

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION



d. Policy, Planning and Sustainability Administration

MEMORANDUM

TO: District of Columbia Board of Zoning Adjustment

FROM: Samuel Zimbabwe *sz*
Associate Director, PPSA
District Department of Transportation

DATE: August 31, 2012

SUBJECT: BZA Case#18395
2441 Market Street, N.E.

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APPLICATION

The Application of CWC WDC LLC (the "Applicant") pursuant to 11 DCMR § 3104.1, is seeking a special exception under sections 706, 726, and 2302, to allow the construction of a new gasoline station in the C-2-B District on a portion of the premises located at 2441 Market Street, N.E. (Square 4327, lot 5). The Applicant is currently constructing a 154,000 square foot Costco Wholesale store at the site premises, which is part of a larger 432,000 square foot shopping center – the Shops at Dakota Crossing. The Applicant is requesting a special exception to install a 16-pump gasoline filling station as an ancillary use to the approved Costco Wholesale store.

RECOMMENDATION

The District Department of Transportation (DDOT) has no objection to the special exception request for a gas station, provided the trips generated by the gas station are mitigated in coordination with the planned mitigations associated with the Shops at Dakota Crossing, currently under construction. DDOT has reviewed the impacts of the new gas station and determined that most of the trips generated by the gas station will not be new, but rather will be vehicles that are already on the roadway network for other reasons (e.g. commuting, shopping, etc.). These pass-by trips and any new trips generated by the gas station will have a small and manageable impact on the District's roadway network. To ensure that the impacts are manageable, DDOT recommends that mitigation measures at the intersections of 33rd Place/South Dakota Ave and 33rd Place/Fort Lincoln Drive are incorporated into the design and signal timing of the intersections.

BOARD OF ZONING ADJUSTMENT
District of Columbia
CASE NO. 18395
EXHIBIT NO. 27

TRANSPORTATION ANALYSIS

DDOT is committed to achieving an exceptional quality of life in the nation's capital by encouraging sustainable travel practices, constructing safer streets and providing outstanding access to goods and services. As one means to achieve this vision, DDOT works through the zoning process to ensure alternative modes are adequate to accommodate new travel demand while discouraging single occupancy vehicle trips.

Site Access

Access to the gas station area would be from the two full-access intersections proposed with the approved Shops at Dakota Crossing. In addition, a site driveway is proposed off of the westbound New York Ave off-ramp to South Dakota Ave. This driveway will be the site ingress point for gasoline delivery trucks. Delivery trucks will exit the site via 33rd place to South Dakota Ave and then to eastbound New York Avenue. The Applicant provided truck turn movements to indicate that turns are feasible within the confines of the proposed entrance from the New York Avenue off-ramp. Additionally, all truck turnaround movements will occur on-site, as is DDOT's preference.

Roadway Capacity and Operations

The Applicant's traffic impact study provided existing traffic conditions, including vehicle counts, intersection Level of Service (LOS), and queue lengths, for a previously agreed-upon study area. To these existing conditions, the Applicant added approved background developments that may impact the study area, planned road improvements, and a regional annual growth factor to the existing arterials in order to forecast a future year background condition, absent the proposed gas station. To this background condition, the Applicant added forecasted trips on the local road network generated by the proposed project. These additional forecasted trips were identified using case studies from similar Costco gas stations. DDOT is in general agreement with this overall approach to estimating the roadway impact from the Applicant's proposed development.

Trip Generation

In order to forecast the net new trips from the gas station onto District roadways, the Applicant utilized trip generation rates based on another Costco gas station in the greater Washington DC area that had average daily traffic on adjacent roadways that were comparable to the Site. Using case studies for unique land uses, such as club member-only gas stations, is a preferred method over employing the industry standard Institute of Transportation Engineers (ITE) *Trip Generation Manual*. Based on this case study, the Applicant employed a peak hour trip generation rate of 12.3 AM trips per fuel pump and 15.8 PM trips per fuel pump. DDOT notes that these trip generation rates are *higher* than those found in the ITE *Trip Generation Manual*. To these trips, the Applicant applied a reduction factor of 90% due to internal capture and pass-by trips. For the proposed development, internal capture trips refer to trips where two or more trips are combined – such as going to a Costco wholesale store and then filling up at an adjacent Costco gas station. Pass-by trips are intermediate trips that are diverted from a primary destination – for example, stopping at a Costco gas station on the way to work. Hence, these trips are not *new* trips to the local area roadway network, but trips that are new *only* to the site driveways. The internal capture and pass-by reductions were based on surveys of other Costco gas stations. DDOT notes that the Applicant did not take any trip reduction credit for the fact that the gas station is replacing a proposed undesignated pad site whose trip generation would have been part of the larger Shops at South Dakota Crossing. DDOT is in general agreement with this conservative approach and with the reduction factors and net *new* trip generation estimate proposed by the Applicant.

Study Area

Per DDOT's request, the Applicant looked at 3 intersections

1. Bladensburg Road/V Street/25th Place;
2. South Dakota Ave/33rd Place;
3. Fort Lincoln Drive/33rd Place.

These intersections were chosen based upon their proximity to the Site and the relative low number of new trips that the proposed gas station is expected to generate.

Level of Service

The Applicant utilized Highway Capacity Manual software to analyze the Level of Service (LOS) of the study area intersections, per the DDOT Design and Engineering Manual. The Applicant compared expected LOS for year 2013 with and without the proposed Costco gas station. The Applicant's impact study shows that the intersection of South Dakota Ave and 33rd Place will degrade from an LOS D to an LOS E, due to the distribution of pass-by trips diverted to the gas station which adds trips to southbound approach of 33rd Place. Because mitigation measures at this intersection will have to be implemented due to the construction of the shopping center, DDOT recommends that any additional mitigations resulting from the additional trips generated by the proposed gas station be included as part of the shopping center mitigation efforts. Similarly, the intersection of Fort Lincoln Drive and 33rd Place (which will also serve as an entrance to the larger shopping center), will see additional trips due to the gas station. When this intersection gets rebuilt and re-timed, DDOT recommends that the design and signal timing plan also incorporates the impact of the trips generated by the proposed gas station.

Vehicle Queuing on District Roads

In addition to an LOS analysis, the Applicant examined the effect of the proposed gas station on the queue lengths at each intersection approach and compared them to the available vehicle storage capacity. Sufficient capacity exists at all of the approaches with the exception of the southbound left-turn lane of 33rd Place at South Dakota Ave, where insufficient capacity exists in future conditions with or without the proposed gas station. The inclusion of the gas station increases the 95th queue length approximately 30 feet over the background condition. The increase in queue length will not result in spillover into upstream intersections but mitigation should be included.

CONCLUSION

The District Department of Transportation (DDOT) has no objection to the special exception request for a gas station. DDOT recommends that when the Shops at Dakota Crossing, currently under construction, are completed that the intersections of 33rd Place/South Dakota Ave and 33rd Place/Fort Lincoln Drive are mitigated to address the new and pass-by vehicle trips generated by the proposed gas station. The Applicant should work with DDOT in the public space permitting process to gain DDOT approvals for necessary mitigation measures.

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