

LSC TRANSPORTATION CONSULTANTS, INC. 2504 East Pikes Peak Avenue, Suite 304 Colorado Springs, CO 80909 (719) 633-2868 FAX (719) 633-5430

E-mail: Isc@Isctrans.com Website: http://www.lsctrans.com

## Retreat at TimberRidge Filing No. 2 Traffic Technical Memorandum

(LSC #S214200)

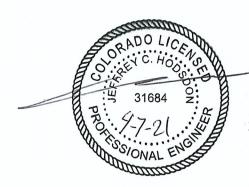
March 26, 2021

PCD File No. SF-21-021



#### **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**

41. L. P.

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

# Retreat at TimberRidge Filing No. 2 Traffic Technical Memorandum

Prepared for:

Loren J. Moreland

Vice President / Project Manager

**Classic Homes** 

6385 Corporate Drive, Suite 200

Contact: Mr. Jim Rohr

MARCH 26, 2021

**LSC Transportation Consultants** 

Prepared by: Kirstin D. Ferrin, P.E.

Reviewed by: Jeffrey C. Hodsdon, P.E.

LSC #S214200



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March 26, 2021

Loren J. Moreland Vice President / Project Manager Classic Homes 6385 Corporate Drive, Suite 200

> RE: Retreat at TimberRidge Filing No. 2 El Paso County, CO Traffic Technical Memorandum LSC #S214200

Dear Mr. Moreland:

LSC Transportation Consultants, Inc. has prepared this traffic technical memorandum for the Retreat at TimberRidge Filing No. 2. As shown in Figure 1 The Retreat at TimberRidge is located generally east of Vollmer Road and south of Arroya Lane in El Paso County, Colorado. LSC prepared a traffic impact study (TIS) for the entire Retreat at TimberRidge PUD development plan dated January 25, 2018 and a traffic memorandum that addressed phasing of that development dated June 29, 2018. LSC also completed a traffic technical memorandum for Filing No. 1 dated April 3, 2020. The lot and street plan has not changed since completion of those reports. This memorandum is intended as a site-specific, final plat traffic report for the currently-proposed filing.

#### **REPORT CONTENTS**

This report presents:

- A description of Retreat at TimberRidge filings that are currently under review, currently proposed, and planned for the future;
- The current status of other subdivisions shown on the approved PUD plan;
- The projected average weekday and peak-hour vehicle trips to be generated by the Retreat at TimberRidge Filing Nos. 1 and 2;
- The assignment of the Filing Nos. 1 and 2 projected trips to the key area intersections;
- The recommended street classifications for the internal streets within the currently-proposed Retreat at TimberRidge Filing No. 2;
- Improvements needed with Retreat at TimberRidge Filing No. 2; and
- The project's obligation to the County roadway improvement fee program.

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#### **LAND USE AND ACCESS**

The Retreat at TimberRidge Preliminary Plan area includes the 203 lots for single-family homes located east of Vollmer Road and two lots for single-family homes located west of Vollmer Road and south of Arroya Lane. Figure 2 shows the location of the approved Retreat at TimberRidge Filing No. 1, the currently-proposed Retreat at TimberRidge Filing No. 2, and future filings. The June 2018 transportation memorandum included analysis of the preliminary plan by phase. Figure 1 from that report shows the phasing plan. No changes have been made to the PUD plan since completion of that memorandum. The current status of subdivisions is discussed below.

#### **Current Status of Other Subdivisions Shown on the Approved PUD Plan**

The approved Retreat at TimberRidge Filing No. 1 includes 70 lots for single-family homes. The location of the lots within this filing includes 11 of the 13 lots assumed in the **Preliminary Plan Phase 2 plan** and the 59 lots assumed in **Preliminary Plan Phase 3 plan** in the June 2018 transportation memorandum. Access is planned to an extension of Poco Road. The proposed easternmost north/south street segments connecting to Arroya Lane will be constructed initially as a gravel road as part of Filing 1. This gravel road will be constructed to provide an interim secondary emergency access. No improvements are planned to Arroya Lane as part of the approved Retreat at TimberRidge Filing No. 1.

The TimberRidge Estates Filing No. 1 (different from "Retreat at TimberRidge" Filing No. 1) was under review by El Paso County. However, it has now been withdrawn. These 10 lots remain part of the approved PUD plan and are shown as part of **Phase 1 of the Preliminary Plan**. With the withdrawal of the subdivision plat, although part of Phase 1 of the Preliminary Plan, there is now no current plan to develop these lots in the short term. This filing planned 10 lots for single-family homes located east of Vollmer Road and north of Arroya Lane. Access is to Arroya Lane only. LSC completed a transportation memorandum for this filing dated April 19, 2018. As discussed with County staff and Black Forest Fire District (reference revised fire commitment letter dated March 22, 2020), Arroya Lane requires no further improvements at this time.

LSC is not aware of any status updates for the two lots for single-family homes on the west side of Vollmer Road. These two lots were included in **Preliminary Plan Phase 2** in the June 2018 transportation memorandum.

#### **Currently-Proposed Filing No. 2**

The Retreat at TimberRidge Filing No. 2 is currently proposed to include 90 lots for single-family homes. The location of the lots within this filing includes 6 of the 33 lots assumed in the **Preliminary Plan Phase 4**, 12 of the 15 lots assumed in the **Preliminary Plan Phase 5** and 72 of the 75 lots assumed in the **Preliminary Plan Phase 6**. No changes are proposed to the Filing 1 access plan with Filing 2.

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#### **TRIP GENERATION**

The Retreat at TimberRidge Filing No. 2 site-generated vehicle trips have been estimated using the nationally published trip-generation rates from *Trip Generation*, *10th Edition*, 2017 by the Institute of Transportation Engineers (ITE). Table 1 shows the trip-generation estimates for these filings. Table 1 also shows estimates of the traffic expected to be generated by the approved Retreat at TimberRidge Filing No. 1 and by future Retreat at TimberRidge filings. The total trips generated by the Retreat at TimberRidge at buildout is consistent with the estimate shown in Table 1 of *The Retreat at TimberRidge Preliminary Plan Transportation Memorandum* dated June 29, 2018.

The Retreat at TimberRidge Filing No. 2 is expected to generate 850 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 17 vehicles would enter and 50 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 56 vehicles would enter and 33 vehicles would exit the site.

#### TRIP DISTRIBUTION AND ASSIGNMENT

When the estimated site trips from Table 1 are directionally distributed according to the LSC estimated short-term percentages shown in Figure 7 from the *Retreat at TimberRidge Updated Traffic Impact Analysis* dated January 25, 2018, the resulting projected site-generated traffic volumes can be determined. Figures 3 and 4 show the projected traffic volumes at the key area intersections and street segments due to the approved Retreat at TimberRidge Filing No. 1 and the currently-proposed Retreat at TimberRidge Filing No.2, respectively. Figure 3 shows the short-term Retreat at TimberRidge site-generated traffic volumes which are the sum of the volumes shown in Figures 1 and 2.

#### **LONG-TERM TOTAL TRAFFIC**

Please refer to the *Retreat at TimberRidge Updated Traffic Impact Analysis* dated January 25, 2018 for the long-term peak-hour traffic volume projections and level of service analysis. The original report is for the entire Retreat at TimberRidge. No changes are projected to the results of this study.

#### SUBDIVISION STREET CLASSIFICATIONS

Figure 2 from the June 2018 transportation memorandum showed the recommended street classifications for the internal streets within the Retreat at TimberRidge plan. The recommendations within the Filing No. 2 area are still valid.

#### **ROADWAY IMPROVEMENTS**

Table 3 from the June 2018 memorandum contained a summary of needed improvements for the entire TimberRidge PUD plan by phase. A copy of this table with markups and notations is attached. The approved Retreat at TimberRidge Filing No. 1 and the currently-proposed Retreat at TimberRidge Filing No. 2 includes 160 of the 195 lots identified in that memorandum as Phases 2 through 6. TimberRidge Filing Nos 1 and 2 do not include the 10 lots shown as Preliminary Plan Phase 1 nor the two lots located west of Vollmer Road. These filings also do not include the 33 lots within Phases 4 and 5 that are adjacent to Arroya Lane which would necessitate improvements to Arroya.

All recommendations in that table are still valid. However, it is important to note that the first improvement listed, identified as "Arroya Lane Initial/Interim," is no longer necessary in the short-term. Although this improvement is still associated with Phase 1 of the Preliminary Plan, and this area of Preliminary Plan Phase 1 will/may occur at a later date, the TimberRidge Estates Filing No. 1 application (and plans for short-term development of 10 lots shown north of Arroya Lane) has been withdrawn. The improvements specially needed with the Retreat at Timber Ridge Filing Nos. 1 and 2 have been repeated below.

- Extend Poco Road to the east including the creek crossing.
- Construct a gravel road to provide secondary emergency access through the future filings area to Arroya Lane (this gravel road would be replaced with the subdivision streets with those future filings).
- Construct a northbound right-turn deceleration lane on Vollmer Road at Poco Road. Based on a design speed of 40 miles per hour and the criteria contained in the El Paso County *Engineering Criteria Manual*, this lane should be 155 feet long plus a 160-foot taper.

#### **Vollmer Road (from Poco Road South to Future Briargate Parkway)**

Vollmer Road adjacent to and south of the site is a two-lane rural roadway (without paved shoulders) with a 60' right-of-way. The section south of Poco Road is ultimately planned as a four-lane urban minor arterial. It is planned to be improved as part of the Sterling Ranch Homestead North Preliminary Plan (File No. SP208) currently under review.

#### ROADWAY IMPROVEMENT FEE PROGRAM

This project will be required to participate in the El Paso County Road Improvement Fee Program. The Retreat at TimberRidge Filing No. 2 will join the ten-mil PID. The 2019 ten-mil PID building permit fee portion associated with this option is \$1,221 per single-family dwelling unit. Based on 90 lots, the total building permit fee would be \$109,890.

Item V6 on Table 3 of Homestead North TIS: "Improve Vollmer Road between Sam Bass Drive and Poco Road to a 4-lane Urban Minor Arterial but with necessary lane transitions, redirect tapers, etc. south of Poco to adequately transition between the 4-Lane Urban Minor Arterial Cross Section and the 2-Lane Rural Arterial Cross Section north of Poco Road." If this plat is approved and recorded prior to the first Homestead North plat, additional agreement or SIA clause will be required to address construction from Poco to Briargate.



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

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E.

Principal

KDF:jas

Enclosures: Table 1

Figures 1-5

Improvements Table – with April 2020 Notations

## **Tables**



#### Table 1 Trip Generation Estimate Retreat at TimberRidge Filing No. 2

U		Use	Trip Generation					Trip Generation Rates (1)					Filing No. 1 Trips Generated						Filing No. 2 Trips Generated					Future Trips Generated					Total Trips Generated			
	Land						Average		Morning		rnoon	Average Weekday Traffic	Morning		Afternoon		Average	Morning		Afternoon		Average	Morning			rnoon	Average	Morning		Afternoon		
	Use Code		Units Fil 1 Fil 2 Future Total			Weekday Traffic	Peak Hour In Out		Peak Ho	Hour Out	Peak In		Peak Hour n Out	Peak Hour In Out		Weekday Traffic	Peak In	Hour Out	Peak	Hour	Weekday Traffic	Peak	Hour Out	Peak In	Hour Out	Weekday Traffic	Peak Hour	Hour Out	Peak Hour In Out			
Phase	Coue	Description	ГПТ	FII 4	ruture	TOlai	Hanne	In	Out	lii	Out	Hanic	111	Out	III	Out	Hanic	III	Out	111	Out	Hanne	III	Out	III	Out	Hanne	ln	Out	111	Cut	
Approv	ed Prelin	ninary Plan																														
1	210	Single-Family Detached Housing	0	0	10	10 D	U <sup>(2)</sup> 9.44	0.19	0.56	0.62	0.37	0	0	0	0	0	0	0	0	0	0	94	2	6	6	4	94	2	6	6	4	
2	210	Single-Family Detached Housing	11	0	2	13 D	U 9.44	0.19	0.56	0.62	0.37	104	2	6	7	4	0	0	0	0	0	19	0	1	1	1	123	2	7	8	5	
3	210	Single-Family Detached Housing	59	0	0	59 D	U 9.44	0.19	0.56	0.62	0.37	557	11	33	37	22	0	0	0	0	0	0	0	0	0	0	557	11	33	37	22	
4	210	Single-Family Detached Housing	0	6	27	33 D	U 9.44	0.19	0.56	0.62	0.37	0	0	0	0	0	57	1	3	4	2	255	5	15	17	10	312	6	18	21	12	
5	210	Single-Family Detached Housing	0	12	3	15 D	U 9.44	0.19	0.56	0.62	0.37	0	0	0	0	0	113	2	7	7	4	28	1	2	2	1	142	3	8	9	5	
6	210	Single-Family Detached Housing	0	72	3	75 D	<u>U</u> 9.44	0.19	0.56	0.62	0.37	0	0	0	0	0	680	13	40	45	26	28	1	2	2	1	708	14	42	47	27	
			70	90	45	205 D	U					661	13	39	44	26	850	17	50	56	33	425	8	25	28	16	1,935	38	114	128	75	
Future I	Filings (F	Part of the overall PUD but not a pa	art of th	e curren	tly appro	oved Prelin	ninary Plan)																									
	210	Single-Family Detached Housing	0	0	7	7 D	U 9.44	0.19	0.56	0.62	0.37	0	0	0	0	0	0	0	0	0	0	66	1	4	4	3	66	1	4	4	3	
	Total at	Buildout of Retreat at TimberRidge				212 D	U 9.44	0.19	0.56	0.62	0.37	661	13	39	44	26	850	17	50	56	33	491	10	29	32	19	2,001	39	118	132	78	

Mar-21

Notes:

(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

## **Figures**



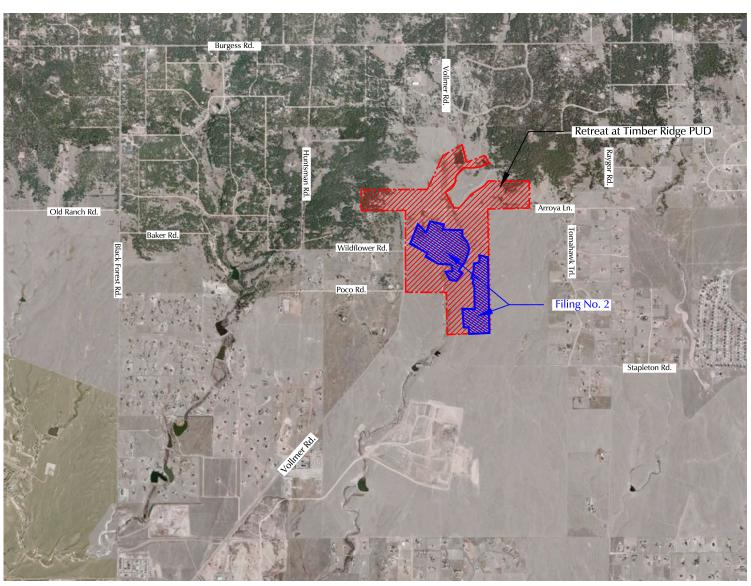
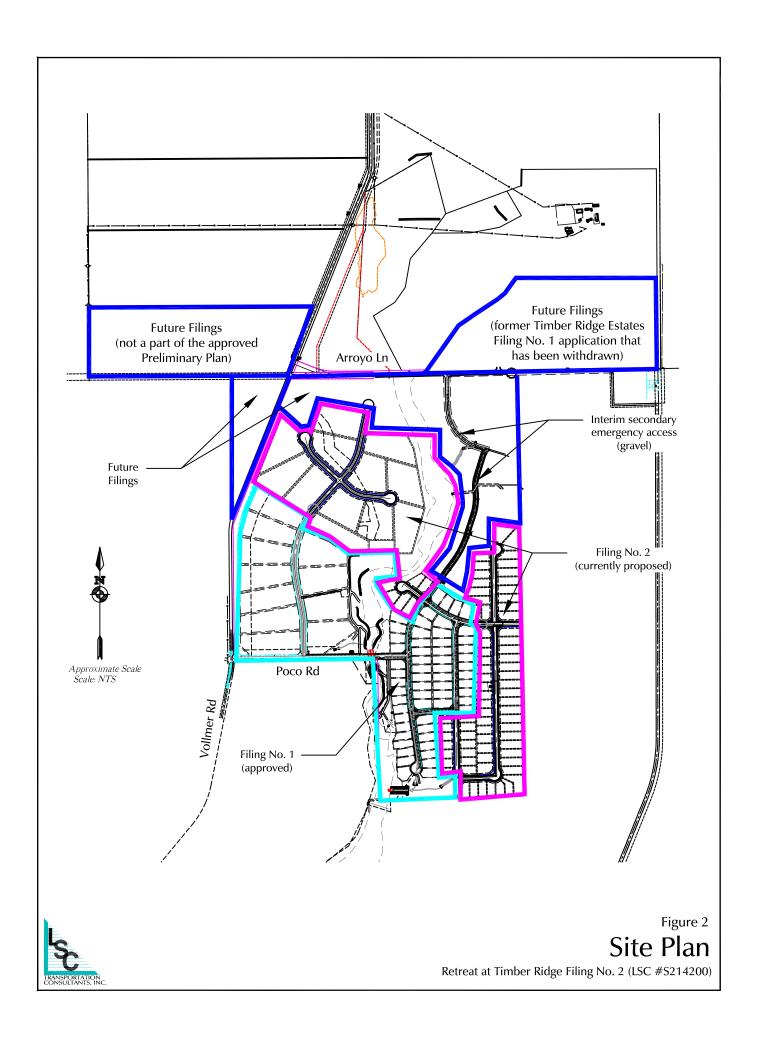
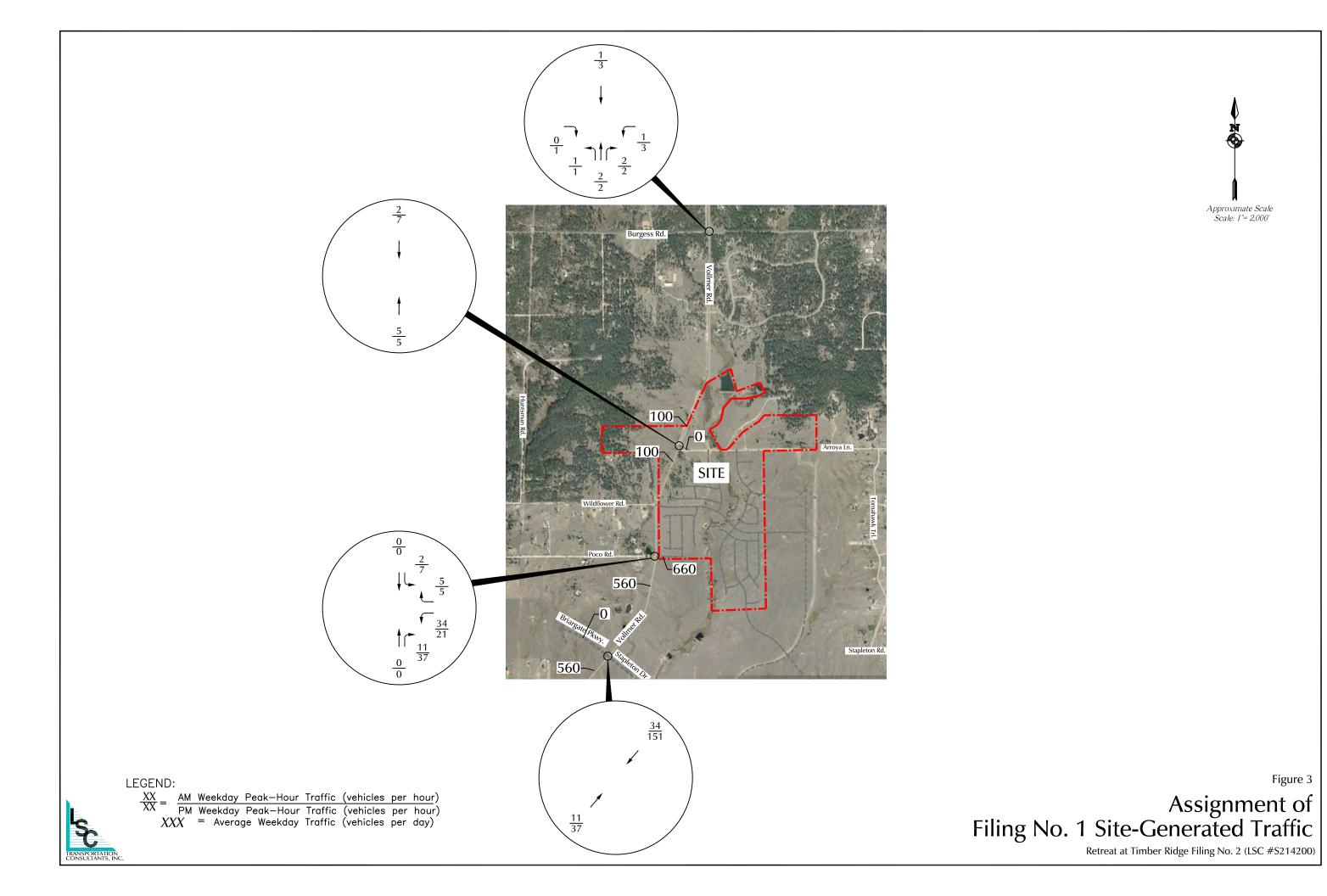




Figure 1 Vicinity
Map
Retreat at Timber Ridge Filing No. 2 (LSC #S214200)







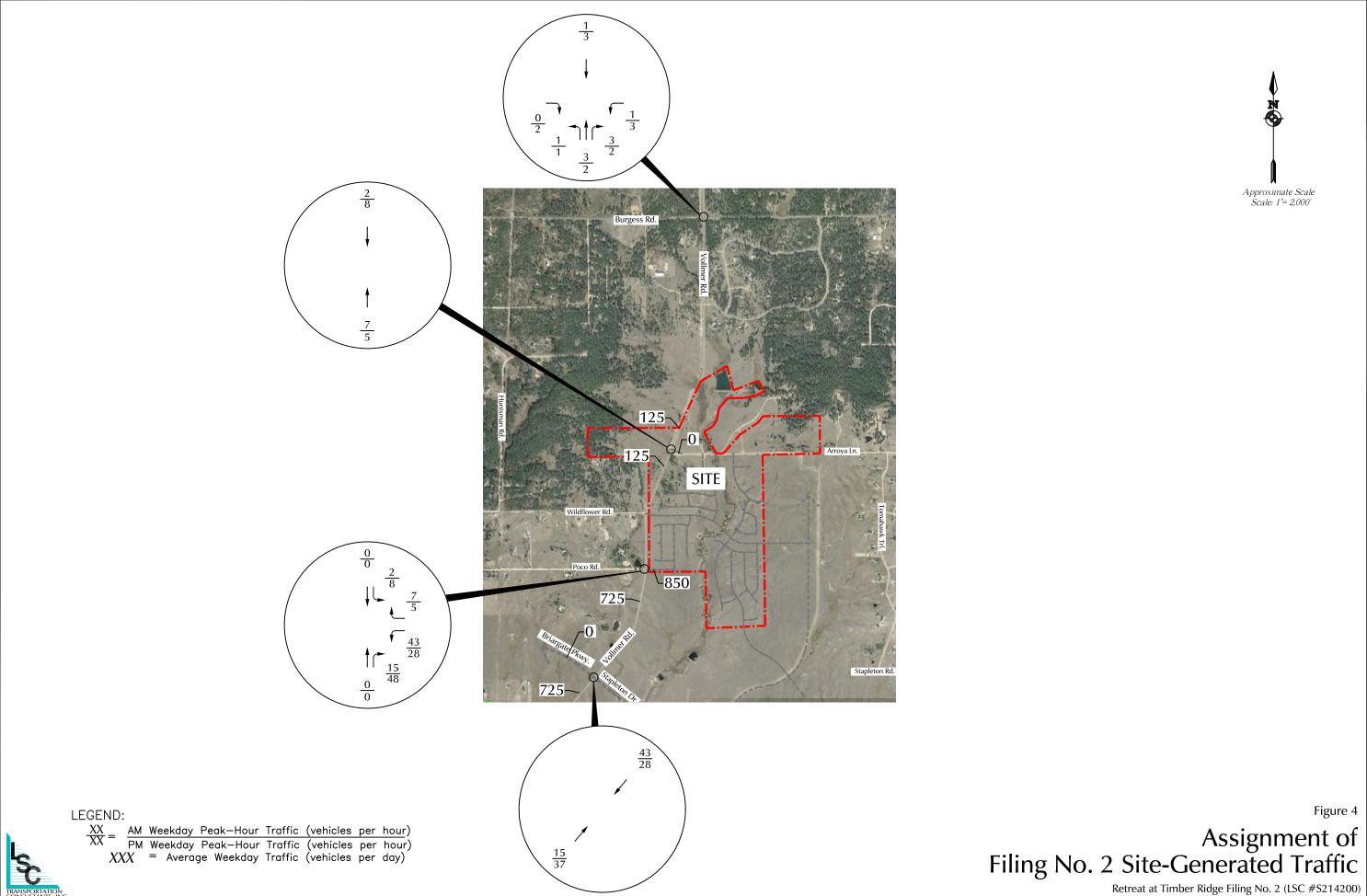
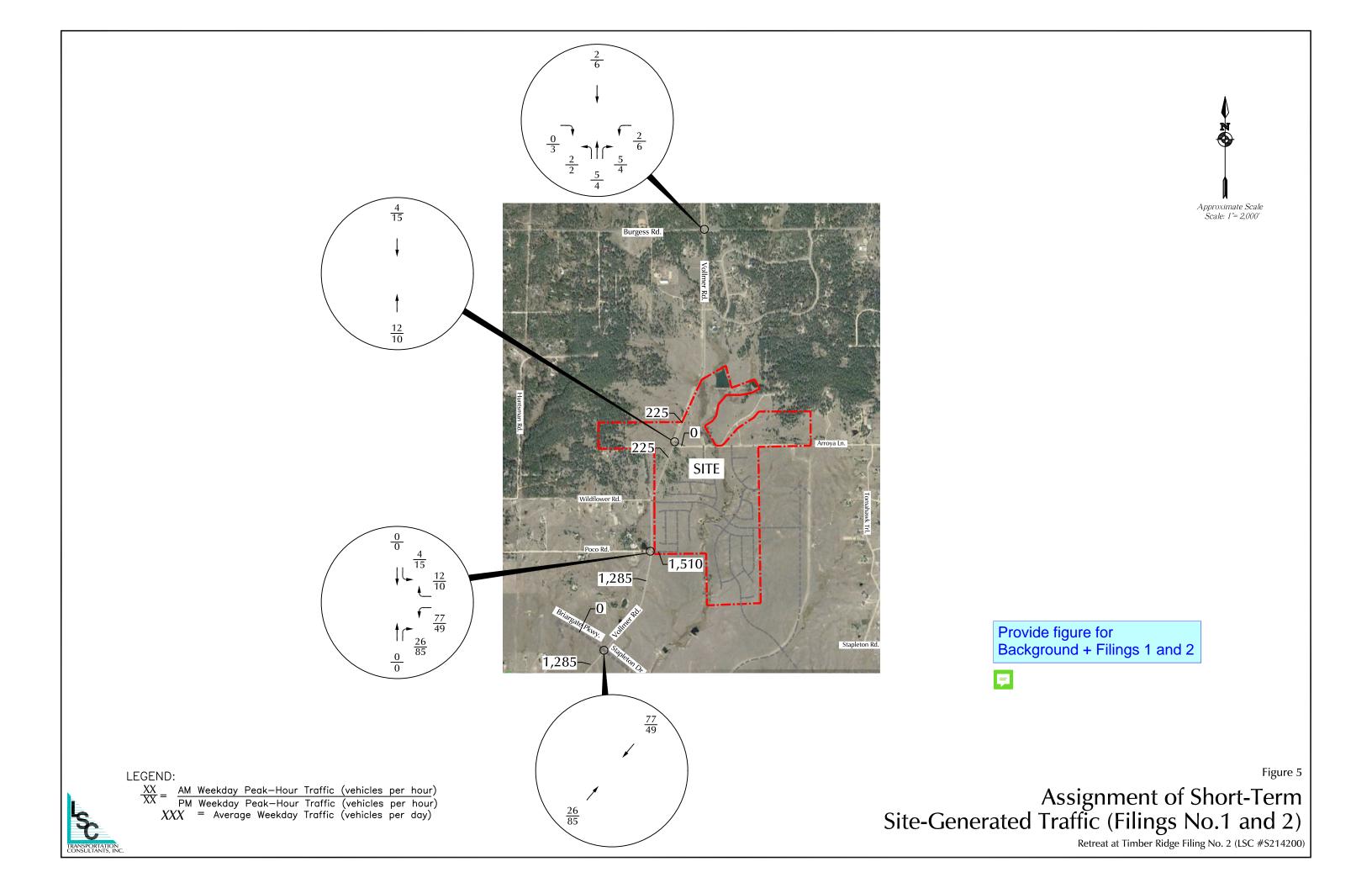


Figure 4



## Improvements Table – with April 2020 Notations



From:

Table 3
Roadway Improvements

The Retreat at Timber Ridge Preliminary Plan Transportation Memorandum

> PCD File No: SP-182 (LSC #174030) June 29, 2018

#### Retreat at Timber Ridge June 29, 2018 **Preliminary Plan** Responsibility<sup>(1)</sup> Improvement Timing Note (3/3/2021): The TimberRidge Estates Filing Arroya Lane Initial/interim: Dedicate 80' of ROW or 40' half No. 1 plat has been withdrawn. See report ROW where applicable: construct a storm sewer crossing under Arroya Lane; regrade and improve the roadway to an narrative for details/explanation. interim all-weather, gravel cross section for two-way traffic and emergency vehicles suitable to the County and the fire district the from Vollmer to Nature Refuge Road; move the Phase 1 The Retreat at Timber Ridge existing temporary turnaround on the east end of Arroya Note (3/3/2021): Not Lane onsite and construct a 50-foot apron at the tie-in to necessary with Fil No. 2 Vollmer Road. Upgrade **Arroya Lane** to a Rural Local cross section Once the average weekday traffic volume exceeds 200 vehicles per day. This is (paved). Along with this improvement, upgrade **Nature Refuge Road** to a Rural Local Road. The Retreat at Timber Ridge projected to occur with either Phase 4 or 5 Realign Arroya Lane at the intersection of Vollmer Road/Arroya Lane so Arroya intersects Vollmer at a right Phases 4 or 5 The Retreat at Timber Ridge Extend Poco Road to the east including the creek crossing Phases 2 and 3 The Retreat at Timber Ridge Construct a gravel road to provide secondary emergency access through the Phase 4 area to Arroya Lane (this gravel Phases 2 and 3 The Retreat at Timber Ridge road would be replaced with the subdivision streets in Phase Construct a northbound right-turn deceleration lane on Design and installation with the applicable final plat(s) for The Retreat at The Retreat at Timber Ridge Vollmer Road approaching Poco Road. Timber Ridge. This turn lane is projected to be required with Phase 5. Evaluation with final plats. Although the anticipated traffic counts do not The Retreat at Timber Ridge and/or possible-but-not-Potential improvement: Southbound left-turn lane at warrant it, the County Engineer may require a southbound left-turn lane at currently-anticipated-future development with access via Arroyo Arroyo based on unanticipated traffic patterns [from Staff Comments]. Arrova Consideration of roundabout traffic control instead of TWSC could be addressed with the applicable final plat(s) for The Retreat at Timber Ridge $\,$ and/or Sterling Ranch. Roundabouts would require signifcant circular right-ofway around the center of the intersection. Currently, additional right-of-way to ecomodate a roundabout(s) is not available on the west side of Vollmer. Also, the southeast corner of the intersection is not part of this project and is not owned by this applicant. It is owned by Sterling Ranch. The consideration is Possible future modern roundabout intersection control The Retreat at Timber Ridge and/or Sterling Ranch at Poco/Vollmer as an alternative to the two-way, Stopsign control (TWSC) shown in this TIS that although the TIS shows better side-street level of service with the roundabout, the projected approach traffic volumes are not close to being equal on all the intersection approaches. The northbound and southbound through volumes are significantly higher than the eastbound and westbound volumes. The balance of approach volumes is an element to consider when evaluating a roundabout as a potential traffic control solution. The Retreat at Timber Ridge will dedicate right-of-way to As shown on the County MTCP: Vollmer Road upgrade volume estimates indicate this improvement will not be needed in the short accommodate the future upgrade to Rural Minor Arterial between Poco Road and Shoup Road to a countyterm horizon. The 2040 MTCP indicates the Vollmer project will be needed by standards (As shown in the MTCP and the Fee Study); 2040. The 2040 MTCP shows the Vollmer upgrade "project" as Project ID Ustandard, two-lane Rural Minor Arterial The applicant will be required to participate in the County Road Impact Fee program. Upgrade Vollmer Road between future Stapleton Drive (Sterling Ranch Metro District) Future MTCP Master-Planned MTCP Project ID U-12 and Poco Road to an Urban Minor Arterial cross section MTCP Project ID U-12 (Note: MTCP indicates two-lane Rural Minor Arterial.) (five lanes) Upgrade Vollmer Road generally between the south Designed MTCP Project ID C-13 boundary of Sterling Ranch and future Stapleton Drive to Sterling Ranch Metro District an Urban Minor Arterial cross section (five lanes) Upgrade Vollmer Road generally between Cowpoke Road Designed and the south boundary of Sterling Ranch to an Urban Woodmen Heights Metro District MTCP Project ID C-13 Minor Arterial cross section (five lanes) Construct section of Stapleton Road half section between With development of Phase 1 of Sterling Ranch - Designed Sterling Ranch Metro District Vollmer Road and the first Sterling Ranch access point MTCP Project ID N-5 Construct a northbound right-turn deceleration lane on With development of Phase 1 of Sterling Ranch - Designed Sterling Ranch Metro District Vollmer Road approaching Stapleton Road MTCP Project ID C-13 Construct Briargate Parkway (four-lane Principal Arterial) Future - TBD TBD with PPRTA(2) Corridor Study TBD with PPRTA(2) Corridor Study between Black Forest Road and Vollmer Road. MTCP Project N-5 Future TBD with PPRTA<sup>(2)</sup> Corridor Study Construct Stapleton Drive between Vollmer Road and TBD with PPRTA(2) Corridor Study MTCP Project N-5 Existing Deficiency - Others Southbound left-turn lanes on Vollmer Road approaching **Existing Deficiency** (This development will not add volume to this turning **Burgess Road** movement.) Based on the revised PLID plan, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both Projections indicate after 2020 but prior to 2040 the turning volume threshold directions of travel) south of the intersection is more than warranting the turn lane (25 northbound left turns per hour) would be Northbound left-turn lane at Burgess/Vollmer 10 percent, however the turn lane thresholds are shown afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the MTCP Project ID is U-12. Based on the revised PUD plan, the afternoon peak-hour traffic impact from this project on the northbound approach to this intersection is projected to be below 10 percent. The site volume on the roadway link (both firections of travel) south of the intersection is more than Projections indicate by 2020 the turning volume threshold warranting the turn Northbound right-turn lane at Burgess/Vollmer 10 percent, however the turn lane thresholds are shown lane (50 northbound right turns per hour) would be exceeded. to be exceeded on the northbound approach during the afternoon peak hour when the impact of this project is below 10 percent on this approach. This project will be participating in the Fee Progam and the MTCP Project ID is U-12. Escrow a fair-share amount toward the cost the signal (to be determined with final plats). Once the signal is onstructed, a portion of the escrow amount used to fund Once warrants are met; analysis to be included with final plat traffic reports; the installation of the signal may have become creditable Future traffic signal at Stapleton/Vollmer projections indicate by 2040 the intersection would be signalilzed. under the Fee Program (if this signal is added to the fee program list of signals eligible for credit (County signals not currently programmed in Fee Program). Notes:

(1) Preliminary concept of responsibility; the actual construction responsibility would be determined through subdivision applications and cost recovery if applicable agreements.

(2) PPRTA = Pikes Peak Rural Transportation Authority.

Source: LSC Transportation Consultants, Inc.