



Comments for this report were provided with SF224 - Ridge at Lorson Ranch Filing No. 1. Please address those comments and submit revised report.

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# The Ridge at Lorson Ranch Transportation Memorandum (LSC #S214082) March 15, 2022

## Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

## Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

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Date



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March 22, 2022

Mr. Jeff Mark  
The Landhuis Company  
212 North Wahsatch Avenue, Suite 301  
Colorado Springs, CO 80903

RE: The Ridge at Lorson Ranch  
Filing Nos. 1-3 Final Plats  
El Paso County, Colorado  
Transportation Memorandum  
LSC #S214082

Dear Mr. Mark:

LSC Transportation Consultants, Inc. has prepared this transportation memorandum to accompany the final plat submittals for the Ridge at Lorson Ranch Filing Nos. 1 through 3. The site is located north of the future Lorson Boulevard and East of Lamprey Drive in El Paso County, Colorado.

LSC prepared a full traffic impact study (TIS) for this development dated November 5, 2021 (PUDSP216). The lot and street plan has not changed since completion of that report. This memorandum presents an updated analysis of roadway improvements by filing and an updated analysis of the required fees for each filing to the El Paso County Road Improvement Fee Program.

#### **SITE DEVELOPMENT AND LAND USE**

The Ridge at Lorson Ranch is planned to include 994 lots for single-family homes. Although the lot and street plan has not changed since the November 2021 PUD TIS, the development is now planned to be divided into three filings with 535, 277, and 182 lots respectively. Figure 1 shows the location of the proposed filings.

#### **TRIP GENERATION**

The Ridge at Lorson Ranch Filing Nos. 1-3 site-generated vehicle trips have been estimated using the nationally published trip-generation rates from *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). Table 1 shows the trip-generation estimate. Table 1 also shows estimates of the traffic expected to be generated for the same area in the November

2021 PUD TIS. The trip-generation estimate shown in that report was based on the trip-generation rates for Single Family Detached Housing from the **10th Edition** of *Trip Generation*, which are slightly higher than the rates shown in the current 11th Edition.

The Ridge at Lorson Ranch Filing Nos. 1-3 is expected to generate 9,373 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. This is about 10 **fewer** vehicle trips per day than was assumed in the November 2021 PUD TIS. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 181 vehicles would enter and 515 vehicles would exit the site. Due to the change in trip-generation rates, this is three **fewer** entering trips and 37 **fewer** exiting trips than was assumed in the November 2021 PUD TIS. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 589 vehicles would enter and 346 vehicles would exit the site. Due to the change in trip-generation rates, this is 31 **fewer** entering trips and 18 **fewer** exiting trips than was assumed in the November 2021 PUD TIS.

#### **FUTURE TRAFFIC VOLUMES AND LEVELS OF SERVICE**

Please refer to the November PUD TIS for future traffic volumes and level of service.

#### **TRAFFIC-SIGNAL WARRANTS**

The intersection of Marksheffel Road/Lorson Boulevard was analyzed to determine if a traffic-signal warrant, based on either vehicular volume or crash history, is currently met. The vehicular-volume traffic-signal warrant analysis is based on manual turning-movement counts conducted by LSC in March 2022. The count-data sheets are attached for reference.

##### **Warrant 1, Eight-Hour Vehicular Volume**

The combination of major-street approach volumes (includes the sum of the northbound and southbound approach volumes on Marksheffel Road) and minor-street volumes (eastbound left-turn volume only on Lorson Boulevard) at the subject intersection were analyzed to determine if the combination currently exceeds or would exceed the threshold criteria for Eight-Hour Vehicular-Volume Traffic-Signal Warrants in the 2009 *MUTCD*. Table 2 shows the warrant evaluation. The minor approach was analyzed as a single-lane approach, only considering the eastbound left-turn volume, as there is an existing exclusive right-turn lane.

All eight of the hours analyzed currently meet the thresholds for an Eight-Hour Vehicular-Volume Warrant based on Condition B – Interruption of Continuous Traffic. **This warrant is currently met.**

##### **Warrant 2, Four-Hour Vehicular Volume**

The combination of major-street approach volumes (includes the sum of northbound and southbound approach volumes on Marksheffel Road) and minor-street volumes (eastbound

left-turn volume only on Lorson Boulevard) at the subject intersection were analyzed to determine if the combination currently exceeds or would exceed the threshold criteria for a Four-Hour Vehicular-Volume Traffic-Signal Warrant in the 2009 *MUTCD*. Table 2 shows the warrant evaluation.

All eight of the hours analyzed currently meet the thresholds for a Four-Hour Vehicular-Volume Warrant. **This warrant is currently met.**

### **Warrant 3, Peak Hour**

Per the *MUTCD*, *“This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.”* Based on this standard, a peak-hour traffic-signal warrant should not be applied to the intersection of Marksheffel/Lorson.

### **Warrant 4, Pedestrian Volume**

Per the *MUTCD*, *“The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.”*

The lower-threshold pedestrian volume for a major street with a posted speed limit of greater than 35 mph is 75 pedestrians per hour for a Four-Hour Volume Warrant and 93 pedestrians per hour for a Peak-Hour Pedestrian-Volume Warrant. The pedestrian volumes at the intersection of Lorson/Marksheffel are anticipated to be well below these thresholds.

### **Warrant 5, School Crossing**

Per the *MUTCD*, *“The School Crossing signal warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal.”*

No school children are anticipated to cross Marksheffel at Lorson.

### **Warrant 6, Coordinated Signal System**

Per the *MUTCD*, *“Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.”*

It is our understanding that the existing signal at the adjacent intersection of Fountaine/Marksheffel is not part of a coordinated system. Even if this signal is placed in

coordination with the construction of a future planned signal at Mesa Ridge/Marksheffel it is unlikely that a signal would be required at Lorson to maintain proper platooning of vehicles.

### **Warrant 7 Analysis (Crash Experience)**

The following is from the MUTCD:

*Support:*

*01 The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.*

*Standard:*

*02 The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:*

*A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and*

*B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and*

*C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.*

The Colorado State Patrol provided LSC with vehicle-crash data for the intersection of Marksheffel/Lorson from July 2019 through February 2022. There were eight reported crashes at this intersection during this period. Of those crashes, seven of them occurred during a 12-month period between February 2021 and January 2022. Five of the seven crashes during this 12-month period involved motorists on Lorson Boulevard (the stop-sign-controlled approach) failing to yield right-of-way to the major-street traffic. A copy of these data is attached for reference.

Based on the crash-history-data criteria discussed above, criteria B has been met and, based on the volume data shown in Table 2, criteria C has been met. However, in order for the overall warrant to be met, the County may first require a trial of alternatives and/or enforcement per criteria A.

### **Warrant 8, Roadway Network**

Per the *MUTCD*, “Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.”

This situation is not applicable to the intersection of Marksheffel/Lorson.

### **Warrant 9, Intersection Near a Grade Crossing**

There are no existing grade crossings in the vicinity of the intersection of Marksheffel/Lorson.

### **Overall Analysis**

As Four-Hour and Eight-Hour Vehicular-Volume Traffic-Signal Warrants are currently met, LSC recommends that plans to convert this intersection to signal control be prepared.

### **TRAFFIC SIGNAL ESCROW PERCENTAGES/AMOUNTS**

#### **Fontaine/Old Glory**

As shown in *The Hills at Lorson Ranch Traffic Impact Analysis* (TIA), the intersection of Fontaine/Old Glory is anticipated to meet the thresholds for an All-Way, Stop-Sign-Control Warrant, Eight-Hour Vehicular-Volume Traffic-Signal Warrant, and Four-Hour Vehicular-Volume Traffic-Signal Warrant, based on the projected short-term traffic volumes. As the level of service analysis indicates that this intersection could operate at a satisfactory level of service in the short term with all-way, stop-sign control, LSC recommended in that report that this improvement be completed with The Hills at Lorson Ranch Final Plat and that an escrow account be set up to collect funds to convert this intersection to signal control in the future.

Table 3 shows the projected 2040 total traffic volumes on the minor approaches at the intersection of Fontaine Boulevard/Old Glory. The minor-approach volumes were assumed to include the northbound and southbound left-turn and through movements only. The right-turn volumes were excluded from the analysis as there are existing dedicated right-turn lanes on both approaches. As shown in Table 3, the Ridge at Lorson Ranch development is projected to contribute about 5.1 percent of the traffic due to future development. Assuming a total signal cost of \$300,000, a fair share contribution towards a future signal at this intersection would be \$15,190. Based on an equal contribution per lot for all lots within The Ridge at Lorson Ranch, Filing No. 1 would be responsible for \$8,176, Filing No. 2 would be responsible for \$4,233, and Filing No. 3 would be responsible for \$2,781.

### **Fontaine/Carriage Meadows**

The Ridge at Lorson Ranch is not projected to add to the total traffic volumes on the minor approaches at the intersection of Fontaine/Carriage Meadows. No contribution to the escrow amounts towards a future signal at that intersection should be required for this development.

### **TRAFFIC IMPACTS AND RECOMMENDED IMPROVEMENTS**

Please refer to the *Ridge at Lorson Ranch Full Traffic Impact Analysis (TIA)* dated October 8, 2021 (PUDSP216) for the short-term and 2040-total traffic volumes and level of service analysis. All recommended auxiliary turn lanes and roadway classifications from that report are still valid.

The October 2021 full TIA included a table which presented improvements in the vicinity of the site. A copy of this table with additional notes by LSC identifying which improvements will be required by each filing has been attached.

Item 9 of the improvements table from the October 2021 full TIA identified the trigger for the addition of a second southbound left-turn as when the southbound left-turn volume exceeds 505 vehicles per hour (vph). As shown in Table 3, the projected afternoon peak-hour volume for this movement is projected to be 480 vehicles following buildout of the Ridge at Lorson Ranch Filing No. 1 and 523 vehicles following buildout of Filing No. 2. If all of the Ridge at Lorson Ranch is built prior to this improvement, the southbound left-turn movement is projected to operate at LOS E and have a v/c ratio of 1.05. LSC recommends escrow funds be collected for the addition of the second southbound left-turn lane payable with final Ridge at Lorson Boulevard Filing to allow time to develop design plans and cost estimates. Table 4 shows the projected short-term afternoon peak-hour southbound left-turn total traffic volume at the intersection of Marksheffel/Fontaine. As shown in Table 4, the Ridge at Lorson Ranch Filing Nos. 1-3 are projected to contribute about 30.8 percent, 16.2 percent, and 10.5 percent of the traffic at buildout of Lorson Ranch, respectively.

### **ROADWAY IMPROVEMENT FEE PROGRAM**

This project will be required to participate in the El Paso County Road Improvement Fee Program. The Ridge at Lorson Ranch will join the ten-mil PID. The ten-mil PID building-permit fee portion associated with this option is \$1,221 per single-family dwelling unit. The building-permit fees would be \$653,235 for Filing No. 1, \$338,217 for Filing No. 2, and \$222,222 for Filing No. 3.

\* \* \* \* \*

Please contact me if you have any questions regarding this report.

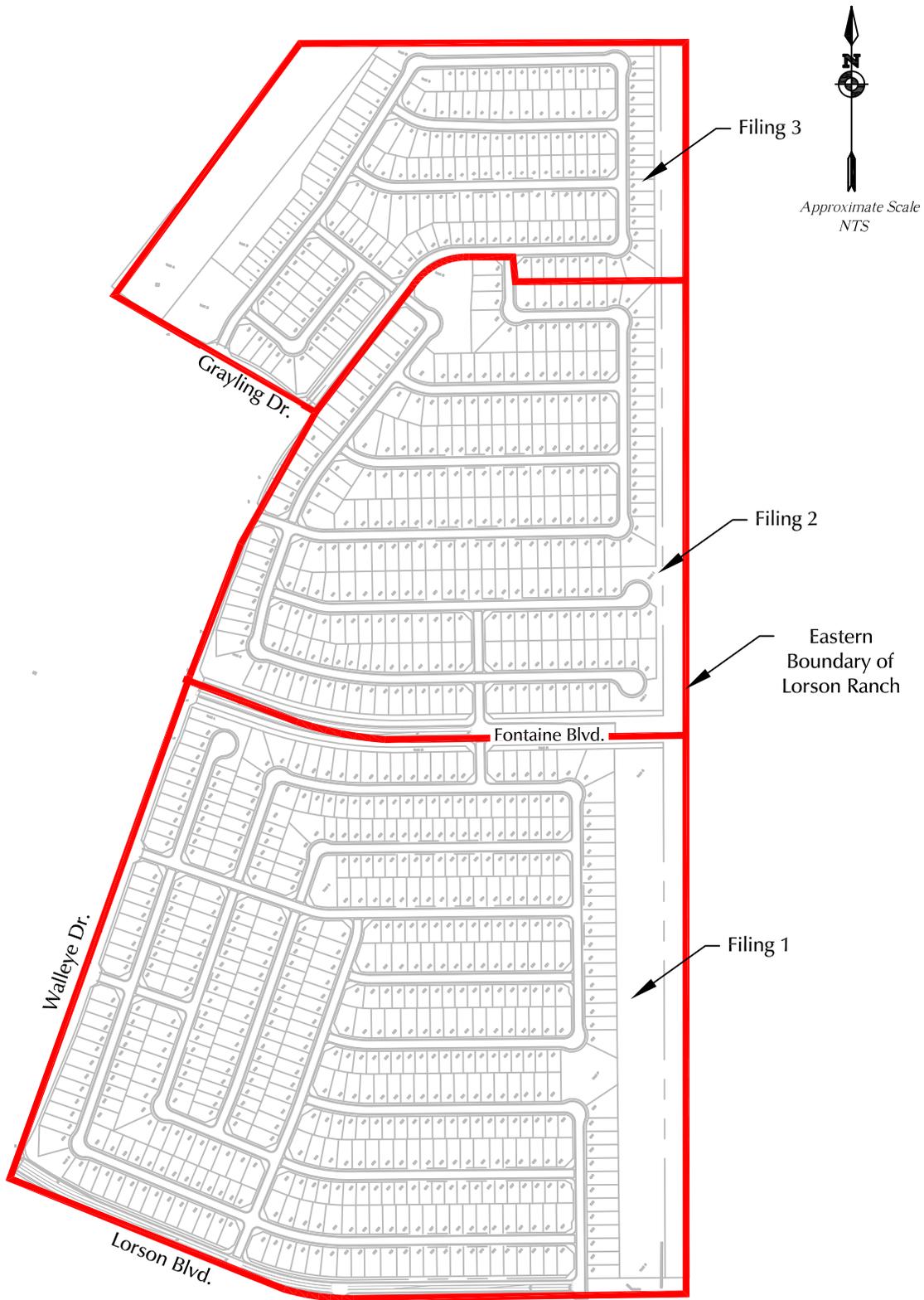
Respectfully submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E.  
Principal

JCH/KDF:jas

Enclosures: Figure 1  
Tables 1-4  
Traffic Count Data  
Crash History Data  
Table 4 from *The Ridge at Lorson Ranch Full Traffic Impact Analysis*



**Table 1  
Trip Generation Estimate  
Ridges at Lorson Ranch Filing No. 1-3**

Currently Proposed Filing	Traffic Analysis Zone	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates <sup>(1)</sup>					Total Trips Generated				
					Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
						In	Out	In	Out		In	Out	In	Out
<b>Trip Generation Estimate Based on the Currently Proposed Plan</b>														
1	35	210	Single-Family Detached Housing	535 DU <sup>(2)</sup>	9.43	0.18	0.52	0.59	0.35	5,045	97	277	317	186
2	46	210	Single-Family Detached Housing	277 DU	9.43	0.18	0.52	0.59	0.35	2,612	50	143	164	96
3		210	Single-Family Detached Housing	182 DU	9.43	0.18	0.52	0.59	0.35	1,716	33	94	108	63
<b>Total Filings 1-3</b>				<b>994 DU</b>						<b>9,373</b>	<b>181</b>	<b>515</b>	<b>589</b>	<b>346</b>
<b>Trip Generation From the Ridges at Lorson Ranch Traffic Impact Analysis PUD SP-216, November 5, 2021<sup>(3)</sup></b>														
---	35	210	Single-Family Detached Housing	459 DU	9.44	0.19	0.56	0.62	0.37	4,333	85	255	286	168
---	46	210	Single-Family Detached Housing	535 DU	9.44	0.19	0.56	0.62	0.37	5,050	99	297	334	196
				<b>994 DU</b>						<b>9,383</b>	<b>184</b>	<b>552</b>	<b>620</b>	<b>364</b>
<b>Change (Decrease) In Trip Generation Estimate</b>										<b>-10</b>	<b>-3</b>	<b>-37</b>	<b>-31</b>	<b>-18</b>

Notes:

(1) Source: "Trip Generation, 11th Edition, 2017" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

(3) Trip Generation Estimates in the November 2021 PUD TIS were based on "Trip Generation, 10th Edition, 2017" by ITE

**Table 2**  
**Traffic Signal Warrant Analysis**  
 Marksheffle/Lorson

Warrant Analysis <sup>(2)</sup>										
Traffic Volumes <sup>(1)</sup>			Warrant 1: Eight Hour Vehicular Volume Evaluation						Warrant 2: Four Hour Vehicular Volume Evaluation	
			Warrant Thresholds				Warrant Threshold Met?		70% Warrant Threshold Minor Minimum	Warrant Threshold Met? WB
Hour	Major <sup>(3)</sup> Marksheffel	Minor <sup>(4)</sup> Lorson WB LT	Condition A (70%)		Condition B (70%)		Condition A	Condition B		
			Major	Minor	Major	Minor	WB	WB		
6:00 - 7:00	711	148	350	105	525	53	Yes	Yes	69	Yes
7:00 - 8:00	1161	184	350	105	525	53	Yes	Yes	60	Yes
8:00 - 9:00	786	192	350	105	525	53	Yes	Yes	61	Yes
11:00 - 12:00	568	107	350	105	525	53	Yes	Yes	101	Yes
12:00 - 13:00	590	102	350	105	525	53	No	Yes	94	Yes
15:00 - 16:00	1029	109	350	105	525	53	Yes	Yes	60	Yes
16:00 - 17:00	1170	93	350	105	525	53	No	Yes	60	Yes
17:00 - 18:00	1279	115	350	105	525	53	Yes	Yes	60	Yes

Number of hours the thresholds are met Warrant met?	6	8	8
	Yes		Yes

Notes:

- (1) Based on counts by LSC March 2022
- (2) Thresholds are based on 1 lane on the major approach and 1 lane on the minor approach with the 70% factor applied for a posted speed limit above 40 mph
- (2) The major street traffic includes all movements (left, through, and right) on Marksheffel Road
- (3) The minor street traffic includes only the westbound left turning movements from Lorson Blvd

Source: LSC Transportation Consultants, Inc.

**Table 3**  
**Signal Escrow Analysis Table**  
 Old Glory/Fontaine Intersection  
 The Ridge at Lorson Ranch

Development	Minor Approach Volume <sup>(1)</sup>		Fair Share		Amount (Based on a \$300,000 signal cost)
	AM	PM	All Traffic	Future Development Only	
<b>Based on Projected 2040 Total Traffic Volumes</b>					
Existing Traffic	166	56	42.2%	---	
Creekside at Lorson Ranch (platted)	19	14	6.3%	---	
Lorson Ranch East Fil 4	19	15	6.5%	---	
Creekside South at Lorson Ranch	45	33	14.8%	32.9%	\$98,734
Ponderosa at Lorson Ranch Fil 3	6	3	1.7%	3.8%	\$11,392
The Hills at Lorson Ranch	8	5	2.5%	5.5%	\$16,456
Future Multi-family SW Lorson/Trappe	13	8	4.0%	8.9%	\$26,582
Ridge at Lorson Ranch	Fil 1 (535 lots)	7	2.3%	5.1%	\$8,176
	Fil 2 (277 lots)				\$4,233
	Fil 3 (182 lots)				\$2,781
Future Development East of Powerline Easement	60	44	19.8%	43.9%	\$131,646
	<b>343</b>	<b>183</b>			<b>\$300,000</b>

Notes:

(1) Minor approach volume includes all northbound and southbound left-turn and through movements. Right-turn movements have been excluded as there are existing dedicated right-turn lanes on both approaches.

Source: LSC Transportation Consultants, Inc.

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**Table 4**  
**Escrow Analysis Table For Southbound Left-turn Improvement at**  
**the Marksheffel/Fontaine Intersection**  
**The Ridge at Lorson Ranch**

Development	Southbound Left-Turn PM Peak Hour Volume (vph)		Fair Share		
	Volume Due to Development	Running Total Volume	All Traffic	Future Development Only	
<b>Based on Projected 2040 Total Traffic Volumes</b>					
Existing Traffic	259	259	47.0%	---	
Creekside at Lorson Ranch (platted)	6	265	1.1%	---	
Lorson Ranch East Fil 4	20	285	3.6%	---	
Creekside South at Lorson Ranch	9	294	1.6%	3.4%	
Ponderosa at Lorson Ranch Fil 3	8	302	1.5%	3.0%	
Carriage Meadows Townhome	4	306	0.7%	1.5%	
The Hills at Lorson Ranch	79	385	14.3%	29.7%	
Skyline at Lorson Ranch	13	398	2.4%	4.9%	
Ridge at Lorson Ranch	Fil 1 (535 lots)	82	480	14.9%	30.8%
	Fil 2 (277 lots)	43	<b>523</b>	7.8%	16.2%
	Fil 3 (182 lots)	28	551	5.1%	10.5%

Source: LSC Transportation Consultants, Inc.

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Table 4  
Page 1 of 2  
The Ridges at Lorson Ranch  
Roadway Improvements

Item #	Improvement	Improvement Description With Details	Trigger	Timing	Responsibility
<b>Roadway Segment Improvements</b>					
1	Roadway Segment	Construct Fontaine Boulevard from its existing terminus to Walleye Drive as an interim 2-Lane Urban Non-Residential Collector in 100' right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
2	Roadway Segment	Construct Fontaine Boulevard from Walleye Drive to the east boundary of Lorson Ranch as an interim 2-Lane Urban Non-Residential Collector in 100' right-of-way	With The Ridges at Lorson Ranch	With The Ridge at Lorson Ranch Fil 1	Lorson Ranch
3	Roadway Segment	Construct Lorson Boulevard from Lamprey Drive to Walleye Drive as an Urban Residential Collector with 64' - 72' of right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
4	Roadway Segment	Construct Lorson Boulevard from Walleye Drive to its planned ultimate terminus as an Urban Residential Collector with 60' of right-of-way	With The Ridges at Lorson Ranch	With The Ridge at Lorson Ranch Fil 1	Lorson Ranch
5	Roadway Segment	Construct-Walleye Drive from Lorson Boulevard to-Grayling Drive as an Urban Residential Collector with 64' - 72' of right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
6	Roadway Segment	Construct-Grayling Drive from Lamprey Drive to Walleye Drive as an Urban Residential Collector with 60' of right-of-way	With The Hills at Lorson Ranch	With The Hills at Lorson Ranch	Lorson Ranch
7	Roadway Segment	Construct-Grayling Drive from Walleye Drive to the north boundary of Lorson Ranch as an Urban Residential Collector with 64' - 72' of right-of-way	With The Skyline at Lorson Ranch	With The Skyline at Lorson Ranch	Lorson Ranch
<b>Intersection #1 Marksheffel/Fontaine</b>					
8	Traffic Signal Improvements	Add protected phasing for left-turn movements	When warrant(s) are met	With The Ridge at Lorson Ranch Fil 1	Lorson Ranch or El Paso County with escrow depending on warrants
9	Second southbound left-turn lane	Add a second southbound left-turn lane on Marksheffel Road approaching Fontaine Boulevard Escrow funds toward this future improvement.	left turn volume > 505 vehicles per hour	With The Ridge at Lorson Ranch Fil 3	Lorson Ranch or El Paso County with escrow depending on warrants
<b>Intersection #2 Old Glory/Fontaine</b>					
10	All-Way Stop Control	Convert from two-way stop-sign control to all-way stop-sign control	When warrant(s) are met	With The Hills at Lorson Ranch	Lorson Ranch
11	Traffic Signal Control	Convert from all-way stop-sign control to traffic signal control	When warrant(s) are met and The Level of Service degrades below an acceptable level (LOS D)	Anticipated to be met prior to buildout of The Hills at Lorson Ranch	Lorson Ranch
<b>Intersection #3 Old Glory/Stingray/Fontaine</b>					
12	Access Restriction	Construct a median on Fontaine Boulevard to restrict the intersection of Old Glory/Stingray/Fontaine to three-quarter movement (left-in/right-in/right-out only) or Construct a median on Fontaine Boulevard to create a channelized "T" intersection for the north leg with a protected eastbound left-turn acceleration lane. The southbound leg would be restricted to right-in/right-out only	When the LOS degrades below LOS D	With The Hills at Lorson Ranch	Lorson Ranch
<b>Intersection #5 Marksheffel/Lorson</b>					
13	Traffic Signal Control	Convert to traffic signal control	When warrant(s) are met and The Level of Service degrades below an acceptable level (LOS D)	Currently Met	Lorson Ranch
<b>Intersection #7 Grayling/Regan Ridge</b>					
14	Southeastbound left-turn lane	Southeastbound left-turn lane on Grayling approaching Regan Ridge	left turn volume > 25 vehicles per hour		NOT REQUIRED
15	Southeastbound right-turn deceleration lane	Southeastbound right-turn deceleration lane on Grayling approaching Regan Ridge	right turn volume > 50 vehicles per hour		NOT REQUIRED
16	Northwestbound left-turn lane	Northwestbound left-turn lane on Grayling approaching Regan Ridge	left turn volume > 25 vehicles per hour		NOT REQUIRED
17	Northwestbound right-turn deceleration lane	Northwestbound right-turn deceleration lane on Grayling approaching Regan Ridge	right turn volume > 50 vehicles per hour		NOT REQUIRED
<b>Intersection #8 Grayling/Walleye</b>					
18	Southeastbound left-turn lane	Southeastbound left-turn lane on Grayling approaching Walleye	left turn volume > 25 vehicles per hour		NOT REQUIRED
19	Northwestbound left-turn lane	Northeastbound left-turn lane on Walleye approaching Grayling	left turn volume > 25 vehicles per hour		NOT REQUIRED
<b>Intersection #9 Walleye/Sanderling</b>					
20	Southbound left-turn lane	Southbound left-turn lane on Walleye approaching Sanderling (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	NOT REQUIRED short left-turn bay recommended to match the northbound left-turn lane (will be included with street construction/in the cross section)	Lorson Ranch
21	Southbound right-turn deceleration lane	Southbound right-turn deceleration lane on Walleye approaching Sanderling	right turn volume > 50 vehicles per hour		NOT REQUIRED
22	Northbound left-turn lane	Northbound left-turn lane on Walleye approaching Sanderling (recommended length: 205' turn lane plus 160' taper)	left turn volume > 25 vehicles per hour	With The Hills at Lorson Ranch	Lorson Ranch
23	Northbound right-turn deceleration lane	Northbound right-turn deceleration lane on Walleye approaching Sanderling (recommended length: 155' turn lane plus 160' taper)	right turn volume > 50 vehicles per hour	With The Ridge at Lorson Ranch Fil 2	Lorson Ranch

Source: LSC Transportation Consultants, Inc. (March 2021)

Taken from *The Ridge at Lorson Ranch Full Traffic Impact Analysis PUDSP203* dated October 8, 2021 with updated notes by LSC March 2022

(See Table 3 for Recommended Escrow Contributions by Filing)

# LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd AM 3-1 SW  
 Site Code : S214080  
 Start Date : 3/1/2022  
 Page No : 1

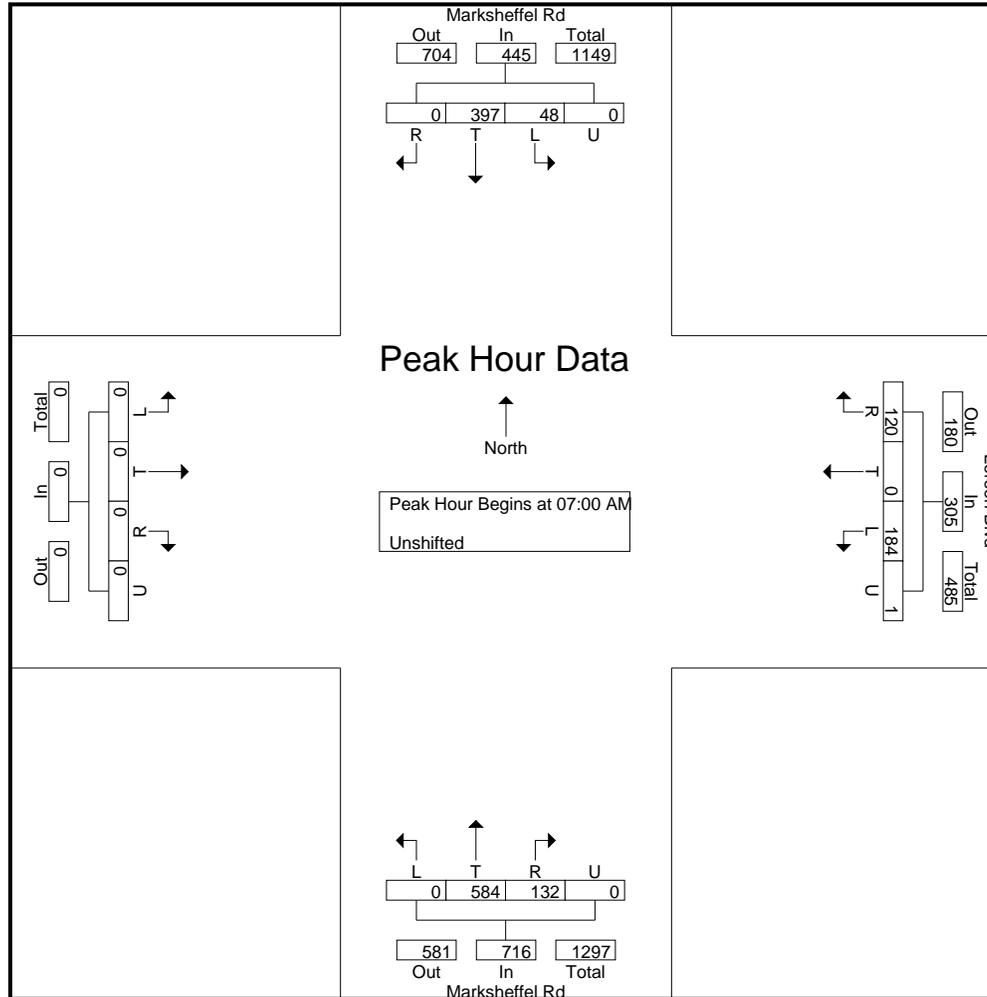
### Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Lorson Blvd Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:00 AM	0	36	0	0	36	31	0	9	0	40	0	69	6	0	75	0	0	0	0	0	151
06:15 AM	4	55	0	0	59	34	0	10	0	44	0	85	8	0	93	0	0	0	0	0	196
06:30 AM	0	86	0	0	86	32	0	18	0	50	0	118	10	0	128	0	0	0	0	0	264
06:45 AM	9	90	0	0	99	51	0	20	0	71	0	114	21	0	135	0	0	0	0	0	305
Total	13	267	0	0	280	148	0	57	0	205	0	386	45	0	431	0	0	0	0	0	916
07:00 AM	11	92	0	0	103	50	0	32	0	82	0	153	18	0	171	0	0	0	0	0	356
07:15 AM	14	111	0	0	125	37	0	36	1	74	0	177	34	0	211	0	0	0	0	0	410
07:30 AM	14	104	0	0	118	41	0	28	0	69	0	144	37	0	181	0	0	0	0	0	368
07:45 AM	9	90	0	0	99	56	0	24	0	80	0	110	43	0	153	0	0	0	0	0	332
Total	48	397	0	0	445	184	0	120	1	305	0	584	132	0	716	0	0	0	0	0	1466
08:00 AM	10	96	0	0	106	45	0	13	0	58	0	73	31	0	104	0	0	0	0	0	268
08:15 AM	11	92	0	0	103	61	0	10	0	71	0	103	29	0	132	0	0	0	0	0	306
08:30 AM	5	72	0	0	77	58	0	13	1	72	0	80	22	0	102	0	0	0	0	0	251
08:45 AM	12	68	0	0	80	28	0	15	0	43	0	61	21	0	82	0	0	0	0	0	205
Total	38	328	0	0	366	192	0	51	1	244	0	317	103	0	420	0	0	0	0	0	1030
Grand Total	99	992	0	0	1091	524	0	228	2	754	0	1287	280	0	1567	0	0	0	0	0	3412
Apprch %	9.1	90.9	0	0		69.5	0	30.2	0.3		0	82.1	17.9	0		0	0	0	0	0	
Total %	2.9	29.1	0	0	32	15.4	0	6.7	0.1	22.1	0	37.7	8.2	0	45.9	0	0	0	0	0	

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2504 E Pikes Peak Ave, Suite 304  
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 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd AM 3-1 SW  
 Site Code : S214080  
 Start Date : 3/1/2022  
 Page No : 3



# LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd Mid 3-1 SW  
 Site Code : S224030  
 Start Date : 3/2/2022  
 Page No : 1

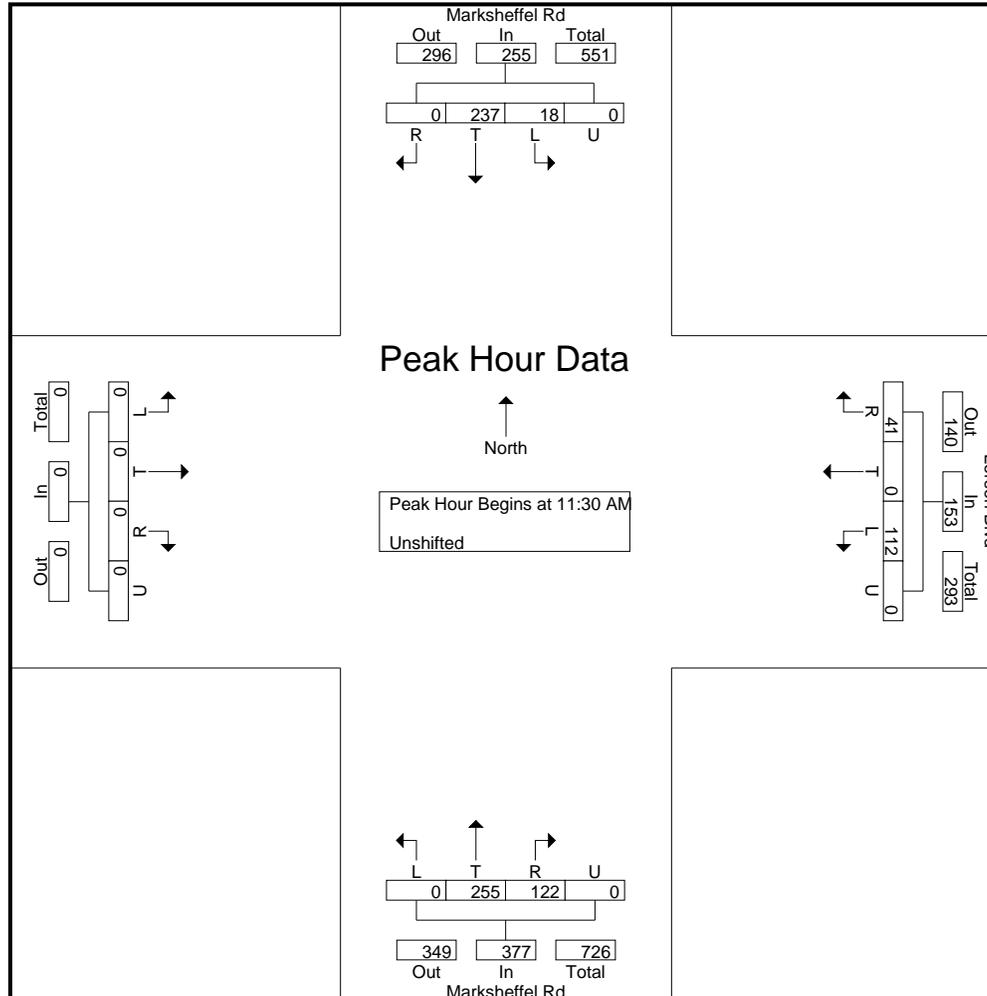
### Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Lorson Blvd Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
11:00 AM	9	42	1	0	52	19	0	4	0	23	0	44	27	0	71	0	0	0	0	0	146
11:15 AM	5	51	0	0	56	34	0	7	0	41	0	56	21	0	77	0	0	0	0	0	174
11:30 AM	6	66	0	0	72	32	0	16	0	48	0	49	34	0	83	0	0	0	0	0	203
11:45 AM	4	57	0	0	61	22	0	10	0	32	0	64	33	0	97	0	0	0	0	0	190
Total	24	216	1	0	241	107	0	37	0	144	0	213	115	0	328	0	0	0	0	0	713
12:00 PM	0	55	0	0	55	23	0	9	0	32	0	68	20	0	88	0	0	0	0	0	175
12:15 PM	8	59	0	0	67	35	0	6	0	41	0	74	35	0	109	0	0	0	0	0	217
12:30 PM	3	48	0	0	51	22	0	14	0	36	0	55	27	0	82	0	0	0	0	0	169
12:45 PM	6	50	0	0	56	22	0	12	0	34	0	53	29	0	82	0	0	0	0	0	172
Total	17	212	0	0	229	102	0	41	0	143	0	250	111	0	361	0	0	0	0	0	733
Grand Total	41	428	1	0	470	209	0	78	0	287	0	463	226	0	689	0	0	0	0	0	1446
Apprch %	8.7	91.1	0.2	0		72.8	0	27.2	0		0	67.2	32.8	0		0	0	0	0	0	
Total %	2.8	29.6	0.1	0	32.5	14.5	0	5.4	0	19.8	0	32	15.6	0	47.6	0	0	0	0	0	

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File Name : Marksheffel Rd - Lorson Blvd Mid 3-1 SW  
 Site Code : S224030  
 Start Date : 3/2/2022  
 Page No : 3



# LSC Transportation Consultants, Inc.

2504 E Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Marksheffel Rd - Lorson Blvd PM 3-1 SW  
 Site Code : S214080  
 Start Date : 3/1/2022  
 Page No : 1

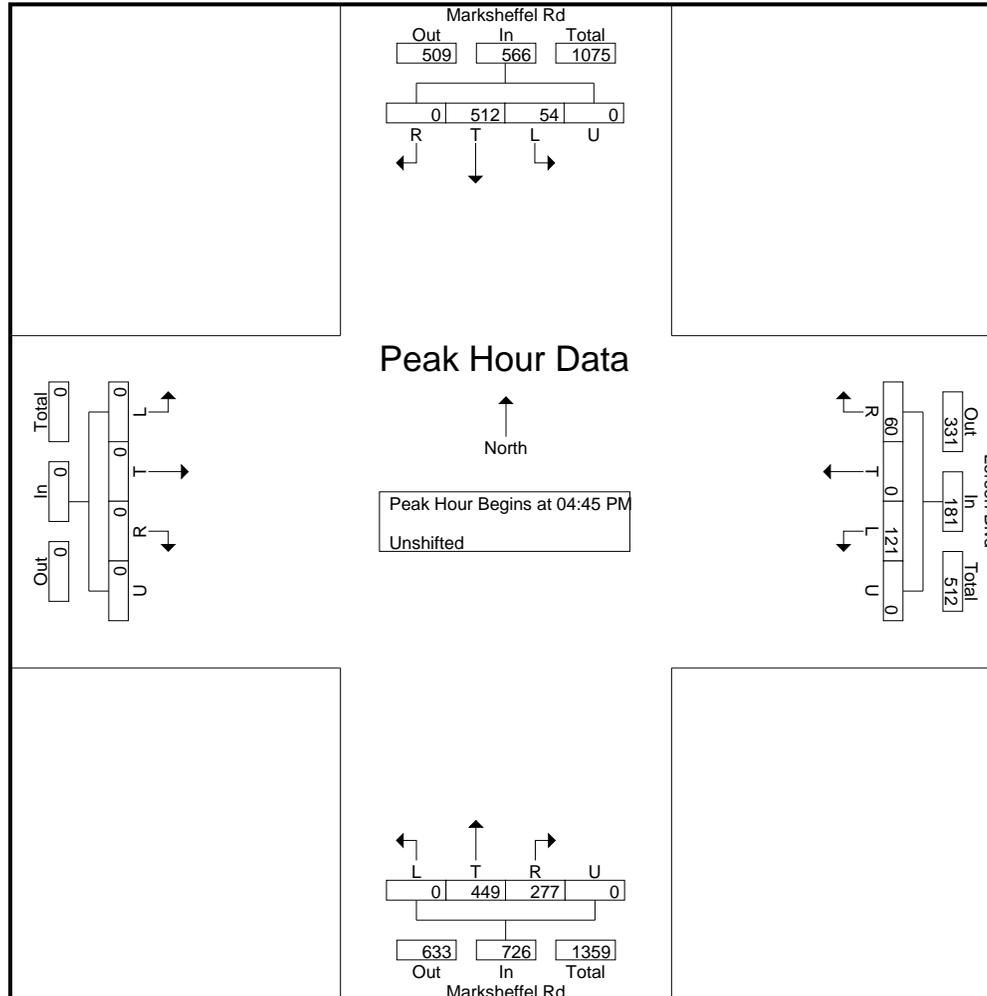
### Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Lorson Blvd Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
03:00 PM	9	85	0	0	94	25	0	16	0	41	0	91	48	0	139	0	0	0	0	0	274
03:15 PM	11	80	0	0	91	25	0	13	0	38	0	90	39	0	129	0	0	0	0	0	258
03:30 PM	10	108	0	0	118	29	0	10	0	39	0	115	43	0	158	0	0	0	0	0	315
03:45 PM	15	122	0	0	137	30	0	15	0	45	0	118	45	0	163	0	0	0	0	0	345
Total	45	395	0	0	440	109	0	54	0	163	0	414	175	0	589	0	0	0	0	0	1192
04:00 PM	11	110	0	0	121	22	0	13	0	35	0	102	63	0	165	0	0	0	0	0	321
04:15 PM	13	145	0	1	159	25	0	9	0	34	0	101	47	0	148	0	0	0	0	0	341
04:30 PM	20	121	0	0	141	23	0	16	0	39	0	91	50	0	141	0	0	0	0	0	321
04:45 PM	10	116	0	0	126	23	0	13	0	36	0	104	66	0	170	0	0	0	0	0	332
Total	54	492	0	1	547	93	0	51	0	144	0	398	226	0	624	0	0	0	0	0	1315
05:00 PM	10	126	0	0	136	29	0	14	0	43	0	132	84	0	216	0	0	0	0	0	395
05:15 PM	20	152	0	0	172	29	0	20	0	49	0	110	68	0	178	0	0	0	0	0	399
05:30 PM	14	118	0	0	132	40	0	13	0	53	0	103	59	0	162	0	0	0	0	0	347
05:45 PM	16	98	0	0	114	17	0	19	0	36	0	105	64	0	169	0	0	0	0	0	319
Total	60	494	0	0	554	115	0	66	0	181	0	450	275	0	725	0	0	0	0	0	1460
Grand Total	159	1381	0	1	1541	317	0	171	0	488	0	1262	676	0	1938	0	0	0	0	0	3967
Apprch %	10.3	89.6	0	0.1		65	0	35	0		0	65.1	34.9	0		0	0	0	0	0	
Total %	4	34.8	0	0	38.8	8	0	4.3	0	12.3	0	31.8	17	0	48.9	0	0	0	0	0	

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File Name : Marksheffel Rd - Lorson Blvd PM 3-1 SW  
 Site Code : S214080  
 Start Date : 3/1/2022  
 Page No : 3



AccidentDate	AccidentTime	TotalVehicles	ReferencePointName	ReferencePointAtName	AccidentNarrative
7/12/2019	23:15	1	MARKSHEFFEL RD	LORSON BLVD	Vehicle #1 was traveling southbound on Marksheffel Rd approaching Lorson Blvd. Vehicle #1 made a left turn onto Larson Blvd. Vehicle #1 went off the south side of Lorson Blvd into a ditch. The occupants fled to scene.
2/11/2021	16:40	3	MARKSHEFFEL RD	LORSON BLVD	<b>Vehicle #1 was west on Lorson Boulevard, turning left to go south onto Marksheffel Road.</b> Vehicle #2 was north on Marksheffel Road, when Vehicle #1 pulled into the intersection causing Vehicle #2 to collide its front into the rear driver side of Vehicle #1. After colliding with Vehicle #1, Vehicle #2 continued northbound and collided its front with Vehicle #3, which was stopped in traffic facing south in the left turn lane to go east on Lorson Boulevard. Vehicle #1 spun counterclockwise 1/2 times before coming to final rest facing east on the northeast corner of Marksheffel Road/Lorson Boulevard. Vehicles #2 and #3 came to final rest on thier wheels, with Vehicle #2 facing north and #3 facing south.
2/12/2021	10:01	2	MARKSHEFFEL RD	LORSON BLVD	Vehicle 1 and Vehicle 2 were traveling westbound Lorson Boulevard approaching Marksheffel Road. Vehicle 2 stopped at the stop sign in the right turn lane. Vehicle 1 was unable to stop due to icy road conditions. Vehicle 1 collided with the rear of Vehicle 2. Both vehicles moved onto the dirt shoulder on Marksheffel Road facing south.
8/16/2021	09:39	2	MARKSHEFFEL RD	LORSON BLVD	<b>Vehicle 1 was westbound on Lorson Boulevard and stopped, at a stop sign, in the left turn lane.</b> Vehicle 2 was northbound on Marksheffel Road. Vehicle 2 continued northbound. Vehicle 1 turned left onto Marksheffel Road and struck Vehicle 2, on its right side with its front. Vehicle 1 was driven to rest. After POI, Vehicle 2 rotated clockwise and came to rest, on its wheels, facing southeast.
9/17/2021	17:26	2	MARKSHEFFEL RD	LORSON BLVD	<b>Vehicle 1 was stopped on Lorson Blvd facing west</b> at the intersection of S Marksheffel Rd. Vehicle 2 was traveling northbound on S Marksheffel Rd approaching the intersection of Lorson Blvd. Vehicle 1 entered the intersection as Vehicle 2 was crossing the intersection and the front left of Vehicle 1 impacted the right rear of Vehicle 2. Vehicle 1 and Vehicle 2 moved from final rest.
11/1/2021	04:16	1	LORSON BLVD	MARKSHEFFEL RD	Vehicle 1 was west on Lorson Blvd approaching Marksheffel Rd. Vehicle 1 continued west across Marksheffel and proceeded off the west side of the roadway. Vehicle 1 hit the ditch proceeded airborne over a barbed wire fence. Vehicle 1 returned back to the ground in a field before coming to final rest facing west.
12/8/2021	18:57	2	MARKSHEFFEL RD	LORSON BLVD	<b>Vehicle #1 was stopped at the intersection of Marksheffel Road and Lorson Blvd attempting to turn right</b> onto Marksheffel Road. Vehicle #2 was traveling northbound on Marksheffel Road approaching Lorson Blvd. Vehicle #1 failed to yield right of way from a stop sign and Vehicle #1 front collided with Vehicle #2 side. After the collision Vehicle #1 came to final rest on the edge of Marksheffel Road on all 4 tires facing Northeast, and vehicle #2 ran off the right side of the roadway and came to final rest 200 in the field facing East.
1/28/2022	15:56	2	MARKSHEFFEL RD	LORSON BLVD	<b>Vehicle #1 was stopped at the intersection of Marksheffel Road and Lorson Blvd attempting to make a left turn (South)</b> on to Marksheffel Road. Vehicle #2 was traveling northbound on Marksheffel Road approaching the intersection at Marksheffel Road and Lorson Blvd. Vehicle #1 failed to yield right of way from a stop sign turning left and Vehicle #2 front collided with Vehicle #1 side. After the collision Vehicle #1 rolled 1/2 time and came to final rest on its right side facing northbound and Vehicle #2 came to final rest on the right side (East) of the roadway facing northbound.