

WALK AUDIT REPORT: Intersection of Normandy Parkway/Columbia Road in Morris Township

On the afternoon of Friday, July 22, 2022, a walk audit of the intersection of Columbia Turnpike (a County arterial road) and Normandy Parkway (a municipal collector road) in Morris Township was conducted by the following participants:

- Rick Bye - Chair of Morris Township's Transportation Advisory Committee (TAC)
- Cathy Wilson - Deputy Mayor and TAC Vice Chair
- Kris Ruggeri - TAC member and member of TAC's Walking Sub-Committee
- Phil Sturno - Kris Ruggeri's husband, a professional engineer
- Chris Vitz - Morris County Engineer
- Judith Sachs - Vice Chair of Morris Township's Historic Preservation Commission (HPC)
- Sue Sarchelli - long-time resident of the neighborhood

The purpose of the audit was to assess current conditions and identify options for improving pedestrian safety at this intersection.

A proposal by the Township to install sidewalks connecting to this intersection from the south along the west side of Normandy Parkway and from the north along the west side of Normandy Heights Road has made pedestrian safety at this intersection a subject of public interest and concern.

Participants spent nearly an hour and a half walking every leg of this intersection; assessing current conditions/concerns; and discussing a range of options for improving pedestrian safety at this intersection.



Audit Participants, L to R: C. Vitz, S. Sanchelli, K Ruggeri, R. Bye, C. Wilson, J. Sachs

Part 1: Survey of Existing Infrastructure Conditions

The existing configuration of the intersection between Columbia Road and Normandy Parkway/Normandy Heights Road is shown in Figure 1. The cross street is named Normandy Parkway south of the intersection and

Normandy Heights Rd north of it. Confusingly, it appears that it is Woodruff Road north of the intersection on many maps but Normandy Heights Road actually intersects with Woodruff Road approximately 400 feet from Columbia Road and turns eastward.

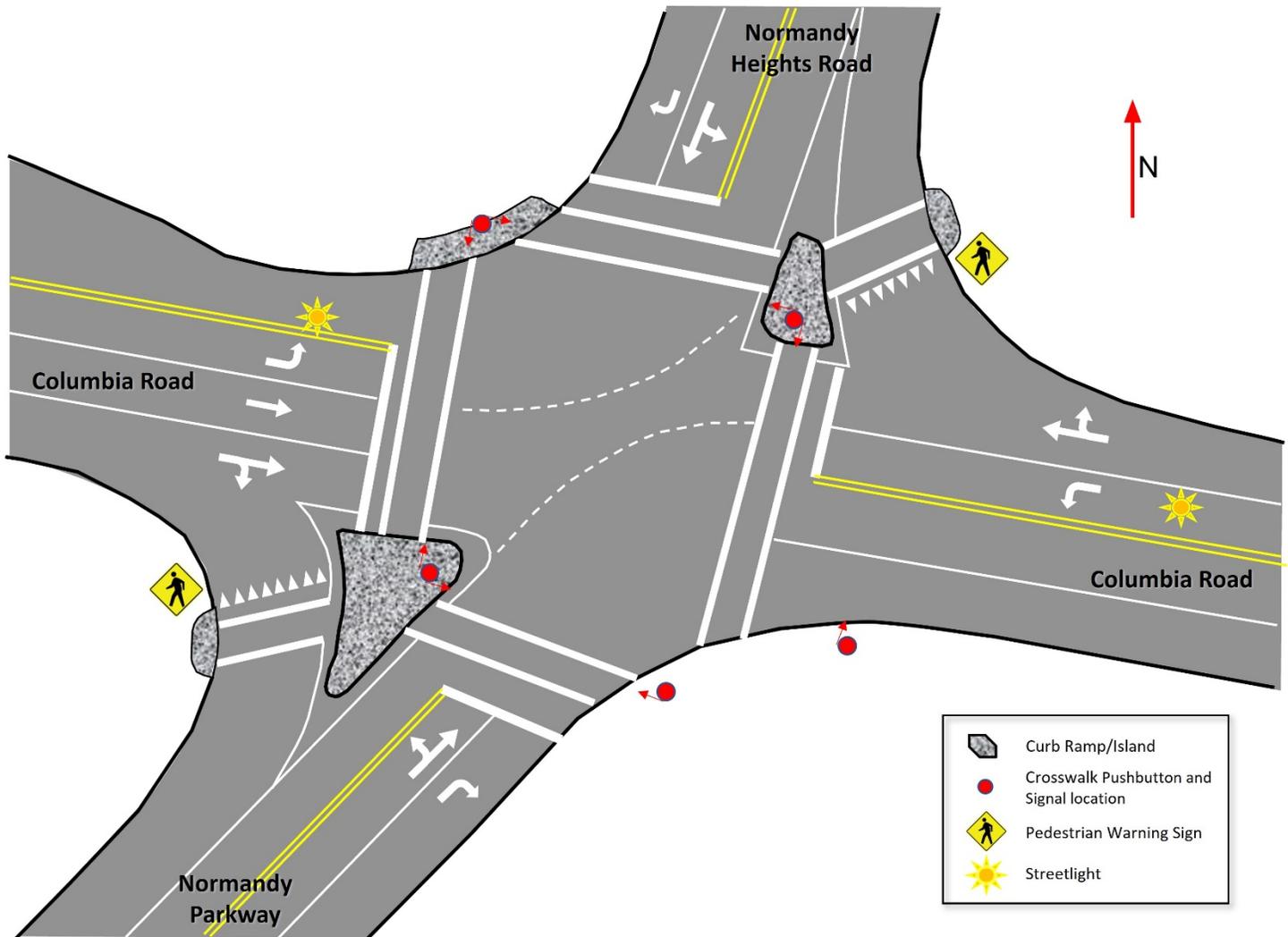


Figure 1. Layout and key features of the intersection between Columbia Road and Normandy Parkway/Normandy Heights Road

Travel Lanes and Traffic Near and At the Intersection

Columbia Road is a Morris County arterial road that generally includes four lanes, each of which is about 12-13 feet wide. The speed limit on Columbia Road is 40 mph.

- 1) West of the intersection, Columbia Road has two eastbound lanes and two westbound lanes. Near the intersection there is a transition to three eastbound lanes and one west bound lane. The leftmost lane of the eastbound lanes is a left turn only lane onto Normandy Heights Road. The center lane is for through traffic, and the right lane allows for through traffic or right turns onto Normandy Parkway via a channelized turn lane that is separated from cross traffic by a raised traffic island.
- 2) East of the intersection, Columbia Road includes two westbound lanes and two eastbound lanes. The leftmost westbound lane is designated as a left-turn only lane for vehicles wishing to turn left on to Normandy Parkway. This is a frequent source of vehicle crashes at this intersection. The right westbound lane is for through traffic or right turns onto Normandy Heights Road via a turn lane that is separated from cross traffic by a raised traffic island.
- 3) On street parking is not allowed on either side of Columbia Road.

The Morris County Traffic Count Program Summary indicates that in 2017 the average weekday traffic volume on Columbia Road just west of the Columbia/Normandy intersection was 10,934. Morning peak hour traffic was 855 eastbound and 257 westbound. Evening peak hour traffic was 713 eastbound and 563 westbound.

Normandy Parkway and Normandy Heights Road are municipal collector streets that, away from the intersection, contain two traffic lanes each, one northbound and one southbound. The speed limit on Normandy Parkway is 40 mph and on Normandy Heights Road it is 30 mph.

- a) Normandy Parkway transitions into four lanes near the intersection: a northbound lane for right turns only
 - b) a northbound lane for through traffic to Normandy Heights Road or left turns west onto Columbia Road
 - c) a southbound lane for through traffic from Normandy Heights Road and traffic turning left onto Normandy Parkway from westbound Columbia Road
 - d) a southbound merge lane for right turns onto Normandy Parkway from Columbia Road that, at the intersection itself, is separated from the other three lanes by a raised traffic island.
- 2) Normandy Heights Road transitions into four lanes near the intersection:
- a) a southbound lane for right turns only
 - b) a southbound lane for through traffic to Normandy Parkway or left turns east onto Columbia Road,
 - c) a northbound lane for through traffic from Normandy Parkway and left turn traffic from eastbound Columbia Road,
 - d) a northbound merge lane for right turns onto Normandy Heights Road from Columbia Road that, at the intersection itself, is separated from the other three lanes by a raised traffic island.
- 3) On street parking is not allowed on either road in the vicinity of the Columbia/Normandy intersection

We observed two patterns of deviation from expected traffic behavior during the walk audit. On several occasions, cars traveling westbound on Columbia Road and intending to turn left onto Normandy Parkway went past the island on the southwest corner of the intersection and turned into the lane intended for eastbound Columbia Road traffic right turns onto Normandy parkway. We also observed cars traveling southbound on Normandy Heights Road, seeing that there was a car at the intersection waiting for an opening to turn left onto Columbia Road, move over into the right turn only lane but go through the intersection instead, moving back to left around the car waiting to make the left. S. Sanchelli and C. Vitz noted that both of these were very common occurrences at this intersection.

Traffic Volume

The Morris County Traffic Count Program Summary indicates that in 2017 the average weekday traffic volume on Columbia Road just west of the Columbia/Normandy intersection was 10,934. Morning peak hour traffic was 855 eastbound and 257 westbound. Evening peak hour traffic was 713 eastbound and 563 westbound.

The same source indicates that in 2013 the average weekday traffic volume on Normandy Parkway was 12,170. Morning peak hour traffic was 642 northbound and 392 southbound. Evening peak hour traffic was 677 northbound and 562 southbound.

C Vitz noted that the most common crashes at the intersection involve collisions between cars making left turns off of Columbia Road and oncoming through traffic, with those involving westbound Columbia Road to Normandy Parkway turns being most common.

Pedestrian Infrastructure

Key pedestrian infrastructures at the Columbia/Normandy intersection are illustrated in Figure 1 above and shown in Figures 2 through 8 below. All the photographs in the figures were taken during the intersection walk audit.

Sidewalks – There are no sidewalks currently connected to this intersection. As noted above, the Township has a proposal to add a sidewalk on the west side of Normandy Heights Road north from Columbia Road to an existing sidewalk on Woodruff Road and on the west side of Normandy Parkway from Columbia Road south to an existing sidewalk at Kenilworth Road.

Curb Ramps - Curb ramps exist at both ends of every crosswalk at this intersection except at the southeast corner. Examples are shown in Figures 2 and 3. The southeast corner has curb cutouts at the end of the crosswalks but no ramps, as seen in Figure 4. Per C. Vitz, County Traffic Engineer, most of the ramps do not meet current ADA standards: the slopes are too steep and the ramps do not include detectable warning surfaces (DWS).

Pedestrian Traffic Signals - Push-button operated pedestrian traffic signals exist at all four corners of this intersection for crosswalks across the major traffic lanes. The mounting locations of the push buttons and signals are shown in Figure 1 and several of the installations can be seen in Figures 2, 3, and 4. There are no signals for the curb-to-island crosswalks across the right turn lanes at the southwest and northeast corners of the intersections. The Normandy Parkway and Normandy Heights Road pedestrian crosswalk signals are delayed signals. That is, after the traffic lights for Columbia Road traffic turn green, the pedestrian walk signal is delayed until the Columbia left turn arrows turn off. They are not protected left turns, however, traffic can still make the left turns under the green light.

Many of these pedestrian buttons and/or signals are not compliant with current standards for various reasons. Some examples:

- At the northwest corner of the intersection: the timing is off; getting a white-lit, pedestrian-walk signal in either direction (but especially for the Columbia crossing) requires an unusually long wait, making one wonder if the buttons and signals are working at all. In addition, the button mounting locations make it confusing as to which button needs to be pushed for a desired crossing direction.
- Some signals contain a count-down feature; others do not.
- Some (but not all) buttons contain an indicator light and audio feature that confirms that the button has been pushed. The button on the island at the southwest corner operating the pedestrian signal for the Normandy Parkway crosswalk was not working at all at the time of this audit.
- The push button and pedestrian signal on the southeast corner of the intersection for the Columbia Road crosswalk is located at least 20 feet from the crosswalk, significantly more than the recommended distance.
- All the pedestrian Walk/Don't Walk signals appear to be mounted 10 to 12 feet above the pavement, the current standard calls for the bottom of the signal housing to be between 7 and 10 feet above the sidewalk.

Crosswalk Location and Markings – All the crosswalks at the Columbia/Normandy intersection were originally marked with the standard marking, as illustrated in Figure 1. There are stop lines in front of all the signal

controlled crosswalks and shark teeth yield markings in front of the right turn lane crosswalks at the southwest and northeast corners of the intersection. The right turn lane crosswalks are also marked with crosswalk warning signs, as shown in Figure 5.

At the time of the walk audit, many of the painted markings at the intersection were worn and faded, especially the two long crosswalks across Columbia Road. As shown in Figures 2 and 6, the markings at those locations are essentially invisible.

Sightlines from the two right turn lane crosswalks are very limited, as shown in Figures 7 and 8. These are not signal controlled crosswalks and it is difficult for pedestrians to see if there are cars planning to make the turns or for drivers to see if there are pedestrians in the crosswalks or intending to enter them. Drivers are likely to be surprised by the presence of any pedestrian because of the lack of any sidewalks along Columbia Road.

Street Lights – There are two street lights at the Columbia/Normandy intersection that are cantilevered over the traffic lanes as shown in Figure 1. According to Chris Vitz, the type of street lights and level of illumination are adequate. Even with the proposed Normandy Parkway/Normandy Heights Road sidewalks, the vast majority of pedestrian activity at the intersection is expected to occur during daylight hours.



Figure 2. Columbia/Normandy intersection from NW corner looking S across Columbia Road



Figure3. Columbia/Normandy intersection from the SW corner looking NE



Figure 4. Columbia/Normandy intersection from the SW island looking W



Figure 5. Right turn lane crosswalk at the SW corner of the Columbia/Normandy intersection



Figure 6. Columbia/Normandy intersection from the SE corner looking N across Columbia Road



Figure 7. Limited sightline from the right turn lane crosswalk at the SW corner of the intersection



Figure 8. Sightline from the right turn lane crosswalk at the NE corner of the intersection

Part 2: Opportunities

Many opportunities exist for improving pedestrian safety at this intersection, including:

Pedestrian Buttons and Signals:

- 1) At a minimum: many opportunities exist to update existing buttons and signals to ensure compliance with safety and regulatory considerations such as:
 - Ensure that the existing buttons/signals actually work (some currently do not work at all).
 - Check on the timing for each of these buttons/signals. The wait time for a walk signal seems inordinately long in some cases but even if the timings are appropriate for current conditions they may need to be adjusted if the proposed sidewalks generate the expected additional pedestrian activity.
 - Replace the outmoded buttons with ones including a visual and audio signal that indicate that they are functional, at least, and consider upgrading to accessible pedestrian signals.
 - Relocate buttons so that they are within the recommended distance from the adjacent crosswalk and oriented for proper access from the crosswalk landings.
 - Reposition the crosswalk signals at the proper height.
 - Add countdown features to the signals at the crosswalks that do not currently have them. This would be especially beneficial for the two Columbia Road crosswalks which traverse four wide lanes of traffic.
- 2) Consider making the left turns from Columbia Road protected left turns, that is, left turns permitted only with a green arrow. This would help reduce the most common crash type at the intersection and eliminate conflicts between cars turning on green light and pedestrians crossing with a walk signal.

Crosswalks:

Simply repainting the intersection markings that are currently badly faded and barely visible in spots would improve both vehicle and pedestrian safety. Furthermore, the existing standard (2-line) crosswalks should be upgraded to the “ladder-type” style which will greatly increase their visibility and functionality. At the very least, a highly visible crosswalk across Columbia Road on the west side of the intersection should reduce the tendency for westbound drivers on Columbia making the left turns onto Normandy Parkway to travel past the island and making the sharp turn into the eastbound right turn lane.

Ramps:

- 1) Upgrade existing ramps to comply with ADA standards – adjust slope and install detectable warning surfaces as required.
- 2) Install ramps and landings at the southeast corner of the intersection.

Signage:

Determine the feasibility of adding signs on Columbia Road to alert drivers intending to turn right onto Normandy Parkway or Normandy Heights Road to the pedestrian crosswalk in the right turn lane.

Part 3: Constraints: barriers that limit safety improvement possibilities:

This is a busy intersection that presents many safety-related challenges including high volumes of fast-moving vehicular traffic and numerous turn possibilities that are confusing to drivers and pedestrians alike. The high volume of traffic requires that careful attention be paid to any upstream traffic impacts. For example, it is possible making the turn from westbound Columbia Road onto Normandy Parkway a protected left turn could back up Columbia Road traffic all the way down to Park Avenue, which already has its own traffic problems.

There are also physical constraints associated with this intersection. The Columbia Road width currently occupies almost the entire right of way and land acquisition costs in this area make it prohibitively expensive to expand on that. This means that it is unlikely that sidewalks will be installed near this intersection along Columbia Road in the foreseeable future, and it also means that adding things like pedestrian safety islands in the Columbia Road crosswalks would be difficult. This limited right of way also makes it difficult to address the right turn lane crosswalk sight line issues discussed above.

Normandy Parkway and Normandy Heights Road are part of the Normandy Parkway Historic District listed on New Jersey and National Registers of Historic Places. Improvements may be subject to review by the State Historical Preservation Office, possibility limiting what may be done.

Conclusion

The Township's proposal to install sidewalks on both sides of this intersection has made pedestrian safety at this intersection a subject of public interest and concern.

Clearly this intersection does pose challenging safety considerations. Clearly also, many viable opportunities exist to improve pedestrian (as well as vehicular) safety at this intersection. Columbia Road is scheduled to be resurfaced this year – which hopefully will provide an opportunity to address many of the improvement possibilities discussed here. Similarly, the Township resurfacing project for Normandy Parkway that includes the proposed sidewalks already incorporates many of the suggestions discussed above.

Can existing pedestrian safety concerns be adequately addressed in projects currently in planning stages and/or via other recommendations contained in this audit? Are there other options yet to be determined by further professional analysis?

These are questions that must be answered by professional engineers from the Township and the County.