

## DRAFT MEMORANDUM

**DATE:** January 11, 2019

**TO:** Bruce Soihr  
Commercial Property Manager  
Norris & Stevens

**FROM:** Monica Leal, PE  
Mary Kate Otto, EIT

**SUBJECT:** 202 Molalla Avenue Traffic Analysis Letter and Parking Analysis P18-152-000

This memorandum presents the traffic analysis letter (TAL) and parking analysis for the proposed parking lot to be located at 202 Molalla Avenue in Oregon City, Oregon. The proposed parking lot will help support parking needs for the 221 Molalla Avenue site located across the street (on the east side of Molalla Avenue). The purpose of this analysis is to evaluate the proposed site access, identify potential off-site improvements required to adequately serve the proposed development, and conduct a parking inventory and occupancy evaluation to understand parking needs.

### TRAFFIC ANALYSIS LETTER

#### 1. Site Plan

The proposed parking lot (See Figure 1) will include the construction of a new site access to Myrtle Street, to be located approximately 196 feet north of the Pearl Street/Myrtle Street intersection (measured from the center of the site access to the center of the intersection). The parking lot will include 10 new parking spaces. Myrtle Street will be extended approx. 69 feet north and will terminate just north of the proposed site access. The proposed design of the parking lot and the site access are illustrated on the site plan (See Figure 2).

#### 2. Trip Generation

The proposed parking lot will be constructed to provide 10 new parking spaces and will help support parking needs for the 221 Molalla Avenue site. The parking lot will serve vehicular trips currently traveling on surrounding roadways and thus, will generate no new trips.

#### 3. Access Design

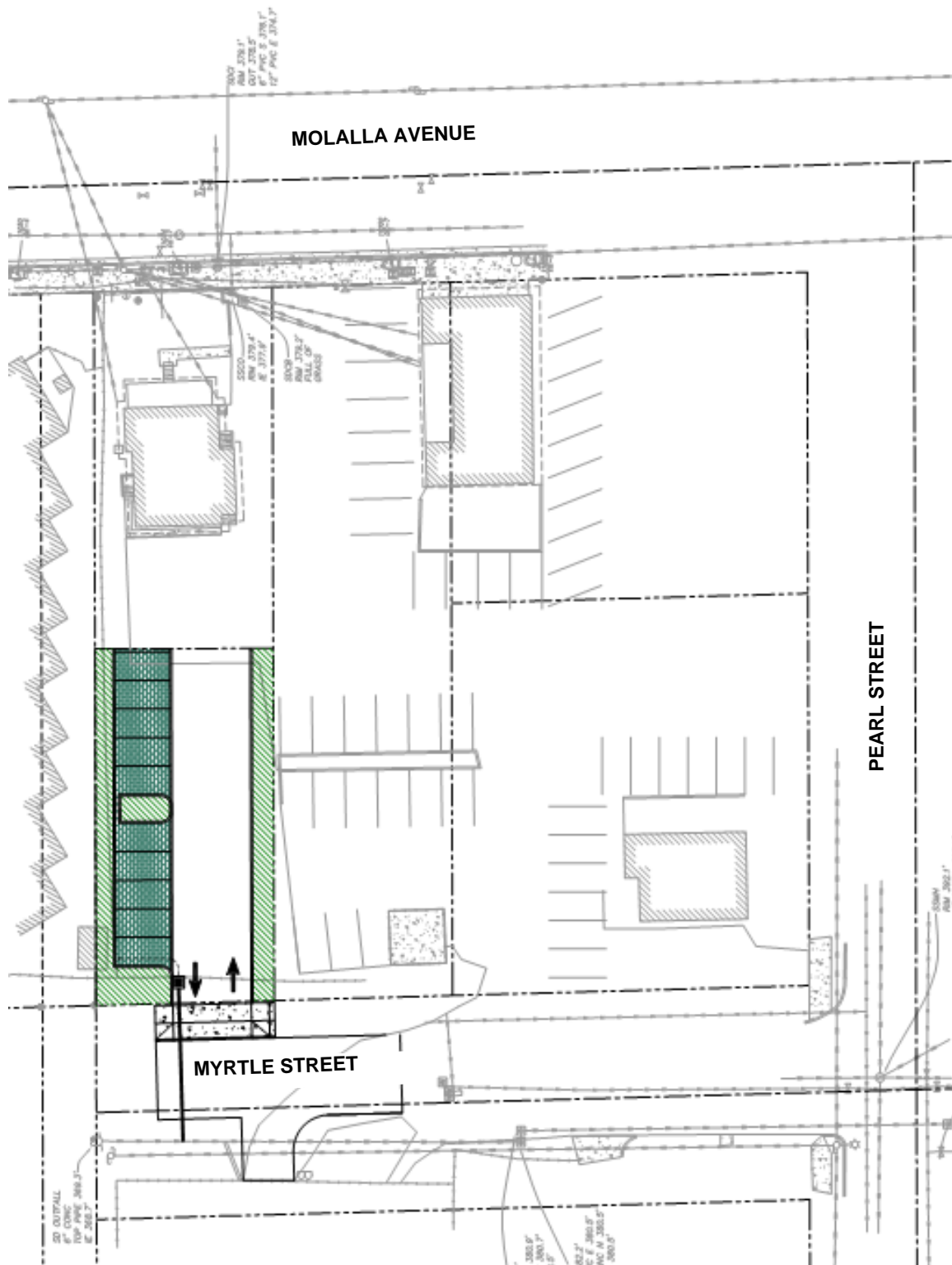
Oregon City Municipal Code Section 12.04.025 identifies that a non-residential site access shall have a minimum width of 15 feet and a maximum width of 40 feet (at the sidewalk or property line). The proposed site access has been designed with a 22-foot width and thus, its width will meet the City's curb cut spacing specifications.

#### 4. Intersection Spacing Standards

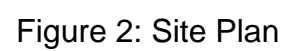
Oregon City's Minimum City Street Intersection Spacing Standards, presented in Table 12.04.195B, are based on the street functional classification. Myrtle Street is classified as a local street on Oregon City's Urban Road Functional Classification Map 5-4a. The minimum intersection spacing standard for a Local Street is identified as 25 feet. The proposed site access will be located 66 feet north of an existing driveway on Myrtle Street shared by 212 Molalla Avenue and 325 Pearl Street. Based on the proposed driveway spacing, the intersection spacing standard for a Local Street is met.



Figure 1: Vicinity Map



PLOT DATE: 01.06.19



## 5. Sight Distance

Oregon City TAL guidelines identify that all new site accesses and/or public street intersections meet AASHTO (American Association of State Highway and Transportation Officials) intersection sight distance guidelines. This sight distance evaluation was based on AASHTO and was measured assuming an object height of 3.5 feet, a driver's eye height of 3.5 feet, and a driver's setback of 14.5 feet from the edge of pavement. The sight distance here is for a stop-controlled site access approach. Intersection and stopping sight distance for the proposed site access was compared to the AASHTO Design Intersection and Stopping Sight Distance for the following two cases:

- Design Intersection Sight Distance – Case B1, left turn from the minor stop-controlled road<sup>1</sup>.
- Stopping Sight Distance for the northbound direction on Myrtle Street<sup>2</sup>.

Sight distance was field measured under existing conditions and compared with the intersection and stopping sight distance requirements for 25 miles per hour (estimated for Myrtle Street). The sight distance evaluation is summarized in Table 1. The existing Myrtle Street alignment limits its length to approximately 125 feet, measured from the north edge of Pearl Street. With the construction of the proposed parking lot and site access, Myrtle Street will be extended north and will terminate at a distance of approx. 193 feet. Based on this physical roadway distance for Myrtle Street and the proposed site access location, AASHTO's minimum sight distance recommendation is not met. However, based on AASHTO standards and an assumed vehicle turning speed of 10-15 mph (Vehicles on Pearl Street turning into Myrtle Street), the required sight distance is 170 ft and the standard is met. AASHTO's stopping sight distance recommendation of 155 feet can be met.

**Table 1: Sight Distance Evaluation – Proposed Site Accesses**

Sight Distance Evaluated	Posted Speed (mph)	Estimated Available Sightline (ft)		Sight Distance Standards (ft)	Meets Standard?
Myrtle Street at Proposed Site Access					
Case B1: Left-turn from Stop	25	To the South	181 *	280 / 170 **	No / Yes **
SSD NB Direction		181 *		155	Yes
Notes: *Measured from the site access to the north side of Pearl Street.					
** Assumed a vehicle turning speed of 10-15 mph (Vehicles on Pearl Street turning into Myrtle Street).					

With development of the parking lot, the proposed site access should be designed and constructed such that the sight lines meet or exceed AASHTO's stopping sight distance recommendation. Obstructions by landscaping, signing, parking, buildings, or other objects would be unsafe.

## 6. Safety

With development of the proposed parking lot driveway access, Myrtle Street will be extended approximately 69 feet. The proposed site access will be located at the end of the road extension. Vehicles traveling to and from the driveway access will have little or no interaction with other vehicles on Myrtle Street and thus, no inherent safety issues are anticipated.

## 7. Compliance with Oregon City's Transportation System Plan

The Oregon City's Transportation System Plan (TSP) was reviewed to document that the proposed parking lot, site access, and extension of Myrtle Street will comply with any standards regarding the functional classification, typical sections, access management, traffic calming and other attributes as appropriate. Myrtle Street is designated as a Local Street on Oregon City's Functional Classification Map

<sup>1</sup> American Association of State Highway and Transportation Official's Geometric Design of Highways and Streets, 2011, Left turn from stop, AASHTO, Case B1, Table 9-6.

<sup>2</sup> American Association of State Highway and Transportation Official's Geometric Design of Highways and Streets, 2011, Stopping Sight Distance, AASHTO, Table 3-1.

5-4a. Vehicular trips that travel along Myrtle Street to and from the proposed parking lot are expected to be minimal, which is consistent with a Local Street functional classification.

The design and construction of roadway improvements on Myrtle Street, related to the proposed parking lot and site frontage improvements shall follow the Oregon City Local Street typical section drawing standards.

## **PARKING ANALYSIS**

A parking analysis was conducted to understand parking conditions in the area and the need of the proposed parking lot at 202 Molalla Avenue. This parking analysis evaluation was based on an 85% parking occupancy standard.

An off-street and on-street parking inventory was conducted within 500-foot radius of 221 Molalla Avenue to identify existing parking conditions. The existing inventory was surveyed on three consecutive weekdays from Tuesday, November 27, 2018 to Thursday, November 29, 2018 from 9:30 AM to 11:30 AM. Data was collected during this time period based on the estimated business hours in the area and highest building occupancy at 221 Molalla Avenue. A summary of the off-street and on-street parking analysis is shown below.

### **1. Off-street parking**

Off-Street parking conditions were evaluated at the parking lots utilized by the 221 Molalla Avenue businesses and offices. The following existing parking lots were included in this analysis (See Figure 3):

- Parking lot at 221 Molalla Avenue
- Parking lot on the southeast quadrant of the Molalla Avenue/Pearl Street Intersection

Table 2 shows a summary of the parking lots supply, demand, and occupancy from 9:30 AM to 11:30 AM. Complete on-street parking demand data can be found in the Appendix. The peak off-street parking demand of 75 vehicles occurred on Tuesday, November 27, 2018 from 9:30 AM to 10:30 AM with a peak parking occupancy of 95%, leaving an off-street parking reserve of 5%. The average off-street parking occupancy was 91% exceeding the 85% parking occupancy standard. The parking lot located on the southeast quadrant of the Molalla Avenue/Pearl Street intersection showed 100% occupancy during two days between 9:30 AM and 10:30 AM. High occupancy values were observed on the two parking lots during the three consecutive days. The supply becomes constrained and does not provide full and convenient services to the intended users. Parking lot users are currently forced to park on the streets reducing parking opportunities for other on-street users.

Due to the high off-street parking demand, additional off-street parking spaces are needed to meet the 85% parking occupancy standard. With the additional 10 parking spaces at 202 Molalla Avenue, parking occupancy will be reduced to 84% and the 85% occupancy standard will be met. The additional parking will ensure that the intended users are conveniently accommodated.

### **2. On-street parking**

On-Street parking conditions were evaluated within 500-foot radius from 221 Molalla Avenue. The data collected included type of parking and time limits. The following on-street parking was included in this inventory (See Figure 3):

- Pearl Street: west and east of Molalla Avenue
- Pleasant Avenue: between Caulfield Street and Molalla Avenue
- Logus Street: between Molalla Avenue and Warren Street
- Alley between Molalla Avenue and Warren Street
- Roosevelt Street: between Molalla Avenue and Warren Street
- Dewey Street: between Molalla Avenue and Warren Street



Parking Lot	Supply (Time Limit)	Demand - Total (Occupancy %)						Average
		27-Nov		28-Nov		29-Nov		
		9:30AM-10:30AM	10:30AM-11:30AM	9:30AM-10:30AM	10:30AM-11:30AM	9:30AM-10:30AM	10:30AM-11:30AM	
221 Molalla Ave	20 (R)	19 (95%)	17 (85%)	18 (90%)	19 (95%)	18 (90%)	17 (85%)	18 (90%)
	3 (30M)	2 (67%)	2 (67%)	2 (67%)	2 (67%)	2 (67%)	1 (33%)	2 (67%)
	4 (A)	2 (50%)	1 (25%)	1 (25%)	0 (0%)	0 (0%)	1 (25%)	1 (25%)
Molalla & Pearl-SE Quadrant	52 (R)	52 (100%)	48 (92%)	52 (100%)	50(96%)	51(98%)	49(94%)	51(98%)
Total (Occupancy)	79	75 (95%)	68 (86%)	73 (92%)	71 (90%)	71 (90%)	68 (86%)	72 (91%)

**Notes:** XX = Does not meet the 85% occupancy standard  
 XX% = Highest Occupancy  
 R=Regular Parking, No Time Limit Restrictions; 3M=30 Minute Parking; A=Accessible Parking Spaces

### Table 3: On-street Parking Supply and Demand Summary

Street		Supply (Time Limit)	Demand					
			27-Nov		28-Nov		29-Nov	
			9:30AM- 10:30AM	10:30AM- 11:30AM	9:30AM- 10:30AM	10:30AM- 11:30AM	9:30AM- 10:30AM	10:30AM- 11:30AM
Pearl St	West of Myrtle (North Side)	3 (R)	0	0	0	0	0	0
	Between Myrtle & Loncheria (North Side)	3 (R)	0	0	0	0	0	0
	Between Myrtle & Loncheria (South Side)	3 (R)	1	1	1	1	1	1
	Between Loncheria & Molalla (North Side)	3 (2H)	3	3	3	2	2	2
	Between Loncheria & Molalla (South Side)	3 (2H)	1	0	0	0	0	0
	East of Molalla (North Side)	15 (R)	8	8	7	6	8	9
Pleasant Ave	Between Caulfield & Molalla (North Side)	7 (R)	0	0	0	0	0	0
	Between Caulfield & Molalla (South Side)	3 (R)	1	1	0	1	1	1
Logus St	Between Molalla & Warren (North Side)	17 (R)	6	4	5	5	5	6
Roosevelt St	Between Molalla & Warren (North Side)	13 (R)	5	3	7	5	9	7
Dewey St	Between Molalla & Warren, north side	14 (R)	4	4	6	6	5	6
	Between Molalla & first driveway, south side	1 (R)	0	0	0	0	1	1
Alley - Between Molalla & Warren (North Side)		0 (R)	1	1	5	4	7	7
<b>Total</b>		<b>79 (R)</b>	26 (R)	22 (R)	31 (R)	28 (R)	37 (R)	38 (R)
		<b>6 (2H)</b>	4 (2H)	3 (2H)	3 (2H)	2 (2H)	2 (2H)	2 (2H)
<b>Total (Occupancy %)</b>			<b>30 (35%)</b>	<b>25 (29%)</b>	<b>34 (40%)</b>	<b>30 (35%)</b>	<b>39 (46%)</b>	<b>40 (47%)</b>
<b>Notes:</b> R= Regular Parking, No Time Limit; 2H = 2-Hour Parking								

## SUMMARY AND RECOMMENDATIONS

### Traffic Analysis Letter

The traffic analysis letter for the 202 Molalla Avenue parking lot has been prepared to evaluate the proposed site access and identify potential off-site improvements. The proposed parking lot will feature 10 parking spaces to help support parking needs for the 221 Molalla Avenue site. The proposed parking lot will serve vehicular trips currently traveling on surrounding roadways and thus, will generate no new trips.

The proposed 22-foot wide site access to Myrtle Street will be located approximately 181 feet north of Pearl Street. The proposed site access and its physical location satisfy Oregon City standards.

Based on this physical roadway distance for Myrtle Street and the proposed site access location, AASHTO's minimum sight distance recommendation (280 feet) is not met. However, based on AASHTO standards and an assumed vehicle turning speed of 10-15 mph (Vehicles on Pearl Street turning into Myrtle Street), the required sight distance is 170 ft and the standard is met. AASHTO's stopping sight distance recommendation of 155 feet can be met. With development of the parking lot, the proposed site access should be designed and constructed such that the sight lines meet or exceed AASHTO's stopping sight distance recommendation. Obstructions by landscaping, signing, parking, buildings, or other objects would be unsafe.

The proposed site access will be located at the end of the Myrtle Street road extension. Vehicles traveling to and from the site access will have little or no interaction with other vehicles on Myrtle Street and thus, no inherent safety issues are anticipated. Based on the documentation presented in the Traffic Analysis Letter section, off-site improvements, in addition to those proposed, are not necessary. It is recommended that the City of Oregon City support and approve the development application.

### Parking Analysis

A parking analysis was conducted to understand parking conditions in the area and the need of the proposed parking lot at 202 Molalla Avenue. An off-street and on-street parking inventory was conducted within 500-foot radius of 221 Molalla Avenue to identify existing parking conditions. The existing inventory was surveyed on three consecutive weekdays from Tuesday, November 27, 2018 to Thursday, November 29, 2018 from 9:30 AM to 11:30 AM. Data was collected during this time period based on the estimated business hours in the area and highest building occupancy at 221 Molalla Avenue.

The off-street parking data shows a peak parking occupancy of 95%, leaving an off-street parking reserve of 5%. The average off-street parking occupancy was 91% exceeding the 85% parking occupancy standard. The parking lot located on the southeast quadrant of the Molalla Avenue/Pearl Street intersection showed 100% occupancy during two days between 9:30 AM and 10:30 AM. High occupancy values were observed on the two parking lots during the three consecutive days. The off-street parking supply becomes constrained and does not provide full and convenient services to the intended users. Parking lot users are currently forced to park on the streets reducing parking opportunities for other on-street users. The additional off-street parking spaces are needed to meet the 85% parking occupancy standard. With the additional 10 parking spaces at 202 Molalla Avenue, parking occupancy will be reduced to 84% and the 85% occupancy standard will be met. The additional parking will ensure that the intended users are conveniently accommodated and will facilitate future parking demand growth in the area.

The on-street parking data shows an occupancy of 47% on-street parking, leaving a parking reserve of 53%. Based on this analysis the on-street parking occupancy meets the 85% occupancy standard. A reserve of 53% allows future parking demand growth in the area.

## **Appendix: Off-Street and On-Street Parking Inventory**

<b>Date</b>
27-Nov
28-Nov
29-Nov



7409 SW Tech Center Dr  
 Tigard, OR 97223  
 (503) 620-4242

Row Labels	Sum of Inventory	Sum of 9:30	Sum of 10:30
<b>27-Nov</b>	<b>164</b>	<b>105</b>	<b>93</b>
<b>221 Molalla Ave</b>	<b>27</b>	<b>23</b>	<b>20</b>
ADA	4	2	1
Regular	20	19	17
30m	3	2	2
<b>Molalla &amp; Pearl southeast lot</b>	<b>52</b>	<b>52</b>	<b>48</b>
Regular	52	52	48
<b>Pearl west of Myrtle, north side</b>	<b>3</b>	<b>0</b>	<b>0</b>
Regular	3	0	0
<b>Pearl, between Myrtle &amp; Loncheria dwy, north side</b>	<b>3</b>	<b>0</b>	<b>0</b>
Regular	3	0	0
<b>Pearl, between Myrtle &amp; Loncheria dwy, south side</b>	<b>3</b>	<b>1</b>	<b>1</b>
Regular	3	1	1
<b>Pearl, between Loncheria dwy &amp; Molalla, north side</b>	<b>3</b>	<b>3</b>	<b>3</b>
2h	3	3	3
<b>Pearl, between Loncheria dwy &amp; Molalla, south side</b>	<b>3</b>	<b>1</b>	<b>0</b>
2h	3	1	0
<b>Pleasant, between Caulfield &amp; Molalla, north side</b>	<b>7</b>	<b>0</b>	<b>0</b>
Regular	7	0	0
<b>Pleasant, between Caulfield &amp; Molalla, south side</b>	<b>3</b>	<b>1</b>	<b>1</b>
Regular	3	1	1
<b>Logus, between Molalla &amp; Warren, north side</b>	<b>17</b>	<b>6</b>	<b>4</b>
Regular	17	6	4
<b>Alley between Molalla &amp; Warren, north side</b>	<b>0</b>	<b>1</b>	<b>1</b>
Regular	0	1	1
<b>Roosevelt, between Molalla &amp; Warren, north side</b>	<b>13</b>	<b>5</b>	<b>3</b>
Regular	13	5	3
<b>Pearl, east of Molalla, north side</b>	<b>15</b>	<b>8</b>	<b>8</b>
Regular	15	8	8
<b>Dewey, between Molalla &amp; Warren, north side</b>	<b>14</b>	<b>4</b>	<b>4</b>
Regular	14	4	4
<b>Dewey, between Molalla &amp; first driveway, south side</b>	<b>1</b>	<b>0</b>	<b>0</b>
Regular	1	0	0
<b>Grand Total</b>	<b>164</b>	<b>105</b>	<b>93</b>

Date
27-Nov
28-Nov
29-Nov



7409 SW Tech Center Dr  
 Tigard, OR 97223  
 (503) 620-4242

Row Labels	Sum of Inventory	Sum of 9:30	Sum of 10:30
<b>28-Nov</b>	<b>164</b>	<b>107</b>	<b>101</b>
<b>221 Molalla Ave</b>	<b>27</b>	<b>21</b>	<b>21</b>
ADA	4	1	0
Regular	20	18	19
30m	3	2	2
<b>Molalla &amp; Pearl southeast lot</b>	<b>52</b>	<b>52</b>	<b>50</b>
Regular	52	52	50
<b>Pearl west of Myrtle, north side</b>	<b>3</b>	<b>0</b>	<b>0</b>
Regular	3	0	0
<b>Pearl, between Myrtle &amp; Loncheria dwy, north side</b>	<b>3</b>	<b>0</b>	<b>0</b>
Regular	3	0	0
<b>Pearl, between Myrtle &amp; Loncheria dwy, south side</b>	<b>3</b>	<b>1</b>	<b>1</b>
Regular	3	1	1
<b>Pearl, between Loncheria dwy &amp; Molalla, north side</b>	<b>3</b>	<b>3</b>	<b>2</b>
2h	3	3	2
<b>Pearl, between Loncheria dwy &amp; Molalla, south side</b>	<b>3</b>	<b>0</b>	<b>0</b>
2h	3	0	0
<b>Pleasant, between Caulfield &amp; Molalla, north side</b>	<b>7</b>	<b>0</b>	<b>0</b>
Regular	7	0	0
<b>Pleasant, between Caulfield &amp; Molalla, south side</b>	<b>3</b>	<b>0</b>	<b>1</b>
Regular	3	0	1
<b>Logus, between Molalla &amp; Warren, north side</b>	<b>17</b>	<b>5</b>	<b>5</b>
Regular	17	5	5
<b>Alley between Molalla &amp; Warren, north side</b>	<b>0</b>	<b>5</b>	<b>4</b>
Regular	0	5	4
<b>Roosevelt, between Molalla &amp; Warren, north side</b>	<b>13</b>	<b>7</b>	<b>5</b>
Regular	13	7	5
<b>Pearl, east of Molalla, north side</b>	<b>15</b>	<b>7</b>	<b>6</b>
Regular	15	7	6
<b>Dewey, between Molalla &amp; Warren, north side</b>	<b>14</b>	<b>6</b>	<b>6</b>
Regular	14	6	6
<b>Dewey, between Molalla &amp; first driveway, south side</b>	<b>1</b>	<b>0</b>	<b>0</b>
Regular	1	0	0
<b>Grand Total</b>	<b>164</b>	<b>107</b>	<b>101</b>

Date
27-Nov
28-Nov
29-Nov



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Row Labels	Sum of Inventory	Sum of 9:30	Sum of 10:30
<b>29-Nov</b>	<b>164</b>	<b>110</b>	<b>108</b>
<b>221 Molalla Ave</b>	<b>27</b>	<b>20</b>	<b>19</b>
ADA	4	0	1
Regular	20	18	17
30m	3	2	1
<b>Molalla &amp; Pearl southeast lot</b>	<b>52</b>	<b>51</b>	<b>49</b>
Regular	52	51	49
<b>Pearl west of Myrtle, north side</b>	<b>3</b>	<b>0</b>	<b>0</b>
Regular	3	0	0
<b>Pearl, between Myrtle &amp; Loncheria dwy, north side</b>	<b>3</b>	<b>0</b>	<b>0</b>
Regular	3	0	0
<b>Pearl, between Myrtle &amp; Loncheria dwy, south side</b>	<b>3</b>	<b>1</b>	<b>1</b>
Regular	3	1	1
<b>Pearl, between Loncheria dwy &amp; Molalla, north side</b>	<b>3</b>	<b>2</b>	<b>2</b>
2h	3	2	2
<b>Pearl, between Loncheria dwy &amp; Molalla, south side</b>	<b>3</b>	<b>0</b>	<b>0</b>
2h	3	0	0
<b>Pleasant, between Caulfield &amp; Molalla, north side</b>	<b>7</b>	<b>0</b>	<b>0</b>
Regular	7	0	0
<b>Pleasant, between Caulfield &amp; Molalla, south side</b>	<b>3</b>	<b>1</b>	<b>1</b>
Regular	3	1	1
<b>Logus, between Molalla &amp; Warren, north side</b>	<b>17</b>	<b>5</b>	<b>6</b>
Regular	17	5	6
<b>Alley between Molalla &amp; Warren, north side</b>	<b>0</b>	<b>7</b>	<b>7</b>
Regular	0	7	7
<b>Roosevelt, between Molalla &amp; Warren, north side</b>	<b>13</b>	<b>9</b>	<b>7</b>
Regular	13	9	7
<b>Pearl, east of Molalla, north side</b>	<b>15</b>	<b>8</b>	<b>9</b>
Regular	15	8	9
<b>Dewey, between Molalla &amp; Warren, north side</b>	<b>14</b>	<b>5</b>	<b>6</b>
Regular	14	5	6
<b>Dewey, between Molalla &amp; first driveway, south side</b>	<b>1</b>	<b>1</b>	<b>1</b>
Regular	1	1	1
<b>Grand Total</b>	<b>164</b>	<b>110</b>	<b>108</b>