



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

MEMORANDUM

Date: November 14, 2016

To: Steve Norcini, P.E.
Radnor Township Public Works Director

From: Amy Kaminski, P.E., PTOE
Transportation Services Manager

cc: Bob Zienkowski, Township Manager
Kevin Kochanski, ASLA, R.L.A., Director of Community Development
Damon Drummond, P.E., PTOE, Gilmore & Associates, Inc.

Reference: PLO Trip Generation Assessment- Commissioner Booker
Radnor Township, Delaware County, PA
G&A 15-06038

Gilmore & Associates, Inc. (G&A) was asked to assist Radnor Township Board of Commissioners in evaluating the PLO District Zoning Amendment with regard to various trip generation alternatives and scenarios as presented by Commissioner Booker.

BACKGROUND

Our review memorandum dated October 3, 2016 identified several items that required Penn Medicine to modify and correct information in the first trip generation analysis found to be erroneous. On October 13, 2016, Penn Medicine provided an updated Trip Generation memorandum (2nd submission) reflecting the requested changes and providing support information that G&A requested in the October 3, 2016 review memorandum. Following a G&A review of the revised Penn Medicine trip generation calculations and supporting information, G&A provided a memorandum dated November 4, 2016 indicating the methodology and calculations were validated; however, there was a discrepancy between the square footage of 915 Old Fern Hill Road site presented in the Penn Medicine Trip Generation analysis and the Ballinger Traffic Presentation. We bring this to your attention as an explanation for modifications to the table Commissioner Booker provided for this analysis included outdated information from the 1st Trip Generation analysis; we have corrected the numbers based on the 2nd submission analysis. On another note, Commissioner Booker requested trip generation information for "Ambulatory Care Roadway G&A"; there are no values to provide for this land use because we are in agreement with the information presented by the 2nd Penn Medicine Trip Generation submission.

A summary of the trip generation information presented in the updated Penn Medicine analysis is presented herein:

PENNONI TRIP GENERATION DATA SUMMARY

SITE LOCATION	PP ¹	Site Size ²	ADT ³ Rate	AM ⁴ Rate	PM ⁴ Rate	Avg SF per PP	AM Percent (In/Out)		PM Percent (In/Out)	
250 King of Prussia, Radnor Twp	189	124,300 SF	21.54	1.59	1.10	658 SF	68%	32%	37%	63%
1001 Chesterbrook Blvd, Valley Forge	149	88,300 SF	8.56	0.64	0.48	593 SF	92%	08%	19%	81%
915 Old Fern Hill Rd, Fern Hill	223	154,826 SF	21.38	2.24	1.42	694 SF	79%	21%	27%	73%
145 King of Prussia Penn Med	258	250,000 SF	18.02	1.60	1.06	969 SF	77%	23%	29%	71%

¹PP Patient Position

²SF Ambulatory Care or Medical Mixed Use

³ADT Average Weekday Traffic Volumes

⁴Trip rates all based on Patient Position

Below are the Trip Generation calculations for the various land uses requested by Commissioner Booker from 100,000 -450,000 SF by 50,000 increments with the following assumptions: 910SF/Hotel room; 900 SF/Assisted Living Beds.

100,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	137	19	156	25	124	149	552	552	1,103
Ambulatory Care Roadway- Pennonni	127	38	165	32	78	109	930	930	1,860
Assisted Living (ITE 254) Generator	19	7	26	16	25	41	156	155	311
Medical Office (ITE 720) Roadway	189	50	239	81	210	291	1,807	1,806	3,874
Medical Office (ITE 720) Generator	231	114	350	167	260	427	1,807	1,806	3,874

150,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	206	28	234	38	186	224	828	827	1,655
Ambulatory Care Roadway- Pennonni	191	57	248	48	117	164	1,395	1,395	2,789
Assisted Living (ITE 254) Generator	27	11	38	22	35	57	199	199	398
Medical Office (ITE 720) Roadway	284	75	359	118	302	420	2,960	2,959	5,919
Medical Office (ITE 720) Generator	346	170	516	250	391	641	2,960	2,959	5,919

200,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	293	40	333	51	251	302	1,112	1,111	2,223
Ambulatory Care Roadway-Pennoni	254	76	330	63	155	219	1,860	1,860	3,719
Assisted Living (ITE 254) Generator	37	14	51	29	45	74	245	245	490
Medical Office (ITE 720) Roadway	378	100	478	152	392	544	3,982	3,981	7,963
Medical Office (ITE 720) Generator	460	227	687	333	521	854	3,982	3,981	7,963

250,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	350	48	398	61	297	358	1,317	1,317	2,634
Ambulatory Care Roadway-Pennoni	318	95	413	79	194	273	2,325	2,325	4,649
Assisted Living (ITE 254) Generator	46	18	64	35	55	90	290	390	580
Medical Office (ITE 720) Roadway	472	126	598	186	479	665	5,004	5,004	10,008
Medical Office (ITE 720) Generator	575	283	858	417	651	1,068	5,004	5,004	10,008

300,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	406	55	461	70	344	414	1,513	1,513	3,026
Ambulatory Care Roadway-Pennoni	381	114	495	95	233	328	2,789	2,789	5,579
Assisted Living (ITE 254) Generator	55	22	77	41	65	106	334	334	668
Medical Office (ITE 720) Roadway	566	151	717	219	564	783	6,026	6,026	12,052
Medical Office (ITE 720) Generator	689	340	1,029	500	781	1,281	6,026	6,026	12,052

350,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	458	63	521	80	390	470	1,701	1,701	3,402
Ambulatory Care Roadway-Pennoni	445	133	578	111	272	383	3,254	3,254	6,509
Assisted Living (ITE 254) Generator	64	25	89	48	74	122	379	379	758
Medical Office (ITE 720) Roadway	661	176	837	252	648	900	7,049	7,048	14,097
Medical Office (ITE 720) Generator	804	396	1,200	583	912	1,495	7,049	7,048	14,097

400,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	510	70	580	89	437	526	1,883	1,882	3,765
Ambulatory Care Roadway-Pennoni	509	152	660	127	311	438	3,719	3,719	7,439
Assisted Living (ITE 254) Generator	73	29	102	54	84	138	424	423	847
Medical Office (ITE 720) Roadway	755	201	956	284	731	1,015	8,071	8,070	16,141
Medical Office (ITE 720) Generator	919	452	1,371	666	1,042	1,708	8,071	8,070	16,141

450,000 SF Site	AM Peak Hour			PM Peak Hour			Weekday Average Daily Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
General Office (ITE 710) Roadway	561	76	637	99	483	582	2,059	2,059	4,118
Ambulatory Care Roadway-Pennoni	572	171	743	143	350	492	4,184	4,184	8,368
Assisted Living (ITE 254) Generator	81	32	115	60	94	154	469	468	937
Medical Office (ITE 720) Roadway	850	226	1,076	316	812	1,128	9,093	9,093	18,186
Medical Office (ITE 720) Generator	1,033	509	1,542	750	1,172	1,922	9,093	9,093	18,186

Also requested by Commissioner Booker were the following tables for a by-right (allowable) uses and proposed uses as follows for 100,000 SF - 450,000 SF in 50,000 SF increments:

EXISTING BY RIGHT USES	100% GENERAL OFFICE			100% Medical-Dental Office			Proposed Uses			100% Hotel			100% Assisted Living			100% Ambulatory		
	Description	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Description	AM	PM	24 HR ADT	AM	PM	24 HR ADT	AM	PM	24 HR ADT	
Description 100,000 SF	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Hotel	73	81	981								
General Office	156	149	1,103				Assisted Living				26	41	311					
Medical/Dental Office				239	291	3,874	Ambulatory Care							165	109	1,860		
Description 150,000 SF	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Hotel	105	118	1472								
General Office	234	224	1,655				Assisted Living				38	57	398					
Medical/Dental Office				359	420	5,919	Ambulatory Care							248	164	2,789		
Description 200,000 SF	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Hotel	137	154	1962								
General Office	333	302	2,223				Assisted Living				51	74	490					
Medical/Dental Office				478	544	7,983	Ambulatory Care							330	219	3,719		
Description 250,000 SF	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Hotel	168	191	2453								
General Office	394		2,634				Assisted Living				64	90	580					
Medical/Dental Office				598	665	10,008	Ambulatory Care							413	273	4,649		
Description 300,000 SF	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Hotel	198	226	2944								
General Office	461	414	3,026				Assisted Living				77	106	668					
Medical/Dental Office				717	783	12,052	Ambulatory Care							495	328	5,579		
Description 350,000 SF	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Hotel	228	261	3434								
General Office	521	470	3,402				Assisted Living				89	122	758					
Medical/Dental Office				837	900	14,097	Ambulatory Care							578	383	6,509		
Description 400,000 SF	AM	PM	24 HR ADT	AM	PM	24 HR ADT	Hotel	257	296	3925								
General Office	580	526	3,765				Assisted Living				102	138	847					
Medical/Dental Office				956	1,015	16,141	Ambulatory Care							660	438	7,439		

EXISTING BY RIGHT USES	100% GENERAL OFFICE			100% Medical-Dental Office			Proposed Uses			100% Hotel			100% Assisted Living			100% Ambulatory				
	Description	AM	PM	24 HR ADT	Description	AM	PM	24 HR ADT	Description	AM	PM	24 HR ADT	Description	AM	PM	24 HR ADT	Description	AM	PM	24 HR ADT
450,000 SF								Hotel	286	331	4415									
General Office	637	582	4,118					Assisted Living				115	154	937						
Medical/Dental Office				1,076	1,128	18,186		Ambulatory Care									743	492	8,368	

Commissioner Booker further request various combinations of land uses as indicated below:

Trip Generation: 145 King of Prussia Road (18.7 Acres)

Scenario	Land Use		AM Peak	PM Peak	24 Hr Total
I	Allowable/Permitted New Use as Medical or Dental Offices				
	Medical/Dental Office 140,000 s.f.		335	394	5,510
	Medical/Dental Office 200,000 s.f.		478	544	7,963
II	Allowable/Permitted New Use as General Offices				
			AM Peak	PM Peak	24 Hr Total
	General Office 267,000 s.f.		420	377	2,769
III	267,500 s.f. - Allowable/Permitted Use as Medical/Dental and General Office - New Configuration				
			AM Peak	PM Peak	24 Hr Total
	Medical or Dental Offices (no new s.f.)		N/A	N/A	N/A
	New General Office 142,500 s.f.		254	238	1,718
		Total	254	238	1,718
	Medical or Dental Offices 15,000 s.f. (New Portion)		36	54	542
	General Office 127,500 s.f.		232	221	1,579
		Total	268	275	2,121

IV		427,500 s.f. - By Right Re-use of Existing Buildings as 250,000 s.f. Office and 177,500 s.f. Laboratory			
		AM Peak	PM Peak	24 Hr Total	
	10,000 s.f. (New Portion) Medical Offices	24	37	194	
	General Office 292,000 s.f.	451	405	2,964	
	Total	475	442	3,158	

V		Prospective Mixed Use as Proposed for Penn Medicine Site (475,000 s.f.)			
		AM Peak	PM Peak	24 Hr Total	
	Mixed Medical Ambulatory Care Facility (250,000 s.f.)	413	273	4,649	
	Hotel (75,000 s.f.)	56	61	731	
	General Office (150,000 s.f.)	265	246	1,787	
	Total	734	580	7,167	

