

Lenhart Traffic Consulting, Inc.

Transportation Planning & Traffic Engineering

Memorandum:

Date: **October 24, 2023**

TO: City of Gaithersburg
 Planning Division
 31 South Summit Avenue
 Gaithersburg, MD 20877

FROM: Nick Driban

RE: Traffic Statement for Festival at Muddy Branch Shopping Center – Whip Clean Car Wash

This memorandum is being provided in support of the proposed development of Units 14 and 15 of the Festival at Muddy Branch shopping center, located in Gaithersburg, Maryland. The location of the site is shown on **Exhibit 1**. The shopping center was previously approved for up to 267,945 square feet of commercial space. To date, 237,334 square feet have been developed. The most-recent, approved plat is included in Appendix A.

Units 14 and 15 of the Festival at Muddy Branch Condominium are undeveloped and were originally approved for development of up to 30,611 square feet of commercial space. These units are proposed to be developed with approximately 12,000 square feet of commercial space, in the form of the Whip Clean car wash.

The City of Gaithersburg requires submission of a Traffic Impact Study as part of each development application for; (a) any new development application that generates 30 or more weekday trips during the peak hour of the morning and/or evening peak period of the adjacent roadway, or (b) any redevelopment application that generates 30 additional weekday trips during the peak hour of the morning and/or evening peak period of the adjacent street.

Trip generation for the proposed development is shown on **Exhibits 2a & 2b**.

The trip generation analysis on **Exhibit 2a** compares the previously approved 267,945 square feet of commercial space, with the current proposal, which includes the 237,334 square feet of existing, constructed commercial space as well as the additional 12,000 square feet of commercial space currently proposed as a car wash on Units 14 and 15 of the Shopping Center. ITE land use code 820, Shopping Center (>150 ksf), was utilized to analyze the existing and proposed site conditions, including the now proposed car wash facility. Including the car wash in the overall square footage of the shopping center is consistent with the ITE definition and methodology for a shopping center, which states:

- A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit.
- A shopping center of this size typically contains more than retail merchandising facilities.
- Many shopping centers – in addition to the integrated unit of shops in one building or enclosed around a mall – include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices.

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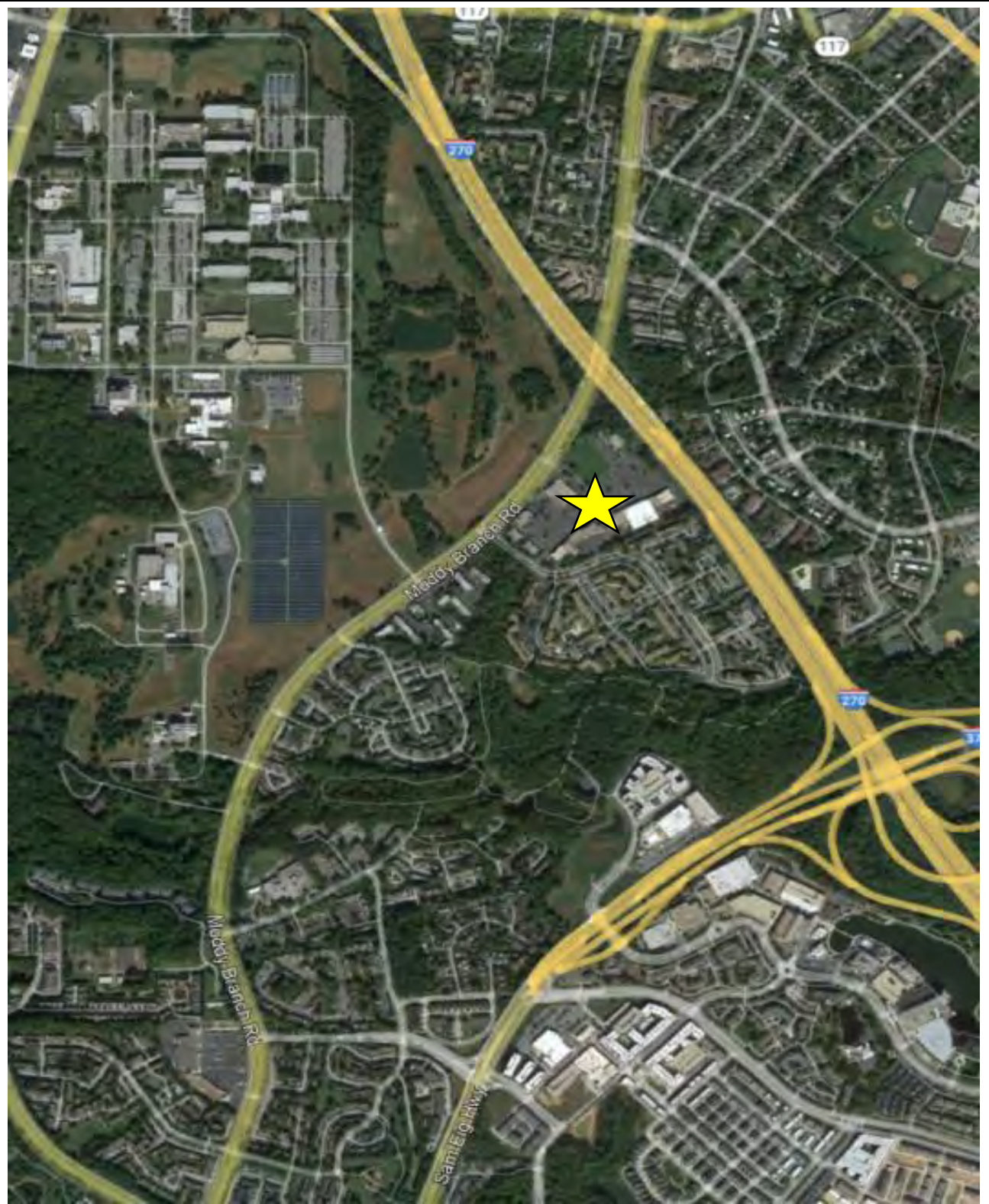
The trip generation analysis on **Exhibit 2b** compares the previously approved 267,945 square feet of commercial space, with the current proposal, which includes the 237,334 square feet of existing, constructed commercial space as well as the 12,000 square foot proposed car wash considered as its own use, separate from the Shopping Center. In this case, ITE land use code 948, Automated Car Wash, was utilized to analyze the proposed car wash facility. This analysis was requested by City of Gaithersburg staff as an alternative to the scenario shown in Exhibit 2a, in which the Car Wash square footage was considered as part of the overall Shopping Center square footage.

The results of the trip generation analysis under either scenario, above, show that the development of the car wash facility on Units 14 and 15 of the Festival at Muddy Branch Condominium will result in a net increase of less-than-30 trips during the morning and evening peak hour compared to what was previously approved. As such, a traffic impact study should not be required for this development.

In addition to the trip generation analysis, City of Gaithersburg staff requested additional information regarding queuing for the site. **Exhibit 3** details queuing analyses based on field observations from car wash facilities in Annapolis, MD and Prince Frederick, MD, each of which has a single, automated car wash tunnel of similar length as the proposed Whip Clean. As detailed on Exhibit 3, the maximum number of vehicles queued waiting to access the car wash tunnel occurred at the Prince Frederick location where 8 vehicles were queued at one time (4:00 pm on Friday). As shown on the concept plan for the site, there is adequate space for queued passenger vehicles leading up to the entrance of the car wash tunnel.

Based on the information contained in this report:

- The Festival at Muddy Branch shopping center was previously approved to include up to 267,945 square feet of commercial space.
- The Festival at Muddy Branch shopping center currently includes 237,334 square feet of commercial space that has been constructed.
- A 12,000 square foot car wash facility is now proposed on Units 14 and 15 of the shopping center, which was previously platted for up to 30,611 square feet of commercial space.
- The results of the trip generation analysis show that the proposed car wash facility will result in a net increase of less-than-30 trips during the morning and evening peak hour compared to what was previously approved.
- As such, a traffic impact study should not be required for this development.
- In addition, based on analysis of queuing at similar automated car wash facilities, there is adequate space for the maximum-anticipated number of queued vehicles to be accommodated within the site, as designed.



Traffic Impact Analysis

Site Location
Map

**Exhibit
1**



LENHART TRAFFIC CONSULTING, INC.
645 BALTIMORE ANNAPOLIS BLVD, SUITE 214
SEVERNA PARK, MD 21146
www.lenharttraffic.com

Trip Generation Rates

Shopping Center (>150 ksf)(ksf, ITE-820)

Morning Trips = 0.59 x ksf + 133.55
 Ln(Evening Trips) = 0.72 x Ln(ksf) + 3.02

Trip Distribution (In/Out)

62/38
 48/52


Trip Generation Totals

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Previously Approved	Shopping Center (>150 ksf)(ksf, ITE-820)	267,945 sq.ft.	139	86	225	437	474	911

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Proposed	Shopping Center (>150 ksf)(ksf, ITE-820)	249,334 sq.ft.	130	79	209	407	441	848

	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Previously Approved Peak Hour Trips:	139	86	225	437	474	911
Proposed Peak Hour Trips:	130	79	209	407	441	848
Net Peak Hour Trips:	-9	-7	-16	-30	-33	-63

NOTES: 1. Trip Generation Rates obtained from the ITE Trip Generation Manual, 11th Edition
 2. The Festival at Muddy Branch Shopping Center was previously approved for up to 267,945 square feet of commercial space. To date, 237,334 square feet of commercial space has been constructed. Units 14 and 15 were approved to include up to 30,611 square feet, but are yet to be constructed. Units 14 and 15 are now proposed to be developed with a 12,000 square foot car wash facility. The proposed square footage includes the 237,334 square feet of existing commercial space and the approximately 12,000 square foot car wash facility.

Traffic Impact Analysis	Trip Generation for Site	Exhibit 2a
 LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com		

Trip Generation Rates

Shopping Center (>150 ksf)(ksf, ITE-820)	<u>Trip Distribution (In/Out)</u>
Morning Trips = 0.59 x ksf + 133.55	62/38
Ln(Evening Trips) = 0.72 x Ln(ksf) + 3.02	48/52
Automated Car Wash (Car Wash Tunnels, ITE-948)	<u>Trip Distribution (In/Out)</u>
Morning Trips - See Note, Below	
Evening Trips = 77.5 x Tunnels	50/50

Trip Generation Totals

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Previously Approved	Shopping Center (>150 ksf)(ksf, ITE-820)	267,945 sq.ft.	139	86	225	437	474	911

			AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Proposed	Shopping Center (>150 ksf)(ksf, ITE-820)	237,334 sq.ft.	123	76	199	387	420	807
	Automated Car Wash (Car Wash Tunnels, ITE-948)	1 tunnel	19	20	39	39	39	78

	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Previously Approved Peak Hour Trips:	139	86	225	437	474	911
Proposed Peak Hour Trips:	142	96	238	426	459	885
Net Peak Hour Trips:	3	10	13	-11	-15	-26

- NOTES:** 1. Trip Generation Rates obtained from the ITE Trip Generation Manual, 11th Edition
2. The Festival at Muddy Branch Shopping Center was previously approved for up to 267,945 square feet of commercial space. To date, 237,334 square feet of commercial space has been constructed. Units 14 and 15 were approved to include up to 30,611 square feet, but are yet to be constructed. Units 14 and 15 are now proposed to be developed with a 12,000 square foot car wash facility.
3. 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. While it is likely that a negligible number of trips would be generated during the AM peak hour, in order to be conservative it was assumed that the AM trip generation rate was 50% of the PM trip rate with the same split.

Traffic Impact Analysis	Trip Generation for Site	Exhibit 2b
 LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com		

Annapolis EcoXpress Car Wash

Friday Queuing (# of cars)	
Friday	Queue
5:00	0
5:05	1
5:10	1
5:15	0
5:20	0
5:25	0
5:30	0
5:35	0
5:40	0
5:45	1
5:50	0
5:55	2
6:00	1


Saturday Queuing (# of cars)	
Saturday	Queue
1:00	1
1:05	0
1:10	1
1:15	1
1:20	0
1:25	1
1:30	1
1:35	0
1:40	0
1:45	1
1:50	1
1:55	4
2:00	4

Prince Frederick Magic Tunnel Car Wash

Friday Queuing (# of cars)	
Friday	Queue
3:15	1
3:20	1
3:25	1
3:30	6
3:35	5
3:40	1
3:45	1
3:50	4
3:55	4
4:00	8
4:05	6
4:10	1
4:15	1

Saturday Queuing (# of cars)	
Saturday	Queue
12:30	3
12:35	1
12:40	3
12:45	4
12:50	0
12:55	5
1:00	3
1:05	1
1:10	7
1:15	3
1:20	5
1:25	6
1:30	6

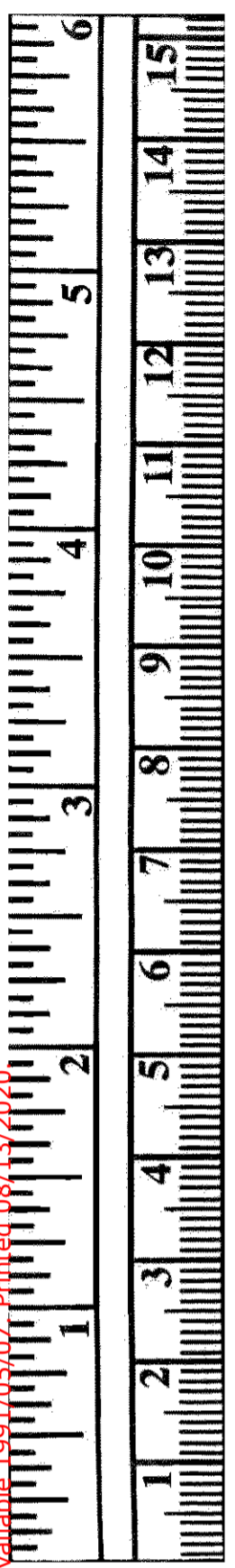
 Peak Queuing

Traffic Impact Analysis	Queuing Analysis for Similar Express Carwash	Exhibit 3
 LENHART TRAFFIC CONSULTING, INC. 645 BALTIMORE ANNAPOLIS BLVD, SUITE 214 SEVERNA PARK, MD 21146 www.lenharttraffic.com		

Appendix A

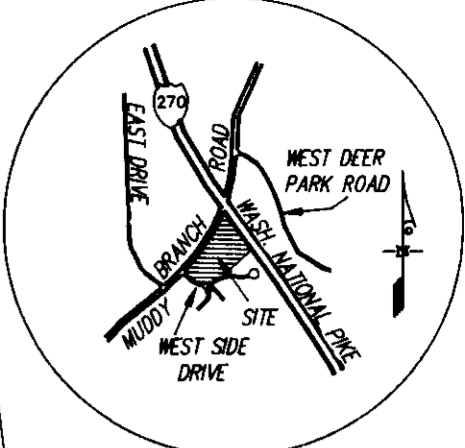
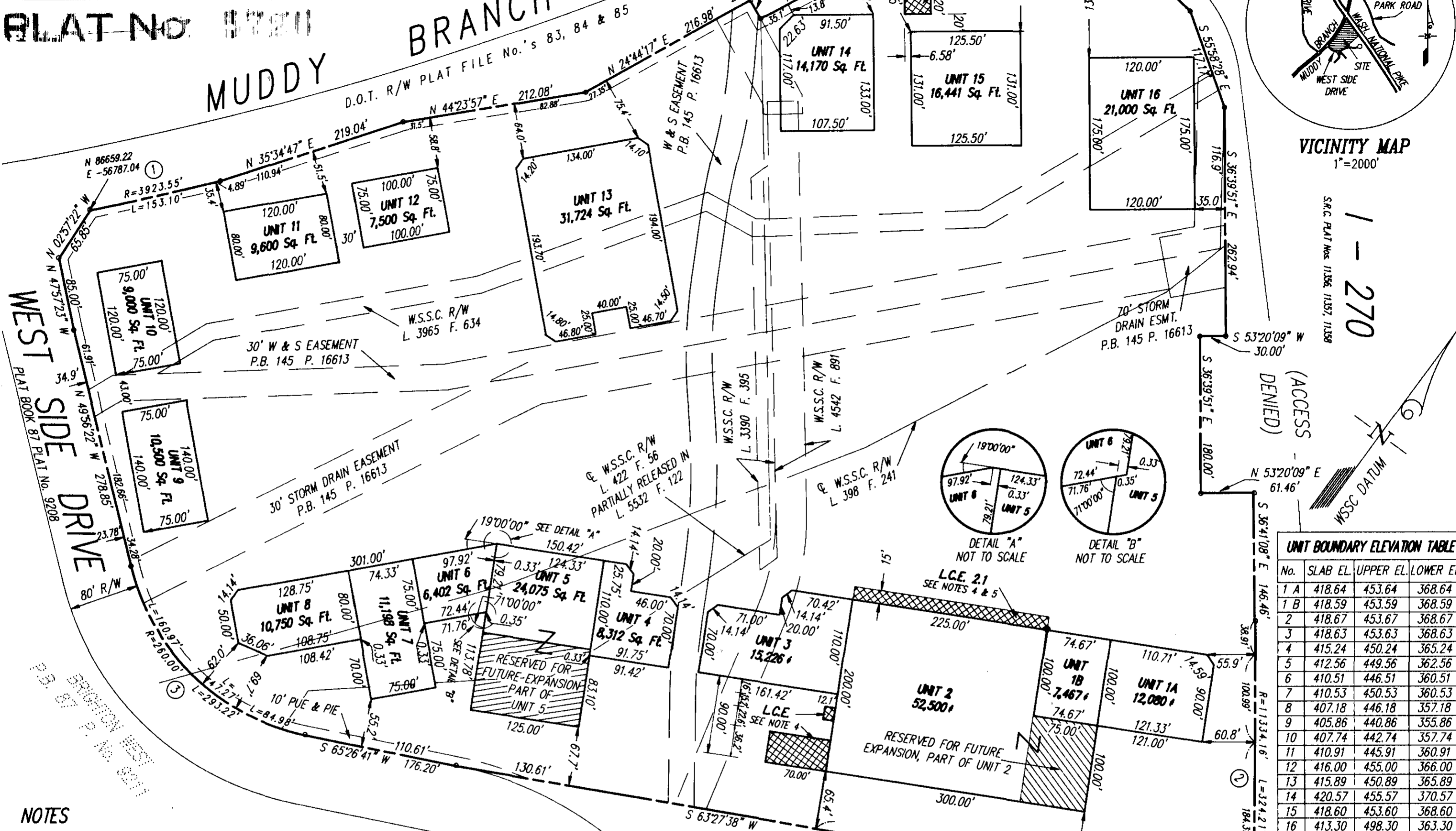
Supplemental Information

MONTGOMERY COUNTY CIRCUIT COURT (Condominium Plats, MO) Plat 5726, MSA_S1264_6076. Date available 1991.05.07. Printed 08.13.2020



CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
1	3923.55'	153.10'	76.56'	153.09'	N 41°7'46" E	02°14'09"
2	11334.16'	324.21'	162.12'	324.20'	S 35°52'00" E	01°38'20"
3	260.00'	293.22'	164.42'	277.92'	N 82°14'50" W	64°36'58"



VICINITY MAP
1" = 2000'

1 - 270
S.R.C. PLAT Nos. 1156, 1157, 1158

UNIT BOUNDARY ELEVATION TABLE

No.	SLAB EL.	UPPER EL.	LOWER EL.
1 A	418.64	453.64	368.64
1 B	418.59	453.59	368.59
2	418.67	453.67	368.67
3	418.63	453.63	368.63
4	415.24	450.24	365.24
5	412.56	449.56	362.56
6	410.51	446.51	360.51
7	410.53	450.53	360.53
8	407.18	446.18	357.18
9	405.86	440.86	355.86
10	407.74	442.74	357.74
11	410.91	445.91	360.91
12	416.00	455.00	366.00
13	415.89	450.89	365.89
14	420.57	455.57	370.57
15	418.60	453.60	368.60
16	413.30	498.30	363.30

NOTES

- THE AREAS SHOWN HEREON AS RESERVED FOR FUTURE UNIT BUILDING EXPANSION ARE PART OF THE UNIT WITHIN THE BOUNDARY OF WHICH SUCH AREAS ARE SITUATED. THE USE OF ANY SUCH AREA SHALL BE IN ACCORDANCE WITH THE TERMS OF THE DECLARATION.
- EACH UNIT CONSISTS OF THREE-DIMENSIONAL SPACE, THE UNIT BUILDING AND ANY OTHER IMPROVEMENTS NOW OR HEREAFTER PLACED WITHIN THE UNIT'S BOUNDARIES. THE VERTICAL BOUNDARIES OF A UNIT SHALL BE VERTICAL PLANES EXTENDED TO INTERSECT WITH EACH OTHER AND COINCIDE WITH THE UNIT BOUNDARIES SHOWN HEREON. UPPER AND LOWER BOUNDARIES OF EACH UNIT ARE DEFINED BY ELEVATIONS AS SHOWN IN THE "ELEVATION TABLE" HEREON (W.S.S.C. DATUM).
- THE COMMON ELEMENTS SHALL CONSIST OF ALL PORTIONS OF THE PROPERTY OTHER THAN THE UNITS AS DEPICTED HEREON OR SET FORTH IN THE DECLARATION.
- L.C.E. DESIGNATES LIMITED COMMON ELEMENTS WHICH ARE RESERVED FOR THE USE OF THE UNIT OR UNITS DESIGNATED HEREON, OR IN THE DECLARATION, SUBJECT TO ANY EASEMENTS OR OTHER COVENANTS OR RESTRICTIONS AS SET FORTH IN THE DECLARATION.
- L.C.E. 2.1 DESIGNATES CERTAIN LIMITED COMMON ELEMENTS APPURTENANT TO UNIT NO. 2 AS SET FORTH IN THE DECLARATION.
- UNIT DIMENSIONS ARE IN ACCORD WITH SECTION RP, 11-101-D OF THE ANNOTATED CODE OF MARYLAND, TITLE 11, REAL PROPERTY ARTICLE, (1986 CUMULATIVE SUPPLEMENT) AS SUCH DIMENSIONS RELATE TO THE DEFINITION OF THE TERM "UNIT" WITHIN THE CODE. UNIT LINES ARE NOT INTENDED TO REPRESENT FACES OR CENTERLINE OF EXISTING WALLS.
- THE PERCENTAGE INTERESTS APPURTENANT TO ANY UNIT SHALL BE THE QUOTIENT OBTAINED BY DIVIDING THE MAXIMUM NUMBER OF SQUARE FEET OF GROSS LEASABLE BUILDING AREA THAT IS PERMITTED TO BE CONTAINED IN THE UNIT BUILDING (AS DEFINED IN THE DECLARATION) NOW OR HEREAFTER ERECTED ON SUCH UNIT, AS SET FORTH IN THE DECLARATION, BY THE AGGREGATE NUMBER OF SQUARE FEET OF GROSS LEASABLE BUILDING AREA THAT IS PERMITTED TO BE CONTAINED IN ALL UNIT BUILDINGS AS SET FORTH IN THE DECLARATION. THE TOTAL AGGREGATE NUMBER OF SQUARE FEET OF GROSS LEASABLE BUILDING AREA THAT IS PERMITTED TO BE CONTAINED IN ALL UNIT BUILDINGS IN THE CONDOMINIUM IN THE FUTURE IS 310,560 SQUARE FEET. THE PERCENTAGE INTERESTS APPURTENANT TO ANY UNIT SHALL BE SET FORTH IN THE DECLARATION.
- ZONING: C-2

OWNERS' CERTIFICATIONS

WE, WEST SIDE ASSOCIATES LIMITED PARTNERSHIP A MARYLAND LIMITED PARTNERSHIP, OWNERS OF THE PROPERTY (OTHER THAN UNIT NO. 2) SHOWN AND DESCRIBED IN THE SURVEYOR'S CERTIFICATE, HEREBY ADOPT THIS AMENDED CONDOMINIUM PLAT PURSUANT TO THE PROVISIONS AND REQUIREMENTS OF TITLE 11 OF THE REAL PROPERTY ARTICLE SECTION 11-101, et seq. OF THE ANNOTATED CODE OF MARYLAND (1981 REPLACEMENT VOLUME) AS AMENDED, AND SPECIFICALLY IN ACCORDANCE WITH SECTIONS 11-103(C)(1) AND 11-105(E).

WEST SIDE ASSOCIATES LIMITED PARTNERSHIP
BY: GROW-MUDDY BRANCH RETAIL LIMITED PARTNERSHIP

William Wedder
DATE: _____
WOLFRAM WEDDER, GENERAL PARTNER

WE, MEIS MARKETS, INC., A PENNSYLVANIA CORPORATION, OWNER OF UNIT NO. 2, SHOWN AND DESCRIBED IN THE SURVEYOR'S CERTIFICATE, HEREBY ADOPT THIS AMENDED CONDOMINIUM PLAT PURSUANT TO THE PROVISIONS AND REQUIREMENTS OF TITLE 11 OF THE REAL PROPERTY ARTICLE SECTION 11-101, et seq. OF THE ANNOTATED CODE OF MARYLAND (1981 REPLACEMENT VOLUME) AS AMENDED AND SPECIFICALLY IN ACCORDANCE WITH SECTIONS 11-103(C)(1) AND 11-105(E).

MEIS MARKETS, INC., A PENNSYLVANIA CORPORATION

Robert F. Weis
DATE: 4/30/91
BY: ROBERT F. WEIS, VICE PRESIDENT



SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT OF CONDOMINIUM CONSISTING OF ONE SHEET IS CORRECT, THAT IT IS AN AMENDMENT TO THE PLAT RECORDED IN CONDOMINIUM BOOK 45 AS PLAT NO. 4643 WHICH IS A CONDOMINIUM SUBDIVISION OF PARCEL FOUR AS SHOWN ON A PLAT OF SUBDIVISION ENTITLED "PARCEL FOUR, BRIGHTON WEST" AND RECORDED IN PLAT BOOK 145 AS PLAT NO. 16613, ALL AMONG THE LAND RECORDS OF MONTGOMERY COUNTY, MARYLAND, AND THAT THE LOCATIONS AND DIMENSIONS OF ALL EXISTING IMPROVEMENTS HAVE BEEN CAREFULLY ESTABLISHED, AND THAT, UNLESS SHOWN HEREON, THERE ARE NO VISIBLE ENCROACHMENTS.

I FURTHER CERTIFY THAT, IN ACCORDANCE WITH THE REQUIREMENTS OF THE REAL PROPERTY ARTICLE, TITLE 11 SECTION 11-105 OF THE ANNOTATED CODE OF MARYLAND (1981 CUMULATIVE SUPPLEMENT) THE PLAT TOGETHER WITH THE APPLICABLE WORDING OF THE DECLARATION, IS A CORRECT REPRESENTATION OF THE CONDOMINIUM DESCRIBED, AND THAT THE IDENTIFICATION AND LOCATION OF EACH UNIT AND COMMON ELEMENTS, AS CONSTRUCTED, CAN BE DETERMINED FROM THEM.

THE TOTAL AREA INCLUDED IN THIS PLAT IS 1,102,870 SQ. FT. OR 25.3184 ACRES.
DATE: 4/17/91
David S. Weber
DAVID S. WEBER
PROFESSIONAL LAND SURVEYOR
MARYLAND REG. NO. 10852

FILED
MAY -7 1991

AMENDED CONDOMINIUM PLAT

EXHIBIT "C" TO THE DECLARATION

EXHIBIT "1" TO THE "AMENDMENT TO DECLARATION OF CONDOMINIUM AND CONDOMINIUM PLAT OF FESTIVAL AT MUDDY BRANCH CONDOMINIUM FESTIVAL AT MUDDY BRANCH CONDOMINIUM

SCALE: 1" = 100' APRIL 17, 1991
GAITHERSBURG (9TH) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

SHEET 1 of 1

GLW GUTSCHICK LITTLE & WEBER, P.A.

ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 METRO: (301) 989-2524 FAX: (301) 421-4186

DRAWN BY: JEH CHKD. BY: DSW G.L.W. FILE NO. 89-055

MSA SSU 12646076

EXHIBIT "B"

PERCENTAGE INTERESTS

Unit Identifying #	Percentage Interest	Maximum Square Footage of Gross Leaseable Building Area Permitted	Number of Votes
Unit #1A	4.67%	12,080	467
Unit #1B	2.88%	7,467	288
Unit #2	16.79%	52,500	1,679
Unit #3	5.88%	15,226	588
Unit #4	3.21%	8,312	321
Unit #5	9.30%	24,075	930
Unit #6	2.47%	6,402	247
Unit #7	4.32%	11,198	432
Unit #8	4.15%	10,750	415
Unit #9	4.06%	10,500	406
Unit #10	3.48%	9,000	348
Unit #11	3.71%	9,600	371
Unit #12	2.90%	7,500	290
Unit #13	12.25%	31,724	1,225
Unit #14/15	11.82%	30,611	1,182
Unit #16	<u>8.11%</u>	<u>21,000</u>	<u>811</u>
	100.00%	267,945	10,000

PJF

Land Use: 820

Shopping Center (>150k)

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has at least 150,000 square feet of gross leasable area (GLA). It often has more than one anchor store. Various names can be assigned to a shopping center within this size range, depending on its specific size and tenants, such as community center, regional center, superregional center, fashion center, and power center.

A shopping center of this size typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants.

A shopping center of this size can be enclosed or open-air. The vehicle trips generated at a shopping center are based upon the total GLA of the center. In the case of a smaller center without an enclosed mall or peripheral buildings, the GLA is the same as the gross floor area of the building.

The 150,000 square feet GLA threshold value between community/regional shopping center and shopping plaza (Land Use 821) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.

Shopping plaza (40-150k) (Land Use 821), strip retail plaza (<40k) (Land Use 822), and factory outlet center (Land Use 823) are related uses.

Additional Data

Many shopping centers—in addition to the integrated unit of shops in one building or enclosed around a mall—include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied include peripheral buildings, it can be assumed that some of the data show their effect.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky,

Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

Source Numbers

77, 110, 154, 156, 159, 190, 199, 202, 204, 213, 251, 269, 294, 295, 299, 304, 305, 307, 308, 309, 311, 314, 315, 316, 317, 319, 365, 385, 404, 414, 423, 442, 446, 562, 629, 702, 715, 728, 868, 871, 880, 899, 912, 926, 946, 962, 973, 974, 978, 1034, 1040, 1067

Land Use: 948

Automated Car Wash

Description

An automated car wash is a facility that allows for the mechanical cleaning of the exterior of vehicles. Manual cleaning service may also be available at the facility. Self-service car wash (Land Use 947) and car wash and detail center (Land Use 949) are related uses.

Additional Data

The sites were surveyed in the 1990s and the 2000s in New Jersey, New York, and Washington.

Source Numbers

552, 555, 585, 599, 954