



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

MEMORANDUM

Date: April 6, 2015

To: Steve Norcini, P.E.

From: Amy Kaminski, P.E., PTOE.

cc: Roger Phillips, P.E., Gannett Fleming, Inc.
Steve Gabriel, P.P, Rettew
Damon Drummond, P.E., PTOE

Reference: Preliminary Land Development Transportation Impact Study
DRAFT Review
145 King of Prussia Road
Radnor Township, Delaware County
G&A 12-06069

Gilmore & Associates, Inc. has completed a transportation review of the referenced project and offers the following comments for Township consideration:

I. PROJECT OVERVIEW:

Biomed Realty Trust, Inc. proposes to redevelop the site at 145 King of Prussia Road to provide additional office space. The site currently contains 427,109 square feet of office/research and development space (177,233 sf is currently vacant). The proposed design includes the removal of the existing space to provide 475,000 square feet of new office space. Access to the proposed site will be provided via the existing southern site access and the existing northern shared access with SEPTA.

II. SUBMISSION

1. Response letter regarding the Gilmore & Associates, Inc. February 23, 2015 review memorandum, prepared by McMahon Associates, Inc., dated March 17, 2015.
2. Transportation Impact Study, prepared by McMahon Associates, Inc., dated March, 2015, received March 26, 2015.

III. IDENTIFIED IMPROVEMENTS

1. King of Prussia Road and Lancaster Avenue (U.S. Route 30)/I-476 NB Off-Ramp
 - i. Widen southbound King of Prussia Road to provide a second right-turn lane, contingent upon the ability to secure right-of-way.
 - ii. Restripe northbound I-476 off-ramp for a shared through/right-turn lane.
2. King of Prussia Road and Raider Road
 - i. Construct a new traffic signal.
3. King of Prussia Road and Southern Site Access
 - i. Provide one ingress lane and two egress lanes.
 - ii. Install a traffic signal, which is warranted during the weekday afternoon peak hour. This traffic signal will be interconnected with the existing U.S. Route 30 traffic signal system.
 - iii. Provide 45-foot curb radii (at minimum), or larger if necessary for the anticipated delivery traffic.
 - iv. Widen northbound King of Prussia Road to provide a separate right-turn lane, contingent upon the ability to secure right-of-way.
4. King of Prussia Road and SEPTA Access/Site Access
 - i. Provide one ingress lane and two egress lanes.
 - ii. Construction of a northbound King of Prussia Road right turn deceleration lane.
 - iii. Construction of a southbound King of Prussia Road left turn lane.
 - iv. Construct a bus shelter on King of Prussia Road on the southeast of the SEPTA Access/Site Access
 - v. Construct sidewalks from the site to the R-100 Station at the rear of the property.
5. King of Prussia Road
 - i. Provide a four-lane cross section along the property's site frontage along King of Prussia Road (between the southern site access and the shared SEPTA/Site Access).
 - ii. Construct 5 foot sidewalks along the entire property frontage on King of Prussia Road.
6. Traffic Adaptive Signal Coordination at the following intersections, subject to PennDOT review and approval:
 - i. Route 30 & I-476/King of Prussia Road
 - ii. Route 30 & I-476 Southbound Ramps
 - iii. Route 30 & Radnor-Chester Road
 - iv. King of Prussia Road & Radnor-Chester Road
 - v. King of Prussia Road & Matsonford Road
 - vi. Matsonford Road & South Centennial Drive
 - vii. Matsonford Road & North Centennial Drive
 - viii. King of Prussia Road & Raider Road
 - ix. King of Prussia Road & Southern Driveway

7. Construct a trail extension from the Southern Driveway through the existing PennDOT Right-of-Way, southeast of the site with connections to the existing Route 30 sidewalks.

IV. WAIVERS REQUESTED

1. §255-20.b(5)(d)[4] – To permit the use of ITE Trip Generation Rates in the Transportation Impact Study.
2. §255-27.C(1) – To permit a 44 foot wide cartway along King of Prussia Road.
3. §255-27.H. – To permit an intersection which is not a 90 degree alignment.
4. §255-229.A(6) – To permit painted gore marking in lieu of a concrete curb for parking stalls along the concrete ramp due to drainage concerns.
5. §255-229.A(12)(b) – To permit a 22 foot drive aisle in areas without parking to maintain a roadside vegetative drainage swale.

V. TRANSPORTATION IMPACT STUDY REVIEW COMMENTS

1. Provide a comparison of the trip generation numbers based on ITE Land Use Code (LUC) 720 Medical Office Use. During a recent meeting with the applicant, this may be a possible tenant and the trip making characteristics for this type of use is more significant than the LUC 710 General Office used in the Transportation Impact Study (TIS); therefore, a worst case scenario must be provided for review.
2. A Signal Warrant Analysis was provided for both proposed signals on King of Prussia Road in in Appendix F. Although the applicant evaluated both the peak hour and four-hour traffic signal warrants for both intersections, only the Peak Hour Warrant (Warrant 3) was met. PennDOT requires Central Office approval if only the Peak Hour Warrant is met for an intersection being considered for signalization. We recommend the applicant perform the following:
 - i. Re-evaluate both intersections to determine if either intersection meets warrant conditions for 8 hour warrant analysis. This may require additional traffic counts that should be obtained prior to school releasing for summer break.
 - ii. Submit a copy of both traffic signal warrant analyses (including the above discussed 8 hour warrant) to PennDOT for review and consideration.
3. Appendix F *Traffic Signal and Auxiliary Turn Lane Warrant Worksheets* identifies the following improvements are warranted:
 - i. King of Prussia Road and Raider Road: A 275 foot northbound left turn lane and taper on King of Prussia Road at Raider Road.

The applicant has not proposed a northbound left turn lane at Raider Road.
 - ii. King of Prussia Road and Southern Access::
 - (1) A 100 foot southbound left turn lane and taper
 - (2) A 375 foot northbound right turn lane and taper

No southbound left turn lane is proposed, and a 100 foot northbound right turn lane with an 85 foot taper is proposed.

- iii. Investigate the left turn conflict factor worksheets for both proposed traffic signals; adjust the proposed traffic signal timings as needed.
- iv. Route 30 and King of Prussia Road:
 - (1) Provide an auxiliary turn lane analysis for the southbound right-turn lane on King of Prussia Road at Route 30 to determine the maximum required storage length. The proposed storage length should be the greater of the auxiliary turn lane length analysis or the 95 percentile queue length analyses, based on the Future Build conditions.

A 200 foot southbound right turn lane and 100 foot taper is currently proposed.

4. The **Executive Summary** should be updated to include the auxiliary lane information discussed above.
5. Appendix L: *Concept Plans & Cost Estimates*: The provided cost estimates do not appear to include the improvements at Raider Road and the proposed trail improvements
6. **Lancaster Ave/King of Prussia Rd/I-476 Northbound off Ramp**: The applicant proposed southbound King of Prussia Road dual right turn lanes and restriping the northbound right turn lane from I-476 to a share through/right lane. These improvements will improve the overall delay at the intersection but not all critical lane movement deficiencies will be mitigated. Other capacity improvements are likely infeasible due to the physical constraints at the intersection such as the overpasses. The improvements at this intersection will be subject to the review and approval of PennDOT.