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132-25

March 21, 2025

VIA (E-MAIL)
zcarballo@westorange.org

Zayibeth Carballo, PE, PLS, PP, CME, CFM, CFS
Director, Municipal Engineer
Department of Engineering
Township of West Orange
25 Lakeside Avenue
West Orange, New Jersey 07052

Re: Crosswalk Evaluation
Gregory Avenue & Orange Heights Avenue
West Orange Township, Essex County, New Jersey
BVE Project No.: 240344

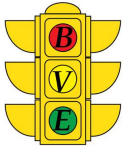
Dear Ms. Carballo:

Bright View Engineering (*BVE here-in*) was tasked by the Township of West Orange (*the Township here-in*) with performing an evaluation of a potential demarked crosswalk at the intersection Gregory Avenue & Orange Heights Avenue. BVE visited the location to determine the viability of a marked pedestrian crossing including existing sight lines, potential construction conflicts, and other potential hazards to providing a safe and ADA-compliant pedestrian route across Gregory Avenue.

70 South Orange Avenue, Suite 109
Livingston, New Jersey 07039

C: (732) 236-7557 T: (973) 228-0999 F: (201) 753-3904
BrightViewEngineering.com

P.O. Box 99
Roseland, NJ 07068



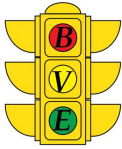
EXISTING CONDITIONS

Multiple field investigations were conducted to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations of the roadways in the study area, and existing vehicular and pedestrian traffic patterns. The following is a brief description of the roadways:

The intersection of Gregory Avenue & Orange Heights Avenue is a 3-legged unsignalized intersection. Orange Heights Avenue is STOP controlled at its intersection with Gregory Avenue. We note that Gregory Elementary School is approximately 600 feet away from the intersection. Various utility and stormwater features were found within the intersection area.

Gregory Avenue (CR-577) is north to south which spans approximately 1.64 miles between Luddington Road and Mount Pleasant Avenue through West Orange Township. We are concerned with the section of Gregory Avenue between Luddington Road & Forest Hill Road. The roadway is classified as Urban Minor Arterial and is under Essex County jurisdiction per the available NJDOT Straight Line Diagram (*last inventoried June 2012*). The speed limit on the roadway is posted at 25 MPH. Gregory Avenue provides for an approximate pavement width of 24 feet including 2-foot shoulders in the study area and allows for bi-directional travel via two (2) 12-foot lanes with a solid double yellow centerline. On-street parking is prohibited along both sides of the roadway. Within the study location, a 4-foot sidewalk is present throughout the northbound side of Gregory Avenue. A 4-foot sidewalk is present throughout the southbound side of the roadway from Helen Avenue to Forest Hill Road. Gregory Avenue has a serpentine geometry approximately 75 feet north of Lowell Place and approximately 350 feet south of Lawrence Avenue. The land use along Gregory Avenue is generally residential in nature. We note that Gregory Elementary School is on the southbound side of the roadway.

Orange Heights Avenue is an east to west local roadway which spans approximately 0.28 miles between Gregory Avenue and South Valley Road. There are no NJDOT Straight Line Diagrams for this roadway. There is no posted speed limit along this roadway. It is our opinion that a 25 MPH speed limit is appropriate and conforms with the guidance set forth within the New Jersey Statutes Title 39. Orange Heights provides for an approximate pavement width of 36 feet. On-street parking is permitted along both sides of the roadway. A 4 feet sidewalk is present along the westbound side of Orange Heights Avenue. The land use along Orange Heights Avenue is generally residential in nature.

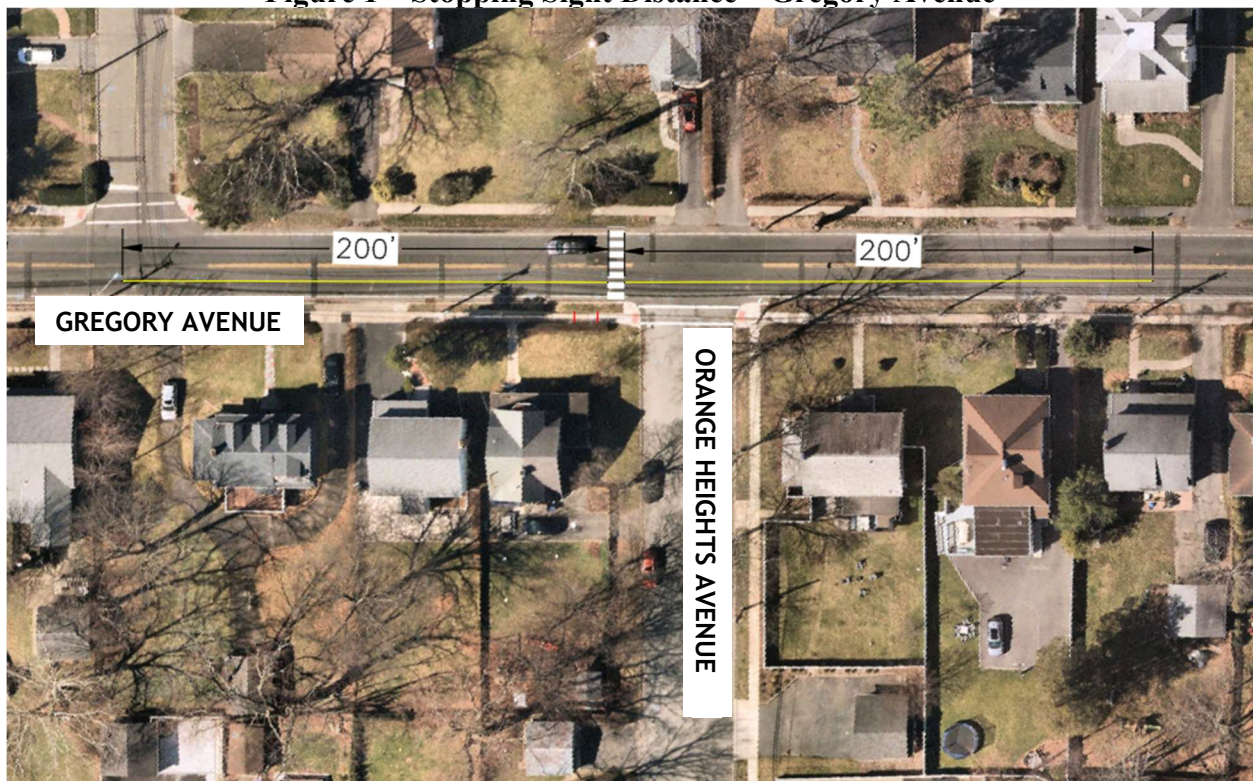


SIGHT DISTANCE

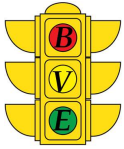
Gregory Avenue at intersection with Orange Heights Avenue

We performed a stopping sight distance analysis for Gregory Avenue at the study intersection. This analysis was performed per the standards set forth within the 2018 AASHTO - A Policy on Geometric Design of Highways and Streets (*The Green Book*). Gregory Avenue has a 25 MPH posted speed limit. Based on Table 3-1 of the AASHTO standards, a design speed of 30 MPH (5 MPH over the posted speed limit) with a leveled terrain will require a stopping sight distance of 200 feet.

Figure 1 – Stopping Sight Distance – Gregory Avenue



From the analysis, we observed that there is adequate stopping sight distance for vehicles on the major-road (Gregory Avenue) to stop for a proposed crosswalk.



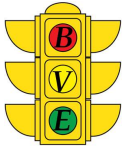
Gregory Avenue & Orange Heights Avenue

We performed a sight distance analysis for the intersection of Gregory Avenue & Orange Heights Avenue. This analysis was performed per the standards set forth within the 2018 AASHTO - A Policy on Geometric Design of Highways and Streets (*The Green Book*). Orange Heights Avenue has no posted speed limit. It is our opinion that a 25 MPH speed limit is appropriate for this roadway. Based on Table 3-1 of the AASHTO standards, a design speed of 30 MPH (5 MPH over the posted speed limit) with a leveled roadway will require an intersection sight distance of 335 feet.

Figure 2 – Sight Distance – Gregory Avenue & Orange Heights Avenue



From the analysis, we observed that there is adequate sight distance for vehicles on the minor-road (Orange Heights Avenue) to turn or cross the major road (Gregory Avenue). There are minimal obstructions such as bushes and tree foliage preventing vehicles from Orange Heights Avenue from observing the entire intersection area.



RECOMMENDATIONS & CONCLUSIONS

CROSSWALK FEASIBILITY

BVE reviewed the existing configuration and recommends that the Township install a crosswalk at this location. Since this is an existing intersection, a legal crosswalk is “present” by statute and adding the crosswalk will connect existing sidewalks. Gregory Avenue has a linear geometry and leveled terrain as approaching its intersection with Orange Heights Avenue. Gregory Avenue has an adequate stopping distance of 200 feet for a proposed crosswalk at the intersection.

CROSSWALK LOCATION

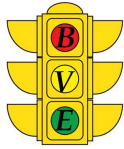
BVE identifies (2) potential configuration for the crosswalk at the intersection of Gregory Avenue & Orange Heights Avenue – Option A is perpendicular to existing southern curb ramp, and Option B is perpendicular to existing northern curb ramp.

Option A – Perpendicular to Orange Heights Avenue Existing Southern Curb Ramp

The west section of Gregory Avenue has an asphalt curb at the study location. Modifications to the existing curb are proposed to meet MUTCD standards for a crosswalk and curb ramp. We note that the proposed crosswalk will be within 25 feet of a private driveway. We recommend that the Township and County reconstruct the curb along the west side of Gregory Avenue and to trim overgrown foliage.

Option B – Perpendicular to Orange Heights Avenue Existing Northern Curb Ramp

We note a second potential configuration for a crosswalk at the intersection of Gregory Avenue & Orange Heights Avenue was evaluated – Perpendicular to the existing northern curb ramp. We observed that crosswalk will interfere with the existing private driveway of 267 Gregory Avenue and is not recommended at this time.

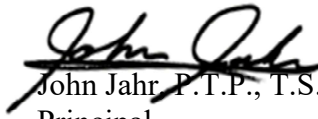


PREFERRED ALTERNATIVE

BVE recommends that the Township & County adopt Option A for design and construction at Gregory Avenue & Orange Heights Avenue. The implementation of the crosswalk is estimated at \$20,000. A conceptual level sketch of Option A are attached for the Township's consideration.

Should you have any questions or require additional information please do not hesitate to contact this office at (732) 236-7557.

Sincerely,
Bright View Engineering


John Jahr, P.T.P., T.S.O.S.
Principal


Joseph A. Fishinger, Jr., PE, PP, PTOE
Director of Traffic Engineering
NJ P.E. License #46314

Enclosures

Gregory Avenue Crosswalk Concept Plans

JAF/AM

<https://bvengr.sharepoint.com/sites/bvengr/proj/240344-WOT-GregoryAve/7-Reports-Analysis/Gregory Avenue Crosswalk .docxs>