

**ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS - TRAFFIC ENGINEERING DIVISION**



Intersection

Cohasset Ave & Walnut Ave (Arundel on the Bay)

Study Area Location

Aerial photo of intersection from 2020



Background

The Arundel on the Bay community has concerns about the safety of traffic operations at the intersection of Cohasset Ave and Walnut Ave.

Arundel on the Bay is a subdivision of approximately 300 single family located near Thomas Point. Community leadership has recently met with the Traffic Engineering Division and expressed their concerns about the speed of the vehicles on Cohasset Ave that are approaching its intersection with Walnut Ave. Residents pulling onto Cohasset Ave from Walnut Ave feel intimidated by the traffic approaching from Cohasset Ave.

Cohasset Ave is the major thoroughfare which provides the only access to the Arundel on the Bay Community. Walnut Ave is the minor road where it intersects with Cohasset Ave. It is the first

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intersection for southbound traffic entering the community. There are currently no stop conditions and Cohasset Ave is free-flow traffic until its termination point at Magnolia Ave.

The Arundel on the Bay Community has tried numerous times in the past to work with the County with a request for traffic calming devices to slow traffic on Cohasset Ave. Historically Cohasset Ave has met the County's traffic volume warrants but has not met the speed warrants for traffic calming devices.

Map of Arundel on the Bay Community



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Functional Classification of the Roadways

Walnut Ave is functionally classified as a local road and it is the minor street of the subject intersection. It is the first side street when entering the community heading south down Cohasset Ave. Walnut Ave is also the first side street that provides access to the east and west sides of the community. According to the Anne Arundel County Office of Transportation (OOT). "Local Roads are designed specifically to have high accessibility to abutting land and access to the higher classification facilities. They offer the lowest level of mobility and service to through traffic from outside the neighborhood.

Cohasset Ave is functionally classified as a collector road and it is the major street of the subject intersection. The OOT describe the function of collector roads, "Collectors provide traffic circulation within neighborhoods, commercial and industrial areas. These roads collect traffic from local streets in neighborhoods and channel it into the arterial system. Connections between arterials should be indirect or should not be allowed in order to discourage use by traffic from outside the neighborhood.

All roads serve the dual functions of providing mobility and access.

Site Information

Intersection site location:

The intersection is located a point where there is adverse alignment due to its location just south of a horizontal curve

Roadway/configuration:

Both Cohasset Ave and Walnut Ave have a single lane in each direction. Both roads are open section and have no pavement marking to delineate the lane direction or the edge of the pavement.

Existing traffic control devices:

Intersection control (if applicable):

- ☐ Signal
- ☒ Two-way stop (Walnut Ave)
- ☐ Four-way stop
- ☐ Other (please explain): T intersections with one stop

Marked crosswalk: ☐yes ☒no

Crossing length – 20 feet

Pedestrian signals: ☐yes ☒no

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Existing lighting: roadway/vehicular lighting on the south west corner of intersection

Other pavement markings – There are no other pavement markings near this intersection

Signing

- There is no curve warning signs or intersection warning signs on Cohasset Ave prior to its intersection with Walnut Ave.
- This section of Cohasset Ave is posted at 25 MPH. The nearest speed limit sign for southbound traffic is located just south of the intersection. The nearest speed limit sign for northbound traffic is located 830 feet south of the intersection.

Minimum Sight Distance - Walnut Ave vehicle approaches:

- Field measured 245' for eastbound stopped vehicles on Walnut Ave prior to entering Cohasset Ave intersection



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- Recommended AASHTO Design Intersection Sight Distance – Case B1, Left Turn from Stop for a 25 MPH Road is 280’.
- Prevailing Speed on Cohasset Ave is actually **28 MPH**

Recommended Intersection Sight Distance (25 MPH)	280’
Available sight distance:	245’
Difference:	35’ (deficit)

Traffic Data

Traffic volume counts and speeds collected on Cohasset Ave north of intersection on December 1, 2021 – December 8, 2021

- Methodology – machine counters
- Posted Speed Limit on this section of Cohasset Ave –25 mph
- Average Daily Traffic - 1,386 vehicles per day
- Prevailing speed (85%) - **28 mph**
- Median speed (50%) – 24 mph

Spot Radar Study performed on Cohasset Ave at its intersection with Walnut Ave on November 16, 2021

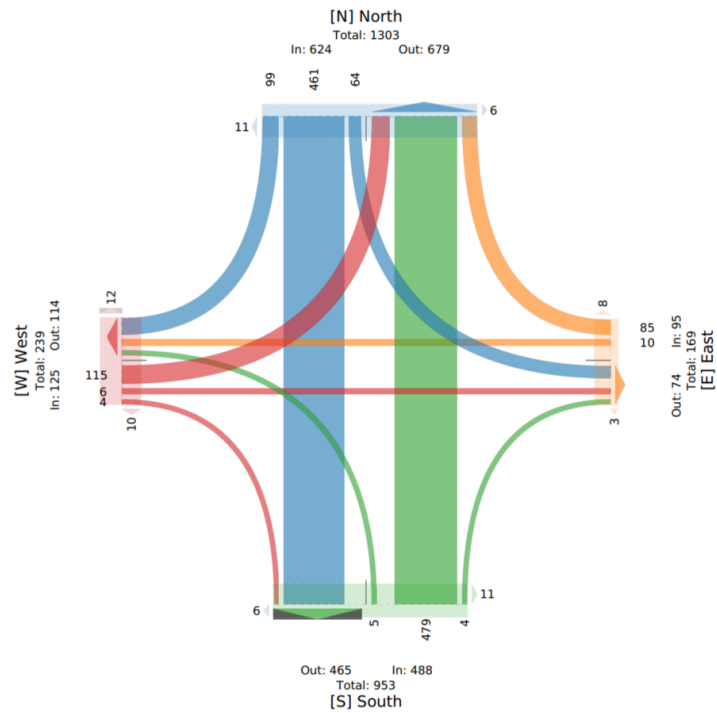
- Methodology – radar gun
- Posted Speed Limit on this section of Cohasset Ave –25 mph
- AM Peak Hour (85%) – 7:00 AM – 8:00 AM – 26 mph
- AM Peak Hour (50%) – 7:00 AM – 8:00 AM – 22 mph
- PM Peak Hour (85%) – 4:00 PM – 5:00 PM – 25 mph
- PM Peak Hour (50%) – 4:00 PM – 5:00 PM – 22 mph

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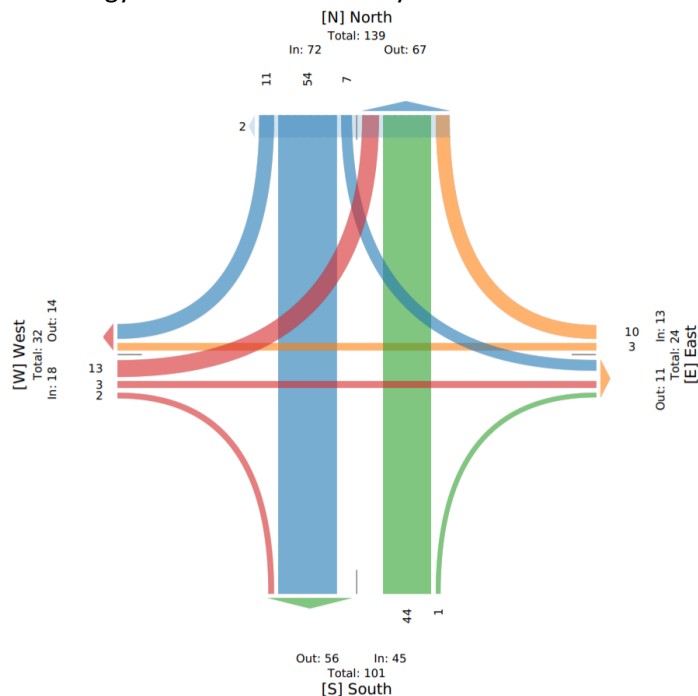
13 Hour turning movement count performed on Wednesday, November 17, 2021

- Methodology: MioVision video analysis



Peak Hour turning movement count performed on Wednesday, November 17, 2021

- Methodology: MioVision video analysis

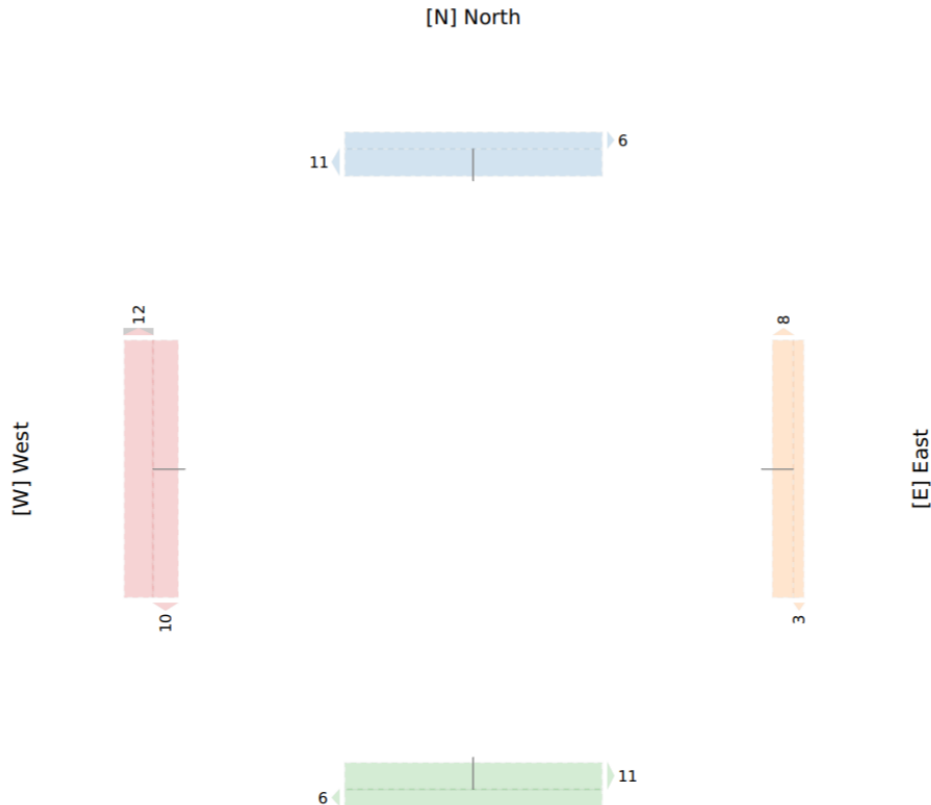


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13 Hour Pedestrian & Bicycle crossings Wednesday, November 17, 2021

- Methodology: MioVision video analysis



Field Observations

Potential geometric or construction/maintenance issues –

- Adverse roadway alignment - Intersection located south of a horizontal curve
- High driveway density in area

Other observations

- Skyline appears adequate to support solar power

MUTCD - All Way Stop Control Warrants

Section 2B.07 of the Manual on Uniform Traffic Control Devices (MUTCD) gives guidance on the installation of Multiway Stop Controls. The subject intersection does not meet the accident criteria of

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five or more reported crashes over a 12 month period. The volume warrants are also not met due to the relatively low volume at this intersection. However, due to the documented sight line deficiency and elevated prevailing speeds, the County is willing to convert the intersection of Cohasset Ave and Walnut Ave into an all way stop control.

The proposed short-term improvements to the intersection will include:

- Develop and deploy 'NEW TRAFFIC PATTERNS' alert signage prior to new stop sign install.
- Install NEW STOP AHEAD warning sign on Cohasset Ave for southbound traffic
- Install two 30" STOP signs on Cohasset Ave prior to Walnut Ave
- Install ALL WAY plaques below all stop signs (existing and new)
- Install four 12" wide stop bar pavement markings on all legs of intersection
- Adjust locations of existing speed limit signage
- All sign installations to be MUTCD compliant

Next Steps

Before The Traffic Engineering Division moves forward with the conversion to an all way stop control at the intersection of Walnut Avenue and Cohasset Ave, we request an official recommendation from the Arundel on the Bay Home Owners Association which states that the community supports the county moving forward in the proces

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