



MEMORANDUM

DATE: May 8, 2019

TO: Lori Zumwalt | Premier Development, LLC

FROM: Lacy Brown, Ph.D., P.E. | DKS Associates

SUBJECT: Oak Ridge Meadows – Supplemental Traffic Evaluation



This memorandum provides supplemental evidence related to traffic conditions associated with the proposed Oak Ridge Meadows development in McMinnville, Oregon. The following sections address concerns raised at the April 18, 2019 Planning Commission Meeting.

EXISTING TRAFFIC CONDITIONS

At the planning commission hearing, residents noted that high traffic volumes along Baker Creek Road make it difficult to turn out of Oak Ridge Drive and Merlot Drive in the morning, and that the traffic analysis results were inaccurate. DKS Associates conducted a site visit on April 30, 2019 to observe traffic patterns and record vehicle delays and queues during the morning peak period¹. Field observations were focused on the intersection of Oak Ridge Drive/Baker Creek Road as the previously collected traffic counts showed that intersection had higher traffic volumes than Merlot Drive.



Figure 1. Baker Creek Road looking northeast at Oak Ridge Drive. Maximum observed queue of two vehicles.

During field observations at Oak Ridge Drive/Baker Creek Road in the AM peak period, maximum vehicle delay was recorded to be 37.2 seconds, minimum delay was 1 second and the average delay was 9.6 seconds. A total of 33 vehicles were observed traveling from Oak Ridge Drive on to Baker Creek Road, and the maximum observed queue was two vehicles.

¹ Peak Period defined as 7:30 AM to 8:15 AM based on traffic counts collected on February 12th, 2019



Figure 2. Traffic back-up on Baker Creek Road resulting from school bus stopping near Merlot Drive.

At 7:45 AM, an eastbound school bus stopped on Baker Creek Road to pick up students near Oak Ridge Drive and again near Merlot Drive. This regular AM peak hour event caused traffic to back up on Baker Creek Road that limited the gaps in traffic, causing increased delay to the vehicles attempting to turn left out of the Oak Ridge Neighborhood. Traffic recovered quickly and resumed to normal operations by 7:50 AM (roughly five minutes later).

Table 1 presents a comparison of the observed vehicle delay and the calculated delay that was reported in the Traffic Impact Analysis (TIA) for the AM peak hour. As shown, the observed delay was substantially lower than the HCM calculated delay², even though traffic volumes were higher on the day of field observations than what was used in the analysis. This

suggests that the HCM analysis provides a conservative estimate of the intersection operations at Oak Ridge Drive/Baker Creek Road. Not only do the field observations confirm that delays experienced turning onto Baker Creek Road are well below the City’s acceptable levels, it is also likely that the delays experienced (and perceived) by drivers are even lower than what is reported in the TIA.

Table 1: Vehicle Delay Comparison

Source	Vehicles Exiting Oak Ridge Drive (7:30 AM – 8:15 AM)	Delay (s)			Level of Service
		Average	Minimum	Maximum	
HCM Calculations (using traffic counts from February 12th)	29	17.3 ¹	N/A ^a	N/A ^a	C (stable flow with acceptable delays)
Field Observations (conducted April 30th)	33	9.6	1.0	37.2	A (Free flow traffic conditions)

^a The HCM methodology allows for calculating average delay only, minimum and maximum not available..

FUTURE TRAFFIC CONDITIONS

Residents also raised concerns about future traffic conditions and the level of traffic that will be added to the Oak Ridge neighborhood. The summary of field observations above confirms that the intersections of Oak Ridge Drive and Merlot Drive with Baker Creek Road will operate with minimal delay and easily meet City standards for intersection operations. Two additional considerations related to future traffic conditions are described below.

² Using standard Highway Capacity Manual 6th Edition capacity analysis methodology for unsignalized intersections.

Planned Improvements

The City of McMinnville has set aside \$50,000 for FY 2020 to restripe Baker Creek Road between Hill Road and Elm Street. The restriping will provide a center two-way left-turn lane (TWLTL) that will allow two-stage left-turns onto Baker Creek Road. The addition of this TWLTL will increase capacity, reduce delays, and improve operations at both intersections at Oak Ridge Drive and Merlot Drive.

Development Phasing

Oak Ridge Meadows will be developed in phases as the market allows, and it is expected up to 49 lots will be constructed in Phase 1 over a two year period. The balance of the proposed 108 lots will be completed in Phase 2 within the following three years. It is also expected that the Shadden Drive extension will be constructed in a similar timeframe, and will ultimately serve as the primary access to Oak Ridge Meadows.

At full build out of Oak Ridge Meadows, even prior to the completion and dedication of NW Shadden Drive between NW Baker Creek Road and NW Pinehurst Drive, all roadways within the existing Oak Ridge neighborhood will operate at or below their intended capacity of 1,200 vehicles per day (vpd). In that eventuality, only a very small portion of Pinot Noir Drive (less than 500 feet) is expected to carry a volume up to 1,200 vpd.

SUMMARY

In response to concerns raised at the planning commission hearing, DKS Associates conducted field observations to verify existing traffic conditions, including queuing and delay experienced by drivers turning left onto Baker Creek Road from the Oak Ridge neighborhood. Field observations confirmed that the average delay experienced by drivers is substantially lower than the City requires, and is also lower than the calculated delays reported in the TIA. Neither the analysis reported in the TIA nor the subsequent field observations support the claim of significant vehicle delays while accessing Baker Creek Road from the Oak Ridge neighborhood. These findings (combined with the City's planned improvements to Baker Creek Road and the anticipated phasing of the Oak Ridge Meadows development) confirm that the traffic impacts related to the Oak Ridge Meadows development will be limited and all facilities will continue to meet the City's operating and design standards.

APPENDIX A – FIELD OBSERVATION DATA SHEET

Field Observations

April 30th 2019

Project: Oak Ridge Meadows TIA

Recorder:

Lacy Brown

Vehicle	Time	Delay (s)	Comment		
1	7:30-7:35 AM	4.1		Max Queue	2
2		3.6		Max Delay	37.2
3		6.2		Min Delay	1
4		13.9		Avg delay	9.64
5	7:35-7:40 AM	3.4			
6		36.3			
7		3.9			
8	7:40 -7:45 AM	2.2			
9		24.3			
10		1.0			
11		4.3			
12		21.6			
13		15.4			
14		3.7			
15		2.4			
16	7:45-7:50 AM	3.1	School Bus Pick-Up		
17		2.1	Baker Creek Queues		
18		5.4	Baker Creek Queues		
19	7:50-7:55 AM	29.7	Baker Creek Queues		
20		4.2	Traffic Recovered		
21		2.5			
22		2.3			
23	7:55-8:00 AM	35.6			
24		1.0			
25	8:00-8:05 AM	6.1			
26		2.0			
27		2.7			
28		37.2			
29	8:05-8:10 AM	4.3			
30		4.6			
31		16.1			
32	8:10-8:15 AM	2.6			
33		10.2			