

Ref: 10165

December 12, 2025

Pascal Rettig
Planning Board Chair
City of Amesbury
62 Friend Street
Amesbury, MA 02913

Re: Proposed Multi-Family Residential Development
27.5 and 29 Clarks Road
Amesbury, Massachusetts

Dear Pascal Rettig:

Vanasse & Associates, Inc. (VAI) is pleased to provide responses to comments that were identified in the December 5, 2025 Traffic Peer Review prepared by Vanasse Hangen Brustlin, Inc. (VHB) concerning their review of the October 2025 Transportation Impact Assessment (TIA) that was prepared by VAI in support of the proposed multifamily residential development to be located at 27.5 and 29 Clarks Road in Amesbury, Massachusetts (hereafter referred to as the “Project”). Listed below are the comments identified by VHB in the subject memorandum, followed by responses prepared on behalf of the Project applicant.

Transportation Impact Assessment Review

Existing Conditions

Comment 1: *Study Area – The study area evaluated appropriately considers the key roadway and intersections most likely to experience any impacts as a result of the Project. The roadway inventory descriptions and subsequent Figure 2 graphic accurately depict current roadway conditions and existing traffic control. No expansion or modification of this study area is required.*

Response: No response required.

Comment 2: *Traffic Volumes – The underlying peak period turning movement counts (TMCs) for the TIA analysis were conducted in July 2023, with the exception of the weekday TMCS for the Route 110 (Macy Street)/Elm Street/Clark’s Road intersection which were conducted on April 30, 2025. While no seasonal adjustments were required, the counts were appropriately increased using an annual growth rate to reflect 2025 existing conditions. [For consistency, these same 2023 TMCs were used for the traffic study¹ for the nearby proposed Rocky Hill Residential Development also prepared by VAI. However, as that study was prepared in 2024, July 2023 TMCs also were used for Saturday conditions in that study.] The peak hour traffic volumes are balanced between arriving and departing intersection volumes except for the Route 110 (Macy Street) segment between its*



intersections with Carriagetown Marketplace and Elm Street/Clark's Road. That is attributable to the presence of commercial driveways along that segment, which does not require any adjustments to the volumes. VHB compared the recent 2025 counts at the Route 110 (Macy Street) Elm Street/Clark's Road intersection to prior 2023 counts (from the Rocky Hill Residential Development study noted earlier) and found that there were no major differences in volumes beyond normal fluctuations.

Response: No response required.

Comment 3: *Pedestrian and Bicycle Facilities – the TIA provides descriptions of current pedestrian and bicycle accommodations in the study area. This discussion should be expanded to include the observed pedestrian and bicycle volumes. While existing volumes appear to be low, any notable existing patterns should be noted along with any likely future desire lines associated with expected residential growth in the area.*

Response: Pedestrian and bicycle counts were collected at the same time as vehicle counts at the study area intersections. The existing counts do not show any notable pattern. There was 1 bicyclist observed during the weekday morning peak hour traveling westbound on Route 110 and 1 pedestrian observed crossing the I-95 southbound on-ramp north of Route 110. During the weekday evening peak hour, there were 2 pedestrians who crossed the Carriagetown Marketplace driveway, 2 that crossed the I-95 southbound ramps south of Route 110, 1 who crossed the I-95 northbound off-ramp south of Route 110, and 1 who crossed Route 110 east of Clarks Road. There was 1 observed bicyclist traveling south on Elm Street to Clarks Road, 1 on Route 110 eastbound, and 2 on Route 110 westbound during the weekday evening peak hour. On Saturday, 3 pedestrians were observed crossing Elm Street north of Route 110. One bicyclist was observed traveling south on Elm Street to Clarks Road and up to 4 on Route 110 traveling westbound.

Most of the bicycle traffic is heading westbound on Route 110, although the numbers are very low. In the future, with the residential development in the area coming online, we would suspect some additional pedestrian and bicycle traffic in the area, but we expect the overall numbers to continue to be low. Residents at the Project will likely frequent the proposed Starbucks and other commercial developments on Route 110. In addition, the MassWork grant project will upgrade the sidewalk from the Project frontage to the Starbuck property, which connects them to the sidewalks on Route 110, Elm Street, and the Salisbury Point Ghost Trail.

Comment 4: *Public Transportation – the TIA provides an appropriate inventory of existing MeVA public transportation accommodations within the area.*

Response: No response required.

Comment 5: *Crash Analysis – The study provides a comprehensive crash analysis which indicates a relatively low crash experience in recent years within the study area. Notwithstanding the low crash history, a Roadway Safety Audit (RSA) was conducted in June 2025 on behalf of the nearby Rocky Hill Residential Development project. That RSA evaluated both the intersections of Route 110 with Elm Street/Clark's Road and Merrill Street/Rabbit Road (within the Town Salisbury). VHB understands that the proponent of that project has committed to implementing the short-term, low-cost measures identified in the RSA. If that*



project should not proceed in a timely manner (to be defined by the Planning Board, ideally before Project occupancy) then that mitigation responsibility, for the Route 110 (Macy Street)/Elm Street/Clark's Road intersection only, should be assumed by this Project's proponent. While the intersection issues pre-date this Project, the additional traffic added to this intersection by the Project could exacerbate existing deficiencies.

Response: The short-term low-cost improvements from the RSA that the Rocky Hill Road development are supposed to implement are also part of the MassWorks grant project that the City will be undertaking. The improvements are listed below:

- Test the vehicle detection system and repair or replace the associated equipment as needed;
- Replace the emergency vehicle pre-emption system and adjust the location of the receivers as necessary to ensure proper operation;
- Evaluate the impact on traffic operations of restricting right-turn-on-red movements. If deemed feasible and desirable by MassDOT, install the necessary signs to restrict this movement;
- Review and adjust the “yellow” and “all red” clearance intervals
- Trim vegetation to improve sight lines on the approaches to the intersection and at the intersection corners;
- Add advance lane assignment markings on the Elm Street approach;
- Reapply the crosswalk pavement markings with high visibility, ladder style thermoplastic markings;
- Reapply the pavement markings on the intersection approaches with high visibility thermoplastic markings;
- Add additional directional guide signs for I-95 on Route 110 after (east of) the Macy Street; and
- Install radar speed feedback signs on Route 110 east of Macy Street and west of I-495.

Although these improvements are expected to be completed by the Rocky Hill Road development or the MassWorks grant project, the Applicant is willing to commit to complete a number of improvements in the unlikely event that neither of those projects are completed. The Applicant will commit to testing the vehicle detection system and repair or replace the associated detection equipment as needed on the Clarks Road approach to the intersection, review and adjust the “yellow” and “all red” clearance intervals, and reapply the crosswalk pavement markings with high visibility, ladder style thermoplastic markings.

Comment 6: *Vehicle Speeds – The data collection for the study indicates that the current “85th percentile speed” on Clark's Road is 19 miles per hour (mph) heading northbound and 20 mph heading southbound. Both are lower than the posted 25 mph speed limit on this roadway. The exact location of these speed measurements is not identified. As speeds along this roadway may vary depending on the precise location, additional speed measurements should be conducted at an alternate location that would not be influenced by roadway curvature or proximity to Route 110 (Macy Street). The Project also should explore implementing traffic calming measures along Clark's Road between the Site driveway and Route 110 (Macy Street) to help maintain appropriate speeds within the neighborhood*



setting. These could include speed humps, speed feedback signs, or other measures. Additional potential sidewalk improvements are discussed in the Conclusion section of this memorandum.

Response: Vehicle speeds were collected on Clarks Road, approximately 150 feet south of Route 110, which is on a straight section of Clarks Road. Vehicle speeds were collected over a 48-hour period, capturing both peak and off-peak speeds. Generally, off-peak speeds are higher due to fewer vehicles on the roadway. The Clarks Road approach to the intersection with Route 110 is going to be widened to extend the two-lane section approximately 250 feet back from Route 110. This improvement is proposed as part of the mitigation for the proposed Starbucks development on Clarks Road. When that is completed, there will be approximately 320 feet of roadway between the Project site driveway and the start of the two-lane section for the intersection. That 320-foot section has curvature, which naturally slows down drivers, leading to the intersection with Route 110. As the observed vehicle speeds were low, traffic calming measures on this short section of Clarks Road are unnecessary.

Future Conditions

Comment 1: *Future Traffic Growth – the TIA appropriately considers potential future traffic growth based on typical background growth and site-specific traffic generated by other planned development projects in the area. VHB agrees with both the 1.5-percent annual traffic growth rate identified and the list of six nearby development projects. Traffic assignment for the background project was done following accepted industry practices.*

Response: No response required.

Comment 2: *Planned Roadway Improvements – VHB agrees with the inclusion of both the planned Starbucks Clark's Road mitigation and the recently awarded MassWorks grant improvements at the Route 110 (Macy Street)/Elm Street/Clark's Road intersection as being significant future projects.*

Response: No response required.

Comment 3: *Project-Generated Traffic – Trip generation for the proposed 152-unit residential development was calculated appropriately based on the most recent version of the "Trip Generation Manual²" published by the Institute of Transportation Engineers (ITE). This database includes studies of several comparable residential developments and use of the ITE data is the accepted industry standard for estimating trip generation.*

Response: No response required.

Comment 4: *Trip Distribution and Assignment – The regional assignment of Project trips was based on U.S. census data and observed travel patterns. VHB agrees with this methodology. The resulting regional trip distribution is consistent with that used in the Rocky Hill Residential Development study noted earlier. However, Clark's Road also connects to Main Street to the south, which can be used to travel to/from other destinations to the east and west. To determine potential use of this road by the Project, VAI should conduct TMCs at the nearby*



Birchwood Pointe Condominium development. This information can be used to identify the north/south distribution of that site's trips, which should be similar to that of the Project.

Response: Peak-hour TMCs at the two driveways to the Birchwood Pointe development are scheduled to be counted December 11th and 13th. Once the data is received and processed, a summary of the northbound/southbound split on Clarks Road will be provided under separate cover.

Comment 5: *Future Traffic Volumes – Build Condition – VHB agrees with the documentation presented which indicates that the Project should result less than one-percent increase in traffic volumes compared to the 2032 No-Build condition. The Clark's Road increases should be revisited based on the trip distribution sensitivity analysis discussed under the previous comment.*

Response: If the Birchwood Pointe development counts indicate a significant change in the trips directed to/from the south on Clarks Road, an updated peak-hour traffic-volume increase table will be provided.

Comment 6: *Parking Generation – The potential parking demand for the Project was estimated using standard ITE parking data³ based on the 213 bedrooms proposed within the proposed 152-unit development. The ITE data reflects the parking demand for both residents and visitors at the sites in its database. The 85th percentile weekday parking demand would be 187 parked vehicles, which could be accommodated by the proposed parking supply. [The parking supply shown on the Project Site plans is shown as 203 spaces, and not the 209 spaces referenced in the TIA.] While not shown in the report, the estimated 85th percentile demand on a typical Saturday would be 164 spaces based on the number of bedrooms (though Saturday ITE data is limited to only one study). If parking generation was instead based on the proposed number of units and not bedrooms, the resulting weekday 85th percentile parking demand would be 220 spaces. As this slightly exceeds the proposed parking supply, this should be discussed further by the applicant. VHB expects that the actual parking demand may be lower based on other industry sources, but documentation of this should be provided. The use of compact spaces also should be reconsidered as they generally are less efficient while only resulting in a minimal number of additional spaces within the overall Site.*

Response: The ITE parking analysis was carried out using bedrooms instead of units, as it typically gives a better estimation of the actual parking demand. A development could be all one-bedroom units, while another development with the same number of units is all two-plus bedroom units. The two developments would require a different parking demand. As such, the use of bedrooms provides a more accurate picture of the Project's parking demand. The Project provides 203 spaces for 213 bedrooms/152 units, or 0.95 spaces per bedroom/1.34 spaces per unit. This parking supply is above the average parking supply provided at similar residential developments in Salem, Peabody, Beverly, and Danvers noted in the Perfect Fit Parking data from the Metropolitan Area Planning Council (MAPC). This study collected parking data at 31 residential developments in Salem, Peabody, Beverly, and Danvers, and the average parking supply was 1.16 spaces per unit, below the 1.34 spaces per unit proposed. In addition, the MAPC looked at parking demand. At the same 31 developments, the average parking demand was shown to be 0.85 spaces per unit. As is the case with these residential developments, we believe the parking demand for the Project will be below the proposed parking supply of 1.34 spaces per unit.



With regard to the use of compact spaces, it should be noted that compact spaces can accommodate most vehicles in use today. The 85th percentile composite vehicle as established by the National Parking Association has dimensions of 6'7" wide by 16'10" long. This composite vehicle size accounts for SUVs and CUVs, and is recommended to be used as the design vehicle for parking garages and surface lots. Based on this vehicle size, the compact space dimensions of 8'6" wide by 18' long can accommodate 85 percent of vehicles that are this size and below. Therefore, the use of compact spaces is appropriate for this site.

Sight Distance Evaluation

Comment 1: *Sight Distance – both the stopping sight distance and intersection sight distance measurements were compared to industry standards⁴ based on the regulatory 25 mph speed limit for Clark's Road. This results in a conservative analysis as the actual travel speeds measured during the study's data collection were at or below 20 mph in both directions. The measured stopping sight distance exceeds requirements. The intersection sight distance looking to the south falls slightly below desirable levels. However, this should not pose safety concerns as the sight line still significantly exceeds the required stopping sight distance. VAI should confirm that any walls, plantings, or other potential visual obstructions do not impede the reported sight lines. Also, sight distance should be evaluated at the proposed garage exit within the Site to confirm that the retaining walls adjacent to the exit ramp do not impede visibility. If sight distance is constrained, mitigating measures should be proposed.*

Response: As recommended in the traffic study, any signs or landscaping adjacent to the Project site driveway should be designed and maintained to ensure they do not restrict lines of sight. The Applicant's site plan conforms with requirements for and best practices related to preserving sight lines at both the Project entrance and the top of the garage ramp.

Traffic Operations Analysis

Comment 1: *Analysis Results – The TIA analysis indicates that the Project will have a negligible impact at the Route 110 (Macy Street)/Carriagetown Marketplace signalized driveway. This is consistent with the relatively low volumes of Site traffic expected to pass through this intersection. Likewise, the Project should have a negligible impact on the Route 110 (Macy Street)/I-95 South ramps intersection under its future signalized condition. The critical movement at the Route 110 (Macy Street)/I-95 North unsignalized intersection is expected to operate at LOS F under future conditions with or without the Project in place. The additional four to eleven Project peak hour trips added to this ramp approach will only increase the projected ramp queues by a maximum of two vehicles. Regardless, delays on that approach already are projected to be excessive. This should be discussed further.*

Response: The proposed MassWorks project that the City is undertaking is designed to address the queueing on Route 110 westbound, which impacts the off-ramp for I-95 northbound. The addition of the third westbound travel lane and the signalization of the I-95 southbound ramps intersection will increase capacity and allow more vehicles to exit the I-95 northbound ramp. Synchro was used for the analysis, which is standard practice for traffic studies. Synchro assesses each intersection as a discrete location, and therefore, the impact of the improvements at the intersection of Route 110 at Clarks Road/Elm Street and



Route 110 at I-95 southbound ramps is not realized in the level of service and queueing result for the intersection of Route 110 at I-95 northbound ramps. In, addition the 4-11 vehicle per hour added to that movement from this Project equates to 1 vehicle every 5 to 15 minutes.

Comment 2: *Route 110 (Macy Street)/Elm Street/Clark's Road analysis results – The TIA 2032 No-Build and 2032 Build conditions analysis reflect the planned MassWorks improvements for the Route 110 (Macy Street)/Elm Street/Clark's Road intersection. The capacity analysis indicates that the Project will not change the reported level of service (LOS) for any intersection movements. [Note: Table 9 mistakenly shows the Elm Street southbound left-turn movement degrading to LOS F, while it actually remains unchanged at LOS E.] The northbound Clark's Road left-turn movement is expected to operate at LOS E during each peak hour under the 2032 Build condition. The adjacent northbound through-/right-turn movement is projected to operate at LOS B, LOS A, and LOS B during the respective weekday morning, weekday evening, and Saturday midday peak hours. The Project is expected to increase peak-hour vehicle queues on this approach by no more than one vehicle. These impacts should not require mitigation beyond the improvements already planned in this area.*

The maximum queue on the northbound Clark's Road approach (194 feet during the weekday evening peak hour) will extend beyond the roughly 150-foot segment having at least a 20-foot width as it approaches the signal. As the planned Clark's Road roadwork extends less than 100 feet to the south of the signalized intersection this condition will not change. Accordingly, the northbound left-turn queue will likely extend beyond the available storage and block access to the adjacent through-/right-turn lane. This only will occur with the 95th percentile queue under peak hour conditions, and not with the average queue length. The estimated queues will not extend to the Burger King parcel driveway or Starbucks driveway, both of which are located at least 220 feet to the south of Route 110 (Macy Street).

Independent of this Project, it may be beneficial for "DO NOT BLOCK INTERSECTION" pavement markings to be installed at the Starbucks driveway to help avoid southbound left-turns from being able to turn into that site.

Response: VAI concurs that the intersection of Route 110 at Clark Road/Elm Street does not require mitigation beyond the improvements already planned in the area.

The proposed improvements on Clarks Road to be completed by the Starbucks development will extend the two-lane section of Clarks Road to 250 feet south of Route 110, which is more than 50 feet beyond the 194-foot maximum queue shown in the report.

VAI concurs that, independent of this Project, it may be beneficial to install "DO NOT BLOCK INTERSECTION" pavement markings at the Starbucks driveway.

Comment 3: *Clark's Road/Proposed Site driveway – the TIA did not include capacity analysis for the intersection of Clark's Road with the proposed Site driveway. Peak hour volumes on Clark's Road are expected to range from 424 to 554 vehicles. While exiting Site traffic almost entirely would be turning right, likely with low delays, expected operating*



conditions should be documented by VAI in the form of unsignalized capacity analyses for this location.

Response: The analysis for the Project site driveway's intersection with Clarks Road was mistakenly left out of the traffic study. Table 1 below provides a summary of the intersection's level of service.

As can be seen in Table 1, under 2032 Build conditions, the southbound left-turn movement operates at LOS A during weekday morning, weekday evening, and Saturday midday peak hours, and the westbound left/right-turn movement operates at LOS B or better. Vehicle queues are expected to be less than one vehicle.



Table 1
CLARKS ROAD AT PROJECT SITE DRIVEWAY CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak Hour	2025 Existing				2032 No-Build				2032 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
Clarks Road at Site Driveway												
<i>Weekday Morning:</i>												
Project Site Driveway WB LT/RT									43	9.8	A	5
Clarks Road SB LT									13	7.7	A	0
<i>Weekday Evening:</i>												
Project Site Driveway WB LT/RT					Intersection is constructed under 2032 Build Conditions				21	9.6	A	3
Clarks Road SB LT									36	7.7	A	3
<i>Saturday Midday:</i>												
Project Site Driveway WB LT/RT									27	13.4	B	5
Clarks Road SB LT									27	7.9	A	3

^aDemand in vehicles per hour.

^bDelay in seconds per vehicle.

^cLevel of service.

^d95th percentile queue length (feet).



Conclusion

In addition to the analysis revisions requested above, the proponent should consider the following mitigation measures beyond those currently proposed:

Comment 1: *In the event that the proposed Rocky Hill Residential development should not proceed in a timely manner for any reason, this Project's proponent should commit to implementing the short-term, low-cost measures identified in the RSA conduct on behalf of that project. That mitigation would be limited to the Route 110 (Macy Street)/Elm Street/Clark's Road intersection only.*

Response: See response to Existing Conditions Section Comment 4.

Comment 2: *The Project should explore implementing traffic calming measures along Clark's Road between the Site driveway and Route 110 (Macy Street) to help maintain appropriate speeds within the neighborhood setting.*

Response: The Clarks Road approach to the intersection with Route 110 is going to be widened to extend the two-lane section approximately 250 feet back from Route 110. This improvement is proposed as part of the mitigation for the proposed Starbucks development on Clarks Road. When that is completed, there will be approximately 320 feet of roadway between the Project site driveway and the start of the two-lane section for the intersection. That 320-foot section has curvature, which naturally slows drivers down leading to the intersection with Route 110. As the observed vehicle speeds were low, traffic calming measures on this short section of Clarks Road are unnecessary.

Comment 3: *The concept plans submitted with the MassWorks grant application for the Route 110 (Macy Street)/Elm Street/Clark's Road intersection noted that the sidewalk along the east side of Clark's Road should be extended to the Project Site driveway. However, the subsequent 25% design plans reviewed by MassDOT did not depict this. Discussion of the status of that potential sidewalk work should be provided. If these potential sidewalk improvements did not proceed for any reason (which appears unlikely with the grant having been secured), this work should be undertaken by the Project. This work would be limited to sidewalk improvements that could be implemented within the Clark's Road right-of-way.*

The City is currently planning for improved sidewalks for the full length of Clark's Road. Potential future work to be undertaken by the City would include a new sidewalk along the westerly side of the road from Main Street to the Birchwood Pointe Condominium complex area. Whether the sidewalk work along the easterly side of the road to the north is undertaken by the MassWorks improvements or by the Project, that sidewalk should continue to the condominium development's westerly driveway. A new raised crosswalk should be provided at that location connecting to the City sidewalk project on the opposite side of the road. Any new sidewalks should be approximately eight feet wide (as allowed by available right of way) in light of the increased residential population in this area. Any new sidewalks should be positioned to allow for potential roadway widenings which may be required in the future so that the new sidewalk would not need to be replaced.



Response: The MassWorks grant includes installing a new sidewalk on the east side of Clarks Road from the Starbucks property to the residential driveway at 29 Clarks Road. That being said, the Applicant has committed to replacing the existing sidewalk to City standards from the Project site driveway to Route 110 in the event some or all of that sidewalk is not replaced during the Starbucks work and/or the MassDOT intersection improvements.

The Applicant is also willing to upgrade the existing sidewalk between the Project site driveway and the closest Birchwood property driveway to City standards.

Providing a raised crosswalk at the Birchwood property driveway to cross Clarks Road is unnecessary. There is no reason to cross Clarks Road at this location when there will be sidewalks on both sides of Clarks Road between the Birchwood Property and Route 110. Pedestrians on either side of Clarks Road could walk up to Route 110, and from there they could head east, west, or north to their desired destination and use the signalized pedestrian crossings at the intersection of Route 110 at Clarks Road/Elm Street.

Project Site Plans

This memorandum also includes a technical review of the transportation aspects of the Project Site plans prepared by The Morin-Cameron Group, Inc., dated September 29, 2025. VHB's December 2, 2025 civil engineering and stormwater review memorandum already provided comments regarding several transportation-related elements of the Site plans. VHB also is providing the following additional comments for consideration:

Comment 1: *As noted in the TIA, the applicant should commit to not having any walls, plantings, or other potential visual obstructions near the Site driveway impeding the reported sight lines. Also, sight distance should be evaluated at the proposed garage exit within the Site to confirm that the retaining walls adjacent to the exit ramp do not impede visibility.*

Response: The Applicant's site plan conforms with requirements for and best practices related to preserving sight lines at both the Project entrance and the top of the garage ramp.

Comment 2: *A crosswalk should be installed across the proposed garage ramp driveway at its intersection with the east/west parking lot circulation aisle.*

Response: A crosswalk has been added to the plan at the top of the garage ramp.

Comment 3: *VHB's civil engineering/stormwater review memorandum provided comments regarding the proposed 40-foot long loading space. In addition to responding to those comments, the applicant also should provide any expected operational measures which may be required to accommodate residents moving in or out of the development. These could include requiring some parking spaces temporarily being blocked off to allow for moving activities, or other temporary measures.*

Response: Given the space available for loading at both ends of the multifamily building, the Applicant does not expect to block spaces during moving activities.

Comment 4: *The Project's parking management should be discussed in terms of if parking stickers or other means will be provided to control parking. Consideration should be given to unbundling parking from the leasing of units so that any residents choosing not to own a vehicle would not have to lease a space. Discussion should be provided regarding if any*



parking spaces will specifically be designated for visitors, or if an open parking supply would be preferred.

Response: Visitor parking spaces will be designated near the amenity area. Parking stickers, further visitor parking designation, or “unbundling” parking from rent as suggested by VHB, which Applicant assumes would mean charging separately for all parking spaces (and which Applicant is not intending to do), are business and management decisions that will be made and evaluated by Applicant and management from time to time as necessary.

Sincerely,

VANASSE & ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read "Derek Roach".

Derek Roach, P.E.
Senior Transportation Engineer

cc: File



APPENDIX

PEDESTRIAN AND BICYCLE COUNT DATA
PERFECT FIT PARKING DATA
CAPACITY ANALYSIS

PEDESTRIAN AND BICYCLE COUNT DATA

978-664-2565

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[illegible]

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

Page No : 1

Groups Printed- Bikes Peds

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	2	3
Total	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	2	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	2	3
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0	0			
Total %	0	0	0		0	50	0		0	0	0		0	50	0	0	33.3	66.7	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:00 PM																		
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

Page No : 1

Groups Printed- Bikes Peds

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
Grand Total	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	5	5
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0	0			
Total %	0	0	0		0	80	0		0	0	0		0	20	0	0		100	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 11:00 AM																		
11:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	0	1	3
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.000	.250	.375

978-664-2565

Page No : 1

	Elm St From North				Route 110 From East				Clark's Rd From South				Route 110 From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0														

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Clear

File Name : 10269001

Site Code : 10269001

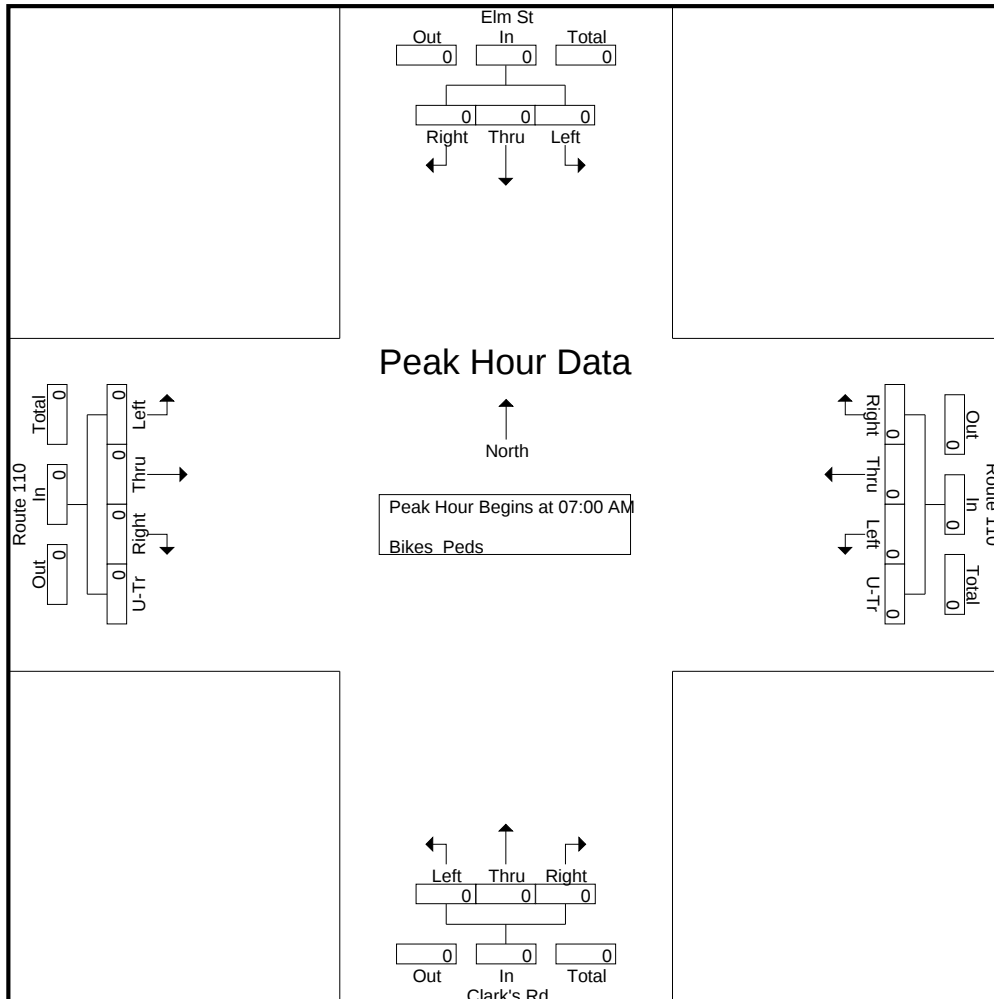
Start Date : 4/30/2025

Page No : 2

Groups Printed- Bikes Peds

	Elm St From North				Route 110 From East				Clark's Rd From South				Route 110 From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	5	5
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
06:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
06:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	3
Total	0	0	0	1	0	1	0	3	0	0	0	0	0	0	0	0	1	4	5
Grand Total	0	1	0	5	0	4	0	5	0	0	0	0	0	0	0	0	5	10	15
Apprch %	0	100	0		0	44.4	0	55.6	0	0	0	0	0	0	0	0			
Total %	0	10	0		0	40	0	50	0	0	0	0	0	0	0	0	33.3	66.7	

	Elm St From North				Route 110 From East					Clark's Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:00 AM																			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0	0		0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



978-664-2565

Page No : 1

[illegible]

978-664-2565

Page No : 10

[illegible]

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 10

Groups Printed- Bikes Peds

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	2	2	4
Total	0	0	0	0	0	2	0	0	0	0	0	2	0	1	0	0	2	3	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	0	0	0	0	0	3	0	0	0	0	0	2	0	1	0	0	2	4	6
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0				
Total %	0	0	0		0	75	0		0	0	0		0	25	0		33.3	66.7	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.375

978-664-2565

Page No : 10

[illegible]

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

Page No : 10

Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	2	0	0	0	0	0	0	2	0	2
07:30 AM	0	0	1	0	0	0	0	0	0	1	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	3	0	0	0	0	0	0	3	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	0	0	0	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	1	1
Grand Total	0	0	3	0	1	0	0	0	0	3	1	4
Apprch %	0	0		0	100		0	0				
Total %	0	0		0	100		0	0		75	25	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	1	0	0	0	1
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

Page No : 10

Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
04:00 PM	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	2	0	0	0	0	0	0	2	0	2
Total	0	0	2	0	0	0	0	1	0	2	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	2	0	0	0	0	1	0	2	1	3
05:45 PM	0	0	2	0	0	0	0	0	0	2	0	2
Total	0	0	4	0	0	0	0	1	0	4	1	5
Grand Total	0	0	6	0	0	0	0	2	0	6	2	8
Apprch %	0	0		0	0		0	100				
Total %	0	0		0	0		0	100		75	25	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	1	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

Page No : 10

Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
11:00 AM	0	0	0	0	0	1	0	0	0	1	0	1
11:15 AM	0	0	1	1	0	0	0	0	0	1	1	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	1	0	0	0	2	1	3
12:00 PM	0	0	0	1	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	1	1
01:00 PM	0	0	2	0	0	0	0	0	0	2	0	2
01:15 PM	0	0	0	2	0	0	0	0	0	0	2	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	2	0	0	0	0	0	2	2	4
Grand Total	0	0	3	4	0	1	0	0	0	4	4	8
Apprch %	0	0		100	0		0	0				
Total %	0	0		100	0		0	0		50	50	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	0	0	0	1	0	1	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	1	0	1	0	0	0	1
Total Volume	0	0	0	2	0	2	0	0	0	2
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.500	.000	.500	.000	.000	.000	.500

PERFECT FIT PARKING DATA

Site Name	Municipality	Parking Supply per Unit	Parking Demand per Unit
Conifer Hill Commons	Danvers	1.77	1.11
Burnham Apartments	Beverly	1.08	0.86
CSH	Beverly	0.67	0.3
Cabot Street Apartments	Beverly	1.09	1.09
Elliott Landing	Beverly	1.97	1.11
Enterprise Apartments	Beverly	0.96	0.87
Flats at 131	Beverly	0.96	0.64
HPH1&2	Beverly	0.43	0.38
Link 480	Beverly	1.14	1.12
Brown School Residences	Peabody	1.05	0.85
15-17 Central St	Peabody	1.67	0.91
85 Main Street	Peabody	1	0.94
Eaves Peabody	Peabody	1.71	1.53
Penelope 120 Apartments	Peabody	0.58	0.49
Bell at Salem Station	Salem	1.2	0.89
Loring Towers	Salem	1.24	0.9
North River Apartments	Salem	2.09	1.41
Salem Heights	Salem	0.78	0.64
Boston Street Crossing	Salem	0.31	0.04
Halstead Salem Station	Salem	1.52	0.98
Lighthouses 34	Salem	0.9	0.52
Lighthouses 47	Salem	0.88	0.68
Loring Towers	Salem	1.36	1.21
North River Apartments	Salem	2.4	1.36
Pequot Highlands	Salem	1.43	1.13
Rainbow Terrace	Salem	1.34	1.04
Salem heights Apartments	Salem	0.91	0.8
Seeds of Hope 20 Endicott	Salem	0.17	0
Seeds of Hope 7 High St	Salem	0.3	0.1
Sofi at Salem Station	Salem	1.6	1.14
Traders Row	Salem	1.54	1.23
Average		1.162903226	0.847419355

CAPACITY ANALYSIS

Intersection						
Int Delay, s/veh	1.1					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	1	42	224	0	13	187
Future Vol, veh/h	1	42	224	0	13	187
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	5	0	0	4
Mvmt Flow	1	46	243	0	14	203

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	475	243	0
Stage 1	243	-	-
Stage 2	232	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	552	800	-
Stage 1	802	-	-
Stage 2	812	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	545	800	-
Mov Cap-2 Maneuver	545	-	-
Stage 1	802	-	-
Stage 2	802	-	-

Approach	NW	NE	SW
HCM Ctrl Dly, s/v	9.83	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWL	SWL	SWT
Capacity (veh/h)	-	-	792	117	-
HCM Lane V/C Ratio	-	-	0.059	0.011	-
HCM Ctrl Dly (s/v)	-	-	9.8	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	1					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	1	20	199	1	36	239
Future Vol, veh/h	1	20	199	1	36	239
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	2
Mvmt Flow	1	22	216	1	39	260
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	555	217	0	0	217	0
Stage 1	217	-	-	-	-	-
Stage 2	338	-	-	-	-	-
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	496	828	-	-	1364	-
Stage 1	824	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	480	828	-	-	1364	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Approach	NW	NE	SW			
HCM Ctrl Dly, s/v	9.63	0	1.01			
HCM LOS	A					
Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT		
Capacity (veh/h)	-	-	800	236	-	
HCM Lane V/C Ratio	-	-	0.029	0.029	-	
HCM Ctrl Dly (s/v)	-	-	9.6	7.7	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

Intersection						
Int Delay, s/veh	1					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	26	1	260	1	27	247
Future Vol, veh/h	26	1	260	1	27	247
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	1	283	1	29	268
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	610	283	0	0	284	0
Stage 1	283	-	-	-	-	-
Stage 2	327	-	-	-	-	-
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	461	761	-	-	1290	-
Stage 1	769	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	448	761	-	-	1290	-
Mov Cap-2 Maneuver	448	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Approach	NW	NE	SW			
HCM Ctrl Dly, s/v	13.45	0	0.77			
HCM LOS	B					
Minor Lane/Major Mvmt	NET	NER	NWL	SWL	SWT	
Capacity (veh/h)	-	-	455	177	-	
HCM Lane V/C Ratio	-	-	0.064	0.023	-	
HCM Ctrl Dly (s/v)	-	-	13.4	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	