



J. TRAFFIC, TRANSPORTATION, PEDESTRIANS AND TRANSIT

1. Existing Conditions

a) Existing Intersections and Roadways

Evaluation of the potential traffic impacts associated with the Project requires a thorough understanding of the existing roadway system in the vicinity of the Site.

The Site is located on the east and west sides of US Route 44 (Dutchess Turnpike), between the Victory Lane/Barnes Drive and Concord Village Drive intersections. Regional north-south access is provided east of the site via the Taconic State Parkway and west of the site via Interstate 87 (I-87). Regional east-west access is provided south of the site via Interstate 84 (I-84).

The existing conditions observed in the study area include an inventory of roadways and intersection geometry, on-street parking, bus stop locations, and traffic control devices. This information is summarized below and discussed in detail in the Traffic Impact and Access Study (TIAS) included in Appendix H of the DEIS. The Final Scope identifies the key roadways and study area intersections which are described in detail in the TIAS. The eight study area intersections are illustrated on Figure 2 in the TIAS.

1. US Route 44/Colonial Knolls - unsignalized
2. US Route 44/Hornbeck Road - unsignalized
3. US Route 44/Concord Village Drive - unsignalized
4. US Route 44/Darrow Place - unsignalized
5. US Route 44/Barnes Drive/Victory Lane - signalized
6. US Route 44/Degarmo Road (County Road 46)/Walgreens Driveway - signalized
7. US Route 44/Overocker Road - unsignalized
8. US Route 44/Cherry Hill Drive - signalized

The roadways in the study area include:

1. US Route 44 (Dutchess Turnpike)
2. Degarmo Road (County Road 43)
3. Overocker Road
4. Hornbeck Road
5. Victory Lane
6. Concord Village Drive



b) Existing Traffic Conditions

To assess existing traffic conditions in the vicinity of the Site, peak period manual turning movement traffic volume counts were recorded at the eight study area intersections. The counts included tallies of vehicles and pedestrians and were conducted at the majority of the intersections on Thursday, June 8, 2016 and Saturday, June 18, 2016. Counts at the US Route 44/Cherry Hill Drive intersection were conducted on Wednesday, October 5, 2016 and Saturday, October 1, 2016. Weekday and Saturday peak hour counts completed in 2012 at the US Route 44/Overocker Road intersection were utilized in the study and adjusted to represent 2016 conditions. It is noted that in 2016 the bridge on Degarmo Road was closed with a detour in place; therefore, the 2016 traffic volumes were compared to 2012 traffic volume data and adjusted as needed to represent current conditions without the detour in place. Existing peak hour traffic volumes are illustrated on Figures 3, 4 and 5 in the TIAS.

To assess the quality of traffic flow in the study area during the peak hours, intersection capacity analyses were conducted for the existing traffic volume conditions. The intersection capacity analyses were based on the evaluation criteria contained in the 2010 Highway Capacity Manual (HCM). Levels of service range from A to F with LOS A representing short vehicle delays and LOS F representing long vehicle delays.

The results of the capacity analyses for the AM, PM and Saturday Peak Hours for the Existing traffic conditions are summarized in Table 3J-1. The detailed Synchro capacity analysis worksheets are contained in the TIAS Appendix E.

As indicated in Table 3J-1, under existing conditions, the following is noted:

- The stop controlled Concord Village Drive approach to US Route 44 operates at LOS F during the PM peak hour with average vehicle delays of 72 seconds.
- The US Route 44 northbound through movement at the signalized Degarmo Road intersection operates at LOS F during the PM peak hour with the overall intersection operating at LOS E with average vehicle delays of 59 seconds.



Table 3J-1 Existing Intersection Levels of Service Summary

Intersection	Approach	Lane Group	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			LOS ^a	Delay ^b	Veh Q ^c	LOS	Delay	Veh Q	LOS	Delay	Veh Q
Rt 44/Colonial Knolls (Unsignalized)	SB	L	A	8	0	B	10	0	A	9	<1
	WB	LR	D	25	<1	E	42	<1	D	27	<1
Rt 44/Hornbeck Rd (Unsignalized)	NB	L	A	10	<1	A	10	<1	A	9	<1
	EB	LR	C	22	1	E	35	2	C	21	<1
Rt 44/Concord Village Dr (Unsignalized)	NB	L	B	11	<1	A	10	0	A	9	<1
	EB	LR	E	44	<1	F	72	2	C	18	<1
Rt 44/Darrow Pl (Unsignalized)	SB	L	A	9	0	B	10	0	A	9	0
	WB	LR	D	35	<1	C	18	0	C	20	<1
Rt 44/Barnes Dr/ Victory Ln (Signal)	NB	L	A	10	<1	A	8	<1	A	5	<1
		T	A	4	4	A	9	11	A	4	5
	SB	L	A	5	<1	B	11	0	A	5	0
		TR	A	8	10	A	6	7	A	5	6
	EB	LTR	C	27	<1	C	27	<1	C	28	<1
	WB	L	C	28	<1	C	28	<1	C	27	0
		TR	C	27	<1	C	29	<1	C	28	0
	Intersection		A	7		A	8		A	5	
Rt 44/Degarmo Rd/ Walgreens (Signal)	NB	L	C	20	<1	B	17	<1	B	17	<1
		T	C	29	10	F	96	30	D	45	18
		R	B	19	1	B	17	<1	B	17	<1
	SB	L	D	38	7	E	78	10	C	25	3
		TR	D	43	20	C	23	12	C	25	12
	EB	LTR	C	21	<1	C	26	<1	C	24	<1
	WB	LT	E	61	6	D	40	7	D	37	5
		R	B	15	1	B	18	2	B	17	2
Intersection		D	38		E	59		C	32		
Rt 44/ Overocker Rd (Unsignalized)	NB	L	A	10	0	A	9	0	A	9	0
	SB	L	A	9	<1	B	10	<1	A	10	<1
	EB	LTR	D	29	<1	B	14	0	E	36	<1
	WB	LTR	C	19	<1	C	23	<1	C	23	<1
Rt 44/ Cherry Hill Dr (Signal)	NB	LT	D	36	2	D	54	4	D	53	4
		R	C	30	<1	C	32	1	C	32	1
	SB	LT	C	33	1	D	39	3	D	38	4
		R	C	29	2	C	28	2	C	28	2
	EB	L	B	16	1	C	26	4	B	19	3
		TR	B	15	8	D	45	24	C	30	17
	WB	L	A	10	<1	B	20	<1	B	17	<1
		TR	C	32	18	D	48	21	D	41	19
Intersection		C	25		D	42		C	34		

a Level of service

b Average total delay, in seconds per vehicle.

c Average vehicle queue at signalized intersections and 95th percentile queue at unsignalized intersections.



c) Public Transportation

Public transportation in the study area is provided by the Dutchess County Division of Public Transit via the existing fixed route and demand response services. Details on current transit opportunities are provided below:

- **Route D:** The Poughkeepsie-Pleasant Valley-Millbrook-Amenia-Dover route provides service along the US Route 44 project frontage Monday through Saturday from approximately 6:00 AM to 11:00 PM at headways (time between buses) ranging from one to three hours. Scheduled stops are located at the Rochdale Firehouse located 0.55-miles north of the site and Adams Fairacre Farms located 1.15-miles south of the site. Flag stops are available at any point along Route D, including the project frontage.
- **Dial-A-Ride:** Dial-A-Ride service is available to residents in the Town of Poughkeepsie living outside of fixed routes. Service is available weekdays from 9:00 AM to 1:45 PM and passengers must call for reservations a minimum of three days prior to the scheduled service.

d) Crash Analysis

Crash data for the 1.5 mile section of US Route 44 from Colonial Knolls to Cherry Hill Drive was obtained from NYSDOT for the latest available three-year period from September 1, 2013 to August 31, 2016. Review of the data shows that during the three-year period, a total of 77 crashes occurred on this section of US Route 44. Table 3J-2 shows that of the 77 crashes, there were 45 injury crashes, 24 property damage collisions, 8 non-reportable incidents (no injury and less than \$2,000 in damage), and there were no fatalities. Two crashes involved pedestrians and there were no crashes that involved bicyclists. A detailed breakdown of the crash data is provided in Appendix C of the TIAS.



Table 3J-2 Summary of 3-year Crash History

Location	Total Crashes	Severity			
		Fatal	INJ ^a	PDO ^b	NR ^c
Townsend Blvd to Colonial Knolls	1			1	
Hornbeck Rd intersection	3		3		
Hornbeck Rd to Darrow Pl	3		2	1	
Darrow Pl intersection	1			1	
Darrow Pl to Victory Ln	3		2	1	
Victory Ln intersection	6		4	2	
Victory Ln to Edwin Rd	4		4		
Edwin Rd intersection	1		1		
Edwin Rd to Ridge Rd	1				1
Ridge Rd intersection	4		2	1	1
Ridge Rd to Degarmo Rd	0				
Degarmo Rd intersection	10		3	5	2
Degarmo Rd to Overocker Rd	0				
Overocker Rd intersection	5		3	2	
Overocker Rd to Overlook Rd	4		3	1	
Overlook Rd intersection	8		7		1
Overlook Rd to Cherry Hill Dr	5		3	1	1
Cherry Hill Dr intersection	18		8	8	2
Total	77	0	45	24	8

Source: NYSDOT crash data dated September 1, 2013 through August 31, 2016.

- a Injury
- b Property Damage Only
- c Non-Reportable

As shown in Table 3J-2, the intersections of US Route 44 with Degarmo Road, Overlook Road, and Cherry Hill Drive accounted for close to half (47%) of the total crashes. In the three-year period, the highest number of crashes occurred at the intersection of US Route 44 and Cherry Hill Drive with a total of 18 crashes. Approximately 40% of these crashes were rear-end crashes with driver inattention and following too closely cited as the most occurring contributing factors in the crashes.

The Degarmo Road intersection had the second highest occurrence of crashes over the three year period with a total of 10 incidents. Of the ten crashes four were right-angle crashes and three were rear end crashes. The highest contributing factors cited at this intersection were failure to yield to the right-of-way and following too closely.



Review of the crash data through the study corridor does not identify any prevalent accident patterns in the study area.

The data was also used to calculate the crash rate for the 1.5 mile long segment along US Route 44. The urban undivided 2 lane highway segment has a crash rate of 2.56 accidents per million vehicles miles (ACC/MVM), which is lower than the state-wide average of 3.52 ACC/MVM for similar facilities.

e) Travel Time Data

Google travel time data was used to estimate the time it takes to travel northbound and southbound between the US Route 44/West Road intersection in Pleasant Valley (north) and the US Route 44 westbound arterial/NY Route 115 intersection in Poughkeepsie (south). Virtual travel time data was collected during the weekday AM, PM, and Saturday midday peak hours on five routes. The routes are described below as if travelling in the southbound direction.

- US Route 44
- West Road to Salt Point Turnpike (NY Route 115)
- US Route 44 to Bower Road to Van Wagner Road and to the East/West Arterial
- US Route 44 to Hornbeck Road to Van Wagner Road and to the East/West Arterial
- West Road to Salt Point Turnpike to Van Wagner Road to the East/West Arterial

Table 3J-3 summarizes the travel time estimates for the five routes during the peak hours. The table shows travel time estimates were recorded on specific days and the typical travel time estimate for each peak hour condition. Screen captures of the virtual travel time surveys are included in the TIAS Appendix B.



Table 3J-3 Peak Hour Travel Time Summary in Minutes

Route	AM Peak				PM Peak				Saturday Peak			
	11/16/16		Typical		11/10/16		Typical		11/19/16		Typical	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
US Rt 44	12	11	10- 16	10- 16	14	11	12- 18	10- 16	12	11	10- 16	10- 14
West Rd, Salt Point Turnpike	12	13	12- 16	12- 16	13	13	12- 16	12- 14	12	11	12- 14	10- 14
US Rt 44, Bower Rd, Van Wagner Rd, Arterial	15	12	14- 18	12- 14	16	12	14- 18	14	15	12	14- 18	14
US Rt 44, Hornbeck Rd, Van Wagner Rd, Arterial	16	13	14- 18	12- 16	17	13	14- 18	12- 16	16	12	14- 18	14
West Rd, Van Wagner Rd, Arterial	17	13	14- 18	12- 16	17	13	16- 20	12- 16	16	13	14- 18	14

Source: Google

Table 3J-3 shows that it is generally faster to travel solely on US Route 44 or to travel via West Road and Salt Point Turnpike than detouring to other travel routes.

2. Potential Impacts

a) Future without Proposed Project

The year 2023 No-Build traffic volume networks were developed by applying the 0.25% annual growth rate over the seven-year study horizon to the existing volume networks. Figures 6, 7, and 8 in the TIAS show the resulting 2023 No-Build peak hour traffic volume networks for the weekday morning, weekday evening, and Saturday midday peak hours, respectively. Table 3J-4 summarizes the levels of service for the 2023 No-Build condition. The detailed evaluations are included in the TIAS Appendix E.

The following is noted regarding the 2023 No-Build conditions:

- The stop controlled Concord Village Drive approach to US Route 44 continues to operate at LOS F during the PM peak hour with average vehicle delays of 78 seconds.
- The US Route 44 northbound through movement at the signalized Degarmo Road intersection continues to operate at LOS F during the PM peak hour and with an overall intersection LOS E with average vehicle delays of 62 seconds. In addition, the southbound left-turn movement on US Route 44 drops to LOS F during the PM peak hour.



Table 3J-4 2023 No-Build Intersection Levels of Service Summary

Intersection	Approach	Lane Group	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			LOS ^a	Delay ^b	Veh Q ^c	LOS	Delay	Veh Q	LOS	Delay	Veh Q
Rt 44/Colonial Knolls (Unsignalized)	SB	L	A	8	0	B	10	0	A	9	<1
	WB	LR	D	26	<1	E	44	<1	D	28	<1
Rt 44/Hornbeck Rd (Unsignalized)	NB	L	B	10	<1	A	10	<1	A	9	<1
	EB	LR	C	23	2	E	50	2	C	21	<1
Rt 44/Concord Village Dr (Unsignalized)	NB	L	B	11	<1	A	10	0	A	9	<1
	EB	LR	E	47	<1	F	78	2	C	19	<1
Rt 44/Darrow Pl (Unsignalized)	SB	L	A	9	0	B	11	0	A	9	0
	WB	LR	E	36	<1	C	18	0	C	21	<1
Rt 44/Barnes Dr/ Victory Ln (Signal)	NB	L	B	10	<1	A	8	<1	A	5	<1
		T	A	4	4	A	9	12	A	5	6
	SB	L	A	5	<1	B	11	0	A	5	0
		TR	A	8	11	A	6	8	A	5	6
	EB	LTR	C	27	<1	C	27	<1	C	28	<1
	WB	L	C	28	<1	C	28	<1	C	27	0
		TR	C	27	<1	C	29	<1	C	28	0
	Intersection			A	7		A	9		A	5
Rt 44/Degarmo Rd/ Walgreens (Signal)	NB	L	C	21	<1	B	17	<1	B	17	<1
		T	C	29	10	F	103	31	D	46	18
	SB	R	B	18	<1	B	17	<1	B	17	<1
		L	D	42	6	F	82	11	C	27	3
	EB	TR	D	46	21	C	24	13	C	25	13
		LTR	C	21	<1	C	26	<1	C	24	<1
	WB	LT	E	65	6	D	41	7	D	39	5
		R	B	15	1	B	18	2	B	17	2
Intersection			D	41		E	62		C	33	
Rt 44/ Overocker Rd (Unsignalized)	NB	L	A	10	0	A	9	0	A	9	0
	SB	L	A	9	<1	B	10	<1	A	10	<1
	EB	LTR	D	30	<1	B	14	0	E	37	<1
	WB	LTR	C	19	<1	C	24	<1	C	24	<1
Rt 44/ Cherry Hill Dr (Signal)	NB	LT	D	36	2	E	56	4	D	53	4
		R	C	30	<1	C	32	<1	C	32	1
	SB	LT	C	33	1	D	39	3	D	38	4
		R	C	29	2	C	28	2	C	28	2
	EB	L	B	16	1	C	31	7	C	20	3
		TR	B	15	8	D	46	25	C	31	17
	WB	L	A	10	<1	C	20	<1	B	17	<1
		TR	C	35	19	D	55	23	D	43	20
Intersection			C	26		D	46		D	36	

a Level of service

b Average total delay, in seconds per vehicle.

c Average vehicle queue at signalized intersections and 95th percentile queue at unsignalized intersections.



b) Future with Proposed Project

Trip Generation

The proposed development plan consists of the construction of 390 residential units, 36,500 SF of office/medical office space, 42,000 SF of service/retail space, and 15,000 SF of restaurant space. Trip generation estimates for the proposed uses were projected using trip generation rates published by the Institute of Transportation Engineers (ITE) *Trip Generation, 9th Edition*. Due to the mixed-use nature of the proposed *MacDonnell Heights Town Center* and the vehicle connections between the various land uses, it's expected that a number of vehicle trips at the site will be multi-use or "internal". To determine the internal capture rate, the procedures and methodologies contained in ITE's *Trip Generation* and National Cooperative Highway Research Program (NCHRP) Report 684 *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* were used. It is also expected that some of the trips accessing the proposed project will be pass-by trips or diverted link trips. Data published by ITE was used to determine the appropriate pass-by rate for specific land uses.

Table 3J-5 summarizes the projected trip generation associated with the proposed development. A detailed trip generation estimate is included in the TIAS Appendix D. It is noted that the total new trips anticipated at the site are a total of the overall trips less the internal trips and pass-by trips.



Table 3J-5 Project Trip Generation Summary

Peak Hour	Total Trips ^a	Internal Trips ^b	Pass-by Trips ^a	New Trips ^c
Weekday Morning				
Enter	503	-102	-132	269
<u>Exit</u>	<u>550</u>	<u>-102</u>	<u>-132</u>	316
Total	1,053	-204	-264	585
Weekday Evening				
Enter	499	-210	-54	235
<u>Exit</u>	<u>465</u>	<u>-210</u>	<u>-54</u>	201
Total	964	-420	-108	436
Saturday Midday				
Enter	514	-223	-83	208
<u>Exit</u>	<u>495</u>	<u>-223</u>	<u>-83</u>	189
Total	1,009	-446	-166	397

a Trip Generation and pass-by trips estimated based ITE *Trip Generation*, 9th Edition

b Internal Trip estimated based on NCHRP Report 684 *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*

c New trips = Total trips less internal trips and pass-by trips

As shown in Table 3J-5, the proposed development at full buildout is estimated to generate approximately 585 new vehicle trips (269 entering and 316 exiting) during the weekday morning peak hour, 436 new vehicle trips (235 entering and 201 exiting) during the weekday evening peak hour, and 397 new vehicle trips (208 entering and 189 exiting) during the Saturday midday peak hour.

Traffic Volumes

The assignment of site-generated traffic to specific travel routes was based on existing traffic patterns at the study area intersections and the assumption that most motorists will seek the fastest and most direct routes to and from the site. It is expected that approximately 35% of the site generated traffic will access the site to and from the north and 65% will access the site to and from the south. The regional trip distribution is shown on Figure 9 in the TIAS.

The site-generated traffic volumes were assigned to the roadway network according to the distribution and travel patterns described above and are shown on Figures 10, 11, and 12 in the TIAS. The Trip Assignment volumes were added to the No-Build traffic volumes to develop the 2023 Build traffic volumes. Figures 13, 14, and 15 in the TIAS present the resulting 2023 Build



traffic volumes for the weekday morning and weekday evening and Saturday midday peak hours, respectively.

Operations

Intersection Operations

Table 3J-6 summarizes the levels of service for the 2023 Build condition. The detailed evaluations are included in the TIAS Appendix E.

Under Build conditions with construction of the proposed project, the evaluations show the following:

- Colonial Knolls westbound approach to US Route 44 drops from LOS E with 44 seconds of average vehicle delay to LOS F with average vehicle delays of 54 seconds during the PM peak hour.
- Hornbeck Road eastbound approach to US Route 44 drops from LOS E with 50 seconds of average vehicle delay to LOS F with average vehicle delays of 51 seconds during the PM peak hour.
- Concord Village Drive eastbound approach will continue to operate at LOS F during the PM peak hour and will drop from LOS E with 47 seconds of average vehicle delay to LOS F with more than 200 seconds of average vehicle delay during the AM peak hour.
- Darrow Place westbound approach to US Route 44 will drop from LOS E with 36 seconds of average vehicle delay to LOS F with 71 seconds of average vehicle delay during the AM peak hour.
- At the US Route 44/Degarmo Road intersection the northbound through and southbound left will continue to operate at LOS F during the PM peak hour and overall intersection will drop to a LOS F with average vehicle delays of 97 seconds. During the AM peak hour, the southbound approach will operate at LOS F and overall intersection will operate at LOS F with average vehicle delays of 95 seconds. The northbound through movement will operate at LOS F during the Saturday midday peak hour with overall intersection operations at a LOS D.
- At the US Route 44 and Cherry Hill Drive/Arlington Square driveway intersection the eastbound and westbound US Route 44 approaches will operate at LOS F during the PM peak hour. The westbound US Route 44 through movement will operate at LOS F during the AM peak hour and Saturday midday peak hour.



Table 3J-6 2023 Build Intersection Levels of Service Summary

Intersection	Approach	Lane Group	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			LOS ^a	Delay ^b	Veh Q ^c	LOS	Delay	Veh Q	LOS	Delay	Veh Q
Rt 44/Colonial Knolls (Unsignalized)	SB	L	A	9	0	B	11	0	A	10	<1
	WB	LR	D	34	<1	F	54	<1	D	33	<1
Rt 44/Hornbeck Rd (Unsignalized)	NB	L	B	11	<1	B	10	<1	A	10	<1
	EB	LR	D	29	2	F	51	2	C	24	1
Rt 44/Concord Village Dr (Unsignalized)	NB	L	B	12	<1	B	10	<1	A	10	<1
	EB	LR	F	210	6	F	243	6	E	36	1
Rt 44/Darrow Pl (Unsignalized)	SB	L	A	9	0	B	11	0	A	10	0
	EB	R	C	20	<1	C	16	<1	C	16	<1
	WB	LR	F	71	<1	C	20	0	D	28	<1
Rt 44/Barnes Dr/ Victory Ln (Signal)	NB	L	C	21	<1	B	11	<1	A	8	<1
		T	A	6	6	B	16	18	A	6	8
	SB	L	A	7	<1	B	18	<1	A	7	0
		TR	B	18	20	A	8	10	A	6	8
	EB	LTR	C	27	<1	C	27	<1	C	28	<1
	WB	L	C	28	1	C	28	<1	C	27	<1
		TR	C	27	<1	C	28	<1	C	27	<1
Intersection			B	14		B	13		A	7	
Rt 44/Degarmo Rd/ Walgreens (Signal)	NB	L	C	21	<1	B	18	<1	B	18	<1
		T	D	42	15	F	161	42	F	74	26
		R	B	18	1	B	17	<1	B	17	<1
	SB	L	F	207	19	F	149	15	E	70	10
		TR	F	94	33	C	29	16	C	29	16
	EB	LTR	C	22	<1	C	26	<1	C	26	<1
	WB	LT	E	69	6	D	41	7	D	42	6
	R	B	15	<1	B	17	1	B	18	2	
Intersection			F	95		F	97		D	49	
Rt 44/ Overocker Rd (Unsignalized)	NB	L	B	10	0	A	10	0	A	9	0
	SB	L	A	9	<1	B	11	<1	B	10	<1
	EB	LTR	E	44	<1	C	15	0	E	50	<1
	WB	LTR	C	23	<1	D	29	1	D	29	1
Rt 44/ Cherry Hill Dr (Signal)	NB	LT	D	36	2	E	57	4	D	55	4
		R	C	30	<1	C	33	1	C	33	1
	SB	LT	C	34	2	D	40	4	D	39	4
		R	C	28	1	C	27	2	C	28	2
	EB	L	B	17	1	C	34	7	C	27	5
		TR	B	16	10	F	71	32	D	41	22
	WB	L	B	10	<1	C	21	<1	B	19	<1
	TR	F	64	28	F	90	31	F	69	27	
Intersection			D	41		E	67		D	49	

a Level of service

b Average total delay, in seconds per vehicle.

c Average vehicle queue at signalized intersections and 95th percentile queue at unsignalized intersections.



Travel Time Evaluation

As noted previously, it is generally faster for vehicles to travel through the study area on US Route 44 rather than using alternate routes. A review of the level of service calculations shows that delays to through traffic would increase at the Degarmo Road intersection by approximately one minute and at the Cherry Hill Drive intersection by approximately 30 seconds. The increase of approximately 90 seconds is within the typical travel time range identified in Table 3J-3. However, should these delays become disruptive to through travelling vehicles, drivers have the option to choose other routes, especially during the peak travel times, such as West Road and Salt Point Turnpike which was identified as one of the faster routes through the study area under the existing conditions.

Proposed Site Access

Access to the site is currently proposed via seven driveways as described below:

- Two full access driveways intersecting Concord Village Drive from the south.
- A right-in, right-out driveway intersecting US Route 44 from the west opposite Darrow Place.
- A right-in, right-out driveway intersecting US Route 44 from the east opposite an existing residential driveway.
- Full access driveways intersecting US Route 44 from the east and west providing primary access to the proposed project. Review of future traffic volumes shows that Traffic Signal Warrants 1, 2, and 3 in the Manual of Uniform Traffic Control Devices (MUTCD) are met (See Chapter 7 of the TIAS); therefore, it is proposed that this intersection be controlled with a traffic signal.
- A right-in, right-out driveway intersecting US Route 44 from the east at the southern end of the project frontage.
- A full access driveway intersecting Victory Lane from the north.

All internal site roadways are proposed to be privately owned and maintained.

Site Access Sight Lines

A detailed sight distance evaluation was conducted at the proposed unsignalized right-in/right-out site access intersections along US Route 44 and is included in Chapter 7 of the TIAS. The analysis illustrated that the available stopping sight distances and the sight distance looking left to complete a right-turn exiting the site meet AASHTO guidelines for a 45-mph operating



speed. To maintain good sight lines, vegetation along the project frontage should be cleared and any project signing or landscaping should be placed outside of the line of sight.

Complete Streets

Complete Streets are planned and designed to provide safe access and mobility for all roadway users including pedestrians, cyclists, transit users, and general vehicle traffic while recognizing the varying abilities included in these user groups. A complete streets approach would include a mix of sidewalks, lane striping, paved shoulders, pedestrian and vehicle control signals, traffic calming measures, parking accommodations, roadway and path connections, roundabouts, etc. This holistic approach would balance the needs of all roadway users recognizing the need for trade-offs to reach the desired overall network goals and would be reviewed and applied along the project frontage on US Route 44 as applicable. The Dutchess County Complete Streets Checklist was completed and included in Appendix F of the TIAS.

Parking

Parking for the proposed project would be provided via on-street and shared off-street surface parking lots. As currently proposed, the project includes providing on-street parking along the project frontage. The proposal for on-street parking includes a recommendation to reduce the speed limit on US Route 44 in the immediate study area to provide a suitable atmosphere for on-street parking and to alter the character of the area to more of a town center. The implementation of on-street parking, reduced speed limit, and change in character to a town center area would serve to slow and calm vehicle traffic in the immediate study area.

Parking for residents of the townhomes would be provided via individual driveways and attached garages while apartment residents would use surface parking lots and free-standing garages. The surface parking lots and free-standing garages can be shared with the commercial office spaces reducing the overall number of parking spaces needed on the Project Site.

Pedestrian and Cyclist Accommodations

Pedestrians in the study area would be accommodated through the construction of sidewalks along the project frontage and through the Project Site. The sidewalks would allow pedestrians to travel safely and easily between the multiple land uses on the Site and reduce the need for all users to travel via a vehicle. There are currently no sidewalks on US Route 44 adjacent to the project frontage so the project-related sidewalks will be designed to provide a logical terminus either at adjacent or internal intersections or at parcel boundaries. The sidewalk terminus will be determined through coordination with the Town and NYSDOT. Internally the Project has proposed recreational trails for use by pedestrians.



Cyclists in the study area are currently accommodated through the wide shoulders along the project frontages. If on-street parking is provided as proposed, these wide shoulders would no longer be available for cyclists. Rather, cyclists can be accommodated through new striped bike lanes adjacent to the parking lane or a wide travel lane allowing for cyclists to share the travel lane with vehicles. Additional details on the bicycle accommodations to be provided along US Route 44 will be defined as the project progresses. Within the Project Site, cyclists will share the roadway on the low volume internal roadways and be encouraged by bike racks placed throughout the site.

Roadway Connections & Emergency Access

As proposed, the Project includes vehicle connections to Concord Village Drive and Victory Lane. These additional roadway connections are an important part of a complete street network and provide the following benefits:

- Choices for drivers entering and exiting the site.
- Alternative routes for emergency vehicle access.
- Connectivity between sites for internal travel between adjacent land uses or neighborhoods without accessing the mainline.
- Allow travelers on the adjacent sites to utilize the site roadways when accessing US Route 44.
- Allow more vulnerable users like pedestrians and cyclists to make trips with less exposure to vehicles.

Transit

Transit service in the study area is currently provided by Dutchess County Division of Public Transit via an on-call service and Route D which is a fixed route. The applicant is currently coordinating with Dutchess County regarding transit access at the Site. Based on the coordination to date, it is anticipated that designated bus stops will be provided on US Route 44 adjacent to the Project Site to be serviced as part of Route D.



3. Proposed Mitigation Measures

a) Intersection Operations

Future 2023 Build Conditions

Analysis to mitigate the drops in levels of service identified in Section 2, are summarized in Table 3J-7 and discussed below. The following is noted regarding the 2023 Build with Mitigation conditions:

- The Colonial Knolls and Hornbeck Road unsignalized approaches to US Route 44 are expected to operate at LOS F during the PM peak hour with approximately 54 seconds of average delay on the Colonial Knolls intersection approach and 51 seconds of average delay on the Hornbeck Road intersection approach. This length of delay is not unusual for unsignalized approaches in high volume corridors, and the vehicle queue is very low (less than one vehicle at Colonial Knolls and two or fewer vehicles at Hornbeck Road), and therefore no mitigation is recommended.
- The Concord Village Drive intersection approach to US Route 44 would experience LOS F conditions during the AM and PM peak hours and LOS E conditions during the Saturday midday peak hour of the Build condition. This length of delay is not unusual for unsignalized approaches in high volume corridors. However, since the overall volumes and vehicle queues are anticipated to be greater, mitigation is considered for this intersection. As mitigation, it is recommended that drivers to and from Concord Village have the ability to access the signalized main site access driveway intersection. Therefore, the Project driveways intersecting Concord Village Drive should be available to all drivers.
- The Darrow Place intersection approach to US Route 44 would experience LOS F conditions during the AM peak hour with average vehicle delays around 71 seconds. Similar to Colonial Knolls and Hornbeck Road intersections, this level of delay is not uncommon at unsignalized intersections in busy corridors, and the vehicle queue is very low (less than one vehicle), and therefore no mitigation is recommended.
- The Degarmo Road/Walgreens driveway intersection would operate at overall LOS F conditions during the AM and PM peak hours. A review of traffic signal phasing and timing modifications with the existing intersection geometry did not alleviate the LOS F conditions. Two options with increased intersection capacity were evaluated to mitigate the LOS F conditions including construction of an additional northbound travel lane on US Route 44 through the intersection and construction of a two-lane roundabout.



- The construction of an additional northbound through lane at this intersection is not a good planning solution to increase the capacity at this intersection without a review of the regional needs in the US Route 44 corridor. Providing an additional lane at the intersection would improve the intersection operations, but push the capacity issues north where the two lanes merge back into a single through lane; therefore, widening the northbound US Route 44 approach for a short distance at the intersection is not recommended as project mitigation.
- Construction of a two-lane roundabout at this intersection would be difficult due to existing constraints associated with existing established businesses and homes at the intersection. This improvement is also a large-scale mitigation measure that would be cost prohibitive as part of the subject development project.

It is recommended that the applicant work with the Town and NYSDOT to determine a fair share mitigation measure that would adequately address the project level impacts at this intersection.

- It is recommended that the Cherry Hill Drive and Arlington Square driveway approaches to US Route 44 be re-striped to provide left-turn and shared through/right-turn lanes and the phasing be modified to provide concurrent phasing on the two approaches to the intersection. This mitigation is expected to improve the overall intersection from E to C in the evening PM period, and eliminate all of the F delays for individual movements as shown in Table 3J-7 below
- Although acceptable operating conditions exist at the US Route 44/Victory Lane/Barnes Drive intersection, this intersection will likely need upgrades to accommodate the appropriate coordination and detection between this intersection and the adjacent main site access intersection.



Table 3J-7 2023 Build w/ Mitigation Levels of Service Summary

Intersection	Approach	Lane Group	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			LOS ^a	Delay ^b	Veh Q ^c	LOS	Delay	Veh Q	LOS	Delay	Veh Q
Rt 44/Concord Village Dr (Unsignalized)	NB	L	B	12	<1	B	10	<1	A	10	<1
	EB	LR	F	210	6	F	243	6	E	36	1
Rt 44/Barnes Dr/ Victory Ln (Signal)	NB	L	C	21	<1	B	11	<1	A	8	<1
		T	A	6	6	B	16	18	A	6	8
	SB	L	A	7	<1	B	18	<1	A	7	0
		TR	B	18	20	A	8	10	A	6	8
	EB	LTR	C	27	<1	C	27	<1	C	28	<1
	WB	L	C	28	1	C	28	<1	C	27	<1
		TR	C	27	<1	C	28	<1	C	27	<1
	Intersection		B	14		B	13		A	7	
Rt 44/Degarmo Rd/ Walgreens (Signal)	NB	L	D	40	<1	D	37	<1	D	37	<1
		T,T	C	26	6	D	38	11	C	28	8
		R	C	22	1	C	22	<1	C	21	<1
	SB	L	C	32	9	D	36	7	C	25	5
		TR	D	50	27	D	38	19	D	36	17
	EB	LTR	C	25	<1	C	25	<1	C	23	<1
	WB	LT	F	89	7	D	36	7	C	34	5
	R	B	13	<1	B	13	<1	B	14	2	
	Intersection		D	42		D	36		C	30	
Rt 44/Degarmo Rd/ Walgreens (Roundabout)	NB	LT	A	6	2	A	9	5	A	5	2
		TR	A	5	<1	A	5	1	A	4	<1
	SB	LT	A	9	6	A	8	3	A	6	2
		TR	A	4	1	A	4	<1	A	4	<1
	EB	LTR	B	11	0	B	10	<1	A	9	<1
	WB	LT	A	10	<1	B	14	1	B	10	<1
	R	A	5	<1	B	10	2	A	6	<1	
	Intersection		A	7		A	9		A	5	
Rt 44/ Cherry Hill Dr (Signal)	NB	L	C	33	1	C	34	2	C	29	2
		TR	D	36	<1	D	54	3	D	36	2
	SB	L	C	32	1	D	36	3	C	31	<1
		TR	D	40	2	D	43	3	D	42	3
	EB	L	B	20	2	C	26	4	C	24	3
		TR	B	15	10	C	34	25	C	30	18
	WB	L	A	10	<1	B	18	<1	B	16	<1
	TR	D	39	25	C	34	21	D	44	21	
	Intersection		C	29		C	34		C	35	

a Level of service

b Average total delay, in seconds per vehicle.

c Average vehicle queue at signalized intersections and 95th percentile queue at unsignalized intersections.



Future ETC+10 2033 Build Conditions

Study Area Intersections

In addition to the evaluation of future conditions at project completion, NYSDOT requested an evaluation of future conditions ten years after project completion. Traffic volumes were developed to represent the future ETC+10 2033 Build conditions and are illustrated on Figures 16, 17, and 18 in the TIAS. In addition, Table 3J-8 provides level of service evaluations for the ETC+10 Build conditions for the three peak hours. The mitigation identified above is included in the analysis.

The following is noted regarding the 2033 Build with Mitigation conditions:

- The Colonial Knolls, Hornbeck Road, Darrow Place and the diner approach to US Route 44 opposite Overocker Road would experience LOS F conditions during a single peak hour. The length of delay is comparable to the 2023 Build conditions and, as noted previously, is not unusual for unsignalized approaches in high volume corridors. As the vehicle queue at these intersections remains low, no intersection mitigation is recommended at these intersections as a result of the project development.
- The Concord Village Drive approach to US Route 44 would continue to operate at LOS E/F conditions during the peak hours. Drivers have the option to access the traffic signal at the primary site driveway to enter and exit Concord Village Drive as needed.
- Both the US Route 44 southbound shared through/right-turn lane and the Degarmo Road westbound shared left-turn/through lane would operate at LOS F conditions during the AM peak hour. As under the 2023 Build condition, coordination with the Town and NYSDOT is recommended to identify a fair share contribution to address project-related impacts.
- At the other study area intersections, the evaluation shows that with the identified capacity modifications, the study intersections would operate comparably to the 2023 Build conditions with LOS D or better at all intersections during all peak hours.



Table 3J-8 ETC+10 2033 Build w/ Mitigation Levels of Service Summary

Intersection	Approach	Lane Group	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			LOS ^a	Delay	Veh	LOS	Delay	Veh Q	LOS	Delay	Veh Q
Rt 44/Colonial Knolls (Unsignalized)	SB	L	A	9	0	B	11	<1	A	10	<1
	WB	LR	E	35	<1	F	58	<1	D	34	<1
Rt 44/Hornbeck Rd (Unsignalized)	NB	L	B	11	<1	B	10	<1	A	10	<1
	EB	LR	D	31	2	F	61	3	D	26	1
Rt 44/Concord Village Dr (Unsignalized)	NB	L	B	12	<1	B	10	<1	A	10	<1
	EB	LR	F	243	6	F	282	6	E	39	1
Rt 44/Darrow Pl (Unsignalized)	SB	L	A	9	0	B	11	0	A	10	0
	EB	R	C	21	<1	C	17	<1	C	16	<1
	WB	LR	F	78	<1	C	20	0	D	29	<1
Rt 44/Barnes Dr/ Victory Ln (Signal)	NB	L	C	23	<1	B	12	<1	A	8	<1
		T	A	6	7	B	18	20	A	6	8
	SB	L	A	8	<1	C	20	<1	A	8	0
		TR	C	20	22	A	9	11	A	7	8
	EB	LTR	C	27	<1	C	27	<1	C	28	<1
	WB	L	C	28	1	C	28	<1	C	27	<1
		TR	C	27	<1	C	28	<1	C	27	<1
Intersection			B	15		B	14		A	7	
Rt 44/Degarmo Rd/Walgreens (Signal)	NB	L	D	40	<1	D	38	<1	D	38	<1
		T,T	C	27	6	D	39	12	C	29	8
		R	C	22	1	C	23	<1	C	21	1
	SB	L	C	34	10	D	37	8	C	26	5
		TR	F	55	29	D	40	19	D	37	18
	EB	LTR	C	25	<1	C	26	<1	C	24	<1
	WB	LT	F	97	8	D	39	7	D	36	5
	R	B	12	<1	B	13	<1	B	14	2	
Intersection			D	45		D	38		C	31	
Rt 44/Degarmo Rd/Walgreens (Roundabout)	NB	LT	A	7	2	B	10	6	A	5	3
		TR	A	5	<1	A	6	1	A	4	<1
	SB	LT	B	10	6	A	8	3	A	6	2
		TR	A	4	1	A	4	<1	A	4	<1
	EB	LTR	B	12	0	B	11	<1	A	9	<1
	WB	LT	B	10	<1	B	15	2	B	10	<1
		R	A	5	1	B	12	2	A	6	<1
Intersection			A	8		A	9		A	6	
Rt 44/ Overocker Rd (Unsignalized)	NB	L	B	10	0	A	10	0	A	10	0
	SB	L	A	9	<1	B	11	<1	B	10	<1
	EB	LTR	E	47	<1	C	15	0	F	53	<1
	WB	LTR	C	24	<1	D	31	1	D	30	1
Rt 44/ Cherry Hill Dr (Signal)	NB	L	C	33	1	C	35	2	C	29	2
		TR	D	36	<1	D	54	3	D	36	2
	SB	L	C	32	1	D	36	3	C	31	3
	TR	D	40	2	D	44	3	D	43	3	



EB	L	C	22	2	C	33	7	C	30	4
	TR	B	16	10	D	37	26	C	33	19
WB	L	B	10	<1	B	19	<1	B	16	<1
	TR	D	44	28	D	38	23	D	51	23
Intersection		C	32		D	37		D	39	

- a Level of service
 b Average total delay, in seconds per vehicle.
 c Average vehicle queue at signalized intersections and 95th percentile queue at unsignalized intersections.

Site Access Intersections

To ensure adequate operating conditions at the site access intersections under future conditions, the site access driveways were evaluated for the ETC+10 2033 Build conditions. Figures 27, 28, and 29 in the TIAS illustrate the future traffic volumes. Table 3J-9 summarizes the future levels of service at the site driveway intersections. The US Route 44/Main Access intersection is analyzed with both traffic signal and roundabout control.

The following is noted regarding the ETC+10 2033 Build conditions:

- The unsignalized site driveways would operate with acceptable levels of service during all peak hours through the 2033 Build conditions with single approach lanes and unsignalized control.
- Based on a review of the LOS and queueing impacts, traffic signal control is preferred at the US Route 44/Main Access intersection. The intersection would operate with overall LOS C conditions during the AM peak hour and overall LOS B during the PM and Saturday peak hours with construction of a four-leg intersection with widening on US Route 44 to provide northbound and southbound left-turn lanes and two lane approaches (left-turn lane and shared through-right-turn lane) on the site access eastbound and westbound approaches.
- Review of the average vehicle queues shows that during the AM peak period, the southbound queue at the Barnes Drive/Victory Lane intersection has the potential to back into the main access intersection. During the PM peak period, when the main site access operates under traffic signal control, the northbound queue has the potential to back into the Barnes Drive/Victory Lane intersection. To avoid standing queues impacting operations at the adjacent intersection, the traffic signals at the two intersections should be coordinated and additional detection should be installed on the mainline approaches to release the queue that has the potential to impact the adjacent intersection. The use of an adaptive signal system could also be pursued at these intersections. The Applicant should coordinate with NYSDOT and



the Town to identify the appropriate signal design of the site access intersection and adjacent Barnes Drive/Victory Lane intersections as the project progresses.

Table 3J-9 ETC+10 2033 Build Site Access Levels of Service Summary

Intersection	Approach	Lane Group	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
			LOS ^a	Delay ^b	Veh Q ^c	LOS	Delay	Veh Q	LOS	Delay	Veh Q
Rt 44/NE Dwy (Unsignalized)	WB	R	B	14	<1	C	20	<1	C	16	<1
	NB	L	E	66	5	B	15	2	B	13	<1
Rt 44/Main Access (Signalized)		TR	A	5	7	B	17	23	A	8	10
	SB	L	A	9	<1	C	27	<1	B	14	<1
		TR	D	40	36	B	17	18	C	22	16
	EB	L	D	42	2	D	36	1	C	27	<1
		TR	D	45	3	D	37	2	C	27	1
	WB	L	E	59	3	D	40	1	C	30	1
		TR	D	39	<1	C	34	<1	C	26	<1
		Intersection		C	31		B	19		B	16
Rt 44/Main Access (Roundabout)	NB	LTR	A	5	3	B	17	20	A	4	5
	SB	LTR	F	81	30	A	8	7	A	7	5
	EB	LTR	D	39	3	B	15	1	B	13	<1
	WB	LTR	B	12	<1	C	28	1	B	14	<1
		Intersection		D	46		B	14		A	6
Rt 44/SE Dwy (Unsignalized)	WB	R	B	14	<1	C	22	<1	C	17	<1
Concord Village Dr/ CVD Dwy (Unsignalized)	NB	LR	A	9	<1	A	9	<1	A	9	<1
	WB	L	A	7	<1	A	7	<1	A	7	<1
Victory Ln/VL Dwy (Unsignalized)	SB	LR	A	9	<1	A	9	0	A	8	0
	EB	L	A	7	0	A	7	0	A	7	0

a Level of service

b Average total delay, in seconds per vehicle

c Average vehicle queue at signalized intersections and 95th percentile queue at unsignalized intersections