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To: John Lewis, Public Works Director
From: John Replinger, PE
Subject: Dutch Brothers Access
Date: April 20, 2016

Issues

In response to inquiries from representatives of Dutch Brothers, the city requested that I evaluate a variety of possibilities to improve access to the site for customers. The site is located in the southeast quadrant of the intersection of Division Street and Molalla Avenue. Originally approved in 2007, some changes were processed for the site in 2010. The facility was originally approved as a drive-through coffee establishment and is being reopened by another owner.

The establishment's owner, Dutch Brothers, has suggested some possible methods of increasing access by customers. City staff has asked for my analysis of those and others that might improve customer access while protecting transportation system users.

This memorandum responds to those issues. It explains the site conditions and summarizes observations relating to traffic operations. Finally, it provides my recommendations.

Location and Site Conditions

Molalla Avenue is a collector street running in a north-south orientation. South of Taylor Street it features a three-lane section with either left-turn lanes or raised medians depending on the exact location. South of Division Street, Molalla Avenue features on-street bike lanes. In the immediate vicinity of Molalla Avenue, Division Street is a local street that is westbound on the west side of Molalla Avenue and eastbound for the single block between Molalla Avenue and 7th Street.

The signal at the intersection of Molalla Avenue and Division Street is a pedestrian signal. It operates only in response to users pushing the pedestrian actuation buttons on either side of Molalla Avenue. Normally, it "shows green" for motorists on Molalla Avenue.

The traffic control at the intersection of Molalla Avenue and Division Street is also unusual. Since Division Street leads away from Molalla Avenue in both directions, there is no approaching traffic on Division Street in either direction. Both northbound and southbound traffic on Molalla Avenue is prohibited from making left turns onto Division Street.

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Southbound traffic on Molalla Avenue actually features two southbound lanes from Taylor Street through the intersection with Division Street. The curb lane is the through lane that comes up the hill from the downtown area; the left lane is a “slip lane” that serves as a receiving lane for those seeking to make left turns from westbound Taylor Street to southbound Molalla Avenue. Just south of Division Street, the left lane is forced to merge into the right lane to continue south on Molalla Avenue.

The slip lane on southbound Molalla Avenue helps the operations for left turns from Taylor Street to southbound Molalla by allowing those motorists to execute a “two-stage left turn.” A left-turning motorist need only yield to northbound Molalla Avenue traffic before initiating a turn onto Molalla Avenue. Then, a block to the south, they can merge into the through southbound lane on Molalla Avenue. This is not a maneuver that many motorists are comfortable with, but is a legal maneuver and does reduce delays encountered by those making left turns from Taylor Street to Molalla Avenue.

In front of the Dutch Brothers site, a barrier median exists to prevent southbound motorists from trying to enter the site.

A vicinity map is provided for reference as the final page of this memorandum.

Existing Dutch Brothers Site Access

Unlike other retail establishments, a drive-through coffee facility serves high volumes of traffic during peak travel times and develops significant queues of vehicles whose occupants wait in their vehicles for service. At the time of development of this site, efforts were made to maximize on-site storage of vehicles waiting for service.

The primary access to the Dutch Brother site is from northbound Molalla Avenue. The secondary access is from Division Street to a site driveway located approximately 70 feet east of Molalla Avenue. The only legal access to this section of Division Street is by making a right turn from northbound Molalla Avenue.

Access to the site for southbound vehicles on Molalla Avenue involves circuitous routes using neighborhood streets. One possible route would involve a left turn on Taylor Street, a right turn on 7th Street, followed by a right turn on Warren Street, a right turn on Willamette Street, and another right turn on Molalla Avenue northbound.

Access to the site for westbound vehicles on Division Street would also involve a circuitous route. One possibility is a left turn on Warren Street, a right on Willamette Street and another right turn on Molalla Avenue northbound.

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Exiting traffic from Dutch Brothers is provided at two points. The more usual would be the exit onto Division Street followed by a right turn to eastbound Division Street, then to its intersection with Taylor Street. The second path for exiting traffic involves a driving through the parking lot and an exit to northbound Molalla Avenue. In both cases, right turns are the only legal exiting maneuver.

Options for Changing Access to the Site

The following provides a discussion of potential changes that could be made to traffic control in the vicinity of the site. Some have been suggested by the establishment's representatives, others are based on some of the original owner's ideas developed during the original site development, and others are in response to my tour of the site.

- *Removing the barrier to allow inbound left turns from Molalla Avenue.* Many establishments along Molalla Avenue have inbound site access afforded by left turns from the center median. The barrier median was installed in direct response to concerns that southbound traffic would end up queuing on the street in an attempt to gain access to the site. A worst case scenario could result in a left-turning vehicle trapped in the queue and blocking northbound traffic on Molalla Avenue. Removal of the existing barrier median is not recommended.

- *Allowing left turns from southbound Molalla Avenue to eastbound Division Street.* As described above, this maneuver is prohibited. A "No Left Turn" sign is suspended above the intersection informs motorist that this is a prohibited movement. Allowing left turns from this location would require removal of the slip lane for left-turn movements from Taylor Street to southbound Molalla Avenue. The performance of the Molalla/Taylor intersection would be degraded and longer delays would be experienced by those seeking to make that maneuver. The longer delays would also result in longer queues for this movement and would further interfere with operations of the intersection of Taylor Street and 7th Street. Removal of the slip lane and allowing left turns at Division Street would have serious operational consequences; this measure is not recommended.

- *Allowing two-way movement on Division Street between 7th Street and the site driveway.* As described above, Division Street is currently one-way eastbound between Molalla Avenue and 7th Street. Allowing two-way traffic on this section of Division Street, a distance of approximately 250 feet, would allow customer access to the existing entrance on Division Street. Changing this section of Division Street would allow westbound motorists on Division Street to continue westbound to access the site driveway. Southbound motorists on Molalla Avenue could potentially access the site by turning left on Taylor Street, right on 7th Street,

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followed by a tight, right turn of more than 140 degrees onto westbound Division Street, followed by a left turn into the site. This option would require removal of existing parking on the south side of Division Street between Molalla Avenue and 7th Street. Casual observation indicates that the parking between the Dutch Brothers site and 7th Street is frequently used. Another problem associated with this option is the difficulty of making a 140-degree right turn from eastbound 7th Street to westbound Division Street. This appears to be a maneuver that could be made reasonably well by many small and mid-size cars, but it would be problematic for large pick-up trucks and large SUVs some of which have turning circles measuring in excess of 50 feet. When attempting a right turn from eastbound 7th Street to westbound Division, these larger vehicles could intrude on an eastbound travel lane. The difficulty making this maneuver safely combined with the needed parking removal leads to not recommending this option.

● *Conversion of the Molalla Avenue/Division signal from a pedestrian signal to a full traffic signal.* The solution for traffic operations in the vicinity prescribed in the city's Transportation System Plan (TSP) is the installation of a roundabout that accommodates movements from all directions. The analysis has not gone beyond the concept stage. The price, right-of-way, and access issues associated with the installation are not well defined. As an alternative, the installation of a traffic signal could conceivably provide new access to the Dutch Brother site. Signalizing Molalla Avenue/Division Street would necessarily involve signalizing Molalla Avenue and Taylor Street. Additional study would be needed to determine whether they could operate as an interconnected pair of signals or whether it would function better as one intersection with long clearance intervals to allow traffic to traverse the entire section between Taylor and Division Streets before allowing the next signal phase. Among other things, left turns might be allowable from southbound Molalla Avenue to eastbound Division Street. Detailed analysis and some out-of-the-box thinking would be required to assess the traffic operations associated with this option. It is clear that the cost of a signal would be high and through traffic on Molalla Avenue would definitely be negatively impacted relative to the existing configuration.

Conclusions and Recommendations

I conclude that allowing a left turn from southbound Molalla Avenue directly into the site or a left turn to eastbound Division Street would have safety issues and would cause unacceptable delays at Molalla Avenue and Taylor Street because it would require removal of the existing slip lane.

The option of converting of a section of Division Street to allow two-way traffic between 7th Street and the Dutch Brothers' site driveway is also not recommended. The significant drawbacks to this option are the removal of on-street parking and the difficulty of larger

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passenger vehicles making the right turn from eastbound 7th Street to westbound Division Street.

As suggested above, an alternative solution from that identified in the TSP for the traffic in the vicinity of Molalla/Division/Taylor might be explored. It is not an option that has immediate application to the desire for better access to Dutch Brothers. If it were to prove operationally acceptable, the expense of implementing it would be quite high.

In the course of my field inspection I verified that the site driveway providing an exit onto Division Street includes a "Right Turn Only" sign on the site. Though I do not have any observations to verify it, I suspect some users may miss that sign. I recommend supplementing that sign with another on the south side of Division Street directly opposite the site exit. Either a "One-way" sign or "Right Turn Only" sign could be used.



Expires 12/31/16

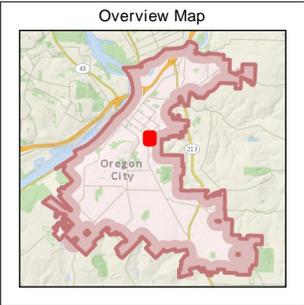
Oregon City GIS Map



Legend

- Taxlots
- Taxlots (Outside UGB)
- Unimproved ROW
- City Limits
- UGB
- Basemap

Notes



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.



City of Oregon City
 PO Box 3040
 625 Center St
 Oregon City
 OR 97045
 (503) 657-0891
www.orcity.org

