

## TRAFFIC IMPACT PEER REVIEW

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Proposed Residence at Park Central Development – Southborough, Massachusetts

**REF:** MAX-2014067.00

**DATE:** June 20, 2014

**TO:** Mr. Leo Bartolini, Jr.  
Chairman, Zoning Board of Appeals  
17 Common Street  
Southborough, MA 01772

**FROM:** Mr. Jason DeGray, P.E., PTOE

**RE:** Proposed Residence at Park Central  
Traffic Impact & Access Study Peer Review

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**Greenman-Pedersen Inc. (GPI)** has conducted a comprehensive peer review of the materials provided in support of the proposed Residence at Park Central (Project). As currently proposed the Project consists of the construction of 180 residential units contained within five separate three story 36-unit buildings, a club house and 370 surface parking spaces. Access to the site will be provided via the existing right-in/right-out access to Park Central Drive from Turnpike Road westbound (Route 9), a new cross connection to Flagg Road providing full access and right-out only egress and connections to Tara Road and Bantry Road. The project is being developed under Chapter 40B regulations.

Overall GPI has found the material provided to be prepared in a manner consistent with transportation engineering standards and reasonably evaluates the Project's potential impacts. While GPI finds the materials provided in support of the Project to be representative of the Project's transportation impacts our review did identify some areas where additional information could benefit the understanding of the Project.

In addition, while GPI generally concurs with the findings of the latest Traffic Impact & Access Study prepared in support of the project it should be noted that elements concerning access to the Project site appear to merit further discussion, particularly in light of the additional development potential along Park Central Drive identified by the applicant and the latest regarding MassDOT's desire to eliminate egress from Park Central Drive.

The remainder of this memorandum contains the details of our peer review findings.

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GPI's assessment of the Project currently consists of the review of the following materials:

- Second Traffic Impact and Access Study, Residence at Park Central 40B Development, Southborough, Massachusetts, TEC, Inc., May 19, 2014;
- Proposed 180 Unit 40B Project, Park Central Southborough, Massachusetts, Capital Group Properties, October 15, 2013 (Site Plan);
- Park Central – Potential Site Buildout, Southborough, Massachusetts, Capital Group Properties, June 25, 2013;
- MassHousing Project Eligibility Letter to Park Central, LLC, February 11, 2014;
- Traffic Impact & Access Study, Proposed Park Central 40B Residential Development, Southborough, Massachusetts, Green International Affiliates, Inc., March 2013;
- Traffic Impact & Access Study, Proposed Park Central 40B Residential Development, Southborough, Massachusetts, Green International Affiliates, Inc., Revised June 2013.

### **Crash History Analysis**

The traffic study appropriately conducted an assessment of the vehicle collision history at each of the study area locations utilizing records maintained by MassDOT. While conducted appropriately, the utilization of crash data maintained by the Southborough Police Department is desirable. The Town may wish to review its records to ensure the nature and the frequency of the crash history within the study area as reported by the MassDOT data, particularly the local residential neighborhoods, is representative of the Towns understanding of the crash frequency and severity within the area.

### **Sight Distance**

The traffic study correctly asserts that the minimum required intersection sight distance is equal to the required stopping sight distance. This assessment however makes no mention of the desired intersection sight distance criteria. Intersection sight distance is important because it is the distance required for a motorist stopped at an intersecting side street to perceive and react to traffic. Without providing desired intersection sight distance drivers stopped at the intersecting side street may feel a heightened sense of anxiety upon entering a roadway, as the minimum safety requirement is based only upon the ability of driver on the major roadway to apply the brakes with enough time to stop before colliding with the entering vehicle.

The project should document the desired and available intersection sight distance at the study locations.

### **General Background Growth**

GPI reviewed the calculations relative to the general background growth rate. GPI was unable to confirm the growth rate represented for STA 3094, Flagg Road north of Route 9. Based on GPI's calculation the average growth rate for this station between 2004 and 2012 was 9.7% not

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1.9% as indicated in the traffic study. Please confirm the methodology utilized to develop this growth rate.

### **Specific Development by Others**

Based on conversation with the Town one additional project should be considered for inclusion as a background project, Woodland Meadows 40B project located on Oak Hill Road.

### **Site Generated Traffic**

The trip generation methodology employed for the Project appears appropriate provided the residential units are ownership units and not rental units. An earlier version of the traffic study based the trip generation on apartments which are rental units and generate traffic at a higher rate than the townhouse which is currently employed. Please confirm that the units under development are to be ownership units.

### **Trip Distribution**

The trip distribution to the site was based upon a gravity model using 2000 U.S. Census Journey to Work data. As the components of this gravity model are left to engineering discretion to some degree GPI conducted a sensitivity analysis to determine if the methodology employed was appropriate. The results of this sensitivity analysis are provided below.

Direction	Entering %		Exiting %	
Route 9 to/from East	TEC 55%	GPI 49%	TEC 29%	GPI 31%
Route 9 to/from West	12%	12%	12%	12%
I-495 to/from North	10%	10%	14%	11%
I-495 to/from South	6%	6%	30%	25%
Route 30 to/from East	13%	18%	13%	16%
Route 30 to/from West	2%	5%	2%	5%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
AM Peak Hour		PM Peak Hour		
<b>Total Trips Utilizing Residential Roadways</b>	12	18	14	22

As can be seen in the above GPI has identified the potential for an additional 6 to 8 vehicles during the AM and PM peak hours respectively which may utilize the local residential roadways as a means to access Route 30.

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### **Site Plan**

While GPI's review did not include a detailed evaluation of the proposed site plan we would like to note that the current plan is insufficient to convey a thorough understanding of the circulation and logistical operations of the Project site. Detailed engineering plans are required to evaluate internal traffic control, geometric design, pedestrian facilities, parking design, access for emergency response, waste disposal and larger vehicles and snow storage areas.

### **Mitigation**

The latest traffic impact study makes no mention of a commitment to install sidewalks along Bantry Road and Tara Road to provide safer pedestrian travel as well as commitments to direct all residents leaving Park Central Drive to the Park Central/Flagg Road exit and to install driver feedback signs on Flagg Road. Please confirm if these commitments are still part of the development proposal. These commitments were noted in the MassHousing approval of project eligibility.

The traffic study recommends the installation of a three way stop at the intersection of Blackthorn Drive at Flagg Road to alleviate sight distance restrictions. GPI would note that daily traffic volumes along Flagg Road are more than double those along Blackthorn Drive. This volume differential coupled with the alignment of Flagg Road may cause the installation of an all-way stop at this location to violate driver expectation. GPI feels this recommendation warrants further investigation/engineering study. The MUTCD (section 2B.07) contains criteria for the installation of multi-way stops, the applicant should justify the use of an all-way stop based on these criteria. This should include requesting crash records of this location from Town of Southborough Police Department.

GPI would also note that the signage plan proposed as mitigation along Flagg Road as part of the earlier traffic studies has merit and should be considered for implementation.

### **Site Access & Future Development Potential**

As currently proposed access to the Project site will be maintained via the existing right-in/right-out access to Park Central Drive from Turnpike Road westbound (Route 9), a new cross connection to Flagg Road providing full access and right-out only egress and connections to Tara Road and Bantry Road. This current access proposal is reflective of two external factors which must be noted:

1. As part of the long-term planning for the future of the Route 9 and Interstate 495 Interchange MassDOT has indicated a desire to eliminate the egress from Park Central Drive.

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2. To ensure that connections to Tara Road and Bantry Road serve as secondary access points primary access/egress to the Project site will be provided via an extension of Park Central Drive with a cross connection to Flagg Road.

Tara Road, Bantry Road, Blackthorn Drive are local roadways and are not intended to service notable traffic volumes. They currently exhibit no pavement markings or sidewalks. Trees and utility poles exist along the roadway in close proximity to the pavement edge in addition to landscaped components of the abutting residences. Flagg Road, while classified as an urban collector also exhibits similar characteristics. These roadways vary in width from 20 to 24 feet, with the noted exception of Flagg Road narrowing to 17 feet at a culvert crossing.

It is understood that the Residence of Park Central is but the potential first phase of a larger buildout of land controlled by the applicant as demonstrated in plans prepared by the applicant and shown on the following page. The potential for additional traffic which could be generated by this additional development, and what percentage of that may utilize local neighborhood roadways, is currently not understood. While not currently part of the application before the ZBA GPI is compelled to identify that the future ability to preclude traffic associated with this larger development from utilizing the local neighborhood roadways warrants further discussion given the current access plan and desire for traffic from the Residence at Park Central to utilize the extension of Park Central Drive as its primary means of access/egress. Earlier plans indicate the connection to Park Central Drive from the Residence at Park Central to be emergency access only. Physically gating this connection point appears to be the only viable means to avoid the potential of traffic from future development potential from utilizing local neighborhood roadways, this however could require all traffic from the Residence at Park Central to utilize these roadways if these gates were not automated for residence of the Project.

While this concern can be separated from the development proposal currently before the ZBA to some degree, this intricacy needs to be understood as it affects the future development potential of the site. **GPI recommends the installation of an automated gating system be installed as part of this project at the Park Central, Tara Road and Bantry Road access points to ensure access to the residential neighborhoods can be controlled now and upon future development of longer term plans.**



**Blackthorn Drive**

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Further this Project will require MEPA review. As MEPA does not allow for the segmentation of projects, this review will consider the full build-out potential of the site, including access/egress and mitigation. While projects cannot be segmented MEPA can grant a Phase I waiver if it feels the project meets certain conditions. It is our understanding that the applicant is considering a Phase I waiver to allow for the development of the Residence at Park Central prior to the larger project undergoing an exhaustive MEPA review.

One of the factors that MEPA will take into consideration while weighing a Phase I waiver request is:

*(c) the Project is severable, such that phase one does not require the implementation of any other future phase of the Project or restrict the means by which potential environmental impacts from any other phase of the Project may be avoided, minimized or mitigated<sup>1</sup>*

GPI would suggest that the current access plan of the Residence at Park Central, as a Phase I of a larger development, could be considered to restrict the means by which potential environmental impacts (traffic) from any other phase of the Project may be avoided if an automated gating system were not committed to at this point. As MEPA will seek comment from the Town before granting a Phase I waiver, the Town may wish to consider raising this concern.

GPI would also like to note all parties (MassDOT, the Town and the Applicant) should continue to discuss the future of Park Central Drive egress to seek a resolution to this matter prior to the construction of this Project. The most reasonable and preferred access to the site from Route 9 would be from the extension of Park Central Drive. Clearly however if egress from Park Central Drive to Turnpike Road (Route 9) westbound were to be eliminated at a future date it would have dramatic ramifications to egress not only from this site, but to also other commercial properties which currently utilize Park Central Drive. This includes Park Central, Red Roof Inn and Cumberland Farms.

As part of the Interstate 495 & Route 9 Interchange Improvement Study<sup>2</sup> completed by MassDOT in November of 2013 the possibility of the closure of the egress from Park Central Drive was identified. This final report however also included a Response to Comments section. Some of these comments and associated responses were specific to the closure of this egress including the following from the Cumberland Gulf Group of Companies:

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<sup>1</sup> 301 CMR 11.00 MEPA Regulations, Section 11.11 Waivers (4) ©

<sup>2</sup> Interstate 495 & Route 9 Interchange Improvement Study Prepared for MassDOT by AECOM, November 2013.

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### Comment:

The Route 9 Corridor Study includes a recommendation to eliminate the right turn exiting from Park Central Drive onto Route 9 westbound. We understand that this change is proposed due to the proximity of Park Central Drive to the I-495 northbound on-ramp; however, there is no history of crashes at this location and your report indicates that no crashes occurred at this intersection from 2007-2009. In fact, there were only three crashes reported at our site driveway during this time. As the crash rates do not indicate any safety deficiencies at this location, we question the need for such a drastic change and the expenses associated with the access road construction.

### *Response:*

*The recommendation to eliminate the right turn exiting from Park Central Drive onto Route 9 westbound is based on its lack of conformance with national and state design standards and the potential safety issue that results, not on the crash history at this location. Determining the final design for this recommendation will require coordination with the Town of Southborough and any property owners that would be affected by the roadway reconfiguration in order to address impacts such as those that are raised in your comments. The connector road will also require the purchase of new right-of-way and would cross an unnamed stream at two locations. Additional environmental studies would be required to determine the extent of impact associated with the stream crossings.*

As the closure of this egress point appears tenuous GPI suggests that the cross connection to Flagg Road be reserved pending the final decision by MassDOT regarding the future of egress from Park Central Drive.