



Boles, Smyth Associates, Inc.
Consulting Civil Engineers Since 1972

June 12, 2015

Mr. Paul A. Leonard, Township Manager
Upper Dublin Township
801 Loch Alsh Avenue
Fort Washington, PA 19034

Subject: Traffic Impact Study Review - LifeTime Fitness Center
375 Commerce Drive, Fort Washington

Dear Mr. Leonard:

Boles, Smyth Associates, Inc. has performed a review of the Traffic Impact Study for the proposed LifeTime Fitness Center, prepared by McMahon Associates, dated April, 2015. The Applicant is proposing the development of a 2-story, 112,610 square foot fitness center and outdoor pool area with deck seating and a small 1-story, 755 square foot bistro on the EC-Employment Center zoned property. Site access is proposed via a main driveway at Delaware Drive and a second driveway at Commerce Drive.

This review is limited to an analysis of the proposed Traffic Impact Study and compliance with the Upper Dublin Township Zoning and Subdivision and Land Development Ordinance Section 212-35 for consideration by the Township.

We offer the following comments for your consideration:

- 1) The Stop-Controlled intersection of Virginia Drive and Camphill Road should be added to the list of study area intersections. Development generated traffic projections from Camphill Road should be analyzed and the intersection Level of Service provided. Due to the unique nature of the intersection which restricts turns from all approaches, Camphill Road traffic destined for 375 Commerce Drive would be required to proceed across Camphill Road and turn left onto Highland Avenue, then Pinetown Road. With this indirect path, illegal left turns onto Virginia Drive may increase from existing observed limits.
- 2) The TIS notes a Trip Generation Study was prepared by TRC Engineers, Inc. in November 2007 and is the basis for the trip generation presented in this report. Please provide the TRC Engineers report for review. Also, please indicate if there has been an updated analysis based on comparable sites built since 2007 and provide the data if available.
- 3) Traditional methods for projecting future traffic growth rates are not applicable at this location due to the recently adopted Transfer of Development Rights and Mixed Use Ordinances and independent transportation projects within the office park that will revise travel patterns on Commerce Drive and within the overall office park. As part of an independent project, Boles,

Smyth will be developing an updated Synchro network based on traffic projections provided by the Delaware Valley Regional Planning Commission as part of the PA Turnpike Corridor Reinvestment Study. After review and approval of the number/distribution of new trips generated by the development, we would recommend coordinating between our projects to develop final future traffic volumes. For this development, we would recommend developing future traffic projections five (5) years after opening.

- 4) Please separate the trip generation for the fitness center and the outdoor pool/bistro that shows over 300 deck seats. Due to the seasonal nature of the traffic generated by the pool, verify the trips presented in the TIS reflect the worst case condition when the pool is open.
- 5) Indicate if there is anticipated daily truck traffic and, if so, approximately how many. With the existing truck restrictions on Highland Avenue and Pinetown Road, trucks would be required to access the site via Virginia Drive/Delaware Drive from the east and Commerce Drive from the west. Based on the number of trucks and access points, revise the minimum curb radii from 35 feet to 25 feet for the Delaware Drive curb radii, if appropriate.
- 6) Please add reference to the SEPTA Regional Rail Station on Pennsylvania Avenue in the Transit Services section.
- 7) For the Commerce Drive access a protected left turn is warranted. Although two westbound Commerce Drive lanes are available, the location of the proposed driveway in relation to the double left turn from Delaware Drive is not conducive to a safe run-around. As discussed at a meeting with LifeTime Fitness representatives on May 18, 2015 a shared driveway with a new traffic signal is proposed at the 90 degree curve to replace the need for a mid-block Commerce Drive access location. The shared driveway would provide access for both 375 Commerce Drive and 335 Commerce Drive. The signal would also provide the opportunity for a future "Zip Ramp" connection from the PA 309 toll plaza as the fourth approach. If the shared driveway concept is not able to be incorporated into the Site Plan for permanent access, a protected left turn lane and/or common center turn lane alternative will be required for analysis at the currently proposed location.
- 8) For the Commerce Drive access, a protected right turn lane is marginally warranted. Traveling east on Commerce Drive around the 90 degree turn, lane distribution is not equal as vehicles have positioned themselves for a right turn onto Delaware Drive. Over three times more vehicles turn right at Delaware Drive when compared with proceeding straight through the signal onto Pinetown Road. For this additional reason, the shared driveway concept with a new traffic signal is recommended. If the shared driveway concept is not able to be incorporated into the Site Plan for permanent access, a protected right turn lane alternative will be required for

analysis at the currently proposed location and further justification would be requested taking into account sight distance, lane utilization and roadway geometry from the curve.

- 9) For the Delaware Drive access, a protected left turn lane is required. To avoid the need for a run-around, please develop an alternative to convert the inside westbound Delaware Drive lane into a common center turn lane. Perform a left turn lane queue analysis to determine the required length of the inside westbound Delaware Drive left turn lane at the intersection with Commerce Drive/Pinetown Road to determine the start of the common center turn lane.
- 10) At the Delaware Drive and Commerce Drive intersection provide ADA compliant ramps for the existing crosswalks and provide justification to retain the No Pedestrian Crossing condition for the Commerce Drive west approach. Due to the nature of the proposed facility and the anticipated transition of the office park into mixed use through the Transfer of Development Rights Ordinance, pedestrian access is critical. Recommend analyzing revised lane use for Pinetown Road to provide a left turn lane and through lane for the southbound approach as opposed to the existing left/through lane and through lane configuration in order to establish a protected left turn phase that will allow a crosswalk for the Commerce Drive northbound approach.
- 11) For the reasons noted above, maintain the proposed sidewalk along Delaware Drive as an element of the project in subsequent submittals.
- 12) As shown by Exhibit 3B, the existing overall Level of Service is D at the Virginia Drive and Susquehanna Road intersection with June 22, 2013 counts. Please re-evaluate with counts that were recently obtained and attached. Per Section 212-315, provide recommendations for elimination of the LOS D or worse problems.
- 13) As part of the independent project, a 12 foot multi-use trail will be constructed from Pennsylvania Avenue to the site along Commerce Drive. It will be designated as the regional Cross County Trail and easements will be obtained on behalf of Montgomery County for their use in maintaining the trail. Please increase the width of the trail shown on the Site Plan from 8 feet to 12 feet and revise the "Trail Easement" to be "Cross County Trail Easement". Trails must be a minimum of 10 feet to be designated as the Cross County Trail and this width may be used when right-of-way or environmental constraints dictate; however 12 feet is the standard and will be consistent with the adjacent project.

Please feel free to contact Jack Smyth, Jr. (jsmythjr@bolesmyth.com) should you have any questions or require additional information.

Mr. Paul Leonard
June 12, 2015
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Sincerely,

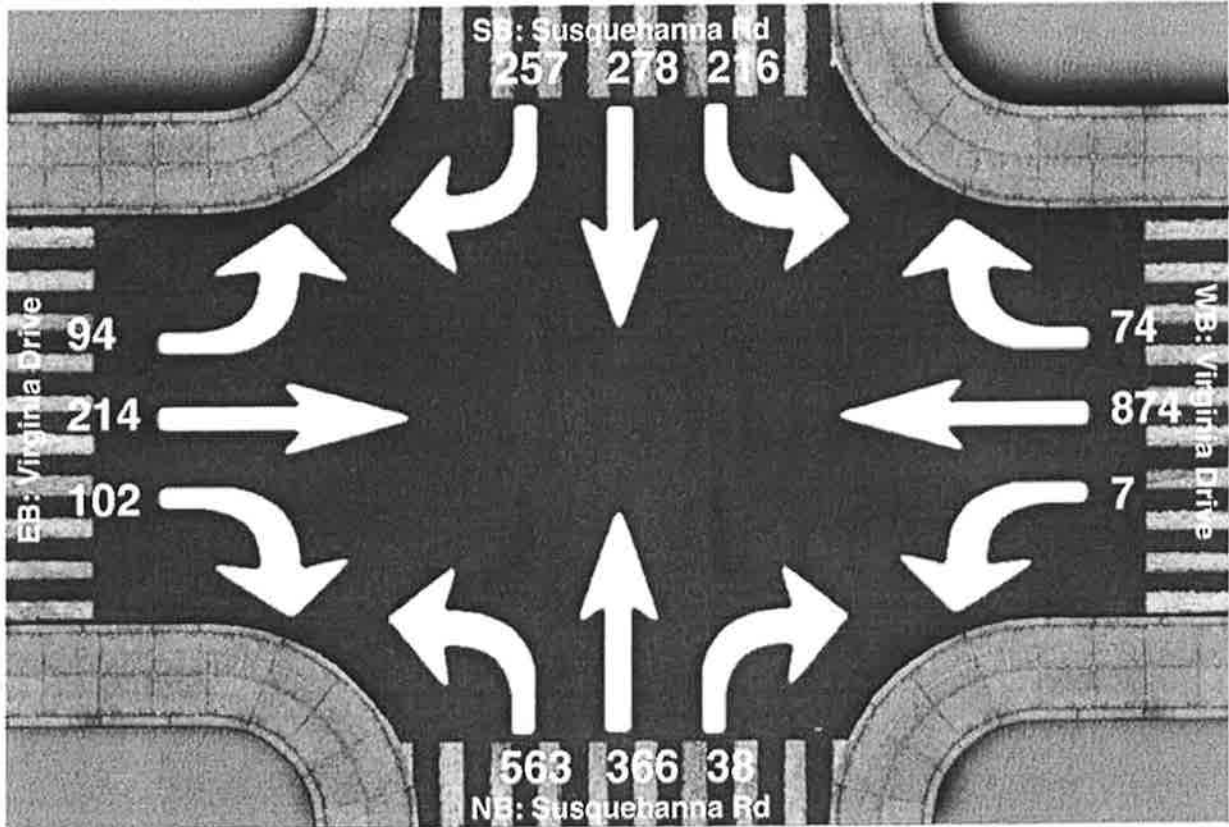
A handwritten signature in black ink that reads "Jack Smyth Jr." in a cursive style.

Jack Smyth, Jr., P.E.

Cc: Richard D. Barton, Upper Dublin Township
Jeffrey A. Wert, P.E., P.L.S., Township Engineer
Aaron Koehler, LifeTime Fitness
Marc D. Jonas, Eastburn and Gray, P.C.
Mark A. Roth, P.E., McMahon Associates
Jason Korczak, P.E., Bohler Engineering

Intersection Peak Hour

Location: Susquehanna Rd at Virginia Drive,
GPS Coordinates: Lat=40.141733, Lon=-75.169326
Date: 2015-06-10
Day of week: Wednesday
Weather:
Analyst: RAB



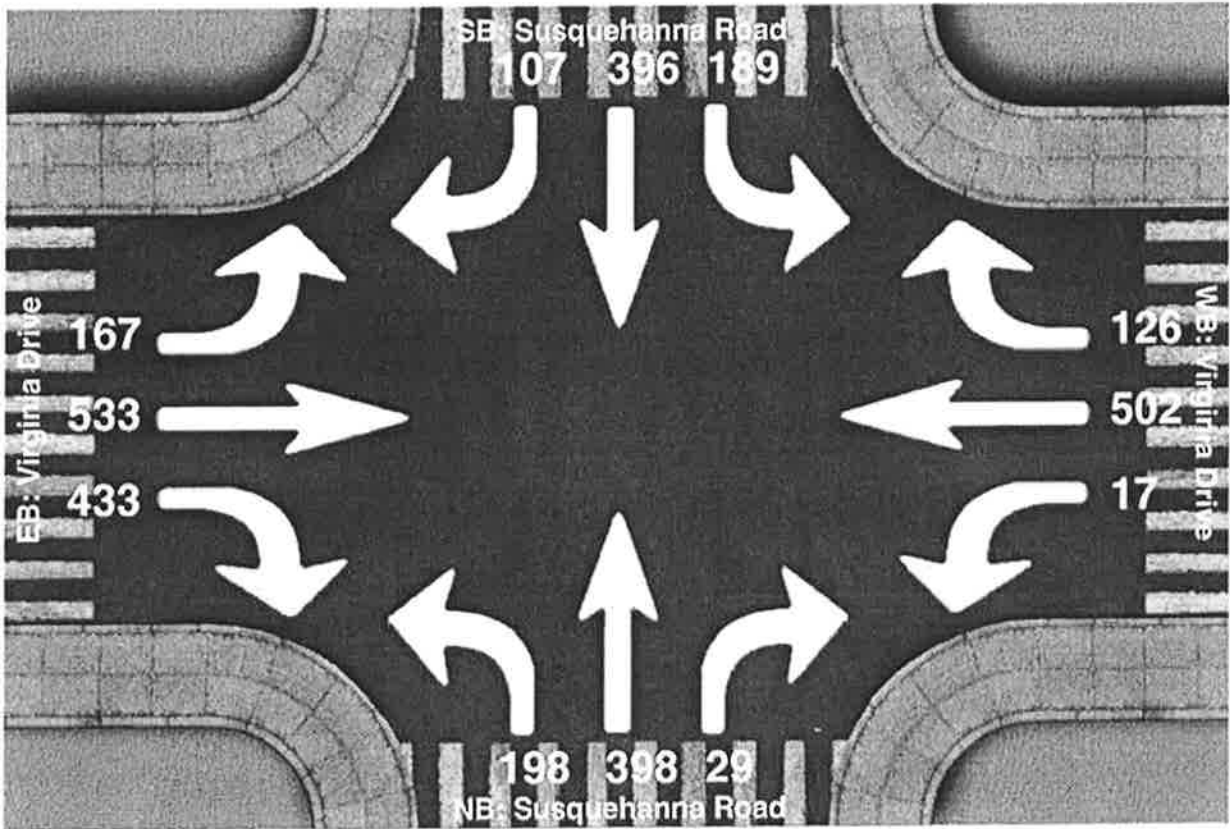
Intersection Peak Hour

07:45 - 08:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	216	278	257	7	874	74	563	366	38	94	214	102	3083
Factor	0.86	0.84	0.79	0.58	0.93	0.64	0.89	0.77	0.59	0.73	0.82	0.65	0.93
Approach Factor	0.95			0.95			0.89			0.83			

Intersection Peak Hour

Location: Susquehanna Road at Virginia Drive,
GPS Coordinates: Lat=40.139049, Lon=-75.163726
Date: 2015-06-10
Day of week: Wednesday
Weather:
Analyst: RAB



Intersection Peak Hour

17:00 - 18:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	189	396	107	17	502	126	198	398	29	167	533	433	3095
Factor	0.84	0.79	0.84	0.61	0.92	0.90	0.93	0.95	0.66	0.68	0.76	0.79	0.92
Approach Factor	0.88			0.95			0.94			0.76			