

C1026-023
December 22, 2022

Karen Johnson, AICP
Charter Realty & Development
1666 Massachusetts Ave – Suite 6A
Lexington, Massachusetts 02420

Re: **Traffic Statement – Starbucks & Chipotle Modifications
Medway Commons – 65 Main Street, Medway, Massachusetts**

Dear Karen:

On behalf of Charter Realty & Development, Tighe & Bond has prepared this traffic impact statement to review the potential impact of modifications to the existing Medway Commons retail plaza located at 65 Main Street in Medway. This statement is provided to identify the net traffic decrease created by the redevelopment of the former McDonald's restaurant site as a Chipotle and an as yet unknown restaurant tenant, and to provide analysis of existing demand at the Starbucks site to remain and identify the positive impact of proposed Starbucks drive-through lane improvements.

Existing Conditions

The Medway Commons shopping center includes a Shaw's grocery store, a CVS pharmacy, a childcare center currently under construction, and a mix of retail, restaurant, and service uses. The plaza is served by a single access driveway intersecting Main Street (Route 109) at a four-way intersection under traffic signal control, with a driveway serving a Walgreens pharmacy opposite the Medway Commons driveway. The Starbucks and former McDonald's restaurant parcels are at the northeastern edge of the plaza, bordered by a site circulating drive to the south and Main Street (Route 109) to the north. No direct access is provided to Main Street from the Starbucks or former McDonald's parcels. Four driveways intersect the two parcels and the site circulating driveway, from west to east: a one-way exit driveway to the west of the former McDonald's building; a two-way driveway between the McDonald's and Starbucks buildings; a two-lane exit driveway from the Starbucks drive-through window; and a two-way driveway to the east of the Starbucks building. The site circulating driveway continues to the east beyond the eastern Starbucks driveway to the western edge of the Shaw's building, providing access to Shaw's frontage driveway and rear loading area.

Two-way circulation is provided around the Starbucks building, which also houses an Orangetheory Fitness location. One-way counterclockwise circulation exists around the former McDonald's building, matching circulation of the former restaurant's drive-through operation. Starbucks drive-through vehicles enter from the two-way driveway between the two buildings, then loop around to access the Starbucks drive-through on the west side of the building and exit to the site circulating roadway.



Trip Generation

To determine the potential impact of the proposed re-use of the McDonald's site for other restaurant uses, trips generated by the prior and proposed uses were estimated using the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, 2021. Land-Use Codes (LUC) 930 – Fast Casual Restaurant, 933 – Fast Food Restaurant without Drive-Through Window, and 934 – Fast Food Restaurant with Drive-Through Window, were considered for the prior and proposed trips of the McDonald's site.

Trips generated for the former 3,749 square foot (sf) McDonald's use were estimated using LUC 934, Fast Food Restaurant with Drive-Through Window. As previously noted, the redevelopment of the former McDonald's building includes a Chipotle and an as yet-unnamed additional restaurant tenant. The Chipotle will promote the brand's Chipotlane concept, where customers can place their order through the Chipotle website or mobile app, then pick it up at a window without leaving their car. This differs from the typical Chipotle site, which does not offer a drive-through/pick-up window and requires the customer to go inside to either order at a counter or pick up from a designated pick-up area for website and mobile orders. While the Chipotlane concept retains the ability to order and eat inside, it is primarily marketed towards pick-up orders. LUC 930, Fast Casual Restaurant, is best aligned with the typical Chipotle operation; however, the introduction of a drive-through lane requires consideration of LUC 934 as well. A comparison of these two LUCs for the proposed 2,530 sf Chipotle reveals that LUC 934 has a greater rate of expected trips for both the overall day and for the weekday afternoon peak hour; as such, LUC 934 has been utilized to generate trips for the proposed use in order to present the most conservative assumption.

The remaining 1,219 sf is anticipated to be a restaurant use with walk-in, counter order service, but will not have a drive-through or pick-up window. LUC 933, Fast Food Restaurant without Drive-Through Window, is most appropriate for this anticipated use. Both proposed uses of the former McDonald's site are not anticipated to be open during weekday morning hours, so no trips are predicted for the weekday morning peak hour for the proposed uses.

As shown in Table 1, the former McDonald's use would be expected to generate approximately 167 trips in the weekday morning peak hour, 124 trips in the weekday afternoon peak hour, and 1,753 trips on a typical weekday. The redevelopment of the site as a Chipotle and additional restaurant tenant results in a reduction of all 167 trips (85 entering, 82 exiting) in the weekday morning peak hour, no change in the weekday afternoon peak hour, and an overall decrease of 21 weekday trips. The actual change in overall weekday trips will likely be greater than predicted, since the two proposed restaurant uses do not operate during the typical morning peak hour. Most importantly, they do not operate at the same time as the typical peak demand at the adjacent Starbucks site.

TABLE 1
Site-Generated Traffic Summary

Existing - 3,749 SF McDonalds			LUC 934
Peak Hour Period	Enter	Exit	Total
Weekday Morning	85	82	167
Weekday Afternoon	64	60	124
Weekday	877	876	1,753
Proposed - 2,530 SF Chipotle			LUC 934
Peak Hour Period	Enter	Exit	Total
Weekday Morning	0	0	0
Weekday Afternoon	44	40	84
Weekday	592	591	1,183
Proposed - 1,219 SF Fast Food without Drive-Through			LUC 933
Peak Hour Period	Enter	Exit	Total
Weekday Morning	0	0	0
Weekday Afternoon	20	20	40
Weekday	275	274	549
Net Vehicular Trips			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	-85	-82	-167
Weekday Afternoon	0	0	0
Weekday	-10	-11	-21

Source:

Land Use -

Land Use -

Institute of Transportation Engineers,
Trip Generation, 11th Edition, 2021
934 [Fast Food Restaurant with Drive-Through Window]
933 [Fast Food Restaurant without Drive-Through Window]

Starbucks Drive-Through Operation

An important consideration of the proposed redevelopment of the McDonald's site is its interaction with the Starbucks site, and more specifically with Starbucks drive-through operation. Tighe & Bond conducted on-site observations of the existing Starbucks drive-through operation on a typical Friday and Saturday. Observations were conducted from 7:00 AM to 11:00 AM on Friday, October 21st, 2022 and from 8:00 AM to 12:00 PM on Saturday,

October 22nd, 2022. Observation days and times were chosen to align with the busiest days and times as identified by local Starbucks management.

During observations, cones were present across the two-way driveway between the McDonald's and Starbucks building. This requires Starbucks patrons to enter at the eastern driveway, travel along the northern side of the Starbucks building, continue along the northern side of the former McDonald's in a counterclockwise direction, and cross the two-way driveway to access the Starbucks drive-through, or enter the existing queue, if present. The existing drive-through has a storage capacity of six vehicles. When the queue exceeds six vehicles, it extends across the blocked driveway and along the McDonald's building, generally in the area of the former McDonald's drive-through. It is understood that during high demand periods prior to the McDonald's closure, Starbucks drive-through vehicles would queue through the driveway to the main site circulation driveway outside of the Starbucks and McDonald's parking area. The current configuration eliminates conflicts between drive-through vehicles and entering vehicles and takes advantage of the currently vacant McDonald's site.

Queue observations were conducted based on 15-minute intervals, with a typical and maximum queue observed for each interval. Observations revealed a typical queue ranging between two and ten vehicles on Friday, and between three and eight vehicles on Saturday. Maximum queues exceeding six vehicles were observed from 7:15 to 9:30 AM and from 10:15 to 10:30 AM on Friday, with overall maximum queues during the observed intervals ranging from four to thirteen vehicles. Maximum queues exceeding six vehicles were observed from 8:15 AM to 12:00 PM on Saturday, with maximum queues during the observed intervals ranging from five to nine vehicles.

Proposed Site Modifications

The proposed redevelopment of the former McDonald's building generally retains the layout of the former site, with counterclockwise circulation in the parking lot and a drive-through/pick-up window at the southeast corner of the building. This configuration allows a drive-through lane to be maintained around three sides of the building while still allowing adequate room for entering vehicles and parking maneuvers while customers are potentially queued.

Site plans currently under development envision a modification to the Starbucks site to provide a similar configuration of counterclockwise circulation. One-way circulation is proposed along the north side of the building, with angle parking proposed similar to what exists to support one-way, counterclockwise operation at the Chipotle building. The Starbucks drive-through entry is modified so that vehicles will enter from the driveway to the east of the building, circulate counter-clockwise and enter the drive through from the northwest corner of the building. While the two-way driveway is maintained between the Starbucks and Chipotle buildings, the one-way configuration around both buildings restricts entry to the Starbucks parking area from this driveway. The counter-clockwise circulation and drive-through queueing of both buildings would be similar. The proposed modifications to the Starbucks drive-through create queueing space for ten vehicles before impacting existing or proposed parking, unlike current operation, additional queueing will potentially impact Starbucks operation, but not impede operations for Chipotle or the other restaurant tenant.

Conclusion

Based on the trip generation estimates presented herein, the proposed redevelopment of the former McDonald's restaurant site will result in a net decrease in vehicle trips over the prior McDonald's use; specifically, in the weekday morning peak hour as the proposed restaurant uses do not typically offer service during the weekday morning peak period from 7:00 AM to

9:00 AM. This is especially beneficial to overall site operations, as there will be little to no demand for the Chipotle site at the same time as the typical peak demand at the adjacent Starbucks site.

For the Starbucks site, observations on a typical Friday and Saturday revealed average queues between two and ten vehicles, with a maximum queue reaching 13 vehicles between 7:30 and 7:45 AM on Friday. Existing queueing is accommodated by blocking the two-way driveway between the two sites and allowing vehicles to queue along the former McDonald's building. Proposed site modifications to the Starbucks site support vehicle circulation around the Starbucks building and queueing along the north side of the building, with available space to support a ten-vehicle queue before impacting parking. This proposed available storage contains the average queue based on existing site observations. Queues exceeding ten vehicles may impact Starbucks parking but will not impact the Chipotle site due to proposed circulation modifications.

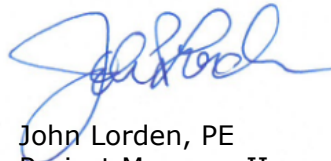
In summary, proposed redevelopment results in a net decrease of trips over prior McDonald's operations, with no impact to operation on area roadways. Starbucks drive-through modifications effectively accommodate existing observed queues on-site, while eliminating potential conflicts in operation between the Starbucks and proposed Chipotle sites.

Sincerely,

TIGHE & BOND, INC.



Greg E. Lucas, PE, PTOE, RSP1
Senior Project Manager



John Lorden, PE
Project Manager II

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