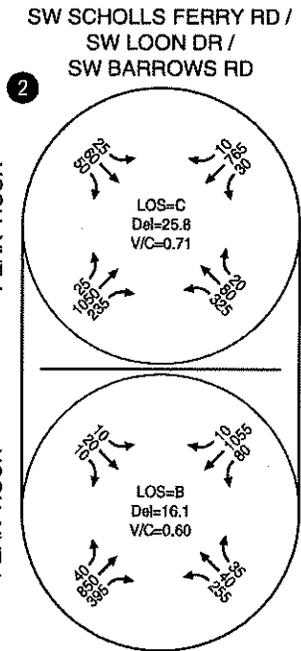
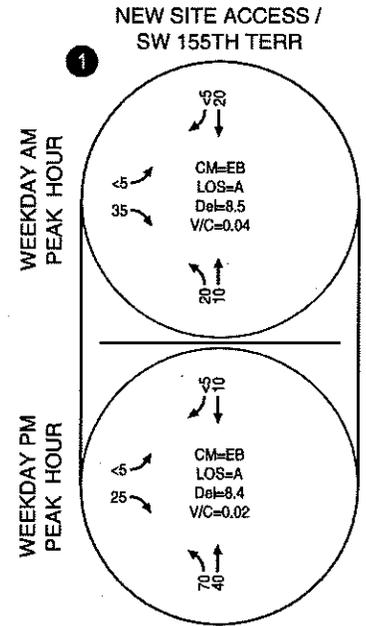
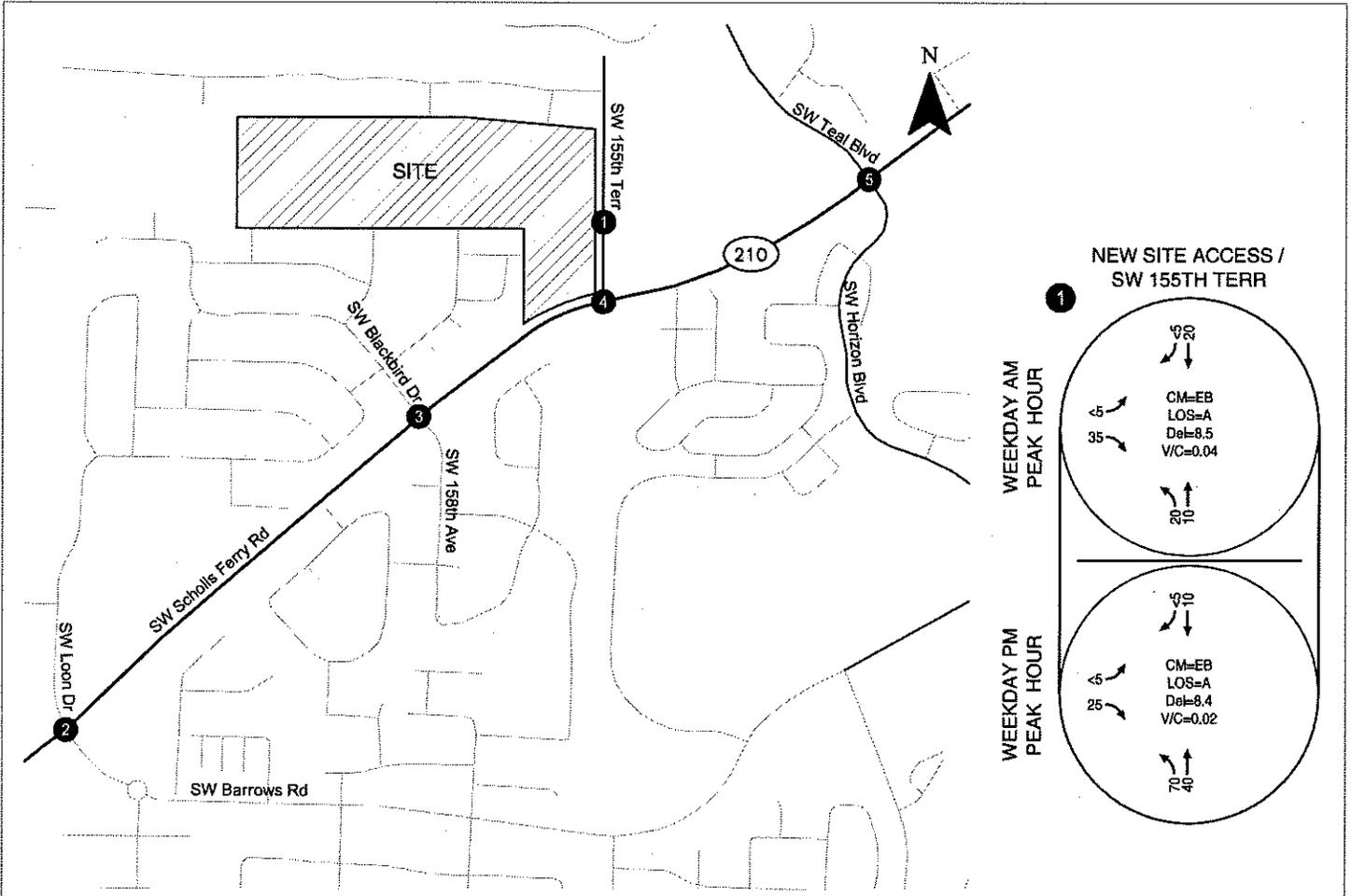
As discussed previously, West Hills proposes to construct a series of public streets to serve the proposed new neighborhood. Two east-west streets will intersect with SW 155th Terrace. Two north-south streets will connect with the neighborhood to the north and three north-south connections will be provided to the neighborhoods to the south. The connections to the south will be provided via SW Eider Avenue, SW Finch Street and SW Turnstone Avenue, which all connect to SW Scholls Ferry Road via SW Blackbird Drive.

For trips oriented to/from the east, the use of the Sterling Park local street system would require out-of-direction travel as drivers destined to/from the proposed development would travel west past the Russell neighborhood to access Sterling Park and then proceed eastward back to the Russell neighborhood. However, the SW Blackbird Drive/SW Scholls Ferry Road intersection is signalized and could provide an alternative route for residents leaving the neighborhood and trying to turn left onto SW Scholls Ferry Road. For this reason, we assumed that up to 50 percent of the outbound vehicles oriented to the east would use the signal at SW Blackbird Drive instead of using the SW 155th Terrace intersection to access SW Scholls Ferry Road.¹

For those drivers headed to/from the west, we assumed that one-half of the trips to/from the west would use the SW Blackbird Drive/SW Scholls Ferry Road intersection in lieu of the SW 155th Terrace/SW Scholls Ferry Road intersection.²

¹ This could equate to 27 outbound trips during the weekday AM peak hour (73 outbound trips × 0.75 to the east × 0.50) and 18 outbound trips during the weekday PM peak hour (48 outbound trips × 0.75 to the east × 0.50).

² This would equate to a total of 12 trips during the weekday AM peak hour (98 trips × 0.25 to/from the west × 0.50) and a total of 16 trips during the weekday PM peak hour (130 trips × 0.25 to/from the west × 0.50)



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**Year 2016 Total Traffic Conditions
 Weekday AM and PM Peak Hours
 Beaverton, Oregon**

**Figure
 7**

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When combined, the trips using the SW Blackbird Drive/SW Scholls Ferry Road could result in the following trips using the local streets within Sterling Park:

- Weekday AM peak hour – 3 trips inbound to the neighborhood and 36 trips outbound (9 to/from west and 27 to/from east) from the neighborhood could use the local streets.
- Weekday PM peak hour – 10 trips inbound to the neighborhood and 24 trips outbound (6 to/from the west and 18 to/from the east) from the neighborhood could use the local streets.

The trips from the Russell neighborhood would likely use a combination of SW Eider Avenue, SW Finch Street and SW Turnstone Avenue through the Sterling Park neighborhood. Based on the location of the lots in the new neighborhood, approximately one-half of the trips could use SW Finch Street and one-half could use SW Turnstone Avenue to access SW Blackbird Drive. Although SW Eider Avenue provides access to some of the new lots, SW Finch Street provides a much more direct connection to the neighborhood. For this reason, our analysis conservatively assumes that no trips will use SW Eider Avenue and instead all will use SW Finch Street. With these assumptions, the estimated site-generated traffic volumes that could route onto the local streets attributable to the Russell neighborhood are:

- SW Finch Street
 - Weekday AM Peak hour – 2 trips inbound and 18 trips outbound
 - Weekday PM peak hour – 5 trips inbound and 12 trips outbound
- SW Turnstone Avenue
 - Weekday AM peak hour – 1 trip inbound and 18 trips outbound
 - Weekday PM peak hour – 5 trips inbound and 12 trips outbound

The routing of trips is also shown in Figure 8.

Based on the above, none of the existing local streets are anticipated to experience an increase of more than 20 vehicles per hour (thus conforming to City of Beaverton Development (BDC) Code Section 60.55.15). Therefore, no mitigation measures are required due to the proposed neighborhood street connectivity and the required connectivity can be expected to help provide for pedestrian, bicycle and vehicular connections between neighborhoods consistent with the City's Transportation System Plan goals. In fact, *Chapter 6 (Transportation)* of the city's Comprehensive Plan cites Goal 6.2.2(f):

“Develop neighborhood and local connections to provide convenient circulation into and out of neighborhoods. Work to prevent and eliminate pedestrian and bicycle “cul-de-sacs” that require substantial out-of-direction travel for pedestrians and bicyclists.”



Figure 8

Site-generated Trips Through Sterling Park Beaverton, Oregon

In addition to the local streets, we also evaluated the expected increase in traffic on SW Blackbird Drive, a neighborhood route. In the one-block section between SW Turnstone Avenue and SW Scholls Ferry Road, the following increases could occur:

- Weekday AM peak hour – 3 trips inbound to the neighborhood and 36 trips outbound (9 to/from west and 27 to/from east) from the neighborhood.
- Weekday PM peak hour – 10 trips inbound to the neighborhood and 24 trips outbound (6 to/from the west and 18 to/from the east) from the neighborhood.

Based on the above, SW Blackbird Drive between SW Turnstone and SW Scholls Ferry Road could experience an increase of more than 20 vehicles per hour during both the weekday AM and PM peak hours. It is important to note that the increase of more than 20 trips on SW Blackbird Drive is not anticipated on the blocks north of SW Turnstone.

Today, SW Blackbird Drive adjacent to SW Scholls Ferry Road accommodates 90 weekday AM peak hour trips and 120 weekday PM peak hour trips. Per BDC Section 60.55.15, we analyzed the potential need for traffic calming mitigation measures in this block section on SW Blackbird Drive. There are no private driveways along this section of the block and the SW Blackbird Drive/SW Scholls Ferry Road intersection is signalized. To avoid potential degradation of traffic signal operations as a result of traffic calming measures and given the short roadway segment impacted, we don't recommend any mitigation measures at this time.

Consideration of Murray Ridge Neighborhood Connectivity

As mentioned previously, West Hills will also provide two north/south local streets to connect to the Murray Ridge neighborhood to the north. These include SW 158th Terrace and SW 156th Terrace. These connections could provide the SW Snowy Owl Lane residents with access to the Sterling Park neighborhood via Street "A" being constructed by West Hills and via the SW Finch Street and SW Turnstone Avenue extensions. If one-half of the existing southbound left-turns from SW 155th Terrace onto SW Scholls Ferry Road were rerouted from SW Snowy Lane through Sterling Park to the SW Blackbird/SW Scholls Ferry Road intersection, this would result in 15 outbound trips during the weekday AM peak hour and 8 outbound trips during the PM peak hour diverting from SW 155th Terrace today through Sterling Park. This trip re-routing is also incorporated into the total traffic analysis shown in Figure 7. As shown, the SW Blackbird Drive/SW Scholls Ferry Road intersection operates acceptably during the weekday AM and PM peak hours, even with full buildout of the Russell neighborhood. For this reason, there are minimal impacts associated with north-south connectivity to the Murray Ridge neighborhood on the SW Blackbird Drive/SW Scholls Ferry Road intersection.

Assuming the Murray Ridge outbound trips were to use both SW Finch Street and SW Turnstone, the combined effect of the Murray Ridge trips and the Russell neighborhood trips on the neighborhood streets would be:

- SW Finch Street
 - Weekday AM Peak hour – 2 trips inbound and 25 trips outbound
 - Weekday PM peak hour – 5 trips inbound and 16 trips outbound
- SW Turnstone Avenue
 - Weekday AM peak hour – 1 trip inbound and 26 trips outbound
 - Weekday PM peak hour – 5 trips inbound and 16 trips outbound

When combined, the Murray Ridge and Russell neighborhoods could increase the traffic on both SW Finch Street and SW Turnstone Avenue by more than 20 vehicles in the weekday AM and PM peak hours. Given that these two streets are currently stubbed and signed for future extension and serve less than 40 homes each, the total volumes on each will still be consistent with those expected of a local street. For this reason, no traffic calming mitigations are recommended.

Effect of Russell Neighborhood on SW Blackbird Drive/SW Scholls Ferry Road Intersection Operations

Figure 7 identifies the projected intersection operations of the SW Blackbird Drive/SW Scholls Ferry Road intersection assuming the use of the Sterling Park neighborhood streets as shown in Figure 8. As shown in Figure 7, this intersection is projected to operate acceptably per City and County standards.

We also performed a sensitivity analysis of the projected intersection operations at SW Blackbird Drive/SW Scholls Ferry Road to determine the impact of additional traffic from the Russell neighborhood using this signal to access SW Scholls Ferry Road. If one were to assume that *all* of the Russell neighborhood traffic used the SW Blackbird Drive intersection rather than the SW 155th Terrace intersection to access SW Scholls Ferry Road, the intersection would still operate acceptably as shown below:

- Weekday AM peak hour – Intersection LOS “B”, 10.9 seconds of delay per vehicle
- Weekday PM peak hour – Intersection LOS “A”, 9.3 seconds of delay per vehicle

TRAFFIC SIGNAL WARRANT ANALYSIS AT SW 155TH TERRACE

In response to city staff comments, we performed a signal warrant analysis of the SW 155th Terrace/SW Scholls Ferry Road intersection. As shown in Figure 7, peak hour operations of this intersection meet City and County standards with full buildout of the Russell Property subdivision and no capacity improvement is triggered by site development. We conducted this analysis using the

traffic signal warrants outlined in the *Manual on Uniform Traffic Control Devices* (MUTCD) consistent with Washington County requirements. The MUTCD identifies nine traffic signal warrants and notes "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal."

Based on this analysis, projected year 2016 total traffic volumes at this intersection do not warrant signalization per MUTCD Warrants 1 through 3. The criteria of MUTCD Warrants 4 through 9 were also reviewed and were not found to be satisfied³. Even if one were to assume that all of the Russell neighborhood traffic to/from the east and 50 percent of the traffic to/from the west used SW 155th Terrace, the intersection would still not warrant signalization. A copy of the volume-based traffic signal warrant analysis worksheets is provided as an attachment to this report.

Intersection Sight Distance

The SW 155th Terrace/SW Scholls Ferry Road intersection was recently improved by Washington County as part of the widening of SW Scholls Ferry Road to a five-lane cross-section with sidewalks and bike lanes. The widening project required the construction of retaining walls and utility pole/equipment relocation at the 155th Terrace intersection.

Based on conversations with County staff, the sight distance exceeds 400 feet in both directions and therefore meets County and AASHTO guidelines when measured at the edge of the bike lane.

The proposed development will not be making any physical changes to the SW 155th Terrace/SW Scholls Ferry Road intersection. Given the recent reconstruction of this intersection by Washington County and that no site frontage/improvements are proposed, County staff determined that no modifications are needed at this intersection with the proposed site development.⁴

As the neighborhood is developed, future landscaping, above-ground utilities, and site signage should be located and maintained such that they provide minimum required sight lines at the local street intersections within the site.

³ Warrants 4 through 9 address factors including pedestrian volumes, school crossings, coordinated signal systems, crash experience, roadway network, and intersections near a railroad grade crossing, respectively.

⁴ Per November 16, 2015 email from Washington County Traffic Engineer.

PLANNING YEAR TOTAL TRAFFIC CONDITIONS

The proposed site is located within Regional TAZ 1042 / City of Beaverton disaggregated TAZ 1042001, a TAZ that is bounded by SW Scholls Ferry Road, SW 155th Terrace, and SW Loon Drive. The subject site is currently zoned for residential uses.

The impact of site development was reviewed in the context of the City's Transportation System Plan (TSP) to assess whether the proposed development would have an unanticipated impact on the transportation system. This review determined that the proposed redevelopment was accounted for within the Transportation Analysis Zone (TAZ) land use assumptions used in the TSP.

TAZ 102001 includes an increase in both households and employment, including growth in households from 305 to 538, as well as an increase in other employment from 95 to 195 employees. The trip-making characteristics of the proposed Russell Property neighborhood are well within the trips associated with the forecast increase of 233 households. Given the neighborhood is consistent with the existing zoning, the surrounding uses and the growth forecasts in the TSP, the long-range impacts of the development can be assumed to have been accounted for in the TSP.

FINDINGS AND RECOMMENDATIONS

Based on the results of this access report, the proposed Russell neighborhood can be developed while maintaining acceptable operations at the study intersections assuming implementation of the recommended mitigation measures.

Findings

- The study intersections were found to operate acceptably during the weekday AM and PM peak hours under existing and future conditions (without and with site development).
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.

Recommendations

- Intersection sight distance should be maintained at the new intersections within the neighborhood per city code. Landscaping, above ground utilities, and signing should be located and maintained in a manner that preserves adequate intersection sight distance.

Please let us know if you need any additional information regarding our analyses.

REFERENCES

1. Washington County Oregon. *Washington County 2020 Transportation Plan*. 2011.
2. TriMet. *Maps and Schedules*. Accessed on-line at TriMet.org. February 2015.
3. Washington County Oregon. *2011 – 2013 Safety Priority Index System (SPIS)*.
4. Institute of Transportation Engineers. *Trip Generation, 9th Edition*. 2012.
5. Transportation Research Board. *Highway Capacity Manual*. 2000.

APPENDICES

Appendix A – Description of Level-of-Service and Volume-to-Capacity Methods and Criteria

Appendix B – Crash Data

Appendix C – Traffic Count Data

Appendix D – Level-of-Service Worksheets

