

Mr. Jim Nikkel
Meridian Ranch Fieldhouse

Page

1
Include discussion of Sunrise Ridge and Rex Road as this intersection appears to be the quickest route for Sanctuary & Rolling hills Ranch North subdivisions. This traffic appears to be included in your analysis and the distribution of traffic.

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Londonderry Drive/Lambert Road

The intersection of Londonderry/Lambert Road is currently all-way, stop-sign controlled. All approaches are currently operating at LOS C or better during the peak hours.

Existing Traffic-Signal Warrant Analysis

The intersection Londonderry Drive/Lambert Road has been analyzed to estimate whether Eight-Hour or Four-Hour Vehicular-Volume Traffic-Signal Warrant thresholds are currently met, based on the existing peak-hour traffic volumes.

Based on the criteria contained in Table 4C-1, Warrant 1, Eight-Hour Vehicular-Volume from the *Manual of Uniform Traffic Control Devices* (MUTCD) December 2023 for an intersection with two lanes on both approaches, the minimum major street volume is 600 vehicles per hour for Condition A – Minimum Vehicular Volume and 900 vehicles per hour for Condition B – Interruption of Continuous Traffic. The major-street volume at the intersection of Londonderry/Lambert is currently 480 vehicles per hour during the morning peak hour, which occurred from 6:45 a.m. to 7:45 a.m., and 359 vehicles per hour during the afternoon peak hour, which occurred from 4:30 p.m. to 5:30 p.m. Both of these volumes are well below the required major street threshold.

Figure 6 shows the analysis of the existing peak-hour traffic volumes based on the MUTCD criteria for Warrant 2, Four-Hour Vehicular Volume. As shown in Figure 6, the existing morning and afternoon peak-hour volumes are both well below the thresholds for this warrant to be met.

Future analysis at this intersection was not included in this TIA because this intersection has already been addressed as part of recent residential subdivisions, the existing traffic volumes at the intersection of Londonderry/Lambert are currently well below the thresholds where a vehicular-volume traffic-signal warrant would be met, and all approaches are currently operating at LOS C or better during the peak hours,


2043 BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the study-area streets without consideration of the proposed fieldhouse. It includes through traffic and traffic generated by adjacent/nearby developments.


Figure 7 shows the projected 20-year background traffic volumes for the year 2043. These volumes assume that Rex Road has been extended east to US Highway 24. The 2043 background traffic volumes were based on previous work completed by LSC in the area, including the *Meridian Ranch Sketch Plan 2021 Amendment Traffic Impact Study* ([SKP-213](#)), dated June 25, 2021.

LSC Responses to EPC TIS Redline Comments

Page: 10

 Number: 1 Author: Bret Subject: Text Box Date: 5/30/2024 1:25:32 PM

Include discussion of Sunrise Ridge and Rex Road as this intersection appears to be the quickest route for Sanctuary & Rolling hills Ranch North subdivisions. This traffic appears to be included in your analysis and the distribution of traffic.

 Author: Kirstin Ferrin Subject: Sticky Note Date: 7/24/2024 4:28:46 PM
LSC Response: The additional information has been added as requested.

QUEING ANALYSIS

Table 3 shows the projected 95th percentile queue lengths at the intersection of Londonderry/Rainbow Bridge based on the based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition (HCM)* by the Transportation Research Board. As shown in Table 3, based on the projected 2043 total traffic volumes, the existing eastbound, westbound, and southbound left-turn lanes can accommodate the projected 95th percentile queues.

AUXILIARY TURN-LANE NEEDS ANALYSIS

Londonderry Drive/Rainbow Bridge Drive

- Based on the **existing and future** traffic volumes shown in Figure 6 and the criteria contained in the *ECM*, the turning movements have projected turning volumes which fall above the thresholds requiring auxiliary lanes:
 - An eastbound right-turn lane on Londonderry Drive approaching Rainbow Bridge Drive
 - A northbound left-turn lane on Rainbow Bridge Drive approaching Londonderry Drive.
 - A southbound right-turn lane on Rainbow Bridge Drive approaching Londonderry Drive.

However, these turn lanes would not be necessary given site-specific conditions.

needed for mitigation of turning vehicle "speed differential"

General Background: The auxiliary turn-lane criteria in the *ECM* was derived from the Colorado State Highway Access Code and auxiliary turn-lane requirements in the Access Code are for the purposes of mitigating "speed-change differential" between through traffic on a major road (without a stop condition) and turning traffic from the major road onto a minor road.

Auxiliary turn lanes for purposes of mitigating speed differential are not necessary at this intersection, as it is all-way, stop-sign controlled and all vehicles approaching the intersection decelerate to a stop.

- It is very unlikely they will go back to a TWSC or convert to a signalized intersection in the future (not shown in the Master TIS report). Therefore, it is reasonable to assume that the AWSC control will remain.

Conformance with the Master TIS Report

- The current laneage and traffic control matches the Master TIS.
- The projected total entering volume at the intersection is lower than the sketch plan report dated October 17, 2017, with more balanced approach volumes than the sketch plan which showed more east/west and less north/south. The Sketch Plan report showed AWSC for the Long Term.

Figure 6 is the Traffic Signal Warrant Analysis, please revise accordingly

Westbound

Please submit a Deviation Request for these two movements since they exceed the ECM thresholds and a non action is being recommended.





 Number: 1 Author: Bret Subject: Engineer Date: 5/30/2024 10:33:32 AM


Figure 6 is the Traffic Signal Warrant Analysis, please revise accordingly

 Author: Kirstin Ferrin Subject: Sticky Note Date: 7/24/2024 4:28:39 PM
LSC Response: Revised as requested.


 Number: 2 Author: Bret Subject: Engineer Date: 5/30/2024 11:06:18 AM

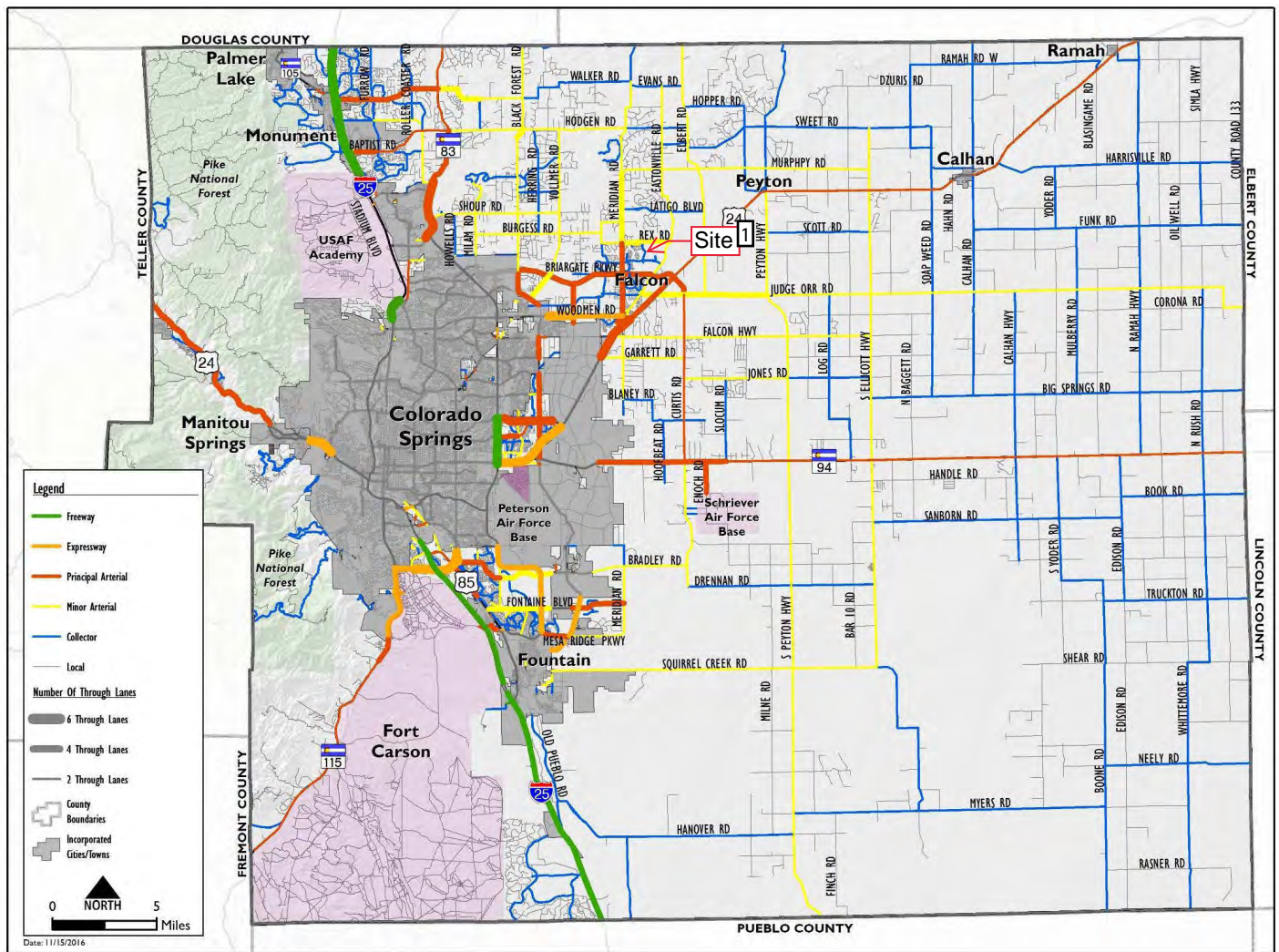
Westbound

 Author: Kirstin Ferrin Subject: Sticky Note Date: 7/24/2024 4:28:33 PM
LSC Response: Revised as requested.

 Number: 3 Author: Bret Subject: Engineer Date: 5/30/2024 11:24:49 AM

Please submit a Deviation Request for these two movements since they exceed the ECM thresholds and a non action is being recommended.

 Author: Kirstin Ferrin Subject: Sticky Note Date: 7/24/2024 4:28:24 PM
LSC Response: A deviation request will be submitted.



Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation

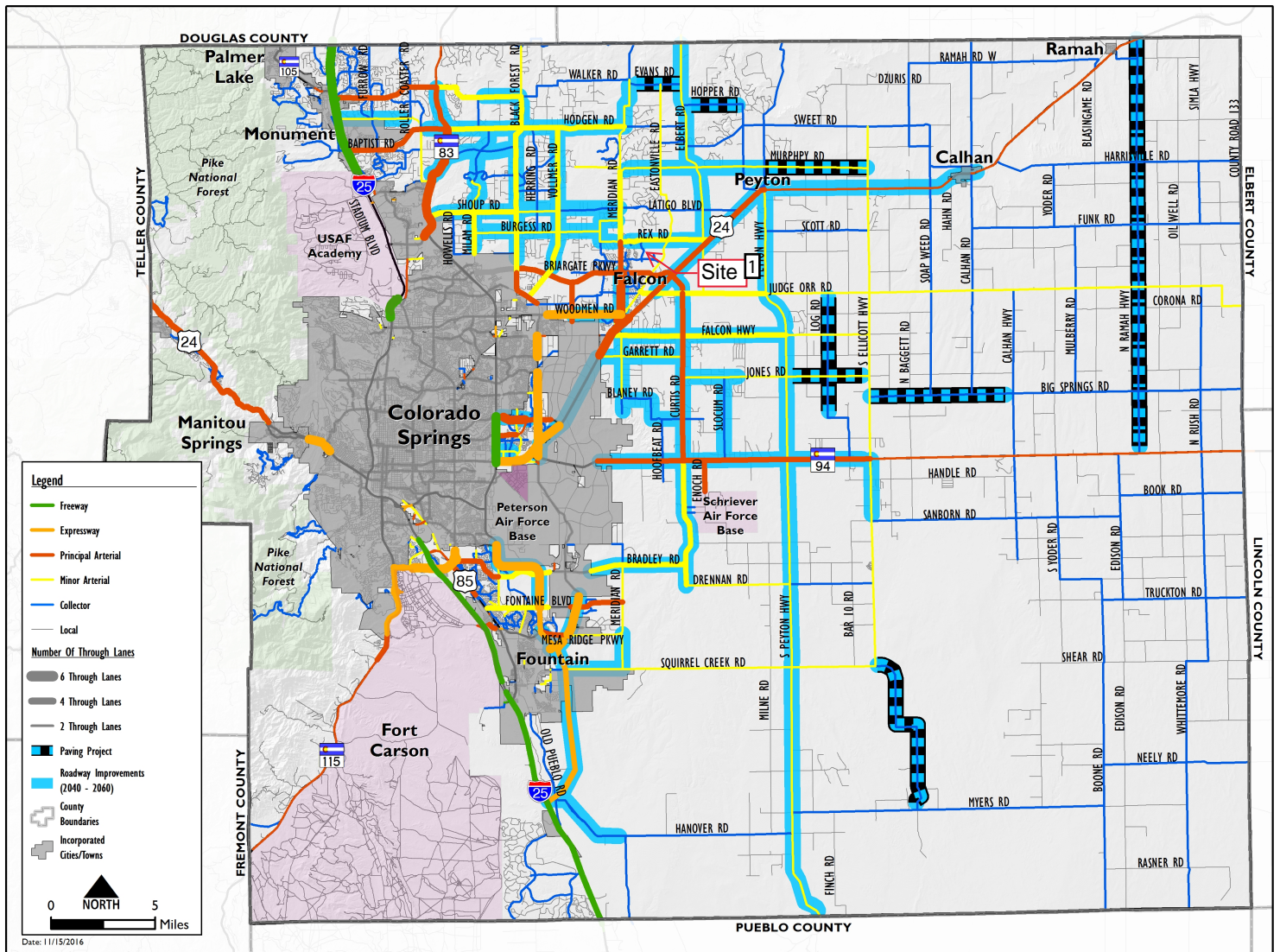


Table 1
Meridian Ranch Sketch Plan
Land Use Comparison

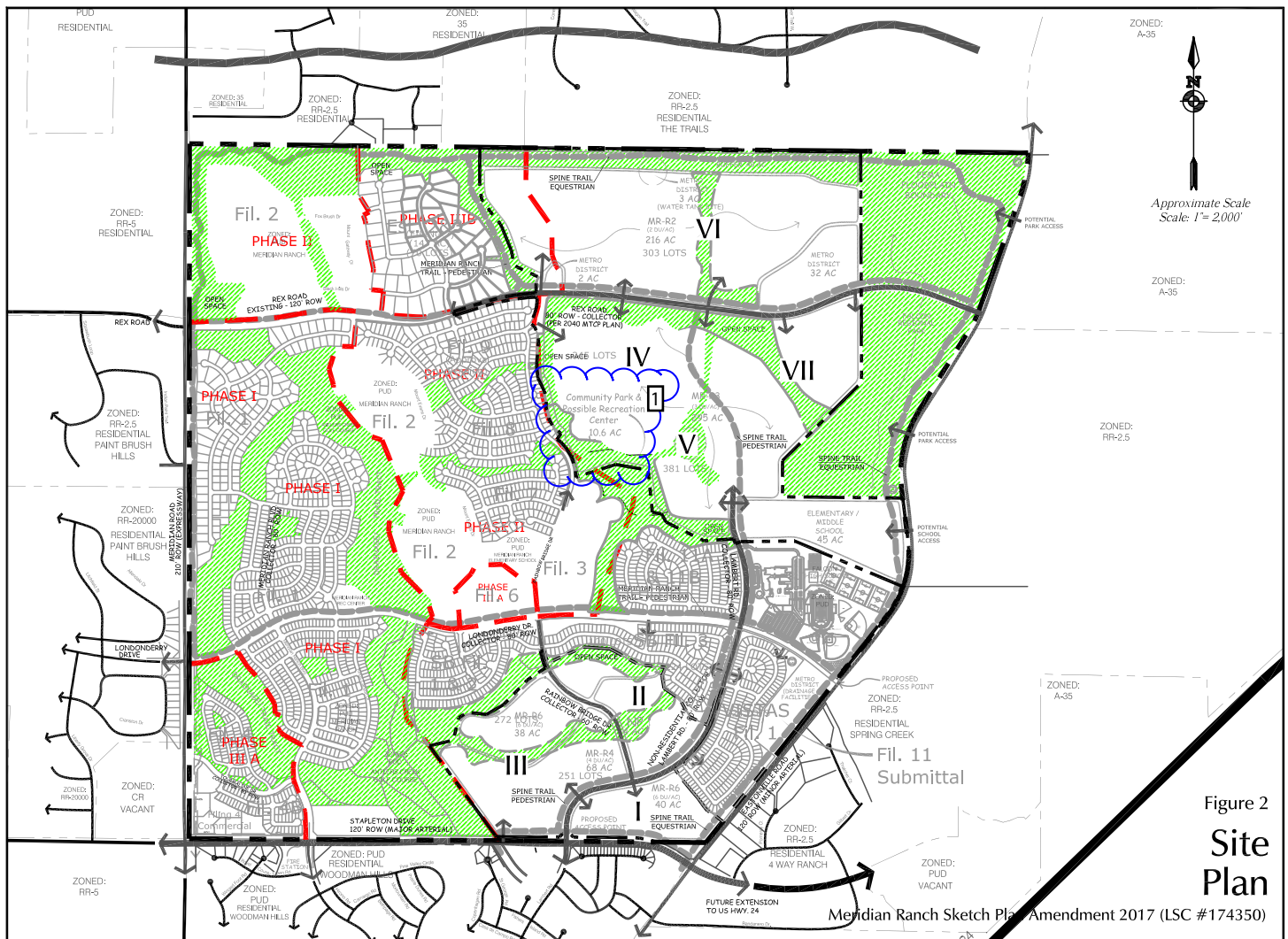
Meridian Ranch Sketch Plan 2015 Traffic Analysis July 29, 2015				Currently Proposed Sketch Plan				Change in Land Use	
Filing	Land Use	Quantity	Unit	Phase	Land Use	Quantity	Unit	Quantity	Unit
Meridian Ranch Filing 1	Single-Family Detached Housing	800	DU ⁽¹⁾	Existing/Approved	Single-Family Detached Housing	800	DU	0	DU
Meridian Ranch Filing 2	Single-Family Detached Housing	350	DU	Existing/Approved	Single-Family Detached Housing	350	DU	0	DU
Meridian Ranch Filing 3	Single-Family Detached Housing	122	DU	Existing/Approved	Single-Family Detached Housing	122	DU	0	DU
Meridian Ranch Filing 4	Single-Family Detached Housing	96	DU	Existing/Approved	Single-Family Detached Housing	96	DU	0	DU
Meridian Ranch Filing 6	Single-Family Detached Housing	54	DU	Existing/Approved	Single-Family Detached Housing	54	DU	0	DU
Meridian Ranch Filing 7	Single-Family Detached Housing	131	DU	Existing/Approved	Single-Family Detached Housing	131	DU	0	DU
Meridian Ranch Estates Fil 2&3	Single-Family Detached Housing	62	DU	Existing/Approved	Single-Family Detached Housing	62	DU	0	DU
Meridian Ranch Filing 11	Single-Family Detached Housing	200	DU	Existing/Approved	Single-Family Detached Housing	200	DU	0	DU
Stonebridge Fil 1&2	Single-Family Detached Housing	175	DU	Existing/Approved	Single-Family Detached Housing	175	DU	0	DU
Meridian Ranch Fil 4B & Meridian Ranch Commercial	Shopping Center	90	KSF ⁽²⁾	Existing/Approved	Shopping Center	90	KSF	0	KSF
	Gasoline/Service Station with Convenience Market	20	VFP ⁽³⁾	Existing/Approved	Gasoline/Service Station with Convenience Market	20	VFP	0	VFP
Meridian Ranch Filing 8	Single-Family Detached Housing	145	DU	Existing/Approved	Single-Family Detached Housing	145	DU	0	DU
Meridian Ranch Filing 9	Single-Family Detached Housing	162	DU	Existing/Approved	Single-Family Detached Housing	181	DU	19	DU
Other	Meridian Ranch Elementary School	600	Students	Existing/Approved	Meridian Ranch Elementary School	600	Students	0	Students
	Falcon High School	2000	Students	Existing/Approved	Falcon High School	2000	Students	0	Students
	Recreation Center	16.6	KSF	Existing/Approved	Recreation Center	16.6	KSF	0	KSF
	Antler Creek Golf Course	27	Holes	Existing/Approved	Antler Creek Golf Course	27	Holes	0	Holes
	Community Park	4	Fields	V	Community Park	4	Fields	0	Fields
Phase I The Vistas Filing 1 ⁽⁴⁾	Single-Family Detached Housing	220	DU	Existing/Approved	Single-Family Detached Housing	221	DU	127	DU
	Business Park	40	Acres	I	Single-Family Detached Housing	126	DU	-40	Acres
Phase II	Single-Family Detached Housing	171	DU	IV	Single-Family Detached Housing	277	DU	106	DU
Phase III	Single-Family Detached Housing	375	DU	III	Single-Family Detached Housing	388	DU	13	DU
Phase IV	Single-Family Detached Housing	310	DU	Existing/Approved	Single-Family Detached Housing	164	DU	16	DU
				II	Single-Family Detached Housing	162	DU		DU
Phase V	Single-Family Detached Housing	130	DU	V	Single-Family Detached Housing	170	DU	40	DU
Phase VI	Single-Family Detached Housing	122	DU	VI	Single-Family Detached Housing	183	DU	61	DU
Phase VII	Single-Family Detached Housing	349	DU	VII	Single-Family Detached Housing	431	DU	82	DU
	Middle School	900	Students	VII	Middle School	900	Students	0	Students
	Elementary School	600	Students	VII	Elementary School	600	Students	0	Students
	Recreation Center	16.6	KSF	V	Recreation Center	16.6	KSF	0	KSF
Future Phases	Community Park - Regional	4	Fields	Future	Community Park - Regional	4	Fields	0	Fields
	Community Park - Community	4	Fields	Future	Community Park - Community	4	Fields	0	Fields
				Existing/Approved Residential Dwelling Units		2,763	DU		
				Future Residential Dwelling Units		1,901	DU		
				Total Residential Dwelling Units		4,500	DU	464	DU
Total	Residential Dwelling Units	4,036	DU						

Notes:
 (1) dwelling unit
 (2) thousand square feet of floor area
 (3) vehicle fueling positions
 (4) Currently approved or pending approval

Source: LSC Transportation Consultants, Inc.

[illegible]

Source: LSC Transportation Consultants, Inc.



1 Source: Rolling Hills Ranch North PUD Transportation Memorandum (PUD File No.: PUDSP235), February 23, 2024

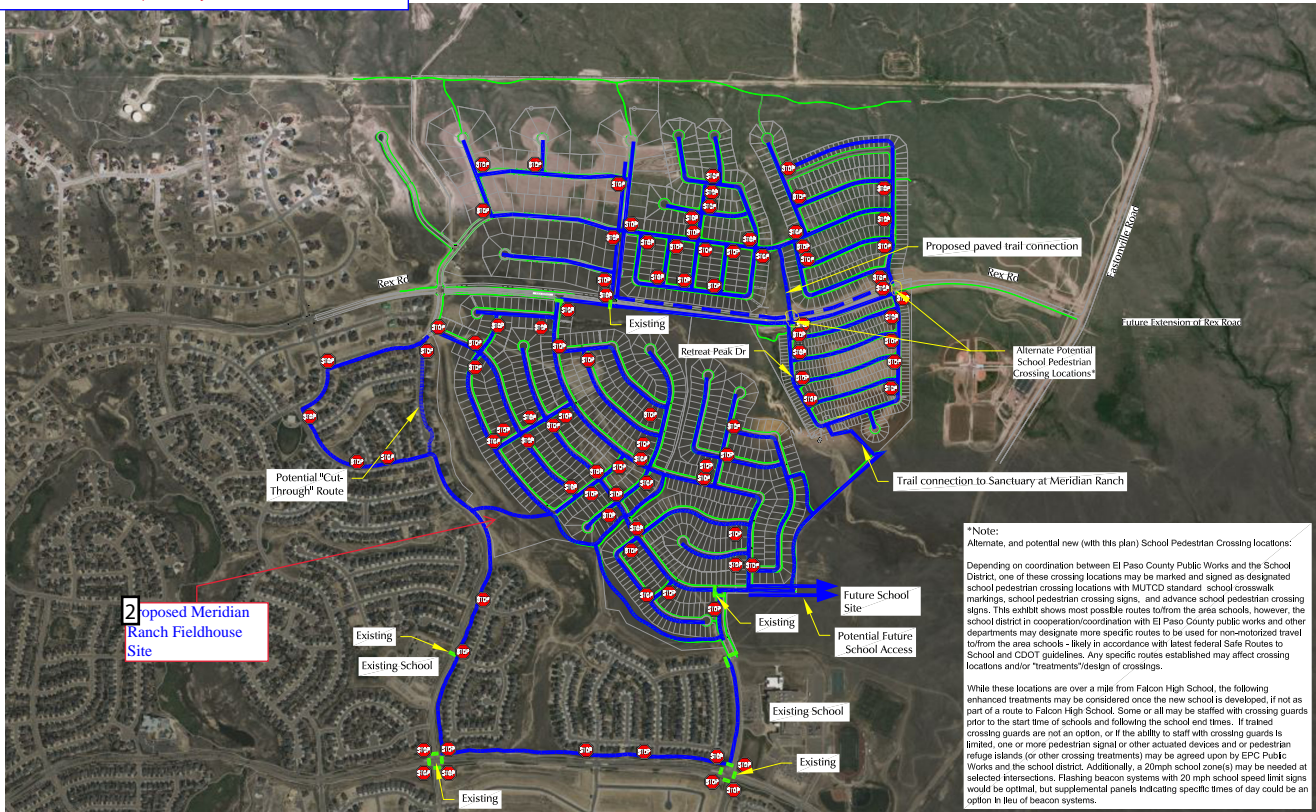




Figure 5
School Pedestrian Routes
Rolling Hills Ranch North PUD (LSC #5234290)

	Number: 1	Author: kdfer	Subject: Text Box	Date: 5/8/2024 2:07:28 PM
Source: <i>Rolling Hills Ranch North PUD Transportation Memorandum</i> (PCD File No.: PUDSSP235), February 23, 2024				
	Number: 2	Author: kdfer	Subject: Callout	Date: 5/8/2024 12:37:33 PM
Proposed Meridian Ranch Fieldhouse Site				