

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

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TREDYFFRIN EASTTOWN MIDDLE SCHOOL

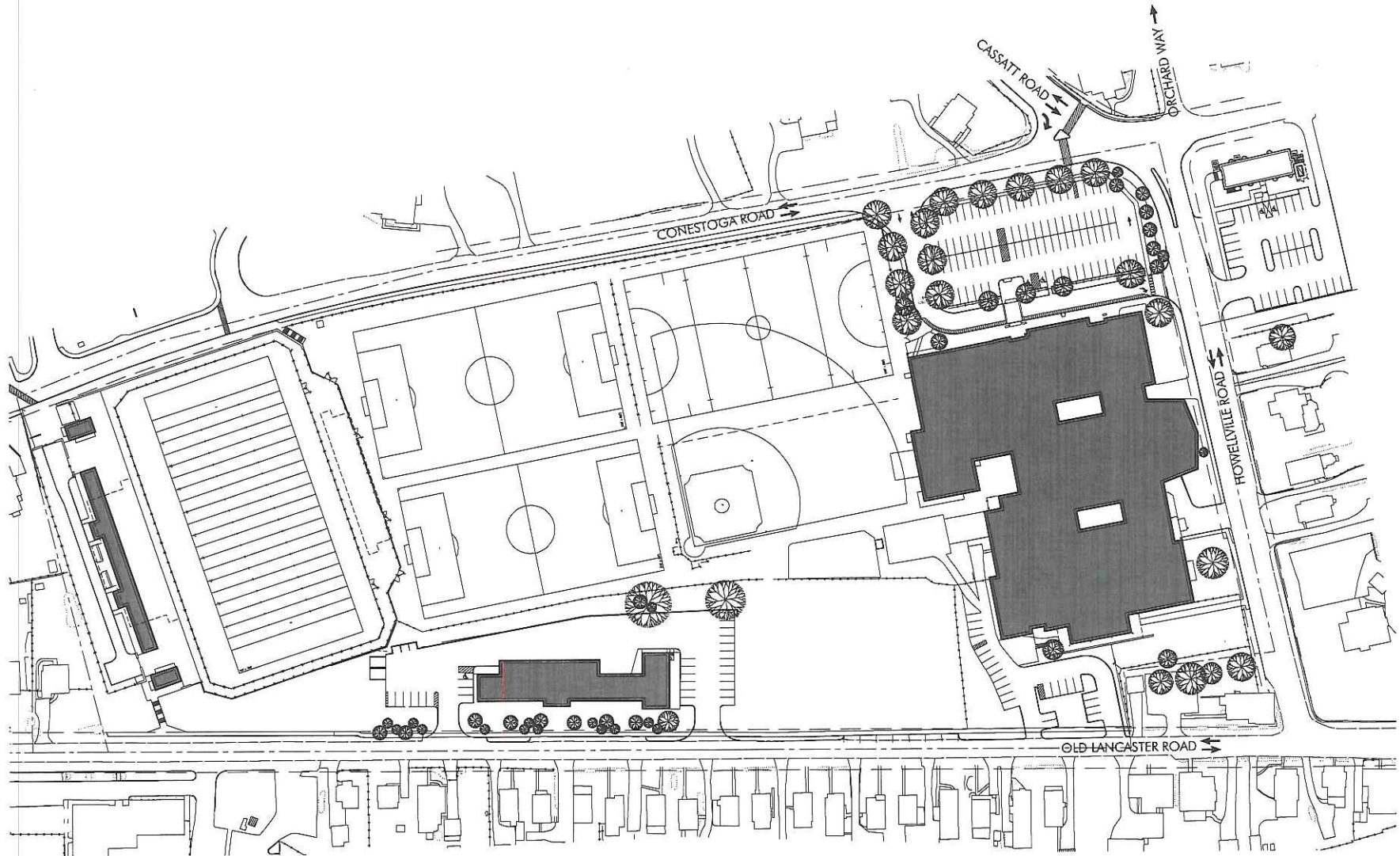
EXISTING CONDITIONS



AERIAL IMAGE

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

EXISTING CONDITIONS



SITE PLAN



TREDYFFRIN EASTTOWN MIDDLE SCHOOL

EXISTING CONDITIONS



BUSES



BUSES AND PASSENGER VEHICLES



PASSENGER VEHICLES

VEHICLE ROUTES FROM TPD TRAFFIC STUDY, APRIL 2017

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

VEHICLE QUEUING LANE PARALLEL TO CONESTOGA ROAD

The vehicle queuing lane would be constructed parallel to Conestoga Road to allow eastbound traffic on Conestoga Road turning into the main entry drive of Tredyffrin Easttown Middle School to get off Conestoga Road allowing through traffic to proceed. The construction of the turning lane would encroach into the buffer area alongside the athletic fields. The existing sidewalk, retaining wall, and fence would need to be reconstructed. Existing street signage, and school zone light may need to be modified in location.



PROPOSED PLAN

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

VEHICLE QUEUING LANE PARALLEL TO CONESTOGA ROAD



GOOGLE STREET VIEW IMAGES

SITE CONDITION:
RETAINING WALL



GOOGLE STREET VIEW IMAGES

SITE CONDITION:
SCHOOL ZONE LIGHT

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

VEHICLE QUEUING LANE PARALLEL TO CONESTOGA ROAD

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
- Utilities, site walls, and site features to be relocated

TRAFFIC ANALYSIS

- Increases vehicle queue capacity along eastbound Conestoga Road
- Removes existing queued vehicles from eastbound Conestoga Road through travel lane, thus improving capacity and reducing congestion on the public roadway
- Does not improve on-site circulation or reduce traffic volumes along Conestoga Road
- Cost Benefit Assessment:

While this improvement will have a positive impact for through traffic along Conestoga Road, it alone will not solve the TEMS's on-site circulation in the North parking lot nor reduce traffic volume or congestion. In addition, the impact to the adjacent sports field make this a medium level priority.

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

VEHICLE QUEUING LANE PARALLEL TO CONESTOGA ROAD

PROJECT DURATION

Preparation of construction documentation will take approximately 3-4 months. The permitting process will take approximately 6-8 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 4-6 months. A revised budget and schedule is recommended to be prepared as additional details of the improvement are developed.

PROJECT BUDGET

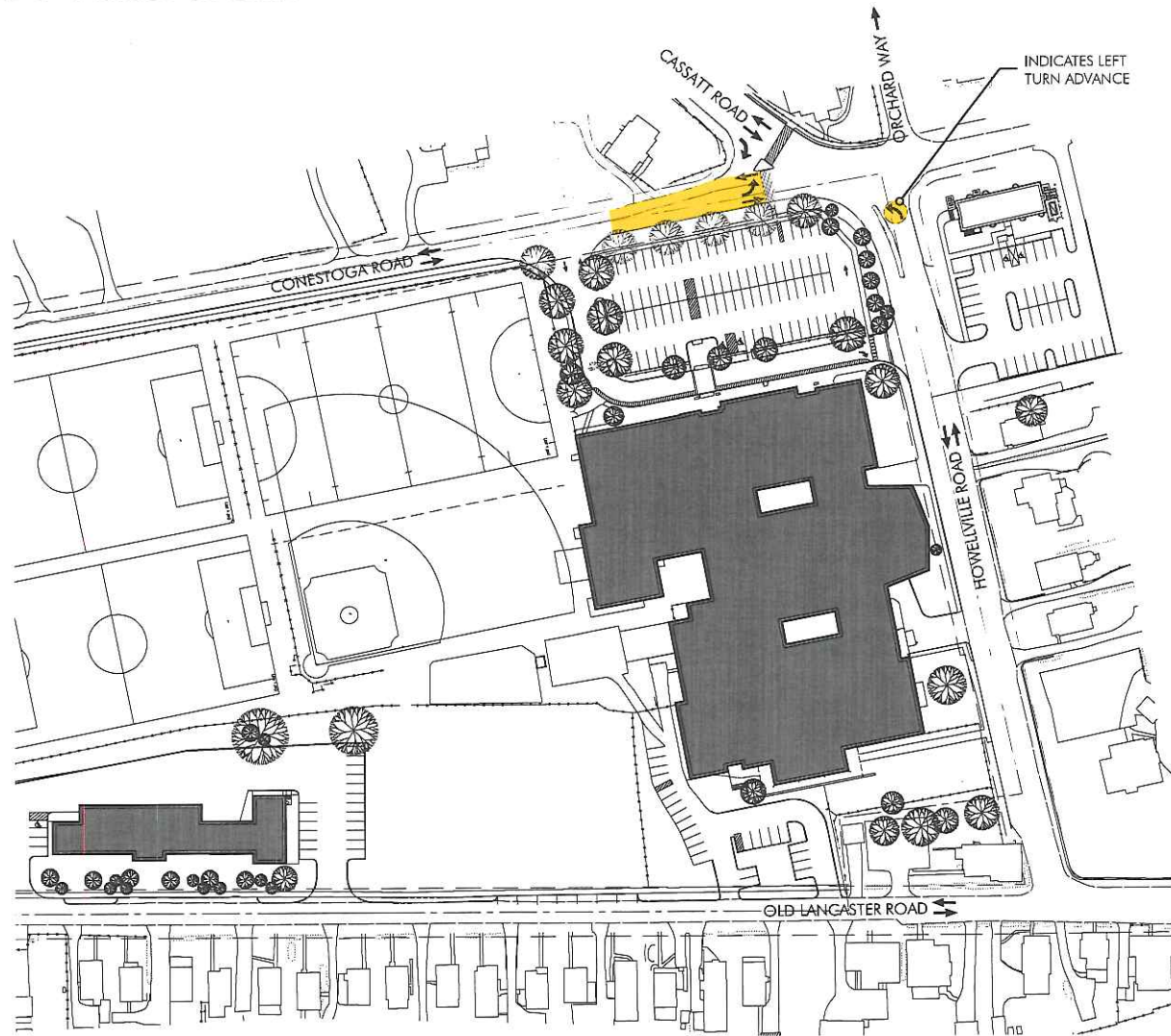
ITEM	EST. COST
TREDYFFRIN EASTTOWN MIDDLE SCHOOL	
VEHICLE QUEUEING LANE PARALLEL TO CONESTOGA ROAD	
REMOVE - TREES	\$ 1,000
REMOVE - CONCRETE CURB	\$ 2,100
REMOVE - CONCRETE SIDEWALK	\$ 4,500
REMOVE - RETAINING WALL	\$ 14,000
EARTHWORK/GRADING/FINE GRADING	\$ 40,000
STORMWATER MANAGEMENT	\$ 60,000
REMOVE AND RELOCATION – SITE UTILITIES	\$ 50,000
NEW ASPHALT - FULL DEPTH	\$ 19,000
CONCRETE SIDEWALK PAVING	\$ 12,750
NEW CONCRETE CURB	\$ 20,750
PAVEMENT STRIPING	\$ 4,500
RETAINING WALL	\$ 108,000
EROSION & SEDIMENTATION CONTROLS	\$ 20,000
GENERAL CONDITIONS (15%)	\$ 53,490
CONTINGENCY (20%)	\$ 71,320
SOFT COSTS - DESIGN, ENG., PERMIT.	\$ 110,000
Subtotal	\$ 591,410

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

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

EASTBOUND CONESTOGA LEFT TURN LANE

A left turn lane with signal arrow on Conestoga Road going eastbound, and left turn signal arrow going Northbound Howellville road would be constructed at the intersection. Modifications to the right of way along Conestoga Road would need to take place to align traffic lanes to accommodate the proposed new left turn lane. The steep grade next to the school parking lot may be affected by this option possibly requiring a retaining wall with modifications to the existing stair and crosswalk. The existing storm sewer inlet may need to be relocated. The existing street signage and utility poles would need to be relocated. There may be a need to modify the existing island and crosswalks to align the lanes on Conestoga Road.



PROPOSED PLAN



TREDYFFRIN EASTTOWN MIDDLE SCHOOL

EASTBOUND CONESTOGA LEFT TURN LANE



GOOGLE STREET VIEW IMAGES

SITE CONDITION:
EXISTING INTERSECTION

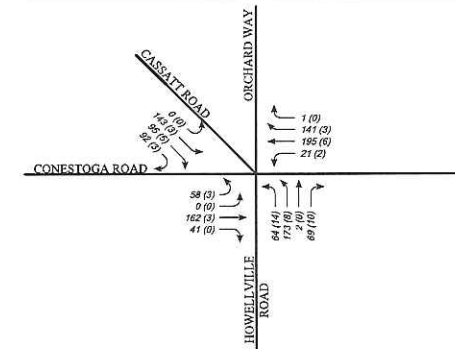


GOOGLE STREET VIEW IMAGES

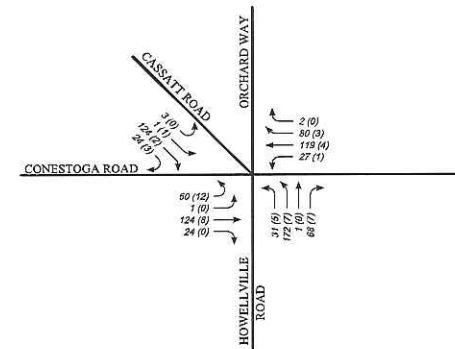
SITE CONDITION:
EXISTING INTERSECTION

EXISTING CONDITIONS TRAFFIC VOLUMES BY TPD

WEEKDAY AM PEAK HOUR (7:00 - 8:00 AM)



WEEKDAY PM PEAK HOUR (2:15 - 3:15 PM)



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

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

EASTBOUND CONESTOGA LEFT TURN LANE

ZONING ANALYSIS

- Improvements to be within public Right-of-Way
- Traffic signals and lanes to be redesigned
- PennDOT Highway Occupancy Permit required
- Additional Right-of-Way may need to be given to PennDOT
- Utilities to be relocated
- Retaining wall required on Middle School property

TRAFFIC ANALYSIS

- Increases vehicle queue capacity along eastbound Conestoga Road and at the intersection as a whole
- Removes existing left turning vehicles from eastbound Conestoga Road through travel lane
- Will require right-of-way acquisition
- Substantial cost due to roadway widening and new signal equipment
- Only benefits the adjacent schools during 1-2 hour windows of the normal day
- Will not be effective with manual control of traffic signal equipment that occurs today
- Cost Benefit Assessment:

Similar to the Conestoga Road Right Turn Lane, this improvement will have a positive impact for through traffic along Conestoga Road, it alone will not solve the TEMS's on-site circulation in the North parking lot nor reduce traffic volume or congestion. This improvement would only benefit the adjacent school for limited time periods during the school year. In addition, the potential need to acquire additional property to construct the improvements makes this a low priority.

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

EASTBOUND CONESTOGA LEFT TURN LANE

PROJECT DURATION AND BUDGET

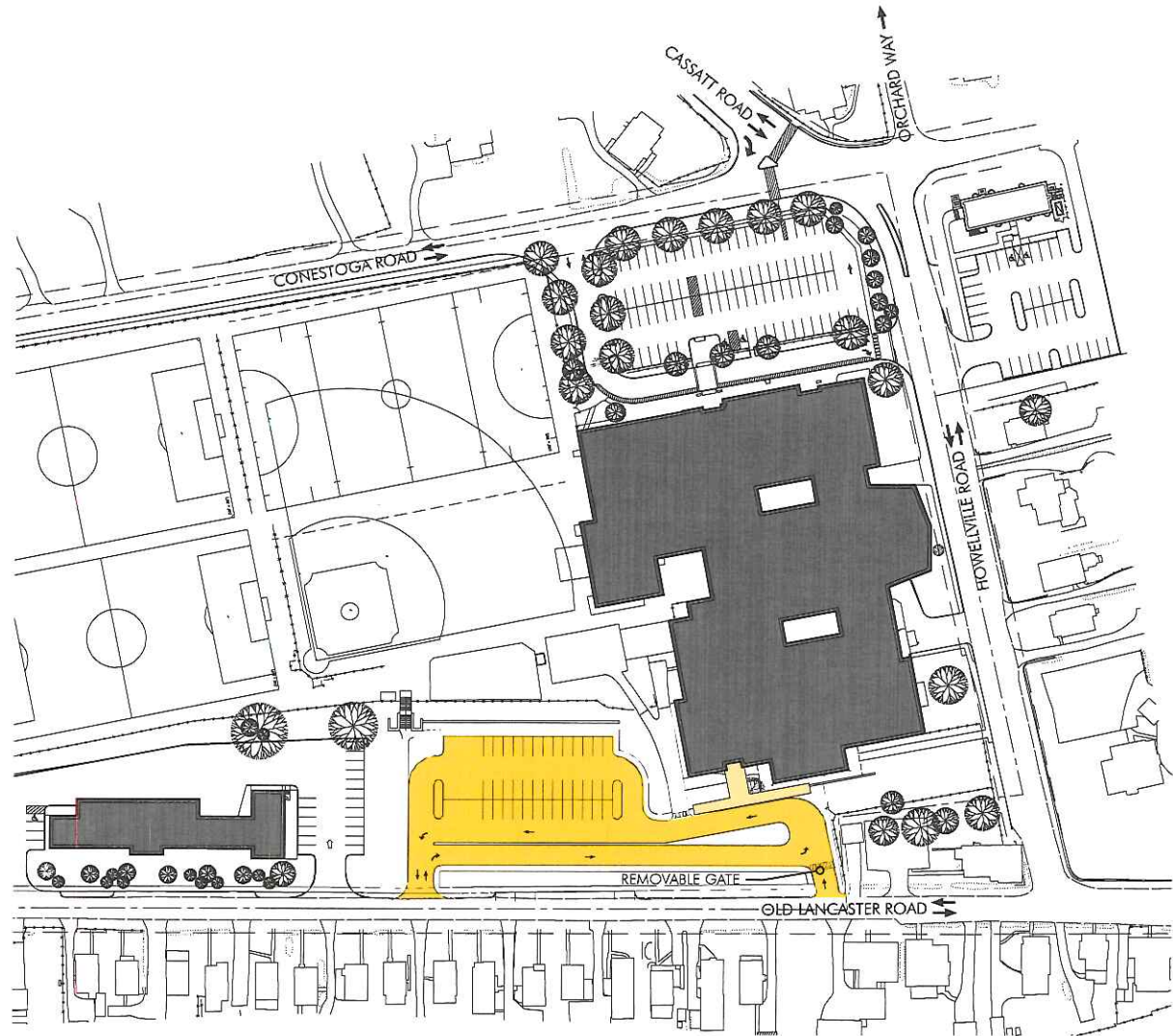
Additional study and coordination is required with PennDOT due to existing conditions to determine a budget and schedule for the proposed work. Alternative improvements for the intersection, such as a signalization timing for additional left turn movements, are recommended to be reviewed to determine their feasibility. The budget and schedule significantly vary depending on the extent of the improvements and if grants are pursued to assist in the cost of the improvement.

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. Adding a turning lane, improving the intersection, and relocating the existing utilities is estimated to take 12-18 months for the design and permitting, 12-18 months for construction, and cost approximately \$1,500,000.

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

ADDITIONAL PARKING & QUEUING ALONG OLD LANCASTER ROAD

Construction of a queuing lane with covered drop off location, and parking will allow traffic to get off of Old Lancaster Road with student drop off/pickup, and provide the parking needed for the school. A new curb cut with access drive for the queuing lane will be constructed further west from Old Lancaster Road and Howellville Road intersection. The existing driveway entry will remain for service use, but closed during drop off/pick up times with a removable gate. The new parking area will provide the parking necessary to replace the existing 24 spaces being removed with the construction of the queuing lane. Currently Tredyffrin Easttown Middle school has 118 spaces. The new parking will have 51 spaces, which provides an additional 27 spaces to the school total. The new overall parking total will be 145 spaces. This will provide the spaces needed to cover the 26 car space deficit the school has as per the DJA 2017 parking study. A stormwater management system would need to be constructed to manage the additional impervious coverage.



PROPOSED PLAN

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

ADDITIONAL PARKING & QUEUING ALONG OLD LANCASTER ROAD



GOOGLE STREET VIEW IMAGES

SITE CONDITION:
MORNING QUEUE



GOOGLE STREET VIEW IMAGES

SITE CONDITION:
AFTERNOON QUEUE

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

ADDITIONAL PARKING & QUEUING ALONG OLD LANCASTER ROAD

ZONING NARRATIVE

- Variance required for exceeding maximum impervious cover
- Variance required for exceeding maximum building cover
- Variance required for less than the required distance between accessways
- Variance/Special Exception for more than two driveways in the buffer
- Township approvals for development and stormwater
- PADEP NPDES permit may be required if disturbance is greater than (1) acre
- 118 existing parking spaces, 345 required, 145 parking spaces proposed

TRAFFIC ANALYSIS

- Increases on-site queue capacity from 7 cars to 26 cars
- Will promote improved traffic segregation between the Conestoga Road Lot and the Old Lancaster Road "New" Lot
- Will reduce traffic volumes, congestion and queues on Conestoga Road
- Will reduce the need for drop-offs/pick-ups from the adjacent streets, thus improving pedestrian safety
- Will increase traffic on Old Lancaster Road
- Introduces a new conflict point/driveway on Old Lancaster Road
- Cost Benefit Assessment:
This improvement is the most costly of the options, but the positive benefits of increased on-site queue capacity, reduction of congestion along Conestoga Road, improvement of internal circulation in North parking lot, improved safety, and an increase in parking capacity makes it a high priority.

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

ADDITIONAL PARKING & QUEUING ALONG OLD LANCASTER ROAD

PROJECT DURATION

Preparation of construction documentation will take approximately 3-4 months. The permitting process will take approximately 6-8 months to receive Township, conservation district, and PADEP (if necessary) approvals. Bidding process will take approximately 2-3 months. Fabrication of the aluminum canopy system will take approximately 10-12 weeks. Construction of the proposed improvements will take approximately 4-6 months. The fabrication schedule and cost of the structure should be reviewed with the contractor and fabricator. A revised budget and schedule is recommended to be prepared as additional details of the improvement are developed.

PROJECT BUDGET

ITEM	EST. COST
TREDYFFRIN EASTTOWN MIDDLE SCHOOL	
ADDITIONAL PARKING AND QUEUING AREA ALONG OLD LANCASTER ROAD	
REMOVE - TREES	\$ 5,600
REMOVE - CONCRETE CURB	\$ 1,700
REMOVE - CONCRETE SIDEWALK	\$ 600
REMOVE ASPHALT PAVING	\$ 7,500
EARTHWORK/GRADING/FINE GRADING	\$ 125,000
STORMWATER MANAGEMENT	\$ 400,000
NEW ASPHALT - FULL DEPTH	\$ 150,000
ASPHALT PAVING - MILL AND OVERLAY	\$ 25,000
CONCRETE SIDEWALK PAVING	\$ 55,000
NEW CONCRETE CURB	\$ 40,000
PAVEMENT STRIPING	\$ 10,000
NEW LIGHTING	\$ 75,000
EROSION & SEDIMENTATION CONTROLS	\$ 40,000
PREFABRICATED ALUMINUM CANOPY SYSTEM	\$ 136,010
CONCRETE FOUNDATIONS	\$ 3,200
CANOPY LIGHTING	\$ 10,000
GENERAL CONDITIONS (15%)	\$ 162,691
CONTINGENCY (20%)	\$ 216,922
SOFT COSTS - DESIGN, ENG., PERMIT.	\$ 150,000
Subtotal	\$ 1,614,223

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

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

SUMMARY

Tredyffrin Easttown Middle School Zoning Summary

Tredyffrin Township

Zoning District: R2 - Residential (Assumed)

Site Area

	Acres	Square Feet
Lot Area	18.93	824442

Description	Current Ordinance Section	Ordinance Required							
			Existing	Vehicle Queuing Lane Parallel to Conestoga Road	Eastbound Conestoga Road Left Turn Lane	Additional Queuing Area Along Old Lancaster Avenue	Additional Parking and Queuing Along Old Lancaster Road	Covered Drop-offs	
Use Regulations	208-25(B)	Public Agency (School)	School	School	School	School	School	School	
Min. Lot Area	208-27(A)	80,000 SF	>80000 SF	-	-	-	-	-	
Min. Lot Width	208-27(A)	200 FT	> 200 FT	-	-	-	-	-	
Max. Building Coverage	208-27(B)	10%	14.4%	-	-	-	-	15.36%	
Max Impervious Coverage	208-27(C)	25%	46.83%	-	-	48.24%	50.41%	46.89%	
Min. Front Yard	208-27(D)	50 FT	Non-Conf.	-	-	-	-	-	
Min. Side Yard, 2 Req.	208-27(E)	40 FT	Non-Conf.	-	-	-	-	-	
Min. Rear Yard	208-27(F)	50 FT	> 50 FT	-	-	-	-	-	
Max. Height	208-27(G)	35 FT	-	-	-	-	-	-	
Min. Buffer to Residential	208-27(H)	25 FT	Non-Conf.	-	-	-	-	-	
Buffer Use	208-102(B)(2)	No Sidewalk	Non-Conf.	-	-	-	-	-	
One Entrance/ Exit in Buffer	208-102(B)(4)	More than one *	Non-Conf.	-	-	> 2 *	> 2 *	-	
No More Than Two Accesses	208-102(C)(1)	300 FT Separation Req'd	Non-Conf.	-	-	< 300 FT	< 300 FT	-	
Off-Street Loading Space	208-104	Provided on the Lot	Yes	-	-	-	-	-	
Add'l On-Site Impervious						11626 SF	29580 SF	536 SF	
Add'l Off-Site Impervious				3857 SF					
Basin Footprint (5:1)				771 SF		2907 SF	5916 SF	107 SF	

Existing Conditions

- 18.93 AC Total Lot Area
- Assumed in R2-Residential Zoning District
- Recommend consolidating and rezoning the lots
- (8) nonconformities

Variance Required

* Special Exception Required

TREDYFFRIN EASTTOWN MIDDLE SCHOOL

SUMMARY

BUDGETS:

VEHICLE QUEUING LANE PARALLEL TO CONESTOGA ROAD	\$591,410
EASTBOUND CONESTOGA LEFT TURN LANE	\$50,000 to \$1,500,000
ADDITIONAL PARKING & QUEUING ALONG OLD LANCASTER ROAD	\$1,614,223

VALLEY FORGE MIDDLE SCHOOL

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NORTHBOUND VALLEY FORGE ROAD LEFT TURN ADVANCE

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VALLEY FORGE MIDDLE SCHOOL

EXISTING CONDITIONS



AERIAL IMAGE