Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

Ref: 8986

December 17, 2021

Mr. Keith Rondeau, Chairperson
Zoning Board of Appeals
Town of Seekonk
100 Peck Street
Seekonk, MA 02771

Re: Traffic Engineering Peer Review
Greenbrier II – Cole Street
Seekonk, Massachusetts

Dear Chairperson Rondeau and Members of the Zoning Board of Appeals:

Vanasse & Associates, Inc. (VAI) has completed a review of the materials submitted on behalf of RI Seekonk Holdings, LLC, Trustee of the Greenbrier Village II (the "Applicant"), in support of Phase II of the Greenbrier residential development located in Seekonk, Massachusetts (hereafter referred to as the "Project"). Our review focused on the following specific areas as they relate to the Project: i) vehicle and pedestrian access and circulation; ii) Massachusetts Department of Transportation (MassDOT) design standards; iii) Town Zoning requirements as they relate to access, parking and circulation; and iv) accepted Traffic Engineering and Transportation Planning practices. The Applicant has submitted the following supporting materials which are the subject of this review:

1. *Seekonk Zoning Board of Appeals Application for a Comprehensive Permit*, RI Seekonk Holdings, LLC, Trustee of the Greenbrier Village II, March 25, 2021;

2. *Greenbrier II Affordable Housing Project Narrative*, AJA Architects, March 25, 2021;

3. *MassHousing Comprehensive Permit Documents*, Greenbrier II, Seekonk Massachusetts; AJA Architects; November 6, 2020, last revised July 28, 2021 (the "Site Plans");

4. *Sight Distance Plan,* Greenbrier II; AJA Architects; October 26, 2021; and

5. *Transportation Impact Assessment*, Proposed Residential Development, Greenbrier Phase II, Seekonk, Massachusetts; Caputo and Wick Ltd.; November 2021 (the "November 2021 TIA").

In addition, VAI reviewed the site locus in order to validate the existing conditions context of the Project and to observe factors related to the design and location of the access to the Project site, internal circulation and potential off-site improvements.

Based on our review of the aforementioned materials that have been submitted in support of the Project, we have determined that the materials were prepared in a professional manner and following the applicable standards of care. That being said, the Applicant should address the following comments that were identified as a part of our review, a detailed summary of which is attached:

November 2021 TIA

T1: The data collection effort was undertaken following proper standards and methodologies. That being said, we are not in agreement with the methodologies that were used to establish the adjustments that were applied to the traffic count data. The Applicant's engineer should refer to MassDOT's guidance for Transportation Impact Assessments (TIAs) conducted during the COVID-19 pandemic.[1] The traffic volume adjustment should be performed as follows:

1. Monthly traffic count data obtained from the closest MassDOT permanent count station to the study area should be reviewed in order to determine if a seasonal adjustment is required so that the collected data is representative of average-month conditions. It is customary to not reduce traffic counts if the data was collected during a month where traffic volumes are above average (such as August);

2. MassDOT considers 2019 traffic volume data to be representative of "Existing" conditions. As such, a comparison between August 2019 traffic volume data and August 2021 traffic volume data at the same MassDOT permanent count station that was used to determine the seasonal adjustment should be performed.[2] This comparison will establish the COVID-19 adjustment factor that is to be applied to the peak-hour traffic volumes.

3. Once the seasonal (if any) and COVID-19 adjustments are made to the raw traffic count data, the school adjustment factor should be considered, which was determined to be an additional 20 percent adjustment to the weekday morning peak-hour traffic volumes.

4. Finally, the adjusted traffic volumes should be balanced between the study area intersections where there are no intervening driveways or side streets that would add or remove traffic volumes from the roadway network (such as between the I-195 ramps). Traffic volume imbalances between intersections should be reviewed and adjusted as necessary.

T2: Vehicle travel speed data should be collected for Cole Street in the vicinity of the Project site driveway for a minimum of 48-hours (two consecutive weekdays) in order to ascertain the speed profile for the roadway and to determine the 85th percentile vehicle travel speed for the purpose of assessing sight distances at the driveway.

T3: A description of existing and planned future pedestrian and bicycle accommodations for all study area roadways and intersections should be provided. It is suggested that a graphic be prepared that shows the location of existing and proposed pedestrian facilities, including the location of crosswalks and intersections that are under traffic signal control that currently include or will include pedestrian accommodations.

[1] *Guidance on Traffic Count Data*; MassDOT; revised April 2020.
[2] We would not take exception to adjusting the August 2019 traffic count data to 2021 conditions by applying the background traffic growth rate that was used in the November 2021 TIA before comparing the data.

T4: The motor vehicle crash analysis should be revisited using the revised existing condition traffic volumes. With the revised motor vehicle crash analysis, the following should be included:

1. Motor vehicle crash rate calculations should be provided for all study area intersections.

2. A summary table should be provided that includes the type of traffic control present (i.e., signalized or unsignalized), the calculated motor vehicle crash rate and the MassDOT Statewide and District 5 average crash rates.

3. The segmental crash analysis should not include the crashes at the intersections for which an intersection crash analysis is provided. Accordingly, the segmental analysis should be separated into distinct roadway segments between the study area intersections.

4. The Route 114A/Crossroads Convenience Store Driveways crashes should be added to the segmental analysis and a separate intersection crash analysis, while beneficial, is not required since this intersection was not included in the traffic operations analysis and traffic counts for this location were not provided.

5. A review of the MassDOT statewide High Crash Location List should be completed in order to determine if there are any listed locations within the study area that are included on MassDOT's Highway Safety Improvement Program (HSIP) listing as a high crash cluster location.

T5: The future No-Build traffic volumes should be revised to reflect that changes in the 2021 Existing peak-hour traffic volumes.

T6: U.S. Census Journey-to-Work data should be reviewed to validate the trip distribution pattern that was used for the Project and should be compared to the trip distribution pattern observed for Phase I of the Greenbrier residential community.

T7: The Build condition traffic volumes should be revised to reflect the changes in the 2028 No-Build traffic volumes resulting from the refinement of the 2021 Existing traffic volumes. In addition, the trip assignment network should be reviewed and any imbalances between intersections should be corrected.

T8: The traffic operations analysis and associated summary tables should be updated to reflect the revised peak-hour traffic volumes (2021 Existing, 2028 No-Build and 2028 Build).

T9: An assessment of both the stopping sight distance along Cole Street approaching the Project site driveway and the intersection sight distance for a motorist existing the driveway should be provided and performed in accordance with the standards of the American Association of State Highway and Transportation Officials (AASHTO)[3] and using the posted (or statutory) speed limit or the measured 85th percentile vehicle travel speed along Cole Street at the Project site driveway, whichever is higher. To the extent that the sight lines cross private property or land that is not under the control of the Applicant, the Applicant should identify what measures or agreements have been or will be provided

[3] *A Policy on Geometric Design of Highway and Streets,* 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.

to ensure that objects are not placed within the sight triangle areas that would limit sight lines to and from the Project site driveway.

T10: Pending resolution of the comments raised as a part of this review, the Applicant should review the Road Safety Audit (RSA) that was completed for the intersection of Route 114A at County Street in 2014[4] and commit to the design and construction of the short-term improvements identified therein to the extent that they have not yet been completed.

T11: The Applicant should commit to the implantation of a Transportation Demand Management (TDM) program that is inclusive of the following elements:

- A transportation coordinator should be assigned for the Project to coordinate the TDM program;
- Information regarding public transportation services, maps, schedules and fare information should be posted in a central location and/or otherwise made available to residents;
- A "welcome packet" should be provided to residents detailing available public transportation services, bicycle and walking alternatives, and commuting options;
- Pedestrian accommodations should be incorporated within the Project site and extend to the planned sidewalk along Cole Street (shown on the Site Plan);
- Secure bicycle parking should be provided consisting of both weather protected bicycle parking and exterior bicycle racks; and
- A central mail drop should be provided.

Site Plans

S1. A vehicle turning analysis should be provided using the AutoTurn© software for a single-unit truck (SU-30 design vehicle). The turning analysis should depict all maneuvers required to enter and exit the Project site, as well as those required to access the location for trash/recycling and service/loading, and should demonstrate that the subject vehicle can access the Project site and circulate in an unimpeded manner.

S2: A STOP-sign and marked STOP-line should be added to the Project site driveway approach to Cole Street.

S3: Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at pedestrian crossings within the Project site.

S4: A note should be added stating: "All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).[5]"

[4]Road Safety Audit, Luther's Corner, Fall River Avenue (Route 114A) at County Street, Town of Seekonk; Greenman-Pedersen, Inc. (GPI); September 2, 2014.
[5]*Manual on Uniform Traffic Control Devices* (MUTCD); Federal Highway Administration; Washington, DC; 2009.

S5. Bicycle rack(s) should be provided proximate to the community building, the playground and at other appropriate location(s) within the Project site, with weather protected bicycle parking provided within the proposed buildings.

S6. The sight triangle areas for the Project site driveway intersection with Cole Street should be shown along with a note to indicate: "Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow accumulation (windrows) located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."

S7. Consideration should be given to installing electric vehicle (EV) charging stations for use by residents of the Project.

This concludes our review of the materials that have been submitted to date in support of the Project. If you should have any questions regarding our review, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.

Jeffrey S. Dirk

Jeffrey S. Dirk, P.E., PTOE, FITE
Managing Partner

Professional Engineer in CT, MA, ME, NH, RI and VA

Attachment

JSD/jsd

TRAFFIC ENGINEERING PEER REVIEW
GREENBRIER PHASE II
SEEKONK, MASSACHUSETTS
DECEMBER 17, 2021

The following details Vanasse & Associates, Inc.'s (VAI's) review of the November 2021 *Transportation Impact Assessment* prepared by Caputo and Wick Ltd. (the "November 2021 TIA") and the July 28, 2021 (last revision) *MassHousing Comprehensive Permit Documents* (the "Site Plans") prepared by AJA Architects in support of Phase II of the Greenbrier residential development located in Seekonk, Massachusetts (hereafter referred to as the "Project"). Our comments are indicated in *italicized* text, with those requiring responses or additional information ***bolded***.

PROJECT DESCRIPTION

The Project will entail the construction of a 240-unit multifamily residential development with supporting parking to be situated on a portion of a larger 22± acre parcel of land that includes the Showcase Cinema property at 800 Fall River Avenue (Route 114) and is located between Fall River Avenue (Route 114A) and the Greenbrier Condominiums and Apartments community at 11 Springhouse Trail in Seekonk, Massachusetts. The Applicant intends to subdivide the larger parcel into two parcels, with the Showcase Cinema building to be contained within a 7.8± acre parcel fronting along Route 114A and the multifamily residential community (the "Project") to located on the remaining 14.2± acre parcel between the Showcase Cinema parcel and the Greenbrier Condominiums and Apartments community. The Applicant intends to renovate the former Showcase Cinema building to provide warehouse and medical office space independent of the proposed multifamily residential community.

Access to the Project site will be provided by way of a full access driveway that will intersect the north side of Cole Street approximately 345 feet east of Route 114A, with secondary (gated) access for emergency vehicles provided by way of a drive that will intersect the south side of Forsythe Circle. Access to the Showcase Cinema property will be provided by way the existing northernmost driveway that intersects the east side of Route 114A, with secondary access to be provided by way of a new driveway that will intersect the Project site driveway approximately 100 feet north of Cole Street that will be limited to passenger cars only (no trucks).

Off-street parking will be provided for 520 vehicles in surface parking lots dispersed throughout the site, or an approximate parking ratio of 2.2 parking spaces per unit.

November 2021 TIA

General

Comment: *The November 2021 TIA was prepared in a professional manner and following the applicable standards of care, and was prepared under the responsible charge of Allan L. Shear, P.E. (MA P.E. No. 35256, Civil).*

Existing Conditions

Study Area

The study area that was assessed in the November 2021 TIA included Fall River Avenue (Route 114A), County Street and Cole Street, and the following specific intersections:

- Route 114A at County Street
- Route 114A at the I-195 WB Ramps
- Route 114A at the I-195 EB Ramps
- County Street at Howland Street and Mill Road
- Route 114A at Greenbrier Drive
- Route 114A at Cole Street
- Cole Street at Springhouse Trail

Comment: *This study area is sufficient to evaluate the potential impact of the Project on the transportation infrastructure and includes all intersections where the Project is predicted to result in an increase in peak hour traffic volumes by: a) five (5) percent or more, or b) by more than 100 vehicles per hour.*

Traffic Volumes and Data Collection

Traffic volume data was collected by means of: i) automatic traffic recorder counts (ATRs) conducted over a continuous 48-hour period on two consecutive weekdays in October 2020 and August 2021 on Route 114A (5 locations) and on County Street; and ii) manual turning movement counts (TMCs) and vehicle classification counts conducted at the study intersections during the weekday morning (7:00 to 11:00 AM) and evening (2:30 to 6:30 PM) peak periods, with extended (6:30 AM to 6:30 PM) traffic counts conducted at the Route 114A/Cole Street and Route 114A/Greenbrier Drive intersections in order to allow for an evaluation of the applicable criteria (warrants) for the installation of a traffic control signal. The TMC's were performed on Tuesday, October 20, 2020, and on Thursday, August 26, 2021.

Based on a comparison of the ATR data that was collected along Route 114A in October 2020 to the data that was collected in August 2021, it was determined that traffic volumes within the study area increased by approximately 17 percent. A review of traffic volume data available from MassDOT for Route114A south of Taunton Avenue (Route 44) indicated that traffic volumes on Route 114A decreased by approximately 20 percent between 2019 and 2020. As such, the August 2021 traffic counts were increased by 5 percent in order to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic.

In addition, supplemental TMCs were conducted at the County Street/Howland Street/Mill Road intersection on September 29, 2021, from 2:00 to 3:00 PM, and at the Springhouse Trail/Cole Street intersection on September 29, 2021, and on October 6, 2021, from 7:30 to 8:30 AM, in order to determine if an adjustment was required to the August traffic volume data in order to account for school traffic that was not present at the time that the August 2021 traffic counts were performed. Based on a comparison of the September/October 2021 traffic count data to the August 2021 traffic count data at these intersections, it was determined that the August 2021 traffic volumes were 20 percent lower during the weekday morning peak-hour, with no statistical difference apparent during the weekday afternoon peak hour. As such, the morning peak-hour traffic volumes were increased by an additional 15 percent, with no adjustment applied to the weekday evening peak-hour traffic volumes.

Comment T1: ***The data collection effort was undertaken following proper standards and methodologies. That being said, we are not in agreement with the methodologies that were used to establish the adjustments that were applied to the traffic count data. The***

Applicant's engineer should refer to MassDOT's guidance for Transportation Impact Assessments (TIAs) conducted during the COVID-19 pandemic.[6] The traffic volume adjustment should be performed as follows:

1. ***Monthly traffic count data obtained from the closest MassDOT permanent count station to the study area should be reviewed in order to determine if a seasonal adjustment is required so that the collected data is representative of average-month conditions. It is customary to not reduce traffic counts if the data was collected during a month where traffic volumes are above average (such as August);***

2. ***MassDOT considers 2019 traffic volume data to be representative of "Existing" conditions. As such, a comparison between August 2019 traffic volume data and August 2021 traffic volume data at the same MassDOT permanent count station that was used to determine the seasonal adjustment should be performed.[7] This comparison will establish the COVID-19 adjustment factor that is to be applied to the peak-hour traffic volumes.***

3. ***Once the seasonal (if any) and COVID-19 adjustments are made to the raw traffic count data, the school adjustment factor should be considered, which was determined to be an additional 20 percent adjustment to the weekday morning peak-hour traffic volumes.***

4. ***Finally, the adjusted traffic volumes should be balanced between the study area intersections where there are no intervening driveways or side streets that would add or remove traffic volumes from the roadway network (such as between the I-195 ramps). Traffic volume imbalances between intersections should be reviewed and adjusted as necessary.***

Comment T2: ***Vehicle travel speed data should be collected for Cole Street in the vicinity of the Project site driveway for a minimum of 48-hours (two consecutive weekdays) in order to ascertain the speed profile for the roadway and to determine the 85th percentile vehicle travel speed for the purpose of assessing sight distances at the driveway (discussion follows).***

Pedestrian and Bicycle Facilities

A description of pedestrian facilities along Route 114A was presented as a part of the roadway and intersection descriptions in the November 2021 TIA.

Comment T3: ***A description of existing and planned future pedestrian and bicycle accommodations for all study area roadways and intersections should be provided. It is suggested that a graphic be prepared that shows the location of existing and proposed pedestrian***

[6] *Guidance on Traffic Count Data*; MassDOT; revised April 2020.

[7] We would not take exception to adjusting the August 2019 traffic count data to 2021 conditions by applying the background traffic growth rate that was used in the November 2021 TIA before comparing the data.

facilities, including the location of crosswalks and intersections that are under traffic signal control that currently include or will include pedestrian accommodations.

Public Transportation

A description of public transportation services that are available within the study area was presented in the November 2021 TIA. Public transportation services are not currently provided within the study area and are not directly accessible at the Project site. The Greater Attleboro-Taunton Regional Transit Authority (GATRA) provides service to the Town of Seekonk to the north of the study area by way of the Route 16 bus (Seekonk/Attleboro) and provides Dial-A-Ride services to residents of Seekonk age 60 and over, or persons with a disability who cannot access public transportation in accordance with the Americans with Disabilities Act (ADA).

Motor Vehicle Crash Summary

Motor vehicle crash information for the study area intersections and for the Route 114A roadway segment within the study area was obtained from MassDOT and the Town of Seekonk for the period 2017 through August 14, 2021, and a summary table and crash rate worksheets were included in the Appendix to the November 2021 TIA. Based on a review of the crash data, the study area intersections experienced an average of approximately 10 or fewer reported motor vehicle crashes per year over the multiyear review period, with the Route 114A/County Street intersection found to have experienced the largest number of reported motor vehicle crashes (46 total between 2017 and August 14, 2021). The calculated motor vehicle crash rate (i.e., number of motor vehicle crashes per million vehicles entering (MEV) the intersection) at the following intersections were found to be above the MassDOT average crash rate for similar intersections:

- Route 114A at County Street
- Route 114A at Cole Street
- Route 114A at Crossroads Convenience Store Driveways

In addition, the Route 114A segment within the study area was also found to have a motor vehicle crash rate that was significantly above the MassDOT average crash rate for similar roadway segments.

Comment T4: ***The motor vehicle crash analysis should be revisited using the revised existing condition traffic volumes. With the revised motor vehicle crash analysis, the following should be included:***

1. ***Motor vehicle crash rate calculations should be provided for all study area intersections.***

2. ***A summary table should be provided that includes the type of traffic control present (i.e., signalized or unsignalized), the calculated motor vehicle crash rate, and the MassDOT Statewide and District 5 average crash rates.***

3. ***The segmental crash analysis should not include the crashes at the intersections for which an intersection crash analysis is provided. Accordingly, the segmental***

analysis should be separated into distinct roadway segments between the study area intersections.

4. ***The Route 114A/Crossroads Convenience Store Driveways crashes should be added to the segmental analysis and a separate intersection crash analysis, while beneficial, is not required since this intersection was not included in the traffic operations analysis and traffic counts for this location were not provided.***

5. ***A review of the MassDOT statewide High Crash Location List should be completed in order to determine if there are any listed locations within the study area that are included on MassDOT's Highway Safety Improvement Program (HSIP) listing as a high crash cluster location.***

Future Conditions

No-Build Conditions

Traffic volumes within the study area were projected to 2028, which represents a 7-year planning horizon from the existing conditions base year (2021) that was presented in the November 2021 TIA. The future condition traffic volume projections were developed by: i) applying a background traffic growth rate to the 2021 Existing traffic volumes; and ii) adding traffic associated with specific development projects by others that may increase traffic volumes within the study area beyond that accounted for by the background traffic growth rate.

Based on discussions with the Southeastern Regional Planning and Economic Development District (SRPEDD), a 1.0 percent per year compounded annual background traffic growth rate was identified for use to reflect anticipated future traffic growth independent of specific development projects. The Applicant's engineer consulted with the Town of Seekonk Planning Department in order to ascertain if there were any specific development projects by others that would result in an increase in traffic volumes within the study area that would exceed the background traffic growth rate. Based on this consultation, two (2) specific development projects by others were identified for inclusion in the future condition traffic volume projections: i) an 85 room hotel to be constructed adjacent to the Fireplace Showcase (775 Fall River Avenue); and ii) the redevelopment of the Showcase Cinema property.

The Applicant's engineer identified several roadway improvement projects that are expected to be complete within the study area that are associated with the existing Greenbrier Phase I residential community:

- Widening Fall River Avenue to provide a three-lane cross-section in the vicinity of Greenbrier Drive (two lanes southbound and one lane northbound) and a four-lane cross-section in the vicinity of Cole Street extending to the I-195 westbound ramp.

- Extension of the existing sidewalk along Route 114 southerly from Perry Avenue to the intersection of Cole Street, with a new sidewalk to be constructed along Cole Street to Springhouse Trail.

- Design and install a traffic control signal at the intersection of Route 114 at Cole Street that will be interconnected and coordinated with the signals at the I-195 ramps and the Lowe's Access Road. This intersection was to be monitored by the proponent of the Greenbrier Phase I residential

community after reaching full occupancy in order to determine if the intersection meets the necessary criteria to justify (warrant) the installation of a traffic signal.

These improvements were assumed to be complete within the future conditions horizon year of the November 2021 TIA are reflected in the 2028 No-Build and 2028 Build condition analyses.

Comment: *We are in agreement with the methodology that was used to develop the future No-Build condition traffic volume projections, including the background traffic growth rate (1.0 percent) and inclusion of the identified specific development projects by others.*

Comment T5: ***The future No-Build traffic volumes should be revised to reflect that changes in the 2021 Existing peak-hour traffic volumes.***

Build Conditions

The traffic characteristics of the Project were developed by the Applicant's engineer using trip-generation statistics published by the Institute of Transportation Engineers (ITE)[8] for a similar land use as that proposed and empirical data obtained from Phase I of the Greenbrier residential community. ITE Land Use Code (LUC) 221, *Multifamily Housing (Mid-Rise),* was used to develop the traffic characteristics of the Project, the results of which then compared to those derived using trip rates developed from traffic counts performed at the Phase I residential community, and the higher of the calculated values were used to assess the impact of the Project. The table below summarizes the trip-generation calculations that were used for the Project:

Greenbrier Phase II
Trip-Generation Summary

Time Period	Vehicle Trips		
	Entering	Exiting	Total
Average Weekday	653	653	1,306[a]
Weekday Morning Peak Hour	21	60	81[a]
Weekday Evening Peak Hour	84	54	138[b]

[a]Based on ITE LUC 221, *Multifamily Housing (Mid-Rise);* 240 units.
[b]Based on empirical trip rates obtained from Phase I of the Greenbrier residential community.

Traffic volumes associated with the Project were assigned to the study area roadways and intersections based on a review of existing traffic patterns within the study area.

Comment: *We are in agreement with the methodology that was used to develop the traffic characteristics of the Project.*

[8]*Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.

Comment T6: ***U.S. Census Journey-to-Work data should be reviewed to validate the trip distribution pattern that was used for the Project and should be compared to the trip distribution pattern observed for Phase I of the Greenbrier residential community.***

Comment T7: ***The Build condition traffic volumes should be revised to reflect the changes in the 2028 No-Build traffic volumes resulting from the refinement of the 2021 Existing traffic volumes. In addition, the trip assignment network should be reviewed and any imbalances between intersections should be corrected.***

Traffic Operations Analysis

In order to assess the potential impact of the Project on the transportation infrastructure, a detailed traffic operations analysis was performed for the study intersections under 2021 Existing, 2028 No-Build (without the Project) and 2028 Build conditions (with the Project). In brief, traffic operations are described by six "levels of service" which are defined by letter grades from "A" through "F", with a level-of-service (LOS) "A" representing the best operating conditions (average motorist delays of less than 10 seconds and little or no apparent vehicle queuing) and a LOS "F" representing constrained operating conditions (average motorist delays of 50 to 80 seconds or more and often with apparent vehicle queuing). A LOS of "E" is representative of an intersection or traffic movement that is operating at its design capacity, with a LOS of "D" typically representing the limit of acceptable traffic operations.

A review of the traffic operations analysis indicates that the addition of Project-related traffic to the study area intersections will not result in a significant increase in motorist delays or vehicle queuing over anticipated future conditions without the Project (i.e. No-Build conditions) with the implementation of the improvements that are required for Phase I of the Greenbrier residential community and that have not yet been constructed, including the installation of a traffic control signal at the Route 114A/Cole Street intersection. Project-related impacts were generally defined by an increase in average motorist delay of up to 8.5 seconds at the unsignalized study area intersections and a generalized increase in motorist delay at the signalized study area intersections that resulted in an increase in vehicle queuing of up to two (2) vehicles.

The traffic operations analysis also indicated that even with the improvements that are required for Phase I of the Greenbrier residential community, one or more movements at the Route 114/County Street intersection will operate over their design capacity (i.e., LOS "F") with extended vehicle queuing. As identified previously, this intersection is considered a high crash location.

Comment T8: ***The traffic operations analysis and associated summary tables should be updated to reflect the revised peak-hour traffic volumes (2021 Existing, 2028 No-Build and 2028 Build).***

Sight Distance

An evaluation of the intersection sight distance at the Project site driveway intersection with Cole Street was provided as a part of the November 2021 TIA and was based on the sight distance required for an approach speed ranging from 25 to 30 miles per hour (mph), which was noted as being the operational speed along Cole Street approaching the driveway. Based on this assessment, it was concluded the available

sight distances meet or exceed the recommended minimum sight distances for the intersection to operate safely (155 feet at 25 mph and 200 feet at 30 mph).

Comment T9: ***An assessment of both the stopping sight distance along Cole Street approaching the Project site driveway and the intersection sight distance for a motorist existing the driveway should be provided and performed in accordance with the standards of the American Association of State Highway and Transportation Officials (AASHTO)[9] and using the posted (or statutory) speed limit or the measured 85th percentile vehicle travel speed along Cole Street at the Project site driveway, whichever is higher. To the extent that the sight lines cross private property or land that is not under the control of the Applicant, the Applicant should identify what measures or agreements have been or will be provided to ensure that objects are not placed within the sight triangle areas that would limit sight lines to and from the Project site driveway.***

Recommendations

The following recommendations were provided as a part of the November 2021 TIA:

- The improvements that are associated with Phase I of the Greenbrier residential community will be designed and constructed prior to the issuance of the first Certificate of Occupancy for Phase II, including the installation of a traffic control signal at the Route 114A/Cole Street intersection
- The southern driveway along Route 114A that served the former Showcase Cinema (approximately 100 feet north of Cole Street) will be closed and secondary access to the Showcase Cinema property will be provided from the Project site driveway and limited to passenger cars only (no trucks)
- The access road between Route 114A and Cole Street that abuts the Crossroads Convenience Store will be removed
- A raised channelizing island will be added to the Route 114A/Cole Street intersection to channelize right-turn movements from Route 114A northbound to Cole Street

Comment T10: ***Pending resolution of the comments raised as a part of this review, the Applicant should review the Road Safety Audit (RSA) that was completed for the intersection of Route 114A at County Street in 2014[10] and commit to the design and construction of the short-term improvements identified therein to the extent that they have not yet been completed.***

[9] *A Policy on Geometric Design of Highway and Streets,* 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.

[10] *Road Safety Audit*, Luther's Corner, Fall River Avenue (Route 114A) at County Street, Town of Seekonk; Greenman-Pedersen, Inc. (GPI); September 2, 2014.

Comment T11: The Applicant should commit to the implantation of a Transportation Demand Management (TDM) program that is inclusive of the following elements:

- ***A transportation coordinator should be assigned for the Project to coordinate the TDM program;***
- ***Information regarding public transportation services, maps, schedules and fare information should be posted in a central location and/or otherwise made available to residents;***
- ***A "welcome packet" should be provided to residents detailing available public transportation services, bicycle and walking alternatives, and commuting options;***
- ***Pedestrian accommodations should be incorporated within the Project site and extend to the planned sidewalk along Cole Street (shown on the Site Plan);***
- ***Secure bicycle parking should be provided consisting of both weather protected bicycle parking and exterior bicycle racks; and***
- ***A central mail drop should be provided.***

SITE PLANS

The following comments are offered with regard to our review of the *MassHousing Comprehensive Permit Documents* prepared by AJA Architects and dated November 6, 2020, last revised July 28, 2021:

Comment S1. A vehicle turning analysis should be provided using the AutoTurn© software for a single-unit truck (SU-30 design vehicle). The turning analysis should depict all maneuvers required to enter and exit the Project site, as well as those required to access the location for trash/recycling and service/loading, and should demonstrate that the subject vehicle can access the Project site and circulate in an unimpeded manner.

Comment S2: A STOP-sign and marked STOP-line should be added to the Project site driveway approach to Cole Street.

Comment S3: Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at pedestrian crossings within the Project site.

Comment S4: A note should be added stating: "All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).[11]"

Comment S5. Bicycle rack(s) should be provided proximate to the community building, the playground and at other appropriate location(s) within the Project site, with weather protected bicycle parking provided within the proposed buildings.

[11] *Manual on Uniform Traffic Control Devices* (MUTCD); Federal Highway Administration; Washington, DC; 2009.

Comment S6. ***The sight triangle areas for the Project site driveway intersection with Cole Street should be shown along with a note to indicate: "Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow accumulation (windrows) located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."***

Comment S7. ***Consideration should be given to installing electric vehicle (EV) charging stations for use by residents of the Project.***

PARKING

The *MassHousing Comprehensive Permit Documents* prepared by AJA Architects and dated November 6, 2020, last revised July 28, 2021, indicate that off-street parking will be provided for 520 vehicles in surface parking lots dispersed throughout the site, or an approximate parking ratio of 2.2 parking spaces per unit.

Section 8.1, *Parking*, of Town of Seekonk Zoning By-Laws requires that a minimum of 2.0 parking spaces per dwelling unit and a maximum of 2.5 parking spaces per dwelling unit be provided for a residential use. Given that the Project will provide 2.2 parking spaces per dwelling unit, the parking supply complies with the Zoning By-Laws.