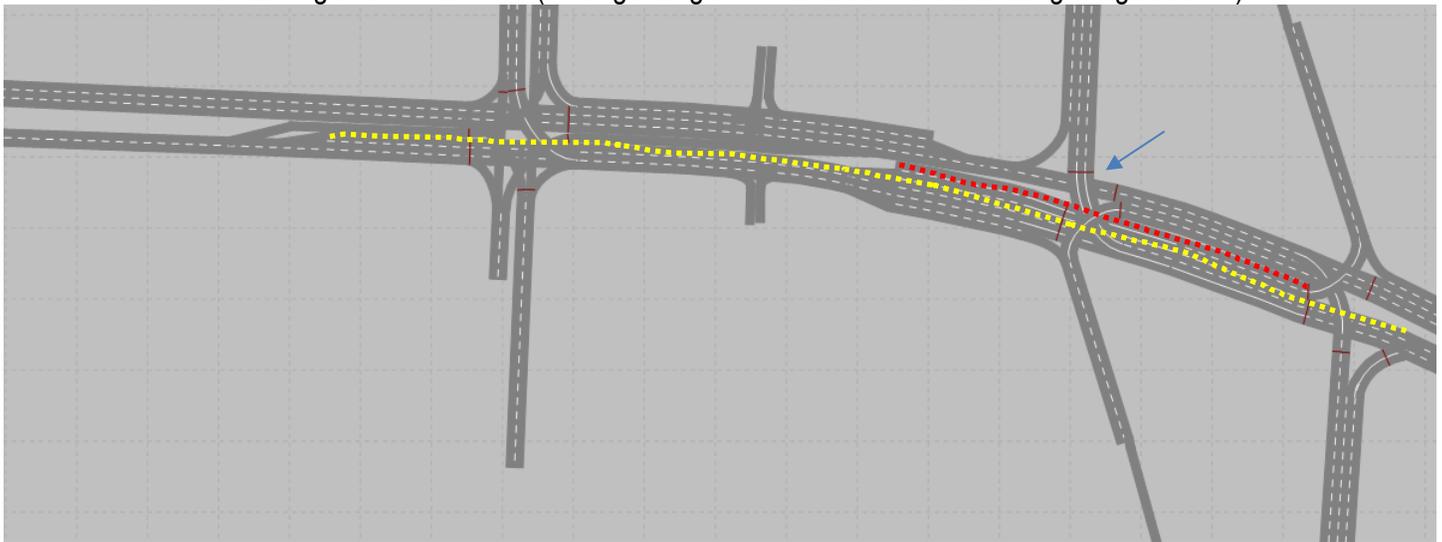


12-8-21 Some operational scoping work has been done for US-40 between Cliff Drive and Little Blue Parkway. Many options have been tested in future peak hour periods; this document will attempt to describe the geometric variations that seem to result in the most value. The discussion is sorted from west to east.

1. (Cliff Drive to I-470) extension of EBL into Valley View (including triple SBL at I-470 and lane opening at Cliff Dr)
 - a. Maintaining two EBL to I-470 (shifting a single EBT lane behind the existing bridge column)
2. (I-470) NBR widening and signalization
3. (Valley View Parkway) Connect I-470 WBR lane to Valley View WBR, addition of WBR
4. (Little Blue Parkway) Reconfigure intersection as J-turn to prevent queueing challenges within US-40 median

More detail is provided below. Further detail (levels of service, etc) available

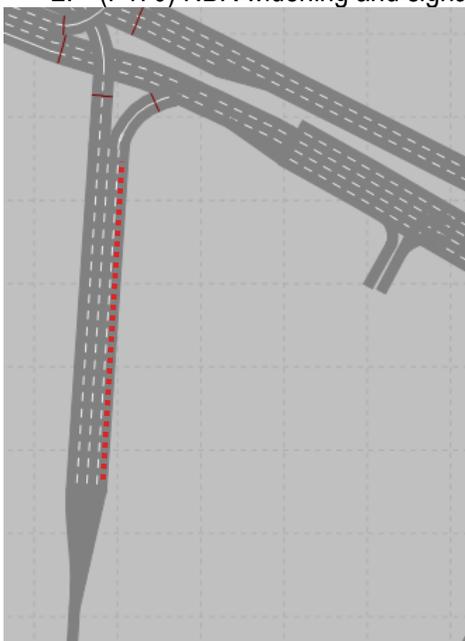
1. (Cliff Drive to I-470) extension of EBL into Valley View (including triple SBL at I-470 and lane opening at Cliff Dr)
 - a. Maintaining two EBL to I-470 (shifting a single EBT lane behind the existing bridge column)



The extension of the Valley View EBL (yellow marking) greatly helps the interchange operations (allows triple SBL at I-470 depicted by blue arrow)

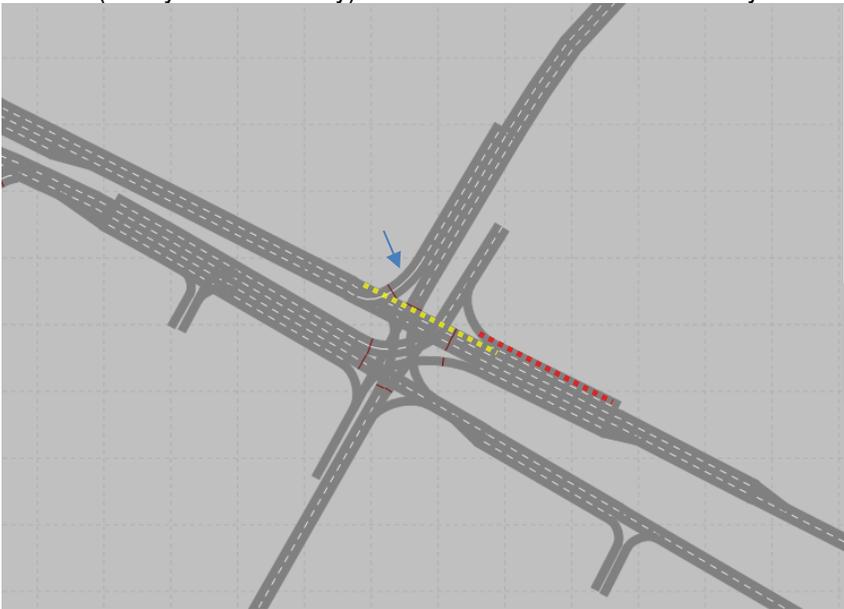
The “a” portion (red marking) requires more reconstruction and offers smaller improvement compared to the “yellow” lane extension.

2. (I-470) NBR widening and signalization



The additional NBR turn lane (red marking) helps reduce the NB queue.

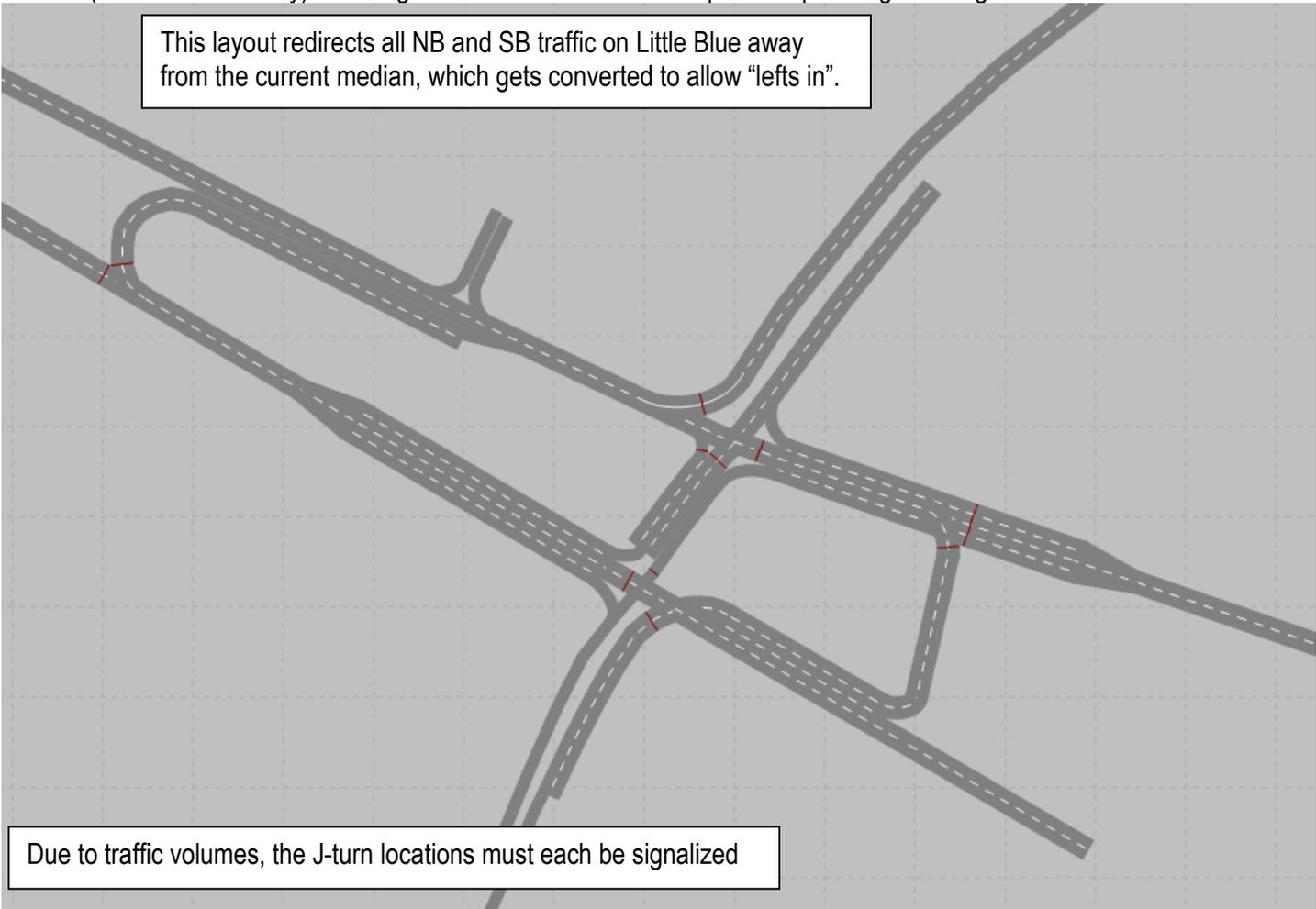
3. (Valley View Parkway) Connect I-470 WBR lane to Valley View WBR, addition of WBR



Connecting the two WBR lanes into one larger lane (yellow marking) helps operations at the Valley View signal: the high number of WBR to I-470 can now use a different lane than those headed to either WB US-40 or SB I-470. This can also result in the unique dual SBR being configured more conventionally (blue arrow).

The additional WBR turn lane (red marking) helps reduce the WB queue.

4. (Little Blue Parkway) Reconfigure intersection as J-turn to prevent queuing challenges within US-40 median



This layout redirects all NB and SB traffic on Little Blue away from the current median, which gets converted to allow "lefts in".

Due to traffic volumes, the J-turn locations must each be signalized

JS-40 (Cliff Dr to Little Blue Parkway) Future PM			
no-build conditions			
Network measures:			
Average Delay:	217		
Vehicles Arrived:	7,536		
Travel Time (hr):	2,197,584		
Intersection Delay			
	Volume	Delay (Sec)	LOS
Cliff	3,047	109	F
SB ramps	4,127	48	D
NB ramps	4,613	36	D
Valley View	4,607	84	F
Little Blue Parkway	3,658	105	F

Text highlighted like this means the geometry does include this modification

Text highlighted like this means the geometry does not include this modification

JS-40 (Cliff Dr to Little Blue Parkway) Future PM			
Geometry v5			
Network measures:			
Average Delay:	131		
Vehicles Arrived:	8,389		
Travel Time (hr):	1,619,803		
Intersection Delay			
	Volume	Delay (Sec)	LOS
Cliff	3,474	82	F
SB ramps	4,631	48	D
NB ramps	5,148	45	D
Valley View	5,213	39	D
Little Blue Parkway	4,110	40	D

“Geometry v5” is equivalent to...

- (Cliff Drive to I-470) extension of EBL into Valley View (including triple SBL at I-470 and lane opening at Cliff Dr)
 - Maintaining two EBL to I-470 (shifting a single EBT lane behind the existing bridge column)
- (I-470) NBR widening and signalization
- (Valley View Parkway) Connect I-470 WBR lane to Valley View WBR, addition of WBR
- (Little Blue Parkway) Reconfigure intersection as J-turn to prevent queueing challenges within US-40 median

JS-40 (Cliff Dr to Little Blue Parkway) Future PM			
Geometry v8			
Network measures:			
Average Delay:	91		
Vehicles Arrived:	8,640		
Travel Time (hr):	1,294,013		
Intersection Delay			
	Volume	Delay (Sec)	LOS
Cliff	3,658	26	C
SB ramps	4,830	32	C
NB ramps	5,373	28	C
Valley View	5,351	39	D
Little Blue Parkway	4,177	42	D

“Geometry v8” is equivalent to...

- (Cliff Drive to I-470) extension of EBL into Valley View (including triple SBL at I-470 and lane opening at Cliff Dr)
 - Maintaining two EBL to I-470 (shifting a single EBT lane behind the existing bridge column)
- (I-470) NBR widening and signalization
- (Valley View Parkway) Connect I-470 WBR lane to Valley View WBR, addition of WBR
- (Little Blue Parkway) Reconfigure intersection as J-turn to prevent queueing challenges within US-40 median

JS-40 (Cliff Dr to Little Blue Parkway) Future PM			
Geometry v9			
Network measures:			
Average Delay:	86		
Vehicles Arrived:	8,669		
Travel Time (hr):	1,247,793		
Intersection Delay			
	Volume	Delay (Sec)	LOS
Cliff	3,669	26	C
SB ramps	4,842	23	C
NB ramps	5,374	30	C
Valley View	5,368	37	D
Little Blue Parkway	4,189	41	D

“Geometry v9” is equivalent to...

- (Cliff Drive to I-470) extension of EBL into Valley View (including triple SBL at I-470 and lane opening at Cliff Dr)
 - Maintaining two EBL to I-470 (shifting a single EBT lane behind the existing bridge column)
- (I-470) NBR widening and signalization
- (Valley View Parkway) Connect I-470 WBR lane to Valley View WBR, addition of WBR
- (Little Blue Parkway) Reconfigure intersection as J-turn to prevent queueing challenges within US-40 median

JS-40 (Cliff Dr to Little Blue Parkway) Future PM			
Geometry v10.5			
Network measures:			
Average Delay:	76		
Vehicles Arrived:	8,652		
Travel Time (hr):	1,171,333		
Intersection Delay			
	Volume	Delay (Sec)	LOS
Cliff	3,675	26	C
SB ramps	4,842	23	C
NB ramps	5,377	23	C
Valley View	5,360	35	C
Little Blue Parkway	4,180	31	C

“Geometry v10.5” is equivalent to...

- (Cliff Drive to I-470) extension of EBL into Valley View (including triple SBL at I-470 and lane opening at Cliff Dr)
 - Maintaining two EBL to I-470 (shifting a single EBT lane behind the existing bridge column)
- (I-470) NBR widening and signalization
- (Valley View Parkway) Connect I-470 WBR lane to Valley View WBR, addition of WBR
- (Little Blue Parkway) Reconfigure intersection as J-turn to prevent queueing challenges within US-40 median