

Public Information Center Meeting

Concept Development Study for the Roundabout at the Intersection of Phalanx Road and Campus Drive in the Township of Middletown

Presented by:

**Monmouth County Department of Public Works & Engineering
Division of Engineering and Traffic Safety**

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Location Map



Existing Intersection Conditions at Phalanx Road and Campus Drive



Why the Study by the County?

- Phalanx Rd - municipal roadway
 - Campus Dr. – Brookdale Community College roadway
 - Phalanx Rd on the County Map plan identified as a potential roadway for jurisdictional exchange
 - Brookdale Community College – county facility
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- Request for a study for a roundabout from the governing body of the Township of Middletown with the support of Lincroft Village Green Association LVGA
 - Dialog between the Township and the County to initiate roadway jurisdiction exchange

Project Need

- Insufficient gaps in traffic on Phalanx Rd during peak hours
- Failing traffic conditions on Campus Dr. approach during AM and PM peak hours
- Inadequate sight distance from Campus Dr. EB approach looking north along Phalanx Rd
- Diversion of traffic through the residential neighborhood
- Lack of turning lanes on Phalanx Rd
- Insufficient Pedestrian Facilities; must meet code requirements
- Speeding along Phalanx Rd

Traffic Engineering Study

- Site visits and observations
- Crash Analysis
- Traffic volumes collection
 - ATR (24 – 7)
 - Manual 8 hour turning movements
- Speed Study
- Capacity, Level of Service and delays analyses
- Review of MT-61 structure inspection report
 - 48” RCP pipe culvert
 - Constructed in 1945
 - Classified structurally deficient

Crash History

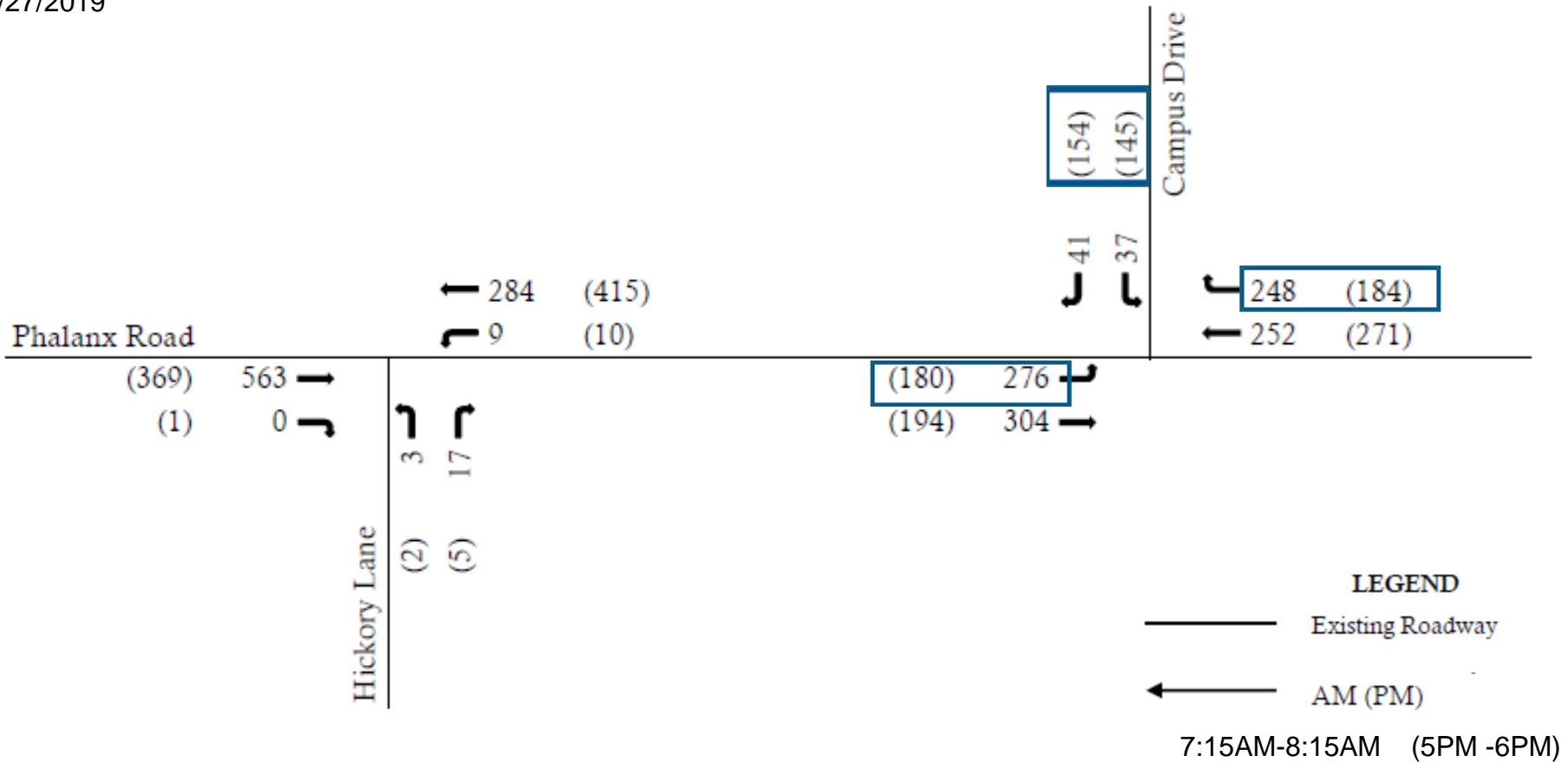
Crash History – Phalanx Road (Vicinity of Campus Drive and/or Hickory Lane) February 2016 – February 2019

Crash Type	2016 (Feb-Dec)	2017	2018	2019 (Jan-Feb)	Total
Angle	1	2	0	0	3
Head On	1	0	0	0	1
Fixed Object	2	0	1	0	3
Rear End	4	0	0	0	4
Animal	0	4	1	1	6
Total	8	6	2	1	17

- 17 (reportable) crashes in 3 year period
- Many “near crashes” observed and reported by the residents, Township and College
- 3 crashes **right angle crashes** between vehicles making a left turn from Campus Dr. and vehicles on Phalanx Rd
- Intersection perceived as difficult to negotiate so the drivers exercise extra caution or make right turn followed by a left to go through the residential area

Traffic Volume Counts

2/27/2019



Level of Service

A qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience

(**A** best to **F** worst) .



Stop controlled intersection

control delay (LOS) seconds/vehicle **f > 50**



Signal controlled intersection

control delay (LOS) seconds/vehicle **F > 80**



Roundabout controlled intersection

control delay (LOS) seconds/vehicle **f > 70**

Traffic Volumes, LOS & Delay

Existing Levels of Service (2019)

Intersection	Street/Direction/ Movement			AM PSH	PM PSH
	Phalanx Road & Campus Drive	Phalanx Road	EB	L	b (11)
Campus Drive		SB	L	f (128)	f (109)
			R	b (12)	b (13)

a (#) – Unsignalized Intersection Level of Service (seconds of delay per vehicle)

Existing 95th Percentile Queues (2019)

Intersection	Street/Direction/ Movement			AM PSH	PM PSH
	Phalanx Road & Campus Drive	Phalanx Road	EB	L	38'
Campus Drive		SB	L	73'	190'
			R	8'	30'

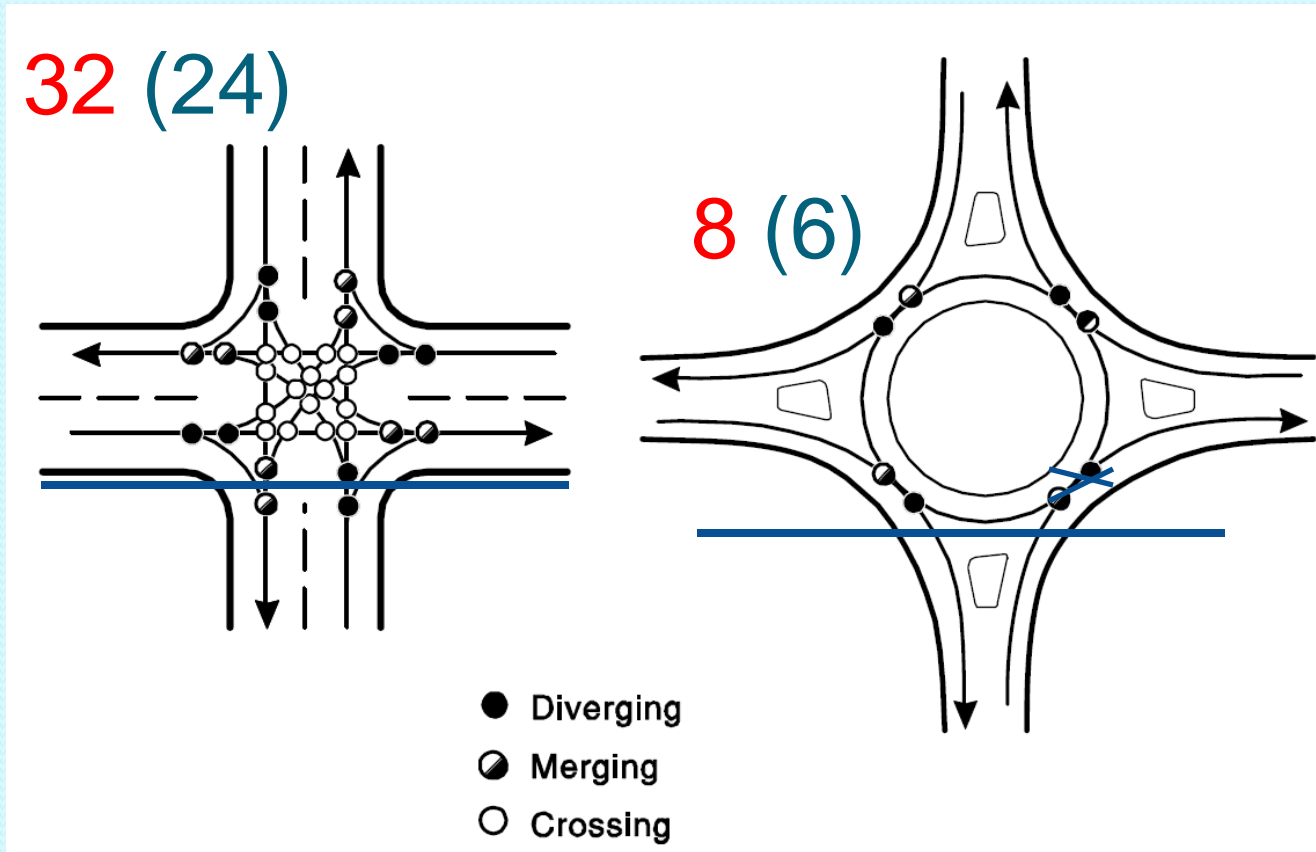
#' – 95th Percentile Queue Length (feet)

Why the Modern Roundabout?

- Existing Roundabout at CR 520 (Newman Springs Rd) entrance to BCC
- Consistent Gateway treatment to BCC from Phalanx Rd
- Roundabouts offer many benefits over traditional intersection treatments, including:
 - Significantly reduced number of conflict points
 - Reduction in severity and number of crashes
 - Slow traffic on all approaches – traffic calming effect
 - Compliant with County's Complete Streets Policy
 - Provide opportunity for landscaping and/or gateway feature to enhance the sense of community
 - Reduced maintenance and operation costs
 - Not impacted by loss of electrical power
 - Reduced vehicle delay, fuel consumption, carbon dioxide emissions, noise and better air quality

Benefits of Modern Roundabouts

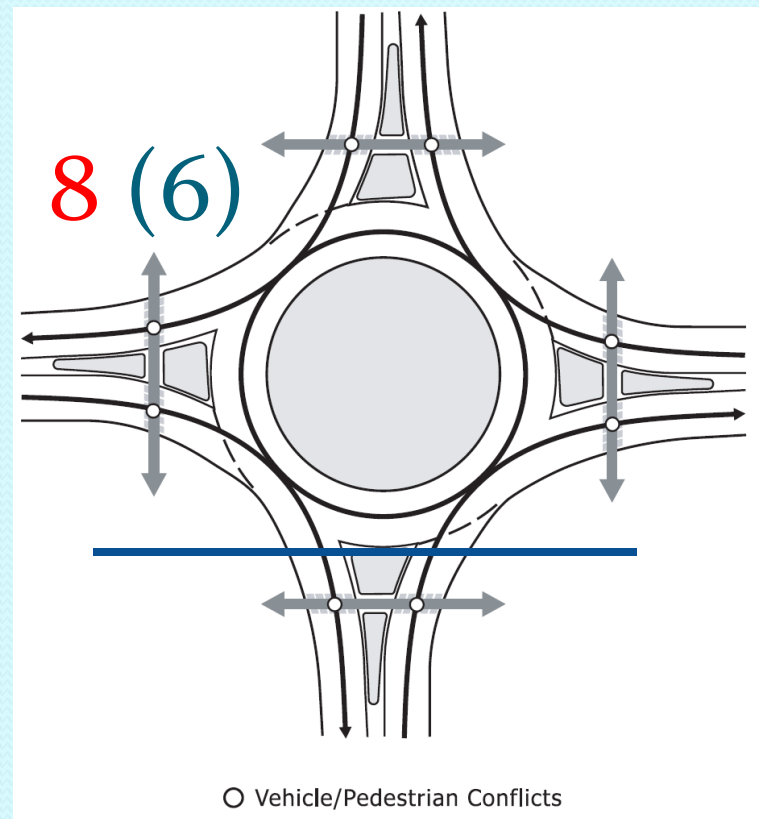
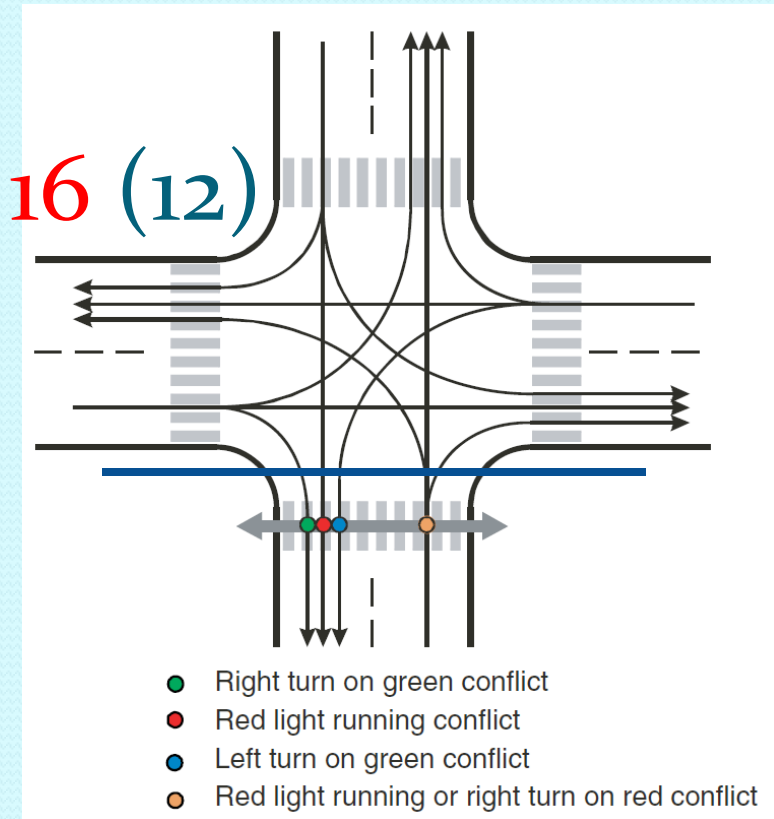
- Reduced number of vehicle-vehicle conflict points:



Source: NCHRP 672: Exhibit 5-2

Benefits of Modern Roundabouts

- Reduced number of vehicle-pedestrian conflict points:



Source: NCHRP 672: Exhibits 5-7 and 5-8

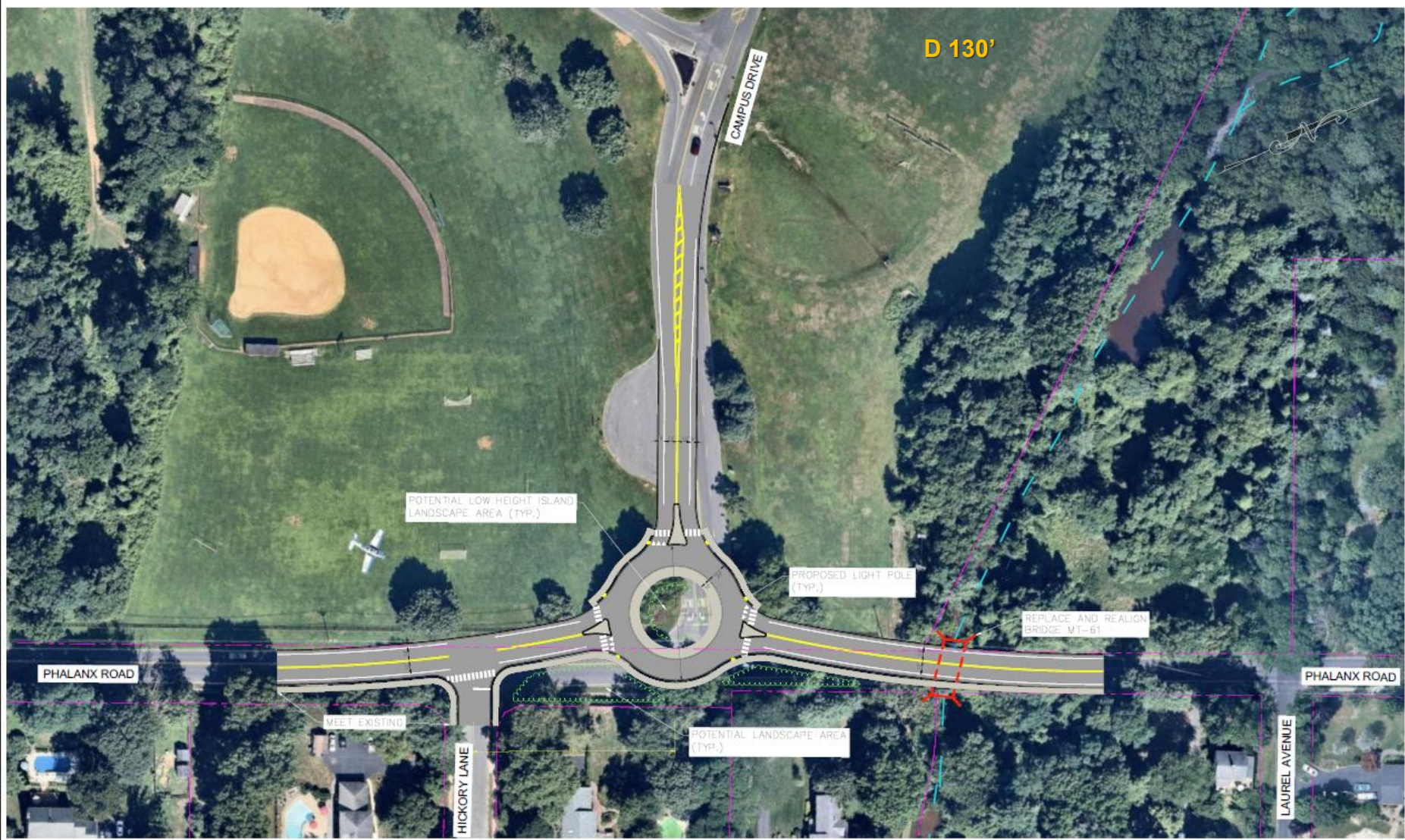
Concepts for Roundabout

- **Concept 1** – roundabout centered at Campus Dr.
- **Concept 2** - roundabout centered between Campus Dr. and Hickory Ln
- **Concept 3** - roundabout centered at Hickory Ln
- All concepts include:
 - No impacts to the residential properties on east side of Phalanx Rd
 - Improved pedestrian facilities
 - Realignment of Phalanx Rd and reconstruction of the existing MT-61 culvert
 - Landscaping to shield the residential properties from vehicular head lights
 - Landscaping and/or gateway feature to enhance the sense of place/community

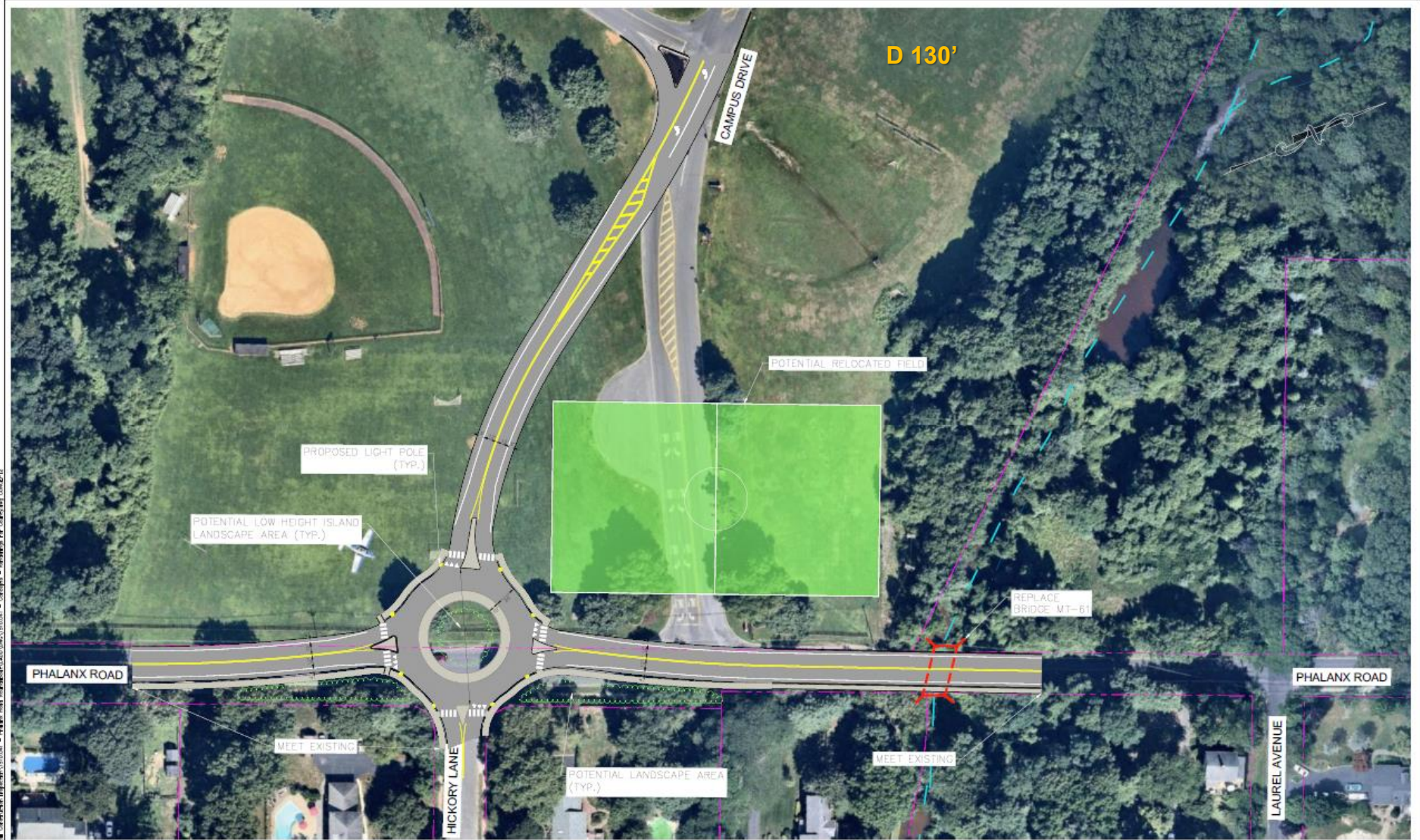
Concept 1B



Concept 2



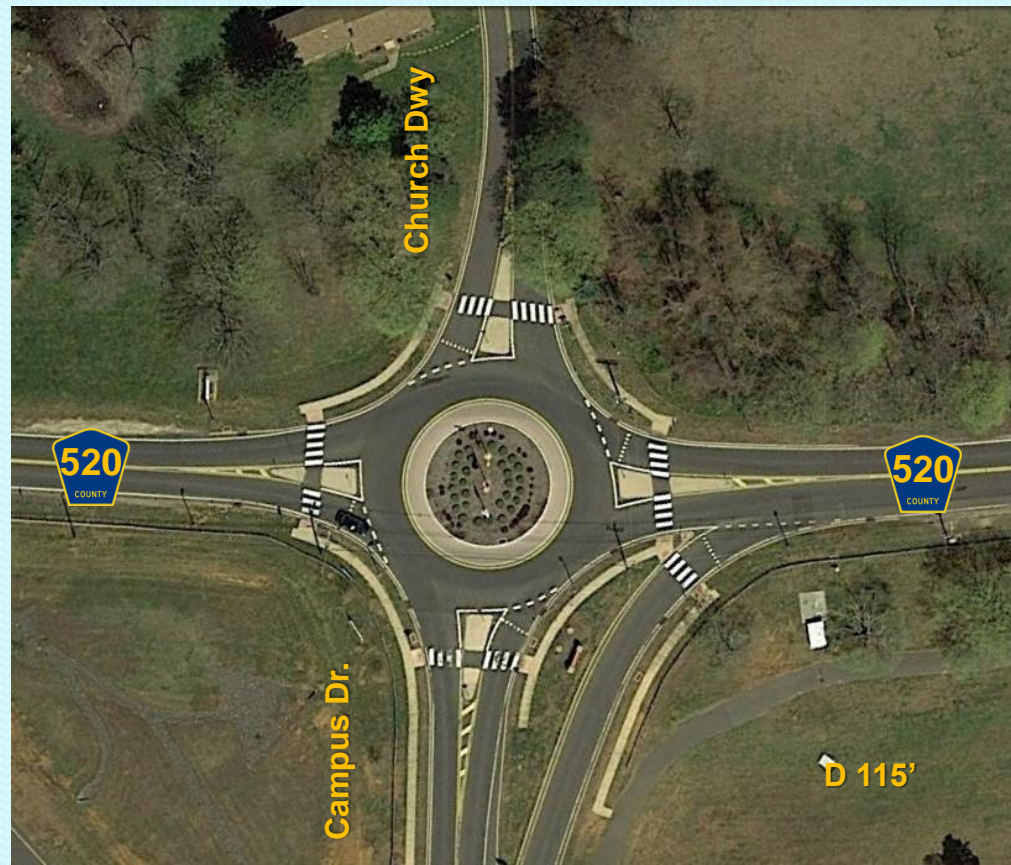
Concept 3



CR 4 Roundabout



CR 520 Roundabout



Roundabout LOS & Delay 2039

Alternative 1 (2039)
Levels of Service

Intersection	Street/Direction/ Movement			AM PSH		PM PSH	
				No Build	Alt. 1	No Build	Alt. 1
Phalanx Road & Campus Drive	Phalanx Road	EB	LT	b (11)	b (10)	a (10)	a (8)
		WB	TR	-	c (16)	-	b (10)
	Campus Drive	SB	L	f (239)	a (6)	f (202)	a (9)
			R	b (12)		b (14)	

a (#) – Unsignalized Intersection Level of Service (seconds of delay per vehicle)

Alternative 1 (2039)
95th Percentile Queues

Intersection	Street/Direction/ Movement			AM PSH		PM PSH	
				No Build	Alt. 1	No Build	Alt. 1
Phalanx Road & Campus Drive	Phalanx Road	EB	LT	45'	100'	23'	50'
		WB	TR	-	150'	-	100'
	Campus Drive	SB	L	100'	0'	263'	50'
			R	8'		35'	

#' – 95th Percentile Queue Length (feet)

Next Steps

- Comments from the Stakeholders/Public
- Endorsement from the Township for PPA – Fall 2019
- Commencement of final design phase – Winter 2019
- Row acquisition – Spring 2020
- Present to the Township final design – Fall 2020
- Bid and award project for construction –Winter/Spring 2020/2021

Questions ?

Thank you