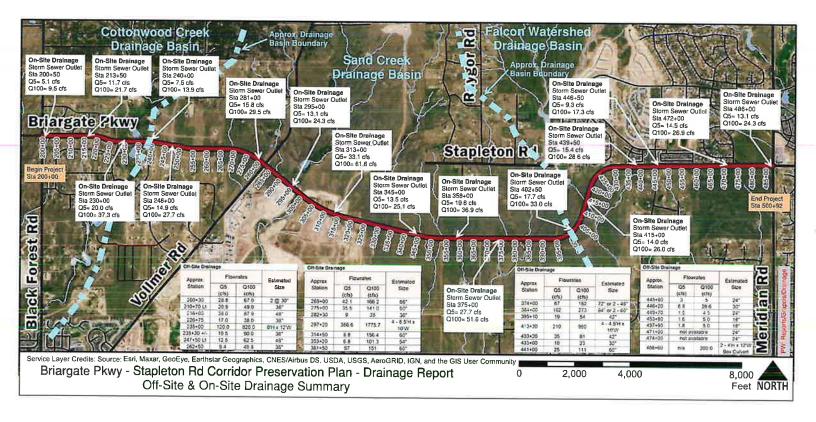
# Appendix C - Drainage Summary Map



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# Appendix D – Offsite Drainage Summary

### Briargate Parkway - Stapleton Road Corridor Preservation Plan - Drainage Report

Approx.	Flov	vrates	F # 1 181			
Station	Q5 (cfs)	Q100 (cfs)	Estimated Size	Water Quality and/or Detention	Basis of Estimated Peak Flowrates	
200+30	28.8	67.0	2 @ 30" RCP	поле	Eagle Wing FDR	
210+70 Lt	20.9	49.0	36" RCP	none	Eagle Wing FDR	
216+00	38.0	87.9	48" RCP	tbd	Eagle Wing FDR	
226+75	17.0	38.0	36" RCP	tbd	Eagle Wing FDR	
235+00	120.0	820.0	8"H x 12"W CBC	tbd	Cottonwood Creek DBPS	
238+30 +/-	19.5	90.0	36" RCP	sediment pond upstream	Highland Park Fil No 3 FDR; survey labels as 38"	
247+50 Lt	12.5	62,5	48" RCP	sediment pond downstream	Highland Park Fil No 3 FDR; part of sediment pond outfall crossing B/S at 238+30; surveilabels as 50"	
262+50	9,4	49.8	36" RCP	drains to an existing detention pond approx. 350' downstream	Highland Park Fil No 3 FDR	
269+00	42.1	166.2	66" RCP	tbd	Sterling Ranch MDDP	
275+00	35,5	141.0	60" RCP	tbd	Sterling Ranch MDDP	
282+30	9	35	36" RCP	tbd	Storing Ranch MDDP; flows estimated as 25% of those for 275+00	
297+20	366,6	1775.7	4 - 8,5'H x 10'W CBC	MDDP shows permanent FSEDB for flows coming from development	Sand Creek DBPS; Sterling Ranch MDDP	
314+50	8.8	156.4	60" RCP	MDDP shows permanent FSEDB for flows coming from development	Sterling Ranch MDDP; East Fork Sand Creek	
353+20	6.8	101.3	54" RCP	MDDP shows permanent FSEDB for flows coming from development	Sterling Ranch MDDP; East Fork Sand Creek	
361+50	57	151	60" RCP	tbd	A = 98 ac (TR-55 Methodology used to estimate flow)	
374+00	67	182	72" RCP or (2 - 48")	tbd	A = 126 ac (TR-55 Methodolgy used to estimate flow)	
384+00	102	273	84" RCP or (2 - 60")	tbd	A = 202 ac; (TR-55 Methodolgy used to estimate flow)	
395+10	19	54	42" RCP	tbd	A = 40 ac (TR-55 Methodology used to estimate flow)	
413+30	210	960	4 - 4,5'H x 10'W CBC	DBPS shows permanent FSEDB for flows coming from upstream development and proposes a sub- regional pand downstream	Falcon DBPS; West Tributary Falcon Watershed	
430+20	35	81	42" RCP	tbd	Paint Brush Hills Fil No 10 & 11 FDR; survey labels as 40"	
433+00	10	23	30" RCP	tbd	Paint Brush Hills Fil No 10 & 11 FDR; Basin O and DP13	
441+00	25	111	60" RCP	FDR shows permanent detention ponds for flows coming from development	Paint Brush Hills Fil No 10 & 11 FDR; pipe not in survey;	
445+80	3	5	24" RCP	FDR shows permanent detention ponds for flows coming from development	Paint Brush Hills Fil No 10 & 11 FDR	
446+20	8.8	28.6	30" RCP	FDR shows permanent detention ponds for flows coming from development	Scenic View at Paint Brush Hills FDR	

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### Briargate Parkway - Stapleton Road Corridor Preservation Plan - Drainage Report

Approx.	Flowrates		Estimated Size	Water Quality and/or Detention	Basis of Estimated Peak Flowrates
Station	Q5 (cfs)	Q100 (cfs)	Estimated Size		
449+70	1.5	4.5	24" RCP	none	Scenic View at Paint Brush Hills FDR
453+80	1.6	5.0	18" RCP	none	Scenic View at Paint Brush Hills FDR; survey labels as 22"
457+90	1.8	5.0	18" RCP		Scenic View at Paint Brush Hills FDR
471+00	1.0	5.0	24" RCP	none	Size is from survey, pipe doesn't appear in Paint Brush Hills Fill No 4 FDR
474+00			24" RCP	pond for flows coming from	pond is Q5= 20 cfs and Q100= 57 cfs.
488+60	n/a	200,0	2 - 12' (W) x 4'(H) CBC	Sub regional pond upstream	Falcon DBPS: East Tributary Falcon Watershed: Proposed size 2 - 12.0° (W) x 4.0° (H); proposed subregional pond just upsteam of culvert, outflow from proposed pond is Q100=200 cfs

- Notes

  > Design flows taken or estimated from Drainage Reports and MDDPs or estimated with TR-55 Methodolgy

  > Existing pipe info is taken from Drainage Reports when available

  > Proposed culvert sizes are estimated using Inlet Control Nomograph with Q100 and max. HW/D = 1,2

c:\wcipw\d0480635\[B-S Drainage Summary,xlsx]Offsite Drainage 8/9/2021

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# Appendix E - Onsite Drainage Summary

### Briargate Parkway - Stapleton Road Corridor Preservation Plan - Drainage Report

2,1011	E DRAINAGE SUI		oad	way				Flow Calculations						
	Basin ID	Approx. Station	1000	Length	Width	Area	Slope	Tc <sup>1</sup>	5-Yr Runoff Coef.	5-Yr Rainfall Intensity	5-Yr Flowrate (Q5)	100-Yr Runoff Coef	100-Yr Rainfall Intensity	100-Yr Flowrate (Q100)
			- 6	(ft)	(ft)	(ac)	(ft/ft)	(min)	C <sub>5</sub>	(in/hr)	(cfs)	C <sub>100</sub>	(in/hr)	(cfs)
Α.	Outlet	200+50		550	105	1.326	0.01	8	0.9	4.3	5.1	0.96	7.5	9.5
_	Crest	206+00												
												0.00	7.5	40.0
	Crest	206+00	V	750	105	1.808	0.027	8	0.9	4.3	7.0	0.96	7.5	13.0
3	Sag/Outlet	213+50							Sag/Outlet		11.7		1 75	21.7
	Crest	218+50		500	105	1.205	0.014	8	0.9	4.3	4.7	0.96	7.5	8.7
_	Crest	218+50	-	1150	105	2.772	0.020	8	0.9	4.3	10.7	0.96	7.5	19.9
0	Sag/Outlet	230+00	i	1100	100			Total at	Sag/Outlet		20.0			37.3
	Break	240+00		1000	105	2.410	0.023	8	0.9	4.3	9.3	0.96	7.5	17.3
										4.0	7.5	0.96	7.5	13.9
D	Outlet	240+00		800	105	1.928	0.01	8	0.9	4.3	7,5	0.96	7.5	13.9
	Break	248+00											1	
É	Outlet	248+00		1600	105	3.857	0.01	8	0.9	4.3	14.9	0.96	7.5	27.7
	Crest	264+00	A											
		001.00	L		_				-	-	-	-	<u> </u>	_
	Crest	264+00	×	1700	105	4.098	0.014	8	0.9	4.3	15.8	0.96	7.5	29.5
	Outlet	281+00	۳	1700	103	4.030	0.014		0.0	,,,,	10.0	0.00		
	Break	281+00	V											
G	Outlet	295+00		1400	105	3.375	0.014	8	0.9	4.3	13.1	0.96	7.5	24.3
_	Break	295+00	-	1800	105	4.339	0.014	8	0.9	4.3	16.8	0.96	7.5	31.2
н	Sag/Outlet	313+00	t	1000	100	4.000	0.011		Sag/Outlet		33.1			61.6
11:	Crest	330+50	Ā	1750	105	4.218	0.01	8	0.9	4.3	16.3	0.96	7.5	30.4
			L						-				1	-
	Crest	330+50	Į.		105	D 105	0.010		0.9	4.3	13.5	0.96	7.5	25.1
	Outlet	345+00	1	1450	105	3.495	0.013	8	0.9	4.3	13.3	0.30	1 7.5	20,1
	Break	345+00	1	1300	105	3.134	0.013	- 8	0.9	4.3	12,1	0.96	7.5	22.5
J	Sag/Outlet	358+00	1					Total a	t Sag/Outlet		19.8			36.9
	Crest	366+25	A	825	105	1.989	0.01	8	0.9	4.3	7.7	0.96	7.5	14.3

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#### Briargate Parkway - Stapleton Road Corridor Preservation Plan - Drainage Report

ONSITE DRAINAGE SUMMARY

	Roadway								Flow Calculations					
	Basin ID	Approx. Station		Length	Width	Area	Slope	Tc <sup>1</sup>	5-Yr Runoff Coef.	5-Yr Rainfall Intensity	5-Yr Flowrate (Q5)	100-Yr Runoff Coef	100-Yr Rainfall Intensity	100-Yr Flowrate (Q100)
			1	(ft)	(ft)	(ac)	(ft/ft)	(min)	C <sub>5</sub>	(in/hr)	(cfs)	C <sub>100</sub>	(in/hr)	(cfs)
	Crest	366+25	V	875	105	2.109	0.019	8	0.9	4.3	8.2	0.96	7.5	15.2
K	Sag/Outlet	375+00						Total at	Sag/Outlet		27.7			51.6
	Crest	396+00	A	2100	105	5,062	0.01	8	0.9	4,3	19.6	0,96	7.5	36.4
	Crest	396+00	7	650	105	1.567	0.01	8	0.9	4.3	6,1	0.96	7,5	11.3
L	Sag/Outlet	402+50						Total at	Sag/Outlet		17.7			33.0
	Break	415+00	Δ	1250	105	3.013	0.022	8	0.9	4.3	11.7	0.96	7.5	21.7
M	Outlet	415+00		1500	105	3.616	0.022	8	0.9	4.3	14.0	0.96	7.5	26.0
	Crest	430+00										7,52	1110	
	Crest	430+00	1	950	105	2.290	0.01	8	0.9	4.3	8.9	0.96	7.5	16.5
N	Sag/Outlet	439+50						Total at	Sag/Outlet		15.4	0.00	7.0	28.6
	Break	446+50	A	700	105	1.687	0.01	8	0.9	4.3	6.5	0.96	7.5	12.1
0	Outlet	446+50		1000	105	2.410	0.01	8	0.9	4.3	9.3	0.96	7.5	17.3
	Crest	456+50	▲											1110
	Crest	456+50	V											
Р	Outlet	472+00		1550	105	3.736	0.022	8	0.9	4.3	14.5	0.96	7.5	26.9
	Break	472+00	V											
Q	Outlet	486+00		1400	105	3.375	0.02	8	0.9	4.3	13.1	0.96	7.5	24.3

A median Tc of 8 min, was used to compute the flow rates for the roadway drainage areas. This value is congruent with the roadway longitudinal slopes, which vary from 1% to 2.75%, and a maximum gutter flow distance of about 1000 ft.

Flow Direction - V

Time of Concentration Table For Roadway Pavement (32 ft wide)

Rosoway	oadway Overland Flow		CHALLOW CONCENTRATED FLOW						
Slope 1 (%) (a	Te (ain)	Length (ft)	Slope (%)	(tos)	Te (mn)	Tc (mm)			
1%	2	500	1.0%	2.0	4.2	6			
	2	1000	1.0%	2.0	8.3	10			
	2	1500	1.0%	2.0	12.5	15			
2%	2	500	2.0%	2.7	3.1	5			
	2	1000	20%	2.7	6.2				
	2	1500	2.0%	2.7	9.3	-11			
3%	2	500	3.0%	3.5	2.4	4			
	2	1000	3.0%	3.5	4.0	7.			
	2	1500	30%	3.5	71	- 6			

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# Appendix F - Calculations

Street Capacity Principal Arterial Type I

Inlet Capacity for Continuous Grade (8' D-10-R) - Principal Arterial Type I

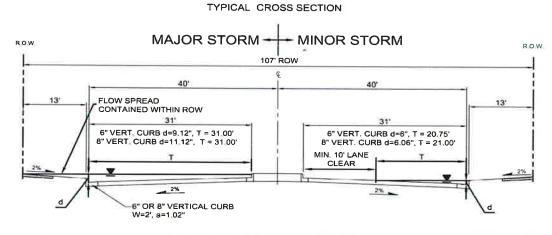
Inlet Capacity for Sump Condition (8' D-10-R)

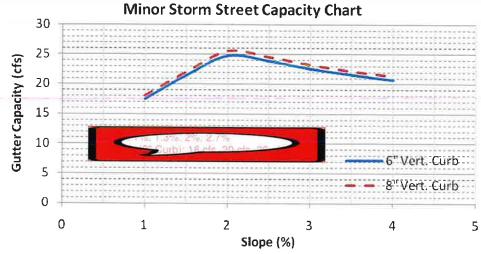
Calculation of WQCV and Detention Volumes for 1000' of Roadway at 2% Slope

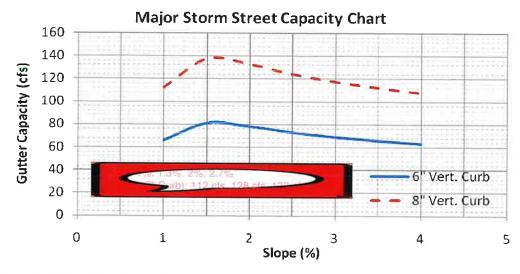
Calculation of WQCV and Detention Volumes for Storm Sewer Outlet at Sta 472+00

Conceptual Cost Estimate

Figure 7-1. Street Capacity Charts Principal Arterial Type I







These charts shall only be used for the standard street sections as shown. The capacity shown is based on ½ the street section as calculated by the UD-Inlet spreadsheets. Minor storm capacities are based on no crown overtopping, curb height or maximum allowable spread widths. Major storm capacities are based on flow being containing within the public right-of-way, including conveyance capacity behind the curb. The UDFCD Safety Reduction Factor was applied. An 'nstreet' of 0.016 and 'nback' of 0.020 was used. Calculations were done using UD-Inlet 3.00.xls, March, 2011.

Inlets Chapter 8

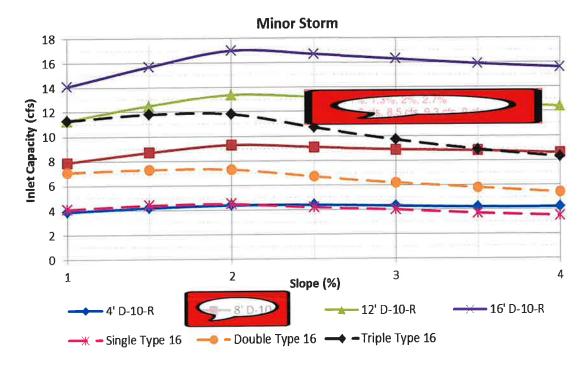
Figure 8-1. Inlet Capacity Charts Continuous Grade Conditions, Principal Arterial Type I

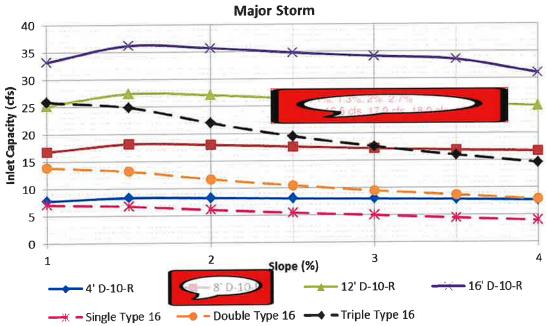
Street Section Data:

Street Width Flowline to Flowline = 80'

Type of Curb and Gutter: D-10-R = 8" vertical

Type 16 = 6" vertical





The standard street section parameters as defined in Chapter 7 must apply to use these charts. For non-standard sections, the inlet capacity shall be calculated using the UDFCD spreadsheets. The maximum spread width is limited by the curb height based on no curb overtopping during a minor storm and flow being contained within the public right-of-way during the major storm. Calculations were done using UD-Inlet 3.00.xls, Mar., 2011 with the default clogging factors.

Chapter 8 Inlets

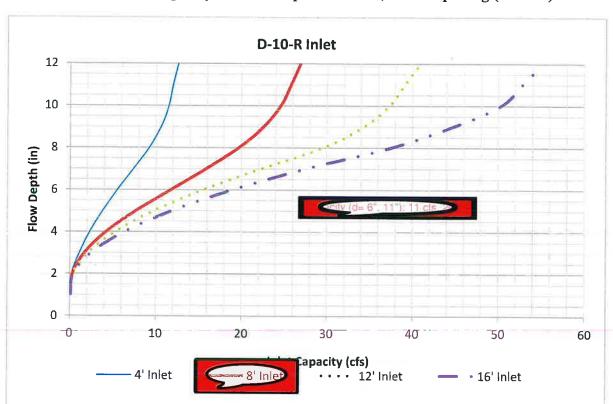


Figure 8-12. Inlet Capacity Chart Sump Conditions, Curb Opening (D-10-R) Inlet

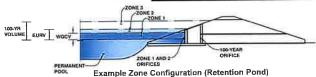
### DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.03 (May 2020)

Depth Increment =

Project: Briargate Parkway - Stapleton Road Corridor Preservation Plan Drainage Report

Basin ID: Storm Sewer FSEDB Example (per 1000 ft of roadway at 0.02 ft/ft slope)



### Watershed Information

SUGO TURGITURADO		in the second
Selected BMP Type =	EDB	
Watershed Area =	2.41	acres
Watershed Length =	1,000	ft
Watershed Length to Centroid =	500	rt
Watershed Slope =	0.020	ft/ft
Watershed Imperviousness =	100.00%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	100.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours

Location for 1-hr Rainfall Depths = User Input

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

ate empedade dolored order trj = -3		
Water Quality Capture Volume (WQCV) =	0.100	acre-feet
Excess Urban Runoff Volume (EURV) =	0.272	acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	0.237	acre-feet
5-yr Runoff Volume (P1 = 1.5 in.) =	0.304	acre-feet
10-yr Runoff Volume (P1 = 1.75 in.) =	0.357	acre-feet
25-yr Runoff Volume (P1 = 2 in.) =	0.411	acre-feet
50-yr Runoff Volume (P1 = 2.25 in.) =	0.465	acre-feet
100-yr Runoff Volume (P1 = 2.52 in.) =	0,523	acre-feet
500-yr Runoff Volume (P1 = 3.1 in.) =	0.647	acre-feet
Approximate 2-yr Detention Volume =	0.221	acre-feet
Approximate 5-yr Detention Volume =	0.286	acre-feet
Approximate 10-yr Detention Volume =	0.346	acre-feet
Approximate 25-yr Detention Volume =	0.371	acre-feet
Approximate 50-yr Detention Volume =	0.385	acre-feet
Approximate 100-yr Detention Volume =	0.395	acre-feet

Note: L / W Ratio > 8

L / W Ratio = 9.53

Optional User Overrides

	acre-feet
	acre-feet
1.19	inches
1.50	inches
1.75	inches
2.00	inches
2.25	inches
2.52	inches
3.10	inches

Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft <sup>2</sup> )	Override Area (ft <sup>2</sup> )	Area (acre)	Volume (ft³)	Volum (ac-ft)
Top of Micropool						-		-//1	
									-
									_
								-	_
						-			_
		+							
	-								
									-
								-	-
								-	-
								-	-
								-	-
						-			-

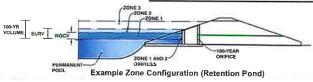
PC Report Packet Strmsyr Example MHED Detention\_v4 03 (1).xlsm, Basin Page 251 of 476

### DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.03 (May 2020)

Project: Briangate Parkway - Stapleton Road Corridor Preservation Plan Drainage Report

Basin ID: Storm Sewer FSEDB for outlet at Sta 472+00



Watershed Information

tershed Information			
Selected BMP Type =	EDB		Note: L / W Ratio > 8
Watershed Area =	3.74	acres	L / W Ratio = 14.76
Watershed Length =	1,550	n	
Watershed Length to Centroid =	775	ft	
Watershed Slope =	0.022	ft/ft	
Watershed Imperviousness =	100.00%	percent	
Percentage Hydrologic Soil Group A =	0.0%	percent	
Percentage Hydrologic Soil Group B =	100.0%	percent	
Percentage Hydrologic Soil Groups C/D =	0.0%	percent	
Target WQCV Drain Time =	40.0	hours	

Location for 1-hr Rainfall Depths = User Input

After providing required Inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Water Quality Capture Volume (WQCV) =	0.156	acre-feet
Excess Urban Runoff Volume (EURV) =	0.422	acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	0.000	acre-feet
5-yr Runoff Volume (P1 = 1.5 in.) =	0.000	acre-feet
10-yr Runoff Volume (P1 = 1.75 in.) =	0.000	acre-feet
25-yr Runoff Volume (P1 = 2 in.) =	0.000	acre-feet
50-yr Runoff Volume (P1 = 2,25 in.) =	0.000	acre-feet
100-yr Runoff Volume (P1 = 2.52 in.) =	0.000	acre-feet
500-yr Runoff Volume (P1 = 3.1 in.) =	0.000	acre-feet
Approximate 2-yr Detention Volume =	0.342	acre-feet
Approximate 5-yr Detention Volume =	0.443	acre-feet
Approximate 10-yr Detention Volume =	0.536	acre-feet
Approximate 25-yr Detention Volume =	0.575	acre-feet
Approximate 50-yr Detention Volume =	0.597	acre-feet
Approximate 100-yr Detention Volume =	0.612	acre-feet
		_

Optional Us	er Overrides
	acre-feet
	acre-feet
1.19	inches
1.50	inches
1.75	inches
2.00	inches
2.25	inches
2.52	inches
3.10	inches

Depth Increment =		ft							
Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft ²)	Optional Override Area (ft <sup>2</sup> )	Area (acre)	Volume (ft³)	Volume (ac-ft)
Top of Micropool									AL III
	_								
									-
	_	-							
							1		

PC Report Packet Strmsyr median area MHFD-Detention\_v4 03 xlsm, Basin Page 252 of 476

3/3/2021, 1:50 PM

# Briargate Parkway - Stapleton Road Corridor Study Conceptual Drainage Cost Estimate

### OFF-SITE DRAINAGE

Size	Quantity	y Unit Price			Cost		
(in)	(LF)	T	(\$)		(\$)		
18	490	\$	100	\$	49,000		
24	920	\$	150	\$	138,000		
30	800	\$	200	\$	160,000		
36	1100	\$	225	\$	247,500		
42	400	\$	250	\$ \$ \$	100,000		
48	820	\$	300	\$	246,000		
54	200	\$	350	\$	70,000		
60	1260	\$	400	\$	504,000		
66	230	\$	450	\$	103,500		
			Sub-Total	\$	1,618,000		
Concrete End Sections Size	Quantity	1	Init Price		Cost		
(in)	(each)	1 –	(\$)		(\$)		
18	4	\$	1,491	\$	5,964		
24	8	\$	1,742	\$	13,936		
30	8	\$	2,179	\$	17,432		
	10	\$	2,859	\$	28,590		
36	4	\$	3,290	\$	13,160		
42 48	8	\$	3,347	\$	26,776		
40	- 0	+Ψ	Sub-Total	\$	105,858		
Outlet Protection (Low Ta	ailwater Riprap B	asin)	Cub Total	<u> </u>	100,000		
Outlet Protection (Low Ta	Quantity	asin)	Init Price		Cost		
Pipe Size (in)	Quantity (EA)	L	Init Price (\$)		Cost (\$)		
Pipe Size (in) 18	Quantity (EA)	\$	Init Price (\$) 2,281	\$	Cost (\$) 2,28		
Pipe Size (in) 18 24	Quantity (EA) 1 4	\$ \$	Init Price (\$) 2,281 2,281	\$	Cost (\$) 2,28° 9,12°		
Pipe Size (in) 18 24 30	Quantity (EA) 1 4 4	\$ \$	Init Price (\$) 2,281 2,281 4,356	\$ \$	Cost (\$) 2,28° 9,124 17,424		
Pipe Size (in) 18 24 30 36	Quantity (EA) 1 4 4 5	\$ \$ \$	Init Price (\$) 2,281 2,281 4,356 4,356	\$ \$	Cost (\$) 2,28' 9,12' 17,42' 21,780		
Pipe Size (in) 18 24 30 36 42	Quantity (EA)  1  4  4  5  2	\$ \$	Init Price (\$) 2,281 2,281 4,356 4,356 8,462	\$ \$ \$ \$	Cost (\$) 2,282 9,124 17,424 21,780 16,924		
Pipe Size (in) 18 24 30 36 42 48	Quantity (EA)  1  4  4  5  2  2	\$ \$ \$	Unit Price (\$) 2,281 2,281 4,356 4,356 8,462 8,462	\$ \$ \$ \$ \$ \$	Cost (\$) 2,287 9,124 17,424 21,780 16,924 16,924		
Pipe Size (in) 18 24 30 36 42 48 48 Dual	Quantity (EA)  1  4  4  5  2  1	\$ \$ \$	Unit Price (\$) 2,281 2,281 4,356 4,356 4,356 8,462 8,462 16,924	\$ \$ \$ \$ \$	Cost (\$) 2,28° 9,12° 17,42° 21,780 16,92° 16,92°		
Pipe Size (in) 18 24 30 36 42 48 48 Dual	Quantity (EA)  1 4 4 5 2 2 1 1 1	\$ \$ \$ \$ \$ \$	Unit Price (\$) 2,281 2,281 4,356 4,356 8,462 8,462 16,924 12,880	\$ \$ \$ \$ \$ \$ \$	Cost (\$) 2,287 9,124 17,424 21,780 16,924 16,924 16,924 12,880		
Pipe Size (in) 18 24 30 36 42 48 48 Dual 54 60	Quantity (EA)  1 4 4 5 2 2 1 1 4	\$ \$ \$ \$ \$ \$	Init Price (\$) 2,281 2,281 4,356 4,356 8,462 8,462 16,924 12,880 12,880	\$ \$ \$ \$ \$ \$ \$ \$	Cost (\$) 2,282 9,124 17,424 21,780 16,924 16,924 12,880 51,520		
Pipe Size (in) 18 24 30 36 42 48 48 Dual 54 60 60 Dual	Quantity (EA)  1 4 4 5 2 2 1 1 4 1 1 1	\$ \$ \$ \$ \$ \$	Init Price (\$) 2,281 2,281 4,356 4,356 8,462 8,462 16,924 12,880 12,880 25,760	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Cost (\$) 2,28 9,12 17,42 21,78 16,92 16,92 12,88 51,52 25,76		
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Pipe Size (in) 18 24 30 36 42 48 48 Dual 54 60 60 Dual 66  Pipe Culvert Headwalls (** Size (in) 54	Quantity (EA)  1 4 4 5 2 2 1 1 1 4 1 1  w/ Wingwalls) Quantity (each)	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Jnit Price (\$) 2,281 2,281 4,356 4,356 8,462 8,462 16,924 12,880 25,760 16,800 Sub Total  Jnit Price (\$)	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Cost (\$) 2,287 9,124 17,424 21,780 16,924 16,924 12,880 51,520 25,760 16,800 208,347		
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# **Briargate Parkway - Stapleton Road Corridor Study Conceptual Drainage Cost Estimate**

### Concrete Box Culverts

Cells - Span x Rise	Quantity	Unit Price			Cost						
(ft)	(each)		(\$)		(\$)		(\$)		(\$)		(\$)
1 - 8 x 12	1	\$	625,058	\$	625,058						
4 - 8.5 x 10	1	\$	2,237,227	\$	2,237,227						
4 - 4.5 x 10	1	\$	1,936,487	\$	1,936,487						
2 - 4 x 12	1	\$	1,428,469	\$	1,428,469						
			Sub-Total	\$	6,227,242						
		C	off-Site Total	\$	8,280,343						

### **ON-SITE DRAINAGE**

ltem	Unit	Quantity	Unit Price	Cost
30" RCP	LF	10450	\$ 200	\$ 2,090,000
Curb Inlet	EA	77	\$ 8,750	\$ 673,750
Conc End Section	EA	17	\$ 2,179	\$ 37,043
FSEDB	EA	17	\$ 73,925	\$ 1,256,725
			On-Site Total	\$ 4,057,518

### **EROSION CONTROL**

Item	Unit	Quantity	U	nit Price	Cost
Permanent Seeding	AC	69	\$	770	\$ 53,130
Mulching	AC	52	\$	1,068	\$ 55,536
Erosion Control Blanket	AC	17	\$	14,520	\$ 246,840
Check Dams	EA	400	\$	821	\$ 328,400
Silt Fence	LF	60000	\$	2	\$ 130,800
Sediment Control Log	LF	6000	\$	7	\$ 42,060
Straw Bale Barrier	EA	400	\$	30	\$ 12,000
Rock Sock	LF	3600	\$	10	\$ 36,000
Inlet Protection	EA	77	\$	72	\$ 5,579
Vehicle Tracking Control	EA	12	\$	2,846	\$ 34,158
Stabilized Staging Area	EA	12	\$	2,500	\$ 30,000
Concrete Washout Area	EA	12	\$	2,324	\$ 27,889
Stockpile Management	EA	12	\$	2,324	\$ 27,889
Top Soil	CY	36736	\$	15	\$ 551,040
		Er	osion C	ontrol Total	\$ 1,581,320

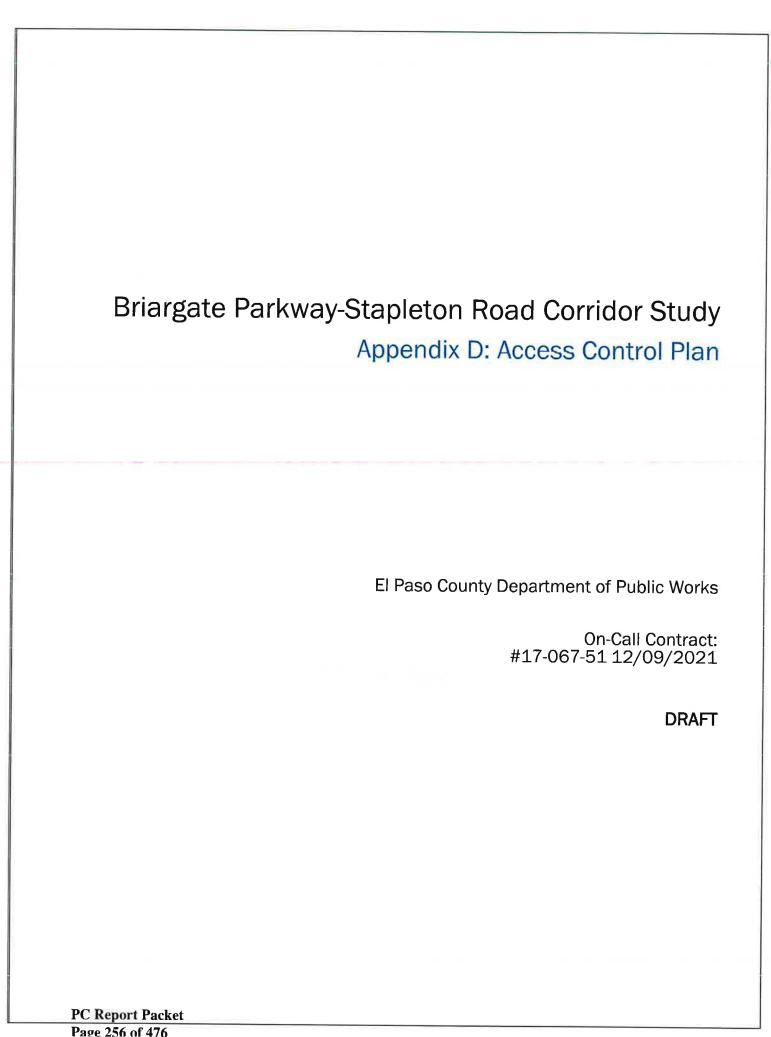
Grand Total \$ 13,919,181

Prepared by



5755 Mark Dabling Boulevard, Suite 220 Colorado Springs, CO 80919 719-520-5800

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# Briargate Parkway-Stapleton Road Corridor Study Appendix D: Access Control Plan



Prepared for

El Paso County Department of Public Works On-Call Contract: #17-067-51

### **DRAFT**

December 9, 2021

Prepared by



5755 Mark Dabling Boulevard, Suite 220 Colorado Springs, CO 80919 719-520-5800

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## List of Abbreviations

Abbreviation Term/Phrase/Name

ACP Access Control Plan

ADT Average Daily Traffic

COS / the City City of Colorado Springs

CPP Corridor Preservation Plan

EB Eastbound

ECM Engineering Criteria Manual

IGA Intergovernmental Agreement

MTCP Major Transportation Corridors Plan

MUTCD Manual on Uniform Traffic Control Devices

NB Northbound

PPACG RTP Pikes Peak Area Council of Governments Regional Transportation Plan

RIRO Right-In/Right-Out

ROW Right-of-Way

SB Southbound

TCM Traffic Criteria Manual

TRB Transportation Research Board

WB Westbound

# **Executive Summary**

## Background

The Briargate Parkway–Stapleton Road (in some locations referred to as Stapleton Drive) corridor is an integral part of a larger transportation system in the Pikes Peak Region. The corridor will ultimately connect I-25 to US Highway 24 on the north side of the greater Colorado Springs area. The portion of this corridor under consideration as part of this study, between Black Forest Road and Meridian Road, is widely undeveloped. Some sections contain existing roadways of various types and phases of construction associated with adjacent development.

### Goals

This study effort coordinates anticipated development and growth in the area with the roadway network. The goals for the project are as follows:

- Provide safe, effective, and efficient access to and from Briargate/Stapleton Road for businesses, residents, and other corridor users.
- Maintain compatibility with existing and proposed off-system connections that provide local circulation to support the Major Transportation Corridors Plan (MTCP).
- Provide a plan that can be adopted by all entities and can be implemented in phases.
- Support the economic viability of the project area.
- Maintain compatibility with local planning efforts.
- Support mobility provisions such as bikes, pedestrians, and public transit.

# **Existing Conditions**

The study area begins at Black Forest Road, the eastern boundary of the Wolf Ranch subdivision, and coincides with the east edge of Colorado Springs. The terminus of the study area is along the Stapleton Road right-of-way (ROW) at Meridian Road. There are significant amounts of development occurring in this rapidly developing area of the city and the county. The length of the corridor is about 5.5 miles.

The surrounding area is widely vacant, although there are pockets of urban and rural residential developments and multiple development proposals for additional residential units. The corridor ends at Meridian Road. Adjacent planned developments include Wolf Ridge, Eagle Wing, Wolf Ranch, Highland Park, Eagle Rising, Wild Ridge, Sterling Ranch, Sterling Ranch Homestead, Indian Wells, The Ranch, Stapleton Estates, The Meadows, and Paint Brush Hills.

### Recommendations

After evaluating both existing and proposed conditions, the plan limits full-movement access to major intersections spaced approximately one-half mile apart. Minor intersections are limited to right-in/right-out (RIRO) access, limiting opportunities to make left turns onto the highway. Traffic control measures include raised medians, driveway channelizing islands at limited-access points, and signing and striping.

Full-movement intersections with potential for future signalization or other traffic control measures have been identified as part of the Access Plan; however, the type of traffic control is not specified. Potential traffic control may include stop signs, traffic signals, roundabouts, interchanges, and other traffic control devices recognized by the *Manual on Uniform Traffic Control Devices* (MUTCD). Where warranted per current MUTCD standards, traffic signals may be implemented when funding is available.

## 1 Introduction and Overview

El Paso County (EPC or the County) has completed the Briargate Parkway – Stapleton Road Corridor Preservation Plan (CPP). The CPP establishes the necessary framework for future connection of the corridor between Meridian Road and Black Forest Road, including the centerline alignment, the ultimate roadway section, an environmental overview, conceptual roadway and drainage design, and this Access Control Plan (ACP).

The Briargate Parkway–Stapleton Road (in some locations referred to as Stapleton Drive) corridor is an integral part of a larger planned transportation system in the Pikes Peak Region. The corridor will ultimately connect I-25 to US Highway 24 on the north side of the greater Colorado Springs area. The portion of the corridor that is under consideration as part of this study, between Black Forest Road and Meridian Road, is generally rural in character and is not developed in most areas. Some sections contain existing roadway of varying configurations and phases of construction associated with adjacent development.

# 1.1 Project Summary

The study area (Figure 1) begins at Black Forest Road, the eastern boundary of the Wolf Ranch subdivision, and coincides with the east edge of Colorado Springs. The terminus of the study area is along the Stapleton Road right-of-way (ROW) at Meridian Road. There are significant amounts of development occurring in this rapidly developing area of the city and the county.

Most of the corridor currently falls under the County's jurisdiction; however, it will likely be incorporated into the city of Colorado Springs as development progresses. Close coordination will be required with the City of Colorado Springs (the City or COS) throughout the project. The County had previously developed an Access Management Plan and a Master Plan for the area as part of its ongoing development.

This corridor is expected to play an essential role in the region's mobility and connectivity by providing a northern connection from I-25 to US Highway 24. The proposed corridor cross section will include a four-lane section with shoulders, turn lanes, and pedestrian/bicycle facilities. These facilities will improve the mobility of motorists, transit, bicycles, and pedestrians.

# 1.2 Project Goals

This study effort coordinates anticipated development and growth in the area with the roadway network. The goals for the project are as follows:

- Provide safe, effective, and efficient access to and from Briangate/Stapleton Road for businesses, residents, and other corridor users.
- Maintain compatibility with existing and proposed off-system connections that provide local circulation to support the Major Transportation Corridors Plan (MTCP).
- Provide a plan that can be adopted by all entities and can be implemented in phases.
- Support the economic viability of the project area.
- Maintain compatibility with local planning efforts.
- Support mobility provisions such as bikes, pedestrians, and public transit.

## 1.3 Existing Conditions

The length of the corridor is about 5.5 miles. The project area within the ROW, excluding potential drainage or construction easements, is about 116 acres. The current Briargate Parkway west of the project area (in Wolf Ranch subdivision) has a posted speed limit of 35 mph. East of the project area on Stapleton Road, the

speed limit is posted at 45 mph. The portion of the corridor that is not currently greenfield is paved with asphalt pavement.

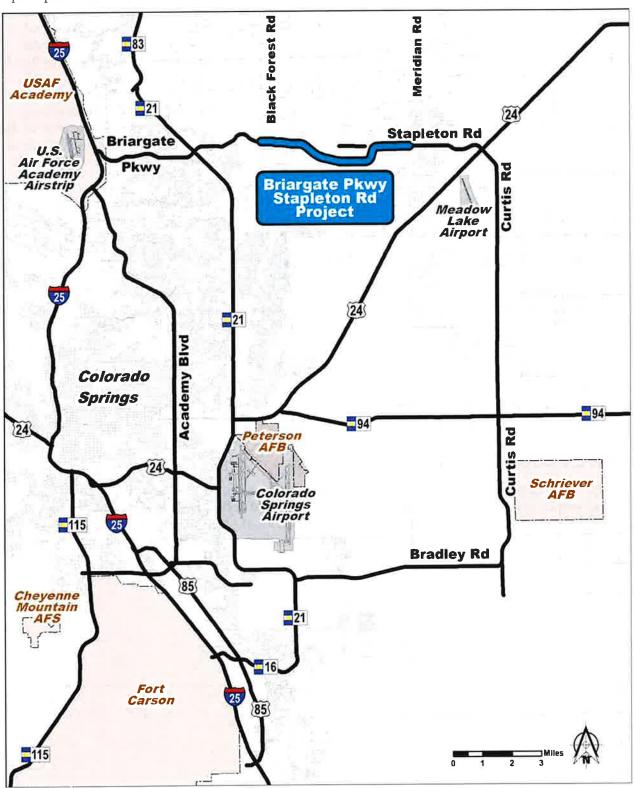


Figure 1. Study Area Vicinity Map

El Paso County Department of Public Works

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### Appendix D: Access Control Plan

The surrounding area is widely vacant, although there are pockets of urban and rural residential developments and multiple development proposals for additional residential units. Primarily large-lot (2.5 ac) residential developments exist along the westernmost section of the corridor from Black Forest Road to Cottonwood Creek. The corridor aligns with the existing Briargate Parkway in this area. Continuing from Cottonwood Creek to Vollmer Road, the corridor turns southeast and has other large-lot developments currently under construction, as well as some undeveloped land. The corridor then runs through the proposed Sterling Ranch development, consisting of primarily residential areas along the corridor (ranging from 3–5 to 5–8 dwelling units per acre) and commercial areas. Part of this Plan is currently under construction at Vollmer Road. The corridor continues east and then north across undeveloped land and finally turns east to align with existing Stapleton Road. There are existing single-family residential lot (0.5 ac or less) developments along most of the north part of the corridor in this location and large-lot residential or undeveloped land to the south. There is a large undeveloped lot in the northwest quadrant of Stapleton Road and Meridian Road. The corridor ends at Meridian Road.

Drainage is accommodated with an open system. The corridor is in the Cottonwood Creek, Sand Creek, and Falcon drainage basins through this area. The Cottonwood Creek basin generally drains southwest, and the Sand Creek basin and its tributaries drain south and southwest. The Falcon basin drains southeast.

Overhead utilities exist on the north side of Stapleton Road, west of Meridian Road to just east of Scenic Brush Drive in the Scenic View at Paint Brush Hills subdivision. There are several locations where overhead utilities cross the corridor: at Black Forest Road, at Vollmer Road, and at Meridian Road, and there is an electric transmission line crossing west of Towner Road. Underground utilities may exist at some locations in the project area where development has occurred adjacent to the corridor. Utility easements likely exist along all platted parcels even if actual utilities are not present.

# 1.4 Traffic Analysis

Traffic analysis and future traffic projections are detailed in the Traffic Analysis Report (Wilson and Company, June 2021) in Appendix B.

### 1.4.1 Access Needs and Impacts

Multiple developments have submitted filings along this corridor and are in various approval, construction, and completion stages. The corridor alignment took these planned developments under consideration. Adjacent planned developments include the list below. Locations of selected existing platted subdivisions and active filings are shown in **Figure 2**, along with the roadway alignment and future proposed and potential (not required to serve submitted development plans as of October 2021) access locations.

- Wolf Ridge
- Eagle Wing Estates
- Wolf Ranch
- Highland Park
- Eagle Rising
- Wild Ridge
- Sterling Ranch

- Sterling Ranch
- Indian Wells
- The Ranch
- Stapleton Estates
- The Meadows
- Paint Brush Hills

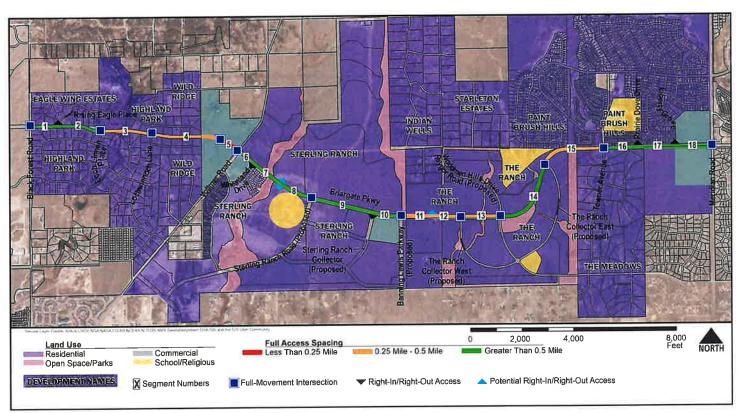


Figure 2. Corridor Land Use and Planned Developments

El Paso County Department of Public Works

PC Report Packet Page 265 of 476

# 2 Access Management

The State of Colorado State Highway Access Code, last updated March 2002 Section 2.12, states that a local authority may develop an ACP for a road segment that defines access locations and type. Creating an ACP allows the local authorities to plan all access points along a roadway segment as a network rather than at individual access locations. Intersection spacing, traffic movements, land use, topography, and other local plans may be considered in developing an ACP. The

ACCESS MANAGEMENT IS THE
COORDINATED PLANNING, REGULATION,
AND DESIGN OF ACCESS BETWEEN
ROADWAYS AND LAND DEVELOPMENT.
IT INVOLVES THE SYSTEMATIC CONTROL
OF THE LOCATION, SPACING, DESIGN, AND
OPERATION OF DRIVEWAYS, MEDIAN
OPENINGS, INTERCHANGES, AND STREET
CONNECTIONS TO A ROADWAY.

Access Management Manual, TRB, Second Edition 2014

plan does not define capacity improvements, off-network improvements, or funding sources for access improvements. The It is a long-range planning tool that identifies access conditions implemented as development occurs. The local authorities adopt ACPs through an intergovernmental agreement (IGA).

### 2.1 Benefits

An ACP provides a framework to ensure that future development and access will not affect the roadway's functionality. This is particularly relevant to arterial roads as it can allow for more continuous traffic movement and reduce delays due to intersection or turning movements. Access management has several benefits:

- Improves Safety Fewer decision points and conflict points.
- Accommodates Travel Demand Strategically limits entrance/exit point, reduces congestion, and lessons travel times.
- Preserves Economic Viability Captures a broader market by providing a consistent development environment, allowing for easy access to businesses and residential areas.
- Enhanced Aesthetics Defined sidewalks and medians provide opportunities for streetscaping.

## 2.2 Implementation

The El Paso County Engineering Criteria Manual (ECM) has guidance for the minimum intersection spacing required, based on the roadway classification. Since this is essentially a new corridor, multiple developments have submitted filings along the corridor and are in various approvals, construction, and completion stages. An ACP benefits this corridor by limiting the amount and type of access made to the corridor, per the ECM requirements.

All current development filings have been examined, and the access for those developments has been studied. The study results indicate that the currently proposed intersections should be implemented either as full-access or right-in/right-out (RIRO) intersections as detailed in **Section 4.2.1**. All future filings should be examined to ensure that they comply with the results of this ACP.

# 3 Existing Access Conditions

Most of the proposed roadway did not exist at the time that this Access Control Plan was developed. Planned/approved future access was identified based on development plans filed with the County. Additionally, public and stakeholder input collected through virtual meetings held with stakeholders and a Virtual Public Open House that was hosted on the project website and via a project website. The project website includes an integrated reference library, a comment form, and an interactive comment map. Comments that identified recommendations and concerns relating to corridor access and other pertinent issues were considered as part of the planning process. A full range of improvement alternatives was then developed, evaluated, and iteratively refined to provide preferred recommendations for:

- Local and Regional Mobility
- Roadway Alignment and Cross-Section
- Intersection Layout and Control
- Access Management and Connectivity
- Roadway Drainage

The corridor currently falls under County jurisdiction; however, it is anticipated that with the development occurring, much of the area along the corridor may be annexed into the City of Colorado Springs in the future. As such, the City of Colorado Springs design criteria was also considered.

# 3.1 Design Criteria: Four-Lane Principal Arterial

The 2016 MTCP designates the Briargate/Stapleton Corridor as a four-lane principal arterial. The current speed limit west of the project area (in Wolf Ranch Subdivision, Colorado Springs) is 35 mph, which is inconsistent with the City's classification of the roadway as a principal arterial. The current speed limit east of the project area (at Meridian Road, in El Paso County) is 45 mph, consistent with the County's classification of the roadway as an urban principal arterial.

The ultimate section developed for the corridor, as shown in **Figure 3**, will resemble the City of Colorado Springs typical section with 11' thru lanes in each direction and a 6' outside shoulder to provide a shared facility for bicycles, and a 6' detached sidewalk ensures increased pedestrian safety. The design criteria for the Ultimate section are shown in **Table 1**.

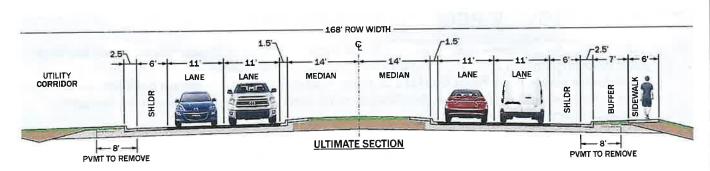


Figure 3. Ultimate Hybrid Section

Table 1. Ultimate Roadway Design Criteria for 4-Lane Principal Arterials					
Ultimate					
Design Speed/Posted Speed	50/45	Sidewalk Width (at flowline)	6' detached		
Clear Zone	n/a	Design ADT	40,000		
Minimum Centerline Curve Radius	930'1	Design Vehicle	WB-67		
Trip Length	1-2 miles	Bike Lakes Permitted	6' Multi-Use Shoulder		
Number of Thru Lanes	4	Tree Lawn Width	7'		
Lane Width	11	Access	Full Control		
Right-of-Way	168'	Intersection Spacing	½ mile (signalized) ¼ mile (unsignalized)		
Paved Width	28 <sup>12</sup> (excluding gutter pan)	Parking Permitted	No		
Median Width	31' (including curb & gutter)	Minimum Flowline Grade of Curb	0.50%		
Outside Shoulder Width	6' (excluding gutter)	Centerline Grade (Min.– Max.)	0.5-6%		
Inside Shoulder Width	n/a	Intersection Grades (Min.– Max)	0.5-3%		
Required Curb/Gutter Type	6" vertical	Intersection Sight Distance	500'		

Assumes 4% superclevation, 6% for 70 MPH design speeds.

Sources: Data from El Paso County, Engineering Criteria Manual, Chapter 2, "Transportation Facilities, Table 2-4: Roadway Design Standards for Rural Expressways and Arterials and Table 2-6: Roadway Design Standards for Urban Expressways and Arterials,, last modified October 14, 2020, https://library.municode.com/co/el\_paso\_county/codes/engineering\_criteria\_manual\_?nodeld=ENCRMA\_C

H2TRFA: City of Colorado Springs, Traffic Criteria Manual, Section 16, "Table of Traffic Engineering Design Standards," Table 10 Traffic Engineering Design Standards (Freeways, Expressways and Arterials), p.39. https://coloradosprings.gov/sites/default/files/images/traffic\_criteria\_manual.pdf.

# 3.2 Roadway Access

Table 2 shows the intersections and characteristics of existing segments of Briargate Parkway and Stapleton Road (Stapleton Drive in some locations) between Black Forest Road and Meridian Road. Among the existing cross streets, Black Forest Road and Meridian Road currently have functional classifications that are equal to or higher than the functional classifications of the currently existing segments of the Briargate Parkway—Stapleton Road project corridor.

# 3.3 Existing and Proposed Access Descriptions

The existing condition of each access—intersecting roads, driveways, and field gates—along the entire length of the Briargate Parkway–Stapleton Road project corridor are described below. The ultimate access conditions are also described consistent with applicable design criteria and, if necessary, the interim plan prior to implementing the final design. Plan sheets showing modifications to existing access and proposed access and survey stationing are included as **Attachment A**.

<sup>&</sup>lt;sup>2</sup>Pavement width in each direction for divided roadways:

### Appendix D: Access Control Plan

Gated field access points will be closed if the subdivision plat does not specify that a parcel is to have access to Briargate Parkway–Stapleton Road or if the parcel already has alternative access. Field access for deeded parcels without a current access will remain, and the gate's location will be noted as the "future access" for that property. It is anticipated that any existing or planned field gates providing access to utilities will remain.

### Station 200+00 North/South: Black Forest Road

- Existing: This access, known as Black Forest Road, currently exists as a T-intersection that connects to existing Briargate Parkway and extends east from Black Forest Road. The existing intersection operates under two-way stop control. Black Forest Road is a two-lane minor arterial at this intersection and existing Briargate Parkway is a two-lane collector with no driveway access.
- Ultimate: Black Forest Road will be widened to four lanes. It will remain a minor arterial to the north of this intersection and will be upgraded to a principal arterial classification to the south of this intersection. The ultimate Briargate Parkway section at this location will be a four-lane principal arterial extending to the east and west, and this intersection will become a full-movement signalized intersection.

### Station 211+00 North: Rising Eagle Place

- Existing: This access, known as Rising Eagle Place, currently exists as a dogleg connection between the existing Briargate Parkway, east of Back Forest Road and Rising Eagle Place. Both Briargate Parkway and Rising Eagle Place currently exist as local residential streets. Rising Eagle Place has direct driveway access.
- Ultimate: The ultimate Briargate Parkway section at this location will extend to the east and to the west as a four-lane principal arterial. A future T-intersection access (to the north) at Rising Eagle Place will have RIRO only access.

#### Station 227+60 South: Loch Linneh Place

- Existing: Loch Linneh Place currently terminates as a cul-de-sac that is coincident with the proposed
  future alignment of Briargate Parkway—Stapleton Road, and a field access connects to the cul-de-sac
  from the north. Loch Linneh Place is a two-lane residential street/collector that indirectly connects
  to Black Forest Road and Vollmer Road via Forestgate Road and Forestgate Road/Lochwinnoch
  Lane, respectively.
- Ultimate: The ultimate Briargate Parkway section will be a four-lane principal arterial, and the future T-intersection (to the south) at Loch Linneh Place will have RIRO-only access. The field access will be closed.

### Station 247+50 North/South: Lochwinnoch Lane

- Existing: Lochwinnoch Lane is a two-lane residential street/collector that connects to Black Forest Road and Vollmer Road via Forestgate Road and Forestgate Road/Lochwinnoch Lane, respectively.
- Ultimate: The ultimate Briargate Parkway section will be a four-lane principal arterial, and the future intersection at Lochwinnoch Lane will be a full-movement intersection. The ultimate configuration of the future Briargate Parkway—Stapleton Road/Lochwinnoch Lane intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

### Station 267+00 North/South: Proposed Commercial Collector

- Existing: Neither the Briargate Parkway–Stapleton Road nor the proposed commercial collector currently exists at this location.
- Ultimate: Access at this location will serve anticipated commercial development to the north and south of the future Briargate Parkway–Stapleton Road. The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial, and the yet-unnamed proposed commercial

### Appendix D: Access Control Plan

collector will be a three-lane commercial collector. The ultimate configuration of the future full-movement Briargate Parkway–Stapleton Road/commercial collector intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

#### Station 282+50 North/South: Vollmer Road

- Existing: Vollmer Road currently exists as a two-lane minor arterial that extends diagonally from Black Forest Road and then north to Hodgen Road. A "pioneer" segment of proposed Briargate Parkway—Stapleton Road exists as a four-lane principal arterial that extends east from Vollmer Road to a terminus at Wheatland Drive.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. Vollmer Road will remain a two-lane minor arterial at this intersection.

### Station 290+00 South: Proposed Wheatland Drive

- Existing: Existing Briargate Parkway—Stapleton Road extends east from Vollmer Road to a terminus at Wheatland Drive. Wheatland Drive is a two-lane commercial collector with a connection to Vollmer Road via Dines Boulevard.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. The ultimate T-intersection at Wheatland Drive (access from the south) will have RIRO-only access.

### Station 316+40 South: Proposed Sterling Ranch Road

- Existing: Neither Briargate Parkway–Stapleton Road nor the proposed Sterling Ranch Road collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial. Proposed Sterling Ranch Road will be a three-lane non-residential collector. The ultimate intersection at proposed Sterling Ranch Road (access from the south) will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

### Station 341+20 South: Proposed Sterling Ranch Collector

- Existing: Neither Briargate Parkway—Stapleton Road nor the yet-unnamed proposed Sterling Ranch collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial and the yet-unnamed proposed Sterling Ranch collector will be a two-lane non-residential collector. The ultimate T-intersection (access from the south) at this location will have RIRO-only access.

### Station 352+00 South: Proposed Banning Lewis Parkway

- Existing: Neither the Briargate Parkway–Stapleton Road nor proposed Banning Lewis Parkway currently exists at this location. ROW for Banning Lewis Parkway to the south of Woodmen Road was dedicated as part on the annexation of Banning Lewis Ranch to the City of Colorado Springs. Since the annexation, ownership of the development has changed hands several times.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. Proposed Banning Lewis Parkway has been included in the Pikes Peak Area Council of Governments Regional Transportation Plan (PPACG RTP) as a four-lane expressway; however, the Banning Lewis Parkway extension north of Woodmen Road is not included in the current, 2045 PPACG RTP. The ultimate intersection at proposed Banning Lewis Parkway (access from the south) will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

### Station 375+20 South: Proposed "The Ranch" Collector West

- Existing: Neither Briargate Parkway–Stapleton Road nor the yet-unnamed proposed west "The Ranch" collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial and the yet-unnamed proposed west collector that will serve The Ranch will be a two-lane residential collector. The ultimate T-intersection (access from the south) at this location will have RIRO only access.

### Station 390+50 North/South: Woodmen Hills Drive-Raygor Road

- Existing: Neither Briargate Parkway–Stapleton Road nor the proposed extended Raygor Road collector connections to the corridor currently exist at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial. The Raygor Road access will be created within The Ranch via extensions of existing Raygor Road to the south (along a new alignment) and the extension of Woodman Hills Drive to the west (see Figure 4) and will be a two-lane collector. The proposed Woodman Hills Drive-Raygor Road access will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

### Station 420+25 North: Proposed "The Ranch" Collector East

- Existing: Neither Briargate Parkway—Stapleton Road nor the yet-unnamed proposed east "The Ranch" collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial
  and the yet-unnamed proposed east collector that will serve The Ranch will be a two-lane residential
  collector. The ultimate T-intersection (access from the south) at this location will have RIRO-only
  access.

#### Station 445+60 North/South: Towner Avenue

- Existing: Stapleton Drive currently exists as a two-lane minor arterial east of this intersection and is closed west of this intersection. Existing Towner Avenue is a two-lane non-residential collector north of this intersection and a residential collector with driveway access (The Meadows) to the south of the intersection. The existing full-movement intersection operates under two-way stop control.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. The ultimate intersection at Towner Avenue will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

### Station 459+00 North: Prairie Dove Drive

- Existing: Stapleton Drive currently exists as a two-lane minor arterial at this location and Prairie Dove Drive is a two-lane local street with alternative ingress/egress route available. The existing full-movement, T-intersection at this location operates under two-way stop control.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal
  arterial. The ultimate t-intersection at Prairie Dove Drive (access from the north) will be restricted to
  RIRO-only access.

#### Station 472+50 North: Liberty Grove Drive

- Existing: Stapleton Drive currently exists as a two-lane minor arterial at this location and Liberty Grove Drive is a two-lane local street with alternative ingress/egress routes available. The existing full-movement, T-intersection at this location operates under two-way stop control.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. The ultimate T-intersection at Liberty Grove Drive (access from the north) will be restricted to RIRO-only access.

### Station 488+00 North/South: Meridian Road

- Existing: Stapleton Drive currently exists as a two-lane minor arterial at this location, and Meridian Road exists and a four-lane principal arterial. The existing full-movement intersection at this location is signalized.
- Ultimate: Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal
  arterial, and Meridian Road will remain a four-lane principal arterial to the north but will be widened to
  six lanes to the south (to Woodmen Road). This intersection will remain a full-movement signalized
  intersection.

# 3.4 Analysis of Existing/Planned Access Spacing

An analysis of the spacing between existing and proposed access locations was performed to evaluate and support ACP development. Based on both EPC and COS design standards, principal arterial full-access intersections should be spaced at ½ mile (2,640'), with COS allowing unsignalized intersections to be spaced at ¼ mile (1,320') increments. Access spacing for existing and proposed full-access, potentially signalized intersection locations are summarized in **Table 2** below and in **Figure 4** on the following page.

Table 2. Full-Access Intersection Spacing					
Western Road	Eastern Road	Full-Access Spacing			
Black Forest Road	Rising Eagle Place (RIRO Access)				
Rising Eagle Place	Loch Linneh Place	2,775' (0.52 mi.)			
Loch Linneh Place	Lochwinnoch Lane	1,975' (0.37 mi.)			
Lochwinnoch Lane	Commercial Collector (proposed)	2,525' (0.48 mi.)			
Commercial Collector (proposed)	Vollmer Road	1,000' (0.19 mi.)			
Vollmer Road	Wheatland Drive (RIRO Access)				
Wheatland Drive (RIRO Access)	Potential Access (limited to RIRO)	3,375' (0.64 mi.)			
RIRO Access (potential)	Sterling Ranch Road (proposed)				
Sterling Ranch Road (proposed)	Sterling Ranch Collector (proposed RIRO)	2 5501/2 67			
Sterling Ranch Collector (proposed RIRO)	Banning Lewis Parkway (proposed)	3,550¹ (0.67 mi.)			
Banning Lewis Parkway (proposed)	Potential Access (limited to RIRO)	0.0001/0.44			
RIRO Access (potential)	The Ranch Collector West (proposed)	2,330' (0.44 mi.)			
The Ranch Collector West (proposed)	Woodmen Hills Dr./Raygor Rd. (proposed)	1,550' (0.29 mi.)			
Woodmen Hills Dr./Raygor Rd. (proposed)	The Ranch Collector East (proposed)	3,000' (0.57 mi.)			
The Ranch Collector East (proposed)	Towner Avenue	2,525' (0.48 mi.)			
Towner Avenue	Prairie Dove Drive (RIRO)				
Prairie Dove Drive (RIRO)	Liberty Grove Drive (RIRO)	4,250' (0.80 mi.)			
Liberty Grove Drive (RIRO)	Meridian Road				
		-			

Note: Roads in italics are currently unnamed roads. Spacing is show between full-access locations only.

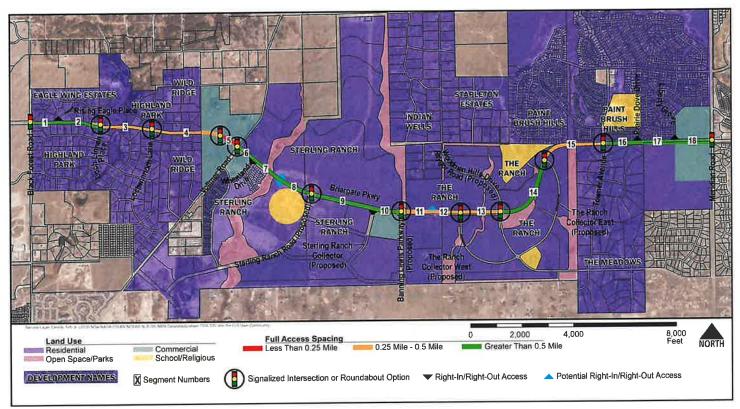


Figure 4. Access Locations and Intersection Access Restrictions

El Paso County Department of Public Works

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# 3.5 Access Control Planning Framework

# 3.5.1 Access Control Guidelines and Design Criteria

Both the EPC ECM and the COS *Traffic Criteria Manual* (TCM) permit intersections along a principal arterial to be spaced at ½ mile intervals. EPC does not allow access to principal arterials between intersections. COS allows for one access drive per property ownership, which may be jointly shared with adjacent properties. COS permits median cuts at a spacing between a ¼ mile and a ½ mile at major or significant street intersections.

The Transportation Research Board (TRB) Access Management Manual, Second Edition identifies 10 "Principles of Access Management":

- 1. Provide a specialized roadway system.
- 2. Limit direct access to major roadways.
- 3. Promote intersection hierarchy.
- Locate signals to favor through movements.
- 5. Preserve the functional area of intersections and interchanges.
- 6. Limit the number of conflict points.
- 7. Separate conflict areas.
- 8. Remove turning vehicles from through-traffic lanes.
- 9. Use non-traversable medians to manage left-turn movements.
- 10. Provide a supporting street and circulation system.

## 3.5.2 Proposed Roadway Section and Intersection Layout

Channelized turn lanes are planned at all corridor intersections to reduce delays and improve corridor safety. The anticipated number of required dedicated turn lanes at each access location varies depending on the existing and forecast turn and mainline traffic flow volumes. Because roundabout and signalized alternatives will be considered during preliminary and final design, intersection layouts may be modified for roundabout alternatives.

Access intersections at Black Forest Road and Vollmer Road will require interim and ultimate configurations that can accommodate future dual left-turn lanes. Initially, the intersections will be striped with one left-turn lane and 200 feet of storage in the eastbound/westbound (EB/WB) directions. The pavement width at these access locations will be constructed to accommodate addition of a second left-turn lane when volumes increase to levels that warrant dual left-turn lanes. Consistent with the City if Colorado Springs Black Forest Road Corridor Plan, dual left-turn lanes with 205 feet or storage are planned for the northbound (NB) approach and dual left-turn lanes with 225 feet of storage are planned for the southbound (SB) approach. The Vollmer Road NB/SB approaches will each have one left-turn lane with a storage capacity of 100 feet.

<sup>&</sup>lt;sup>1</sup> Transportation Research Board, Access Management Manual Second Edition, 2014, p. 6-10.

### Appendix D: Access Control Plan

Traffic forecasts for Loch Linneh Place and Lochwinnoch Lane indicate that dedicated left-turn lanes will not be required on the cross-street approaches from either of these roadways. Mainline traffic forecasts indicate that single EB/WB dedicated left-turn lanes with 200 feet of storage will be adequate to serve both near-term and long-term Briargate Parkway–Stapleton Road mainline traffic flows at these access locations.

Traffic forecasts for the yet-unnamed proposed Commercial Collector (west of Vollmer Road), Woodmen Hills Drive/Raygor Road and Towner Avenue access intersections indicate that single NB/SB left-turn lanes with 100 feet of storage will be adequate to serve both near-term and long-term traffic flows. Mainline traffic forecasts indicate that single EB/WB dedicated left-turn lanes with 200 feet of storage will be adequate to serve both near-term and long-term Briargate Parkway—Stapleton Road mainline left-turn traffic flows at these access locations.

It is expected that Meridian Road will maintain the existing left-turn lane configuration for the NB/SB directions.

Traffic forecasts for Sterling Ranch Road (proposed), Banning Lewis Parkway (proposed), The Ranch Collector West (proposed), and The Ranch Collector East (proposed) indicate that a NB left-turn lane with 100 feet of storage will be required to serve near-term and long-term traffic flows. Mainline traffic forecasts indicate that single WB dedicated left-turn lanes with 200 feet of storage will be required to serve Briargate Parkway—Stapleton Road mainline left-turn traffic flows at these access locations. No northern leg is planned for any of these intersections at this time.

There will not be any left turns from the Briargate Parkway–Stapleton Road mainline to Rising Eagle Place, Wheatland Drive (proposed), Sterling Ranch Collector (proposed), Liberty Grove Drive, and Prairie Dove Drive. Each of these intersections will be restricted to only RIRO access. Additionally, Prairie Dove Drive and Liberty Grove Drive may be closed in the ultimate configuration to ensure adequate traffic flow. Alternative access is available to traffic that would use these intersections.

### 4 Access Control Plan

Access control alternatives, including access restrictions, were evaluated to preserve the roadway's planned functionality. Parcels and subdivisions were grouped by access commonalities to identify locations where direct access to the ultimate Briargate Parkway–Stapleton Road facility would be required.

## 4.1 Analysis of Access Alternatives

Existing and proposed access point locations were reviewed for compatibility with current County criteria. These alternatives were developed considering the connectivity of existing and proposed access points to developed neighborhoods and individual ownership parcels. Access closures were proposed only where alternative access was/could be provided. Most intersections along this corridor have alternatives available as indicated in **Figure 4** in section 3.3 above. This section includes information about channelized lanes that will be required for future signalized intersections. The ultimate configuration of selected accesses/ intersections will be determined as part of preliminary and final design and will consider both signalized intersection and modern roundabout alternatives.

A "no-build" option was not an alternative considered for this corridor. Briargate Parkway–Stapleton Road does not currently exist along most of the corridor alignment, and the approved, planned development requires a "build" alternative to ensure that the road will meet the planned classification and function. Additionally, the project segment is an integral part of the planned regional transportation system network.

Based on public and stakeholder input collected via the project website, issues were identified and considered. A full range of improvement alternatives was then developed, evaluated, and iteratively refined. Benefits and impacts of potential closures, if any, were identified and then evaluated. Four access management concepts were presented to stakeholders and the public through the project website.

Additional review of the operational benefits of selected access closures and the effectiveness of using access management tools in lieu of access closures was undertaken. Based on analysis findings, final access management strategies recommended for use on the corridor include intersection and mainline improvements to implement 5 of the 10 TRB access management principles, as follow below:

- 1. Remove left-turns from through traffic lanes.
- 2. Limitthe number of conflict points.
- 3. Separate conflict areas.
- 4. Manage left-turn movements.
- 5. Use non-traversable medians to enforce turn restrictions.

### 4.2 Access Control Recommendations

This Access Control Plan has been developed with participation from El Paso County, the City of Colorado Springs, and the public. After evaluating both existing and proposed conditions, the plan limits full-movement access to major intersections spaced approximately one-half miles apart. Minor intersections are limited to RIRO, limiting opportunities to make left turns onto the highway. Traffic control measures include raised medians, driveway channelizing islands at limited-access points, and signing and striping.

### 4.2.1 Location-Specific Recommendations

Specific recommendations for access points in the corridor are summarized by segments in **Table 3**. Full-movement intersections with potential for future signalization and other traffic control measures have been identified as part of the Access Control Plan; however, the types of traffic control devices are not specified.

### Appendix D: Access Control Plan

Traffic control will be evaluated on a case-by-case basis as future conditions warrant. Potential traffic control measures may include two-way stop control, traffic signals, roundabouts, and other traffic control devices recognized by the *Manual on Uniform Traffic Control Devices* (MUTCD). Where warranted per current MUTCD standards, traffic signals may be implemented when funding is available.

Eastem Road	Intersection Layout	Access Closed	RIRO Intersection	Signalized Intersection	Roundabout Intersection
Black Forest Road	4 Legs			✓	
Rising Eagle Place	3 Legs		✓		
Loch Linneh Place	3 Legs			✓	✓
Lochwinnoch Lane	4 Legs			✓	✓
Commercial Collector (proposed)	4 Legs			✓	✓
Vollmer Road	4 Legs			<b>√</b>	✓
Wheatland Drive (proposed)	3 Legs		<b>✓</b>		
Sterling Ranch Road (proposed)	3 Legs			✓	✓
Sterling Ranch Collector (proposed)	3 Legs		✓		
Banning Lewis Parkway (proposed)	3 Legs			✓	✓
The Ranch Collector West (proposed)	3 Legs			✓	✓
Woodmen Hills Drive/Raygor Road (proposed)	4 Legs			<b>✓</b>	✓
The Ranch Collector East (proposed)	3 Legs			✓	✓
Towner Avenue	4 Legs			✓	✓
Prairie Dove Drive	3 Legs	✓			
Liberty Grove Drive	3 Legs	✓	✓		

Notes:

### 4.2.1.1 Full-Movement Intersections

Black Forest Road, Lochwinnoch Lane, Commercial Collector (proposed), Vollmer Road, Woodmen Hills Drive/Raygor Road (proposed), and Towner Avenue are intended to be full-movement intersections with four legs. Loch Linneh Place currently ends at the proposed location of Briargate Parkway but is proposed to be extended across Briargate, continuing north to tie into Eagle Wing Drive.

Sterling Ranch Road, Banning Lewis Parkway (proposed), The Ranch Collector West (proposed), and The Ranch Collector East (proposed) are intended to be full-movement intersections with three legs. Two of those legs will be Briargate Road, and the third will extend south.

Both ultimate signalized intersection and modern roundabout alternatives will be evaluated during the preliminary design phase for the project. Concepts for each of these intersection alternatives are depicted in **Figure 5**.

<sup>1)</sup> A preferred alternative for the Black Forest Road intersection was selected as part of the Woodmen Road Widening Study.

<sup>2)</sup> Per plat notes, Scenic Brush Access to Stapleton Road is temporary, to be closed when traffic volumes warrant.

<sup>3)</sup> Per plat notes, The Ranch collector loop connection to Stapleton Road may be signalized or constructed as a modern roundabout.

<sup>4)</sup> Roads in italics are currently unnamed.

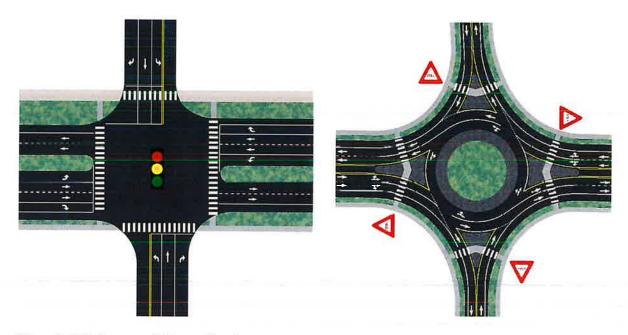


Figure 5. Full-Movement Intersection Concepts

### 4.2.1.2 Right-In/Right-Out Intersections

The intersection at Rising Eagle Place is intended to be converted to RIRO intersection. Wheatland Drive (proposed) and Sterling Ranch Collector (proposed) are not currently constructed and are recommended to be built without full-movement access to the Briargate/Stapleton corridor. If the connections are approved for construction, they are recommended to be RIRO intersections without curb breaks in the median. In addition to these existing and proposed access locations, several potential future RIRO access locations are identified by the Access Control Plan as depicted in Figure 4 in section 3.3 above.

### 4.2.1.3 Intersection Closures

At Prairie Dove Drive and Liberty Grove Drive, the existing full-movement T-intersections will initially

Figure 6. Right-In/Right-Out Intersection Concept

be restricted to RIRO only operations and may be closed in the ultimate configuration to ensure adequate traffic flow. Alternative access is available to traffic that would use these intersections.

### 4.2.2 Future Access Requests

In accordance with the ECM (Chapter 5 "Permits and Inspections," Section 5.4 "Driveway Permit"), all access requests shall be submitted in the form of a permit application and work shall not commence before the permit has been issued. The following criteria must be met:

- Submitted application complies with all applicable requirements of the ECM or an exception approved by the Board of County Commissioners.
- ECM Administrator determines that the access will not create an unsafe condition for the traveling public.
- All required review and permit fees have been paid, and any required surety has been posted.

A property owner seeking to construct a new access must, in advance, apply to the County Development Services Division for approval and obtain an Access/Driveway Permit and a Work in the Right-of-Way Permit; the property owner may also need to clear utilities (if excavation is required) and seek approval of a submitted Traffic Control Plan (if work will interfere with traffic). Permitting requirements are detailed in the ECM.

# 5 Access Control Plan Implementation

## 5.1 Implementation

The Access Control Plan is a long-range planning tool to manage roadway access over time. Any of the following scenarios can trigger the implementation of the plan:

- As property along the corridor develops, any access improvements triggered by that development will need to be consistent with the ACP. (Private Funding)
- El Paso County or the City of Colorado Springs funds improvements to a segment of the roadway.
   (Public Funding)
- State or federal funding is obtained to make a connection in the corridor. (Public Funding)
- An operational issue develops that can be mitigated through techniques described in the ACP.
   (Public Funding)

Once funding has been identified, detailed engineering drawings of the proposed access improvements are required before construction can begin. Details related to storm drainage, utilities, landscaping, environmental issues, pedestrian/bicycle facilities, roadway sections, and other topographic features will be considered during this design process. Environmental evaluations appropriate to the project's size, type, and funding will be completed as part of the design phase.

As part of this ACP, an intergovernmental agreement (IGA) between El Paso County and the City of Colorado Springs has been executed and is included in **Attachment A**. This IGA provides for continued commitment by both parties to implement the modifications identified by this study. As this is a long-range study, the potential for conditions to change is acknowledged. A plan modification process, where both parties agree to the changes, is outlined within the IGA (**Attachment B**).

## 5.2 Phasing

Major corridor funding does not often become available in lump sum packages. As funding does come available, corridor improvements can be broken into standalone phases, for which distinct improvement packages are proposed. Based on required circulation routes, the following segments are recommended:

- Black Forest Road to Vollmer Road (1.55 mi)
   This phase will likely be built first due to the developments in the areas that have already been constructed. The connection between these two arterials will facilitate traffic needs to access these developments. Rising Eagle, Eagle Wing, and Highland Park neighborhoods/developments are adjacent to this segment.
- 2. Vollmer Road to Banning Lewis Parkway (1.30 mi) Phase 2 consists of the segments between Vollmer Road and Banning Lewis Parkway. This entire segment is located within the Sterling Ranch development. It is anticipated that this phase will need to be built contiguously to allow for travel through the development.
- 3. Banning Lewis Parkway to Towner Avenue (1.80 mi)

  The Ranch encompasses most of this phase and will require this segment of Briargate/Stapleton to connect within the development. This phase may be built before, during, or concurrently with the previous phase, depending on which developments begin construction.
- 4. Towner Avenue to Meridian Road (0.80 mi)

  A two-lane roadway exists in this area and is officially outside of this project limits. It will become necessary to upgrade this section of the roadway to match the proposed cross section to the rest of the corridor to ensure efficient and safe travel.

# Attachment A – Recommended Access Locations and Restrictions



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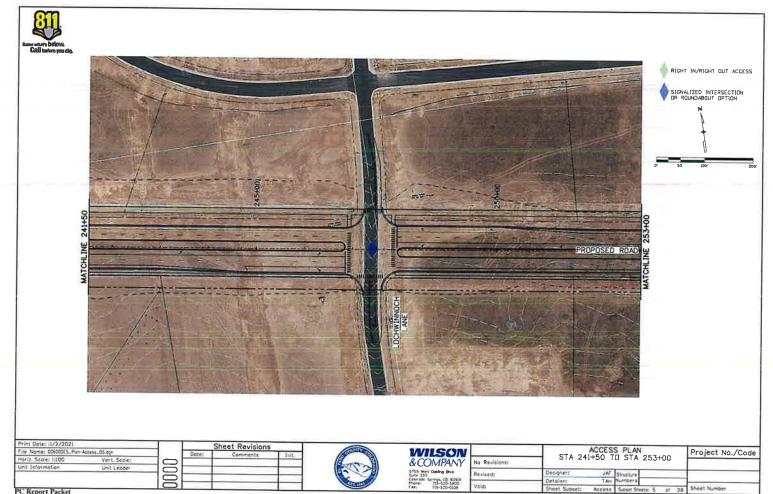
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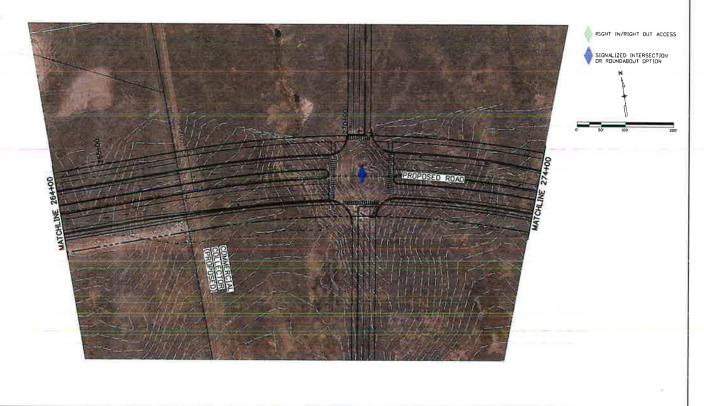


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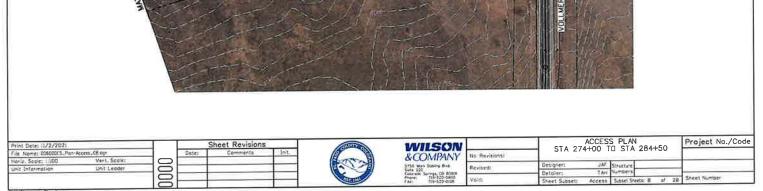
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PROPOSED ROAD

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SIGNALIZED INTERSECTION OR ROUNDABOUT OPTION

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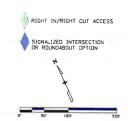


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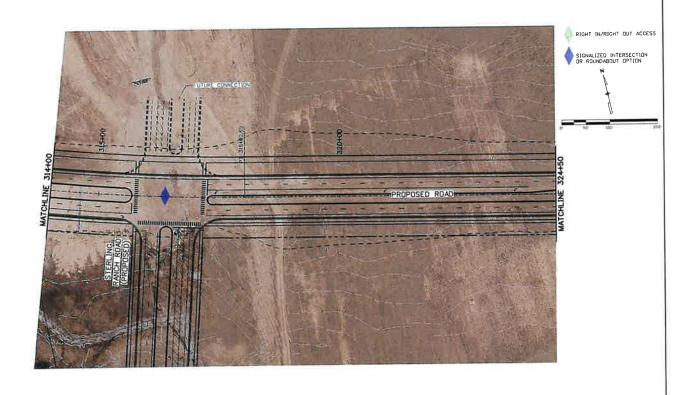
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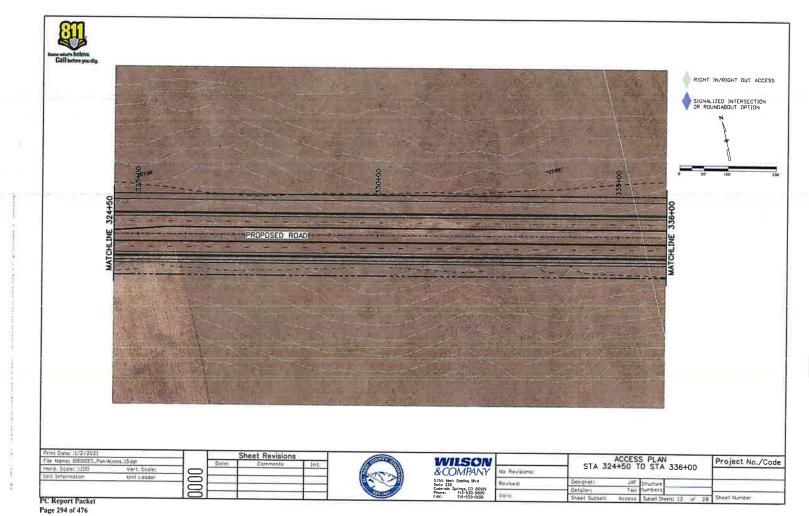
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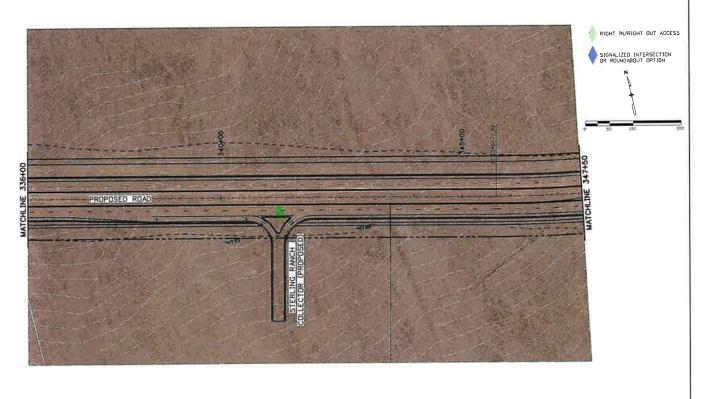




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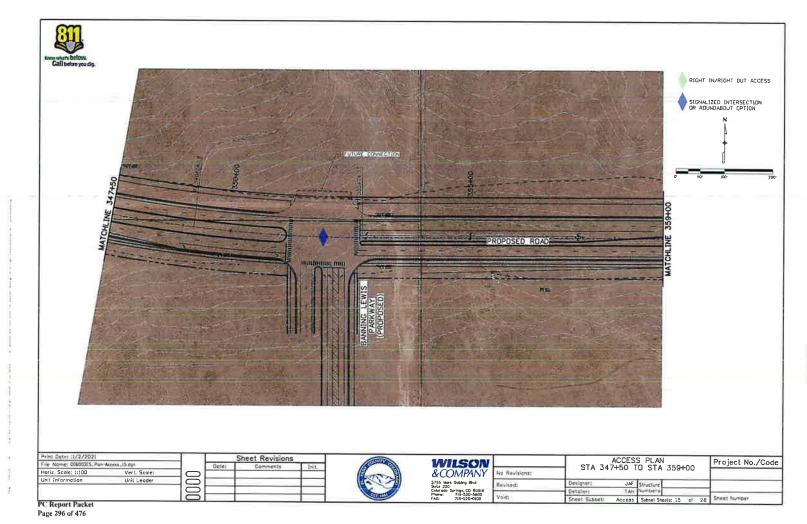
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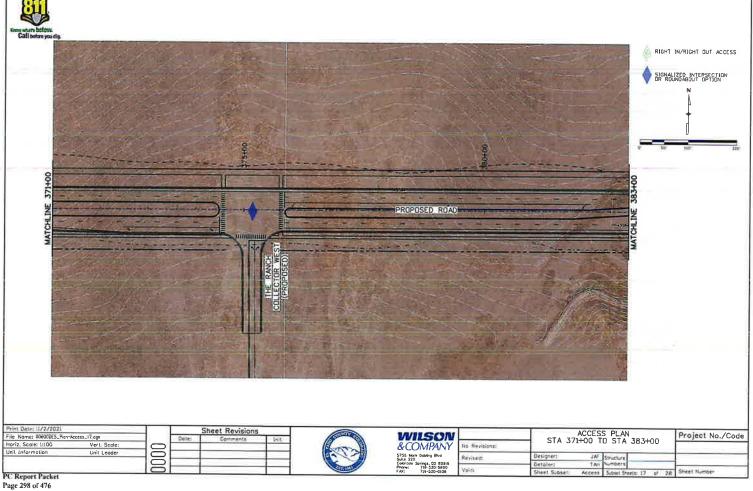
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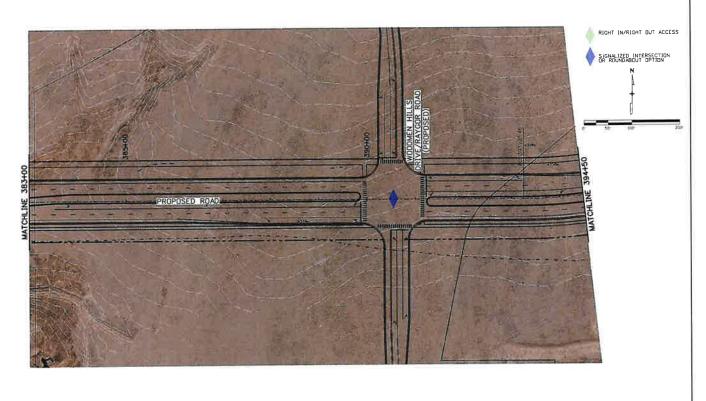
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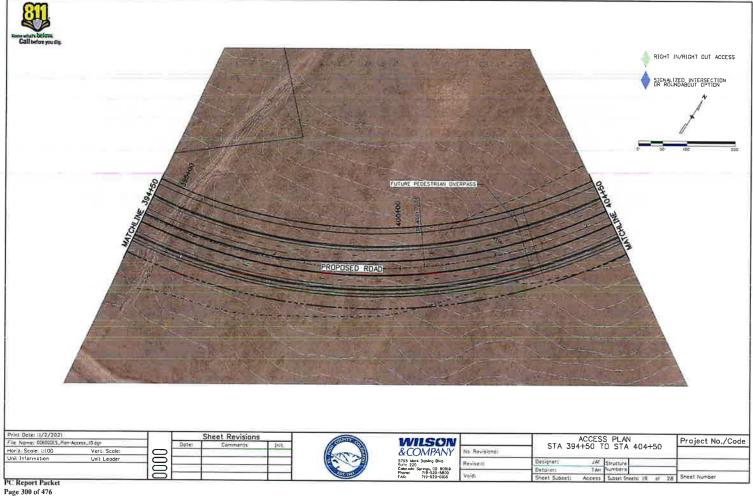


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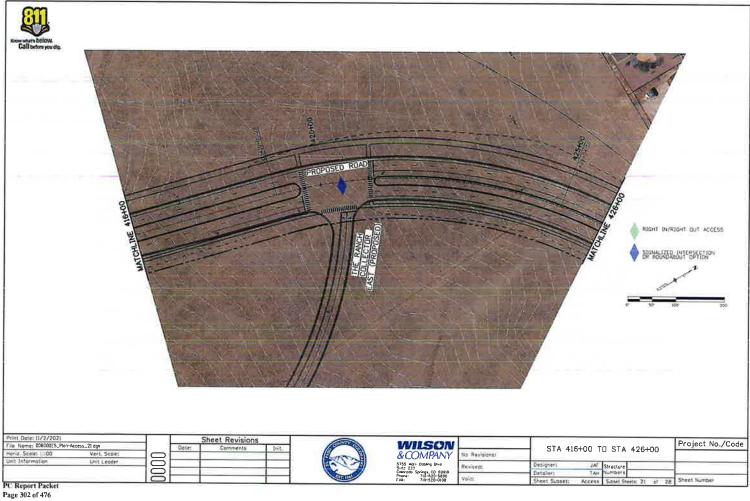
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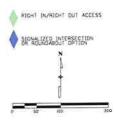




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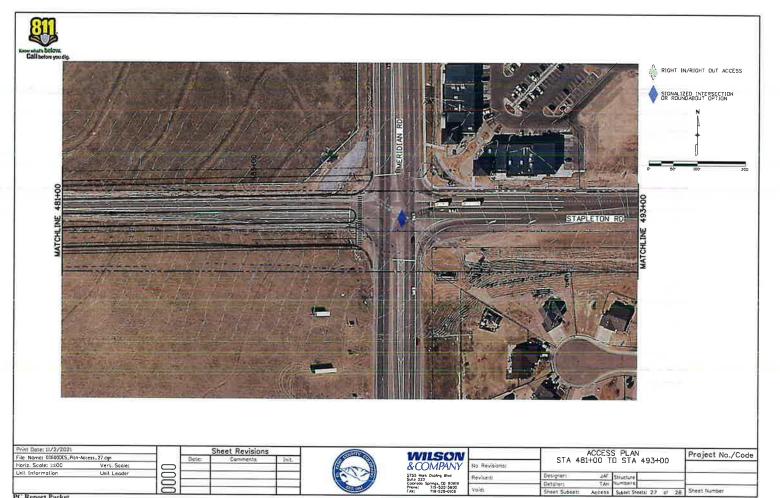
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# Attachment B – Access Control Plan Intergovernmental Agreement

# INTERGOVERNMENTAL AGREEMENT BETWEEN EL PASO COUNTY AND THE CITY OF COLORADO SPRINGS

THIS INTERGOVER	NMENTAL AGREEMENT ("Agreement") is entered into effective as
of the day of	2021, by and between El Paso County, by and through
the Board of County Co	mmissioners of El Paso County, Colorado ("County"), and the City of
Colorado Springs ("City"	'), referred to collectively herein as the "Agencies."

### **RECITALS:**

- A. The Agencies are authorized by the provisions of Article XIV, Section 18(2)(a), Colorado Constitution, and C.R.S. § 29-1-201, et seq., to enter into contracts with each other for the performance of functions which they are authorized by law to perform on their own.
- B. Each Agency is authorized by Section 43-2-147(1)(a), C.R.S., to regulate access to public highways within its jurisdiction.
- C. The coordinated regulation of vehicular access to public highways is necessary to maintain the efficient and smooth flow of traffic, to reduce the potential for traffic accidents, to protect the functional level and optimize the traffic capacity, to provide an efficient spacing of traffic signals.
- D. The Agencies desire to provide for the coordinated regulation of vehicular access for the section of planned Briargate Parkway-Stapleton Road between Black Forest Road and Meridian Road (hereinafter referred to as the "Segment"), which is within the jurisdiction of the Agencies.
- E. The Agencies specifically find and determine that the Access Control Plan adopted and implemented through this Agreement is a necessary exercise of the Agencies' legislative, governmental or police powers to promote and protect the public health, safety, and general welfare of the citizens of the City and County.
- F. The development of the Access Control Plan adheres to the requirements of the El Paso County Engineering Criteria Manual and City of Colorado Springs Engineering Criteria Manual (hereinafter referred to as the "Engineering Criteria").

**NOW, THEREFORE**, for and in consideration of the mutual promises, agreements, and commitments herein contained, the Agencies agree as follows:

- 1. The Access Control Plan dated June 2021 for the Segment (referred to herein as the "Access Control Plan") is attached hereto as **Exhibit A** and incorporated herein. The Access Control Plan illustration dated June 2021 is attached hereto as **Exhibit B** and incorporated herein by this reference. The Access Control Plan Amendment Process is attached hereto as **Exhibit C** and incorporated herein by this reference.
- 2. The Agencies shall regulate access to the Segment in compliance with this Access Control Plan and applicable sections of the Agency Engineering Criteria.

- 3. Accesses that were in existence in compliance with applicable City and County Engineering Criteria prior to the effective date of this Agreement may continue in existence until such time as a change in access is required by this Access Control Plan, in the course of highway reconstruction, or as determined appropriate in the course of development or subdivision actions by the City and/or County. When closure, modification, or relocation of access is necessary or required, each Agency having jurisdiction shall utilize appropriate legal process to effect such action.
- 4. Actions taken by either Agency with regard to transportation planning, transportation facilities and traffic operations within the areas described in the Access Control Plan shall be in conformity with this Agreement. The City and County agree to develop and adopt the necessary resolutions, ordinances, official documents, plans and maps that are necessary to fulfill their responsibilities under this Agreement.
- 5. Parcels of real property created after the effective date of this Agreement which adjoin the Segment shall not be provided with direct access to the Segment unless the location, use, and design thereof conform to the provisions of this Agreement, except in unforeseen circumstances.
- 6. This Agreement is based upon and is intended to be consistent with the applicable Agency Engineering Criteria.
- 7. This Agreement does not create any current specific financial obligation for either of the Agencies. Any future financial obligation for any Agency shall be subject to the execution of an appropriate encumbrance document, where required. Agencies involved in or affected by any particular or site-specific undertaking provided for herein will cooperate with each other to agree upon a fair and equitable allocation of the costs associated therewith, but, notwithstanding any provision of this Agreement, no Agency shall be required to expend its public funds for such undertaking without the express prior approval of its governing body. All financial obligations of the Agencies hereunder shall be contingent upon sufficient funds therefore being appropriated, budgeted, and otherwise made available.
- 8. Should any section or provision of this Agreement be judicially determined to be invalid or unenforceable, such judgement shall not affect, impair, or invalidate the remaining provisions of this Agreement, the intention being that the various provisions hereof are severable.
- 9. This Agreement supersedes and controls all prior written and oral agreements and representations of the Agencies concerning regulating vehicular access to the Segment. No additional or different oral representations, promise or agreement shall be binding on any Agency. This Agreement may be amended or terminated only in writing executed by the Agencies with express authorization from their respective governing bodies or legally designated officials. To the extent that this Access Control Plan, attached as **Exhibit A** to this Agreement, requires modification because of change, closure, relocation, consolidation or addition of access, the Agencies may amend the attached **Exhibit A** so long as the amendment to the Access Control Plan is executed in writing and amended in accord with the Access Control Plan Amendment Process attached as **Exhibit C**.

- 10. By signing this Agreement, the Agencies acknowledge and represent to one another that all procedures necessary to validly contract and execute this Agreement have been performed, and that the persons signing for each Agency have been duly authorized to sign.
- 11. No portion of this Agreement shall be deemed to constitute a waiver of any immunities the Agencies or their officers or employees may possess, nor shall any portion of this Agreement be deemed to have created a duty of care which did not previously exist with respect to any person not a party to this Agreement.
- 12. It is expressly understood and agreed that the enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the undersigned Agencies and nothing in this Agreement shall give or allow any claim or right of action whatsoever by any other person not included in this Agreement. It is the express intention of the undersigned Agencies that any entity other than the undersigned Agencies receiving services or benefits under this Agreement shall be an incidental beneficiary only.

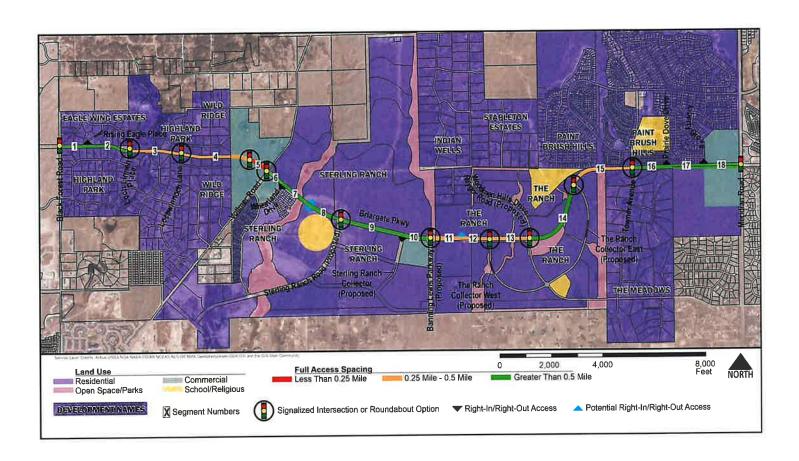
IN WITNESS WHEREOF, the Agencies have executed this Agreement effective as of the day and year first above written.

El Paso County, Colorado	ATTEST:
Stan VanderWerf	Chuck Broerman
Chair of the Board of County Commissioners, El Paso County	County Clerk & Recorder
Approved as to Form:	
County Attorney's Office	
City of Colorado Springs, Colorado	ATTEST:
	V 4
John Suthers Mayor, City of Colorado Springs	Name City Clerk
Approved as to Form:	
Name	
City Attorney	

### Exhibit A - Access Control Plan

NOTE: The stand-alone IGA will have Attachment A from the Access Control Plan inserted as Exhibit A. It was not repeated Appendix D-IGA of the Corridor Preservation Plan. The IGA was not executed by the City of Colorado Springs.

### Exhibit B - Access Control Plan Illustration



### Exhibit C - Access Control Plan Amendment Process

### El Paso County, Colorado

In accordance with the Engineering Criteria Manual (ECM, Chapter 5. Permits and Inspections, Section 5.4 Driveway Permit), all access requests shall be submitted in the form of a permit application and work shall not commence before the permit has been issued. The following criteria must be met:

- Submitted application complies with all applicable requirements of the ECM or an exception approved by the Board of County Commissioners.
- ECM Administrator determines that the access will not create an unsafe condition for the traveling public.
- All required review and permit fees have been paid and any required surety has been posted.

A property owner seeking to construct a new access must, in advance, apply to the County Planning and Community Development Department for approval and obtain an Access/Driveway Permit and a Work in the Right-of-Way Permit, and may also need to clear utilities (if excavation is required) and seek approval of a submitted Traffic Control Plan (if work will interfere with traffic). Detailed permitting requirements can be found in the ECM.

### City of Colorado Springs, Colorado IMAY BE REPLACED BY NARRATIVE TO

### [MAY BE REPLACED BY NARRATIVE TO BE PROVIDED BY CITY OF COLORADO SPRINGS]

In accordance with the City of Colorado Springs Engineering Criteria Manuals, Traffic Criteria Manual (TCM), Chapter 3, Access Control: the design, number, and location of Access to City Streets shall be approved by City Engineering. The number of access drives shall be a balance to allow for efficient traffic flow while providing adequate access to private property. In the interest of achieving that balance, Section 16 of the TMC establishes the 4-lane Principal Arterial intersections spacing criteria as ½ mile for signalized intersections and ¼ mile for unsignalized intersections. Deviations from these criteria must be supported and approved through the City's development review process.

A traffic impact study (TIS) is required for any proposed non-residential development with a peak hour trip generation of over 100 vehicles, or any proposed residential development with 150 or more dwelling units. The forecast volume shall be based on trip generation rates contained in the latest edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE) or other rates as approved by City Engineering. All TIS for new subdivision development shall be submitted to the Engineering Development Review Division (EDRD) of City Engineering. EDRD will return review comments to the preparer. When the review process is complete and the TIS is ready for approval, EDRD requires two copies be submitted for City signature. Additional copies can be submitted and will be returned to the engineer. These copies shall be properly certified, signed, sealed, and dated by the registered professional engineer responsible for the report. The signature block for EDRD shall read This Traffic Impact Study is hereby accepted by City Engineering with a line for the EDRD reviewer's signature and date.

Following EDRD approval of the TIS a scanned PDF version of the record approved report and plans must be received by EDRD prior to recording the Final Plat.

The following types of submittals which exceed the trip generation/ dwelling unit criteria will require a TIS:

- 1. A master plan or development plan submittal.
- 2. Any rezoning application.
- 3. A preliminary map or final plat if the property has already been rezoned for the proposed use and no traffic study was required for the rezoning, or the original traffic study is more than two years old.
- 4. Prior to issuance of a building permit, if the property has already been zoned/ platted and no previous traffic study less than two years old exists.
- 5. For a State Highway Access Permit, if:
  - a. Site access is required off a State Highway prior to issuing a building permit.
  - b. Additional access off a State Highway to an existing use is being requested.
  - c. Any change of use affecting access from the State Highway.
- 6. For an application for annexation into the City.
- 7. The applicant will be required to submit a new traffic study if, after submitting the original traffic study, the land use intensity and traffic generation is increased by more than 15%.
- 8. Other conditions as determined by City Engineering.
- 9. City Engineering may require other memos, letters, analyses, or other documentation to address specific traffic issues at staff discretion.

Prepared by



5755 Mark Dabling Boulevard, Suite 220 Colorado Springs, CO 80919 719-520-5800

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**PC Report Packet** 

# Briargate-Stapleton Corridor Study Appendix E: Cost Estimates

El Paso County Department of Public Works

On-Call Contract: #17-067-51 12/09/2021

**DRAFT** 

### Briargate-Stapleton Corridor Study Appendix E: Cost Estimates



Prepared for

El Paso County Department of Public Works
On-Call Contract: #17-067-51

### **DRAFT**

December 9, 2021

Prepared by



5755 Mark Dabling Boulevard, Suite 220 Colorado Springs, CO 80919 719-520-5800

© 2021



Engineers Opinion of Probable Cost
Project: Description Priargale Pkey/Stapleton Dr - Initial
Project Number 20-100-006-00

Project Number

Name of Preparer Justine Fedde, PE

Item No.	Item Description	Unit	Unit Cost	Quantity	Cost
202-00240	Remove Asphalt Mat (Planing)	Sq Yard	\$2.60	12,000	\$31,200
203-00060	Embankment Material (CIP)	Cubic Yard	\$17.00	310,200	\$5,273,400
304-06000	ABC (CL 6)	Ton	\$29.00	69,000	\$2,001,000
403-34721	HMA (Grade SX) (75) (PG 58-28)	Ton	\$93.00	51,000	\$4,743,000
606-00301	Guardrail Type 3 (6-3)	Lin Foot	\$37.00	1,500	\$55,500
606-00910	Guardrail Type 9 (Style CA)	Lin Foot	\$110.00	150	\$16,500
608-00000	Concrete Sidewalk	Sq Yard	\$85.00	38,400	\$3,264,000
608-00000	Curb and Gutter Type 2 I-B	Lin Foot	\$36.00	30,300	\$1,090,800
613-10000	Wiring	LUMP SUM	\$75,000.00	2	\$150,000
613-10000	Luminaire (LED) (Special)	Each	\$1,700.00	8	\$13,600
614-70150	Pedestrian Signal Face (16) (Countdown)	Each	\$670.00	16	\$10,720
614-70130	Traffic Signal Face (12-12-12)	Each	\$890.00	30	\$26,700
614-70560	Traffic Signal Face (12-12-12)	Each	\$1,400,00	10	\$14,000
614-70360	Pedestrian Push Button	Each	\$840.00	16	\$13,440
		Each	\$7,500.00	8	\$60,000
614-72886	intersection Detect System (Camera)	Each	\$21,000.00	8	\$168,000
614-81150	Signal-Light Pole Steel (1-50 Ft)	Each	\$3,300.00	16	\$52,800
614-84000	Traffic Signal Pedestrian Pole Steel	Each	\$7,100.00	2	\$14,200
614-86240	Controler (Type 170)	SF	\$150.00	5,980	\$897,000
900-	BRIDGE	LUMP SUM	\$8,477,000,00	0,000	\$8,477,000
900-	DRAINAGE (from project team estimate)		\$80.00	11,519	\$921,504
=	WALL	SF	J #50.00	11,010	₩321,004

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The design upon which this opinion of probable cost was based is highly conceptual. As a result, we recommend that a 20% - 30% contingency be used in order to cover additional costs.

### Assumptions:

-Bridges will be placed under only the portion of the roadway that is currently being constructed.

ITEM COST SUBTOTAL:	\$2	7,295,000
Contingency:	30% \$8,189,000.00 : \$35,484,000	
ITEM COST WITH CONTINGENCY:		
Mobilization:	10.00%	\$3,549,000
Utilities	5.00%	\$1,775,000
Right of Way	2,00%	\$710,000
Force Account Provision:	10.00%	\$3,549,000
CONSTRUCTION SUBTOTAL:	\$9	,583,000
Engineering and Env	rironmental Fe	ees
Design Fee:	10.00%	\$3,549,000
Environmental Clearance Fee:	2.00%	\$710,000
Construction Engineering	10.00%	\$3,549,000
FEE SUBTOTAL:	\$7	,808,000
	d	= a+b+c
		2,900,000

b

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Project Number 20-100-006-00
Name of Preparer Justine Fedde, PE Project Number Name of Preparer

Item No.	Item Description	Unit	Unit Cost	Quantity	Cost
202-00240	Remove Asphalt Mat (Planing)	Sq Yard	\$2.60	12,000	\$31,200
203-00060	Embankment Material (CIP)	Cubic Yard	\$17.00	495,000	\$8,415,000
304-06000	ABC (CL 6)	Ton	\$29.00	137,500	\$3,987,500
403-34721	HMA (Grade SX) (75) (PG 58-28)	Ton	\$93.00	101,000	\$9,393,000
606-00301	Guardrail Type 3 (6-3)	Lin Foot	\$37.00	5.950	\$220,150
606-00910	Guardrail Type 9 (Style CA)	Lin Foot	\$110.00	600	\$66,000
608-00000	Concrete Sidewalk	Sq Yard	\$85.00	28,800	\$2,448,000
609-21010	Curb and Gutter Type 2 I-B	Lin Foot	\$36.00	60,500	\$2,178,000
609-21020	Curb and Gutter Type 2 II-B	Lin Foot	\$35.00	60,500	\$2,117,500
610-00026	Median Cover (6 In Pattern Concrete)	Sg Foot	\$12,00	64,800	\$777,600
613-10000	Wiring	LUMP SUM	\$75,000,00	2	\$150,000
613-13000	Luminaire (LED) (Special)	Each	\$1,700.00	8	\$13,600
614-70150	Pedestrian Signal Face (16) (Countdown)	Each	\$670.00	16	\$10,720
614-70336	Traffic Signal Face (12-12-12)	Each	\$890.00	30	\$26,700
614-70560	Traffic Signal Face (12-12-12-12)	Each	\$1,400.00	10	\$14,000
614-72860	Pedestrian Push Button	Each	\$840,00	16	\$13,440
614-72886	Intersection Detect System (Camera)	Each	\$7,500.00	8	\$60,000
614-81150	Signal-Light Pole Steel (1-50 Ft)	Each	\$21,000.00	8	\$168,000
614-84000	Traffic Signal Pedestrian Pole Steel	Each	\$3,300.00	16	\$52,800
614-86240	Controler (Type 170)	Each	\$7,100.00	2	\$14,200
900-	BRIDGE	SF	\$150.00	10,235	\$1,535,250
900-	DRAINAGE (from project team estimate)	LUMP SUM	\$13,919,000.00	1	\$13,919,000
900-	WALL	SF	\$80.00	11.519	\$921,504

NOTES:	ITEM COST SUBTOTAL:	\$4	6,534,000
The design upon which this opinion of probable cost was based is			\$13,961,000.00
nighly conceptual. As a result, we recommend that in 20% - 30% contingency be used in order to cover additional costs.	ITEM COST WITH CONTINGENCY:	\$6	0,495,000
	Mobilization:	10.00%	\$6,050,000
	Utilities	5.00%	\$3,025,000
Assumptions:	Right of Way	2.00%	\$1,210,000
	Force Account Provision:	10.00%	\$6,050,000
	CONSTRUCTION SUBTOTAL:	\$1	6,335,000
Bridges will be placed under only the portion of the roadway that is currently being constructed.	Engineering and Env	ironmental F	ees
	Design Fee:	10.00%	\$6,050,000
	Environmental Clearance Fee:	2.00%	\$1,000
	Construction Engineering	10.00%	\$6,050,000
	FEE SUBTOTAL:		

TOTAL PROGRAM COST:

\$88,900,000



Item No.	Item Description	Unit	Unit Cost	Quantity	Cost
203-00060	Embankment Material (CIP)	Cubic Yard	\$17.00	310,200	\$5,273,400
304-06000	ABC (CL 6)	Ton	\$29.00	69,000	\$2,001,000
403-34721	HMA (Grade SX) (75) (PG 58-28)	Ton	\$93.00	51,000	\$4,743,000
606-00301	Guardrail Type 3 (6-3)	Lin Foot	\$37.00	1,500	\$55,500
606-00910	Guardrail Type 9 (Style CA)	Lin Foot	\$110.00	150	\$16,500
609-21010	Curb and Gutter Type 2 I-B	Lin Foot	\$36.00	30,300	\$1,090,800
610-00026	Median Cover (6 In Pattern Concrete)	Sa Foot	\$12,00	64,800	\$777,600
900-	BRIDGE	SF	\$150.00	4,600	\$690,000
900-	DRAINAGE (from project team estimate)	LUMP SUM	\$5,442,000.00	1	\$5,442,000
900-	WALL	SF	\$80.00	11,519	\$921,504

NOTES:	ITEM COST SUBTOTAL:	\$2	1,012,000
The design upon which this opinion of probable cost was based is	Contingency:	30%	\$6,304,000.00
highly conceptual. As a result, we recommend that a 20% - 30%	ITEM COST WITH CONTINGENCY:	\$2	7,316,000
contingency be used in order to cover additional costs.	Mobilization:	10.00%	\$2,732,000
	Utilities	5.00%	\$1,366,000
	Right of Way	2.00%	\$547,000
	Force Account Provision:	10.00%	\$2,732,000
Assumptions:	CONSTRUCTION SUBTOTAL:	\$	7,377,000
Bridges will be placed under only the portion of the roadway that is	Engineering and En	vironmental F	ees
currently being constructed.	Design Fee:	10.00%	\$2,732,000
	Environmental Clearance Fee:	2.00%	\$547,000
2	Construction Engineering	10,00%	\$2,732,000
2	FEE SUBTOTAL:	\$1	6,011,000
		d	= a+b+c
	TOTAL PROGRAM COST:	\$4	0,700,000



Item No.	Item Description	Unit	Unit Cost	Quantity	Cost
203-00060	Embankment Material (CIP)	Cubic Yard	\$17,00	10,000	\$170,000
603-01300	30 In RCP	Lin Foot	\$250.00	30,525	\$7,631,205
604-19210	Inlet Type R L10 (10 Ft)	Each	\$11,000,00	96	\$1,055,890
606-00301	Guardrail Type 3 (6-3)	Lin Foot	\$37.00	2,880	\$106,549
606-00910	Guardrail Type 9 (Style CA)	Lin Foot	\$110.00	288	\$31,677
608-00000	Concrete Sidewalk	Sq Yard	\$85.00	39,000	\$3,315,000
609-21020	Curb and Gutter Type 2 II-B	Lin Foot	\$35.00	60,500	\$2,117,500
610-00026	Median Cover (6 In Pattern Concrete)	Sq Foot	\$12.00	0	\$0
613-10000	Wiring	LUMP SUM	\$75,000.00	0	\$0
613-13000	Luminaire (LED) (Special)	Each	\$1,700.00	0	\$0
614-70150	Pedestrian Signal Face (16) (Countdown)	Each	\$670.00	0	S0
614-70336	Traffic Signal Face (12-12-12)	Each	\$890.00	0	\$0
614-70560	Traffic Signal Face (12-12-12-12)	Each	\$1,400.00	0	\$0
614-72860	Pedestrian Push Button	Each	\$840.00	0	\$0
614-72886	Intersection Detect System (Camera)	Each	\$7,500,00	0	\$0
614 81150	Signal Light Polc Steel (1-50 Ft)	Each	\$21,000.00	0	\$0
614-84000	Traffic Signal Pedestrian Pole Steel	Each	\$3,300,00	0	\$0
614-86240	Controler (Type 170)	Each	\$7,100.00	0	SO
900-	BRIDGE	SF	\$150.00	0	\$0
900-	DRAINAGE (from project team estimate)	LUMP SUM	\$0.00	1	\$0
900-	WALL	SF	\$80.00	0	\$0

NOTES:	ITEM COST SUBTOTAL:	\$1	4,428,000
The design upon which this opinion of probable cost was based is	Contingency:	30%	\$4,329,000.00
highly conceptual. As a result, we recommend that in 20% 30% contingency be used in order to cover additional costs.	ITEM COST WITH CONTINGENCY.		
,	Mobilization:	10.00%	\$1,876,000
	Utilities	5.00%	\$938,000
	Right of Way	2.00%	\$376,000
	Force Account Provision:	10.00%	\$1,876,000
ssumptions:	CONSTRUCTION SUBTOTAL:	\$5	5,066,000
Bridges will be constructed in a previous phase,	Engineering and Envi	vironmental F	ees
	Design Fee:	10,00%	\$1,876,000
	Environmental Clearance Fee:	2,00%	\$376,000
	Construction Engineering	10.00%	\$1,876,000
	FEE SUBTOTAL:	\$4	,128,000
		d	= a+b+c
	TOTAL PROGRAM COST:	\$2	8,000,000



Item No.	Item Description	Unit	Unit Cost	Quantity	Cost
202-00240	Remove Asphalt Mat (Planing)	Sq Yard	\$2.60	54,000	\$140,400
203-00060	Embankment Material (CIP)	Cubic Yard	\$17,00	412,500	\$7,012,500
304-06000	ABC (CL 6)	Ton	\$29,00	107,000	\$3,103,000
403-34721	HMA (Grade SX) (75) (PG 58-28)	Ton	\$93,00	79,000	\$7,347,000
606-00301	Guardrail Type 3 (6-3)	Lin Foot	\$37,00	6,000	\$222,000
606-00910	Guardrail Type 9 (Style CA)	Lin Foot	\$110.00	600	\$66,000
608-00000	Concrete Sidewalk	Sg Yard	\$85,00	57,600	\$4,896,000
609-21010	Curb and Gutter Type 2 I-B	Lin Foot	\$36,00	60,500	\$2,178,000
609-21020	Curb and Gutter Type 2 II-B	Lin Foot	\$35.00	60,500	\$2,117,500
610-00026	Median Cover (6 In Pattern Concrete)	Sq Foot	\$12.00	64,800	\$777,600
613-10000	Wiring	LUMP SUM	\$75,000.00	2	\$150,000
613-13000	Luminaire (LED) (Special)	Each	\$1,700.00	8	\$13,600
614-70150	Pedestrian Signal Face (16) (Countdown)	Each	\$670.00	16	\$10,720
614-70336	Traffic Signal Face (12-12-12)	Each	\$890.00	30	\$26,700
614-70560	Traffic Signal Face (12-12-12-12-12)	Each	\$1,400.00	10	\$14,000
614-70860	Pedestrian Push Button	Each	\$840.00	16	\$13,440
614-72886	Intersection Detect System (Camera)	Each	\$7,500.00	8	\$60,000
614-81150	Signal-Light Pole Steel (1-50 Ft)	Each	\$21,000.00	8	\$168,000
614-84000	Traffic Signal Pedestrian Pole Steel	Each	\$3,300.00	16	\$52,800
614-86240	Controler (Type 170)	Each	\$7,100.00	2	\$14,200
900-	BRIDGE	SF	\$150.00	7,500	\$1,125,000
900-	DRAINAGE (from project team estimate)	LUMP SUM	\$13,919,000.00	1	\$13,919,000
900-	WALL	SF	\$80,00	12,000	\$960,000

NOTES:	ITEM COST SUBTOTAL:	\$44,388,000	
The design upon which this opinion of probable cost was based is	Contingency:	30%	\$13,317,000.00
highly conceptual. As a result, we recommend that a 20% - 30% contingency be used in order to cover additional costs.	ITEM COST WITH CONTINGENCY:	\$57,705,000	
	Mobilization:	10.00%	\$5,771,000
	Utilities	5.00%	\$2,886,000
	Right of Way	2.00%	\$1,155,000
	Force Account Provision:	10.00%	\$5,771,000
	CONSTRUCTION SUBTOTAL:	\$15,583,000	
	Engineering and Environmental Fees		
	Design Fee:	10,00%	\$5,771,000
	Environmental Clearance Fee:	2,00%	\$1,155,000
	Construction Engineering	10,00%	\$5,771,000
	FEE SUBTOTAL:	\$12,697,000	
		d = a+b+c	
	TOTAL PROGRAM COST:	\$86,000,000	

Prepared by



5755 Mark Dabling Boulevard, Suite 220 Colorado Springs, CO 80919 719-520-5800

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### Briargate-Stapleton Corridor Study Appendix F: Public Involvement Summary

El Paso County Department of Public Works

On-Call Contract: #17-067-51

12/09/2021

**DRAFT** 

### Briargate-Stapleton Corridor Study Appendix F: Public Involvement Summary



Prepared for

El Paso County Department of Public Works On-Call Contract: #17-067-51

### **DRAFT**

December 9, 2021

Prepared by



5755 Mark Dabling Boulevard, Suite 220 Colorado Springs, CO 80919 719-520-5800

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## Attachment A – Project Website

### **Project Website**

A full-function website was developed for the project (go to: Corridor Study | Briargate-Stapleton Project for Mobility). The scrolling Home Page (see Figure 1) begins with a Welcome and Project News banner that includes links to frequently visited site Features. The website includes: a Project Overview, a library of Project Resources and a Questions & Answers posting (see Figure 2). Public and stakeholder input is facilitated by both an interactive Comment Map (see Figure 3) and an online Comment Form (see Figure 4).



Figure 1 Project Website - Front Page Banner

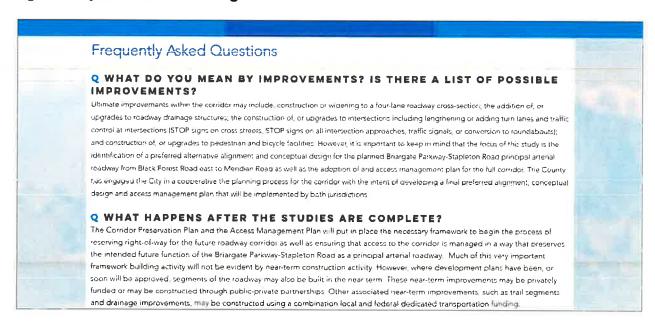


Figure 2 Website Frequently Q&A Posting

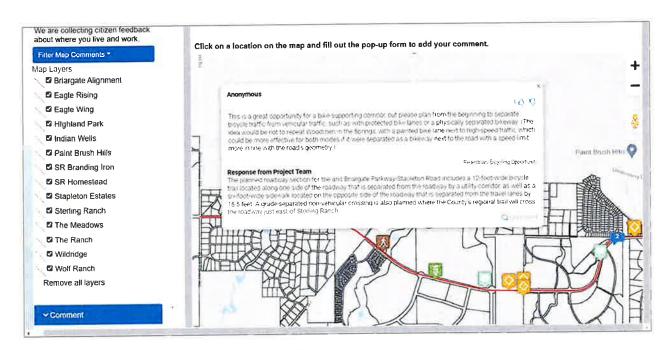


Figure 3 Website Comment Map - Example Comment and Response

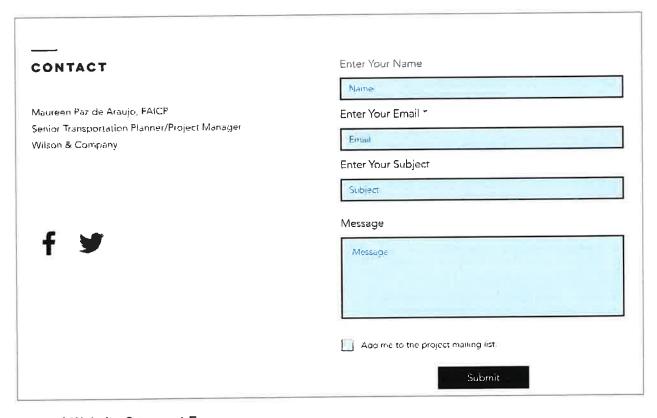


Figure 4 Website Comment Form

## Attachment B – Virtual Open House

# The El Paso County Virtual Public Open House for the Briargate-Stapleton Corridor Study is Live!

your comments or questions to the project team, and provide valued input to help shape the final recommendations for the The Virtual Open House is your opportunity to learn about the study, review the study's draft recommendations, submit study. Visit the Open House at: Virtual Public Open House

Here are some helpful tips for the first-time virtual meeting attendees.

- 1. Use your mouse, or finger if you are using a device with touchscreen display, to pan around the room to the different exhibits.
  - 2. Click on the informational button (blue square with the letter "i") to learn about what information will be presented at that particular exhibit.
- 3. Review the information being presented at each exhibit by clicking on the other blue button at each exhibit.



specific locations along the corridor using the interactive comment map available on this website at: Interactive Map. For The Virtual Public Open House will be virtual due to COVID-19 restrictions. Although the formal comment period for the Virtual Public Open House has closed, the site remains open for viewing. Before or after touring the Open House you can full detail, you can check the boxes to the right of the interactive map to turn on embedded layout layers for the approved still use the Comment Form below to let us know your thoughts about the project. Alternatively, you can comment on and planned developments along the corridor.

# Station #1 Info:

Welcome to the Briargate Parkway-Stapleton Road Corridor Planning Study Virtual Public Open House.

improvements to the Briargate Parkway-Stapleton Road corridor, between Black Forest Road and Meridian Road. As part of the Take a virtual walk through the Open House exhibits to learn more about corridor preservation, access management and future regional transportation network, this planned principal arterial roadway will provide improved connectivity within the greater Colorado Springs area and beyond

- The Virtual Open House is your opportunity to:
- Learn about the corridor study.
- Review the study's draft recommendations,
- Submit comments or questions to the project team, and
- Provide valued input to help shape the final recommendations for the study.

Helpful tips for the first time virtual meeting attendees.

- 1. Use your mouse, or finger if you are using a device with touchscreen display, to pan around the room to the different exhibits.
- 2. Click on the informational button (blue square with the letter i) to learn about what information will be presented at that particular exhibit.
- 3. Review the information being presented at each exhibit by clicking on the other blue button at each exhibit.
- 4. Submit a comment form with your thoughts and a study team member may reach out to you to initiate a conversation.

Thank You for visiting our virtual open house and we look forward to hearing from you.

# Station #2 Info:

The Briargate Parkway-Stapleton Road (in some locations referred to as Stapleton Drive) corridor, between Black Forest Road and Merdian Road, area, Stapleton Road continues easterly from this project area to connect with US 24 and with Judge Orr Road and Curtis Road to the east of the is an integral part of a larger transportation corridor system providing connectivity with 1-25 to the north and south of the greater Colorado Springs City. Curtis Road provides connection to Bradley Road and ultimately to 1-25 south of Colorado Springs

Project Purpose: The purpose for constructing an arterial roadway in the Briargate-Stapleton is to provide a continuous roadway connection between Interstate 25 and U.S. Highway 24 in northern El Paso County both for regional system connectivity and to serve the substantial ransportation demand that is anticipated from planned development in this area

additional Interstate access will be granted. Briargate Parkway has access (Exit 151) and this roadway has sufficient capacity to accommodate the Project Need: This portion of northern El Paso County is already experiencing substantial growth, and east-west roadway options in the area are extremely limited. Connections to Interstate 25 are limited for the six miles where it exists on United State Air Force Academy (USAFA) property, between Academy Roulevard (Exist 150) and North Gate Boulevard (Exit 156). USAFA is a cesignated National Historic Landmark where no demand from planned urban development

# Station #3 Info:

screened. Both alternatives begin on the west at Black Forest Road and follow the same alignment to Vollmer Road. At Vollmer Road, the northern follows the northern alignment for continues to an alignment approximately half a mile south of the existing Stapleton Road before returning to the been submitted to either El Paso Courty or the City of Colorado Springs. Based on this research, two alternative alignments were developed and To determine the recommended horizontal alignment, research was conducted on plats that had been approved and development plans that had alternative connects existing roadway segments and follows a direct route between Vollmer Road and Meridian Road. The southern alternative north and tying in with the existing road. The southern alignment more closely matched the corridors proposed on the submitted plats and was selected as the preferred alignment due to ROW constraints and its conformance with the submitted plats.

# Station #4 Info:

# Roadway

sidewalk, a 16' raised median, and outside curb and gutter for drainage. The City of Colorado Springs Principal Arterial includes The El Paso County Urban Principal Arterial includes 2-12' thru lanes in each direction, with a 4' inside shoulder, 6' detached a 17' raised median, 2-11' thru lanes in each direction, with a 6' outside shoulder, 6' detached sidewalk, and outside curb and gutter for drainage. These two standard sections were used to develop a hybrid proposed roadway section for the corridor.

# **Multimodal Facilities**

The following pedestrian and bicycle facilities are included in the proposed roadway section:

- Large multipurpose shoulders
- Separate bike path/multipurpose trail
- Detached sidewalks

A future grade-separated trail crossing (where County regional trail crosses just east of Sterling Ranch) is also under consideration.

# Utilities

The proposed roadway section includes a utility corridor. Colorado Spring Utilities has prioritized the corridor for a future gas ine extension.

View Typical Section Exhibit to see proposed roadway design elements and planned phasing.

# Station #5 Info:

file. Because planning for a large parcel(s) west of Vollmer Road was not defined, a future direct access was located toward the west boundary of the of the future roadway as a Principal Arterial. Proposed access locations were identified from masterplan and overall development plan submittals on Access management afternatives, including access limitations, consolidation, and closures, were considered as means to preserve the functionality property, providing maximum spacing between the Vollmer Road and Lochwinnoch Lane accesses.

The following access spacing criteria were used as the basis for access management planning:

# 4-Lane Principal Arterial Access Criteria

El Paso County

Spacing of 1/2 mile between signalized intersections (2640')

City of Colorado Springs

- Spacing of 1/2 mile between signalized ntersections (2640')
- Spacing of 1/4 mile between unsignalized intersections (1320)
- Same criteria for 6 lanes

View Map Exhibit to see proposed access locations for the Briargate Parkway -Stapleton Road study corridor.

# Station #6 Info:

At the Corridor Preservation Plan milestone of overall project development, quantified project impacts cannot be determined, but it is possible to identify the types of resources that would likely be affected, and to identify the general types of mitigation and permitting requirements that may apply. At this level, the following resources have been addressed:

- Floodplain Permitting
- Wetlands Mitigation and Permitting
- Water Quality Permits
- Farmland Protection
- Wildlife (Senate Bill 40 Certification)
- Hazardous Waste and Materials (Environmental Site Assessment)
- Noise Analysis
  - Air Quality
- Wildflowers and Noxious Weeds

View Exhibit Mapping of resources and topics that will require additional analysis,

# Station #7 Info:

Watershed. Data from available Drainage Basin Planning Studies (DBPS), Major Development Drainage Plans, and Final The Briargate/Stapleton corridor traverses three major drainage basins - Cottonwood Creek, Sand Creek, and Falcon Drainage Reports was used to estimate the off-site drainage needs. Findings and recommendations include:

- Non-roadway (off-site) drainage traverses the Briargate/Stapleton corridor at approximately 30 locations.
- Roadway (on-site) drainage will require approximately 17 outfall (run-off collection) locations along the corridor.
- · The most significant corridor crossing locations will be at Cottonwood Creek, Sand Creek, West Tributary of Falcon Watershed, and East Tributary of Falcon Watershed.
- Runoff from the roadway will need to be treated for water quality.
- Detention of runoff will be required to reduce flows to required levels.

View the Drainage Map Exhibit to see the locations of existing and planned drainage features.

# Station #8 Info:

# 2045 Traffic Forecasts

respectively. West of and west, respectively. These volumes are the 4-Lene Principal Arterial functional classification for the corridor that is specified Forecast 2045 daily traffic flows for the project corridor range from 15,000 ADT to 20,000 ADT to the east of Towner Avenue and Black Forest Road, Springs plans specify a Principal Arterial with a six-lane cross section west of Black Forest Road, where forecast volumes pick up significantly to by both the PPACG 2045 Moving Forward Regional Transportation Plan and the El Paso County 2040 MTCP. The PPACG and City of Colorado 35,000 ADT to 40,000 ADT to the west of Union Boulevard

# Intersection Design Alternatives

Alternative intersection designs that will be evaluated for selected locations include the following

- Right-In/Right-Out Only (RIRO) T-Intersection
- Full-Access Signalized Intersection
- Modern Roundabout Intersection

View the Traffic Map Exhibits to see forecast 2045 traffic, alternative intersection layouts, and the intersection layout alternatives that will be evaluated at each intersection.

# Station #9 Info:

Avenue) I secured, the County will undertake the following steps to pave the way for future phased construction of the roadway; Until funding for design and construction of Briargate Parkway-Stapleton Road (between Black Forest Road and Towner

- Master Plan Amendment El Paso County will adopt a Master Plan Amendment to include adoption of the identified Briargate Parkway-Stapleton Road alignment, right-of-way footprint, and Access Management Plan
- County-City Intergovernmental Agreement (IGA) The City of Colorado Springs (City) and El Paso County (County)will enter in to an IGA for the purpose of committing to jointly implement the study recommendations
- Right-of Way Preservation The City and County will acquire right-of-way for Briargate Parkway Stapleton Road through the development review and approval process.
- Funding The City and County will identify funding to construct Briargate Parkway Stapleton Road, between Towner Avenue and the east terminus of existing Briargate Parkway

# Station #10 Info:

# Tell Us What You Think - El Paso County Needs Your Input!

Submit geographically specific comments using our Interactive Comment Map at: Interactive Map

Alternatively, you can sign up for our Mailing List and share your thoughts using our Comment Form at: Project Web Site

Frequently Asked Questions - We've Got the Answers!

# Attachment C – Public Comments Summary

## Website Comment Form - Comment Tracking

C-1

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# Attachment D Stakeholder Coordination

## Stakeholder Coordination 03/25/2020 Alignment



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## Stakeholder Collaboration - Typical Section



To: Howard Schwartz, El Paso County

From: Justine Fedde, Wilson & Company, Inc., Engineers & Architects

CC: Maureen Paz de Araujo

Date: 4/14/2020

Re: Stapleton Briargate Cross Section and Access Control

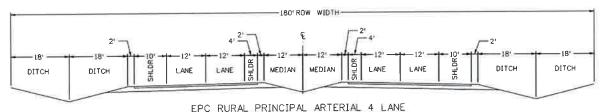
The Briargate Parkway/Stapleton Road Corridor Project is a mostly undeveloped corridor with some portions containing existing roadways of various types and phases associated with adjacent development in El Paso County (EPC). The project area begins at Black Forest Road (eastern boundary of both Wolf Ranch and the City of Colorado Springs). The projects ends at Meridian Road on the west. The project area is anticipated to have significant development with an expectation that some or all of the project will be annexed into the City of Colorado Springs (COS) in the future. An overall project vicinity map is provided in **Exhibit 1.** 

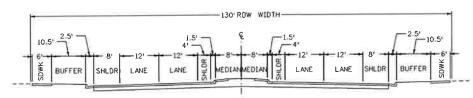
### Traffic Volumes

The unadjusted 2045 forecast volumes (20,000 ADT) are compatible with a 4-lane Principal Arterial in the corridor. This is consistent with the classification in the PPACG regional model. The model is coded with 4 lanes east of Black Forest Road and 6 lanes west of Black Forest Road, where volumes pick up significantly – more in 30,000 ADT range.

## Roadway Typical Section

The EPC Major Transportation Corridors Plan shows a future Principal Arterial with four lanes between Judge Orr Road and Black Forest Road. This typical section includes 2-12' thru lanes in each direction, with a 4' inside shoulder. The rural section included a 10' outside shoulder, a depressed 24' median and graded ditches for drainage. The urban section includes a 4' inside shoulder, 6' detached sidewalk, a 16' raised median, and outside curb and gutter for drainage.

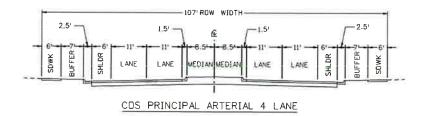




EPC URBAN PRINCIPAL ARTERIAL 4 LANE



West of Black Forest Road, the City's plan shows a Principal Arterial. This typical section includes a 17' raised median, 2-11' thru lanes in each direction, 6' outside shoulder, 6' detached sidewalk, and outside curb and gutter for drainage.

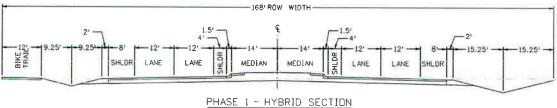


### Proposed Hybrid Section

Due to the forecasted traffic volumes in this area, it is recommended to use a hybrid of EPC's urban and rural Principal Arterial sections and the COS Principal Arterial section. Below are the recommended 4-lane cross sections for the phased construction of this project. Six lane sections would be similar but would add an extra 12' lane in both phases to the outside.

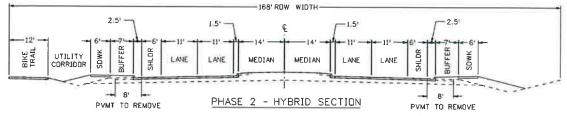
#### Phase 1

As development occurs, the Stapleton/Briargate road can grow to meet development demands. Phase 1 will more closely resemble an EPC typical section with a 28' raised median, to allow for double left turn lanes, inside curb and gutter, 4' inside shoulder, 2-12' thru lanes in each direction, an 8' outside shoulder and graded ditches for drainage. Additionally, 12' bike trail would be included on the edge of the right of way. This bike path would be separated from the sidewalk by a dedicated utility corridor. Phase 1 could be split into two phases for initial construction. In Phase 1A, one direction of travel would be constructed. Then the roadway could be opened for two-way, single lane travel while Phase 1B was constructed.



#### Phase 2

The second Phase of Construction builds within the ROW initially set aside and upon what was constructed in Phase 1. Phase 2 will more closely resemble the COS typical section with 11' thru lanes in each direction, and a 6' outside shoulder. In Phase 2, the outside edge would be defined by a curb. The 6' outside shoulder would allow for shared facility bicycle path while the 6' separated sidewalk ensures increased pedestrian safety. Phase 2 would require the removal of 8' of Phase 1 pavement from each side of the section.





### **Access Control**

Both the EPC Engineering Criteria Manual and the COS Traffic Criteria Manual permit intersections along a Principal Arterial to be spaced at half-mile intervals. EPC does not permit access to Principal Arterials between intersections. COS allows for one access drive per property ownership which may be jointly shared with adjacent properties. COS permits median cuts at a spacing between a quarter-mile and a half-mile, at major or significant street intersections.

#### 2.2.2 Circulation

Circulation is important in transportation system design for the following reasons:

- Operation of the arterial road system is improved by dispersing local traffic onto multiple roads and access points;
- Local roads are to be used only for accessing developed lots;
- Response time for emergency services is reduced;
- Time and mileage traveled by individuals and service providers, including school bus transportation, mail delivery, utilities, etc., are reduced; and
- Use of transit systems, and pedestrian and bicycle facilities, is promoted.

### 2.2.3 Transportation Impact Study (TIS)

#### A. General

The goal of the TIS is to identify the traffic-related issues that result from development and to determine mitigation techniques required to maintain acceptable levels of service, meet the transportation planning goals, and implement the El Paso County Major Transportation Corridors Plan (MTCP).

### B. TIS Preparation Guidelines

A TIS shall be prepared in accordance with the general guidelines in Appendix B. A number of specific parameters shall be evaluated in the TIS based on the level of complexity of the development and location within the transportation network. Three levels of analysis are permitted. Prior to assuming a specific level of required analysis, the design engineer should consult with the ECM Administrator to determine what level of analysis is appropriate and desired in support of a specific project proposal.

### C. Qualifications to Prepare a TIS

A TIS shall be prepared under the supervision of, and sealed by, a licensed Professional Engineer in the State of Colorado with experience in traffic engineering and transportation planning.

### 2.2.4 Roadway Functional Classifications and Urban/Rural Designations

Roadway functional classification is one parameter used to determine appropriate road design. The function of a road is determined by the volume of traffic, length of vehicle trips, and whether the road provides service primarily for vehicular movement or access to abutting land uses. For example, arterial roadways generally carry significantly greater traffic volumes and variety of traffic types at higher speeds than collector roads. Similarly, collector roads will carry greater traffic volumes at higher speeds than local roads.

Roadway functional classifications for regional based facilities are established by the most recently adopted MTCP. Other roadways are classified by the BOCC based on whether the adjoining land uses are rural or urban in nature (i.e. developments with lots greater than or equal to 2.5 acres), along with the existing and projected objectives of the roadway.

The County recognizes six roadway functional classifications within the rural designation: expressways, principal arterials, minor arterials, major collectors, minor collectors, and locals. The County recognizes seven roadway functional classifications within the urban roadway designation: expressways, principal arterials, minor arterials, nonresidential collectors, residential major collectors, residential minor collectors, and locals.

These Standards have been developed in support of the County roadway functional classification system.

### A. Rural Roadways

### 1. Expressway

Expressways serve high-speed and high-volume traffic over long distances. Access is highly controlled and may have both grade-separated interchanges and full movement signalized intersections. Adjacent, existing and future, land uses shall be served by other network roadways, no direct parcel access is permitted (See Figure 2-1 and Figure 2-2).

Figure 2-1. Typical Rural Expressway Partial Cross Section (6 Lane)

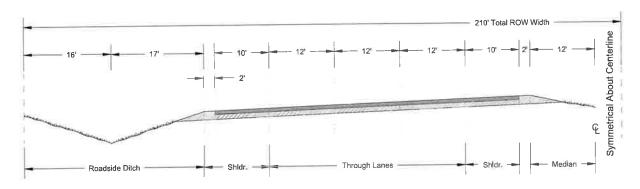
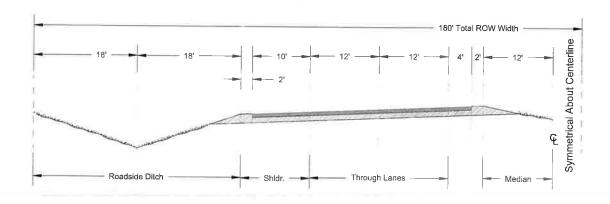


Figure 2-2. Typical Rural Expressway Partial Cross Section (4 Lane)



### 2. Principal Arterial

Principal arterials serve high-speed and high-volume traffic over long distances. Access is highly controlled with a limited number of full movement intersections and medians with infrequent openings, and no direct parcel access. Adjacent, existing and future, land uses shall be served by other network roadways, service roads, and inter parcel connections (See Figure 2-3 and Figure 2-4).

Figure 2-3 Typical Rural Principal Arterial Partial Cross Section (6 Lane)

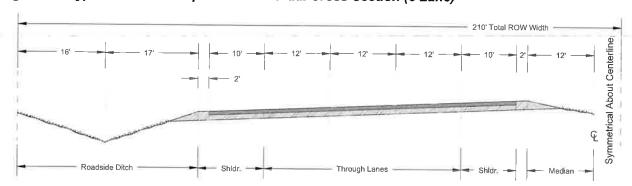
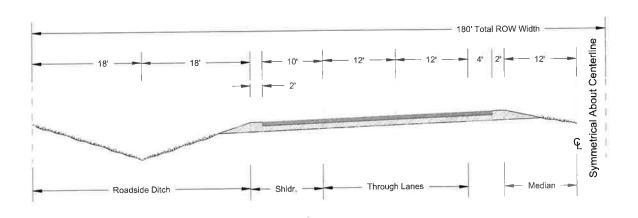


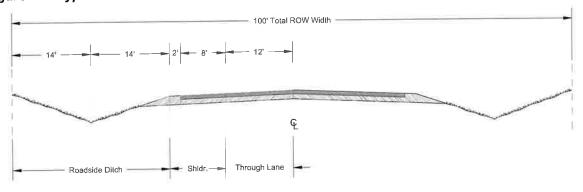
Figure 2-4. Typical Rural Principal Arterial Partial Cross-Section (4 Lane)



### 3. Minor Arterial

Minor arterials serve high-speed and high-volume traffic over medium distances, or are anticipated to serve this kind of traffic within a twenty-year period. Access is restricted through prescribed distances between intersections, use of medians, and no full movement parcel access (See Figure 2-5). Minor arterial status is assigned to rural roadways where the probability of significant travel demand in the future is high. Rights-of-way, easements, setbacks, and access limitations shall be pursued through the land development process on properties adjacent to minor arterials.

Figure 2-5. Typical Rural Minor Arterial Partial Cross Section



### 4. Major Collector

Major collectors serve as links between local access and arterial facilities over medium-to-long distances. Major collectors are managed to

maximize the safe operation of through-movements at speed. No full movement access is permitted where the local roadways can be expected to provide access (See Figure 2-6). Where no local public roadway can provide access, temporary direct parcel or partial turn movement access may be permitted, provided the design meets requirements presented in these Standards.

90' Total ROW Width

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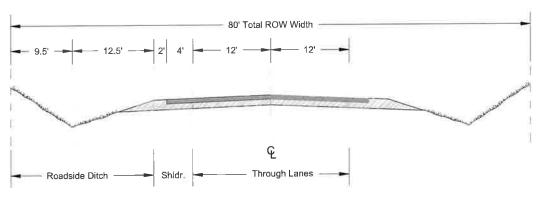
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Figure 2-6. Typical Rural Major Collector Cross Section

### 5. Minor Collector

Minor collectors link local roadways to major collectors or arterial roadways. No full movement access is permitted where local roadways can be expected to provide access (See Figure 2-7). Where no local public or private roadway can provide access or where lot size is five acres or more, temporary direct parcel or partial turn movement access may be permitted. Access location and design are to be reviewed by the ECM Administrator to ensure roadway objectives are being met.

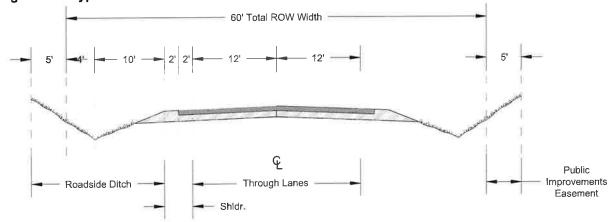
Figure 2-7. Typical Rural Minor Collector Cross Section



### 6. Local

Local roadways provide direct lot access and deliver lot-generated trips to collector roadways. Although access needs are high, accesses shall not be allowed to compromise the safety, health or welfare of roadway users (See Figure 2-8).

Figure 2-8. Typical Rural Local Cross Section



### B. Urban Roadways

### 1. Expressway

Expressways serve high-speed and high-volume traffic over long distances. Access is highly controlled and may have both grade-separated interchanges and full movement signalized intersections. Adjacent, existing and future, land uses shall be served by other network roadways, no direct parcel access is permitted (See Figure 2-9 and Figure 2-10).



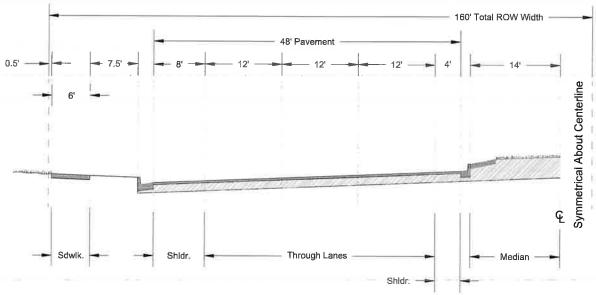


Figure 2-10. Typical Urban Expressway Cross Section (4 Lane)

### 2. Principal Arterial

Principal arterials serve high-speed and high-volume traffic over long distances. Access is highly controlled with a limited number of full movement intersections and medians with infrequent openings, and no direct parcel access. Adjacent, existing and future, land uses shall be served by other network roadways, service roads, and inter parcel connections (See Figure 2-11 and 2-12).

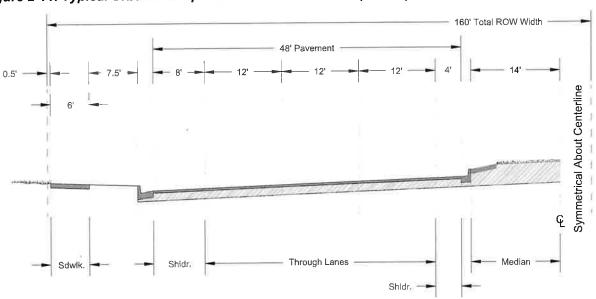


Figure 2-11. Typical Urban Principal Arterial Cross Section (6 Lane)

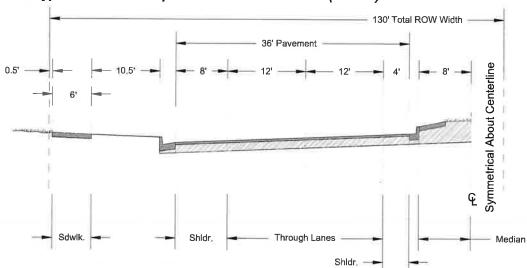


Figure 2-12. Typical Urban Principal Arterial Cross Section (4 Lane)

### 3. Minor Arterial

Minor arterials serve high-volume traffic over medium distances in developed or developing urban areas. Access is restricted and based on prescribed distances between intersections, use of medians, and no full movement parcel access is permitted where the local roadways can be expected to provide access (See Figure 2-13). Where no local public or private roadway can provide access, temporary lot or partial turn movement access may be permitted, provided the design meets these Standards.

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12'

12'

7'

12'

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Figure 2-13. Typical Urban Minor Arterial Cross Section

### 4. Nonresidential Collector

Nonresidential collectors link local roadways and arterial roadways in locations characterized by nonresidential land uses or uncommitted future land uses. Urban nonresidential collectors are intended to accommodate multiple modes of transportation, high-volume turning movements or significant changes in roadway use over time (See Figure 2-14). Urban nonresidential collectors are managed to maximize the safe operation of through-movements. Intersection and parcel access locations and design are reviewed by the ECM Administrator to ensure roadway objectives are being met.

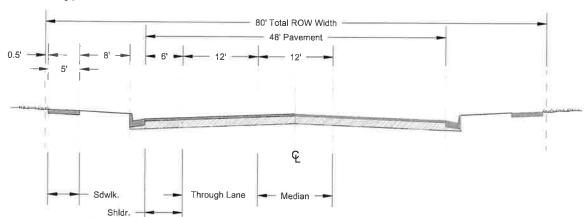
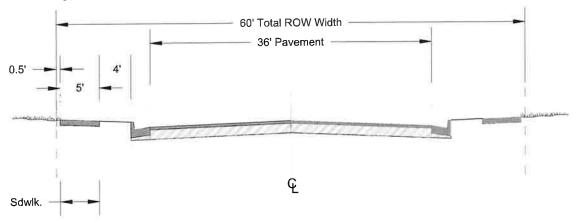


Figure 2-14. Typical Urban Nonresidential Collector Cross Section

### 5. Residential Collector

Residential collectors link local and arterial roadways in exclusively residential areas where build-out conditions for land development and roadway use can be reasonably forecasted (See Figure 2-15). Residential major collectors are managed to maximize the safe operation of through-movements. No full movement parcel access is permitted where the local roadways can be expected to provide access. Where no local public or private roadways can provide access, partial turn movement access may be permitted. Intersection and access location and design are reviewed by the ECM Administrator to ensure roadway objectives are being met.

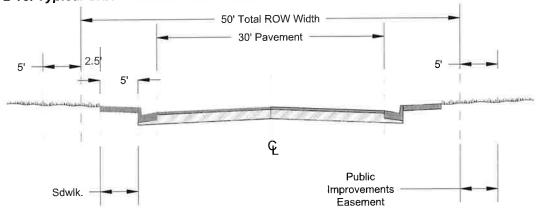
Figure 2-15. Typical Urban Residential Collector Cross Section



### 6. Local

Local roadways link to collector or arterial roadways. Direct parcel access is permitted provided they meet sight distance and other design requirements presented in these Standards (See Figure 2-16). Intersection and parcel access location and design are reviewed by the ECM Administrator to ensure safe operations.

Figure 2-16. Typical Urban Local Cross Section



### 7. Local (low volume)

Local (low volume) roadways provide direct lot access and deliver lotgenerated trips to collector roadways. Although access needs are high, accesses shall not be allowed to compromise the safety, health or welfare of roadway users (See Figure 2-17).

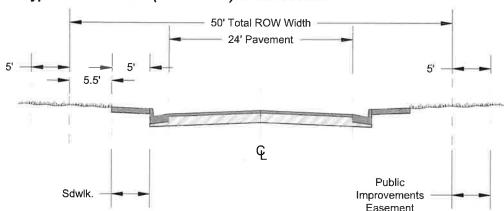


Figure 2-17. Typical Urban Local (low volume) Cross Section

### 2.2.5 Roadway Access Criteria

All new or modified accesses to the County roadways shall meet the requirements of the ECM. Standards and technical criteria not specifically addressed in the ECM shall follow the provisions of the AASHTO, A Policy on Geometric Design of Highways and Roadways ("Green Book") and the Colorado State Highway Access Code. In addition, should any access request fall within the preview of the Major Thoroughfare Task Force (MTTF), per their adopted bylaws, then the request shall be brought before the MTTF for a recommendation.

### A. Rural and Urban Expressway Access Criteria

### 1. Intersection Spacing and General Access Standards

Full movement intersections and major access spacing shall meet the requirements of this section. Right-in/right-out and three quarter movement accesses may be permitted as a deviation only if they meet the criteria presented in this section for sight distances, turn lane requirements, grades and do not negatively impact traffic operations or safety.

### 2. No Alternative Access to Road System

Where reasonable access can be obtained from the local roadway system, a temporary direct lot or partial turn movement access may be permitted provided the access meets these Standards or as otherwise required by the ECM Administrator.

### 3. Access and Lot Division

No additional access right shall accrue and no additional access shall be provided when splitting or dividing of existing lots of land. When an alternative is reasonably available in the opinion of the ECM Administrator, all access to the newly created properties shall be



15.0

## **Roadway Standards**

The City of Colorado Springs uses a roadway hierarchy to provide safe and continuous travel and access. A functional classification of roadways provides the hierarchy needed to accomplish this goal. Streets are divided into categories with different design criteria to maintain and protect the primary purpose of the roadway. The roadway standards provided in this manual are to provide a standard for street sections, but variances to these sections can be requested. Roadway reductions will be considered if a lesser cross-section can be shown to adequately accommodate the projected long-term traffic volumes. The cross-sections provided in this manual are illustrative only. There are not to scale and are not intended to be used as engineering design. For simplicity, some design elements such as sidewalks or bicycle lanes have been left off certain figures. The functional classifications are described below:

## 15.1 Standards for Freeways

- 1. **Function** Freeways permit rapid and unimpeded movement of traffic through and around the City
- 2. **Right-of-Way Widths** 420 feet, minimum with frontage roads, 332 feet, minimum without frontage roads
- 3. Number of Moving Lanes Six to eight lanes
- 4. Access Conditions
  - a. Access shall be grade separated
  - b. Interchanges shall be made with major arterial streets and freeways only
  - c. No intersections at grade shall be permitted

### 5. Traffic Characteristics

- a. No traffic signals
- b. Parking prohibited
- c. Bicycles prohibited
- d. Two separate one-way roadways with a dividing median strip

### 6. Planning Characteristics

- a. Freeways should connect with main highways approaching and leaving the City from all directions
- b. Freeways should be so aligned as to serve the major traffic generators within the City, such as the central business district, major industrial areas, regional shopping centers, etc.
- c. Freeways should not bisect neighborhoods or communities but should act as boundaries between them
- d. Added right-of-way is provided for landscaping, grass planting, added safety, and noise attenuation





- For diamond interchanges, right-of-way should flare to 580' in width from 1000' each side of the intersection right-of-way line at the intersecting cross street.
- 2. For cloverleaf interchanges, right-of-way should flare to 1300' in width from 1300' each side of the intersection right-of-way line at the intersecting cross street.
- 3. For alternative interchange designs (SPUI's, flyovers, etc.) ROW requirements will be provided based on the design.

### 7. Design Characteristics

- a. Grades
  - 1. Not less than one percent (1%) on tangents; nor more than four percent (4%)
- b. Cross sections
  - 1. Cross sections will be determined by specific design

## 15.2

## Standards for Expressways

- 1. **Function** Expressways permit rapid and relatively unimpeded movement of traffic through and around the City.
- 2. **Right-of-Way** 210 feet minimum, with additional right-of-way for frontage roads, if required
- 3. Number of Moving Lanes Four to six lanes

### 4. Access Conditions

- a. Access shall be completely controlled
- b. Interchanges shall be made with freeways and may be made with major arterial streets.
- c. Signalized intersections are permitted with arterial streets only, preferably with one mile spacing. Signalized intersections at ½ mile locations may be allowed by City Engineering.
- d. Turn restricted intersections may be allowed at half mile spacing or where they can be shown to benefit operations on the expressway.
- e. High density or congested areas may require specific access plans.

#### 5. Traffic Characteristics

- a. Traffic control devices and channelization shall be provided at each intersection at grade.
- b. Parking prohibited
- c. Two separate one-way roadways with a dividing raised median
- d. Bicycles may be permitted on the shoulder or on separated bikeways for portions of expressways.



### 6. Planning Characteristics

- Expressways should connect with main highways approaching and leaving the City from all directions.
- b. Expressways should be so aligned as to serve the major traffic generators within the City, such as the central business district, major employment centers, military installations, regional shopping centers, etc.
- c. Expressways should not bisect neighborhoods or communities but should act as boundaries between them
- d. Added right-of-way is provided for landscaping, grass planting, added safety, and noise attenuation
- e. At interchange areas:
  - 1. For diamond interchanges, right-of-way should flare to 580' in width from 1000' each side of the intersection right-of-way line at the intersecting cross streets
  - 2. 2. For cloverleaf interchanges, right-of-way should flare to 1300' in width from 1300' each side of the intersection right-of-way line at the intersecting cross street
  - 3. See Freeway #3

### 7. Design Characteristics

- a. Grades
  - 1. Not less than one percent (1%) on tangents or more than four percent (4%)
- b. Cross section
  - 1. Cross sections will be determined by specific design

## 15.3 Standards for Principal Arterial Streets

- 1. **Function** Major arterial streets permit rapid and relatively unimpeded traffic movement throughout the City and carry high volumes of inter and intra traffic which connects major land use elements as well as communities with one another. Major function is to serve through traffic. The secondary function is to serve abutting property. This functional description pertains to four lane and greater facilities.
- 2. Right-of-Way Width 107 142 feet
- 3. **Number of Moving Lanes -** Four to six lanes, with left and right turn bays. Right turn lanes shall be constructed at intersections of all arterial streets.

### 4. Access Conditions

- a. Intersections and curb cuts shall be limited, as approved by City Engineering.
- b. Signalized intersections shall be limited to 1/2 mile spacing unless adequate justification is provided to approve signalized intersections at other locations.
- c. Median cuts will be permitted at major or significant street intersections, generally at intervals of approximately  $\frac{1}{4}$  to  $\frac{1}{2}$  miles as approved by City Engineering.

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### 5. Traffic Characteristics

- a. Regulation of traffic shall be accomplished by traffic control devices and channelization.
- b. On-street parking prohibited
- c. Vertical curb required with detached sidewalks
- d. Median shall be raised with curb and gutter (City Standard Detail D-6 and D-24)
- e. High density or congested areas may require specific access plans.

### 6. Planning Characteristics

- a. Principal arterial streets should be spaced approximately one mile apart in the suburban areas of the City to ¼ mile apart in areas of high population density and intense land usage.
- b. Principal arterial streets should not bisect neighborhoods, but should act as boundaries between them.
- c. Sidewalks shall be set back from the street.
- d. In general, abutting properties should not face on the roadway unless separated from it by a frontage road. Lots that directly abut the arterial shall have a minimum depth of 120 feet.
- e. Bicycle access shall be part of a 4' multi-use shoulder.

### 7. Design Characteristics

- a. Grades
  - 1. Not less than one percent (1%) on tangents; nor more than four percent (4%). Grades of six percent (6%) may be considered for unique, short distances.
- b. Alignment
  - Horizontal 1040 foot minimum radius at centerline for standard crowned cross-slopes
  - 2. Vertical minimum length equivalent to K value times the algebraic difference in the rate of grade.

Figure 10

### **Cross Sections for Principal Arterial Streets**

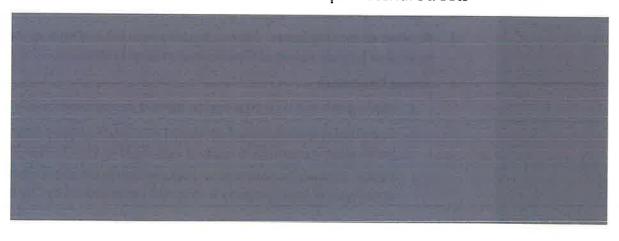




Figure 11

### Type II (6-Lane, 142' Right-of-Way)



### 15.4

### **Standards for Minor Arterial Streets**

- 1. **Function** Minor arterial streets permit rapid and relatively unimpeded traffic movement throughout the City and carry high volumes of inter and intra-traffic which connect major land use elements.
- 2. Right-of-Way Width 90 feet (with two 5 foot easements)
- 3. Number of Moving Lanes Four lanes
- 4. Access Conditions
  - a. Intersections will generally be "T" type at grade as approved by City Engineering.
  - b. Intersections and curb cuts shall be limited as approved by City Engineering.

### 5. Traffic Characteristics

- a. Regulation of traffic shall be accomplished by traffic control devices and channelization.
- b. On-street parking prohibited
- c. Vertical curbs required with detached sidewalks
- d. *Medians* will be raised. Painted medians will be considered with adequate justifications.

### 6. Planning Characteristics

- a. Minor arterial streets should be spaced approximately one mile apart in the suburban areas of the City to a few blocks apart in areas of high population density and intense land usage.
- b. Minor arterial streets preferably should not bisect neighborhoods.
- c. Bicycle access shall be part of a 4' multi-use shoulder.

### 7. Design Characteristics

- a. Grades
  - 1. Not less than one percent (1%) on tangents; nor more than four percent (4%). Grades of six percent (6%) may be considered for unique, short distances.





### b. Alignment

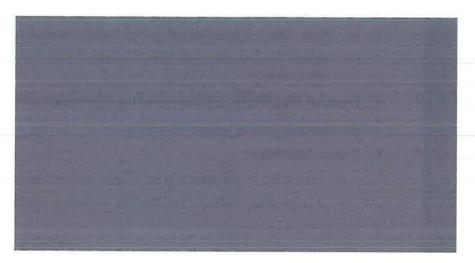
- 1. Horizontal 765 foot minimum radius at centerline for standard crowned cross-slopes.
- 2. Vertical minimum length equivalent to the K value times the algebraic difference approval of grades.

### c. Frequency of intersections

1. Intersections along minor arterial streets shall be limited to as few as possible

Figure 12

### Minor Arterial



### 15,5

### Standards for Collector Streets

- 1. Function Collector streets are designed to serve the local needs of the neighborhood and to provide direct access to non-residential, abutting properties. All traffic carried by collector streets should have an origin or a destination within the neighborhood.
- 2. Right-of-Way Width 57 feet (no parking) to 67 feet (parking)
- Number of Moving Lanes-Two lanes
- 4. Access Conditions Direct access to residential properties is by way of curb cuts.
- 5. Traffic Characteristics
  - a. On-street parking is allowed on both sides of minor collector streets unless prohibited.
  - b. Intersections are at grade

### 6. Planning Characteristics

- a. Sidewalks will be detached from vertical curbs
- b. Bicycle travel can be accommodated with 14' shared lanes.
- c. No residential frontage allowed on collectors with ADT greater than 2500.



### 7. Design Characteristics

- a. Grades
  - 1. Not less than one percent (1%) on tangents; collector not more than ten percent (10%).
- b. Alignment
  - 1. Horizontal curves collector 335 foot minimum radius at centerline for standard crowned cross-slopes.
  - 2. Vertical curves A minimum length equivalent to the K value times the algebraic difference of approach grades.
- c. Frequency of intersections
  - 1. Intersections along collector streets shall be limited to as few points as possible, while providing commercial access to abutting properties and connecting to local street system.





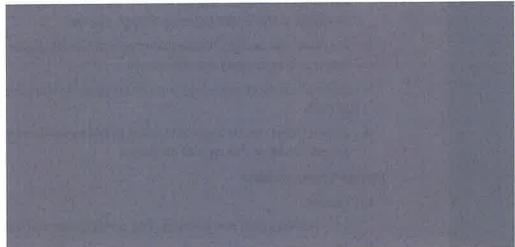
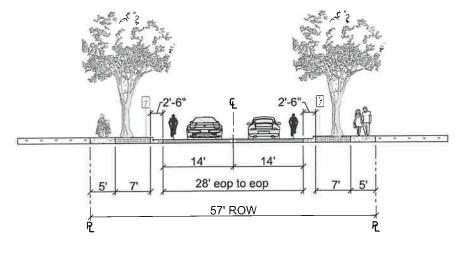


Figure 14

**Collector (Without Parking)** 



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15.6

### **Standards for Residential Streets**

- 1. **Function** Designed to serve the local needs of the neighborhood and to provide direct access to abutting residential properties. All traffic carried by residential streets should have an origin or a destination within the neighborhood.
- 2. **Right-of-Way Width -** 50 feet minimum plus 5 foot easements on each side of right-of-way for utilities and sidewalks.
- 3. Number of Moving Lanes Two lanes
- 4. **Access Conditions** Intersections are at grade with direct access to abutting properties by way of curb cuts or ramp-type curbing.
- 5. Traffic Characteristics On-street parking is allowed on both sides of the street
- 6. Planning Characteristics
  - a. Residential streets should be designed to discourage through traffic and to encourage traffic speeds of 25 mph or less. These streets should not exceed 1200 feet in length and should include geometric features at intervals of 600' maximum. Examples of features include chokers (chicanes), traffic circles, median island/barriers, cul-de-sacs, and curvatures. Design criteria for these techniques are available in the Traffic Calming Design Manual.
  - b. In subdivision design, residential streets are discouraged from intersections with major and secondary arterial streets.
  - c. Sidewalks may be detached from or attached to the curb, depending upon the type of curb.
  - d. Bicycle travel can be accommodated in the travel lanes due to the low volume, low speed nature of this type of roadway.

### 7. Design Characteristics

- a. Grades
  - 1. Not less than one percent (1%) on tangents; nor more than ten percent (10%)
- b. Alignment
  - 1. Horizontal curves 200 foot minimum radius at centerline for standard crowned cross-slopes.
  - 2. Vertical curves a minimum length equal to the K times the algebraic difference of approach grades.
- c. Frequency of Intersections
  - 1. Intersections along residential streets shall be allowed as needed to provide connections to other local streets and collector streets.



Figure 15

# Residential (Local) Streets (Detached Sidewalk)

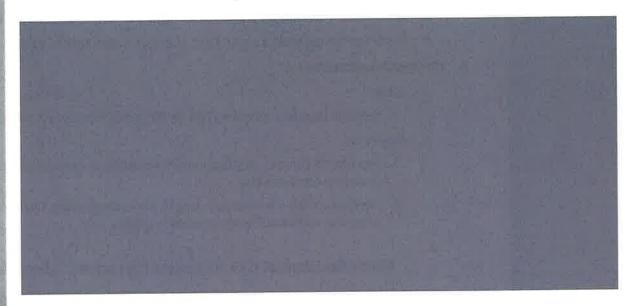


Figure 16

# Residential (Local) Streets (Attached Sidewalk)



15.7

# **Standards for Minor Residential Streets**

- 1. **Function** Designed to provide direct access to abutting single-family residential properties or cul-de-sacs having a length of no greater than 500 feet. A pavement mat of 24 feet is allowed on minor residential streets which contain no more than 20 single-family lots. Any other residential street having more than 20 single-family lots must install a 28 foot pavement mat.
- 2. **Right-of-Way** 47 feet minimum plus 5 foot easements on each side of right-of-way for utilities and sidewalks.
- 3. Number of Moving Lanes Two lanes
- 4. **Access Conditions** Direct access to residential properties is by way of curb cuts or by ramp type curbs.
- 5. Traffic Characteristics
  - a. On-street parking is allowed on one side of the street
  - b. Intersections are at grade



# 6. Planning Characteristics

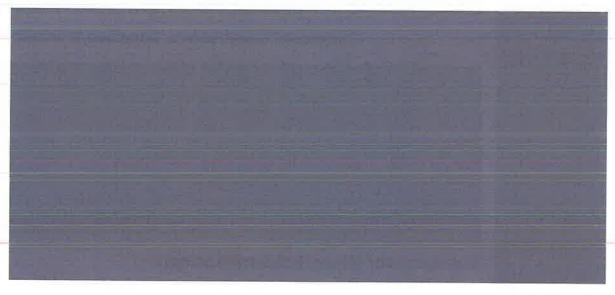
- a. Minor residential streets should be designed as short loop or cul-de-sac streets only.
- b. Minor residential streets should not intersect major arterial streets.

# 7. Design Characteristics

- a. Grades
  - 1. Not less than one percent (1%) on tangents; nor more than ten percent (10%)
- b. Alignment
  - 1. Horizontal curves 200 foot minimum radius at centerline for standard crowned cross-slopes.
  - 2. Vertical curves A minimum length equivalent to the K value times the algebraic difference of the approach grades.

# Figure 17

# Minor Residential (Local) Streets (Detached Sidewalk)



# Figure 18

# Minor Residential (Local) Streets (Attached Sidewalk)

(Serving less than 20 single family lots)



# 15.8

# **Standards for Industrial Streets**

- 1. **Function** Industrial/ commercial streets are designed to serve facilities within industrial/ commercial areas and to connect such areas with major arterial and collector streets.
- 2. Right-of-Way Width 70 feet (with two 5 foot easements)
- 3. Number of Moving Lanes Two lanes to four lanes
- 4. **Access Conditions** Direct access to abutting industrial/commercial properties is by way of curb cuts.

# 5. Traffic Characteristics

- a. On-street parking may be permitted on both sides of the street
- b. Intersections are at grade

# 6. Planning Characteristics

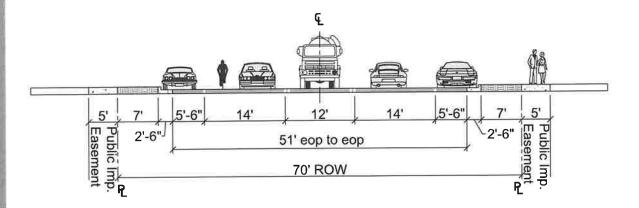
- a. Only local industrial/commercial traffic should be encouraged on industrial streets
- b. Sidewalks will be detached from the curb where required

# 7. 7. Design Characteristics

- a. Grades
  - 1. No less than one percent (1%) on tangents; nor more than eight percent (8%)
- b. Alignment
  - 1. Horizontal 335 foot minimum radius at centerline
  - 2. Vertical A minimum length equivalent to the K value times the algebraic difference of the approach grades.
- c. Frequency of Intersections
  - 1. Intersections along industrial/commercial streets shall be limited to as few as possible, while connecting to the collector street system and providing access to local land uses.

# Figure 19

# **Industrial Streets**





15.9

# **Standards for Alleys**

- 1. **Function** Designed to provide access to abutting property at rear lot lines.
- 2. **Right-of-Way Widths -** 20 foot (Residential)/ 25 foot (Commercial)
- 3. Number of Moving Lanes Two lanes
- 4. Access Conditions
  - a. Provide access to abutting property at rear of lots

# 5. Traffic Characteristics

- a. Normally alleys shall intersect at perpendicular angles with streets
- b. No parking shall be permitted

# 6. Planning Characteristics

- a. Alleys shall be open at both ends
- b. Normally alleys shall not intersect with collector streets or arterial streets.

# 7. Design Characteristics

- a. Grade
  - 1. Not less than one percent (1%) on tangents; nor more than ten percent (10%)

# 8. Alley Drainage

Alley surfaces may be designed to drain in three ways.

- Concrete V-shaped. The entire alley must be concrete. Concrete pans down the center of asphalt alleys are not permitted.
- Asphalt crowned with valley gutters on each side, or
- Asphalt cross-sloped with a valley gutter on the low side.

Flow-spread in alleys-shall be confined to the right-of-way at reasonable depths. Storm flows in alleys shall be limited to the flows generated from the rear of the lots adjoining the alley. Alley flows shall not cross the intersecting streets into another alley but shall be captured or diverted at the intersecting street. For more information about alley design reference is made to the design manuals for Traditional Neighborhood and Mixed Use Development.



Figure 20

# **Residential Alleys**

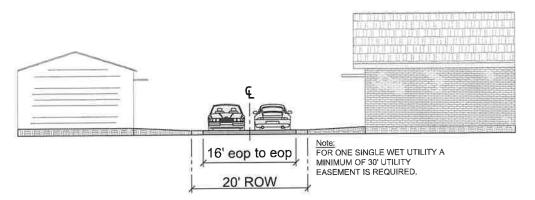
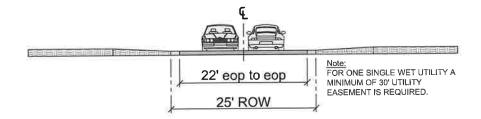


Figure 21

# **Commercial Alleys**



# Stakeholder Presentation Access Control Plan



ment Number	Western Road	Eastern Road	Approdusts Specing Segment Num	Segment Number   Western Road	Eastern Road	Approduate Spacing
	Black Forest Rd	Rising Eagle Place	1075' (0.20ml) 10	Banning Lewis Parkway (proposed)	Banning Lewis Parkway (proposed) The Ranch Callector West (proposed)	2300' (0.44 mi)
2	Rising Eagle Place	Loch Linneh Place	1700' (0.32ml) 11	The Ranch Collector West	Woodmen Hills Drive/Raygor Road	1530' (0,29 mi)
ET.	Loch Linneh Blane	Lochwinnoch Lane	2000' (0.38mi)	(broposed)	(bioposed)	
4	Lochwinnoch Lane	Proposed Commercial Access	1920' (0.36mi) 12.	Woodmen Hills Drive/Raygor Road	The Ranch Collector East (proposed)	2900'(0,55 mil)
		Well-we Band	1550 10 30mil	(basodoud)	The second secon	
^	Proposed Commercial Access	Volimer nodu	TOO INVESTIGATION	The Boach Collector Fost		
9	Volimer Road	Wheatland Drive	750' (0.14mi)	(broposed)	Towner Avenue	3570' (0.67 mī)
7	Wheatland Drive (proposed)	Sterling Ranch Road (proposed)	2700' (0.51mi) 14	Towner Avenue	Scenic Brush Drive	1340' (0.25 mi)
50	Sterling Ranch Road (proposed)	Sterling Ranch Callector (proposed)	2450' [0.46mi] 15	Scenic Brush Drive	Liberty Grove Drive	1450' (0,27 mi)
0	Sterling Ranch Collector largoposed) Banning Lewis Parkway (Proposed)	Banning Lewis Parkway (Proposed)	1100' (0.21 mi)	Otherwise Course Other	Advertising Daniel	14EO/10 37 mil

provided internally from the existing access or new access to a roadway of lower functional classification.

# 4. Relocation of Access when Alternative is Available

All access to an expressway not meeting the minimum one-mile spacing requirement shall be closed in favor of an alternative access when an alternative is reasonably available in the opinion of the ECM Administrator.

# B. Rural and Urban Principal Arterial and Rural Minor Arterial Access Criteria

# 1. Spacing

Spacing of roads accessing a principal arterial or rural minor arterial that will result in a full movement intersection shall be planned at one-half mile (one-quarter mile for rural minor arterials). Should the one-half mile spacing not be "viable or practical" for providing access to the adjacent land, a deviation may be considered and approved by the ECM Administrator. If a deviation is granted, only one additional full movement intersection will be permitted by the ECM Administrator. The Applicant shall have the burden of proof that no other "viable or practical" access is available. A deviation request should be supported by a traffic study or memorandum that provides information to assist the ECM Administrator in determining the proposed deviation minimizes negative safety and other operational impacts. If the development is at the intersection of two major corridors, the full movement access should be located on the lower functional classification roadway. The intersection shall only be approved if the intersection and roadway are shown to operate safely and efficiently with buildout design hour/peak hour projected traffic volumes. The intersection must also show a public benefit. An arterial progression through bandwidth percentage of 35 percent or greater must be achieved or the inclusion of a signal at the access must not degrade the existing signal progression. The intersection must not create any queuing or blocking of lane entries or access points. The intersection must be in a location such that any necessary turn, acceleration and deceleration lanes can be accommodated to maintain safe operations and capacity. The analysis should consider all potential future additional requirements for left turn or other exclusive phasing at a signal for which the need is created by traffic generated by land uses on both sides of the roadway.

# 2. Topographic and Other Limitations

Where topography or other existing conditions make the required spacing inappropriate or unfeasible, location of the access shall be determined with consideration given to topography, established property ownerships, unique physical limitations, pre-existing historical land use patterns, and physical design constraints, with every attempt to achieve an access spacing of one-half mile. The final location shall serve as

many properties as possible to reduce the need for additional direct access to the principal arterial or rural minor arterial. In selecting locations for full movement intersections, preference shall be given to roads that meet, or may be reasonably expected to meet, signal warrants in the future.

# 3. Access and Lot Division

No additional access right shall accrue and no additional access shall be provided when splitting or dividing existing lots of land. When an alternative is reasonably available in the opinion of the ECM Administrator, all access to the newly created properties shall be provided internally from the existing access or new access to a roadway of lower functional classification.

## C. Urban Minor Arterial Access Criteria

Spacing of roads accessing an urban minor arterial that will result in a full movement intersection shall be planned at one-quarter mile. However, one parcel access shall be granted to each existing lot, if it does not create safety or operational problems. The parcel access will provide for right turns only. The access may allow for left turns in (three-quarters movement) if the addition of left turns will improve the operation at an adjacent full movement intersection and meet appropriate design standards.

# D. Collector Access Standards

Collector roadways shall intersect another roadway (centerline to centerline) in accordance with the standards in Section 2.3.7. On minor collector roadways, the closest local roadway intersection to an arterial roadway shall be 330 feet (right-of-way line of arterial to centerline of local roadway). On major collector roadways, the closest local roadway intersection to an arterial roadway shall be 660 feet (right-of-way line of arterial to centerline of local roadway). Single-family residence access to major collector roadways is not permitted (even though existing conditions show otherwise).

# E. Rural and Urban Local Roadways

Roads shall not intersect urban local roadways closer than 175 feet from each other (centerline to centerline) and shall not intersect a rural local roadway closer than 330 feet from each other. On an urban local roadway, the closest intersection to a collector roadway shall be at least 200 feet (centerline to centerline). To an arterial roadway, the closest intersection shall be 330 feet (arterial right-of-way line to local roadway centerline).

# 2.2.6 Soils Investigations

## A. General

Soil investigations are conducted to help in preparing designs of roadways and other public facilities. The soil investigation report provides detailed information



16.0

# **Table of Traffic Engineering Design Standards**

Traffic Engineering Design Standards (Freeways, Expressways and Arterials)

Design Element	Functional Classification						
	Freeway	Expressway	Principal Arterial Type 2 (6 lane)	Principal Arterial Type 1 (4 lane)	Minor Arterial		
Speeds (1)	65	55	45	45	40		
Design ADT	85,000- 100,000	60,000-85,000	25,000-60,000	10,000-25,000	5,000-25,000		
Trip Length	Over 5 miles	Over 5 miles	1-2 miles	1-2 miles	Over 1 mile		
Corridor ROW Width	332'-420'	210′	142′	107′	90' w/ (2) 5' easements		
Roadway Width (pavement mat)	Var. Width	2-50' pavement mat	2-40' pavement mat	2-28' pavement mat	69'		
# of Lanes	6-8	4-6	6	4	4		
Lane Widths	12'	12'	11'	11′	11'		
Shoulder Width	12′	10'	4'	4′	4'		
Median	Var. Width	Raised 28'	Raised 28'	Raised 17'	Raised 17'		
Sidewalk Requirement (placement)	N/A	N/A	Detached 6'	Detached 6'	Detached 6'		
Bicycle Accommodation	N/A	N/A	6' Multi-Use Shoulder	6' Multi-Use Shoulder	5'Multi-Use Shoulder		
Tree lawn Width	N/A	N/A	7′	7'	7'		
Parking	No	No	No	No	No		
Access	Full Control	Full Control	Full Control	Full Control	Full Control		
Design Vehicle	WB 67	WB 67	WB 67	WB 67	WB 50		
Signalized Intersection Frequency	N/A	1 mile	½ mile	½ mile	½ mile		
Unsignalized Intersection Frequency	1 mile	N/A	1⁄4 mile	¼ mile	600′		
Vertical Alignment	Refer to Vertica	al Curve Design in	AASHTO Geometri	c Design of Highwa	ys and Streets		
Horizontal Alignment Radius	N/A	N/A	1045′	1040′	765'		
Grade (min-max)	1%-4%	1%-4%	1%-4%	1%-4%	1%-4%		
Intersection Grade	Grade Separ.	1% min	1% min	1% min	1% min		
Intersection Sight Distance	775′	665'	500′	500′	445′		
Stopping Sight Distance (2)	730′	570′	360′	360′	305′		



# Traffic Engineering Design Standards (Collector, Residential [Local], Public Alley, and Industrial)

Design Element					
	Collector	Residential (Local)	Minor Residential (Local)	Public Alley	Industrial
Speeds (1)	30	25	25	15	30
Design ADT	1,500-5,000	300-1,500	50-300	50-300	<10,000
Trip Length	1 mile	Local	Local	Local	Truck Local
Maximum Uninterrupted Facility Length	¼ mile	600′	300′	Adjacent Street Length	1 mile
Corridor ROW Width	57' (no parking) 67' (parking)	50' w/ (2) 5' easements	47' w/ (2) 5' easements	20' Residential 25' Commercial	70' w/ (2) 5' easements
Roadway Width (pavement mat)	28'(no parking) 38' (parking)	30′	24' (<21 Lots) 28' (>20 Lots)	16' Residential 22' Commercial	51′
# of Lanes	2	2	2	2	3
Lane Widths	14' w/ shared bike	9'	N/A	N/A	14' w/shared bike w/12' ctl
Shoulder Width	N/A	N/A	N/A	N/A	N/A
Median	N/A	N/A	N/A	N/A	N/A
Sidewalk Requirement (placement)	Detached 5'	Attached 6' vert. curb/ Detached 5' others	Attached 6' vert. curb/ Detached 5' others	N/A	Detached 5'
Bicycle Accom- modation	On street w/ shared lane	On street w/ shared lane	On street w/ shared lane		On street w/ shared lane
Tree lawn Width	7'	7′-6″	7'	N/A	7'
Parking	Allowed	Two Sides	One-side parking only	No	Two sides
Access	Partial Control	Partial Control	Partial Control	N/A	Partial Control
Design Vehicle	WB 40	SU 30	SU 30	N/A	WB 67
Signalized Intersection Frequency	N/A	N/A	N/A	N/A	½ mile
Un-signalized Intersection Frequency	600′	300' max	300' max	½ adjacent street length	600'

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Design Element					
	Collector	Residential (Local)	Minor Residential (Local)	Public Alley	Industrial
Vertical Alignment	Refer to		e Design in AA lighways and S	SHTO Geometric Streets	Design of
Horizontal Alignment Radius	335'	200′	200′	85'	335'
Grade (min-max)	1%-10%	1%-10%	1%-10%	1%-10%	1%-8%
Intersection Grade	1%-3%	1%-4%	1%-4%	1%-4%	1%-3%
Intersection Sight Distance	335'	280'	280'	170°	335′
Stopping Sight Distance (2)	200'	155'	155'	80'	200′

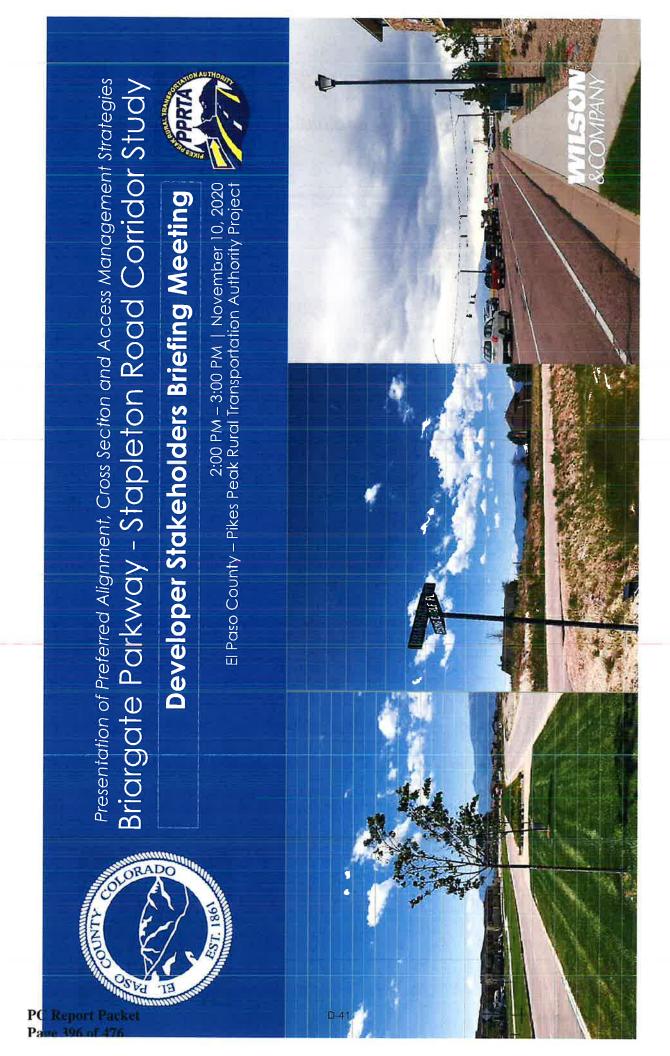
Note: Alternate design standards may apply when Traditional Neighborhood, Mixed Use, Hillside, or Low-Impact Development are used.

<sup>(1)</sup> Speed refers to the anticipated posted speed. The design speed is 5 mph greater than the posted speed.

<sup>(2)</sup> For level terrain only.

# Stakeholder Coordination 11/10/2020 Developers

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# Agenda

Corridor Alignment

Roadway Cross Section

Access Management

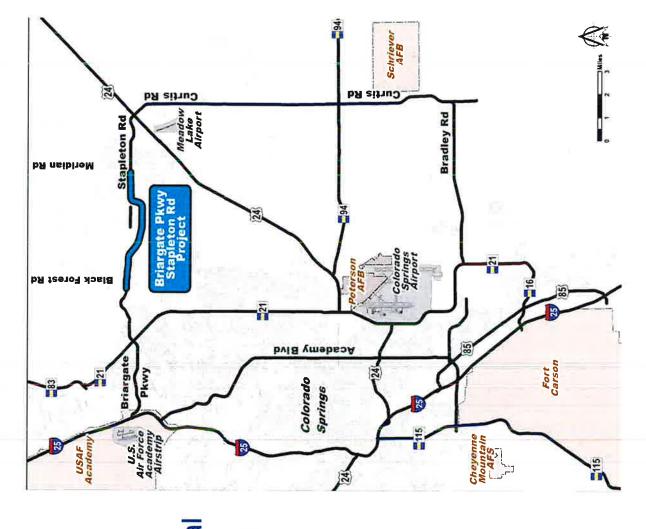
Multimodal Facilities

Utilities

BRIARGATE PARKWAY - STAPLETON ROAD CORRIDOR STUDY

# Context

- The Briargate-Stapleton Project Corridor is part of regional principal arterial route that provides north-south connectivity as well as connections on the north and south to I-25.
- The corridor is identified as a key facility in PPACG's Regional
  Transportation Plan, El Paso
  County's Major Transportation
  Corridor Plan and the City of
  Colorado Springs current
  Intermodal Transportation Plan.



BRIARGATE PARKWAY STAPLETON ROAD CORRIDOR STUDY

# Study Deliverables

Corridor Preservation Plan

Pre-NEPA Environmental Overview

Access Management Plan

BRIARGATE PARKWAY = STAPLETON ROAD CORRIDOR STUDY

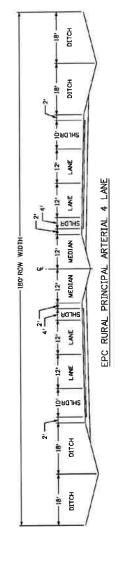
# Corridor Alignment

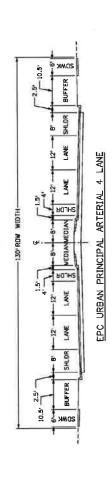


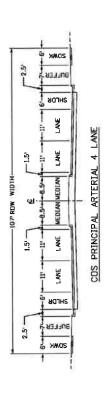
3RIARGATE PARKWAY - STAPLETON ROAD CORRIDOR STUDY

# Roadway Cross Section

# STANDARD 4-LANE CROSS SECTIONS



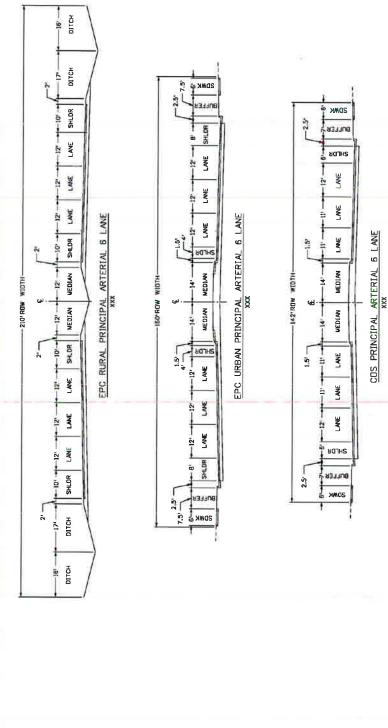




BRIARGATE PARKWAY STAPLETON ROAD CORRIDOR STUDY

# Roadway Cross Section

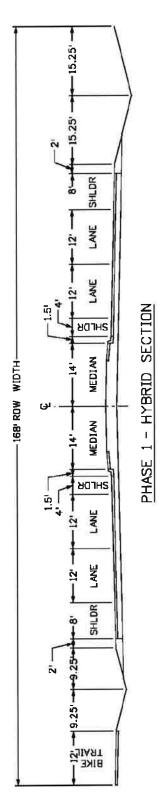
# STANDARD 6-LANE CROSS SECTIONS

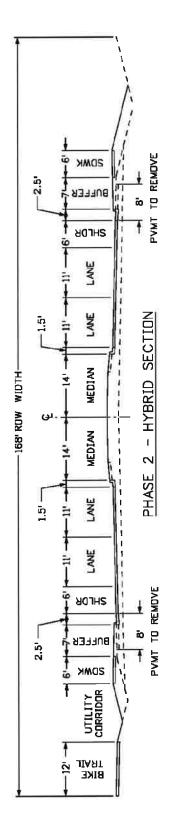


BRIARGATE PARKWAY - STAPLETON ROAD CORRIDOR STUD

# Roadway Cross Section

# HYBRID CROSS SECTION & PHASING





riargate parkway - Stapleton road corridor Study

# Access Management

# 4-LANE PRINCIPAL ARTERIAL ACCESS CRITERIA

▼ El Paso County

Spacing of 1/2 mile between intersections (2640')

· City of Colorado Springs

Spacing of 1/2 mile between signalized intersections (2640')

Spacing of 1/4 mile between unsignalized intersections (1320')

Same criteria for 6 lanes

Briargate parkway = Stapleton road corridor study

# Access Management



Segment Number	Western Road	Eastern Road	Approximate Spacing
1	Black Forest Rd	Rising Eagle Place	1075' (0.20ml)
2	Rising Eagle Place	Loch Linneh Place	1700' (0.32ml)
m	Loch Unneh Place	Lochwinnoch Lane	2000' (0.38mi)
4	Lochwinnoch Lane	Proposed Commercial Access	1920' (0.36ml)
v	Proposed Commercial Access	Vollmer Road	1530' (0.29mi)
9	Voltmer Road	Wheatland Drive	750' (0.14mi)
7	Wheatland Drive (proposed)	Sterling Ranch Road (proposed)	2700' (0.51mi)
00	Sterling Ranch Road (proposed)	Sterling Ranch Collector (proposed)	2450' (0.46mi)
6	Sterling Ranch Collector (proposed)	Banning Lewis Parkway (Proposed)	1100' (0.21 mi)

briargate parkway - Stapleton Road Corridor Study

1450' (0.27 mi) 1450' (0.27 mi)

Scenic Brush Drive Liberty Grove Orive

> Scenic Brush Drive Liberty Grove Drive

> > 15 15

3570' (0.67 mi) 1340' (0.25 mi)

2900' (0.55 ml)

The Ranch Collector East (proposed)

Woodmen Hills Drive/Raygor Road (proposed)

13 13

The Ranch Collector East

1530' (0,29 mî)

2300' (0.44 mi)

The Ranch Collector West (proposed)

Banning Lewis Parkway (proposed)

10

The Ronch Collector West

Woodmen Hills Drive/Raygor Road

# Access Management Strategies

# Right-In/Right-Out Access Restrictions

- Rising Eagle (Segments 1 and 2)
- Wheatland Drive (Segments 5 and 6)
- Sterling Ranch Collector (Segments 8 and 9)
  - Scenic Brush Drive (Segments 13 and 14)

# Implement 2020 MTCP/Plat Notes

- Highland Park:
- There shall be no vehicular access to Briargate Parkway. El Paso County shall be contacted prior to establishment of any driveway.
- The Ranch:
- The developer will construct the extension of Stapleton/Briargate through the property to a 4-lane principal arterial functional classification.
- subject to change. Final location and design will be determined through the subdivision process. Until approved by the County, all proposed access locations, road locations, widths and alignments, roundabout locations and design shown on this sketch plan are conceptual and
  - The eastern intersection of the proposed urban residential collector loop and Stapleton Drive/Briargate Parkway may be signalized or constructed as a modern roundabout

# **Multimodal Facilities**

◆ Large multipurpose shoulders

Separate bike path

Separated sidewalks

pedestrian crossing (where County regional EPC Parks interested in grade-separated trail crosses just east of Sterling Ranch)

briargate parkway - stapi eton road corridor study

# Utilities

Utilities Corridor outside of roadway footprint

Identified by CSU as preferred utilities corridor

Timing is of interest to CSU

BRIARGATE PARKWAY - STAPLETON ROAD CORRIDOR STUDY

# Thank You

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Project Website: https://www.briargate-stapleton.com

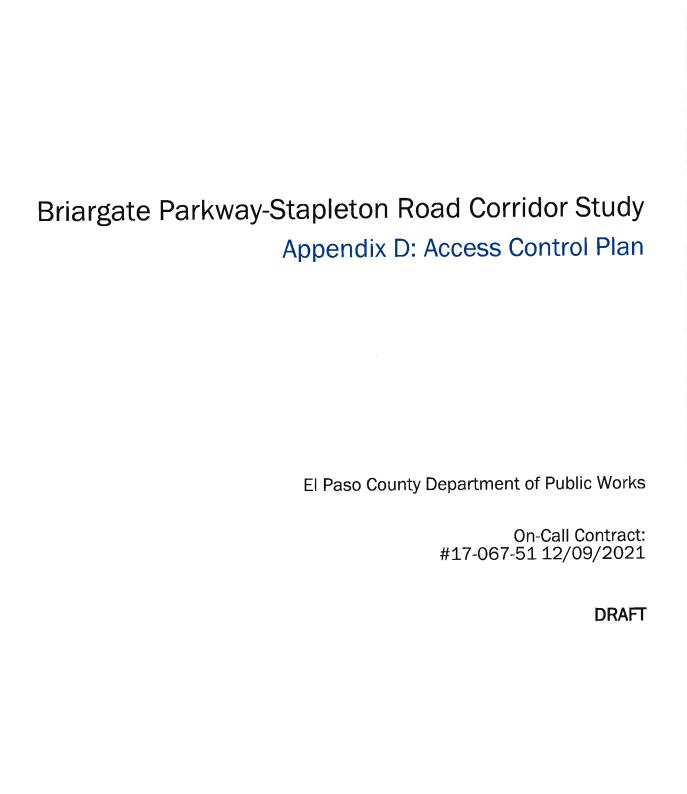
RRIARGATE PARKWAY STAPLETON ROAD CORRIDOR STIIDY

Prepared by



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# Briargate Parkway-Stapleton Road Corridor Study Appendix D: Access Control Plan



Prepared for

El Paso County Department of Public Works On-Call Contract: #17-067-51

# **DRAFT**

December 9, 2021

Prepared by



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# List of Abbreviations

Abbreviation Term/Phrase/Name

ACP Access Control Plan

ADT Average Daily Traffic

COS / the City City of Colorado Springs

CPP Corridor Preservation Plan

EB Eastbound

ECM Engineering Criteria Manual

IGA Intergovernmental Agreement

MTCP Major Transportation Corridors Plan

MUTCD Manual on Uniform Traffic Control Devices

NB Northbound

PPACG RTP Pikes Peak Area Council of Governments Regional Transportation Plan

RIRO Right-In/Right-Out

ROW Right-of-Way

SB Southbound

TCM Traffic Criteria Manual

TRB Transportation Research Board

WB Westbound

# **Executive Summary**

# Background

The Briargate Parkway–Stapleton Road (in some locations referred to as Stapleton Drive) corridor is an integral part of a larger transportation system in the Pikes Peak Region. The corridor will ultimately connect I-25 to US Highway 24 on the north side of the greater Colorado Springs area. The portion of this corridor under consideration as part of this study, between Black Forest Road and Meridian Road, is widely undeveloped. Some sections contain existing roadways of various types and phases of construction associated with adjacent development.

# Goals

This study effort coordinates anticipated development and growth in the area with the roadway network. The goals for the project are as follows:

- Provide safe, effective, and efficient access to and from Briargate/Stapleton Road for businesses, residents, and other corridor users.
- Maintain compatibility with existing and proposed off-system connections that provide local circulation to support the Major Transportation Corridors Plan (MTCP).
- Provide a plan that can be adopted by all entities and can be implemented in phases.
- Support the economic viability of the project area.
- Maintain compatibility with local planning efforts.
- Support mobility provisions such as bikes, pedestrians, and public transit.

# **Existing Conditions**

The study area begins at Black Forest Road, the eastern boundary of the Wolf Ranch subdivision, and coincides with the east edge of Colorado Springs. The terminus of the study area is along the Stapleton Road right-of-way (ROW) at Meridian Road. There are significant amounts of development occurring in this rapidly developing area of the city and the county. The length of the corridor is about 5.5 miles.

The surrounding area is widely vacant, although there are pockets of urban and rural residential developments and multiple development proposals for additional residential units. The corridor ends at Meridian Road. Adjacent planned developments include Wolf Ridge, Eagle Wing, Wolf Ranch, Highland Park, Eagle Rising, Wild Ridge, Sterling Ranch, Sterling Ranch Homestead, Indian Wells, The Ranch, Stapleton Estates, The Meadows, and Paint Brush Hills.

# Recommendations

After evaluating both existing and proposed conditions, the plan limits full-movement access to major intersections spaced approximately one-half mile apart. Minor intersections are limited to right-in/right-out (RIRO) access, limiting opportunities to make left turns onto the highway. Traffic control measures include raised medians, driveway channelizing islands at limited-access points, and signing and striping.

Full-movement intersections with potential for future signalization or other traffic control measures have been identified as part of the Access Plan; however, the type of traffic control is not specified. Potential traffic control may include stop signs, traffic signals, roundabouts, interchanges, and other traffic control devices recognized by the *Manual on Uniform Traffic Control Devices* (MUTCD). Where warranted per current MUTCD standards, traffic signals may be implemented when funding is available.

# 1 Introduction and Overview

El Paso County (EPC or the County) has completed the Briargate Parkway – Stapleton Road Corridor Preservation Plan (CPP). The CPP establishes the necessary framework for future connection of the corridor between Meridian Road and Black Forest Road, including the centerline alignment, the ultimate roadway section, an environmental overview, conceptual roadway and drainage design, and this Access Control Plan (ACP).

The Briargate Parkway–Stapleton Road (in some locations referred to as Stapleton Drive) corridor is an integral part of a larger planned transportation system in the Pikes Peak Region. The corridor will ultimately connect I-25 to US Highway 24 on the north side of the greater Colorado Springs area. The portion of the corridor that is under consideration as part of this study, between Black Forest Road and Meridian Road, is generally rural in character and is not developed in most areas. Some sections contain existing roadway of varying configurations and phases of construction associated with adjacent development.

# 1.1 Project Summary

The study area (Figure 1) begins at Black Forest Road, the eastern boundary of the Wolf Ranch subdivision, and coincides with the east edge of Colorado Springs. The terminus of the study area is along the Stapleton Road right-of-way (ROW) at Meridian Road. There are significant amounts of development occurring in this rapidly developing area of the city and the county.

Most of the corridor currently falls under the County's jurisdiction; however, it will likely be incorporated into the city of Colorado Springs as development progresses. Close coordination will be required with the City of Colorado Springs (the City or COS) throughout the project. The County had previously developed an Access Management Plan and a Master Plan for the area as part of its ongoing development.

This corridor is expected to play an essential role in the region's mobility and connectivity by providing a northern connection from I-25 to US Highway 24. The proposed corridor cross section will include a four-lane section with shoulders, turn lanes, and pedestrian/bicycle facilities. These facilities will improve the mobility of motorists, transit, bicycles, and pedestrians.

# 1.2 Project Goals

This study effort coordinates anticipated development and growth in the area with the roadway network. The goals for the project are as follows:

- Provide safe, effective, and efficient access to and from Briargate/Stapleton Road for businesses, residents, and other corridor users.
- Maintain compatibility with existing and proposed off-system connections that provide local circulation to support the Major Transportation Corridors Plan (MTCP).
- Provide a plan that can be adopted by all entities and can be implemented in phases.
- Support the economic viability of the project area.
- Maintain compatibility with local planning efforts.
- Support mobility provisions such as bikes, pedestrians, and public transit.

# 1.3 Existing Conditions

The length of the corridor is about 5.5 miles. The project area within the ROW, excluding potential drainage or construction easements, is about 116 acres. The current Briargate Parkway west of the project area (in Wolf Ranch subdivision) has a posted speed limit of 35 mph. East of the project area on Stapleton Road, the

# Appendix D: Access Control Plan

speed limit is posted at 45 mph. The portion of the corridor that is not currently greenfield is paved with asphalt pavement.

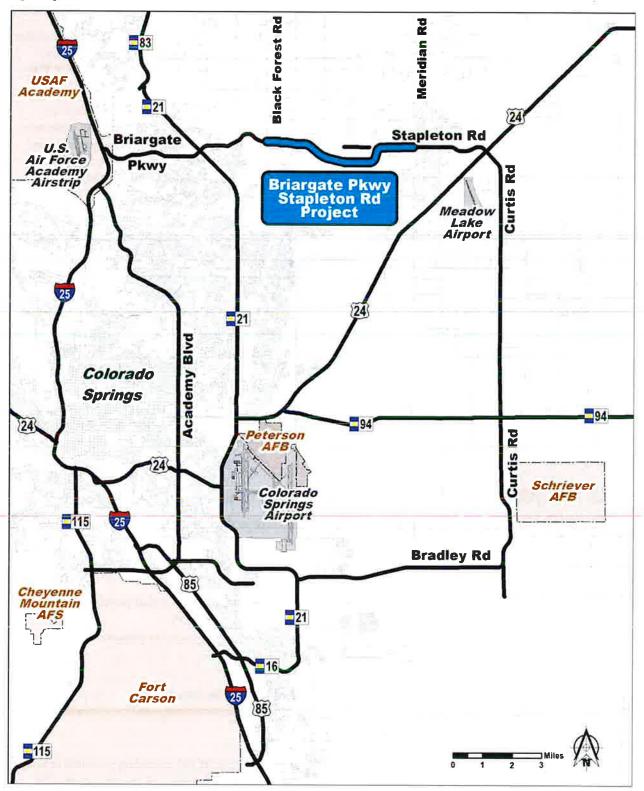


Figure 1. Study Area Vicinity Map

El Paso County Department of Public Works

The surrounding area is widely vacant, although there are pockets of urban and rural residential developments and multiple development proposals for additional residential units. Primarily large-lot (2.5 ac) residential developments exist along the westernmost section of the corridor from Black Forest Road to Cottonwood Creek. The corridor aligns with the existing Briargate Parkway in this area. Continuing from Cottonwood Creek to Vollmer Road, the corridor turns southeast and has other large-lot developments currently under construction, as well as some undeveloped land. The corridor then runs through the proposed Sterling Ranch development, consisting of primarily residential areas along the corridor (ranging from 3–5 to 5–8 dwelling units per acre) and commercial areas. Part of this Plan is currently under construction at Vollmer Road. The corridor continues east and then north across undeveloped land and finally turns east to align with existing Stapleton Road. There are existing single-family residential lot (0.5 ac or less) developments along most of the north part of the corridor in this location and large-lot residential or undeveloped land to the south. There is a large undeveloped lot in the northwest quadrant of Stapleton Road and Meridian Road. The corridor ends at Meridian Road.

Drainage is accommodated with an open system. The corridor is in the Cottonwood Creek, Sand Creek, and Falcon drainage basins through this area. The Cottonwood Creek basin generally drains southwest, and the Sand Creek basin and its tributaries drain south and southwest. The Falcon basin drains southeast.

Overhead utilities exist on the north side of Stapleton Road, west of Meridian Road to just east of Scenic Brush Drive in the Scenic View at Paint Brush Hills subdivision. There are several locations where overhead utilities cross the corridor: at Black Forest Road, at Vollmer Road, and at Meridian Road, and there is an electric transmission line crossing west of Towner Road. Underground utilities may exist at some locations in the project area where development has occurred adjacent to the corridor. Utility easements likely exist along all platted parcels even if actual utilities are not present.

# 1.4 Traffic Analysis

Traffic analysis and future traffic projections are detailed in the Traffic Analysis Report (Wilson and Company, June 2021) in Appendix B.

### 1.4.1 Access Needs and Impacts

Multiple developments have submitted filings along this corridor and are in various approval, construction, and completion stages. The corridor alignment took these planned developments under consideration. Adjacent planned developments include the list below. Locations of selected existing platted subdivisions and active filings are shown in **Figure 2**, along with the roadway alignment and future proposed and potential (not required to serve submitted development plans as of October 2021) access locations.

- Wolf Ridge
- Eagle Wing Estates
- Wolf Ranch
- Highland Park
- Eagle Rising
- Wild Ridge
- Sterling Ranch

- Sterling Ranch
- Indian Wells
- The Ranch
- Stapleton Estates
- The Meadows
- Paint Brush Hills

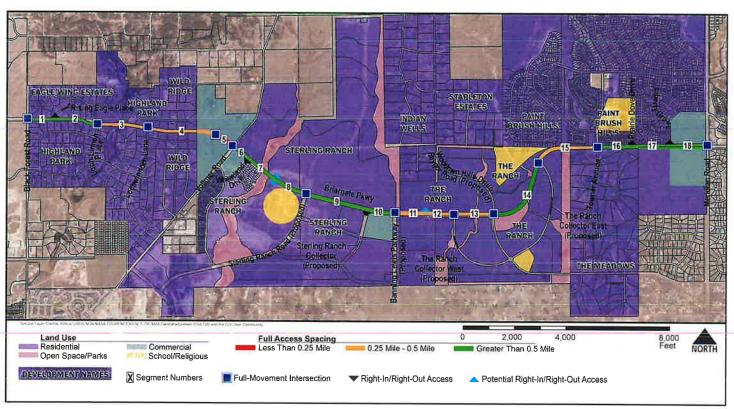


Figure 2. Corridor Land Use and Planned Developments

El Paso County Department of Public Works

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# 2 Access Management

The State of Colorado State Highway Access Code, last updated March 2002 Section 2.12, states that a local authority may develop an ACP for a road segment that defines access locations and type. Creating an ACP allows the local authorities to plan all access points along a roadway segment as a network rather than at individual access locations. Intersection spacing, traffic movements, land use, topography, and other local plans may be considered in developing an ACP. The

ACCESS MANAGEMENT IS THE
COORDINATED PLANNING, REGULATION,
AND DESIGN OF ACCESS BETWEEN
ROADWAYS AND LAND DEVELOPMENT.
IT INVOLVES THE SYSTEMATIC CONTROL
OF THE LOCATION, SPACING, DESIGN, AND
OPERATION OF DRIVEWAYS, MEDIAN
OPENINGS, INTERCHANGES, AND STREET
CONNECTIONS TO A ROADWAY.

Access Management Manual, TRB, Second Edition 2014

plan does not define capacity improvements, off-network improvements, or funding sources for access improvements. The It is a long-range planning tool that identifies access conditions implemented as development occurs. The local authorities adopt ACPs through an intergovernmental agreement (IGA).

### 2.1 Benefits

An ACP provides a framework to ensure that future development and access will not affect the roadway's functionality. This is particularly relevant to arterial roads as it can allow for more continuous traffic movement and reduce delays due to intersection or turning movements. Access management has several benefits:

- Improves Safety Fewer decision points and conflict points.
- Accommodates Travel Demand Strategically limits entrance/exit point, reduces congestion, and lessons travel times.
- Preserves Economic Viability Captures a broader market by providing a consistent development environment, allowing for easy access to businesses and residential areas.
- Enhanced Aesthetics Defined sidewalks and medians provide opportunities for streetscaping.

# 2.2 Implementation

The El Paso County Engineering Criteria Manual (ECM) has guidance for the minimum intersection spacing required, based on the roadway classification. Since this is essentially a new corridor, multiple developments have submitted filings along the corridor and are in various approvals, construction, and completion stages. An ACP benefits this corridor by limiting the amount and type of access made to the corridor, per the ECM requirements.

All current development filings have been examined, and the access for those developments has been studied. The study results indicate that the currently proposed intersections should be implemented either as full-access or right-in/right-out (RIRO) intersections as detailed in **Section 4.2.1**. All future filings should be examined to ensure that they comply with the results of this ACP.

# 3 Existing Access Conditions

Most of the proposed roadway did not exist at the time that this Access Control Plan was developed. Planned/approved future access was identified based on development plans filed with the County. Additionally, public and stakeholder input collected through virtual meetings held with stakeholders and a Virtual Public Open House that was hosted on the project website and via a project website. The project website includes an integrated reference library, a comment form, and an interactive comment map. Comments that identified recommendations and concerns relating to corridor access and other pertinent issues were considered as part of the planning process. A full range of improvement alternatives was then developed, evaluated, and iteratively refined to provide preferred recommendations for:

- Local and Regional Mobility
- Roadway Alignment and Cross-Section
- Intersection Layout and Control
- Access Management and Connectivity
- Roadway Drainage

The corridor currently falls under County jurisdiction; however, it is anticipated that with the development occurring, much of the area along the corridor may be annexed into the City of Colorado Springs in the future. As such, the City of Colorado Springs design criteria was also considered.

# 3.1 Design Criteria: Four-Lane Principal Arterial

The 2016 MTCP designates the Briargate/Stapleton Corridor as a four-lane principal arterial. The current speed limit west of the project area (in Wolf Ranch Subdivision, Colorado Springs) is 35 mph, which is inconsistent with the City's classification of the roadway as a principal arterial. The current speed limit east of the project area (at Meridian Road, in El Paso County) is 45 mph, consistent with the County's classification of the roadway as an urban principal arterial.

The ultimate section developed for the corridor, as shown in **Figure 3**, will resemble the City of Colorado Springs typical section with 11' thru lanes in each direction and a 6' outside shoulder to provide a shared facility for bicycles, and a 6' detached sidewalk ensures increased pedestrian safety. The design criteria for the Ultimate section are shown in **Table 1**.

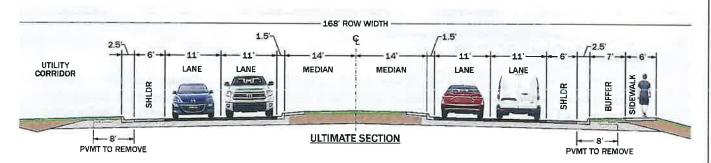


Figure 3. Ultimate Hybrid Section

Table 1. Ultimate Roadway Design (	Criteria for 4-Lane Principa	Il Arterials									
Ultimate											
Design Speed/Posted Speed	50/45	Sidewalk Width (at flowline)	6' detached								
Clear Zone	n/a	Design ADT	40,000								
Minimum Centerline Curve Radius	930'1	Design Vehicle	WB-67								
Trip Length	1-2 miles	Bike Lakes Permitted	6' Multi-Use Shoulder								
Number of Thru Lanes	4	Tree Lawn Width	7'								
Lane Width	11'	Access	Full Control								
Right-of-Way	168'	Intersection Spacing	½ mile (signalized) ¼ mile (unsignalized)								
Paved Width	28 <sup>12</sup> (excluding gutter pan)	Parking Permitted	No								
Median Width	31' (including curb & gutter)	Minimum Flowline Grade of Curb	0.50%								
Outside Shoulder Width	6' (excluding gutter)	Centerline Grade (Min. – Max.)	0.5-6%								
Inside Shoulder Width	n/a	Intersection Grades (Min. – Max)	0.5-3%								
Required Curb/Gutter Type	6" vertical	Intersection Sight Distance	500'								

Assumes 4% superelevation, 6% for 70 MPH design speeds.

Saurces: Data from El Paso County, Engineering Criteria Manual, Chapter 2, "Transportation Facilities, Table 2-4: Roadway Design Standards for Rural Expressways and Arterials and Table 2-6: Roadway Design Standards for Urban Expressways and Arterials,, last modified October 14, 2020,

https://library.municode.com/co/el\_paso\_county/codes/engineering\_criteria\_manual\_?nodeId=ENCRMA\_C H2TRFA; City of Colorado Springs, Traffic Criteria Manual, Section 16, "Table of Traffic Engineering Design Standards," Table 10 Traffic Engineering Design Standards (Freeways, Expressways and Arterials), p.39. https://coloradosprings.gov/sites/default/files/images/traffic\_criteria\_manual.pdf.

## 3.2 Roadway Access

Table 2 shows the intersections and characteristics of existing segments of Briargate Parkway and Stapleton Road (Stapleton Drive in some locations) between Black Forest Road and Meridian Road. Among the existing cross streets, Black Forest Road and Meridian Road currently have functional classifications that are equal to or higher than the functional classifications of the currently existing segments of the Briargate Parkway–Stapleton Road project corridor.

# 3.3 Existing and Proposed Access Descriptions

The existing condition of each access—intersecting roads, driveways, and field gates—along the entire length of the Briargate Parkway–Stapleton Road project corridor are described below. The ultimate access conditions are also described consistent with applicable design criteria and, if necessary, the interim plan prior to implementing the final design. Plan sheets showing modifications to existing access and proposed access and survey stationing are included as **Attachment A**.

<sup>&</sup>lt;sup>2</sup>Pavement width in each direction for divided roadways.

Gated field access points will be closed if the subdivision plat does not specify that a parcel is to have access to Briargate Parkway—Stapleton Road or if the parcel already has alternative access. Field access for deeded parcels without a current access will remain, and the gate's location will be noted as the "future access" for that property. It is anticipated that any existing or planned field gates providing access to utilities will remain.

#### Station 200+00 North/South: Black Forest Road

- Existing: This access, known as Black Forest Road, currently exists as a T-intersection that connects to existing Briargate Parkway and extends east from Black Forest Road. The existing intersection operates under two-way stop control. Black Forest Road is a two-lane minor arterial at this intersection and existing Briargate Parkway is a two-lane collector with no driveway access.
- Ultimate: Black Forest Road will be widened to four lanes. It will remain a minor arterial to the north of this intersection and will be upgraded to a principal arterial classification to the south of this intersection. The ultimate Briargate Parkway section at this location will be a four-lane principal arterial extending to the east and west, and this intersection will become a full-movement signalized intersection.

#### Station 211+00 North: Rising Eagle Place

- Existing: This access, known as Rising Eagle Place, currently exists as a dogleg connection between
  the existing Briargate Parkway, east of Back Forest Road and Rising Eagle Place. Both Briargate
  Parkway and Rising Eagle Place currently exist as local residential streets. Rising Eagle Place has
  direct driveway access.
- Ultimate: The ultimate Briargate Parkway section at this location will extend to the east and to the
  west as a four-lane principal arterial. A future T-intersection access (to the north) at Rising Eagle
  Place will have RIRO only access.

#### Station 227+60 South: Loch Linneh Place

- Existing: Loch Linneh Place currently terminates as a cul-de-sac that is coincident with the proposed
  future alignment of Briargate Parkway—Stapleton Road, and a field access connects to the cul-de-sac
  from the north. Loch Linneh Place is a two-lane residential street/collector that indirectly connects
  to Black Forest Road and Vollmer Road via Forestgate Road and Forestgate Road/Lochwinnoch
  Lane, respectively.
- Ultimate: The ultimate Briargate Parkway section will be a four-lane principal arterial, and the future T-intersection (to the south) at Loch Linneh Place will have RIRO-only access. The field access will be closed.

#### Station 247+50 North/South: Lochwinnoch Lane

- Existing: Lochwinnoch Lane is a two-lane residential street/collector that connects to Black Forest Road and Vollmer Road via Forestgate Road and Forestgate Road/Lochwinnoch Lane, respectively.
- Ultimate: The ultimate Briargate Parkway section will be a four-lane principal arterial, and the future intersection at Lochwinnoch Lane will be a full-movement intersection. The ultimate configuration of the future Briargate Parkway—Stapleton Road/Lochwinnoch Lane intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

#### Station 267+00 North/South: Proposed Commercial Collector

- Existing: Neither the Briargate Parkway–Stapleton Road nor the proposed commercial collector currently exists at this location.
- Ultimate: Access at this location will serve anticipated commercial development to the north and south of the future Briargate Parkway–Stapleton Road. The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial, and the yet-unnamed proposed commercial

collector will be a three-lane commercial collector. The ultimate configuration of the future full-movement Briargate Parkway–Stapleton Road/commercial collector intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

#### Station 282+50 North/South: Vollmer Road

- Existing: Vollmer Road currently exists as a two-lane minor arterial that extends diagonally from Black Forest Road and then north to Hodgen Road. A "pioneer" segment of proposed Briargate Parkway–Stapleton Road exists as a four-lane principal arterial that extends east from Vollmer Road to a terminus at Wheatland Drive.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. Vollmer Road will remain a two-lane minor arterial at this intersection.

#### Station 290+00 South: Proposed Wheatland Drive

- Existing: Existing Briargate Parkway-Stapleton Road extends east from Vollmer Road to a terminus at Wheatland Drive. Wheatland Drive is a two-lane commercial collector with a connection to Vollmer Road via Dines Boulevard.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. The ultimate T-intersection at Wheatland Drive (access from the south) will have RIRO-only access.

#### Station 316+40 South: Proposed Sterling Ranch Road

- Existing: Neither Briargate Parkway–Stapleton Road nor the proposed Sterling Ranch Road collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial. Proposed Sterling Ranch Road will be a three-lane non-residential collector. The ultimate intersection at proposed Sterling Ranch Road (access from the south) will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

#### Station 341+20 South: Proposed Sterling Ranch Collector

- Existing: Neither Briargate Parkway–Stapleton Road nor the yet-unnamed proposed Sterling Ranch collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial and the yet-unnamed proposed Sterling Ranch collector will be a two-lane non-residential collector. The ultimate T-intersection (access from the south) at this location will have RIRO-only access.

#### Station 352+00 South: Proposed Banning Lewis Parkway

- Existing: Neither the Briargate Parkway—Stapleton Road nor proposed Banning Lewis Parkway currently exists at this location. ROW for Banning Lewis Parkway to the south of Woodmen Road was dedicated as part on the annexation of Banning Lewis Ranch to the City of Colorado Springs. Since the annexation, ownership of the development has changed hands several times.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial. Proposed Banning Lewis Parkway has been included in the Pikes Peak Area Council of Governments Regional Transportation Plan (PPACG RTP) as a four-lane expressway; however, the Banning Lewis Parkway extension north of Woodmen Road is not included in the current, 2045 PPACG RTP. The ultimate intersection at proposed Banning Lewis Parkway (access from the south) will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

#### Station 375+20 South: Proposed "The Ranch" Collector West

- Existing: Neither Briargate Parkway–Stapleton Road nor the yet-unnamed proposed west "The Ranch" collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial and the yet-unnamed proposed west collector that will serve The Ranch will be a two-lane residential collector. The ultimate T-intersection (access from the south) at this location will have RIRO only access.

#### Station 390+50 North/South: Woodmen Hills Drive-Raygor Road

- Existing: Neither Briargate Parkway–Stapleton Road nor the proposed extended Raygor Road collector connections to the corridor currently exist at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial. The Raygor Road access will be created within The Ranch via extensions of existing Raygor Road to the south (along a new alignment) and the extension of Woodman Hills Drive to the west (see Figure 4) and will be a two-lane collector. The proposed Woodmen Hills Drive-Raygor Road access will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

#### Station 420+25 North: Proposed "The Ranch" Collector East

- Existing: Neither Briargate Parkway—Stapleton Road nor the yet-unnamed proposed east "The Ranch" collector currently exists at this location.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial and the yet-unnamed proposed east collector that will serve The Ranch will be a two-lane residential collector. The ultimate T-intersection (access from the south) at this location will have RIRO-only access.

#### Station 445+60 North/South: Towner Avenue

- Existing: Stapleton Drive currently exists as a two-lane minor arterial east of this intersection and is closed west of this intersection. Existing Towner Avenue is a two-lane non-residential collector north of this intersection and a residential collector with driveway access (The Meadows) to the south of the intersection. The existing full-movement intersection operates under two-way stop control.
- Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial. The ultimate intersection at Towner Avenue will be a full-movement intersection. The ultimate configuration of the intersection will be determined as part of preliminary and final design and may be either a signalized intersection or a roundabout.

#### Station 459+00 North: Prairie Dove Drive

- Existing: Stapleton Drive currently exists as a two-lane minor arterial at this location and Prairie Dove Drive is a two-lane local street with alternative ingress/egress route available. The existing full-movement, T-intersection at this location operates under two-way stop control.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. The ultimate t-intersection at Prairie Dove Drive (access from the north) will be restricted to RIRO-only access.

#### Station 472+50 North: Liberty Grove Drive

- Existing: Stapleton Drive currently exists as a two-lane minor arterial at this location and Liberty Grove Drive is a two-lane local street with alternative ingress/egress routes available. The existing full-movement, T-intersection at this location operates under two-way stop control.
- Ultimate: The ultimate Briargate Parkway–Stapleton Road section will be a four-lane principal arterial. The ultimate T-intersection at Liberty Grove Drive (access from the north) will be restricted to RIRO-only access.

#### Station 488+00 North/South: Meridian Road

- Existing: Stapleton Drive currently exists as a two-lane minor arterial at this location, and Meridian Road
  exists and a four-lane principal arterial. The existing full-movement intersection at this location is
  signalized.
- Ultimate: Ultimate: The ultimate Briargate Parkway—Stapleton Road section will be a four-lane principal arterial, and Meridian Road will remain a four-lane principal arterial to the north but will be widened to six lanes to the south (to Woodmen Road). This intersection will remain a full-movement signalized intersection.

# 3.4 Analysis of Existing/Planned Access Spacing

An analysis of the spacing between existing and proposed access locations was performed to evaluate and support ACP development. Based on both EPC and COS design standards, principal arterial full-access intersections should be spaced at ½ mile (2,640′), with COS allowing unsignalized intersections to be spaced at ¼ mile (1,320′) increments. Access spacing for existing and proposed full-access, potentially signalized intersection locations are summarized in **Table 2** below and in **Figure 4** on the following page.

Western Road	Eastern Road	Full-Access Spacing		
Black Forest Road	Rising Eagle Place (RIRO Access)			
Rising Eagle Place	Loch Linneh Place	2,775' (0.52 mi.)		
Loch Linneh Place	Lochwinnoch Lane	1,975' (0.37 mi.)		
Lochwinnoch Lane	Commercial Collector (proposed)	2,525' (0.48 mi.)		
Commercial Collector (proposed)	Vollmer Road	1,000' (0.19 mi.)		
Vollmer Road	Wheatland Drive (RIRO Access)			
Wheatland Drive (RIRO Access)	Potential Access (limited to RIRO)	3,375' (0.64 mi.)		
RIRO Access (potential)	Sterling Ranch Road (proposed)			
Sterling Ranch Road (proposed)	Sterling Ranch Collector (proposed RIRO)	2.5501(0.67:)		
Sterling Ranch Collector (proposed RIRO)	Banning Lewis Parkway (proposed)	3,550' (0.67 mi.)		
Banning Lewis Parkway (proposed)	Potential Access (limited to RIRO)	0.2201/0.44: \		
RIRO Access (potential)	The Ranch Collector West (proposed)	2,330' (0.44 mi.)		
The Ranch Collector West (proposed)	Woodmen Hills Dr./Raygor Rd. (proposed)	1,550' (0.29 mi.)		
Woodmen Hills Dr./Raygor Rd. (proposed)	The Ranch Collector East (proposed)	3,000' (0.57 mi.)		
The Ranch Collector East (proposed)	Towner Avenue	2,525' (0.48 mi.)		
Towner Avenue	Prairie Dove Drive (RIRO)			
Prairie Dove Drive (RIRO)	Liberty Grove Drive (RIRO)	4,250' (0.80 mi.)		
Liberty Grove Drive (RIRO)	Meridian Road			

Note: Roads in italics are currently unnamed roads. Spacing is show between full-access locations only.

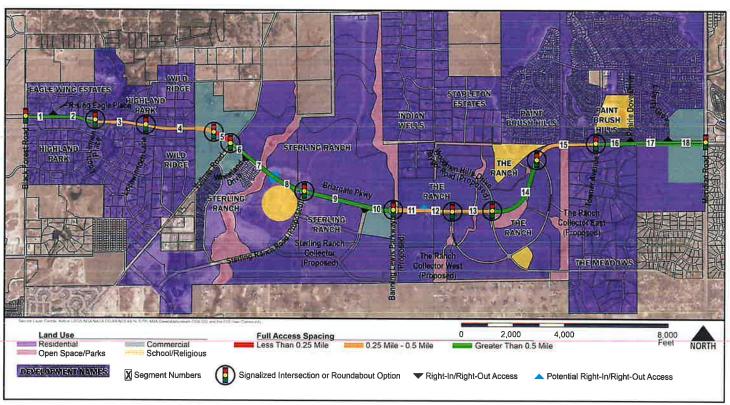


Figure 4. Access Locations and Intersection Access Restrictions

El Paso County Department of Public Works

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# 3.5 Access Control Planning Framework

### 3.5.1 Access Control Guidelines and Design Criteria

Both the EPC ECM and the COS *Traffic Criteria Manual* (TCM) permit intersections along a principal arterial to be spaced at ½ mile intervals. EPC does not allow access to principal arterials between intersections. COS allows for one access drive per property ownership, which may be jointly shared with adjacent properties. COS permits median cuts at a spacing between a ¼ mile and a ½ mile at major or significant street intersections.

The Transportation Research Board (TRB) Access Management Manual, Second Edition identifies 10 "Principles of Access Management":

- 1. Provide a specialized roadway system.
- 2. Limit direct access to major roadways.
- 3. Promote intersection hierarchy.
- 4. Locate signals to favor through movements.
- 5. Preserve the functional area of intersections and interchanges.
- 6. Limit the number of conflict points.
- 7. Separate conflict areas.
- 8. Remove turning vehicles from through-traffic lanes.
- 9. Use non-traversable medians to manage left-turn movements.
- 10. Provide a supporting street and circulation system.

### 3.5.2 Proposed Roadway Section and Intersection Layout

Channelized turn lanes are planned at all corridor intersections to reduce delays and improve corridor safety. The anticipated number of required dedicated turn lanes at each access location varies depending on the existing and forecast turn and mainline traffic flow volumes. Because roundabout and signalized alternatives will be considered during preliminary and final design, intersection layouts may be modified for roundabout alternatives.

Access intersections at Black Forest Road and Vollmer Road will require interim and ultimate configurations that can accommodate future dual left-turn lanes. Initially, the intersections will be striped with one left-turn lane and 200 feet of storage in the eastbound/westbound (EB/WB) directions. The pavement width at these access locations will be constructed to accommodate addition of a second left-turn lane when volumes increase to levels that warrant dual left-turn lanes. Consistent with the City if Colorado Springs Black Forest Road Corridor Plan, dual left-turn lanes with 205 feet or storage are planned for the northbound (NB) approach and dual left-turn lanes with 225 feet of storage are planned for the southbound (SB) approach. The Vollmer Road NB/SB approaches will each have one left-turn lane with a storage capacity of 100 feet.

<sup>&</sup>lt;sup>1</sup> Transportation Research Board, Access Management Manual Second Edition, 2014, p. 6-10.

Traffic forecasts for Loch Linneh Place and Lochwinnoch Lane indicate that dedicated left-turn lanes will not be required on the cross-street approaches from either of these roadways. Mainline traffic forecasts indicate that single EB/WB dedicated left-turn lanes with 200 feet of storage will be adequate to serve both near-term and long-term Briargate Parkway—Stapleton Road mainline traffic flows at these access locations.

Traffic forecasts for the yet-unnamed proposed Commercial Collector (west of Vollmer Road), Woodmen Hills Drive/Raygor Road and Towner Avenue access intersections indicate that single NB/SB left-turn lanes with 100 feet of storage will be adequate to serve both near-term and long-term traffic flows. Mainline traffic forecasts indicate that single EB/WB dedicated left-turn lanes with 200 feet of storage will be adequate to serve both near-term and long-term Briargate Parkway—Stapleton Road mainline left-turn traffic flows at these access locations.

It is expected that Meridian Road will maintain the existing left-turn lane configuration for the NB/SB directions.

Traffic forecasts for Sterling Ranch Road (proposed), Banning Lewis Parkway (proposed), The Ranch Collector West (proposed), and The Ranch Collector East (proposed) indicate that a NB left-turn lane with 100 feet of storage will be required to serve near-term and long-term traffic flows. Mainline traffic forecasts indicate that single WB dedicated left-turn lanes with 200 feet of storage will be required to serve Briargate Parkway–Stapleton Road mainline left-turn traffic flows at these access locations. No northern leg is planned for any of these intersections at this time.

There will not be any left turns from the Briargate Parkway–Stapleton Road mainline to Rising Eagle Place, Wheatland Drive (proposed), Sterling Ranch Collector (proposed), Liberty Grove Drive, and Prairie Dove Drive. Each of these intersections will be restricted to only RIRO access. Additionally, Prairie Dove Drive and Liberty Grove Drive may be closed in the ultimate configuration to ensure adequate traffic flow. Alternative access is available to traffic that would use these intersections.

### 4 Access Control Plan

Access control alternatives, including access restrictions, were evaluated to preserve the roadway's planned functionality. Parcels and subdivisions were grouped by access commonalities to identify locations where direct access to the ultimate Briargate Parkway–Stapleton Road facility would be required.

# 4.1 Analysis of Access Alternatives

Existing and proposed access point locations were reviewed for compatibility with current County criteria. These alternatives were developed considering the connectivity of existing and proposed access points to developed neighborhoods and individual ownership parcels. Access closures were proposed only where alternative access was/could be provided. Most intersections along this corridor have alternatives available as indicated in **Figure 4** in section 3.3 above. This section includes information about channelized lanes that will be required for future signalized intersections. The ultimate configuration of selected accesses/ intersections will be determined as part of preliminary and final design and will consider both signalized intersection and modern roundabout alternatives.

A "no-build" option was not an alternative considered for this corridor. Briargate Parkway–Stapleton Road does not currently exist along most of the corridor alignment, and the approved, planned development requires a "build" alternative to ensure that the road will meet the planned classification and function. Additionally, the project segment is an integral part of the planned regional transportation system network.

Based on public and stakeholder input collected via the project website, issues were identified and considered. A full range of improvement alternatives was then developed, evaluated, and iteratively refined. Benefits and impacts of potential closures, if any, were identified and then evaluated. Four access management concepts were presented to stakeholders and the public through the project website.

Additional review of the operational benefits of selected access closures and the effectiveness of using access management tools in lieu of access closures was undertaken. Based on analysis findings, final access management strategies recommended for use on the corridor include intersection and mainline improvements to implement 5 of the 10 TRB access management principles, as follow below:

- 1. Remove left-turns from through traffic lanes.
- 2. Limitthe number of conflict points.
- 3. Separate conflict areas.
- 4. Manage left-turn movements.
- 5. Use non-traversable medians to enforce turn restrictions.

### 4.2 Access Control Recommendations

This Access Control Plan has been developed with participation from El Paso County, the City of Colorado Springs, and the public. After evaluating both existing and proposed conditions, the plan limits full-movement access to major intersections spaced approximately one-half miles apart. Minor intersections are limited to RIRO, limiting opportunities to make left turns onto the highway. Traffic control measures include raised medians, driveway channelizing islands at limited-access points, and signing and striping.

# 4.2.1 Location-Specific Recommendations

Specific recommendations for access points in the corridor are summarized by segments in **Table 3**. Full-movement intersections with potential for future signalization and other traffic control measures have been identified as part of the Access Control Plan; however, the types of traffic control devices are not specified.

Traffic control will be evaluated on a case-by-case basis as future conditions warrant. Potential traffic control measures may include two-way stop control, traffic signals, roundabouts, and other traffic control devices recognized by the *Manual on Uniform Traffic Control Devices* (MUTCD). Where warranted per current MUTCD standards, traffic signals may be implemented when funding is available.

Eastern Road	Intersection Layout	Access Closed	RIRO Intersection	Signalized Intersection	Roundabout Intersection
Black Forest Road	4 Legs			<b>√</b>	
Rising Eagle Place	3 Legs		<b>√</b>		
Loch Linneh Place	3 Legs			✓	✓
Lochwinnoch Lane	4 Legs			✓	<b>✓</b>
Commercial Collector (proposed)	4 Legs			✓	✓
Vollmer Road	4 Legs			<b>√</b>	✓
Wheatland Drive (proposed)	3 Legs		<b>√</b>		
Sterling Ranch Road (proposed)	3 Legs			✓	✓
Sterling Ranch Collector (proposed)	3 Legs		<b>✓</b>		
Banning Lewis Parkway (proposed)	3 Legs			<b>√</b>	<b>√</b>
The Ranch Collector West (proposed)	3 Legs			✓	<b>✓</b>
Woodmen Hills Drive/Raygor Road (proposed)	4 Legs			✓	<b>✓</b>
The Ranch Collector East (proposed)	3 Legs			<b>√</b>	✓
Towner Avenue	4 Legs			✓	<b>✓</b>
Prairie Dove Drive	3 Legs	✓			
Liberty Grove Drive	3 Legs	✓	<b>1</b>		

Notes:

### 4.2.1.1 Full-Movement Intersections

Black Forest Road, Lochwinnoch Lane, Commercial Collector (proposed), Vollmer Road, Woodmen Hills Drive/Raygor Road (proposed), and Towner Avenue are intended to be full-movement intersections with four legs. Loch Linneh Place currently ends at the proposed location of Briargate Parkway but is proposed to be extended across Briargate, continuing north to tie into Eagle Wing Drive.

Sterling Ranch Road, Banning Lewis Parkway (proposed), The Ranch Collector West (proposed), and The Ranch Collector East (proposed) are intended to be full-movement intersections with three legs. Two of those legs will be Briargate Road, and the third will extend south.

Both ultimate signalized intersection and modern roundabout alternatives will be evaluated during the preliminary design phase for the project. Concepts for each of these intersection alternatives are depicted in **Figure 5**.

<sup>1)</sup> A preferred alternative for the Black Forest Road intersection was selected as part of the Woodmen Road Widening Study.

<sup>2)</sup> Per plat notes, Scenic Brush Access to Stapleton Road is temporary, to be closed when traffic volumes warrant.

<sup>3)</sup> Per plat notes, The Ranch collector loop connection to Stapleton Road may be signalized or constructed as a modern roundabout.

<sup>4)</sup> Roads in italics are currently unnamed.

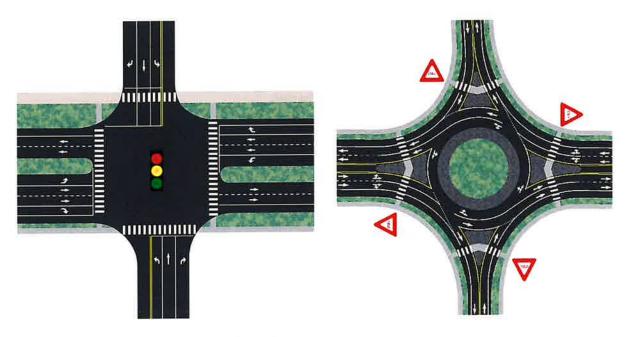


Figure 5. Full-Movement Intersection Concepts

### 4.2.1.2 Right-In/Right-Out Intersections

The intersection at Rising Eagle Place is intended to be converted to RIRO intersection. Wheatland Drive (proposed) and Sterling Ranch Collector (proposed) are not currently constructed and are recommended to be built without full-movement access to the Briargate/Stapleton corridor. If the connections are approved for construction, they are recommended to be RIRO intersections without curb breaks in the median. In addition to these existing and proposed access locations, several potential future RIRO access locations are identified by the Access Control Plan as depicted in **Figure 4** in section 3.3 above.

Figure 6. Right-In/Right-Out Intersection Concept

### 4.2.1.3 Intersection Closures

At Prairie Dove Drive and Liberty Grove Drive, the existing full-movement T-intersections will initially

be restricted to RIRO only operations and may be closed in the ultimate configuration to ensure adequate traffic flow. Alternative access is available to traffic that would use these intersections.

### 4.2.2 Future Access Requests

In accordance with the ECM (Chapter 5 "Permits and Inspections," Section 5.4 "Driveway Permit"), all access requests shall be submitted in the form of a permit application and work shall not commence before the permit has been issued. The following criteria must be met:

- Submitted application complies with all applicable requirements of the ECM or an exception approved by the Board of County Commissioners.
- ECM Administrator determines that the access will not create an unsafe condition for the traveling public.
- All required review and permit fees have been paid, and any required surety has been posted.

A property owner seeking to construct a new access must, in advance, apply to the County Development Services Division for approval and obtain an Access/Driveway Permit and a Work in the Right-of-Way Permit; the property owner may also need to clear utilities (if excavation is required) and seek approval of a submitted Traffic Control Plan (if work will interfere with traffic). Permitting requirements are detailed in the ECM.

# 5 Access Control Plan Implementation

### 5.1 Implementation

The Access Control Plan is a long-range planning tool to manage roadway access over time. Any of the following scenarios can trigger the implementation of the plan:

- As property along the corridor develops, any access improvements triggered by that development will need to be consistent with the ACP. (Private Funding)
- El Paso County or the City of Colorado Springs funds improvements to a segment of the roadway. (Public Funding)
- State or federal funding is obtained to make a connection in the corridor. (Public Funding)
- An operational issue develops that can be mitigated through techniques described in the ACP. (Public Funding)

Once funding has been identified, detailed engineering drawings of the proposed access improvements are required before construction can begin. Details related to storm drainage, utilities, landscaping, environmental issues, pedestrian/bicycle facilities, roadway sections, and other topographic features will be considered during this design process. Environmental evaluations appropriate to the project's size, type, and funding will be completed as part of the design phase.

As part of this ACP, an intergovernmental agreement (IGA) between El Paso County and the City of Colorado Springs has been executed and is included in **Attachment A**. This IGA provides for continued commitment by both parties to implement the modifications identified by this study. As this is a long-range study, the potential for conditions to change is acknowledged. A plan modification process, where both parties agree to the changes, is outlined within the IGA (**Attachment B**).

# 5.2 Phasing

Major corridor funding does not often become available in lump sum packages. As funding does come available, corridor improvements can be broken into standalone phases, for which distinct improvement packages are proposed. Based on required circulation routes, the following segments are recommended:

- Black Forest Road to Vollmer Road (1.55 mi)
   This phase will likely be built first due to the developments in the areas that have already been constructed. The connection between these two arterials will facilitate traffic needs to access these developments. Rising Eagle, Eagle Wing, and Highland Park neighborhoods/developments are adjacent to this segment.
- 2. Vollmer Road to Banning Lewis Parkway (1.30 mi)
  Phase 2 consists of the segments between Vollmer Road and Banning Lewis Parkway. This entire segment is located within the Sterling Ranch development. It is anticipated that this phase will need to be built contiguously to allow for travel through the development.
- 3. Banning Lewis Parkway to Towner Avenue (1.80 mi)
  The Ranch encompasses most of this phase and will require this segment of Briargate/Stapleton to connect within the development. This phase may be built before, during, or concurrently with the previous phase, depending on which developments begin construction.
- 4. Towner Avenue to Meridian Road (0.80 mi)

  A two-lane roadway exists in this area and is officially outside of this project limits. It will become necessary to upgrade this section of the roadway to match the proposed cross section to the rest of the corridor to ensure efficient and safe travel.

# Attachment A – Recommended Access Locations and Restrictions



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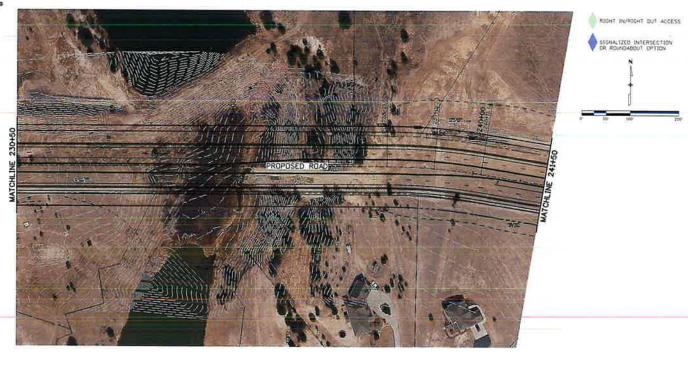
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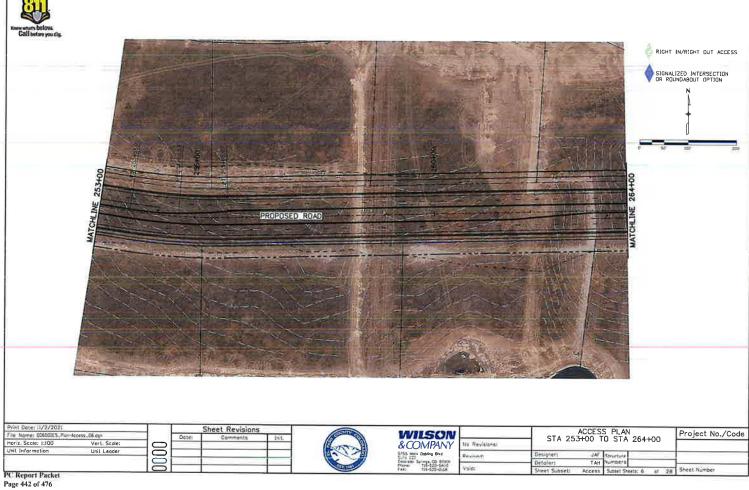
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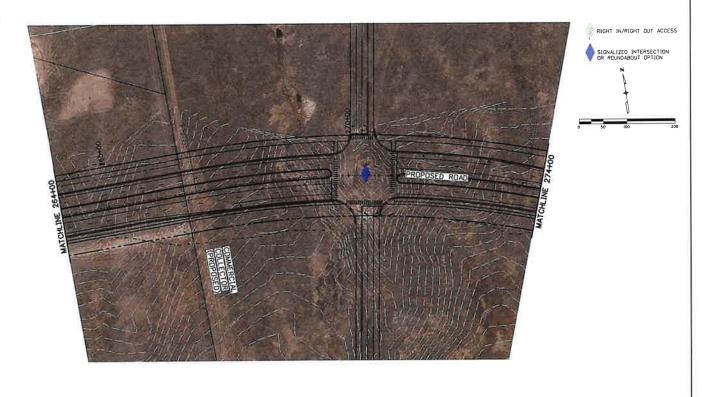


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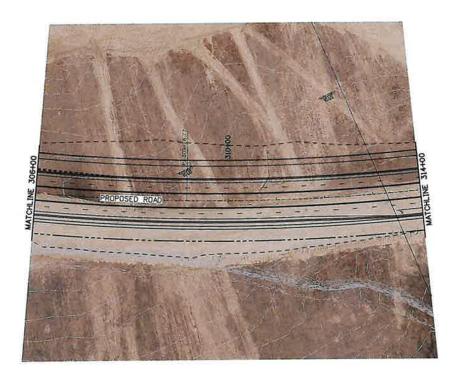


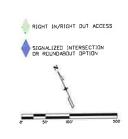


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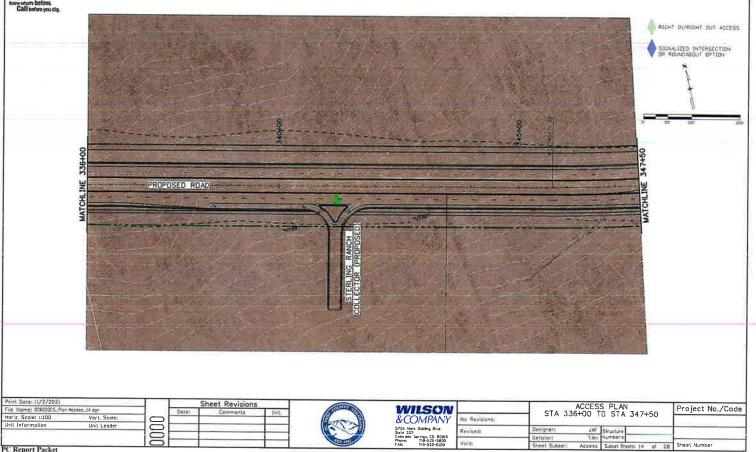
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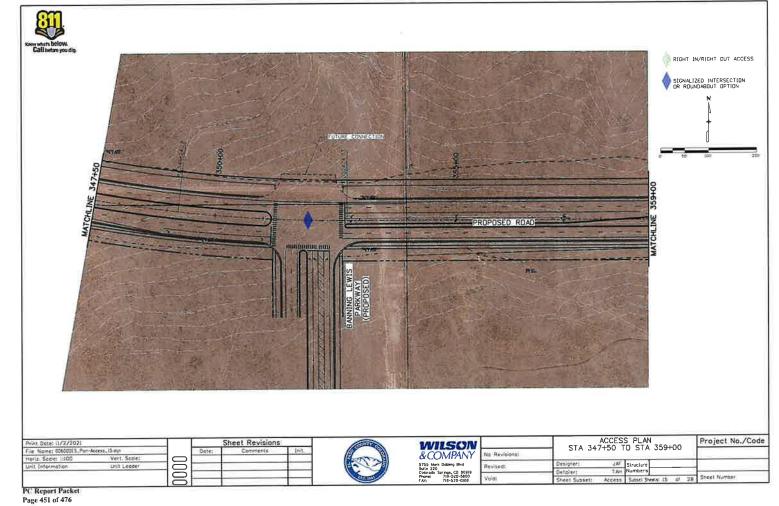


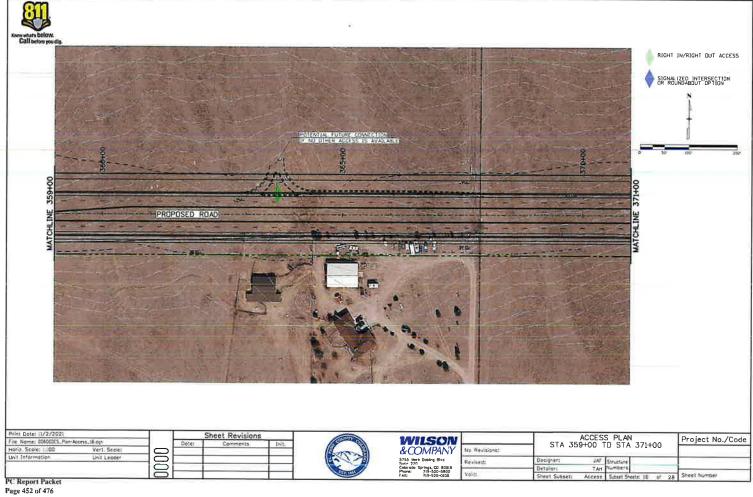


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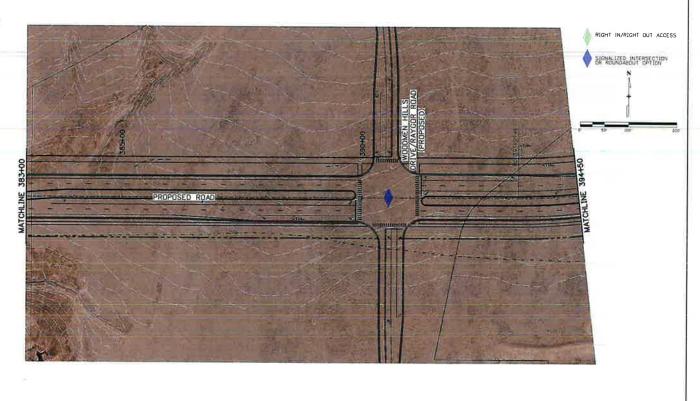
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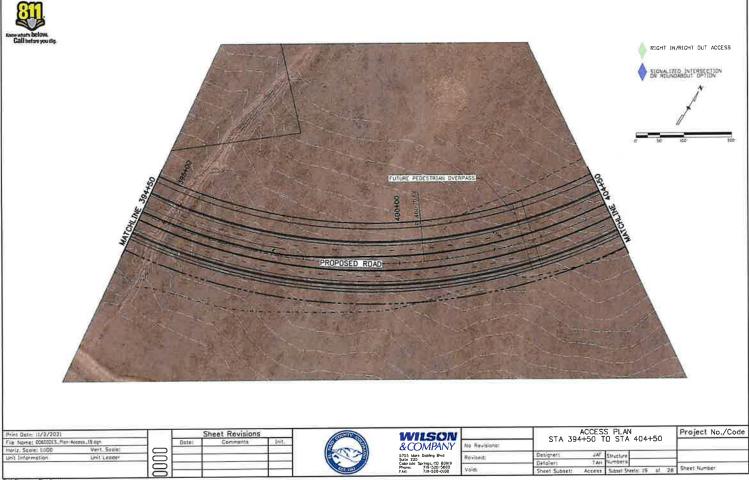


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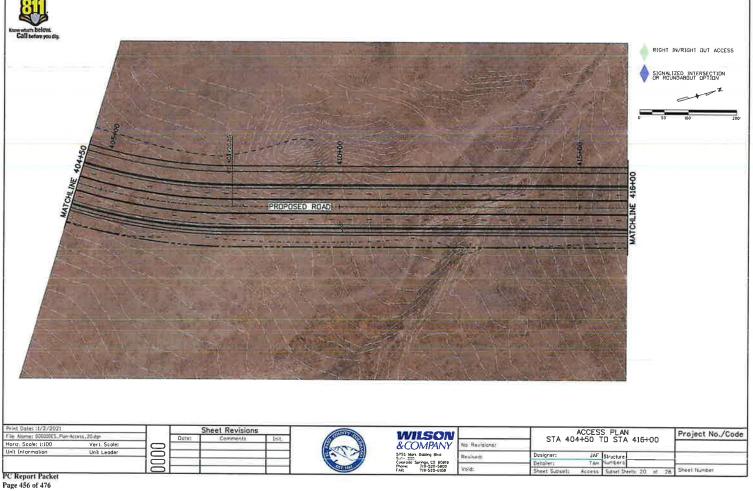


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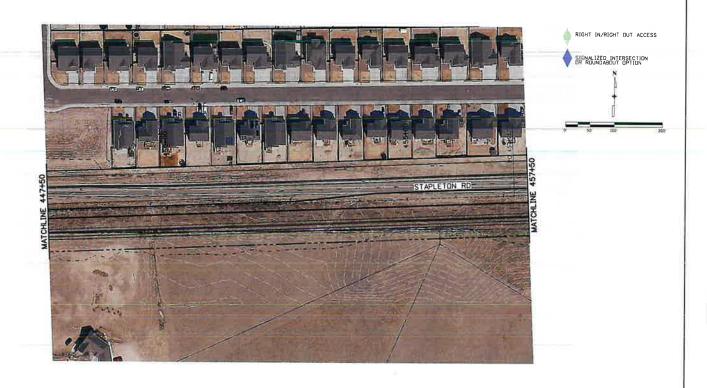




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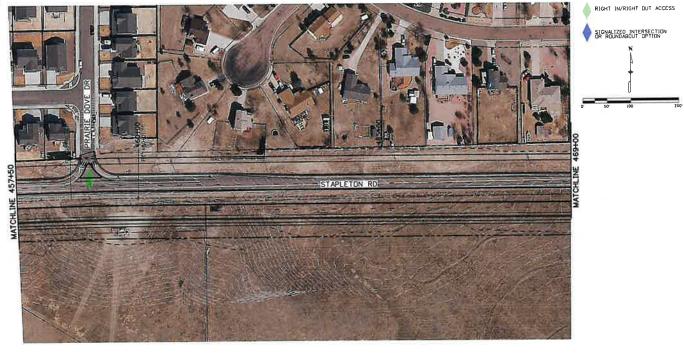
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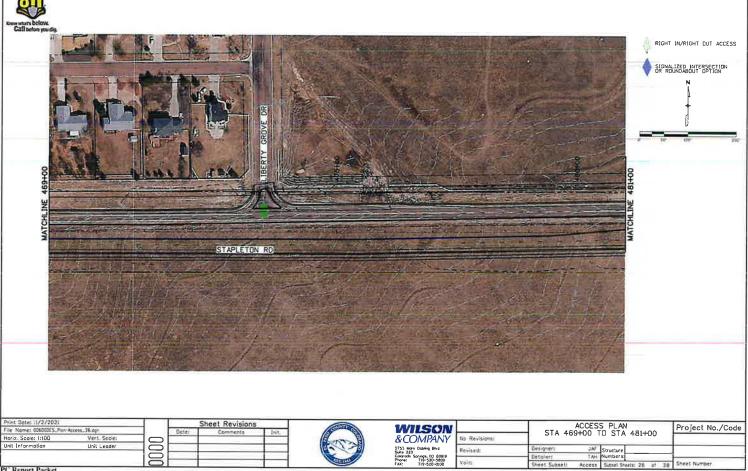
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# Attachment B – Access Control Plan Intergovernmental Agreement

# INTERGOVERNMENTAL AGREEMENT BETWEEN EL PASO COUNTY AND THE CITY OF COLORADO SPRINGS

THIS INTE	ERGOVER	NMENTAL AGREEN	MENT	$\Gamma$ ("Agreement") is entered into effective $z$	as
				d between El Paso County, by and through	
the Board of	County Con	nmissioners of El Paso (	County,	y, Colorado ("County"), and the City of	
Colorado Spr	rings ("City"	'), referred to collectively	herein	n as the "Agencies."	

#### **RECITALS:**

- A. The Agencies are authorized by the provisions of Article XIV, Section 18(2)(a), Colorado Constitution, and C.R.S. § 29-1-201, et seq., to enter into contracts with each other for the performance of functions which they are authorized by law to perform on their own.
- B. Each Agency is authorized by Section 43-2-147(1)(a), C.R.S., to regulate access to public highways within its jurisdiction.
- C. The coordinated regulation of vehicular access to public highways is necessary to maintain the efficient and smooth flow of traffic, to reduce the potential for traffic accidents, to protect the functional level and optimize the traffic capacity, to provide an efficient spacing of traffic signals.
- D. The Agencies desire to provide for the coordinated regulation of vehicular access for the section of planned Briargate Parkway-Stapleton Road between Black Forest Road and Meridian Road (hereinafter referred to as the "Segment"), which is within the jurisdiction of the Agencies.
- E. The Agencies specifically find and determine that the Access Control Plan adopted and implemented through this Agreement is a necessary exercise of the Agencies' legislative, governmental or police powers to promote and protect the public health, safety, and general welfare of the citizens of the City and County.
- F. The development of the Access Control Plan adheres to the requirements of the El Paso County Engineering Criteria Manual and City of Colorado Springs Engineering Criteria Manual (hereinafter referred to as the "Engineering Criteria").

**NOW, THEREFORE**, for and in consideration of the mutual promises, agreements, and commitments herein contained, the Agencies agree as follows:

- 1. The Access Control Plan dated June 2021 for the Segment (referred to herein as the "Access Control Plan") is attached hereto as **Exhibit A** and incorporated herein. The Access Control Plan illustration dated June 2021 is attached hereto as **Exhibit B** and incorporated herein by this reference. The Access Control Plan Amendment Process is attached hereto as **Exhibit C** and incorporated herein by this reference.
- 2. The Agencies shall regulate access to the Segment in compliance with this Access Control Plan and applicable sections of the Agency Engineering Criteria.

- 3. Accesses that were in existence in compliance with applicable City and County Engineering Criteria prior to the effective date of this Agreement may continue in existence until such time as a change in access is required by this Access Control Plan, in the course of highway reconstruction, or as determined appropriate in the course of development or subdivision actions by the City and/or County. When closure, modification, or relocation of access is necessary or required, each Agency having jurisdiction shall utilize appropriate legal process to effect such action.
- 4. Actions taken by either Agency with regard to transportation planning, transportation facilities and traffic operations within the areas described in the Access Control Plan shall be in conformity with this Agreement. The City and County agree to develop and adopt the necessary resolutions, ordinances, official documents, plans and maps that are necessary to fulfill their responsibilities under this Agreement.
- 5. Parcels of real property created after the effective date of this Agreement which adjoin the Segment shall not be provided with direct access to the Segment unless the location, use, and design thereof conform to the provisions of this Agreement, except in unforeseen circumstances.
- 6. This Agreement is based upon and is intended to be consistent with the applicable Agency Engineering Criteria.
- 7. This Agreement does not create any current specific financial obligation for either of the Agencies. Any future financial obligation for any Agency shall be subject to the execution of an appropriate encumbrance document, where required. Agencies involved in or affected by any particular or site-specific undertaking provided for herein will cooperate with each other to agree upon a fair and equitable allocation of the costs associated therewith, but, notwithstanding any provision of this Agreement, no Agency shall be required to expend its public funds for such undertaking without the express prior approval of its governing body. All financial obligations of the Agencies hereunder shall be contingent upon sufficient funds therefore being appropriated, budgeted, and otherwise made available.
- 8. Should any section or provision of this Agreement be judicially determined to be invalid or unenforceable, such judgement shall not affect, impair, or invalidate the remaining provisions of this Agreement, the intention being that the various provisions hereof are severable.
- 9. This Agreement supersedes and controls all prior written and oral agreements and representations of the Agencies concerning regulating vehicular access to the Segment. No additional or different oral representations, promise or agreement shall be binding on any Agency. This Agreement may be amended or terminated only in writing executed by the Agencies with express authorization from their respective governing bodies or legally designated officials. To the extent that this Access Control Plan, attached as **Exhibit A** to this Agreement, requires modification because of change, closure, relocation, consolidation or addition of access, the Agencies may amend the attached **Exhibit A** so long as the amendment to the Access Control Plan is executed in writing and amended in accord with the Access Control Plan Amendment Process attached as **Exhibit C**.

- 10. By signing this Agreement, the Agencies acknowledge and represent to one another that all procedures necessary to validly contract and execute this Agreement have been performed, and that the persons signing for each Agency have been duly authorized to sign.
- 11. No portion of this Agreement shall be deemed to constitute a waiver of any immunities the Agencies or their officers or employees may possess, nor shall any portion of this Agreement be deemed to have created a duty of care which did not previously exist with respect to any person not a party to this Agreement.
- 12. It is expressly understood and agreed that the enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the undersigned Agencies and nothing in this Agreement shall give or allow any claim or right of action whatsoever by any other person not included in this Agreement. It is the express intention of the undersigned Agencies that any entity other than the undersigned Agencies receiving services or benefits under this Agreement shall be an incidental beneficiary only.

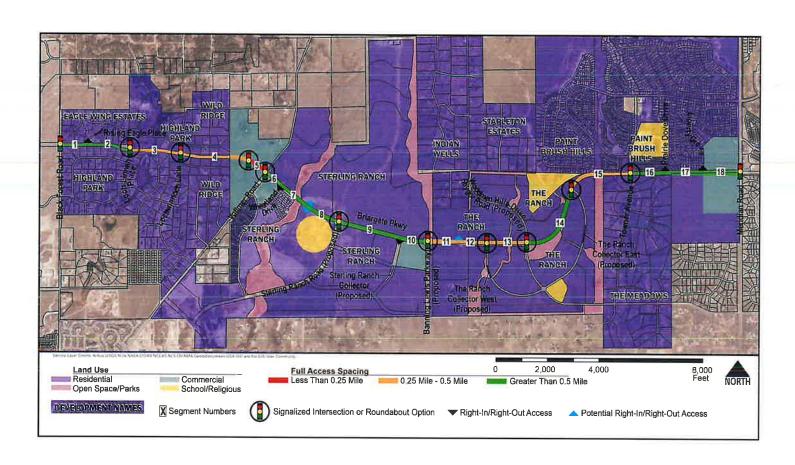
IN WITNESS WHEREOF, the Agencies have executed this Agreement effective as of the day and year first above written.

El Paso County, Colorado	ATTEST:	
Stan VanderWerf	Chuck Broerman	
Chair of the Board of	County Clerk & Recorder	
County Commissioners, El Paso County		
Approved as to Form:		
County Attorney's Office		
City of Colorado Springs, Colorado	ATTEST:	
John Suthers	Name	
Mayor, City of Colorado Springs	City Clerk	
Approved as to Form:		
Name		
City Attorney		

### Exhibit A - Access Control Plan

NOTE: The stand-alone IGA will have Attachment A from the Access Control Plan inserted as Exhibit A. It was not repeated Appendix D-IGA of the Corridor Preservation Plan. The IGA was not executed by the City of Colorado Springs.

## Exhibit B - Access Control Plan Illustration



#### Exhibit C - Access Control Plan Amendment Process

#### El Paso County, Colorado

In accordance with the Engineering Criteria Manual (ECM, Chapter 5. Permits and Inspections, Section 5.4 Driveway Permit), all access requests shall be submitted in the form of a permit application and work shall not commence before the permit has been issued. The following criteria must be met:

- Submitted application complies with all applicable requirements of the ECM or an exception approved by the Board of County Commissioners.
- ECM Administrator determines that the access will not create an unsafe condition for the traveling public.
- All required review and permit fees have been paid and any required surety has been posted.

A property owner seeking to construct a new access must, in advance, apply to the County Planning and Community Development Department for approval and obtain an Access/Driveway Permit and a Work in the Right-of-Way Permit, and may also need to clear utilities (if excavation is required) and seek approval of a submitted Traffic Control Plan (if work will interfere with traffic). Detailed permitting requirements can be found in the ECM.

## City of Colorado Springs, Colorado

# [MAY BE REPLACED BY NARRATIVE TO BE PROVIDED BY CITY OF COLORADO SPRINGS]

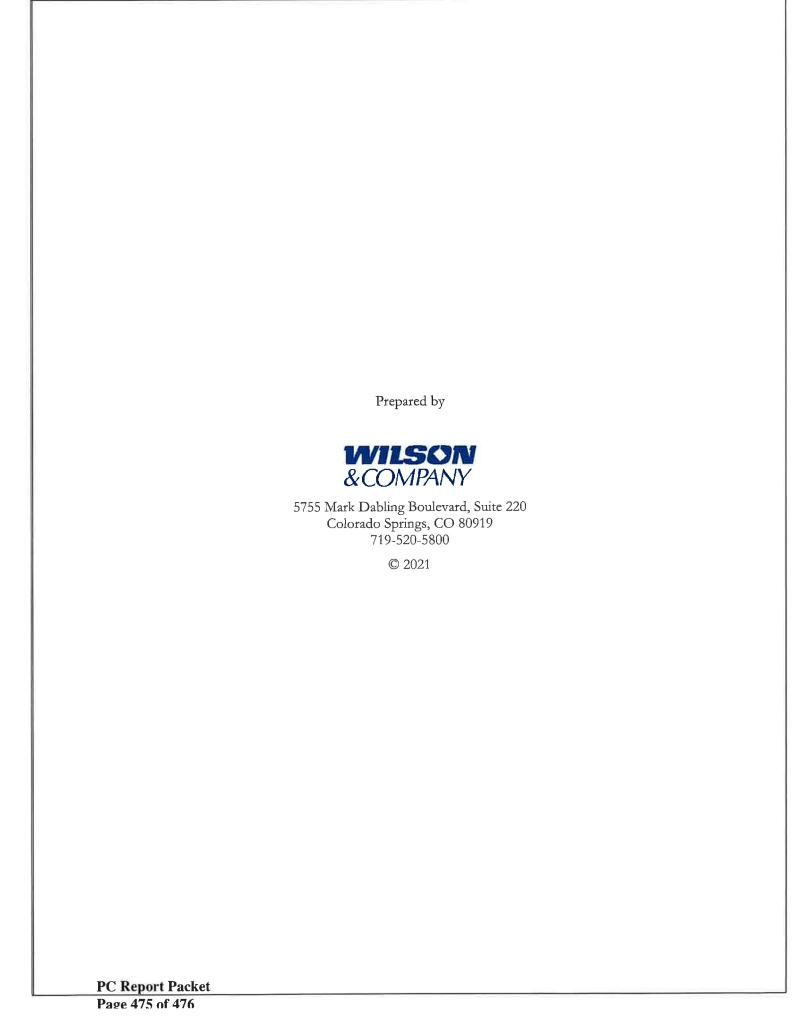
In accordance with the City of Colorado Springs Engineering Criteria Manuals, Traffic Criteria Manual (TCM), Chapter 3, Access Control: the design, number, and location of Access to City Streets shall be approved by City Engineering. The number of access drives shall be a balance to allow for efficient traffic flow while providing adequate access to private property. In the interest of achieving that balance, Section 16 of the TMC establishes the 4-lane Principal Arterial intersections spacing criteria as ½ mile for signalized intersections and ¼ mile for unsignalized intersections. Deviations from these criteria must be supported and approved through the City's development review process.

A traffic impact study (TIS) is required for any proposed non-residential development with a peak hour trip generation of over 100 vehicles, or any proposed residential development with 150 or more dwelling units. The forecast volume shall be based on trip generation rates contained in the latest edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE) or other rates as approved by City Engineering. All TIS for new subdivision development shall be submitted to the Engineering Development Review Division (EDRD) of City Engineering. EDRD will return review comments to the preparer. When the review process is complete and the TIS is ready for approval, EDRD requires two copies be submitted for City signature. Additional copies can be submitted and will be returned to the engineer. These copies shall be properly certified, signed, sealed, and dated by the registered professional engineer responsible for the report. The signature block for EDRD shall read This Traffic Impact Study is hereby accepted by City Engineering with a line for the EDRD reviewer's signature and date.

Following EDRD approval of the TIS a scanned PDF version of the record approved report and plans must be received by EDRD prior to recording the Final Plat.

The following types of submittals which exceed the trip generation/ dwelling unit criteria will require a TIS:

- 1. A master plan or development plan submittal.
- 2. Any rezoning application.
- 3. A preliminary map or final plat if the property has already been rezoned for the proposed use and no traffic study was required for the rezoning, or the original traffic study is more than two years old.
- 4. Prior to issuance of a building permit, if the property has already been zoned/ platted and no previous traffic study less than two years old exists.
- 5. For a State Highway Access Permit, if:
  - a. Site access is required off a State Highway prior to issuing a building permit.
  - b. Additional access off a State Highway to an existing use is being requested.
  - c. Any change of use affecting access from the State Highway.
- 6. For an application for annexation into the City.
- 7. The applicant will be required to submit a new traffic study if, after submitting the original traffic study, the land use intensity and traffic generation is increased by more than 15%.
- 8. Other conditions as determined by City Engineering.
- 9. City Engineering may require other memos, letters, analyses, or other documentation to address specific traffic issues at staff discretion.



#### AFFIDAVIT OF PUBLICATION

STATE OF COLORADO COUNTY OF El Paso

I, Lorre Cosgrove, being first duly sworn, deposes and says that she is the Legal Sales Representative of The Colorado Springs Gazette, LLC., a corporation, the publishers of a daily/weekly public newspapers, which is printed and published daily/weekly in whole in the County of El Paso, and the State of Colorado, and which is called Colorado Springs Gazette; that a notice of which the annexed is an exact copy, cut from said newspaper, was published in the regular and entire editions of said newspaper 1 time(s) to wit 09/22/2023

That said newspaper has been published continuously and uninterruptedly in said County of El Paso for a period of at least six consecutive months next prior to the first issue thereof containing this notice; that said newspaper has a general circulation and that it has been admitted to the United States mails as second-class matter under the provisions of the Act of March 3, 1879 and any amendment thereof, and is a newspaper duly qualified for the printing of legal notices and advertisement within the meaning of the laws of the State of Colorado.

Lorre Cosgrove Sales Center Agent

Subscribed and sworn to me this 09/25/2023, at said City of Colorado Springs, El Paso County, Colorado.

Joure Congrese

My commission expires December 15, 2025.

Lori Curry Notary Public The Gazette

Lori Curry
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20164040549
MY COMMISSION EXPRES December 15, 2025

Document Authentication Number 20164040549-185304

LEGAL NOTICE

MASTER PLAN
BRIARGATE / STAPLETON CORRIDOR PRESERVATION PLAN
AND ACCESS CONTROL PLAN

NOTICE 13 INTEGER DIVEN that on October 5, 2023, at #06 A.M. in Sconn Flore Hebring Room of the Page Speak Regional Developm Sconn Flore Hebring Room of the Page Speak Regional Developm Center located at 2560 international Circle, Colorado Springs, Ceduc, 8936. or at the time of place to which the bearing may be lourned, a public hearing will be held by the Manning Commission the County of It Page, State of Colorado on the application described to the County of It Page, State of Colorado on the application described.

NOTICE IS HERE'S GIVEN that on November 2, 2023, at 9.00 A.M. in the Second floor Hazina Boom of the Pikes Peck Begindul Development Center Iverated at Zillik International Circle, Colorade Springs, Call Jacobs 1997, and the Time of place in which the hazing may be at Journed, a globic hearing will be held by the Planning Commission on the Colorado Colorado (Colorado Colorado). The Colorado Springs of Defeny.

NOTICE IS HEREBY GIVEN that on November 30, 2022, at 9:00 A.M., the Centendia Mak Auditorium of 2005. Sociale Avenue, Colorad Springs, Colorado S009. On at the time or place to which the hearm may be addourned, a date to set the public hearing on the against 10 all will be determined by the Board of County Commissioners of the

The proposed service plan and related documents may be view online as the following web address; https://epcdexplanreview.cobareching his number MP231.

The ET Raso County Department of Poblic Works requests adoption of the Britagola Parkway/Masincyn Raid Corridor Perservation Pland and Access Control Plan ("Plan") into the Your ET Pland County Mastri-Han. With adopting, this Plan will become the principal Pland for the Pland P

Dated at Colorado Springs, Colorado, this 20th day of September 202

THE BOARD OF COUNTY COMMISSIONERS OF IL PASO COUNTY, COLURADO

BY /s/ Cami Bremer Chair

Published in The Gazette September 22, 2023.