



Ivy Road Corridor Pipeline Project Recommended Improvements

October 2, 2024

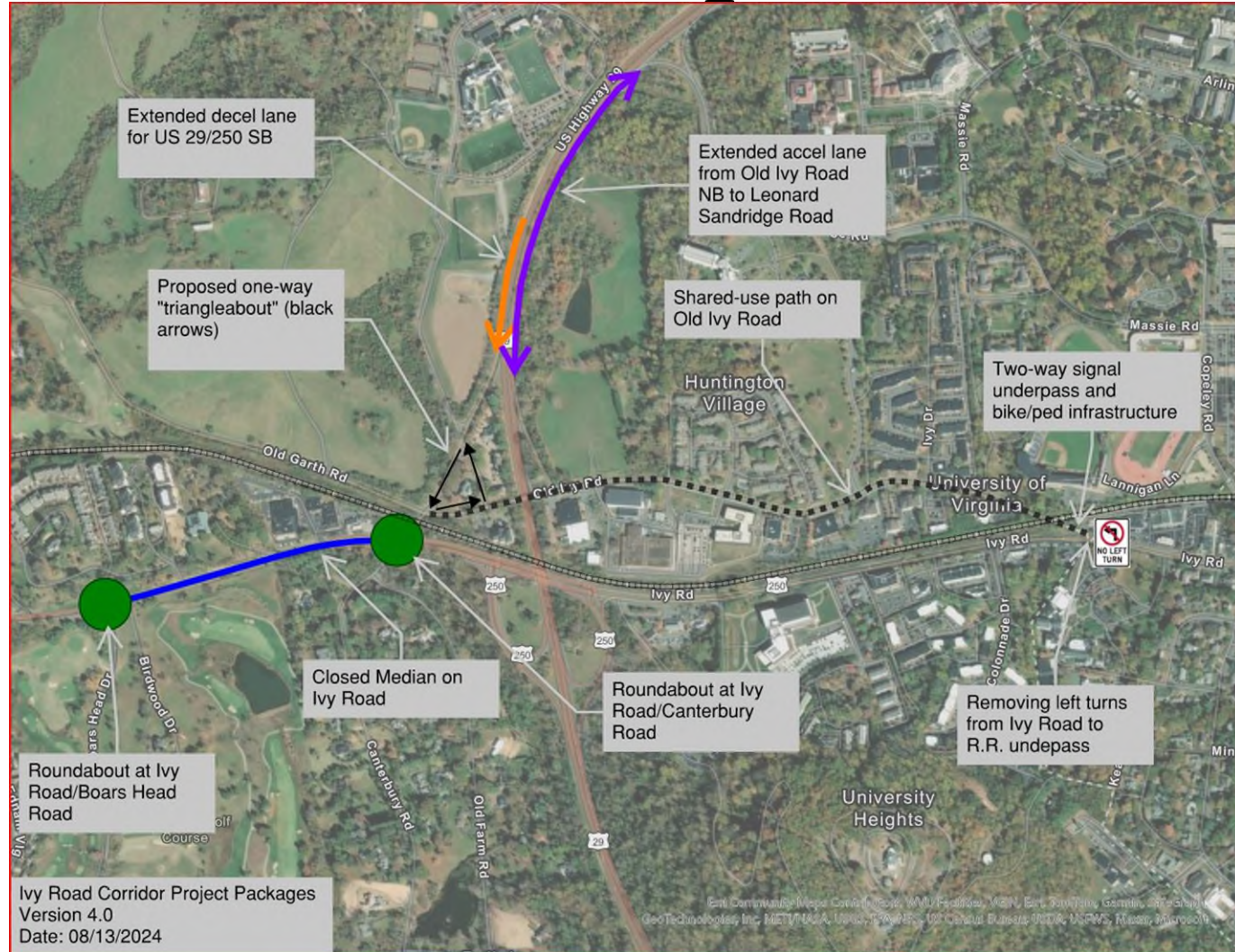


Background

- Study was funded and led by VDOT as part of the Project Pipeline Program
- Study area: Ivy Road from Ednam Drive to Alderman Road; US 29 – US 250 interchange; Old Ivy Road
- Study focus: improving safety; reducing congestion; enhancing multimodal accessibility
- Study began in May 2023



Recommended Improvements





Ivy/Colridge/Boar's Head Drive – Roundabout



P PROJECT PIPELINE
EXHIBIT 6.2: Ivy Road and Boar's Head Roundabout

SKETCH UPDATE PENDING

DRAFT FEBRUARY 2024





Ivy/Colridge/Boar's Head Drive – Roundabout

NB

No.	Intersection	Approach	Lane Group	HCM NB 2045 Delay (sec/veh)		NB 2045 HCM LOS	
				AM	PM	AM	PM
9	Ivy Rd at Boars Head Dr/Colridge Dr -TWSC-	EB	EBL	12.8	20.9	B	C
			EBR	0.0	0.1	A	A
			EBT	0.0	0.1	A	A
		WB	WBL	0.0	0.0	A	A
			WBR	0.0	0.0	A	A
			WBT	0.0	0.0	A	A
		NB	NBL/R/T	41.0	57.0	E	F
		SB	SBL/R/T	240.6	399.7	F	F

BD

No.	Intersection	Movements	Lane Group	HCM BD 2045 Delay (sec/veh)		BD 2045 HCM LOS		BD 2045 95th % (ft.)	
				AM	PM	AM	PM	AM	PM
9	Ivy Rd at Boars Head Dr/Colridge Dr -Roundabout-	Overall	EBL	8.7	18.0	A	C	128	384
			EBR	6.0	18.0	A	C	43	384
			EBT	10.5	18.1	B	C	129	384
			WBU	7.2	9.1	A	A	120	185
			WBL	7.2	9.1	A	A	120	185
			WBR	5.2	5.8	A	A	41	55
			WBT	8.6	10.7	A	B	120	185
			NBL/R/T	17.0	12.1	C	B	13	49
			SBL/R/T	7.7	10.2	A	B	2	3
			OVERALL	9.7	13.5	A	B	-	-



Ivy/Old Garth/Canterbury – Roundabout



PROJECT PIPELINE

EXHIBIT 9.3: Ivy Road and Old Garth/Canterbury - Roundabout

DRAFT FEBRUARY 2024





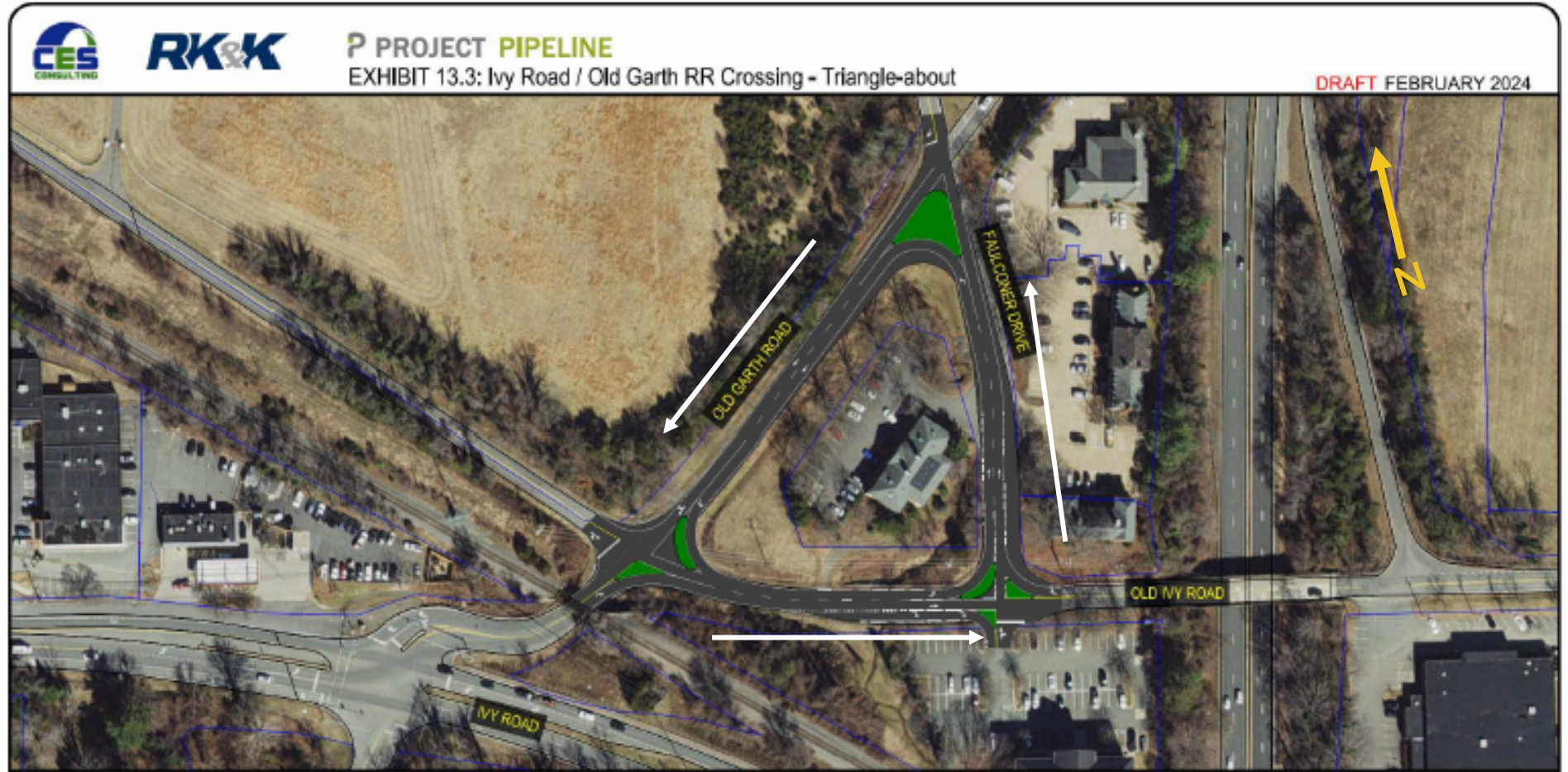
Ivy/Old Garth/Canterbury – Roundabout

NB	No.	Intersection	Approach	Lane Group	HCM NB 2045 Delay (sec/veh)		NB 2045 HCM LOS	
					AM	PM	AM	PM
					1	Ivy Rd at Canterbury Rd -Signalized-	EB	EBL
			EBR	8.8	8.1	A	A	
			EBT	16.8	12.7	B	B	
			WB	WBL	12.9	16.2	B	B
				WBR/T	31.3	43.3	C	D
			NB	NBL/T	56.9	62.0	E	E
				NBR	54.8	60.1	D	E
			SB	SBL/T	58.8	111.0	E	F
				SBR	36.3	49.8	D	D
				OVERALL	30.7	43.9	C	D

BD	No.	Intersection	Movements	Lane Group	HCM BD 2045 Delay (sec/veh)		BD 2045 HCM LOS		BD 2045 95th % (ft.)	
					AM	PM	AM	PM	AM	PM
					1	Ivy Rd at Canterbury Rd -Roundabout-	Overall	EBL	7.4	6.7
			EBT	6.9	6.3	A	A	92.2	74.8	
			EBR	7.0	6.6	A	A	92.2	74.8	
			WBL	7.9	7.8	A	A	75.1	82.3	
			WBT	9.2	10.9	A	B	75.1	82.3	
			WBR	7.5	7.2	A	A	42.9	46.6	
			NBL	8.4	6.9	A	A	10.8	9.3	
			NBT	7.5	7.6	A	A	10.8	9.3	
			NBR	8.1	7.3	A	A	10.8	9.3	
			SBL	8.5	11.1	A	B	19.1	29.4	
			SBT	10.6	10.8	B	B	19.1	29.4	
			SBR	20.9	26.8	C	D	171.7	207.9	
				OVERALL	10.6	12.8	B	B	-	-

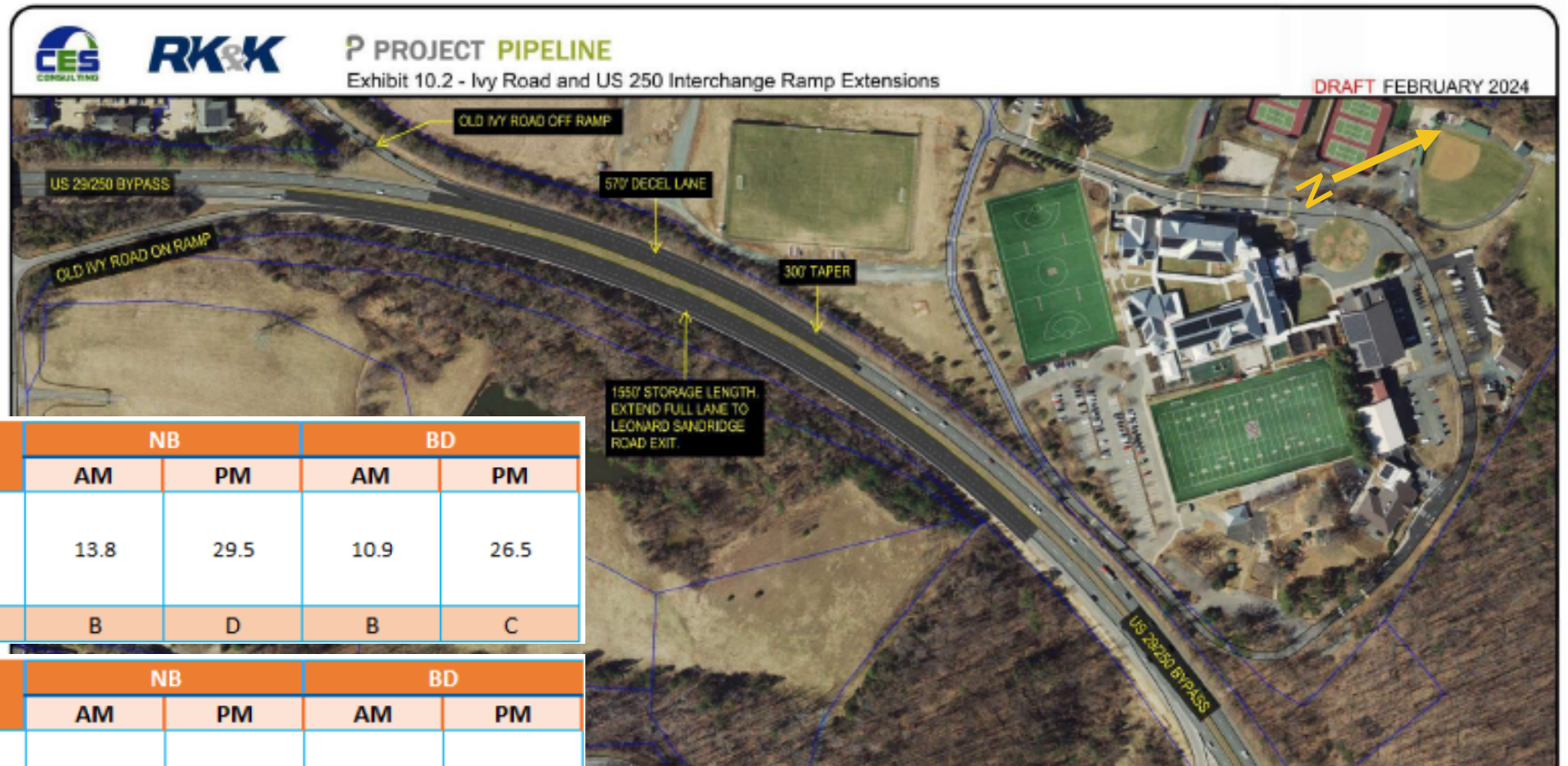


Triangle-about





Extended Deceleration/Acceleration Lanes

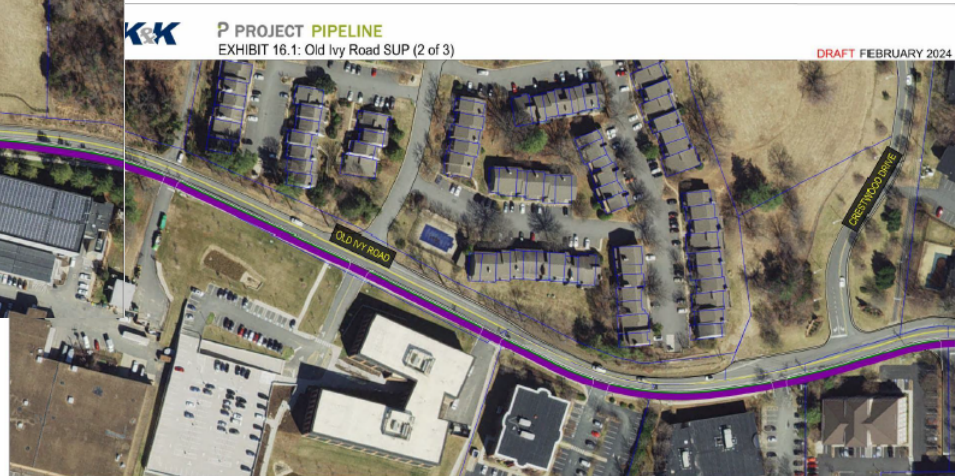
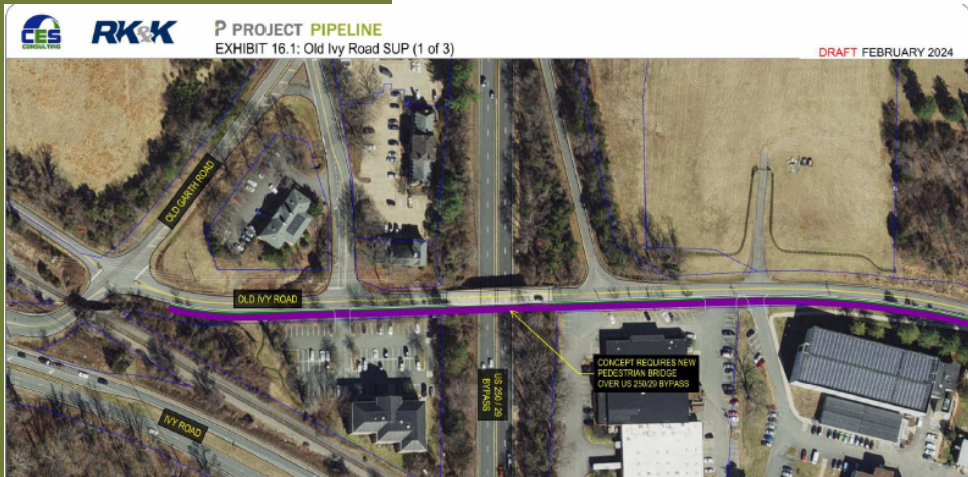


		NB		BD	
		AM	PM	AM	PM
Old Garth Rd at SB Ramp Dec Lane	Density (D), pc/mi/ln	13.8	29.5	10.9	26.5
	Level of Service (LOS)	B	D	B	C

		NB		BD	
		AM	PM	AM	PM
Old Ivy Rd at NB Ramp Acc Lane	Density (D), pc/mi/ln	35.4	29.1	29.6	23.4
	Level of Service (LOS)	E	D	D	C

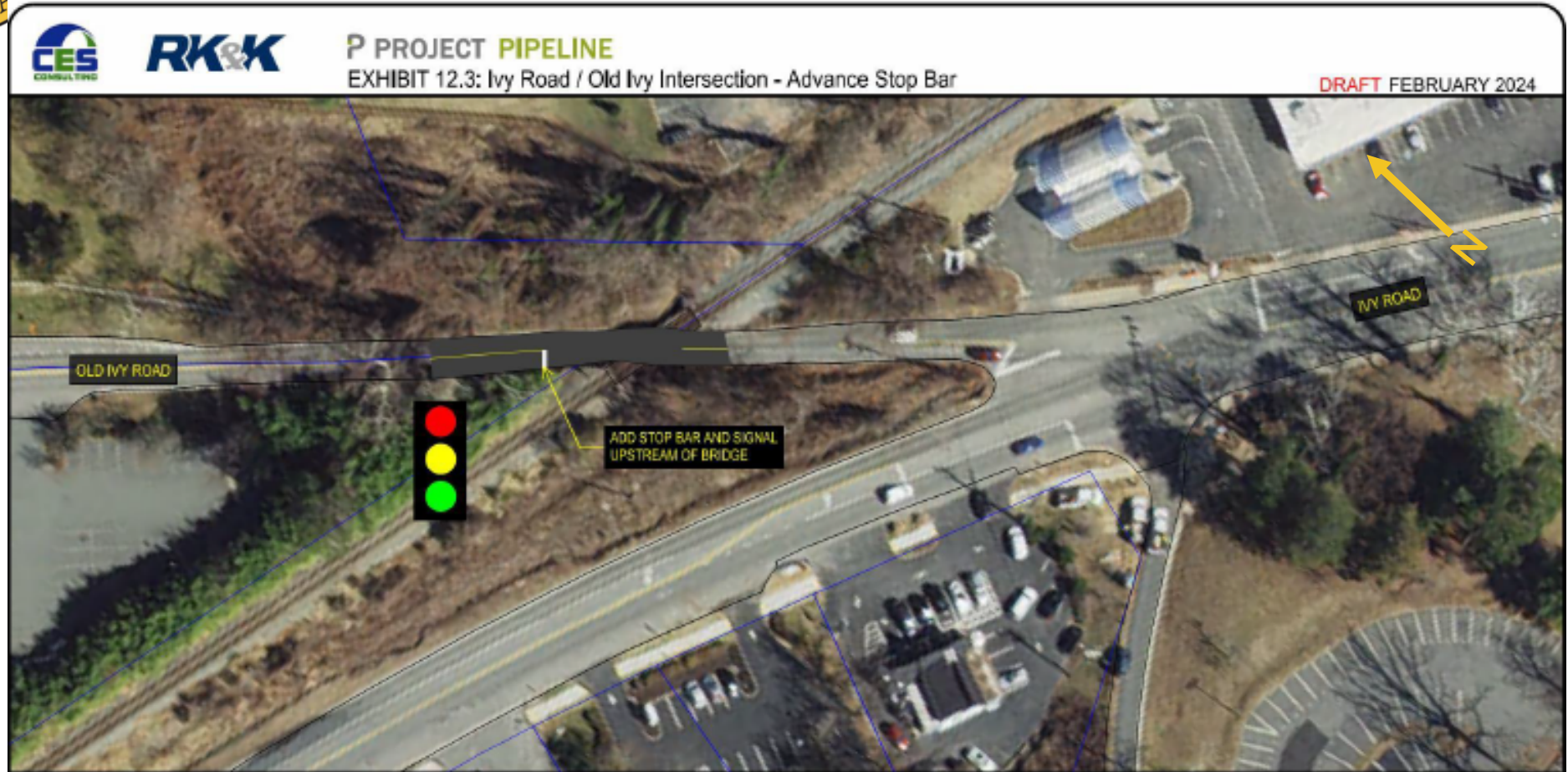


Old Ivy Shared Use Path



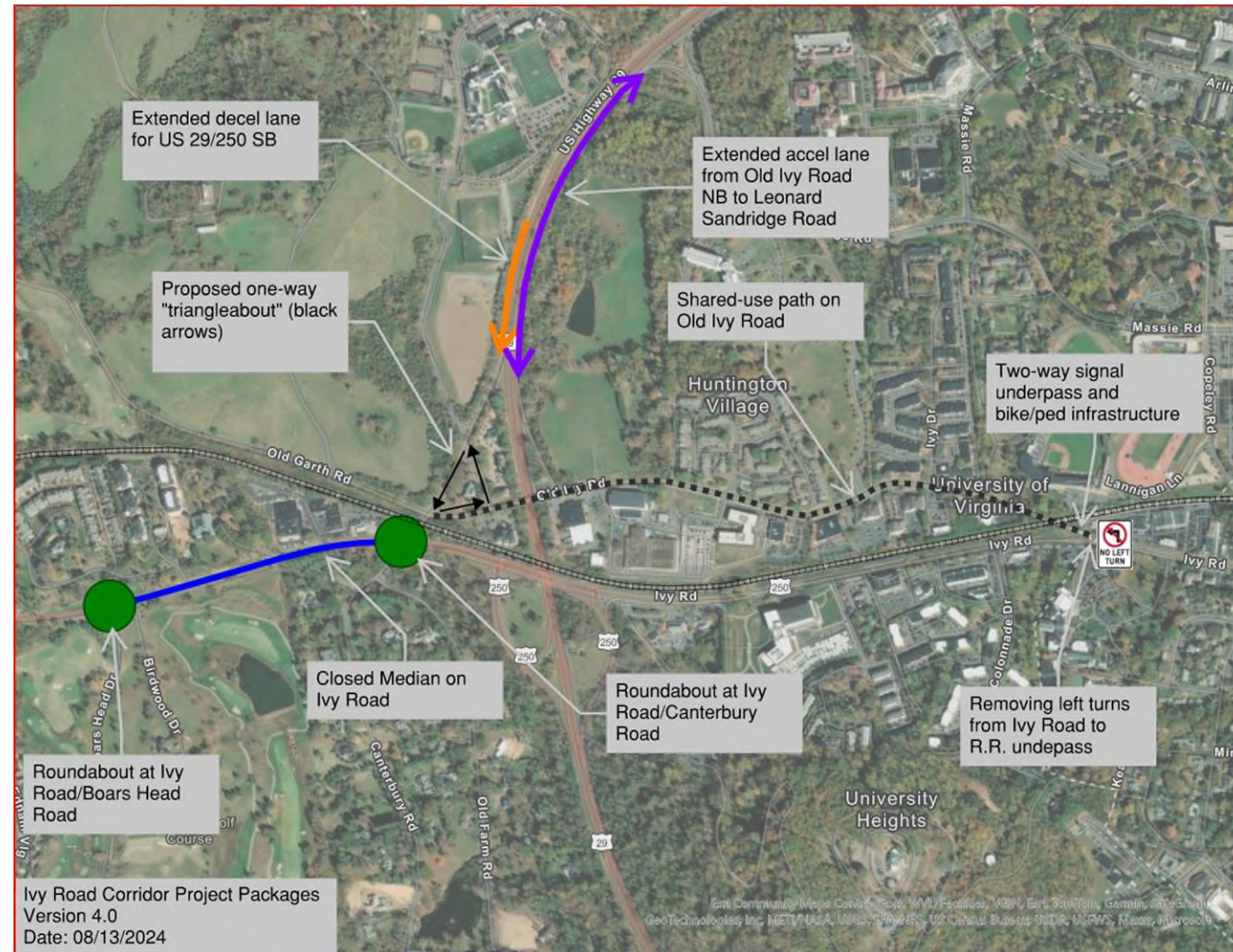


Old Ivy – Two-Way with Advance Stop Bar





DRAFT Recommendations





Discussion

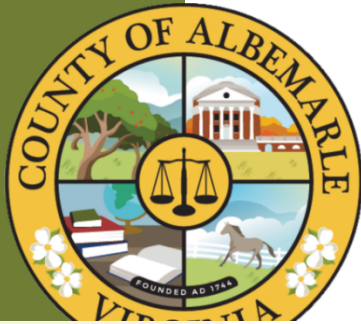
- Does the recommended package of improvements meet the Board of Supervisors' needs and expectations?



Thank you



Extra Slides



Old Ivy – Two-Way with Advance Stop Bar

NB

No.	Intersection	Approach	Lane Group	HCM NB 2045 Delay (sec/veh)		NB 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Old Ivy Rd/St Annes Dr -Signalized-	EB	EBL	8.4	8.6	A	A
			EBT	14.3	8.4	B	A
		WB	WBR	9.1	8.6	A	A
			WBT	9.6	18.0	A	B
		NB	NBL/R/T	32.8	44.0	C	D
		SB	SBL/R/T	24.8	36.1	C	D
		Overall		14.1	16.4	B	B

WB Only

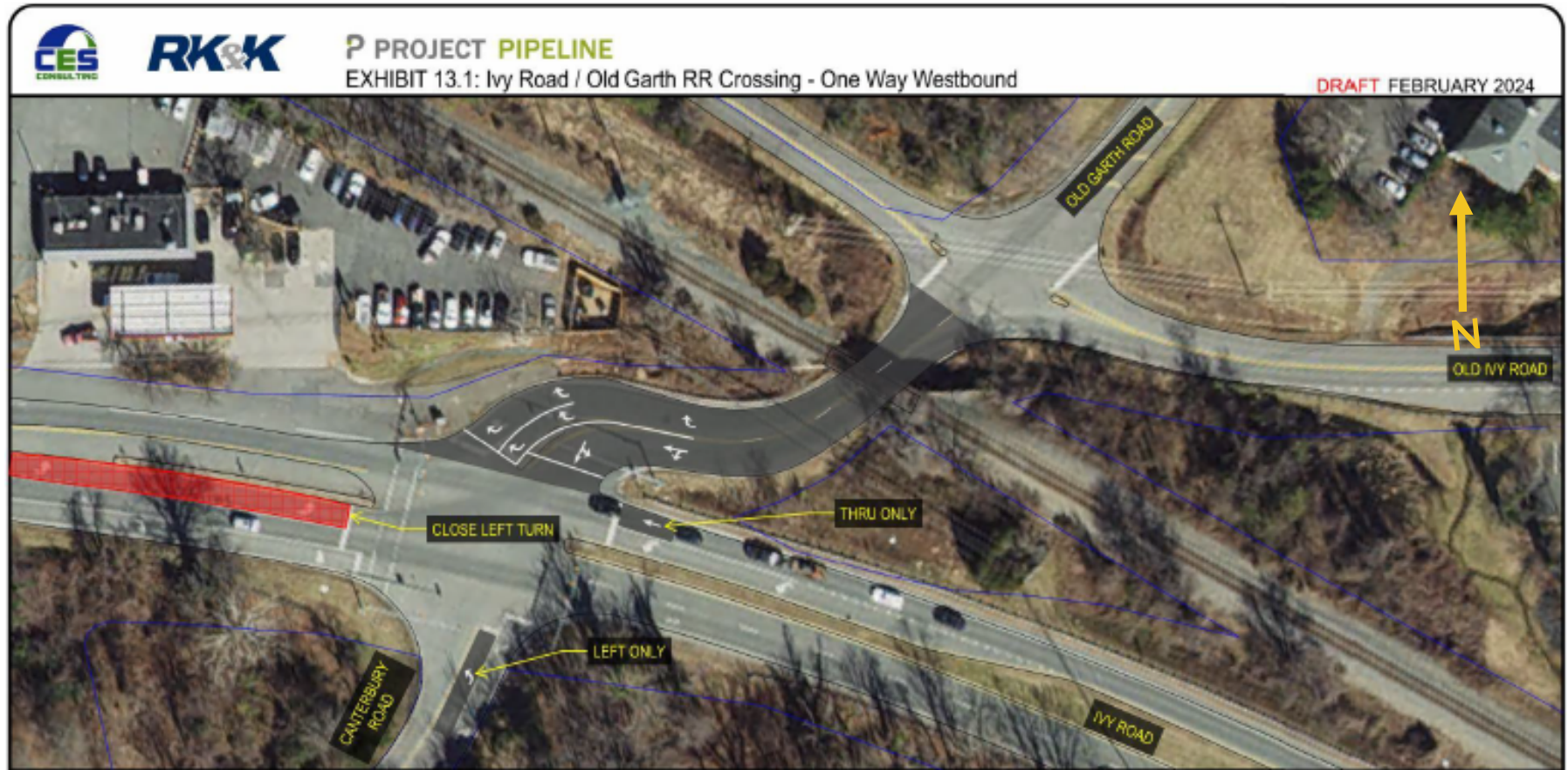
EB Only

BD

No.	Intersection	Approach	Lane Group	HCM BD 2045 Delay (sec/veh)		BD 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Old Ivy Rd/St Annes Dr -Signalized-	EB	EBL	13.0	13.8	B	B
			EBT	22.9	12.2	C	B
		WB	WBR	13.9	12.3	B	B
			WBT	14.8	26.2	B	C
		NB	NBL/R/T	41.4	54.7	D	D
		SB	SBL/R/T	34.3	59.0	C	E
		Overall		21.5	24.6	C	C
		2	Ivy Rd at Old Ivy Rd/St Annes Dr -Signalized-	EB	EBL	1.8	1.7
EBT	3.8				2.2	A	A
WB	WBR			2.0	2.0	A	A
	WBT			2.1	4.0	A	A
NB	NBL/R			29.1	64.7	C	E
SB	SBL/R/T			0.0	0.0	A	A
Overall				3.1	3.5	A	A
2	Ivy Rd at Old Ivy Rd/St Annes Dr -Signalized-			EB	EBL	0.0	0.0
		EBT	14.6		6.4	B	A
		WB	WBR	0.0	0.0	A	A
			WBT	11.7	33.6	B	C
		NB	NBL/R	0.0	0.0	A	A
		SB	SBL/R/T	23.9	56.7	C	E
		Overall		15.1	30.4	B	C

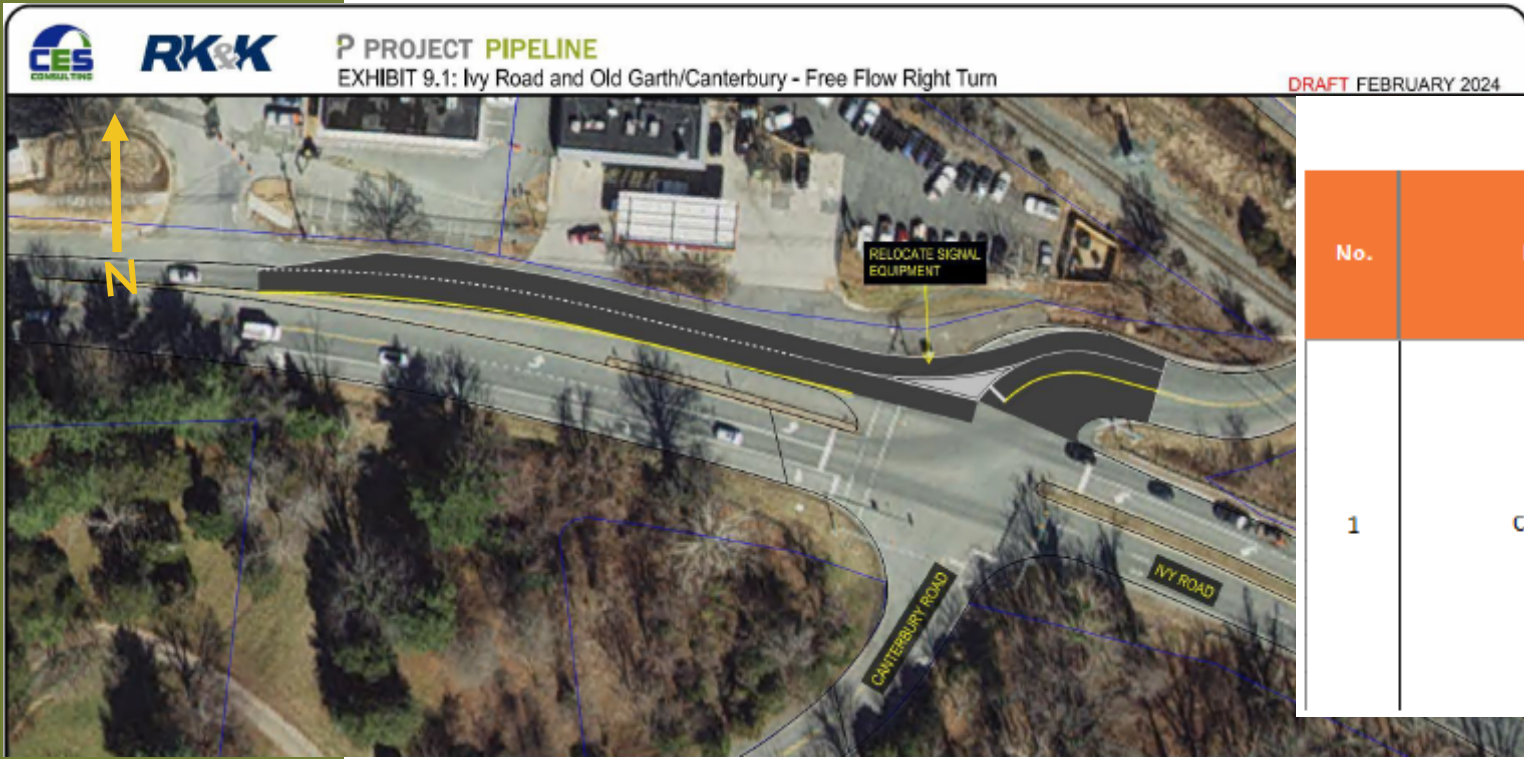


Ivy/Old Garth/Canterbury – One-Way Dual SB Right Turns





Ivy/Old Garth/Canterbury – Free Flow SB Right Turn



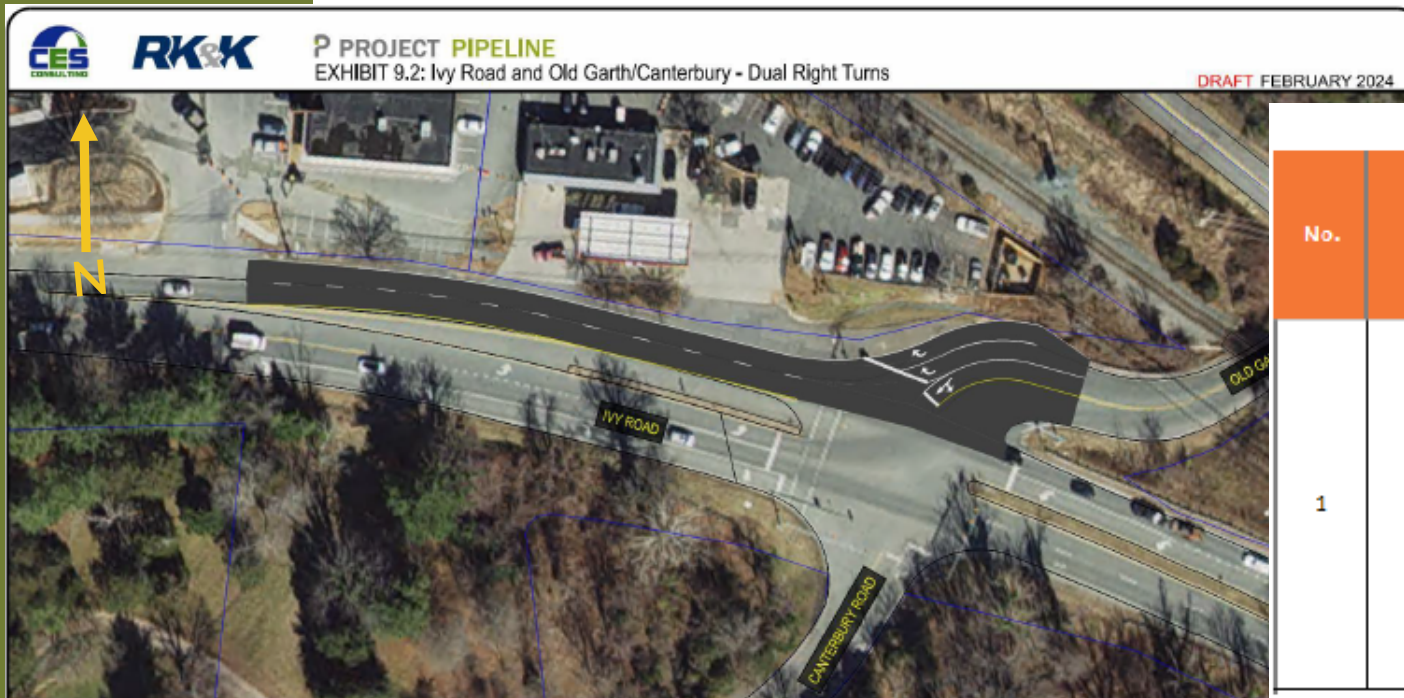
DRAFT FEBRUARY 2024

BD

No.	Intersection	Approach	Lane Group	HCM BD 2045 Delay (sec/veh)		BD 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Canterbury Rd -Signalized-	EB	EBL	39.8	43.4	D	D
			EBR	9.2	8.1	A	A
			EBT	17.6	12.7	B	B
		WB	WBL	21.0	23.3	C	C
			WBR/T	34.4	37.4	C	D
		NB	NBL/T	56.9	62.0	E	E
			NBR	54.8	60.1	D	E
		SB	SBL/T	54.1	111.0	D	F
			SBR	0.7	0.7	A	A
		OVERALL				24.2	28.0



Ivy/Old Garth/Canterbury – Dual SB Right Turns



BD

No.	Intersection	Approach	Lane Group	HCM BD 2045 Delay (sec/veh)		BD 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Canterbury Rd -Signalized-	EB	EBL	39.8	43.4	D	D
			EBR	9.2	8.1	A	A
			EBT	17.6	12.7	B	B
		WB	WBL	20.9	23.4	C	C
			WBR/T	34.5	37.4	C	D
		NB	NBL/T	56.9	62.0	E	E
			NBR	54.8	60.1	D	E
		SB	SBL/T	54.1	111.0	D	F
			SBR	27.6	33.9	C	C
				OVERALL		30.2	36.1



Ivy/Old Garth/Canterbury – One-Way NB



P PROJECT PIPELINE

EXHIBIT 13.2: Ivy Road / Old Garth RR Crossing - One Way Eastbound

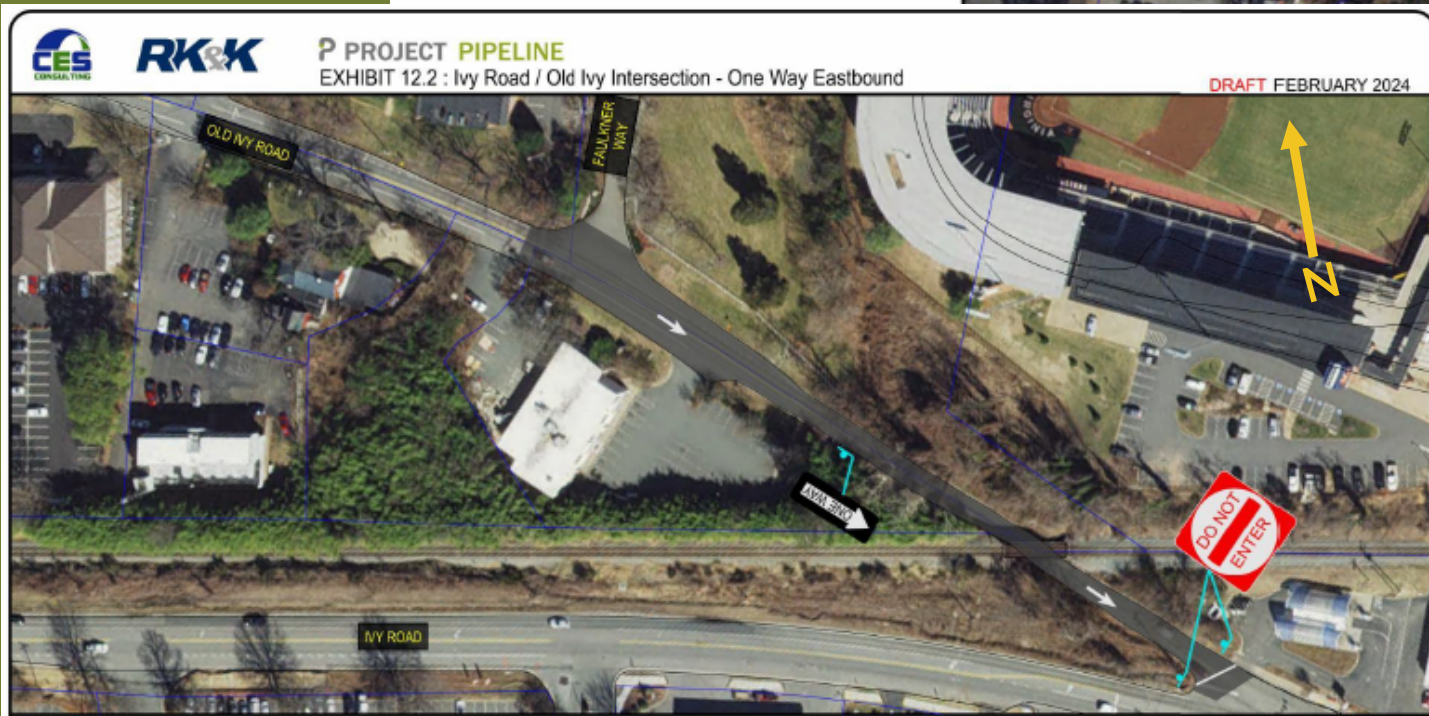
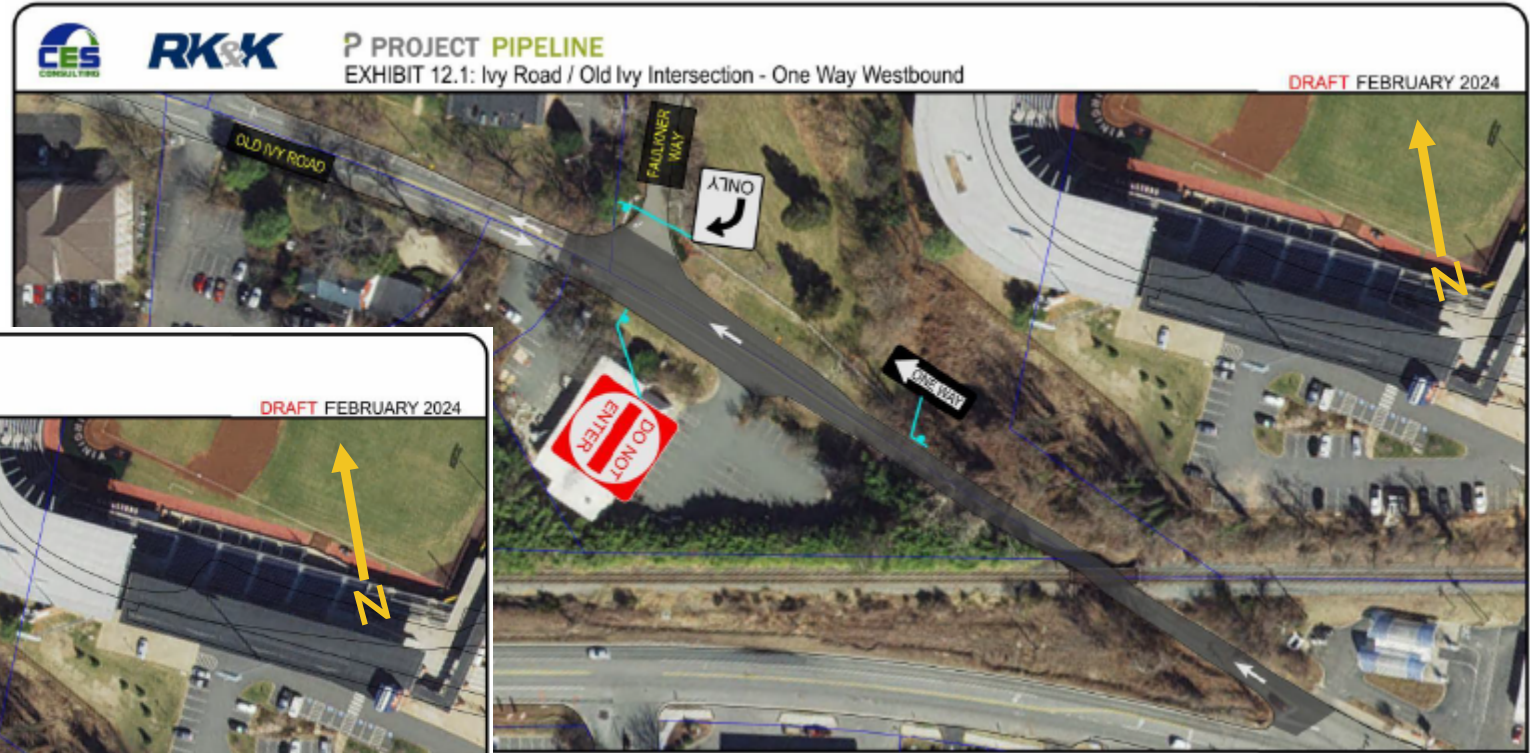


BD

No.	Intersection	Approach	Lane Group	HCM BD 2045 Delay (sec/vch)		BD 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Canterbury Rd -Signalized-	EB	EBL	97.8	112.3	F	F
			EBR	3.4	3.3	A	A
			EBT	6.8	5.4	A	A
		WB	WBL	13.0	8.7	B	A
			WBR/T	111.5	114.2	F	F
			NBL/T	57.7	62.7	E	E
NB	NBR	55.3	60.5	E	E		
	OVERALL		75.4	84.8	E	F	
2	Ivy Rd at US 29 SB Ramp -Signalized-	EB	EBR	22.0	45.0	C	D
			EBT	30.3	56.1	C	E
			WBL	47.0	85.2	D	F
		WB	WBT	27.8	23.5	C	C
			NBL	48.9	85.0	D	F
			NBR	19.3	25.4	B	C
	OVERALL		33.2	58.7	C	E	



Old Ivy – One-Way Options





Old Ivy – One-Way Options

NB

No.	Intersection	Approach	Lane Group	HCM NB 2045 Delay (sec/veh)		NB 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Canterbury Rd -Signalized-	EB	EBL	37.2	57.2	D	E
			EBR	8.8	8.1	A	A
			EBT	16.8	12.7	B	B
		WB	WBL	12.9	16.2	B	B
			WBR/T	31.3	43.3	C	D
		NB	NBL/T	56.9	62.0	E	E
			NBR	54.8	60.1	D	E
		SB	SBL/T	58.8	111.0	E	F
			SBR	36.3	49.8	D	D
		OVERALL	30.7	43.9	C	D	
		2	Ivy Rd at Old Ivy Rd/St Annes Dr -Signalized-	EB	EBL	8.4	8.6
EBT	14.3				8.4	B	A
WB	WBR			9.1	8.6	A	A
	WBT			9.6	18.0	A	B
NB	NBL/R/T			32.8	44.0	C	D
SB	SBL/R/T			24.8	36.1	C	D
OVERALL	14.1			16.4	B	B	

BD WB Only

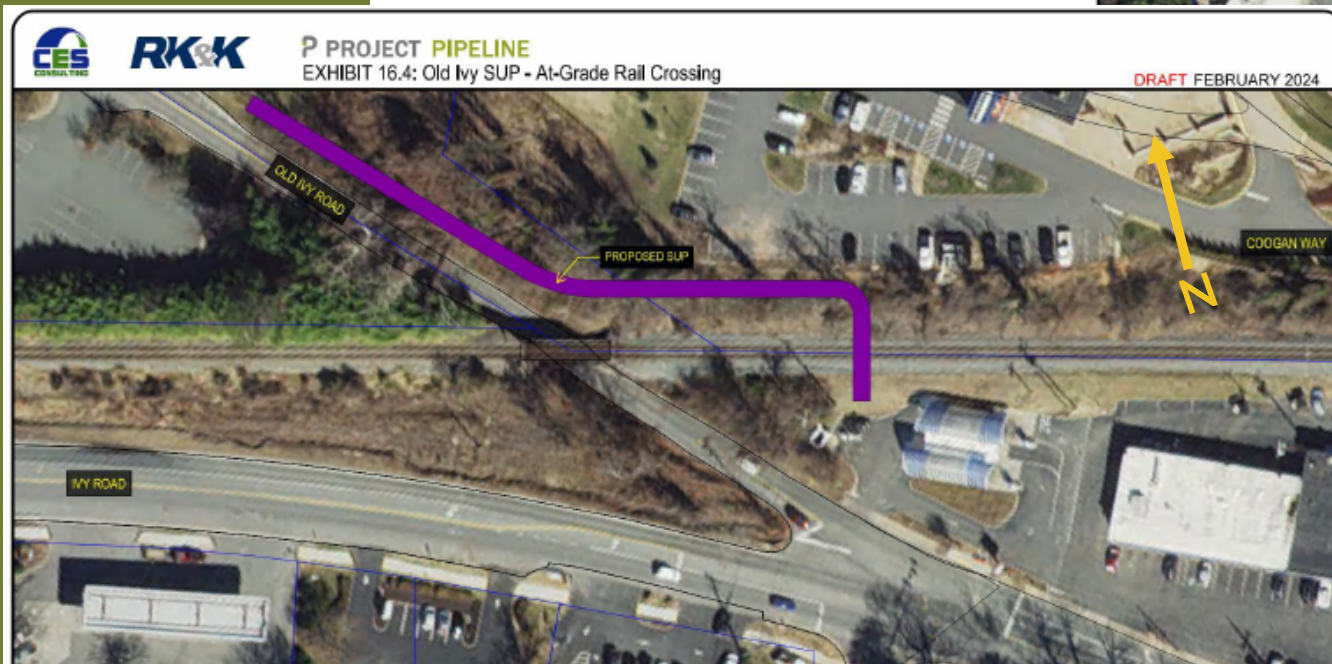
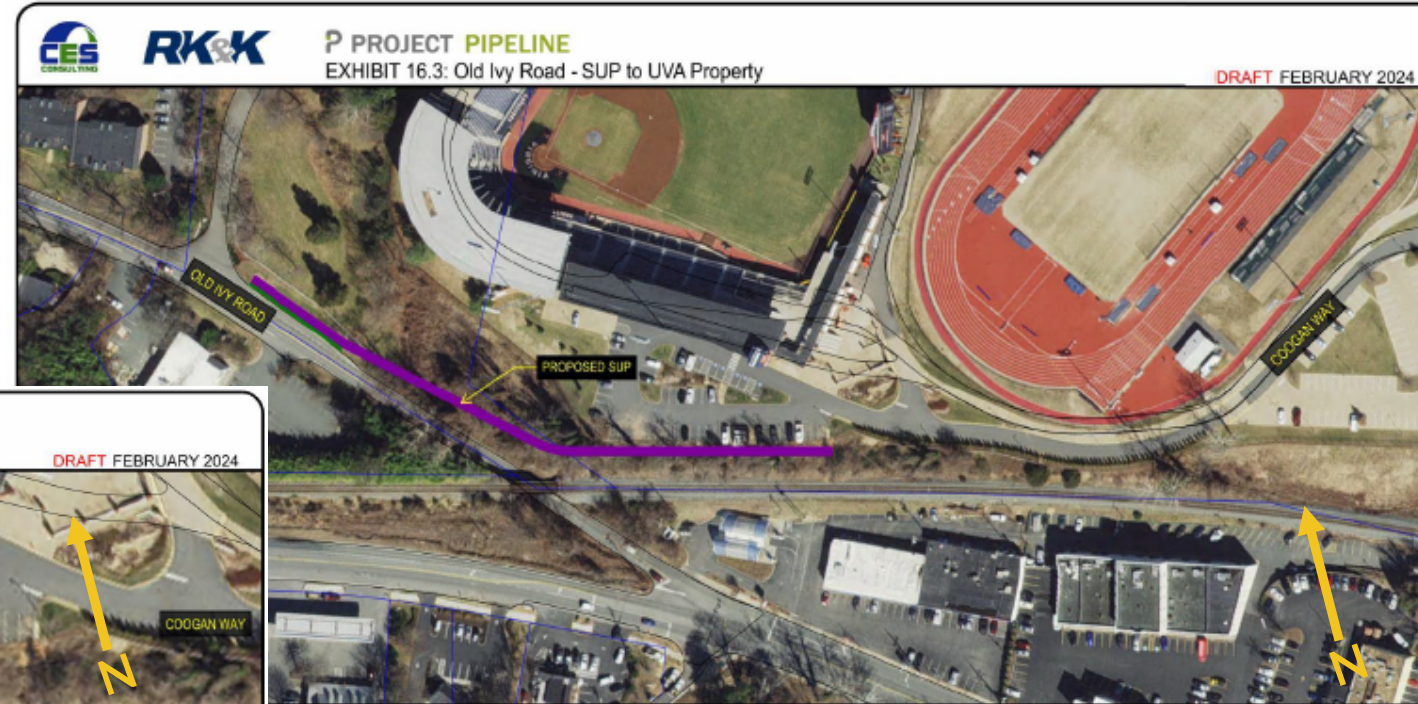
No.	Intersection	Approach	Lane Group	HCM BD 2045 Delay (sec/veh)		BD 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Canterbury Rd -Signalized-	EB	EBL	124.3	51.6	F	D
			EBR	18.5	11.6	B	B
			EBT	42.2	18.2	D	B
		WB	WBL	23.4	21.0	C	C
			WBR/T	194.8	108.1	F	F
		NB	NBL/T	56.9	62.0	E	E
			NBR	54.8	60.1	D	E
		SB	SBL/T	44.1	228.2	D	F
			SBR	26.5	42.9	C	D
		OVERALL	86.8	79.2	F	E	
		2	Ivy Rd at Old Ivy Rd/St Annes Dr -Signalized-	EB	EBL	1.8	1.7
EBT	3.8				2.2	A	A
WB	WBR			2.0	2.0	A	A
	WBT			2.1	4.0	A	A
NB	NBL/R			29.1	64.7	C	E
SB	SBL/R/T			0.0	0.0	A	A
OVERALL	3.1	3.5	A	A			

BD EB Only

No.	Intersection	Approach	Lane Group	HCM BD 2045 Delay (sec/veh)		BD 2045 HCM LOS	
				AM	PM	AM	PM
1	Ivy Rd at Canterbury Rd -Signalized-	EB	EBL	59.8	52.9	E	D
			EBR	7.3	7.8	A	A
			EBT	14.0	12.2	B	B
		WB	WBL	16.3	18.3	B	B
			WBR/T	36.2	204.1	D	F
		NB	NBL/T	56.9	62.0	E	E
			NBR	54.8	60.1	D	E
		SB	SBL/T	144.6	145.5	F	F
			SBR	39.9	49.1	D	D
		OVERALL	38.6	102.3	D	F	
		2	Ivy Rd at Old Ivy Rd/St Annes Dr -Signalized-	EB	EBL	0.0	0.0
EBT	14.6				6.4	B	A
WB	WBR			0.0	0.0	A	A
	WBT			11.7	33.6	B	C
NB	NBL/R			0.0	0.0	A	A
SB	SBL/R/T			23.9	56.7	C	E
OVERALL	15.1	30.4	B	C			



Old Ivy Shared Use Path





Old Ivy – Realignment Alternatives

