

## Jasmine Forbes

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**From:** John Schlichting  
**Sent:** Thursday, April 29, 2021 4:10 PM  
**To:** Linda M. Plummer; galacticfunkboots@yahoo.com  
**Cc:** thefaganz@gmail.com; Jud Ashman; Gregory Mann; Jasmine Forbes  
**Subject:** RE: Car wash concept plan SP-8819-2021 at 601-607 S. Frederick Ave & Central Ave

Good afternoon Linda,

I am happy to meet with you on the proposed Car Wash but the discussion would have to be limited to process at this time. The application for the proposed Concept Site Plan has been formally filed and accepted, and the Mayor & Council's record is now open.

It is our practice to ask our applicants do their public outreach before filing which did indeed happen in this case. The applicant Brett Schaechter met with the East Gaithersburg United group (Chazz's group) on January 14, and hosted a community outreach meeting on February 4. It is my understanding Brett has also done a lot of outreach with various individuals on an informal basis as well.

The application has gone through one round with the City's Design Review Committee and comments have been issued to the applicant. The comments are not discretionary and are based on adherence to City codes and environmental standards. A Public Hearing has not been scheduled and we can't predict at this time when it will be scheduled. All the appropriate advertising and notifications will be done once it is scheduled, also in accordance with our code.

I forwarded the emails below to Planner Jasmine Forbes for inclusion in the Mayor & Council's record, which will remain open indefinitely at this time.

All the best,  
John



**John Schlichting** | Director, Planning and Code Administration

City of Gaithersburg | 31 S Summit Avenue | Gaithersburg, MD 20877

Desk (240) 805-1062 | Mobile (240) 421-0812

[John.Schlichting@GaithersburgMD.gov](mailto:John.Schlichting@GaithersburgMD.gov)

**From:** Linda M. Plummer <lplmp@aol.com>  
**Sent:** Thursday, April 29, 2021 10:08 AM  
**To:** galacticfunkboots@yahoo.com  
**Cc:** John Schlichting <John.Schlichting@gaitthersburgmd.gov>; thefaganz@gmail.com; Jud Ashman <Jud.Ashman@gaitthersburgmd.gov>  
**Subject:** Re: Car wash concept plan SP-8819-2021 at 601-607 S. Frederick Ave & Central Ave

This email is from an EXTERNAL source. Please use caution when opening attachments, clicking links, or responding.

Hi Chazz:

We have asked for a meeting with John Schlichting to follow-up with our interests and concerns.

The subject parcel would affront two of Gaithersburg's most prominent churches on #355. It would also cross over a stream of water that crosses Central Avenue. This makes no sense at all.

Thanks  
Linda

-----Original Message-----

From: Chazz <[galacticfunkboots@yahoo.com](mailto:galacticfunkboots@yahoo.com)>

To: Linda M. Plummer <[lpmp@aol.com](mailto:lpmp@aol.com)>

Sent: Thu, Apr 29, 2021 9:50 am

Subject: Re: Car wash concept plan SP-8819-2021 at 601-607 S. Frederick Ave & Central Ave

Hi Linda

Thanks for sending this to me.

Can you give me a little context? Is the NAACP taking an official position on the proposed car wash and on Lake Forest Mall? I'm wondering if it makes sense for you to meet with our citizen's group to understand what each of us are working on as it relates to the City of Gaithersburg and think through ways we can work together.

-Chazz

On Tuesday, April 27, 2021, 05:45:01 PM EDT, Linda M. Plummer <[lpmp@aol.com](mailto:lpmp@aol.com)> wrote:

Chazz- President of EGU

We oppose this initiative....

FYI

My NAACP officers are cc'd on this communication.

Thanks  
Linda

-----Original Message-----

From: Linda M. Plummer <[lpmp@aol.com](mailto:lpmp@aol.com)>

To: [mayorandcouncil@gaithersburgmd.gov](mailto:mayorandcouncil@gaithersburgmd.gov) <[mayorandcouncil@gaithersburgmd.gov](mailto:mayorandcouncil@gaithersburgmd.gov)>

Cc: [carprin@yahoo.com](mailto:carprin@yahoo.com) <[carprin@yahoo.com](mailto:carprin@yahoo.com)>; [cherribranson@hotmail.com](mailto:cherribranson@hotmail.com) <[cherribranson@hotmail.com](mailto:cherribranson@hotmail.com)>;

[cicsew@gmail.com](mailto:cicsew@gmail.com) <[cicsew@gmail.com](mailto:cicsew@gmail.com)>; [jfloyd3208@aol.com](mailto:jfloyd3208@aol.com) <[jfloyd3208@aol.com](mailto:jfloyd3208@aol.com)>; [lsavage09@yahoo.com](mailto:lsavage09@yahoo.com) <[lsavage09@yahoo.com](mailto:lsavage09@yahoo.com)>

Sent: Tue, Mar 16, 2021 5:12 pm

Subject: Fwd: Car wash concept plan SP-8819-2021 at 601-607 S. Frederick Ave & Central Ave

Hello councilmembers:

We have received a dozen e-mails and calls regarding this proposal. We have had an opportunity to preview the area and have some very serious concerns. Please consider this as our recommendation to oppose this initiative.

However, we are more interested in a proposal to make the current disheveled Lake Forest Mall site into something that the city/county can use for large events, and also be able to hold our MCPS

graduations, without having our families travel to DC or Frederick. This type of development will pay for itself over the years and will speak to the prosperity of the City in making a more conducive investment that works for the members of our community.

I look forward to hearing from you in the near future.

Thank you  
Linda Plummer  
MC/NAACP

Hi Linda

It was nice speaking with you this morning. As a long time active resident of Gaithersburg, I wanted to make you aware of the Proposed Car Wash at 601-607S. Frederick Ave & Central Ave. **Concept Plan, SP-8819-2021** has been submitted to the City Planners and review by Mayor Ashman and the City Council. The applicant's plan is to build a 150 ft Tunnel Wash for Exterior washes only and "parking lot" as they are calling will have 21 outside vacuums for customers to dry, bring their own products to clean the wheels, door jams and wax cars. He is projecting 100 cars per hour. This business is on the side of Industrial and not commercial. It should not be allowed in CB Zoning.

### **Environment Impact**

The site backs up to the Muddy Branch Creek and Watershed. He is asking for an environmental waiver since part of the stormwater requirement can not fit on the site. What is not mentioned is the run off of customers finishing their own cars. Customer will bring their own chemicals/silicones which may not be environmental friendly since they cost more. With the proximity of the Muddy Branch Creek, these products will go UNTREATED into the water way. Due the high volume, cars exiting on Central will be dripping chemicals causing the road to be always wet/icy and going into the Creek . The applicant is not able to capture this run off or addressing it. See attached photos

### **Residential/Church Community**

The site backs up to a residential community. Many of residents are saying "What is the Mayor and City Council thinking?" Those on PoplarWood Place, PoplarWood Ct and Central Ave will be of sight and sound of the wash. Besides the blowers, which are in the tunnel and not a "room" that has a door, there is 21 outside vacuums with air hoses and customers' stereos playing louder. Even with limiting operating hours, this noise will be disruptive. The applicant will have signs and an employee to monitor, but it will not be effective or safe. This was the case in The City of College Park giving noise citations from loud music disrupting the residents to the car wash owner. So many noise citations were given to the car wash owner, it went to court. It was determined that staffing additional hours was not effective or safe. Incidents happen for example on Saturday afternoons and Sunday mornings in broad daylight. It is a police intervention situation and not the car wash operator. "We are car wash operators. We are good with electricity, plumbing and chemistry. We are not social workers" ( You Got Noise and It's All your Fault. Northeaster CarWasher, Winter 2021). Would you want a car wash in your backyard or disrupt Sunday Service?

### **Traffic**

Large Express Car Washes are based on high volume. Traffic will be heavy, especially in the afternoon on that stretch of 355 to turn onto Central. Going South on 355 from Central is prohibited. Customers will do this anyway, causing an increase in accidents, make a UTurn on Deer Park, prohibited too or go down Central through the neighborhood to Deer Park. This will impact residents and Washington Grove School.

### **Employment**

Express Car Washes require very few employees. The primary objective is and condition for success is predicated on large volume of washes with an absolute minimum of labor. This will be offset by competing car wash reducing their current staff due to increase competition. Within a 5 mile radius of this site, there are multiple car washes of all types and income levels providing service to the community.

The corridor into the City will look Industrial as more automotive/manufacturing business will seek permits. Get the opinion from the Police Chief and City Zoning Officials. Many residents of East Gaithersburg are not technology savvy to voice their opposition. Hand written petitions are being submitted to the City.

The disruption and environmental risks are not well served by the community.

The limited employment opportunities will be negligible and very likely be a net negative not only to the residents and business owners but to the City of Gaithersburg tax base. Let's attract a mutually beneficial business base which will advance the economic employment and environmental well- being of our community.

Concerned neighbors of our community.

***KNOPF & BROWN***

401 E. Jefferson Street  
Suite 206  
Rockville, MD 20850

Ph:(301) 545-6100

Fax: (301) 545-6103

David W. Brown  
Sole Practitioner

May 14, 2021

Via Email

[jasmine.forbes@gaitthersburgmd.gov](mailto:jasmine.forbes@gaitthersburgmd.gov)

Jasmine Forbes  
Planning and Code Administration  
City of Gaithersburg  
31 South Summit Avenue  
Gaithersburg, MD 20877

Re: **Concept Plan Application SP-8819-2021**  
**Whip Clean Car Wash – 601/5/7 S. Frederick Avenue**

Dear Ms. Forbes:

This firm represents a number of resident homeowners who live within sight and sound of the automatic car wash being proposed for construction on three lots at 601, 605 and 607 South Frederick Avenue in Gaithersburg. My clients are in opposition to the Concept Plan Application, and have hired a traffic engineer to analyze and memorialize the traffic impacts of the project. I am enclosing herewith a copy of the May 14, 2021 report of the traffic engineer, O.R. George & Associates, Inc. Please place this letter and the report in the permanent file.

Thank you for your assistance with this request.

Respectfully submitted,



David W. Brown  
Knopf & Brown  
401 E. Jefferson Street, Ste 206  
Rockville, MD 20850  
(301) 545-6100  
[brown@knopf-brown.com](mailto:brown@knopf-brown.com)

Attorney for Opposing Neighboring Residents

/enclosure

**O. R. GEORGE & ASSOCIATES, INC.**  
*Traffic Engineers – Transportation Planners*

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9320 Annapolis Road, Suite 320 • Lanham, Maryland 20706  
Tel: (301) 794-7700 • Fax: (240) 467-2689  
E-mail: [ogearge@orgengineering.com](mailto:ogearge@orgengineering.com)

**May 14, 2021**

David W. Brown, Esquire  
**KNOFF & BROWN**  
401 East Jefferson Street, Suite 206  
Rockville, MD 20850

Re: City of Gaithersburg Concept Plan Application No. SP-8819-2021: Whip Clean Express Carwash – Submission on Site Access and Traffic Impact-Related Issues

Dear Mr. Brown:

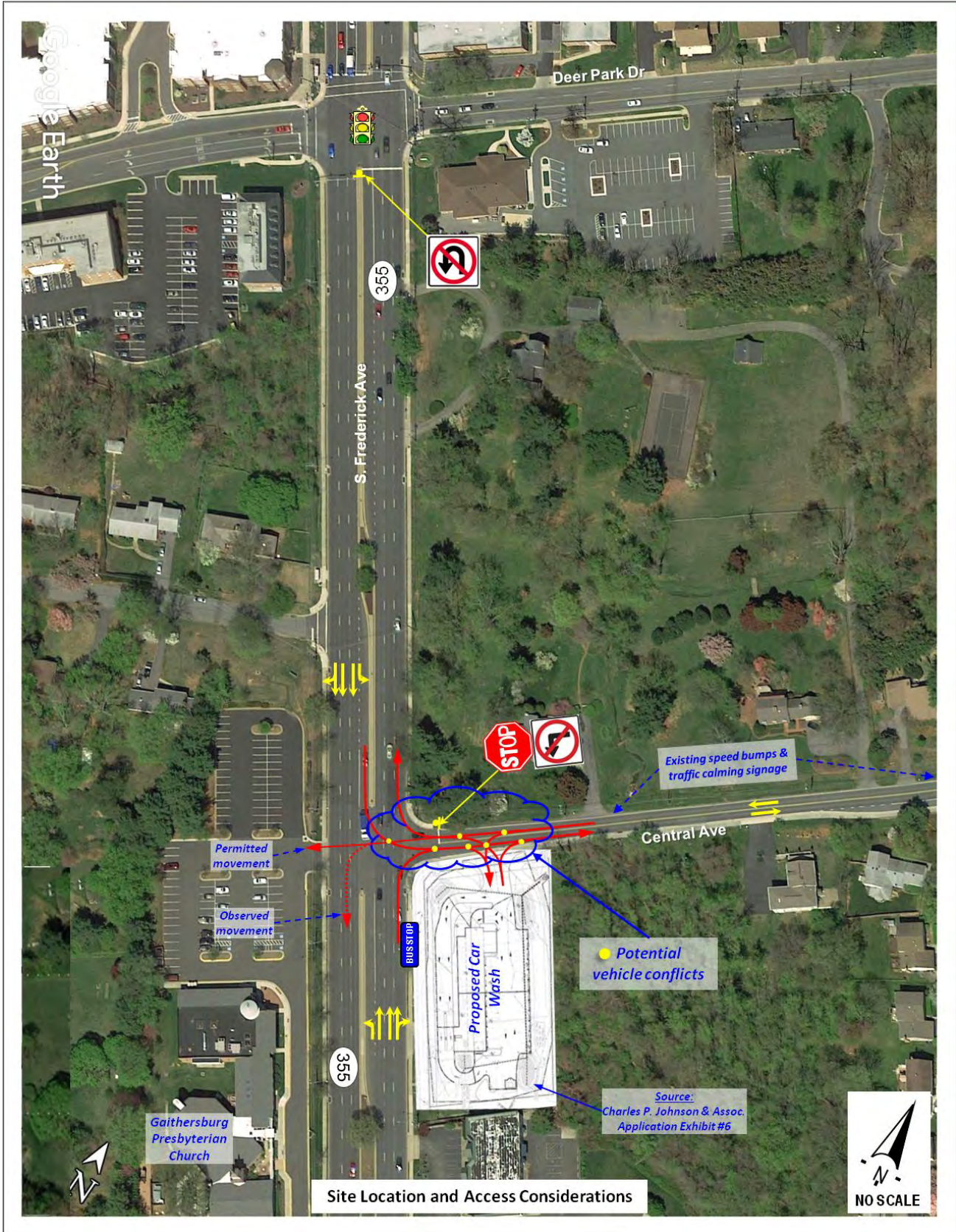
As requested, we reviewed the documents available in the files of the referenced application as of April 30, 2021. We understand that you represent stakeholders who may be impacted by the proposed development, and who have concerns regarding the development plan, particularly relating to the proposed site access, on-site stacking and parking, the likely impact on traffic operations and safety. We therefore visited the site and obtained available traffic data for the adjacent intersection and the connecting roadways. We also had discussions with Mr. Joel Miller (your consultant with National Carwash Solutions) regarding patronage patterns and vehicle processing/throughput factors for the type of carwash proposed. Mr. Miller's input is cited, where appropriate.

We have determined that there have been significant traffic operational and safety issues at the intersection of South Frederick Avenue (MD 355) at Central Avenue for some time; and that these are likely to be exacerbated by the proposed development. We understand that the Applicant will be submitting a Traffic Impact Study later in the application process. However, it is our opinion that a number of issues should be brought to the attention of the City as part of the current review.

We are summarizing our assessment as follows: *i) Recent traffic data and assessment by the Maryland State Highway Administration (SHA) as part of a study of the intersection of South Frederick Avenue at Central Avenue; ii) Applicant's projected site vehicle trip generation; iii) On-site stacking and parking provisions; and iv) Site access and circulation issues that are likely to result.*

**Maryland State Highway Administration Traffic Data and Assessment**

Data available from the SHA website shows that a 24-hour turning movement count was performed at the intersection of South Frederick Avenue (MD 355) at Central Avenue in September, 2018. We understand that the purpose was to address citizen concerns pertaining to egress from Central Avenue. We were not able to obtain a copy of the State's investigation. However, we understand that as a result, signage was installed prohibiting left-turns from Central Avenue onto South Frederick Avenue southbound. The traffic count data is included as Attachment A; and the exhibit on page 2 of this letter shows our inventory of the existing roadway configuration and signage impacting traffic movements within the adjacent roadway network. For context, the exhibit also shows the key vehicular movements that would be generated in the vicinity of the proposed carwash, and this is addressed further on page 4.



Site Location and Access Considerations

Our site visit and review of the State's traffic data (Attachment A) further indicated the following:

- a) We confirmed that the no-left-turn sign for the Central Avenue approach is in place. However, we observed a number of violations of this turn restriction.
- b) We performed a preliminary analysis of the State's traffic count data, and it shows that the 2018 volumes may satisfy one of the State's eight warrants for installing a signal.

With respect to Item b), we note that satisfying a single warrant typically does not lead to the State's approval for signalization. However, this preliminary assessment confirms that there is an operational and potential safety issue that requires additional engineering study. This would include analysis of the crash/accident history for the intersection. *We again note that details of the State's recent investigation will likely provide further insight into the operational and safety issues at this location.*

### **Projected Site Vehicle Trip Generation**

It is generally accepted that a realistic projection of the number of vehicle trips that will be generated by a proposed development is one of the most critical factors in evaluating the adequate functioning of the adjacent roadway network. On page 12 of the Applicant's Statement of Support (under Item 5), reference is made to "projected vehicle trips;" but the number of trips is not quantified in the statement. The Applicant's community outreach meeting presentation of February 4, 2021 includes a table showing estimated vehicle trip generation for the site, a copy of which is included as Attachment B-1 to this letter. The information suggests that the site will generate 39 inbound trips and 39 outbound trips during a typical weekday afternoon peak hour; and this appears to support the Applicant's statement that existing roadway facilities are adequate to serve the proposed project. In view of the critical importance of vehicle trip generation, we wish to comment as follows:

- The source of the Applicant's trip data is the Institute of Transportation Engineers (ITE) Trip Generation Manual. However, it is important to note that the manual recommends that this data should be used with caution, because the data is based on a very limited survey (*of only 3 sites nationwide*). The ITE manual also emphasizes that there is great variation in the equipment and technology and actual operation of the various types of automated carwashes.
- The Applicant's trip data is based on sites having a single tunnel. However, the data does not include any clarifying information regarding the lengths of tunnels that were surveyed. This length is an important factor since it also has a direct bearing on the equivalent number of bays, and on-site stacking and parking requirements.
- ITE recommends that data collected from local sources would typically be "more representative," and therefore more useful in the evaluation of development proposals. For reference, pages extracted from the ITE "*Recommended Practice for Transportation Impact Analyses for Site Development*" are included as Attachments B-2 to B-4 of this letter.
- The Applicant's trip data is representative of traffic conditions occurring during a typical weekday afternoon peak period (i.e., 4:00 - 6:00 PM) between Tuesday and Thursday. This time period is generally considered in assessing Adequacy of Public Facilities. However, National Carwash Solutions have advised us that car washes typically experience their highest demand between Friday and Sunday, when 60% of weekly patronage occurs. Heavy demand also occurs during periods of inclement weather, such as heavy snow and rain falls, severe pollen counts, etc.

The four factors highlighted on the previous page strongly suggest that assessing Adequacy of Public Facilities based solely on typical weekday afternoon peak hours would be highly inappropriate. Furthermore, the City's Traffic Impact Studies Standards and Regulations note that an Applicant may be required to perform an analysis of *"traffic conditions during a different or additional peak period to reflect the location or trip-generation characteristic of the site, existing conditions or background development as generators of traffic."*

### **On-site Stacking and Parking Provisions**

Our assessment of the Applicant's proposed staking and parking provision is based on our review of Exhibit #15 (Circulation Plan and Stacking Plan) and Exhibit #55 (Concept Plan), which also shows the staff's review comments as of April 30, 2021. We note the following:

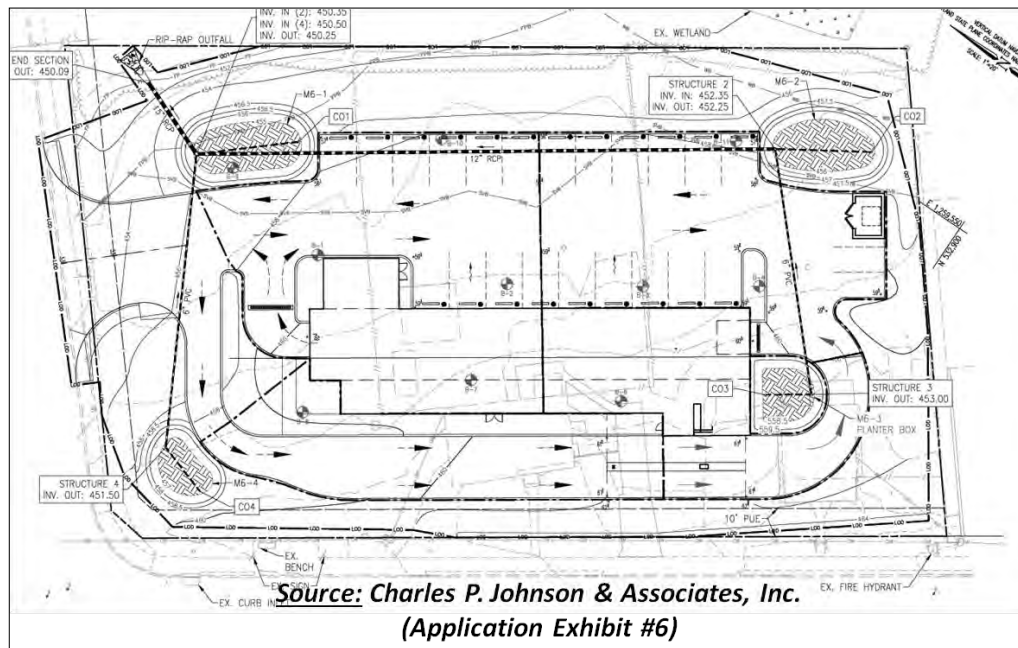
- a) At page 3 of the Applicant's Statement (full paragraph #4), the Applicant states that "approximately 30 vehicle stacking spaces are provided," and that this far exceeds the 9 spaces required by the City's Zoning Ordinance. The 30 stacking spaces are also shown graphically on Exhibit #15.
- b) The 9 spaces cited in Item a) above are based on *Section 24-117(15)g.1 of the City's Zoning Ordinance*. More specifically, the 9 spaces are computed as follows: 3 times the approximate 3-minute wash/dry cycle = (3 x 3-minute wash/dry cycle length) = 9 spaces. *However, the computation appears to assume a single bay, and does not incorporate the equivalent number of bays within the 160-Ft tunnel.*
- c) At the top of page 4 of the Applicant's Statement, the number of bays is stated to be 9; and on Exhibit #55, the number of bays is shown to be 8. If the computation is based on 8 bays, the required number of stacking spaces would be 72 spaces, and 81 spaces for 9 bays.

Based on the above, the City's Zoning Ordinance would require at least 72 on-site stacking spaces, while the site plan provides for approximately 30 spaces.

***With respect to the on-site parking provisions***, the site plan shows a total of 23 spaces (20 Ft x 13 Ft), 21 of which are designated as vacuum stalls. There are no parking spaces reserved for employees or for handicap use. Comments by the City's staff suggest that the size of the spaces could be reduced to the City's standard of 17 Ft x 9 Ft, in part to reduce the impervious area and the resulting impact on the wetland buffer. Our view is that the sizes proposed on the plan would be appropriate to accommodate the vacuuming/cleaning operations, which would typically include the opening of vehicle doors, maneuvering of suction hoses, trash receptacles, etc. We also note that the vacuum stalls are not used for parking, per se. Therefore, the number of stalls should be determined based on supporting industry standards and data that show the relationship between overall carwash patronage and demand for vacuum service. We discuss this further in the following section dealing with on-site circulation.

### **Site Access and Circulation Issues**

The Applicant's site plan shows that the site will be accessed exclusively off Central Avenue, via a single lane inbound/outbound driveway that will be situated approximately 100 Ft. from the east side curb-line of MD 355. For convenience, the site plan is shown on page 5, and potential access and circulation issues are discussed following the exhibit.



*Issue #1 – Potential Vehicle Throughput:* Based on the Applicant’s description of the site/equipment operations at page 4 (paragraph 3), the site has a capacity to process between 90 and 120 vehicles per hour. This is consistent with your carwash consultant’s estimate of approximately 130 vehicles per hour. National Carwash Solutions also estimates that in excess of 60% of carwash patrons would also utilize the vacuum stalls. In addition, an average of 10 non-carwash patrons would access the site to use the vacuum stalls. Using the Applicant’s estimate, approximately 80 vehicles would use the 21 vacuum stalls per hour. This suggests a fairly high turnover of use, which could create significant traffic flow in the area of the entrance; and this would compound the on-site stacking situation that was discussed earlier.

*Issue #2 – Queuing and Storage Demand:* As noted earlier, the Applicant’s site plan shows a layout, which allows for stacking of approximately 30 vehicles between the driveway entrance and the tunnel. We have already shown that provision should be made for stacking a minimum of 72 vehicles within the site. See page 4, Item (c) of this letter. This clearly indicates that there is the potential for considerable spillover of vehicle queues onto both Central Avenue and even onto South Frederick Avenue.

It is our view that the above two issues should be thoroughly addressed in the Applicant’s pending Traffic Impact Study. *On a more general note, we also did a fairly detailed search of existing carwash sites (of various types) located within the City of Gaithersburg and Montgomery County. We could find no location with its sole/exclusive access off a residential street. It is therefore our view that it would be important to thoroughly address this aspect of the development proposal.*

**General Comparison – Bowie Location vs Proposed Gaithersburg Site**

Earlier in this letter, we made reference to the Applicant’s community outreach presentation of February 4, 2021. (See page 3, paragraph 3.) The presentation included considerable information regarding the favorable operation of the Applicant’s site located in Bowie, Prince George’s County, Maryland. The operations at the proposed Gaithersburg site will be substantially different from the Bowie location.

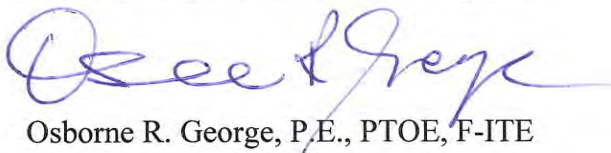
The principal differences between the access opportunities available to the two sites are highlighted in the table below. For reference, a map illustrating the site layout and access situation of the Bowie location is included as page 7 to this letter.

Existing Whip Clean Bowie Site	Proposed Whip Clean Gaithersburg Site
<ul style="list-style-type: none"> <li>Site access is via the southbound roadway of Crain Highway (a freeway-type facility) <i>and</i> an arterial roadway (i.e., Mitchellville Road).</li> </ul>	<ul style="list-style-type: none"> <li>Site access is exclusively off a minor residential collector roadway (i.e., Central Avenue), quite close to residential uses.</li> </ul>
<ul style="list-style-type: none"> <li>Site is part of mixed commercial center, with multiple points of ingress and egress.</li> </ul>	<ul style="list-style-type: none"> <li>Site is stand-alone, with a single point of ingress and egress.</li> </ul>
<ul style="list-style-type: none"> <li>Site ingress and egress movements are well separated, and the vacuum stall area is self-contained, allowing for efficient circulation.</li> </ul>	<ul style="list-style-type: none"> <li>The ingress and egress movements to the carwash, the vacuum stalls and the site entrance are all in close proximity.</li> </ul>
<ul style="list-style-type: none"> <li>Site has a single washing/processing bay.</li> </ul>	<ul style="list-style-type: none"> <li>Site has an equivalent of 8 to 9 bays.</li> </ul>
<ul style="list-style-type: none"> <li>Site has considerable opportunity for on-site queuing and storage.</li> </ul>	<ul style="list-style-type: none"> <li>Site has very limited on-site queuing and storage.</li> </ul>
<ul style="list-style-type: none"> <li>Self-service vacuum stalls are completely separate from other ingress and egress movements.</li> </ul>	<ul style="list-style-type: none"> <li>Self-service vacuum stalls are immediately adjacent to all other ingress and egress movements.</li> </ul>
<ul style="list-style-type: none"> <li>Use of vacuum stalls is expected to be low due to available full-service option.</li> </ul>	<ul style="list-style-type: none"> <li>Use of self-service vacuum stalls will likely be high, at 65%± per the carwash consultants.</li> </ul>

In conclusion, we emphasize that we have raised the issues presented herein with the full understanding that the Applicant is yet to submit a Traffic Impact Study. However, it is our opinion that these issues should be given due consideration at this stage, and appropriately addressed as the development review process moves forward.

Please let us know if you have questions or require further information. Thank you!

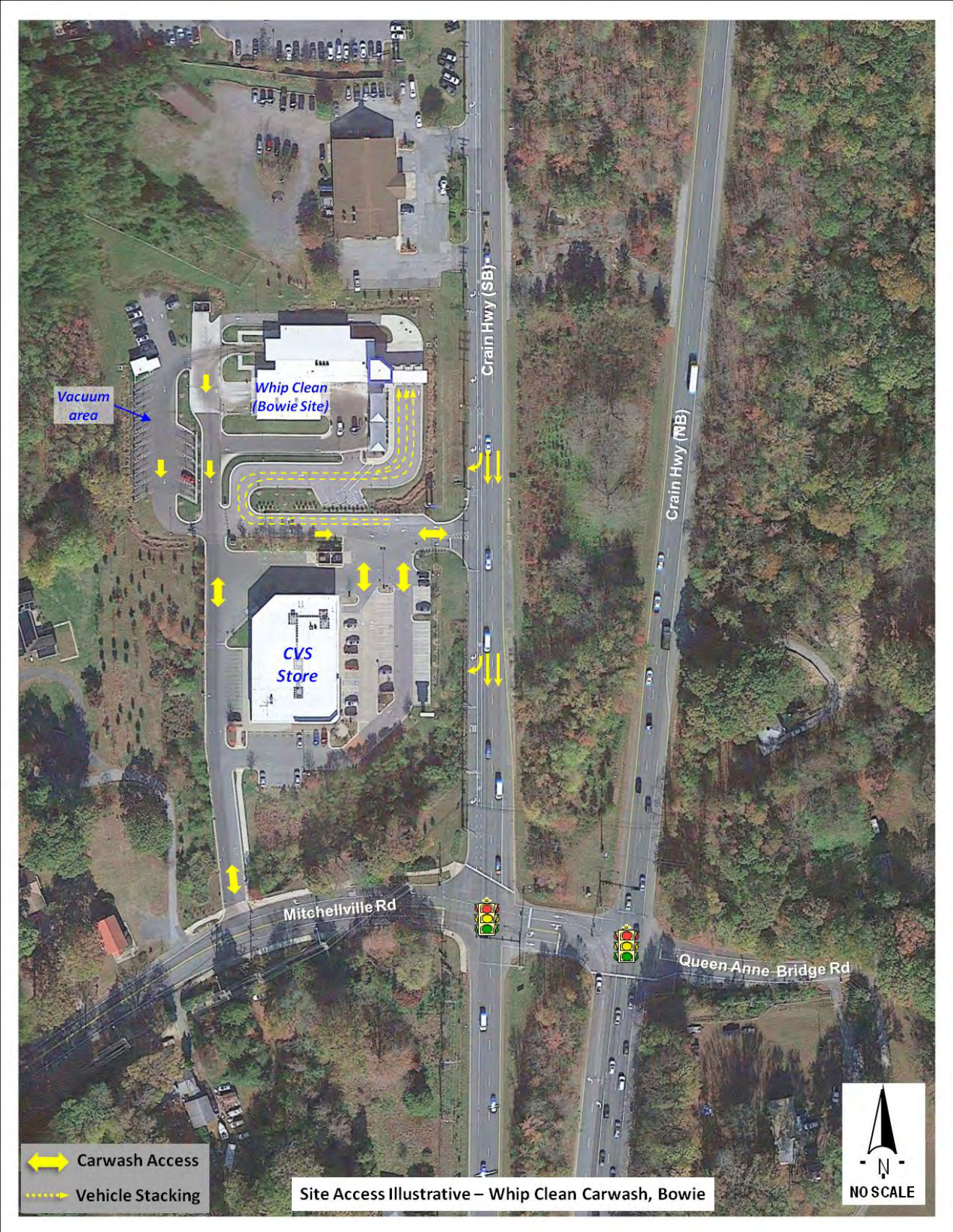
Sincerely,  
 O. R. GEORGE & ASSOCIATES, INC.



Osborne R. George, P.E., PTOE, F-ITE  
 President

Attachments: As noted.

cc: Mr. Joel Miller (National Carwash Solutions)  
 Mr. Mike Trudel (Carwash Consultant/Expert)



**ATTACHMENT A**  
**SHA TURNING MOVEMENT**  
**COUNT DATA**  
**(MD 355 @ Central Avenue)**



Maryland Department of Transportation  
State Highway Administration  
Data Services Division

Turning Movement Summary Report

Station ID: S2000150353  
Date: 9/26/2018 12:00:00 AM  
Location: MD 355 at Central Ave  
Interval: 15 Min

County: Montgomery  
Town: none  
Weather: Clear  
Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



Begin Hour	U.Turn	Left	Through	Right	TOTAL	U.Turn	Left	Through	Right	TOTAL	U.Turn	Left	Through	Right	TOTAL	U.Turn	Left	Through	Right	TOTAL	GrandTotal	
00:00	0	0	19	0	19	0	0	52	6	58	0	1	0	0	1	0	0	0	0	0	0	78
00:15	0	1	25	0	26	0	0	35	4	39	0	0	0	1	1	0	0	0	0	0	0	66
00:30	1	0	18	0	19	0	0	38	3	41	0	0	0	0	0	0	0	0	0	0	0	60
00:45	1	0	19	0	20	0	0	31	5	36	0	0	0	0	0	0	0	0	0	0	0	56
01:00	0	0	12	0	12	1	0	29	1	31	0	0	0	0	0	0	0	0	0	0	0	43
01:15	0	0	10	0	10	0	0	16	0	16	0	0	0	0	0	0	0	0	0	2	2	28
01:30	0	0	14	0	14	0	0	22	3	25	0	1	0	0	1	0	0	0	0	0	0	40
01:45	0	0	7	0	7	0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	0	27
02:00	0	0	10	0	10	3	0	20	0	23	0	3	0	0	3	0	0	0	0	0	0	36
02:15	0	0	12	0	12	0	0	24	1	25	0	0	0	0	0	0	0	0	0	0	0	37
02:30	0	0	9	0	9	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	0	28
02:45	0	0	17	0	17	1	0	20	1	22	0	0	0	0	0	0	0	0	0	0	0	39
03:00	0	0	6	0	6	0	0	11	2	13	0	1	0	0	1	0	0	0	0	0	0	20
03:15	0	0	15	0	15	0	0	7	0	7	0	1	0	0	1	0	0	0	0	0	0	23
03:30	0	0	14	0	14	1	0	9	1	11	0	0	0	0	0	0	0	0	0	0	0	25
03:45	0	0	26	0	26	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	31
04:00	0	0	35	0	35	0	0	11	0	11	0	9	0	0	9	0	0	0	0	0	0	55
04:15	0	0	40	0	40	1	0	10	0	11	0	5	0	0	5	0	0	0	0	0	0	56
04:30	0	1	53	0	54	1	0	25	1	27	0	9	0	1	10	0	0	0	0	0	0	91
04:45	0	0	81	0	81	1	0	18	1	20	0	7	0	1	8	0	0	0	0	0	0	109
05:00	0	1	97	0	98	0	0	20	5	25	0	13	0	1	14	0	0	0	0	0	0	137
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05:30	0	2	147	0	149	0	0	32	2	34	0	23	0	4	27	0	0	0	0	0	0	210
05:45	0	2	218	0	220	1	0	45	5	51	0	26	0	3	29	0	0	0	0	0	0	300
06:00	0	5	245	0	250	2	0	61	4	67	0	21	0	0	21	0	0	0	0	0	0	338
06:15	2	4	377	0	383	1	0	92	4	97	0	18	0	0	18	0	0	0	0	0	0	498
06:30	0	4	486	0	490	0	0	56	9	65	0	24	0	3	27	0	0	0	0	0	0	582



Maryland Department of Transportation  
State Highway Administration  
Data Services Division

Turning Movement Summary Report

Station ID: S2000150353  
Date: 9/26/2018 12:00:00 AM  
Location: MD 355 at Central Ave  
Interval: 15 Min

County: Montgomery  
Town: none  
Weather: Clear  
Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65

MD 355 From North      MD 355 From South      Central Ave From East      Parking Lot From West

06:45	2	11	553	0	566	0	0	110	8	118	0	8	0	1	9	0	0	0	0	0	693
07:00	2	9	625	1	637	0	1	140	3	144	0	16	0	5	21	0	0	0	0	0	802
07:15	2	11	553	0	566	2	0	183	19	204	0	13	0	4	17	0	0	0	0	0	787
07:30	3	14	530	0	547	0	0	181	42	223	0	11	0	2	13	0	0	0	0	0	783
07:45	1	19	552	0	572	0	0	179	43	222	0	10	0	5	15	0	0	0	0	0	809
08:00	0	11	507	1	519	1	0	186	24	211	0	6	0	1	7	0	0	0	0	0	737
08:15	0	11	467	0	478	2	10	186	23	221	0	15	0	3	18	0	0	0	0	0	717
08:30	4	8	472	1	485	6	1	190	30	227	0	11	0	5	16	0	1	0	0	1	729
08:45	1	11	471	4	487	10	11	251	31	303	0	10	0	9	19	0	0	0	0	0	809
09:00	1	11	392	0	404	13	4	219	27	263	0	5	0	5	10	0	3	1	1	5	682
09:15	2	16	340	1	359	6	0	208	20	234	0	11	0	11	22	0	0	0	1	1	616
09:30	1	7	288	0	296	3	0	249	29	281	0	4	0	6	10	0	1	0	0	1	588
09:45	1	3	254	0	258	4	0	230	25	259	0	10	0	4	14	0	0	0	1	1	532
10:00	0	1	253	0	254	10	0	235	12	257	0	6	0	4	10	0	0	0	0	0	521
10:15	0	2	232	1	235	1	0	187	20	208	0	10	0	3	13	0	0	0	0	0	456
10:30	1	1	253	0	255	4	0	228	20	252	0	8	0	2	10	0	0	0	0	0	517
10:45	1	1	221	1	224	9	1	257	22	289	0	6	0	1	7	0	0	0	0	0	520
11:00	0	4	249	0	253	11	0	235	23	269	0	9	0	8	17	0	0	0	1	1	540
11:15	2	1	282	0	285	13	2	228	23	266	0	12	0	6	18	0	0	0	0	0	569
11:30	1	6	275	7	289	21	3	224	23	271	0	11	1	4	16	0	4	0	1	5	581
11:45	4	7	250	5	266	36	14	264	20	334	0	10	0	2	12	0	0	0	2	2	614
12:00	2	2	271	2	277	13	8	271	22	314	0	10	0	3	13	0	0	1	0	1	605
12:15	2	7	255	2	266	15	6	294	25	340	0	7	0	4	11	0	2	0	2	4	621
12:30	1	6	263	2	272	14	4	260	21	299	0	13	0	5	18	0	0	0	2	2	591
12:45	0	6	274	2	282	10	8	299	19	336	0	6	0	5	11	0	1	0	0	1	630
13:00	0	2	271	1	274	11	1	280	39	331	1	5	0	6	12	0	3	0	3	6	623
13:15	0	4	238	0	242	15	2	317	24	358	0	6	0	4	10	0	0	0	3	3	613
13:30	1	6	285	0	292	14	0	284	36	334	0	9	0	6	15	0	2	0	0	2	643
13:45	0	2	250	0	252	15	0	321	23	359	0	5	0	3	8	0	0	0	0	0	619



Maryland Department of Transportation  
State Highway Administration  
Data Services Division

Turning Movement Summary Report

Station ID: S2000150353  
Date: 9/26/2018 12:00:00 AM  
Location: MD 355 at Central Ave  
Interval: 15 Min

County: Montgomery  
Town: none  
Weather: Clear  
Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



Time	MD 355 From North					MD 355 From South					Central Ave From East					Parking Lot From West					
14:00	0	5	258	1	264	11	0	306	33	350	0	6	0	8	14	0	0	1	0	1	629
14:15	2	0	257	1	260	11	0	287	33	331	0	12	0	7	19	0	0	0	0	0	610
14:30	1	12	281	3	297	16	1	335	50	402	0	5	1	5	11	0	0	0	0	0	710
14:45	2	5	296	0	303	14	0	337	34	385	0	11	0	4	15	0	2	0	0	2	705
15:00	3	4	268	0	275	13	0	343	39	395	0	5	0	8	13	0	0	0	0	0	683
15:15	0	7	303	0	310	14	1	380	57	452	0	8	0	8	16	0	0	0	0	0	778
15:30	0	9	275	0	284	7	0	413	54	474	0	7	0	10	17	0	0	0	0	0	775
15:45	0	8	295	0	303	14	1	404	55	474	0	11	0	6	17	0	0	0	1	1	795
16:00	1	9	300	1	311	11	1	431	61	504	0	10	0	8	18	0	0	0	0	0	833
16:15	1	9	281	0	291	8	1	462	61	532	0	7	0	5	12	0	1	0	1	2	837
16:30	3	7	304	1	315	10	0	457	77	544	0	8	0	6	14	0	0	0	0	0	873
16:45	1	3	263	0	267	12	0	523	52	587	0	5	0	6	11	0	0	0	0	0	865
17:00	0	4	300	0	304	9	0	530	63	602	0	4	0	8	12	0	0	0	0	0	918
17:15	1	2	296	2	301	12	3	547	55	617	0	4	0	7	11	0	0	0	0	0	929
17:30	0	7	319	3	329	2	3	549	56	610	0	9	0	10	19	0	0	0	0	0	958
17:45	3	4	277	2	286	7	1	501	68	577	0	11	0	5	16	0	0	0	1	1	880
18:00	1	3	296	5	305	7	4	558	62	631	0	6	0	5	11	0	0	0	0	0	947
18:15	2	3	241	1	247	7	3	525	58	593	1	3	0	7	11	0	0	0	0	0	851
18:30	0	6	230	3	239	5	3	547	53	608	0	1	0	6	7	0	1	0	1	2	856
18:45	1	4	201	0	206	8	1	555	48	612	0	6	0	5	11	0	0	0	0	0	829
19:00	3	7	221	1	232	12	4	455	49	520	0	2	0	4	6	0	0	0	2	2	760
19:15	1	4	204	1	210	11	2	410	50	473	0	4	0	6	10	0	0	0	0	0	693
19:30	2	8	168	0	178	10	0	333	55	398	0	2	0	5	7	0	0	0	0	0	583
19:45	0	9	161	0	170	6	0	289	67	362	0	7	0	2	9	0	0	0	5	5	546
20:00	0	10	159	0	169	5	0	254	59	318	0	5	0	1	6	0	0	1	6	7	500
20:15	2	3	146	2	153	3	1	215	26	245	0	7	0	5	12	0	0	0	1	1	411
20:30	1	2	142	0	145	1	1	208	19	229	0	4	0	0	4	0	3	0	4	7	385
20:45	1	1	110	1	113	3	0	198	34	235	0	6	0	1	7	0	4	0	0	4	359
21:00	0	1	114	0	115	4	0	180	24	208	0	15	0	1	16	0	1	0	0	1	340



**Maryland Department of Transportation  
State Highway Administration  
Data Services Division  
Turning Movement Summary Report**

Station ID: S2000150353  
 Date: 9/26/2018 12:00:00 AM  
 Location: MD 355 at Central Ave  
 Interval: 15 Min

County: Montgomery  
 Town: none  
 Weather: Clear  
 Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65

MD 355
MD 355
Central Ave
Parking Lot

---

From North
From South
From East
From West

21:15	0	2	113	0	115	3	0	223	21	247	0	9	0	2	11	0	0	0	0	0	373
21:30	0	0	134	0	134	5	0	195	23	223	0	19	0	10	29	0	0	0	0	0	386
21:45	0	2	87	0	89	4	0	150	14	168	0	28	0	14	42	0	0	0	1	1	300
22:00	1	1	76	0	78	3	0	149	13	165	0	9	0	1	10	0	0	0	0	0	253
22:15	0	0	65	0	65	2	0	97	12	111	0	6	0	0	6	0	0	0	0	0	182
22:30	0	1	51	0	52	1	0	94	17	112	0	3	0	0	3	0	0	0	0	0	167
22:45	0	0	57	0	57	2	0	107	9	118	0	2	0	1	3	0	0	0	0	0	178
23:00	0	1	49	0	50	1	0	86	11	98	0	2	0	0	2	0	0	0	0	0	150
23:15	1	0	40	0	41	0	0	77	6	83	0	2	0	0	2	0	0	0	0	0	126
23:30	1	0	33	0	34	0	0	62	5	67	0	3	0	0	3	0	1	0	0	1	105
23:45	1	1	35	0	37	1	0	40	5	46	0	0	0	1	1	0	0	0	0	0	84
<b>TOTAL</b>	<b>75</b>	<b>385</b>	<b>19981</b>	<b>59</b>	<b>20500</b>	<b>547</b>	<b>107</b>	<b>20276</b>	<b>2344</b>	<b>23274</b>	<b>2</b>	<b>714</b>	<b>2</b>	<b>330</b>	<b>1048</b>	<b>0</b>	<b>30</b>	<b>4</b>	<b>42</b>	<b>76</b>	<b>44898</b>
<b>AMPEAK</b>	<b>8</b>	<b>53</b>	<b>2260</b>	<b>1</b>	<b>2322</b>	<b>2</b>	<b>1</b>	<b>683</b>	<b>107</b>	<b>793</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>16</b>	<b>66</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3181</b>
<b>PMPEAK</b>	<b>5</b>	<b>16</b>	<b>1188</b>	<b>12</b>	<b>1221</b>	<b>28</b>	<b>11</b>	<b>2155</b>	<b>241</b>	<b>2435</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>27</b>	<b>57</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>3714</b>
	5	16	1188	12	1221	28	11	2155	241	2435	0	30	0	27	57	0	0	0	1	1	3714



**Maryland Department of Transportation  
State Highway Administration  
Data Services Division  
Turning Movement Summary Report**

Station ID: S2000150353  
Date: 9/26/2018 12:00:00 AM  
Location: MD 355 at Central Ave  
Interval: 15 Min

County: Montgomery  
Town: none  
Weather: Clear  
Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



Begin Hour	MD 355 From North			MD 355 From South			Central Ave From East			Parking Lot From West		
	School Children	Pedestrians	Bicycles	School Childer	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles
00:00	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	3	0
01:00	0	0	0	0	0	0	0	0	0	0	3	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	1	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	1	0	0	0	0	0
04:45	0	0	1	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	2	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0
06:15	0	0	0	0	2	0	0	0	0	0	0	0
06:30	0	3	0	0	1	0	0	0	0	0	0	0



**Maryland Department of Transportation  
State Highway Administration  
Data Services Division  
Turning Movement Summary Report**

Station ID: S2000150353  
Date: 9/26/2018 12:00:00 AM  
Location: MD 355 at Central Ave  
Interval: 15 Min

County: Montgomery  
Town: none  
Weather: Clear  
Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



Begin Hour	School Children	Pedestrians	Bicycles	School Childer	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles
06:45	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	3	0	0	2	0	0	0	0	0	0	0
07:15	0	3	0	0	5	0	0	0	0	0	0	0
07:30	0	4	0	0	0	1	0	0	0	0	0	0
07:45	0	2	1	0	0	0	0	0	0	0	0	0
08:00	0	3	0	0	0	0	0	0	0	0	0	0
08:15	0	1	0	0	0	0	0	0	0	0	0	0
08:30	0	2	0	0	0	0	0	0	0	0	0	0
08:45	0	1	0	0	0	0	0	0	0	0	0	0
09:00	0	1	1	0	1	0	0	0	0	0	0	0
09:15	0	2	0	0	0	0	0	0	0	0	0	0
09:30	0	1	0	0	0	0	0	0	0	0	0	0
09:45	0	5	1	0	0	0	0	0	0	0	0	0
10:00	0	1	0	0	0	0	0	0	0	0	0	0
10:15	0	2	1	0	0	0	0	0	0	0	0	0
10:30	0	3	0	0	1	0	0	0	0	0	0	0
10:45	0	1	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	1	0	0	0	0	0	0	0
11:15	0	1	0	0	0	0	0	0	0	0	0	0
11:30	0	2	1	0	0	1	0	0	0	0	0	0
11:45	0	1	0	0	0	0	0	0	0	0	0	0
12:00	0	0	1	0	1	0	0	0	0	0	0	0
12:15	0	2	0	0	1	1	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	2	0	0	0	0	0	0	0	0	0	0
13:00	0	1	0	0	0	0	0	0	0	0	0	0
13:15	0	1	0	0	1	0	0	0	0	0	0	0



**Maryland Department of Transportation  
State Highway Administration  
Data Services Division  
Turning Movement Summary Report**

Station ID: S2000150353  
Date: 9/26/2018 12:00:00 AM  
Location: MD 355 at Central Ave  
Interval: 15 Min

County: Montgomery  
Town: none  
Weather: Clear  
Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



Begin Hour	School Children	Pedestrians	Bicycles	School Childer	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles
13:30	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	2	1	0	1	0	0	0	0	0	0	0
14:00	0	0	1	0	1	0	0	0	0	0	0	0
14:15	0	3	0	0	1	0	0	0	0	0	0	0
14:30	0	4	0	0	1	0	0	1	0	0	0	0
14:45	0	0	0	0	3	0	0	1	0	0	0	0
15:00	0	2	0	0	0	0	0	0	0	0	0	0
15:15	0	1	0	0	0	0	0	0	0	0	0	0
15:30	0	1	1	0	0	0	0	0	0	0	0	0
15:45	0	1	1	0	0	1	0	0	0	0	0	0
16:00	0	0	0	0	1	1	0	0	0	0	0	0
16:15	0	1	0	0	0	0	0	0	0	0	0	0
16:30	0	2	2	0	1	2	0	0	0	0	0	1
16:45	0	2	0	0	1	0	0	0	0	0	0	0
17:00	0	1	0	0	3	0	0	0	0	0	0	0
17:15	0	1	0	0	0	0	0	0	0	0	0	0
17:30	0	2	0	0	0	2	0	0	0	0	0	0
17:45	0	0	0	0	2	0	0	0	0	0	0	0
18:00	0	1	2	0	2	0	0	0	0	0	0	0
18:15	0	2	1	0	0	1	0	0	0	0	0	0
18:30	0	1	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0	0	0	0
19:45	0	1	0	0	0	0	0	0	0	0	0	0
20:00	0	1	0	0	1	0	0	0	0	0	0	0



Maryland Department of Transportation  
State Highway Administration  
Data Services Division

Turning Movement Summary Report

Station ID: S2000150353

County: Montgomery

Comments:

Date: 9/26/2018 12:00:00 AM

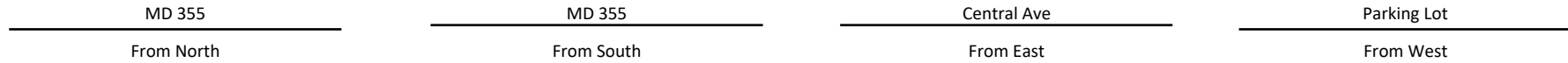
Town: none

Location: MD 355 at Central Ave

Weather: Clear

Interval: 15 Min

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



Begin Hour	School Children	Pedestrians	Bicycles	School Childer	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles	School Children	Pedestrians	Bicycles
20:15	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	1	0	0	0	0	0	0	0	0	0
20:45	0	0	0	0	1	0	0	0	0	0	0	0
21:00	0	2	0	0	1	0	0	0	0	0	0	0
21:15	0	0	0	0	2	0	0	0	0	0	0	0
21:30	0	3	0	0	0	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	2	0	0	0	0	0	0	0
23:15	0	0	1	0	1	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>84</b>	<b>18</b>	<b>0</b>	<b>41</b>	<b>12</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>1</b>
<b>AMPEAK</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>PMPEAK</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	0	4	2	0	4	2	0	0	0	0	0	0



Maryland Department of Transportation  
State Highway Administration  
Data Services Division

Turning Movement Summary Report

Station ID: S2000150353

County: Montgomery

Comments:

Date: 9/26/2018 12:00:00 AM

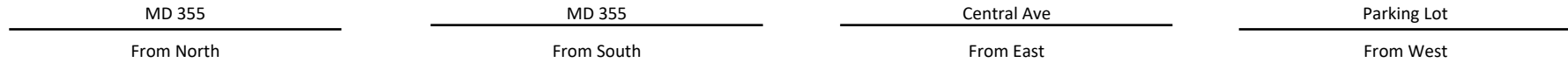
Town: none

Location: MD 355 at Central Ave

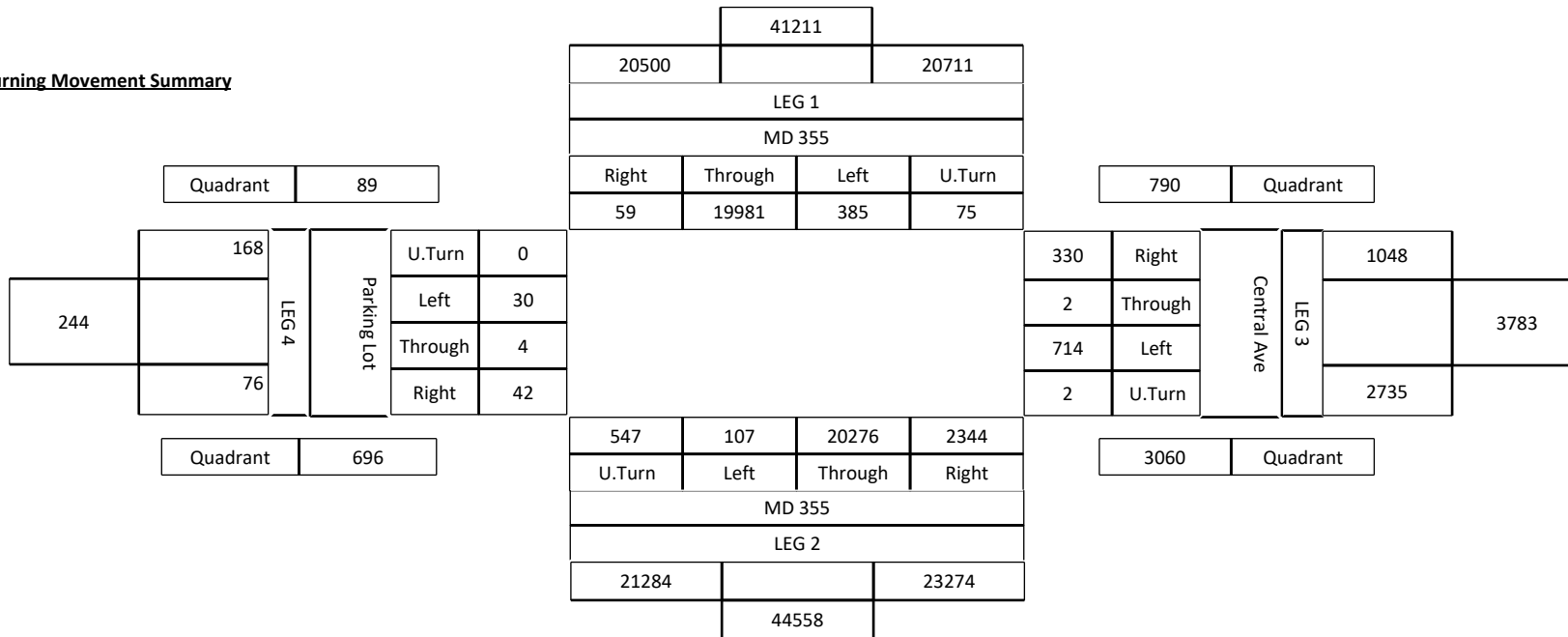
Weather: Clear

Interval: 15 Min

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



Turning Movement Summary





**Maryland Department of Transportation  
State Highway Administration  
Data Services Division  
Turning Movement Summary Report**

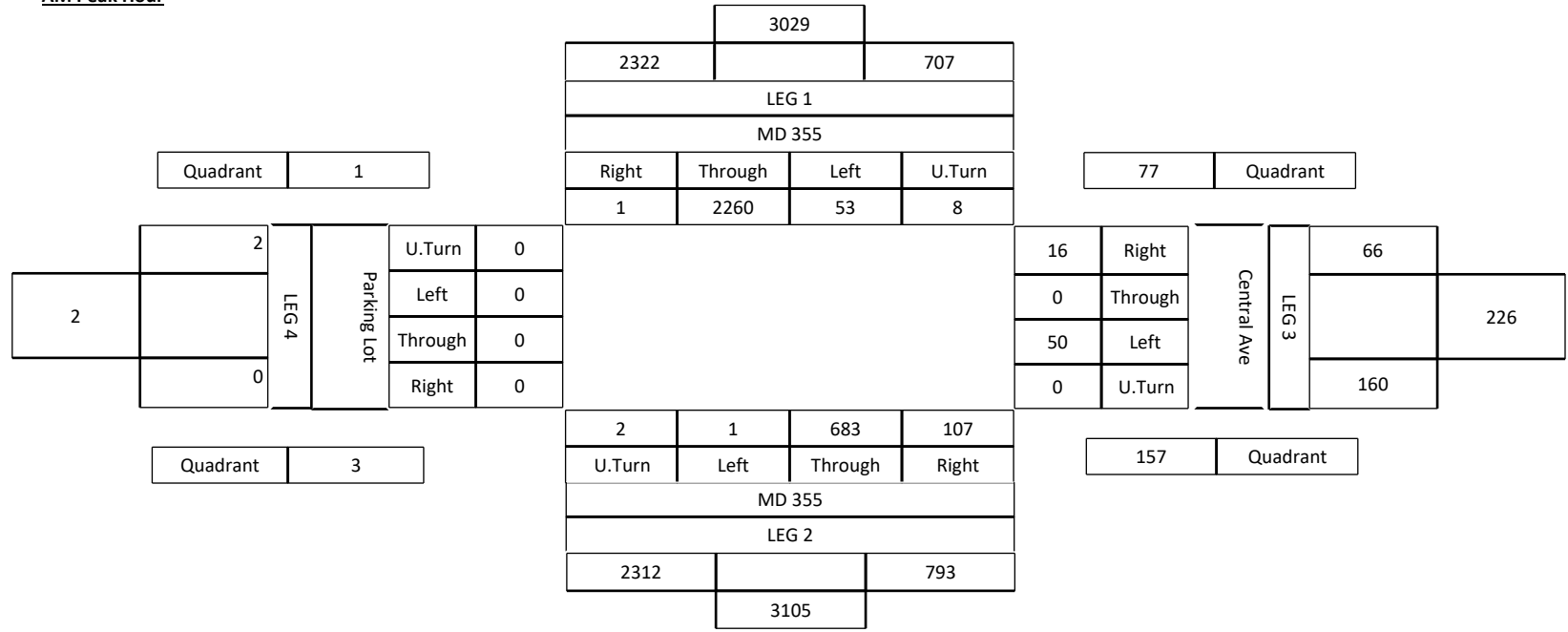
Station ID: S2000150353  
 Date: 9/26/2018 12:00:00 AM  
 Location: MD 355 at Central Ave  
 Interval: 15 Min

County: Montgomery  
 Town: none  
 Weather: Clear  
 Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



**AM Peak Hour**





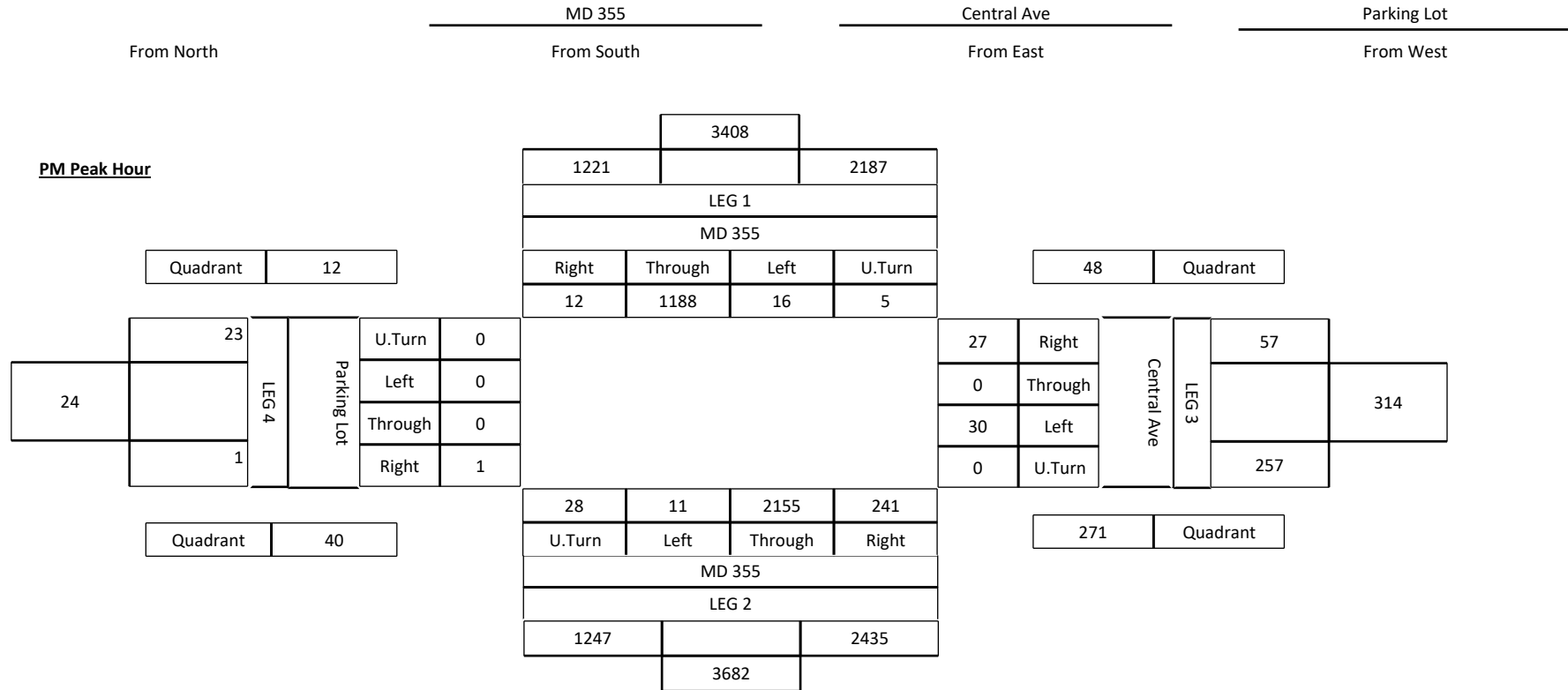
Maryland Department of Transportation  
State Highway Administration  
Data Services Division

Turning Movement Summary Report

Station ID: S2000150353  
Date: 9/26/2018 12:00:00 AM  
Location: MD 355 at Central Ave  
Interval: 15 Min

County: Montgomery  
Town: none  
Weather: Clear  
Comments:

PEAK	AM PERIOD	Start	End	Volume	LOS	V/C	PM PERIOD	Start	End	Volume	LOS	V/C
Hours	6:00AM-12:00PM	07:00	07:45	3181	A	0.61	12:00PM-19:00PM	17:15	18:00	3714	B	0.65



**ATTACHMENT B**  
**TRIP GENERATION DATA**  
**CONSIDERATIONS**

# Lenhart Traffic Consulting

## Trip Generation Rates

Automated Car Wash (Car Wash Tunnels, ITE-948)

Morning Trips - See Notes, Below

Evening Trips = 1.43 x ksf - 157.38

Trip Distribution (In/Out)

50/50

## Trip Generation Totals

		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Automated Car Wash (Car Wash Tunnels, ITE-948)	1 tunnel	N/A - See Notes Below	39	39	39	39	78

**NOTES:** Trip Generation Rates obtained from the ITE Trip Generation Manual, 10th Edition

The ITE Trip Generation Manual does not provide a rate/equation for this use during the morning peak hour. This is likely because the use generates the vast majority of its trips during the afternoon and evening hours, and very few trips during the morning peak hour of adjacent street traffic. As such, it is assumed that a negligible number of trips would be generated during the AM peak hour and no analysis would be required.

Traffic Impact Analysis	Trip Generation for Site	Exhibit 1
Lenhart Traffic Consulting, Inc. Traffic Engineering & Transportation Planning		



# Transportation Impact Analyses for

## Site Development



Institute of Transportation Engineers

An ITE Recommended Practice

ATT. B-2

## 5. Site Traffic Generation

One of the most critical elements of site impact studies is estimating the amount of traffic to be generated by a proposed development. This is usually done by using either trip generation rates or trip generation equations (Institute of Transportation Engineers, 2008). The presumption is that equations provide a more realistic relationship between the development unit and generated trips than rates do. The decision of whether to use the equation or rate depends on the quality of data on which this information is based. The *Trip Generation Handbook* provides guidance on how to select between rates and equations when both are available (Institute of Transportation Engineers, 2004).

A trip is defined as a single or one-directional travel movement with either the origin or the destination of the trip inside the study site.

The traditional method of forecasting trips has been to apply a weighted average trip rate (total counted trips divided by total occupied development units surveyed). For example, the number of trips can be estimated by multiplying the “number of trip ends per unit of independent variable” by the “number of units of the independent variable associated with the proposed development.” Rates are then commonly expressed in trips per unit of development. For example, trips per dwelling unit may be used for residential developments, while trips per 1,000 square feet of gross floor area may be used for offices.

Equations provide a direct estimate of trips based on development units being multiplied in a mathematical relationship. These equations are based on regression analysis and represent “best fits” through the data points. Unlike the weighted average rate, the relationship does not have to be linear (Institute of Transportation Engineers, 2008; Institute of Transportation Engineers, 2004). The analyst needs to carefully review the results of the calculations to be sure they are reasonable.

Trip generation estimates are often the most critical factors in assessing impacts and needs of a proposed

development. A small difference in a forecasted trip generation rate or equation may significantly change the resulting transportation decisions and financial commitments. The out-come of the entire site impact study can depend solely on the question of appropriate trip generation estimates. Trip generation equations and rates must therefore be determined carefully, using a combination of available data and professional judgment.

A table should be provided in the study report showing the categories and quantities of land uses, with the corresponding trip generation rates or equations and resulting number of trips. The reasons for choosing to use either the rate or equation should be documented in table footnotes or in the report text. For large developments that will be phased in over time, the table should also provide trip generation expected at the end of each significant phase. Accurate trip generation estimates are also dependent on the selection of the proper land use category, appropriate independent variables (development units to which trip generation is sensitive) and statistically stable trip generation rates or equations. The *Trip Generation Handbook* provides more information to aid the study preparer and reviewers.

### Sources

The preparer of the study and the government agencies that have study review and approval authority should agree on sources of trip generation estimates. These sources should be referenced in the study report. Table 5-1 summarizes the procedure for determining appropriate trip generation estimates.

### *State and Local Data Sources*

Many state, regional and local agencies have their own trip generation data collected from sites within their boundaries. Appropriate agencies should be contacted to determine if such a database exists. Data collected from local sites may be more representative of other developments within the area than are national data.

**Table 5–1. Procedure for Determining Appropriate Trip Generation Estimates**

Step	Procedure
1	Check national sources for an applicable range of trip generation estimates based on trip rates and equations. <sup>a</sup>
2	Check for availability of local trip generation rates for comparable sites.
3	If local data for similar developments are not available and if time and funding permit, conduct trip generation studies at sites with characteristics similar to those of the proposed development.
4	Determine the design level of traffic (e.g., peak season, average peak hours) to be utilized for the analysis and select appropriate equations and/or rates.
5	Determine any adjustments that need to be applied to trip equations and/or rates to account for the specific characteristics of the development in question (e.g., high transit usage, true mixed-use development). Account for internal capture or multiple-purpose trips within large developments. Account for pass-by trips for certain types of retail and service uses.
6	Select the most appropriate and defensible trip generation rates and/or equations and document the basis for selection.
7	Document the reasons for any variation from normally recognized generation rates or equations and for assumptions unique to the development being studied.

<sup>a</sup> Institute of Transportation Engineers, 2008.

### Existing Data Sources

There are several sources for trip generation rates and equations, which are based on data collected from locations around the United States and Canada. These are compilations of data that have been gathered over many years for various land uses, and these fall into the following categories:

- ITE;
- State, regional and local data (published or unpublished);
- Consultant data—generally unpublished, other than selected studies, most of which are in the ITE database; or
- Developer data—unpublished or privately held for internal planning information or used in specific development applications.

National data sources should be used as starting points in estimating the amount of traffic that may be generated by a specific building or land use.

Whenever possible, these national rates should be adjusted to reflect local or forecasted conditions. These national sources are not intended to be used without question or sound judgment. They often reflect what are supposed to be average or typical conditions.

The most widely used source of national trip generation data is *Trip Generation* (Institute of

Transportation Engineers, 2008). The information in this report is almost solely derived from suburban sites. Data are provided in vehicle trips, not person trips. Trip generation for downtowns, other business districts and areas with significant transit usage requires more study of local conditions or different study data altogether. The user should not assume that ITE vehicle trips are equivalent to person trips.

Trip generation for rural areas may be different from the trip generation for the suburban sites included in *Trip Generation*. Use of *Trip Generation* information for rural areas may not reflect local conditions, and collection of additional local data may be desirable.

Data included in *Trip Generation* were obtained from actual driveway counts of vehicular traffic entering and exiting a site. The eighth edition contains about 4,800 data sets from individual trip generation studies. The report also includes discussions on the application and use of trip generation rates and equations; descriptions of the characteristics of each land use; maximum/minimum/average rates for weekdays, weekends and peak hours of the generator and adjacent street traffic; and additional statistical data regarding data variability.

A companion document to *Trip Generation* is the *Trip Generation Handbook*. *Trip Generation* is ITE’s