GATEWAY ENGINEERS
A FULL-SERVICE CIVIL ENGINEERING FIRM

100 McMorris Road
Pittsburgh, PA 15205
412-921-4030
GatewayEngineers.com

4/14/2026

C-47577
Butler Area School District
McQuistion Elementary School
210 Mechling Drive
Butler, PA 16001

ATTN: Brian Slamecka, Assistant Superintendent of Schools
RE: McQuistion Elementary School Traffic Operations Review

Dear Brian,

At the request of the Butler Area School District (BASD), Gateway Engineers, Inc. performed a review of the existing arrival and dismissal traffic operations at McQuistion Elementary School in Butler Township, Butler County, Pennsylvania. The purpose of this review was to observe current traffic circulation patterns, document queuing conditions during the morning arrival and afternoon dismissal periods and evaluate potential operational improvements to address concerns raised by nearby residents.

Specifically, concerns have been raised regarding parent vehicles staging along Hillvue Drive during afternoon dismissal and the potential impacts to roadway width, sight distance, and residential access.

1.0 EXISTING SITE ACCESS & CIRCULATION

Vehicular access to McQuistion Elementary School is provided via Hillvue Drive and Mechling Drive. Circulation patterns vary between the morning arrival period and afternoon dismissal operations.

Arrival Operations

Morning arrival generally occurs between approximately 8:30 AM and 9:00 AM. During the morning arrival period, parent vehicles enter the campus from Hillvue Drive, proceed through the internal circulation loop to drop off students, and then exit back onto Hillvue Drive. This operation functions as a continuous loop and allows vehicles to enter and exit efficiently without interacting with bus traffic.

School buses and student transportation vans utilize a separate access route during the morning period. These vehicles enter the campus via Mechling Drive, proceed toward the main entrance of the school building where students are dropped off, and then circulate around the parking area before exiting back onto Mechling Drive.

This separation of parent and bus traffic during the arrival period allows both operations to occur with minimal conflicts.

Dismissal Operations

The circulation pattern changes during the afternoon dismissal period to accommodate the parent pickup process.

Parent vehicles enter the campus from Hillvue Drive and proceed into the internal circulation system to queue for student pickup. Once students are loaded, vehicles exit the campus via Mechling Drive.

Within the designated parent pickup area, the school utilizes two (2) loading lanes during dismissal operations. These two (2) lanes provide storage for approximately 12 to 14 vehicles total, with approximately six (6) to seven (7) vehicles accommodated in each lane. This dual-lane configuration allows multiple vehicles to load students simultaneously and significantly improves the efficiency of the pickup process once dismissal begins.

School staff actively assist with dismissal operations. Teachers communicate via handheld radios with staff inside the building to coordinate the release of students so that they are waiting outside and prepared to enter their vehicles as they arrive in the pickup area. During dismissal, approximately four (4) teachers were observed assisting outside, helping direct students to their respective vehicles and ensuring that students cross the driveway safely.

In addition, the school police officer assists with traffic control during dismissal operations. The officer directs traffic as needed and may temporarily stop parent vehicles to allow school buses to safely merge into the designated bus lane before exiting the campus via Mechling Drive.

School buses and transportation vans utilize Mechling Drive for both arrival and dismissal operations, entering and exiting the campus via that roadway.

2.0 OBSERVED OPERATIONS

Gateway performed field observations on Thursday, March 5th during the typical morning arrival and afternoon dismissal periods. Observations focused on vehicle circulation patterns, queuing behavior, interactions between buses and parent vehicles, and potential impacts to surrounding residential streets.

Discussions were also held with nearby residents, school district staff and police, and a representative from the Butler Township Police Department regarding existing concerns associated with dismissal operations.

Arrival Observations

Morning arrival operations occur between approximately 8:30 AM and 9:00 AM. During the observation period on Thursday, March 5th, parent vehicles entered the campus from Hillvue Drive, circulated through the drop-off loop, and exited back onto Hillvue Drive.

At approximately 8:33 AM, the parent drop-off queue consisted of approximately eight (8) vehicles, all of which were contained within the circular drop-off area adjacent to the building entrance.

The maximum queue observed during the arrival period extended to the bottom of the school access drive (approximately 22 vehicles), approaching the turn from Hillvue Drive into the campus. However, the queue remained fully contained within school property and did not extend onto Hillvue Drive.

As vehicles progressed through the drop-off loop, the queue dissipated quickly. Based on field notes, the queue was reduced to approximately four (4) vehicles total within the circular drop-off area by 8:51.

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These observations indicate that the parent drop-off operations during the morning arrival period are short in duration and remain contained within school property without impacting adjacent residential streets.

Dismissal Observations

Afternoon dismissal operations begin at approximately 3:30 PM. Parent vehicles begin arriving prior to dismissal; however, vehicles are not permitted to enter the school parking lot area until approximately 3:15 PM.

During the field observation period on Thursday, March 5th, parent vehicles were observed arriving between approximately 2:55 PM and 3:15 PM. During this time period, several vehicles traveled along Hillvue Drive and continued past the school entrance before turning around near Hemlock Drive rather than staging along the roadway.

Some drivers who entered the parking lot prior to 3:15 PM were advised by the school principal to return closer to the designated access time. Other vehicles were observed waiting at a nearby business along Hillvue Drive until the parking lot opened.

Once the parking lot access opened at approximately 3:15 PM, parent vehicles began entering the campus and the pickup queue formed within school property. Parent pickup operations occur within the designated drop-off area of the campus where the school utilizes two loading lanes during dismissal operations.

Once dismissal operations begin, the parent pickup system was observed to function efficiently. The vehicle queue along Hillvue Drive dissipated quickly once vehicles began entering the campus. By approximately 3:36 PM, only one (1) vehicle remained along Hillvue Drive, with the remaining vehicles contained within school property.

The majority of dismissal operations were observed to be complete by approximately 3:45 PM.

Overall, the field observations indicate that the internal pickup operation itself functions efficiently, and that the primary issue associated with the dismissal period relates to vehicles arriving early and staging along Hillvue Drive prior to the opening of the parking lot access. The maximum queue observed during dismissal extended more than 500 feet along Hillvue Drive and was within 100 feet of the southern driveway to Storage Sense. This equates to a total queue of approximately 915 feet when you account for the vehicles within the school's property (~43 vehicles).

During the field observations, it was identified that the vertical profile of Hillvue Drive near the school access limits the available sight distance for vehicles traveling along Hillvue Drive. With vehicles queued here, motorists must utilize the remainder of Hillvue Drive for two-way operations which could present safety concerns due to restricted sight distance and the need for opposing vehicles to utilize the remaining travel lane.

3.0 POTENTIAL MITIGATION RECOMMENDATIONS

Based on field observations and discussions with school staff, residents, and local officials, several operational strategies may be considered to help reduce vehicle staging along Hillvue Drive.

Evaluate Earlier On-Site Queuing

As an initial operational measure, the School District may consider evaluating whether parent vehicles could be permitted to enter the school property slightly earlier than the current access time of approximately 3:15 PM.

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Allowing earlier on-site queueing would enable vehicles to stage within school property rather than along Hillvue Drive while waiting for dismissal to begin. With vehicles queued on Hillvue Drive, passing vehicles may need to cross the centerline to maneuver around the queue. Allowing for earlier on-site queueing could help reduce the queue length along Hillvue Drive to maintain adequate visibility for motorists traveling along Hillvue Drive.

Reinforcement of this policy through parent communication as well as coordination with local law enforcement may be necessary to assist with ensuring consistent compliance with any updated procedures. This may include staff directing parents that arrive early to continue through campus and come back at the approved arrival time. Additionally, "No Parking" signage on Hillvue Drive may be appropriate to avoid queues that will create unsafe operations with respect to sight distance at the school driveway or the vertical curve. Implementation of any parking or stopping restrictions along Hillvue Drive would require coordination with Butler Township regarding appropriate signage and enforcement.

Evaluate Modified Circulation for Parent Pickup (via Mechling Drive)

As an alternative operational strategy, the School District may consider modifying the circulation pattern during dismissal.

Under this concept, school buses (approximately eight (8) buses) and transportation vans (approximately five (5) to eight (8) vehicles) could utilize the current parent pickup area via Hillvue Drive, which appears to provide adequate storage for those vehicles.

Parent vehicles could instead be directed to approach the campus via Mechling Drive, forming a queue along the roadway leading toward the school property. Preliminary observations suggest that a two-lane queue (similar to current operations) could be staged along the building frontage for approximately 275 feet (550 feet of storage) while maintaining paths for circulation. Approximately 450 feet of additional queueing space would be available for a single lane of vehicles along Mechling Drive.

This approach would relocate the pickup staging of parents away from Hillvue Drive and reduce the potential for vehicles to queue along that roadway. Conversely, staff would need to assist in ensuring the queues do not block circulation for vehicles to exit the campus. Additionally, the parent pick-up queue would need to ensure driveways are not blocked for the six (6) homes located on this roadway.

Evaluate Modified Circulation for Parent Pickup (One-Way Operations)

As discussed during a coordination meeting with the School District, an additional mitigation option is presented for consideration to enhance dismissal operations. This concept would maintain parent pick-up access from Hillvue Drive via the secondary school entrance, while modifying internal circulation to allow two lanes of queued vehicles within the school driveway. The parent pick-up loop currently operates with two one-way lanes during dismissal; this option would extend that operational approach upstream within the site to increase on-site storage.

To accommodate this change, parking circulation in the lot adjacent to the entrance would be modified to operate as one-way during dismissal periods. This improvement is estimated to provide approximately 260 feet of additional on-site queue storage (or about 10 vehicles), thereby reducing the potential for queue spillback onto Hillvue Drive. In addition, this configuration would reduce the potential for vehicle egress movements onto Hillvue Drive during peak dismissal conditions, improving overall safety along the roadway. Implementation of this concept would require coordination with the School District to confirm operational feasibility during active dismissal conditions to ensure staff departing early are not parked in the southern lot that would intermix with pickup operations. Additionally, it would be recommended that the School District coordinate with Butler Township regarding "No Parking" signage and enforcement to deter motorists from parking on Hillvue Drive.

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Long-Term Improvement – Internal Parent Queue Lane

As a potential long-term improvement, the School District may consider evaluating the feasibility of constructing an internal queue or stacking lane within school property.

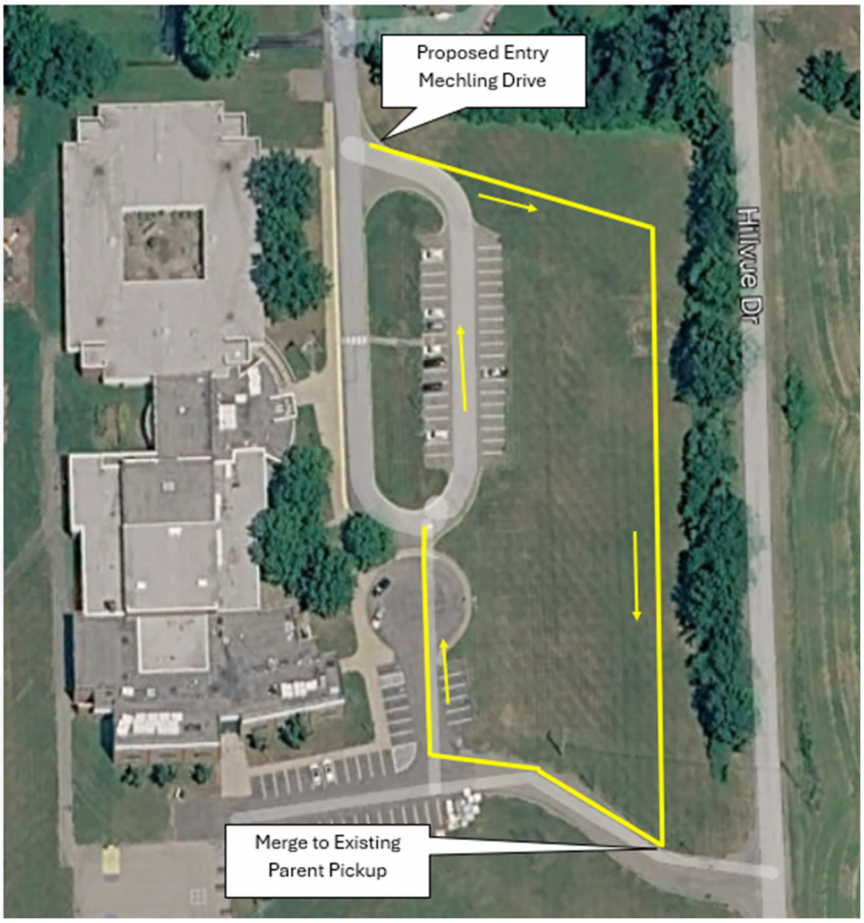
As illustrated conceptually in **Figure 1**, the proposed alignment would allow vehicles entering from Mechling Drive to circulate through an internal queue lane before merging with the existing parent pickup circulation on McElhiney Drive.

Preliminary measurements of the conceptual alignment suggest that the queue lane could provide approximately 600 to 750 feet of internal storage, accommodating approximately 25 to 35 vehicles depending on vehicle spacing.

Based on the field observations, implementation of this improvement is not considered necessary under current conditions, as dismissal operations were observed to clear efficiently once pickup begins.

However, the concept may warrant further evaluation if operational issues persist or if the proportion of students utilizing parent pickup increases. Currently, approximately 125 students (about 25 percent of the student population) are picked up by parent vehicles. If parent pickup participation increases to approximately 30 percent or more of the total student population, additional on-site queue storage may become beneficial.

Figure 1 – Conceptual Internal Parent Queue Lane



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4.0 SUMMARY

Field observations indicate that morning arrival operations function efficiently and do not result in off-site vehicle queues.

Afternoon dismissal operations also function efficiently once student pickup begins, due in part to the dual-lane loading configuration and coordinated staff support.

The primary concern identified relates to vehicles arriving early and staging along Hillvue Drive prior to the opening of the school parking lot access.

Operational measures such as earlier on-site queuing, modified circulation patterns, and improved communication with parents may help reduce this staging behavior. Should operational changes prove insufficient or parent pickup demand increase substantially, a long-term internal queue lane may provide additional on-site storage for parent vehicles.

Please feel free to contact me directly if you have any questions.

Sincerely,

THE GATEWAY ENGINEERS, INC.

Kyle L. Brown, P.E.

Project Manager