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April 17, 2020  
Via FedEx

Borough of Madison Zoning Board  
50 Kings Road, Room 206  
Madison, NJ 07940

Attn: Zoning Board Secretary

**Re: Circulation and Parking Assessment  
Proposed Burger King Renovations  
317 Main Street (NJ Route 124)  
Block 5101 – Lot 33  
Borough of Madison, Morris County, NJ  
DT # 2766-99-002T**

Dear Zoning Board Members:

Dynamic Traffic has prepared the following assessment to determine the traffic impact and adequacy of access, circulation, and parking associated with renovations to an existing Burger King restaurant located along the south side of Main Street (NJ Route 124) in the Borough of Madison, Morris County, New Jersey (see Figure 1). The site is designated as Block 5101 – Lot 33 on the Borough Tax Maps. The site is currently developed with a 3,601 SF Burger King restaurant with drive-thru. It is proposed to remove 39 SF of the existing building and construct a 33 SF building expansion and replace the existing single order board drive-thru configuration with a dual order board drive-thru configuration (The Project).

The building size will be reduced from 3,601 SF to 3,595 SF as part of the renovations. Access to the site is currently provided via one (1) ingress only driveway and one (1) egress only driveway along Main Street, which will remain as existing. Parking for The Project will be provided via thirty-seven (37) on-site parking spaces.

This assessment documents the methodology, analyses, findings and conclusions of our study and includes:

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.
- The proposed site driveways were inspected for adequacy of geometric design, spacing and/or alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.
- The parking layout and supply was assessed based on accepted design standards and demand experienced at similar developments.

## **Existing Conditions**

Main Street (NJ Route 124) is an Urban Principal Arterial roadway under the jurisdiction of the New Jersey Department of Transportation (NJDOT). In the vicinity of the site the posted speed limit is 35 MPH and the roadway provides one travel lane in each direction with a general east/west orientation. On-street parking is not permitted along either side of the roadway while curb and sidewalk are provided along both sides of the roadway. Main Street provides a straight horizontal alignment and a slightly uphill vertical alignment from west to east. The land uses along Main Street in the vicinity of the site are primarily commercial.

## **Site Generated Traffic**

The proposed improvements at the site are primarily driven by the need to include the modification of the single order board configuration of the drive-thru lane to a double order board configuration. This modification will provide benefits by increasing the efficiency of the customer ordering process that results in the elimination of a gap in the stacking between the pick-up window and the order board. Therefore, the stacking of vehicles will occur more efficiently within the entire system and not be concentrated behind the menu board. This will reduce the queue behind the menu board and reduce the potential for queues extending beyond the capacity of the system.

The proposed improvements will have no appreciable effect on the trip generation aspects of the site. Certainly enhanced service and convenience for the customer makes good business-sense, which may draw limited additional customers that may have previously not patronized the site. Additionally, customers may currently choose to park and walk-in if they see that the drive-thru lane is too long.

The primary purpose of the proposed improvements is to react to a change in customer demand. That change in demand is that the customer base has shifted from park and walk-in to utilizing the drive-thru system.

## **Site Access, Parking and Circulation**

The site plan was reviewed with respect to the site access and on-site circulation design. As noted previously, access to the site will remain as existing via one (1) ingress only driveway and one (1) egress only driveway along Main Street.

The parking lot will be serviced by parking aisles with widths ranging from a minimum of 15.8 feet to a maximum of 21.5 feet for one-way circulation and 60-degree angled parking, and a width of 44.7 feet for two-way circulation and 90-degree parking. These dimensions are in accordance with accepted engineering design standards and will be sufficient to accommodate the traffic volumes anticipated for The Project. The drive-thru system will operate with a counter clockwise flow.

## **Drive-Thru System**

The basic shift in the customer base of the fast-food/quick-serve restaurant industry in customer usage has shifted over the past years from primarily park and walk-in to drive-thru. In the past, the drive thru usage approximated 40-50% of customers but has since increased to over 65% of the customers.

The physical stacking capacity of the proposed drive-thru system will accommodate nine (9) cars within the drive-thru system versus the six (6) cars that can be accommodated at the existing single-lane drive-thru system. Furthermore, the increased efficiency of the double-order lanes will have a significant beneficial effect in eliminating stacking beyond the capacity of the drive-thru stacking lane. The increased efficiency in the food-ordering process produced by the double-order lanes will eliminate gaps in the stacking line of vehicles and decrease customer service times to allow vehicles to move through the drive-thru system quicker, thereby reducing queues behind the order board.

## **Parking**

The Borough of Madison Ordinance sets forth a parking requirement of 1 parking space per 2.5 seats or 1 parking space per 180 SF of GFA, whichever is greater. Based on number of seats, this equates to a parking requirement of 29 spaces for the proposed 72 seats. Based on square footage, this equates to a parking requirement of 20 spaces for the proposed 3,595 SF restaurant. As such, the requirement of 29 spaces based on seats was utilized. The site as proposed provides 37 parking spaces inclusive of 2 ADA compliant spaces and the Ordinance requirement is exceeded.

Furthermore, national parking demand data has been collected by the Institute of Transportation Engineers (ITE) within their publication *Parking Generation, 5<sup>th</sup> Edition*. This publication establishes peak parking demands for multiple land uses based upon different independent variables, such as GFA and employees. For Land Use Code 934 – Fast-Food Restaurant with Drive-Through Window, ITE sets forth an average peak parking demand of 0.44 vehicles per seat. This equates to a demand of 32 parking spaces. Thus, it is concluded that the proposed 37 spaces will be sufficient to support the maximum anticipated demand of The Project.

It is proposed to provide parking stalls with dimensions of 9'x18', which meets the Ordinance requirement and as such will adequately serve the anticipated site traffic.

## **Findings**

Based upon the detailed analyses as documented herein, the following findings are noted:

- The proposed improvements to the Burger King Restaurant will result in improved efficiency of the site with the implementation of the double order lane which will reduce drive-thru queuing.
- Access to the site will remain as existing via one (1) ingress only driveway and one (1) egress only driveway along Main Street.
- As proposed, The Project's site driveways and internal circulation have been designed to provide for safe and efficient movement of vehicles on-site.
- The proposed parking supply and design is sufficient to support the maximum anticipated demand and is consistent with past experience at similar developments.

## Conclusion

Based upon our Circulation and Parking Assessment as detailed in the body of this report, it is the professional opinion of Dynamic Traffic that the adjacent street system of the Borough of Madison and NJDOT will not experience any significant degradation in operating conditions with the redevelopment of the site. The site driveways are located to provide safe and efficient access to the adjacent roadway system. The site plan as proposed provides for good circulation throughout the site and provides adequate parking to accommodate The Project's needs.

If you have any questions on the above, please do not hesitate to contact me.

Sincerely,

**Dynamic Traffic, LLC**

A handwritten signature in black ink, appearing to read 'C Chase', with a horizontal line extending to the right.

Corey M. Chase, PE  
Principal  
NJ PE License 47470

CMC;cgh  
Enclosures

c: Jonathan Sorkin (via email w/encl.)  
Joe Sparone/RJ Colucco (via email w/encl.)  
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Irving Gama (via email w/ encl.)