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**Revised: June 23, 2025***May 28, 2025*

Morris Township  
50 Woodland Avenue  
PO Box 7603  
Convent Station, NJ 07961-7603

Attn: Zoning Board of Adjustment

**Re: Traffic Impact Assessment  
South Street Gardens Improvements  
Block 7307 – Lot 8  
383 South Street  
Township of Morris, Morris County, NJ  
DT # 5756-25-01551**

Dear Board Members:

Dynamic Traffic has prepared the following assessment to determine the traffic impact and adequacy of access, circulation, and parking associated with improvements to the “South Street Gardens” garden center located between Pear Street and Whitney Avenue, west of South Street in the Township of Morris, Morris County, New Jersey (see Site Location Map). The site is designated as Block 7307 – Lot 8 on the Township Tax Maps. The site has operated as a garden center/nursery for many years and formerly had two (2) residential apartments on the property as well. It is proposed to upgrade the existing garden center and to convert the residential apartments into a single family home while also enhancing the facility aesthetically and adding a café and a small event space (The Project).

The primary access to the site will continue to be provided along Pear street with a secondary access proposed along Whitney Avenue. No direct access to South Street was historically provided nor is any proposed.

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

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.
- Projections of traffic to be generated by The Project were prepared utilizing trip generation data as published by the Institute of Transportation Engineers.
- The proposed access was inspected for adequacy of geometric design, spacing and/or

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alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.

- The parking layout and supply was assessed based on accepted design standards and demand experienced at similar developments.

**Existing Conditions**

South Street is an Urban Minor Arterial roadway under Morris County jurisdiction with a general north/south orientation. In the vicinity of the site the posted speed limit is 35 MPH and the roadway provides one travel lane in each direction. On-street parking is not permitted. In the site vicinity, South Street provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along South Street in the vicinity of The Project are primarily residential with municipal facilities to the east along Dwyer Lane.

Pear Street and Whitney Avenue are both Local roadways under Morris Township jurisdiction with a general east/west orientation. Both Roadways provide one travel lane in each direction and extend approximately 650 feet to the west from South Street before their westerly terminus. Pear Street and Whitney Avenue each intersect South Street from the west to form three-leg, unsignalized intersections controlled by STOP signs on their respective approaches.

**Site Generated Traffic**

The site historically functioned as a nursery/garden center and that primary use will remain. Trip generation projections for the existing and proposed garden center operations were made utilizing trip generation research data as published under Land Use Code (LUC) 817 – Nursery (Garden Center) in the Institute of Transportation Engineers’ (ITE) publication, *Trip Generation Manual, Eleventh Edition*. This publication sets forth trip generation rates based on empirical traffic count data conducted at numerous research sites. Trip generation projections for the apartments were made with LUC 220 – Multifamily Housing.

The following table shows the anticipated trip generation for the existing development during the weekday morning, weekday evening, and Saturday midday peak street hours (PSH). These projections are inclusive of the primary operation of the site which will remain as has previously existed, and includes ancillary greenhouse, storage, office and garden/flower/decor sales which are customarily part of a garden center operation.

**Table 1  
Trip Generation – Existing**

Use	AM PSH			PM PSH			Sat PSH		
	In	Out	Total	In	Out	Total	In	Out	Total
2.48 Acre Nursey (Garden Center)	4	3	7	10	10	20	28	30	58
2 Apartments	0	1	1	1	0	1	0	1	1
<b>Existing Total</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>11</b>	<b>10</b>	<b>21</b>	<b>28</b>	<b>31</b>	<b>59</b>

The café and event space are new uses proposed for the property that are not necessarily components of typical garden centers. The café, in particular, is intended to be an additional amenity to enhance the experience of those visiting the garden center. However, it is reasonable

to anticipate that the introduction of this amenity will attract additional patrons to the site. The most approximate land use per the ITE data is LUC 930 – Fast Casual Restaurant. The sites studied by ITE likely consist of national brands (ie. Panera, Chipotle, etc.) which are standalone businesses and rely heavily on “passby” traffic which is a percentage of the traffic volume patronizing the business out of convenience as it is along their route to/from home or work. In other words, passby trips are made as a matter of convenience and are made up of those vehicles that are already on the adjacent roadway network. The proposed café is not located on a major roadway, nor is it nationally branded or set up for quick, “convenience” trips. Therefore, the use of ITE data can be deemed conservative. The café will be open from 7:00 AM to 4:00 PM and will therefore not generate any traffic during the weekday evening peak hour.

The second additional component proposed on the site is the event space. NJDOT trip generation rates were utilized to project the site generated traffic for this use which will be controlled as events will be scheduled to ensure they do not coincide with the peak operational times of the primary garden center business on the site.

As previously mentioned, the majority of the café customers will also be garden center patrons. A vehicle entering the site to visit the garden center, who then also patronizes the café, would represent an “internally captured” trip and would not be an additional trip to/from the adjacent roadway network. Similarly, some of the café staff will also likely support any potential food service in the event space. Therefore, the internal capture calculation procedure as outline by ITE and NJDOT was utilized and those worksheets are appended.

Table 2 below details the trip generation associated with the proposed development:

**Table 2  
Trip Generation - Proposed**

Use	AM PSH			PM PSH			Sat PSH		
	In	Out	Total	In	Out	Total	In	Out	Total
2.48 Acre Nursey (Garden Center)	4	3	7	10	10	20	28	30	58
1,822 SF Fast Casual Restaurant	2	1	3	0	0	0	32	27	59
48 Seat Event Space (NJDOT Rates)	6	2	8	8	6	14	9	7	16
Single Family Home	0	1	1	1	1	2	1	1	2
Internally Captured Trips	0	0	0	0	0	0	-27	-27	-54
<b>Proposed Total</b>	<b>12</b>	<b>7</b>	<b>19</b>	<b>19</b>	<b>17</b>	<b>36</b>	<b>43</b>	<b>38</b>	<b>81</b>

Table 3 displays the existing vs. proposed trip generation of the subject site.

**Table 3  
Trip Generation Comparison**

Use	AM PSH			PM PSH			Sat PSH		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing Total	4	4	8	11	10	21	28	31	59
Proposed Total	12	7	19	19	17	36	43	38	81
<b>Difference</b>	<b>+8</b>	<b>+3</b>	<b>+11</b>	<b>+8</b>	<b>+7</b>	<b>+15</b>	<b>+15</b>	<b>+7</b>	<b>+22</b>

It should be noted that the number of new trips falls below the NJDOT accepted threshold of a significant increase in traffic of 100 peak hour trips. As such, it is not anticipated that the change in use will have any perceptible impact on the traffic operation of the adjacent roadway network even considering the conservative nature of the trip generation projections. Realistically, the additional traffic generated by the café will be less than identified above and the schedule coordination of the event space will make it unlikely that its traffic occurs during the same peak hours as the garden center and/or café. However, even without any adjustment for these more realistic scenarios, the traffic increase is insignificant.

### Capacity Analysis

In order to further assess the anticipated traffic impacts, a capacity analysis was prepared for the intersection of Pear Street and South Street. Traffic volumes along South Street were collected by Dynamic Traffic in July of 2015 and in March of 2016. Additionally, NJDOT has published count data from August 2017 and from July of 2020. The data collection dates cover both school activity as well as activity associated with the nearby public pool and recreation fields. The data from 2015 to 2017 was found to be quite consistent with an approximately 30% reduction in July of 2020 which is consistent with our findings throughout the state during the COVID-19 pandemic. It has further been our experience that traffic volumes are only recently recovering to pre-COVID levels. However, conservatively, the NJDOT published growth rate for this area of 2.5% per year was applied to the highest directional volumes from the historical traffic count data which presumes continuous annual traffic growth each year. This conservative forecast of future traffic volumes allows for a test of a “worst case” scenario in terms of background traffic volumes along South Street. Tables 4 and 5 below show the traffic volume calculations for the weekday AM and weekday PM peak hours, respectively.

**Table 4  
AM Peak Hour Traffic Volumes – South Street at Pear Street**

Count Date	Counter	NB	SB	Total
Tuesday, July 28, 2015	Dynamic Traffic	270	745	1015
Thursday, March 10, 2016	Dynamic Traffic	306	805	1111
Wednesday, August 9, 2017	NJDOT	362	754	1116
Thursday, August 10, 2017	NJDOT	419	698	1117
Friday, August 11, 2017	NJDOT	353	684	1037
Wednesday, July 22, 2020	NJDOT	239	542	781
	MAX -	419	805	1224
	<b>2.5%/Year Growth - 2025 Volumes -</b>	<b>511</b>	<b>1005</b>	<b>1516</b>

**Table 5**  
**PM Peak Hour Traffic Volumes – South Street at Pear Street**

Count Date	Counter	NB	SB	Total
Tuesday, July 28, 2015	Dynamic Traffic	556	471	1027
Thursday, March 10, 2016	Dynamic Traffic	570	448	1018
Tuesday, August 8, 2017	NJDOT	606	482	1088
Wednesday, August 9, 2017	NJDOT	613	509	1122
Thursday, August 10, 2017	NJDOT	579	534	1113
Wednesday, July 22, 2020	NJDOT	479	249	728
MAX -		613	534	1147
<b>2.5%/Year Growth - 2025 Volumes -</b>		<b>747</b>	<b>651</b>	<b>1398</b>

Traffic volumes during the Saturday midday peak hour are generally lower than the weekday AM or PM peak hours and typically closer to a 50/50 directional split as opposed to the more directionalized orientation of weekday peak hours. Conservatively, to project the Saturday peak hour traffic volumes, the higher total peak hour volumes were utilized without reduction but with a 50/50 north/south directional split. Traffic volumes associated with the proposed expanded garden center, as shown in Table 2, were distributed over the conservative projections of future background traffic as shown in Table 6 below:

**Table 6**  
**Build Traffic Volumes – South Street at Pear Street**

Peak Hour	Eastbound		Northbound		Southbound	
	Left	Right	Left	Through	Through	Right
AM	3	4	4	511	1005	8
PM	9	8	10	747	651	9
SAT	21	22	19	758	758	19

Capacity Analyses were prepared based on the traffic volumes shown in Table 6. The methodology utilized in the capacity analyses is described in the *Highway Capacity Manual*, published by the Transportation Research Board. In general, the term Level of Service (LOS) is used to provide a “qualitative” evaluation of capacity based upon certain “quantitative” calculations related to empirical values, such as traffic volume and intersection control.

An unsignalized (STOP sign controlled) driveway or side street along a through route is seldom critical from an overall capacity standpoint, however, it may be of great significance to the capacity of the minor cross-route, and it may influence the quality of traffic flow on both. When analyzing an unsignalized intersection, it is assumed that both the major street through and right turn movements are unimpeded and have the right-of-way over all side street traffic and left turns from the major street. All other turning movements in the intersection cross, merge with, or are otherwise impeded by major street movements. Traffic delays at unsignalized intersections are determined by sequentially processing these impeded movements. Table 7 describes the level of service ranges for unsignalized (stop controlled) intersections.

**Table 7  
Level of Service Criteria  
for Unsignalized Intersections**

<b>Level of Service</b>	<b>Average Control Delay (seconds per vehicle)</b>
a	0.0 to 10.0
b	10.1 to 15.0
c	15.1 to 25.0
d	25.1 to 35.0
e	35.1 to 50.0
f	greater than 50.0

All capacity analyses were performed utilizing Synchro 12 software. Table 8 summarizes the existing levels of service (LOS) and delays. All capacity analysis calculation worksheets are contained in the Appendix.

**Table 8  
Existing Levels of Service**

<b>Intersection</b>	<b>Direction/Movement</b>		<b>AM PSH</b>	<b>PM PSH</b>	<b>Sat PSH</b>
South Street and Pear Street	EB	LR	D (34)	C (25)	D (27)
	NB	L	A (10)	A (9)	B (11)

As shown above, even with a very conservative projection of future background traffic volumes and site generated traffic volumes, the intersection of South Street and Pear Street operates at acceptable Levels of Service. In fact, the calculated 95<sup>th</sup> percentile queue at the stop sign on Pear Street is one (1) vehicle or less. This assessment confirms that ample capacity is available at the most impacted intersection to accommodate the expanded and improved South Street Gardens facility.

**Site Access, Parking and Circulation**

The site was reviewed with respect to the site access and on-site circulation design. As previously noted, primary access to the site will continue to be provided along Pear Street. Additionally, access is proposed via a connection to Whitney Avenue which can help disperse traffic during the peak spring season and for arrival and dismissal of events.

The existing operation does not provide any formal parking spaces. Instead, vehicles park in gravel areas along either side of Pear Street. This configuration will be replicated, however, on-site, seven (7) spaces inclusive of two (2) ADA spaces will be formally striped. These parking areas will service the proposed operation during most times of the year. During the busier seasons, overflow parking was not provided. The current proposal includes the provision of parking along the westerly side of the buildings as well as behind the buildings. This will ensure adequate parking is provided for the busier spring season and also for any events held at the site which will eliminate the potential for parallel parking along Pear Street which could impede emergency vehicle access.

In addition to the seven (7) striped spaces along the Pear Street frontage, the existing parking area opposite the site, on Pear Street, can accommodate ten (10) additional vehicles. Furthermore, it is proposed to provide 75 parking spaces in a parking area along the westerly and

southerly sides of the property. This results in a total of 82 parking spaces on site which are supplemented by the ten (10) additional spaces on Pear Street, opposite the site.

The Ordinance sets forth the following parking requirement for each the spaces on the site:

- Retail –  $5/1000 \text{ SF} \times 8,266 \text{ SF} = 41$
- Office –  $4/1000 \text{ SF} \times 300 \text{ SF} = 1$
- Warehouse –  $1/500 \text{ SF} \times 5,753 = 12$
- Café –  $1/2.5 \text{ seats} \times 20 \text{ seats} = 8$
- Place of Assembly –  $1/3 \text{ seats} \times 48 = 16$
- Single Family Home – 3 per 5 Bedroom = 3
- **TOTAL = 81**

As shown, the parking supply of 82 on-site spaces exceeds the Township parking requirement.

In order to further substantiate the parking supply, reference is made to the ITE publication *Parking Generation Manual, 6<sup>th</sup> Edition*. Similar to *Trip Generation*, *Parking Generation* identifies the average peak parking demand based on actual counts at various land uses. As previously mentioned, restaurants studied by ITE are typically located along highways and are nationally recognized brands. Therefore, the parking data, similar to the trip generation data is likely an overestimate of the actual anticipated demand. Nevertheless, with no adjustments made, below are the parking demand projections based on the ITE data:

- Retail –  $3.13/1000 \text{ SF} \times 8,266 \text{ SF} = 26$
- Office –  $1.85/1000 \text{ SF} \times 300 \text{ SF} = 1$
- Warehouse –  $0.37/1000 \text{ SF} \times 5,753 = 3$
- Café –  $9.77/1000 \text{ SF} \times 1,808 \text{ SF} = 18$
- Event Space –  $.63/\text{seat} \times 48 = 30$
- Single Family Home – 1.41/Home = 2
- **TOTAL = 80**

It should be noted that the above calculations based on both Ordinance requirements and ITE findings assume simultaneous peak parking demand for all aspects of the proposed development. Realistically, each of these uses will experience separate peak parking times making the overall parking demand at any one time lower than the simple summation of each use. Even so, the proposed parking supply exceeds the summation of the demand for each use and is supplemented by the ten (10) street spaces opposite the site on Pear Street. Therefore, the parking supply is more than sufficient to accommodate the maximum anticipated demand and can uniquely be controlled by the applicant via scheduling larger events outside of the peak demand of the garden center operation. However, in order to identify a realistic parking demand at a single time of day, a shared parking analysis was conducted based on the time of day distribution published by ITE for each use on site. Note that the space identified as warehouse and office space was assumed to have the same peaking characteristics as the retail use as these spaces are supportive of the primary retail use. Tables 4 and 5 below show the anticipated parking demand broken down by time of day for both weekdays and weekends, respectively:

**Table 4**  
**Shared Parking Analysis - Weekday**

Peak Demand	30		18		2		30		80
	Garden Center		Café		Residence		Event Space		
Time of Day	% of Peak	Occ. Spaces	% of Peak	Occ. Spaces	% of Peak	Occ. Spaces	% of Peak	Occ. Spaces	Total Parking Demand
12AM - 4AM	0%	0	0%	0	100%	2	0%	0	2
5:00 AM	0%	0	0%	0	98%	2	0%	0	2
6:00 AM	0%	0	0%	0	97%	2	0%	0	2
7:00 AM	0%	0	5%	1	85%	2	0%	0	3
8:00 AM	19%	6	12%	2	78%	2	0%	0	10
9:00 AM	40%	12	14%	3	70%	1	0%	0	16
10:00 AM	44%	13	22%	4	70%	1	0%	0	18
11:00 AM	52%	16	100%	18	63%	1	13%	4	39
12:00 PM	96%	29	78%	14	64%	1	38%	11	55
1:00 PM	96%	29	40%	7	64%	1	43%	13	50
2:00 PM	84%	25	32%	6	59%	1	39%	12	44
3:00 PM	52%	16	26%	5	60%	1	32%	10	32
4:00 PM	50%	15	46%	8	66%	1	33%	10	34
5:00 PM	63%	19	0%	0	70%	1	41%	12	32
6:00 PM	49%	15	0%	0	81%	2	78%	23	40
7:00 PM	100%	30	0%	0	84%	2	95%	29	61
8:00 PM	94%	28	0%	0	92%	2	100%	30	60
9:00 PM	73%	22	0%	0	96%	2	88%	26	50
10:00 PM	0%	0	0%	0	97%	2	64%	19	21
11:00 PM	0%	0	0%	0	99%	2	0%	0	2
								MAX =	61

**Table 5  
Shared Parking Analysis – Weekend**

Peak Demand	30		18		2		30		80
	Garden Center		Café		Residence		Event Space		
Time of Day	% of Peak	Occ. Spaces	% of Peak	Occ. Spaces	% of Peak	Occ. Spaces	% of Peak	Occ. Spaces	Total Parking Demand
12AM - 4AM	0%	0	0%	0	100%	2	0%	0	2
5:00 AM	0%	0	0%	0	98%	2	0%	0	2
6:00 AM	0%	0	0%	0	97%	2	0%	0	2
7:00 AM	0%	0	3%	1	85%	2	0%	0	3
8:00 AM	0%	0	7%	1	78%	2	0%	0	3
9:00 AM	38%	11	7%	1	70%	1	0%	0	13
10:00 AM	55%	17	27%	5	70%	1	0%	0	23
11:00 AM	66%	20	70%	13	63%	1	20%	6	40
12:00 PM	85%	26	80%	14	64%	1	40%	12	53
1:00 PM	100%	30	100%	18	64%	1	62%	19	68
2:00 PM	96%	29	57%	10	59%	1	69%	21	61
3:00 PM	79%	24	43%	8	60%	1	49%	15	48
4:00 PM	66%	20	60%	11	66%	1	66%	20	52
5:00 PM	64%	19	0%	0	70%	1	79%	24	44
6:00 PM	67%	20	0%	0	81%	2	85%	26	48
7:00 PM	70%	21	0%	0	84%	2	99%	30	53
8:00 PM	70%	21	0%	0	92%	2	99%	30	53
9:00 PM	51%	15	0%	0	96%	2	100%	30	47
10:00 PM	0%	0	0%	0	97%	2	88%	26	28
11:00 PM	0%	0	0%	0	99%	2	0%	0	2
								MAX =	<b>68</b>

As shown, the maximum instantaneous demand is calculated to be no more than 68 occupied parking spaces. Therefore, the parking supply will be more than sufficient to accommodate the maximum anticipated demand.

**Findings**

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

- The proposed development includes improvements and additional amenities at the existing South Street Gardens garden center which will generate a maximum increase of 8 entering trips and 3 exiting trips during the morning peak hour, 8 entering trips and 7 exiting trips during the evening peak hour and 15 entering trips and 7 exiting trips during the Saturday peak hour.
- The conservatively projected increase in traffic falls below the NJDOT definition of a “significant increase in traffic”.
- A conservative projection of future traffic volumes indicates that the intersection of South Street and Pear Street will operate acceptably.

- Access to the site will continue to be provided via Pear Street with an additional driveway proposed on Whitney Avenue.
- As proposed, The Project's site driveways and internal circulation have been designed to provide for safe and efficient movement of the anticipated vehicle mix.
- The proposed parking supply and design is sufficient to support the projected demand.

## **Conclusion**

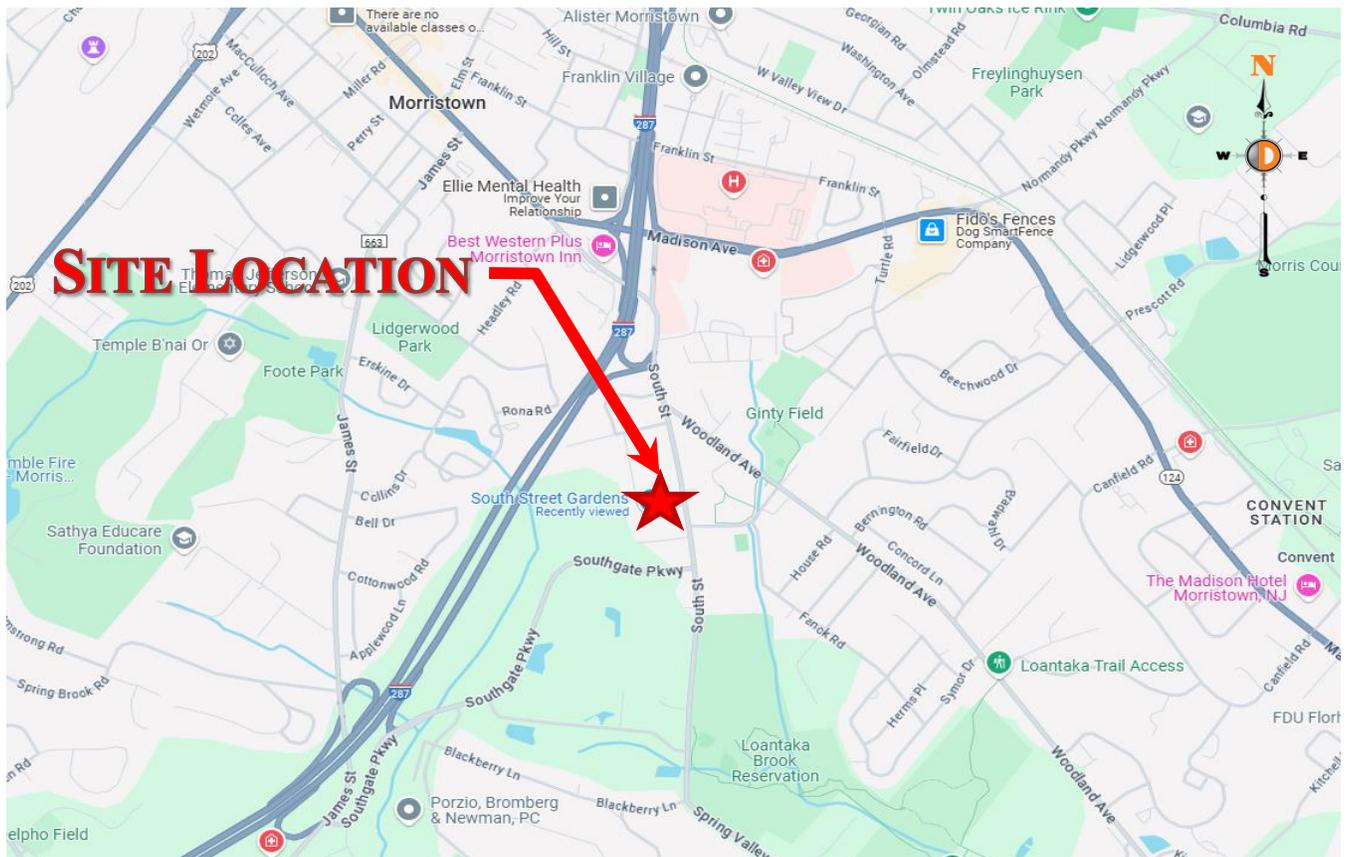
Based upon our Traffic Assessment as detailed in the body of this report, it is the professional opinion of Dynamic Traffic that the adjacent street system of the Township of Morris and Morris County will not experience any significant degradation in operating conditions with the redevelopment of the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

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

Sincerely,  
**Dynamic Traffic, LLC**



Craig W. Peregoy, PE  
Senior Principal  
License #: 45880



**SITE LOCATION**



NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	South Street Gardens	Organization:	Dynamic Traffic
Project Location:	383 South Street	Performed By:	CWP
Scenario Description:		Date:	5/6/2025
Analysis Year:		Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Retail	817	2.48	Acres	7	4	3
Restaurant	930	1,822	SF	3	2	1
Residential	215	1	Home	1	0	1
Cinema/Entertainment	NJDOT	48	Seats	8	6	2
				0		
				0		
				0		
				19	12	7

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	LUC 817	LUC 930	LUC 215	LUC NJDOT	-	-
	2.48 Acres	1822 SF	1 Home	48 Seats		
	Retail	Restaurant	Residential	Cinema/Entertainment	-	-
Retail		0	0	0	0	0
Restaurant	0		0	0	0	0
Residential	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
-	0	0	0	0		0
-	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	19	12	7
Internal Capture Percentage	0.0%	0.0%	0.0%
External Vehicle-Trips <sup>5</sup>	19	12	7
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Retail	0.0%	0.0%
Restaurant	0.0%	0.0%
Residential	N/A	0.0%
Cinema/Entertainment	0.0%	0.0%
-	N/A	N/A
-	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	South Street Gardens	Organization:	Dynamic Traffic
Project Location:	383 South Street	Performed By:	CWP
Scenario Description:		Date:	5/6/2025
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Retail	817	2.48	Acres	20	10	10
Restaurant	930	1,822	SF	0	0	0
Residential	215	1	Home	2	1	1
Cinema/Entertainment	NJDOT	48	Seats	14	8	6
				0		
				0		
				0		
				36	19	17

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	LUC 817	LUC 930	LUC 215	LUC NJDOT	-	-
	2.48 Acres	1822 SF	1 Home	48 Seats		
	Retail	Restaurant	Residential	Cinema/Entertainment	-	-
Retail		0	0	0	0	0
Restaurant	0		0	0	0	0
Residential	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
-	0	0	0	0		0
-	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	36	19	17
Internal Capture Percentage	0.0%	0.0%	0.0%
External Vehicle-Trips <sup>5</sup>	36	19	17
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Retail	0.0%	0.0%
Restaurant	N/A	N/A
Residential	0.0%	0.0%
Cinema/Entertainment	0.0%	0.0%
-	N/A	N/A
-	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-P, 9-P (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

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NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	South Street Gardens	Organization:	Dynamic Traffic
Project Location:	383 South Street	Performed By:	CWP
Scenario Description:		Date:	5/6/2025
Analysis Year:		Checked By:	
Analysis Period:	SAT Street Peak Hour	Date:	

Table 1-S: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Retail	817	2.48	Acres	58	28	30
Restaurant	930	1,822	SF	59	32	27
Residential	215	1	Home	2	1	1
Cinema/Entertainment	NJDOT	48	Seats	16	9	7
				0		
				0		
				0		
				135	70	65

Table 2-S: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-S: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-S: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	LUC 817	LUC 930	LUC 215	LUC NJDOT	-	-
	2.48 Acres	1822 SF	1 Home	48 Seats		
	Retail	Restaurant	Residential	Cinema/Entertainment	-	-
Retail		9	0	3	0	0
Restaurant	8		0	3	0	0
Residential	0	0		0	0	0
Cinema/Entertainment	2	2	0		0	0
-	0	0	0	0		0
-	0	0	0	0	0	

Table 5-S: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	135	70	65
Internal Capture Percentage	40.0%	38.6%	41.5%
External Vehicle-Trips <sup>5</sup>	81	43	38
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-S: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Retail	35.7%	40.0%
Restaurant	34.4%	40.7%
Residential	0.0%	0.0%
Cinema/Entertainment	66.7%	57.1%
-	N/A	N/A
-	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-S vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-S, 9-S (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-S.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

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Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	21	22	19	758	758	19
Future Vol, veh/h	21	22	19	758	758	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	22	23	20	798	798	20

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1646	808	818	0	0
Stage 1	808	-	-	-	-
Stage 2	838	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	111	384	819	-	-
Stage 1	442	-	-	-	-
Stage 2	428	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	106	384	819	-	-
Mov Cap-2 Maneuver	106	-	-	-	-
Stage 1	423	-	-	-	-
Stage 2	428	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	34.14	0.23	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	44	-	168	-	-
HCM Lane V/C Ratio	0.024	-	0.269	-	-
HCM Ctrl Dly (s/v)	9.5	0	34.1	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	9	8	10	747	651	9
Future Vol, veh/h	9	8	10	747	651	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	8	11	786	685	9

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1497	690	695	0	0
Stage 1	690	-	-	-	-
Stage 2	807	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	136	449	910	-	-
Stage 1	502	-	-	-	-
Stage 2	442	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	134	449	910	-	-
Mov Cap-2 Maneuver	134	-	-	-	-
Stage 1	491	-	-	-	-
Stage 2	442	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	24.82	0.12	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	24	-	199	-	-
HCM Lane V/C Ratio	0.012	-	0.09	-	-
HCM Ctrl Dly (s/v)	9	0	24.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	3	4	4	511	1005	8
Future Vol, veh/h	3	4	4	511	1005	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	4	538	1058	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1608	1062	1066	0	-	0
Stage 1	1062	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	117	274	661	-	-	-
Stage 1	335	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	116	274	661	-	-	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	332	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	26.79	0.08	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	14	-	173	-	-
HCM Lane V/C Ratio	0.006	-	0.043	-	-
HCM Ctrl Dly (s/v)	10.5	0	26.8	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-