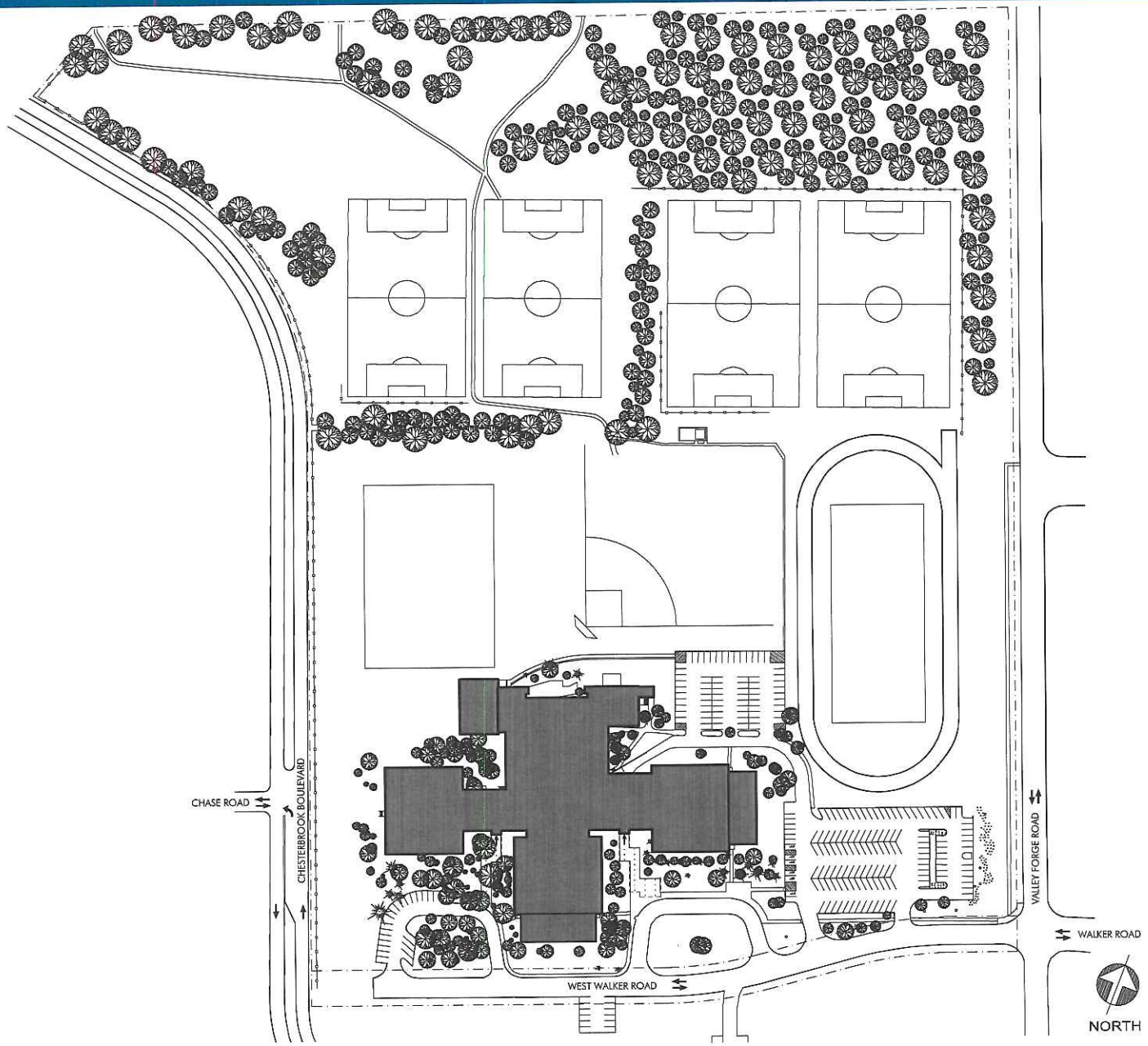
VALLEY FORGE MIDDLE SCHOOL

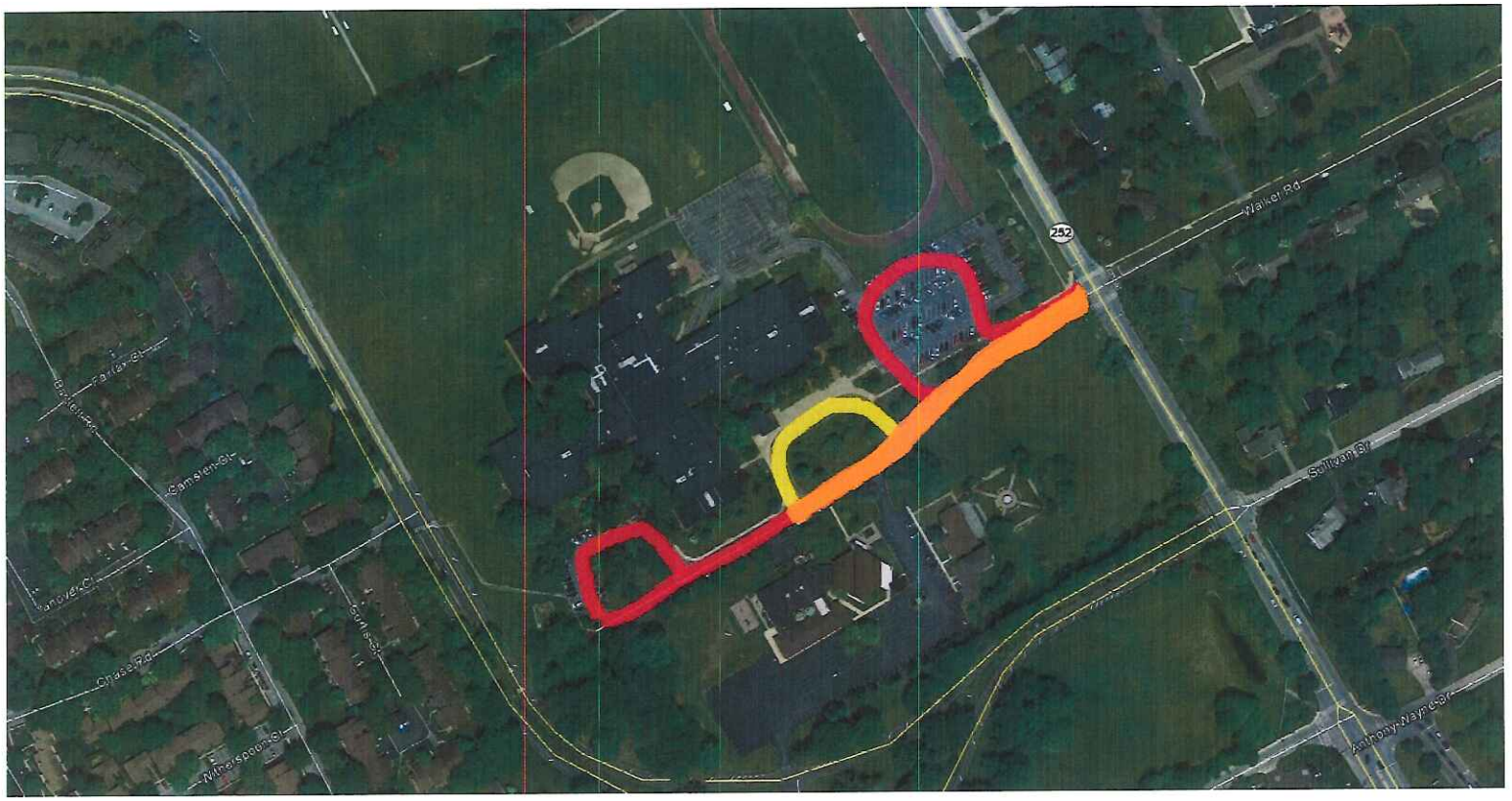
EXISTING CONDITIONS



SITE PLAN

VALLEY FORGE MIDDLE SCHOOL

EXISTING CONDITIONS



BUSES

BUSES AND PASSENGER VEHICLES

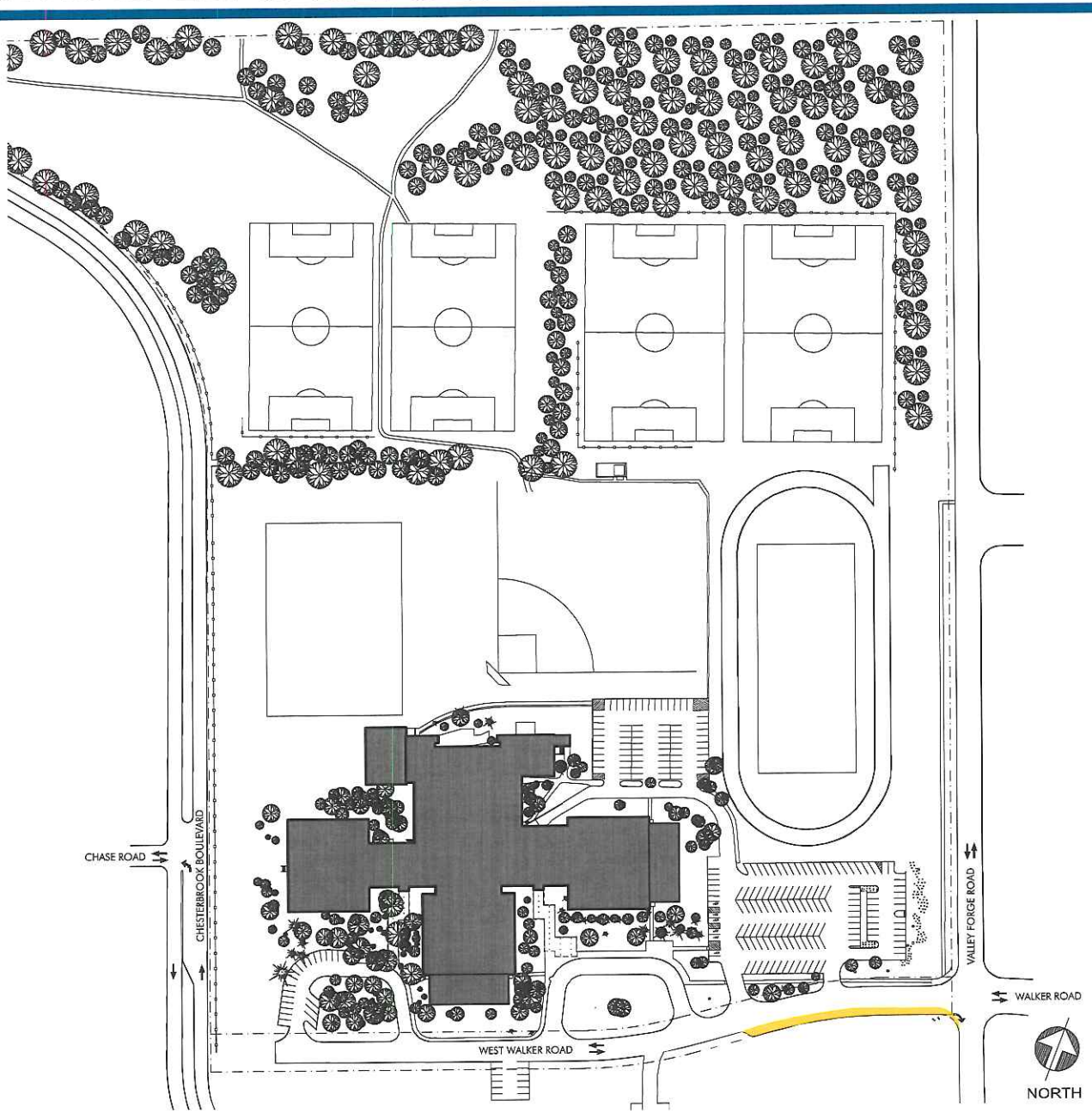
PASSENGER VEHICLES

VEHICLE ROUTES FROM TPD TRAFFIC STUDY, APRIL 2017

VALLEY FORGE MIDDLE SCHOOL

EASTBOUND WEST WALKER ROAD RIGHT TURN LANE

The right turn lane on Walker Road would allow more traffic to move through the intersection in less time. To construct the right turn lane, the Walker Road right of way would be used on the south side for the portion of area to create the lane. A stormwater management system would need to be constructed to manage the additional impervious coverage. A utility pole, and signs would need to be relocated. The existing crosswalk would need to be modified in this option as well.



PROPOSED PLAN

VALLEY FORGE MIDDLE SCHOOL

EASTBOUND WEST WALKER ROAD RIGHT TURN LANE

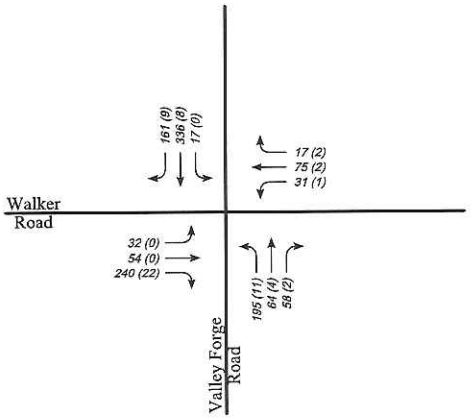
TPD TRAFFIC STUDY, APRIL 2017

AFTERNOON QUEUE CONDITION

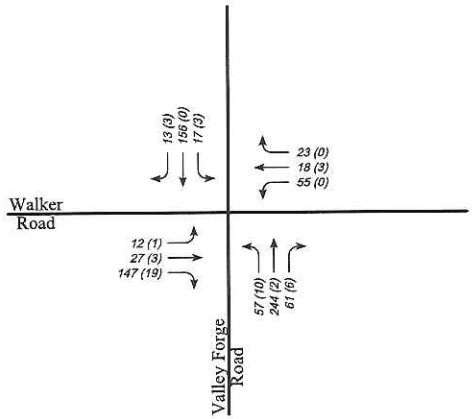
EXISTING CONDITIONS TRAFFIC VOLUMES BY TPD

KEY:
SCHEMATIC DRAWING:NOT TO SCALE
XX (YY) - PASSENGERS VEHICLES (BUSES)

Weekday A.M. Peak Hour
(7:00 - 8:00 A.M.)



Weekday P.M. Peak Hour
(2:30 - 3:30 P.M.)



VALLEY FORGE MIDDLE SCHOOL

EASTBOUND WEST WALKER ROAD RIGHT TURN LANE

ZONING ANALYSIS

- Coordination with southern property owner required
- Potential re-alignment of road
- Improvements to be within public Right-of-Way
- Township approvals for development, stormwater, and dedication of widened roads
- PennDOT Highway Occupancy Permit may be necessary

TRAFFIC ANALYSIS

- Increases vehicle queue capacity along eastbound Walker Road by providing a second lane
- Improves on-site circulation
- Will improve the alignment of the Walker Road centerline alignment
- Does not segregate vehicle types or drop-off/pick-up areas
- Does not reduce traffic volumes at the Walker Road/Valley Forge Road intersection
- Cost Benefit Assessment:

  While this improvement will have a positive impact for exiting traffic from Eastbound Walker Road, it alone will not solve the school's on-site circulation, mixing of vehicle type nor reduce traffic volumes or congestion at the signalized intersection. For these reasons, this improvement should be considered a medium priority.

VALLEY FORGE MIDDLE SCHOOL

EASTBOUND WEST WALKER ROAD RIGHT TURN LANE

PROJECT DURATION

Preparation of construction documentation will take approximately 3-4 months. The permitting process will take approximately 4-6 months to receive Township and conservation district approvals. Additional permitting time may be needed depending on the PennDOT Highway Occupancy Permit requirements for the improvements affecting Valley Forge Road. Bidding process will take approximately 2-3 months. Construction of the proposed improvements will take approximately 2-3 months. A revised budget and schedule is recommended to be prepared as additional details of the improvement are developed.

PROJECT BUDGET

ITEM	EST. COST
VALLEY FORGE MIDDLE SCHOOL	
EASTBOUND WEST WALKER ROAD RIGHT TURN LANE	
REMOVE - CONCRETE CURB	$ 1,000
REMOVE AND RELOCATION - SITE UTILITES	$ 50,000
EARTHWORK/GRADING/FINE GRADING	$ 25,000
STORMWATER MANAGEMENT	$ 100,000
NEW ASPHALT - FULL DEPTH	$ 7,500
NEW CONCRETE CURB	$ 10,000
PAVEMENT STRIPING	$ 5,000
EROSION & SEDIMENTATION CONTROLS	$ 20,000
GENERAL CONDITIONS (15%)	$ 32,775
CONTINGENCY (20%)	$ 43,700
SOFT COSTS - DESIGN, ENG., PERMIT.	$ 90,000
Subtotal	***$ 384,975***

* Cost estimate does not include property/Right-of-Way acquisition

VALLEY FORGE MIDDLE SCHOOL

SOUTHBOUND VALLEY FORGE ROAD RIGHT TURN LANE

The right turn lane southbound Valley Forge Road would allow through traffic to move through the intersection, and not be backed up in the queue of cars turning into Walker Road. To construct the right turn lane, a portion of sloped bank would need to be cut back on school property. Possible construction of a retaining wall to maintain the existing walkway. A utility pole, and signs would need to be relocated. The existing crosswalk from Walker Road would need to be extended. The storm sewer inlet would be relocated.

PROPOSED PLAN

VALLEY FORGE MIDDLE SCHOOL

SOUTHBOUND VALLEY FORGE ROAD RIGHT TURN LANE

GOOGLE STREET VIEW IMAGES

SITE CONDITION:
NORTHBOUND VALLEY FORGE ROAD

GOOGLE STREET VIEW IMAGES

SITE CONDITION:
SOUTHBOUND VALLEY FORGE ROAD

VALLEY FORGE MIDDLE SCHOOL

SOUTHBOUND VALLEY FORGE ROAD RIGHT TURN LANE

ZONING ANALYSIS

- Improvements to be within public Right-of-Way
- PennDOT Highway Occupancy Permit required
- Additional Right-of-Way may need to be given to PennDOT

TRAFFIC ANALYSIS

- Increases vehicle queue capacity along southbound Valley Forge Road
- Removes existing queued vehicles from southbound Valley Forge Road through travel lane, thus improving capacity and reducing congestion on the public roadway
- Does not improve on-site circulation
- Does not segregate vehicle types or drop-off/pick-up areas
- Does not reduce traffic volumes at the Walker Road/Valley Forge Road intersection
- Cost Benefit Assessment:

  This improvement will have a positive impact by providing increased queue capacity and increasing intersection capacity. However, this queue capacity is only needed as a result of on-site congestion and not from a traffic volume perspective. The non-school-related traffic along Valley Forge Road will receive the greatest benefit. Furthermore, this improvement would only benefit the adjacent school for limited time periods during the school year. For these reasons, this improvement should be considered a low priority.

VALLEY FORGE MIDDLE SCHOOL

SOUTHBOUND VALLEY FORGE ROAD RIGHT TURN LANE

PROJECT DURATION

Preparation of construction documentation will take approximately 3-4 months. The permitting process will take approximately 4-6 months to receive Township and conservation district approvals. Additional permitting time may be needed depending on the PennDOT Highway Occupancy Permit requirements. Bidding process will take approximately 2-3 months. Construction of the proposed improvements will take approximately 2-3 months. A revised budget and schedule is recommended to be prepared as additional details of the improvement are developed.

PROJECT BUDGET

ITEM	EST. COST
VALLEY FORGE MIDDLE SCHOOL	
SOUTHBOUND VALLEY FORGE ROAD RIGHT TURN LANE	
REMOVE - CONCRETE CURB	$ 1,250
EARTHWORK/GRADING/FINE GRADING	$ 40,000
STORMWATER MANAGEMENT	$ 60,000
REMOVE AND RELOCATION – SITE/TRAFFIC UTILITIES	$ 130,000
NEW ASPHALT - FULL DEPTH	$ 15,250
NEW CONCRETE CURB	$ 12,500
PAVEMENT STRIPING	$ 5,000
EROSION AND SEDIMENTATION CONTROLS	$ 20,000
GENERAL CONDITIONS (15%)	$ 42,600
CONTINGENCY (20%)	$ 56,800
SOFT COSTS - DESIGN, ENG., PERMIT.	$ 90,000
Subtotal	***$ 473,400***

* Cost estimate does not include property/Right-of-Way acquisition

VALLEY FORGE MIDDLE SCHOOL

SECONDARY DRIVEWAY AT CHESTERBROOK

An extension of Walker Road to connect to Chesterbrook Boulevard would be constructed. Vegetation and trees on the site will be removed to create the area for the roadway connection. Trees and Vegetation on the Parish's property may need to be removed to create the visibility required along the curve of Chesterbrook Boulevard to make the turns in and out of Walker Road. The connection would only allow right turns into and out of Walker Road. A stormwater management system would need to be constructed to manage the additional impervious coverage. Removable gates would be installed to manage traffic circulation during the school drop off and pick up hours.

PROPOSED PLAN

VALLEY FORGE MIDDLE SCHOOL

SECONDARY DRIVEWAY

GOOGLE STREET VIEW IMAGES

SITE CONDITION:
SOUTHBOUND CHESTERBROOK

GOOGLE STREET VIEW IMAGES

SITE CONDITION:
NORTHBOUND CHESTERBROOK

VALLEY FORGE MIDDLE SCHOOL

SECONDARY DRIVEWAY AT CHESTERBROOK

ZONING ANALYSIS

- Coordination with southern property owner required
- Sight triangle easements may be needed from southern property owner
- Right-of-Way may need to be acquired and dedicated to the Township
- Township approved tree removal may be required
- Improvements to be within public Right-of-Way
- Township approvals for development, stormwater, and dedication of widened roads

TRAFFIC ANALYSIS

- Segregates vehicle types, improving traffic flow into two (2) separate student drop-off areas
- Improves on-site circulation, thus reducing congestion and improving pedestrian safety
- Reduces traffic volumes at the Walker Road/Valley Forge Road intersection, thus reducing the need/scope for other intersection improvements
- Increases traffic volumes on Chesterbrook Boulevard
- Introduces a new conflict point/driveway along a horizontal curve
- Will require tree removal/re-grading on an adjacent property
- Will require a permanent sight line easement from the adjacent property owner
- Cost Benefit Assessment:

  This improvement will offer the greatest benefit to the school in terms of internal circulation, reduction of congestion at the signalized intersection of Walker Road and Valley Forge Road, and improved segregation of vehicle types. However, the Township approval of this alternative will be difficult due to the location on Chesterbrook Boulevard. Nevertheless, this improvement should be considered the highest priority for the school and potentially could eliminate the need for the other alternatives.

VALLEY FORGE MIDDLE SCHOOL

SECONDARY DRIVEWAY AT CHESTERBROOK

PROJECT DURATION

Preparation of construction documentation will take approximately 3-4 months. The permitting process will take approximately 4-6 months to receive Township and conservation district approvals. Additional time may be needed for the development of easements and acquisition of Right-of-Way. Bidding process will take approximately 2-3 months. Construction of the proposed improvements will take approximately 3-4 months. A revised budget and schedule is recommended to be prepared as additional details of the improvement are developed.

PROJECT BUDGET

ITEM	EST. COST
VALLEY FORGE MIDDLE SCHOOL	
SECONDARY DRIVEWAY AT CHESTERBROOK BOULEVARD	
REMOVE - TREES	$ 8,000
REMOVE - CONCRETE CURB	$ 2,800
REMOVE AND RELOCATION - SITE UTILITES	$ 15,000
EARTHWORK/GRADING/FINE GRADING	$ 60,000
STORMWATER MANAGEMENT	$ 150,000
NEW ASPHALT - FULL DEPTH	$ 44,000
ASPHALT PAVING - MILL and OVERLAY	$ 27,000
NEW CONCRETE CURB	$ 12,500
PAVEMENT STRIPING	$ 2,500
EROSION & SEDIMENTATION CONTROLS	$ 20,000
GENERAL CONDITIONS (15%)	$ 51,270
CONTINGENCY (20%)	$ 68,360
SOFT COSTS - DESIGN, ENG., PERMIT.	$ 150,000
Subtotal	***$ 611,430***

* Cost estimate does not include property/Right-of-Way acquisition

VALLEY FORGE MIDDLE SCHOOL

NORTHBOUND VALLEY FORGE ROAD LEFT TURN ADVANCE

This option would require alteration to the existing traffic signal at northbound Valley Forge Road and Walker Road to be modified to allow a left turn advanced arrow.

PROPOSED PLAN

VALLEY FORGE MIDDLE SCHOOL

NORTHBOUND VALLEY FORGE ROAD LEFT TURN ADVANCE

ZONING ANALYSIS

- No zoning impact

TRAFFIC ANALYSIS

- Improves left turn vehicle safety and reduces vehicle queues along northbound Valley Forge Road
- Does not improve on-site circulation
- Does not segregate vehicle types or drop-off/pick-up areas
- Does not reduce traffic volumes at the Walker Road/Valley Forge Road intersection
- Cost Benefit Assessment:

  This improvement will have a positive impact by providing increased queue capacity, improving safety, and increasing intersection capacity. However, it alone will not this improve on-site congestion. For this reasons, this improvement should be considered a medium priority.

VALLEY FORGE MIDDLE SCHOOL

NORTHBOUND VALLEY FORGE ROAD LEFT TURN ADVANCE

PROJECT DURATION AND BUDGET

Additional study and coordination is required with PennDOT due to existing conditions to determine a budget and schedule for the proposed work. Signalization timing for left turn movements, are recommended to be reviewed to determine their feasibility.

Adjusting the signal timing of the existing equipment for additional left turns is estimated to take 4-6 months for design, permitting, and construction and cost approximately $50,000.

VALLEY FORGE MIDDLE SCHOOL

COVERED DROP-OFF AREAS

Canopies for covered drop off locations would be constructed at both the main entry driveway, and the secondary driveway loop. The canopies would be installed over existing sidewalk to facilitate the drop off of multiple students at one time. The main lobby canopy with bus drop off would be extended to the existing parking lot to allow parents to drop students off then exit before entering the bus loop. A stormwater management system would need to be constructed to manage the additional impervious coverage.

PROPOSED PLAN

VALLEY FORGE MIDDLE SCHOOL

COVERED DROP-OFF CANOPY

ZONING ANALYSIS

- Variance required for exceeding maximum building cover
- Variance required for exceeding maximum impervious cover
- Township approvals for development and stormwater

TRAFFIC ANALYSIS

- No Traffic Benefit
- Cost-Benefit Assessment:
  Low priority level from traffic and cost perspectives.

VALLEY FORGE MIDDLE SCHOOL

COVERED DROP-OFF CANOPY

PROJECT DURATION

Preparation of construction documentation will take approximately 2-3 months. Permitting 4-6 months to receive township and conservation district approvals. Bidding process will take approximately 2-3 months. Fabrication of the aluminum canopy system will take approximately 10-12 weeks. Construction time for the proposed improvement would take approximately 1-2 months. A revised budget and schedule is recommended to be prepared as additional details of the improvement are developed.

PROJECT BUDGET

ITEM	EST. COST
VALLEY FORGE MIDDLE SCHOOL	
CONSTRUCT COVERED DROP-OFF	
PREFABRICATED ALUMINUM CANOPY SYSTEM	$ 318,920
CONCRETE FOUNDATIONS	$ 6,800
LIGHTING	$ 20,000
STORMWATER MANAGEMENT	$ 50,000
REMOVE - CONCRETE CURB	$ 1,500
REMOVE - CONCRETE SIDEWALK	$ 15,000
CONCRETE SIDEWALK PAVING	$ 43,125
NEW CONCRETE CURB	$ 12,250
EROSION & SEDIMENTATION CONTROLS	$ 5,000
GENERAL CONDITIONS (15%)	$ 70,889
CONTINGENCY (20%)	$ 94,519
SOFT COSTS - DESIGN, ENG., PERMIT.	$ 62,000
Subtotal	***$ 700,003***