

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:

- 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 there 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. (<u>ismythjr@bolesmyth.com</u>) should you have any questions or require additional information.

Mr. Paul Leonard June 12, 2015 Page 4

Sincerely,

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

Turn Count Summary

Location: Susquehanna Ad at Virginia Drive, GPS Coordinates: Lat=40.141733, Lon=76.169326

Date:

2015-06-10 Wednesday

Day of week:

Weather: Analyst:

AAB

Total vehicle traffic

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07:30	57	80	44	2	211	9	126	87	13	14	38	24	711
07:46	57	80	éi8	2.	228	11	145	119	8	21	84	39	830
08:00	47	53	81	2	234	14	134	69	- 5	29	46	20	734
08:15	83	62	73	0	211	50	158	82	9	12	65	. 18	773
06:30	40	63	45	3	203	50	126	96	16	32	39	25	746
00:45	52	78	40	4	198	18	192	В4	.0	30	39	30	721
CKO, RIO	0	8	0	0	0	0	0	4	0	0	0	0	10

Car traffic

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Interval starts	Left	Thru	Right	Left	Thru	Filght	Lot	Thru	Right	t.eft	Thru:	Rìghi	IQIA
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07:15	38	75	43	3	211	13	130	95	9	14	42	22	703
07:30	55	79	44	2	208	7	126	85	12	12	36	22	605
07:45	57	75	57	2	223	0	145	115	8	20	60	36	807
08:00	46	47	79	2	230	12	129	62	5	28	44	19	703
08:15	61	60	71	0	208	20	165	74	8	11	64	17	749
08:30	47	74	44	3	198	26	125	90	16	30	36	23	712
08:45	48	74	48	4	195	16	129	63	7	28	39	29	700
09:00	0	5	0	0	0	0	0	4	0	0	0	0	9

Truck traffic

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07:30	2	10	0	0	5	1	1	2	1	2	0	2	26
07:46	0	5	1	0	3	2	0	4	0	1	4	- 3	23
00;80	1	6	5	0	3	2	5	7	0	1	2.	1	30
08:15	2	2	2	0	3	0	э	8	1	1	1	1	24
06:30	2	0	1	0	5	3	1	6	0	2	3	2	94
00:45	3	4	0	0	2	2	3	3	1	2	0	1	-21
09:00	0	1	0	0	0	0	0	0	0	0	0	0	1

Bicycle traffic

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interval starts	Left	Thru	Right	Leit	Thru	Flight	L64	Thru	Flight	Left	Thru	Right	jota
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OB:30	0	0	0	Ü	0	0	0	0	0	0	0	0	0
08:46	0	0	0	0	0	0	0	0	0	0	0	0	0
0G:00	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian volumes

		NE			NW			BW			86		Total
Interval starts	Left	Alght	Total	Loft	Right	LaloT	Left	Right	Total	i.en	Alght	Total	TOTAL
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0
QB:00	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	. 0	0	0	0	D	0	0	Ö
08:45	0	0	0	0	0	0	a	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	U	0

07:45 - 08:45

	Sc	uthBou	ınd	We	stboun	d	No	rthbour	nd	Εŧ	astboun	d	Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
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		

Peak Hour Vehicle Summary

V-1-1-	Sc	outhBou	ind	We	estboun	d	No	rthbour	nd	Ea	astboun	d	Total
Vehicle	Left	Thru	Right	Total									
Car	211	256	251	7	859	67	554	341	37	89	204	95	2971
Truck	5	22	6	0	14	7	9	25	1	5	10	7	111
Bicycle	0	0	0	0	1	0	0	0	0	0	0	0	1

Peak Hour Pedestrians

		NE			NW			sw			SE		Total
	Left	Right	Total	10141									
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0

Location:

Susquehanna Rd at Virginia Drive,

GPS Coordinates: Lat=40.141733, Lon=-75.169326

Date:

2015-06-10

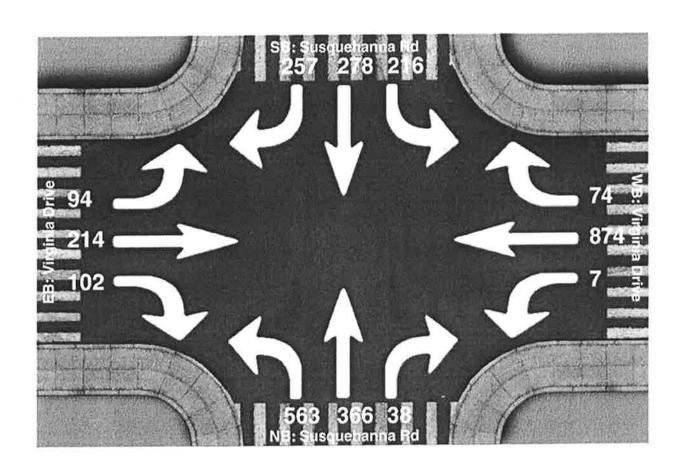
Day of week:

Wednesday

Weather:

Analyst:

RAB



Intersection Peak Hour

07:45 - 08:45

	Sc	uthBou	ınd	W	estboun	d	No	rthbou	nd	E	astboun	d	Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
Vehicle Total	216	278	257	7	874	74	563	386	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		

Turn Count Summary

Location: Susquehanna Road at Virginia Drive, GPS Coordinates: Lat=40.139049, Lon⇒75.163726

2015-06-10

Date: Day of week:

Wednesday

RAB

Weather:

Analyst:

Total vehicle traffic

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Interval starts	Len	Thru	Right	Left	Thru	Elight	Left	Thru	Right	Lett	Thru	Fight	Ichai
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10:15	56	131	15	- 4	79	89	54	92	9	28	72	63	622
16:30	37	103	28	9	112	20	29	91	9	27	122	88	673
16:45	30	110	30	2	108	25	40	87	9	34	98	74	682
17:00	58	80	32	4	114	32	53	96	8	61	175	197	842
17:16	45	125	26	7	100	58	50	105	11	39	151	100	821
17:30	44	92	29	В	122	35	40	105	4	39	127	105	758
17:45	44	93	20	0	130	33	47	102	8	50	80	ÐI	076
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Car traffic

	- 50	outhBou	ina	V	/estbout	nd	N	orthbou	nd	E	aslboui	าดี	Total
Interval starts	l.eh	Thril	Right	Left	Thru	Alght	Leff	Thru	fillyht	Left	Thini	Rigid	TOTAL
16:00	34	85	32	7	85	25	40	81	10	30	92	52	589
18:15	55	128	14	4	78	28	53	77	0	20	71	63	600
16:90	36	98	28	9	111	20	26	89	8	26	122	86	060
10:45	50	116	29	2	108	25	47	86	9	34	96	74	865
17:00	58	88	32	4	114	32	52	85	G	60	175	135	837
17:15	45	124	26	7	135	26	49	103	11	30	151	90	818
17:30	44	91	29	6	121	35	4B	104	4	38	127	104	751
17:45	44	92	20	0	130	33	44	100	ð	28	80	91	670
18:00	1	1:	0	0	0	0	U	0	0	0	0	0	2

Truck traffic

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18:00	1	5	0	0	0	2	0	4	0	1	1	0	14
16:15	1	3	1	0	1	1	1	3	0	0	1	0	14
16:30	1	5	0	0	1	0	O.	2	1	- 1	0	2	13
16:45	1	2	1	0	0	0	2	1	0	0	0	D	7
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10:00	0	0	0	0	0	0	0	0	0	0	0	0	.0

Bicycle traffic

Interval starte	SouthBound			V	Westbound			Northbound			Easibound		
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16:15	0	0	0	C)	0	0	0	0	0	0	0	0	0
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17:00	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0
17;30	0	. 0	0	0	0	0	0	0	0	U	0	0	0
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian volumes

		NE			NW			SW			SE		Total
interval starts	Left	Flight	Total	Lell	Flight	Total	Loff	Highi	Yolal	Lott	Right	Total	Total
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0
16,15	0	0	0	0	0	0	0	0	U	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0
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17:30	0	0	0	0	0	0	0	0	ŋ	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	Ð	0
18:00	0	0	0	D	0	0	0	0	0	0	0	0	0

17:00 - 18:00

	SouthBound			Westbound			Northbound			E	Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
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							

Peak Hour Vehicle Summary

24.41.1	SouthBound			Westbound			Northbound			Eastbound			Total
Vehicle	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Car	189	393	107	17	500	126	193	392	29	165	533	429	3073
Truck	0	3	0	0	2	0	5	5	0	2	0	4	21
Bicycle	0	0	0	0	0	0	0	1	0	0	0	0	1

Peak Hour Pedestrians

	NE			NW			sw			SE			Total
	Left	Right	Total	TOTAL									
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0

Location:

Susquehanna Road at Virginia Drive,

GPS Coordinates: Lat=40.139049, Lon=-75.163726

Date:

2015-06-10

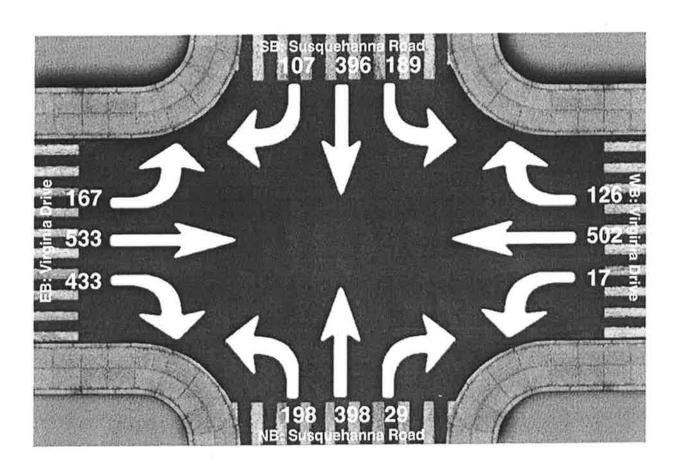
Day of week:

Wednesday

Weather:

Analyst:

RAB



Intersection Peak Hour

17:00 - 18:00

	SouthBound			Westbound			Northbound			E	Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
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			