

MEMORANDUM

TO: Southfield Redevelopment Authority
c/o New England Development
75 Park Plaza
Boston MA 02116

FROM: Mr. Jeffrey S. Dirk, P.E.*, PTOE, FITE
Managing Partner *and*
Mr. Andrew J. Arseneault
Senior Transportation Engineer
Vanasse & Associates, Inc.
35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066
(978) 269-6830
jdirk@rdva.com



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

DATE: March 1, 2023 **RE:** 8950

SUBJECT: Preliminary Transportation Impact Assessment
South Weymouth Naval Air Station Mixed-Use Development
Abington, Rockland, and Weymouth, Massachusetts

SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Preliminary Transportation Impact Assessment (PTIA) in support of modifications to a master plan development program for the mixed-use development that is being advanced on the site of the former South Weymouth Naval Air Station (“SWNAS”) in the Towns of Abington, Rockland and Weymouth, Massachusetts (hereafter referred to as the “Project”). The purpose of this preliminary assessment is four-fold: i) to update the existing conditions context of the transportation infrastructure that serves the Project; ii) to present the trip characteristics of the modified master plan development program; iii) to identify the primary roadway corridors that serve the Project; and iv) to refine this preliminary analysis to ascertain final definitive impacts and define transportation infrastructure improvements that may be required to support the continued build-out of the Project as currently envisioned.

This preliminary assessment has been prepared in advance of the final Transportation Impact Assessment that will accompany the required filings with the Massachusetts Environmental Policy Act (MEPA) Office. For consistency, the geographic scope of the study area that has been assessed as a part of this preliminary assessment is consistent with that evaluated in the June 17, 2007 *Final Environmental Impact Report* (the “2017 FEIR”)¹ that was filed for the Project, originally named Southfield and later renamed Union Point, and also referenced in the subsequent February 28, 2017 *Notice of Project Change* (the “2017 NPC”)².

¹*Final Environmental Impact Report*, Union Point, Abington, Rockland, Weymouth, Massachusetts (EEA No. 11085R); Epsilon, et al; June 17, 2007 (date that availability of the document was noticed in the *Environmental Monitor*).

²*Notice of Project Change*, Union Point, Abington, Rockland, Weymouth, Massachusetts (EEA No. 11085R); Epsilon, et al; February, 28, 2017.



Based on this preliminary analysis, the 2023 projected development program will be significantly less impactful on the transportation infrastructure than the development program that was defined in the 2017 NPC. As it relates to the 2007 FEIR development program, the additional traffic that is associated with the 2023 modified development program can be accommodated by the transportation infrastructure with consideration of: i) planned roadway, intersection and traffic control improvements that are being advanced by others and that will be constructed as a part of the Project; and ii) the dispersal of trips between the three (3) gateways that serve the Project site over the respective peak hours. The analysis completed for the 2007 FEIR Development program and the mitigation approved in connection therewith contemplated a majority of the vehicle trips anticipated for the 2023 development program. The final TIA will analyze the additional vehicle trips anticipated for the 2023 program and refine what additional mitigation may be required.

The 2023 development program will likely be modified over time, but the program provides a “baseline” of study, effectively, a “starting point”, for the analysis, reserving the right to revise the mix and number of residential and commercial uses as market conditions evolve, and adjust the needed roadway improvements as impacts from an updated program requires.

The following details the findings of the PTIA for the SWNAS mixed-use development.

PROJECT DESCRIPTION

The project entails the redevelopment of the former South Weymouth Naval Air Station, a tract of approximately 1,440 acres of land located in the Towns of Abington, Rockland, and Weymouth, as a mixed-use residential, commercial and recreational uses, with both active and passive open space. Vehicular access is supported by three primary gateways: Shea Memorial Drive (via Main Street (Route 18), Bill Delahunt Parkway (via Route 228 to Route 3) and Patriot Parkway (via Trotter Road to Route 18). In addition, the South Weymouth Station on the Massachusetts Bay Transportation Authority (MBTA) Commuter Rail system (Kingston Line) is situated off Trotter Road and immediately adjacent to the Project, offering commuting options for residents and employees of the Project, with service between Kingston and South Station in Boston. Also, within SWNAS, an interconnected network of sidewalks, pathways and bicycle accommodations continues to evolve to support multimodal access to and within the Project site. Figure 1 depicts the location of the Project in relation to the existing transportation infrastructure.

Development Program

Prior zoning at SWNAS set very specific allowed uses by areas and phases. The rigidity of these controls contributed to the failure of earlier redevelopment attempts. The current proposed zoning provides much greater flexibility in blending commercial and residential uses to respond to prevailing market conditions. In this Transportation Impact Assessment and in the current infrastructure planning, a more residential weighted mix of uses was used as the “2023 modified development program.”

The development program for the Project, tested by the PTIA, has evolved to reflect market conditions and regional and local housing needs. These evolving conditions have resulted in a change in the constituent components of the development program, but not the mixed-use focus, which continues to achieve trip reduction by providing residential, retail and employment opportunities in a centralized area that is supported by an interconnected network of roadways, sidewalks and bicycle facilities. Table 1 summarizes and compares the development program as currently envisioned to that of the development program that was the subject of the 2007 FEIR and the subsequent 2017 NPC.



Table 1
SWNAS MIXED-USE DEVELOPMENT PROGRAM
SUMMARY AND COMPARISON TABLE

Land Use	Development Program			Change 2007 FEIR/2017 NPC
	2007 FEIR	2017 NPC	2023 Modification	
<i>Residential:</i>	2,855 units	3,855 units	7,274 units	+4,419 units/+3,419
Single-Family Detached	645 units	355 units	1,630 units	
Single Family Attached	806 units	500 units	1,592 units	
Multifamily	1,234 units	2,000 units	3,882 units	
Age-Restricted	170 units	1,000 units	170 units	
<i>Commercial:</i>	2,060,000 sf	8,000,000 sf	2,000,000 sf	No Change/-6,000,000 sf
Life Sciences/Biopharma	950,000 sf	2,800,000 sf	300,000 sf	
High-Tech Manufacturing	--	800,000 sf	--	
Manufacturing	--	800,000 sf	--	
Warehouse	--	--	800,000 sf	
Office	575,000 sf	2,485,000 sf	800,000 sf	
Retail	300,000 sf	348,000 sf	100,000 sf	
Conference Center	--	120,000 sf	--	
Hotel	90,000 sf (150 keys)	172,000 sf (285 keys)	--	
Stadium	--	270,000 sf (15,000 seats)	--	
Skating Rink/Hockey	60,000 sf	120,000 sf	--	
Fitness/Wellness Center	85,000 sf	85,000 sf	--	

Note: Currently, a combination of 774 rental apartments and 500 homes, as well as 73,000 SF of mixed-use commercial has been built at SWNAS, and those existing uses are included in the 2022 existing condition traffic volumes and the associated analyses that are presented as a part of this assessment.

As identified in Table 1, the modified 2023 development program reflects the desire and need to create additional housing opportunities, to include rental and homeownership options, of a scale to support the commercial component of the mixed-use development. As evidenced by the 2019 foreclosure, the 8 million square foot scale of the commercial component contemplated in 2017 was not, and is not today, supported by the marketplace. As stated above, although a 2023 projected program is being analyzed, there is a strong likelihood that, for example, commercial space may increase over time, depending on market conditions with a corresponding residential adjustment and further adjustment and phasing of roadway improvements.

EXISTING CONDITIONS CONTEXT

A comprehensive field inventory of existing conditions within the study area was conducted in June, July, August and October 2022. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area that has been assessed as a part of this PTIA is consistent with the study area that was assessed in the 2007 FEIR and includes 73 intersections and ramp junctions that are listed below and depicted on Figure 2 (A through D), and geographically include: 30 intersection in Weymouth; 17 intersections in Rockland; 10 intersections in Hingham; 9 intersections in Abington; 3 intersections in Braintree; and 2 intersections each in Norwell and Whitman.

Figure 3 (A through E) depicts existing lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in August and October 2022.



1. Route 18 at Washington Street (Route 53)
2. Route 53 at Middle Street
3. Water Street at Middle Street
4. Route 18 at Winter Street
5. Route 18 at the Route 3 Northbound Ramps
6. Route 18 at the Route 3 Southbound Ramps
7. Route 18 at Middle Street and West Street
8. Grove Street at Plain Street
9. Grove Street at Liberty Street
10. Grove Street at Columbian Street
11. Columbian Street at Forest Street
12. Columbian Street at Park Avenue West
13. Route 18 at Park Avenue and Park Avenue West
14. Route 18 at Columbian Street
15. Columbian Street at Pleasant Street and Union Street
16. Park Avenue at Pleasant Street
17. Pleasant Street at Elm Street
18. Pleasant Street at Pine Street
19. Oak Street at Pine Street
20. Ralph Talbot Street at Pine Street
21. Derby Street at Pond Park Road
22. Derby Street at the Route 3 Southbound Ramps
23. Derby Street at the Route 3 Northbound Ramps
24. Derby Street at Old Derby Street
25. Derby Street at the Derby Street Shops Main Driveway (signalized)
26. Derby Street at Cushing Street
27. Route 53 at Cushing Street
28. Route 53 at Gardner Street and Derby Street
29. Route 53 at Farm Hills Lane
30. Main Street (Route 228) at Gardner Street (north)
31. Route 228 at Route 53
32. Route 53 at Grove Street and High Street
33. Route 228 at the Route 3 Northbound Ramps
34. Route 228 at Gardner Street (south)
35. Route 228 at Pond Street
36. Route 228 at the Route 3 Southbound Ramps
37. Hingham Street at Commerce Road
38. Hingham Street at Reservoir Park Drive
39. Weymouth Street at Reservoir Park Drive
40. Weymouth Street at Sharp Street and Abington Street
41. Randolph Street at Forest Street
42. Derby Street at Pond Street
43. Route 18 at Pond Street and Pleasant Street
44. Route 18 at Derby Street
45. Route 18 at Shea Memorial Drive
46. Shea Memorial Drive at Memorial Grove Avenue
47. Union Street at White Street
48. Pond Street at Thicket Street
49. Route 18 at Trotter Road
50. Route 18 at Pond Street (Route 58)
51. Trotter Road at Patriot Parkway
52. Memorial Grove Avenue at Snow Bird Avenue
53. Bill Delahunt Parkway and Patriot Parkway at Shea Memorial Drive
54. Route 139 at Old Randolph Street and Hancock Street
55. Route 139 at Old Randolph Street and Chestnut Street
56. Randolph Street (Route 139) at Lincoln Street
57. Route 18 at Randolph Street and North Avenue (Route 139)
58. North Avenue at Adams Street (Route 58)
59. North Avenue at Salem Street and Plain Street (Route 139)
60. Salem Street at Spruce Street
61. VFW Drive at Union Street
62. VFW Drive at Pleasant Street
63. Union Street at North Avenue
64. Webster Street at East Water Street (Route 123)
65. Hingham Street at Webster Street (Route 123)
66. Union Street at East Water Street
67. Union Street at Market Street (Route 123/Route 139)
68. Plymouth Street (Route 58) at Central Street
69. Route 58 at Centre Avenue (Route 123)
70. Route 58 at Summer Street
71. Route 18 at Brockton Avenue (Route 123)
72. Route 18 at Temple Street (Route 27)
73. Route 18 at Auburn Street (Route 14)



Existing Traffic Volumes

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts and peak period turning movement counts (TMCs) and vehicle classification counts were performed on the study area roadways and at the study area intersections in June and July 2022. The ATR counts were performed over a continuous 72-hour period (Thursday through Saturday, inclusive) at the following locations:

1. Route 18 - Between Middle Street and Park Avenue
2. Route 18 - Between Columbian Street and Pond Street
3. Route 18 - South of Derby Street
4. Route 18 - North of Trotter Road
5. Route 18 - South of Pond Street
6. Bill Delahunt Parkway - East of Patriot Parkway
7. Shea Memorial Drive - East of Route 18
8. Trotter Road - East of Route 18
9. Hingham Street (Route 228) - West of Route 3 SB Ramps
10. Hingham Street (Route 228) - South of Commerce Road

The TMCs were performed at the study area intersections during the following peak periods: weekday morning (7:00 to 9:00 AM), weekday evening (4:00 to 6:00 PM) and Saturday midday (11:00 AM to 2:00 PM).

Traffic Volume Adjustments

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, traffic-volume data from MassDOT Continuous Count Station No. 6255 located on State Route 3 in Weymouth was reviewed. Based on a review of this data, it was determined that traffic volumes for the month of June are approximately 6.6 percent above average-month conditions and traffic volumes for the month of July are approximately 3.7 percent above average month conditions. As such, no adjustment was made to the raw traffic count data as the data is representative of traffic-volume conditions that are higher than those under average-month conditions.

In order to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic, traffic-volume data collected at MassDOT Continuous Count Station No. 6255 in June and July 2022 was compared to June and July 2019 traffic volumes that were collected at the same location. Based on this pre- and post-COVID-19 traffic count data comparison, the traffic-volume data that was collected as part of this assessment was found to be generally consistent with the traffic volumes that existed prior to the COVID-19 pandemic. As such, no adjustment was required to the June and July 2022 traffic volume data to account for pandemic-related impacts.

The 2022 Existing weekday morning, weekday evening and Saturday midday peak-hour traffic volumes are graphically depicted on Figures 4, 5 and 6 (A through E), respectively.



Pedestrian and Bicycle Facilities

Figure 3 graphically depicts the location of sidewalks, crosswalks and bicycle accommodations at the study area intersections. As depicted thereon, sidewalks are generally provided along one or both sides of the majority of the study area roadways, with marked crosswalks and traffic signal equipment (pedestrian push buttons, signal indications and phasing) provided at the signalized study area intersections. Formal bicycle facilities are not currently provided on a continuous basis along the study area roadways; however, many of the roadways provide sufficient width to accommodate bicycle travel in a shared traveled-way configuration (i.e., bicyclists and motor vehicles sharing the traveled-way).³

Within the overall site, Shea Memorial Drive, Bill Delahunt Parkway, Patriot Parkway and intersecting roadways provide sidewalks along one or both sides. Buffered bicycle lanes are provided along Patriot Parkway, with both Shea Memorial Drive and Bill Delahunt Parkway providing sufficient width to accommodate bicycle travel in a shared traveled-way configuration.

Public Transportation Services

Public transportation services are provided within the study area by the Massachusetts Bay Transportation Authority (MBTA). The MBTA provides Commuter Rail service to South Station in Boston on the Kingston/Plymouth Line from South Weymouth Station, which is located at 89 Trotter Road, adjacent and connected by existing parking and pedestrian pathways within SWNAS. In addition, the MBTA also operates the RIDE paratransit service for eligible persons who cannot use fixed-route bus services all or some of the time due to a physical, cognitive, or mental disability in compliance with the Americans with Disabilities Act (ADA).

Motor Vehicle Crash Data

A review of the MassDOT high crash location database was undertaken for the study area in order to review the location of Highway Safety Improvement Program (HSIP) eligible crash clusters. Figure 7 (A through D) depict the locations of HSIP eligible crash clusters within the study area. MassDOT defines a HSIP eligible cluster as: "...one in which the total number of 'equivalent property damage only' crashes are within the top 5% in the region." The Equivalent Property Damage Only (EPDO) index is a method of combining the number of crashes with the severity of crashes based on a weighted scale, where a property damage only crash is worth 1 point and injury and fatal crashes are worth 21 points. Designation as a HSIP location allows for MassDOT to prioritize funding for safety-related improvements in a specific region of the state. Road Safety Audits (RSAs) have been completed at a number of the identified HSIP locations and improvements have been or are planned to be implemented. A more detailed motor vehicle crash assessment will be undertaken as a part of the subsequent TIA that will be prepared in support of the refinements to the development program for the Project.

³A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared traveled-way condition.



EXISTING TRAFFIC OPERATIONS

A detailed traffic operations analysis (motorist delays, vehicle queuing, and level-of-service) was performed for the study area intersections under 2022 Existing traffic volume conditions for the weekday morning, weekday evening and Saturday midday peak hours. Capacity analyses provide an indication of how well transportation facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

In brief, six levels of service are defined for each type of facility. They are given letter designations ranging from A to F, with LOS “A” representing the best operating conditions and LOS “F” representing congested or constrained operations. An LOS of “E” is representative of a transportation facility that is operating at its design capacity with an LOS of “D” generally defined as the limit of “acceptable” traffic operations. Since the level-of-service of a traffic facility is a function of the flows placed upon it, such a facility may operate at a wide range of levels of service depending on the time of day, day of week, or period of the year. The Synchro® intersection capacity analysis software, which is based on the analysis methodologies and procedures presented in the *Highway Capacity Manual, 6th Edition* (HCM)⁴ for unsignalized intersections, was used to complete the level-of-service and vehicle queue analyses.

Analysis Results

The results of the intersection capacity and vehicle queue analyses are summarized on Figures 8, 9 and 10 (A through E), with the detailed analysis results attached. For context, we note that an LOS of “D” or better is generally defined as “acceptable” operating conditions.

As indicated on the summary figures, the majority of the study area intersections were found to be operating under acceptable conditions during the peak hours, illustrating the benefits that have been attained as a result of recent improvements that have been completed in the area, including the reconstruction of Route 18 and construction of the Parkway to support the continued build-out of SWNAS.

This analysis will serve as the basis of the future conditions analyses that will be undertaken as a part of the final TIA that will be prepared in support of the required filings with the MEPA Office. Given the long-term build-out of the Project, the future condition analyses will be based on a 20-year horizon (from the current year) and will evaluate 2043 No-Build and 2043 Build conditions. The future conditions analysis will form the basis of recommendations for improvements to the transportation infrastructure.

⁴*Highway Capacity Manual, 6th Edition*, Transportation Research Board; Washington, DC; 2016.



TRIP-GENERATION

In order to develop the trip characteristics of the refined development program for the Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)⁵ for similar land uses as those that are anticipated to comprise the build-out of the development were used. The following ITE Land Use Codes (LUCs) were used to develop the traffic characteristics for the refined development program for the Project:

<i>Land Use Code</i>	<i>Land Use Description</i>
140	Manufacturing
150	Warehousing
210	Single-Family Detached Housing
215	Single-Family Attached Housing
221	Multifamily Housing (Mid-Rise)
750	Office Park
760	Research and Development Center
812	Shopping Center (40-150k) – No Supermarket

The 170 senior housing units were disseminated between the residential LUCs (210, 215 and 221) as the unit type (attached vs. detached) has not been defined. This approach overstates the trips that may be associated with the residential component of the refined development program. Trips generated by SWNAS can be characterized as primary trips, internal trips and pass-by or diverted trips. Each type of trip is unique as it relates to impacts on the transportation infrastructure and are defined below.

Primary Trips

Primary trips have an origin or a destination within SWNAS that is the primary purpose of the trip and are unrelated to another land use within development.

Internal Trips

A portion of the trips expected to be generated by SWNAS will consist of internal or dual-purpose trips. An internal trip consists of a resident, employee or customer that patronizes more than one of the uses planned within a development and is common in mixed-use projects with appropriate accommodations to facilitate trips between uses. These “internal” trips are not accounted for when the trip-generation calculations are performed on an individual land use basis, resulting in higher traffic volumes than will actually be generated.

Pass-By and Diverted Trips

Not all of the trips expected to be generated by the commercial component of SWNAS will be new trips on the roadway network. A portion of these trips will consist of pass-by trips or vehicles traveling along adjacent roadways for other purposes that will patronize a uses within SWNAS in conjunction with their trip and then continue to their original destination. These trips are not new trips on the roadway network and can constitute up to 35 percent of trips associated with a retail use and 50 percent or more for a restaurant use. As these trips relate to SWNAS, they are more likely to be derived from within the development (internal trips) or from external roadways (diverted trips).

⁵*Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.



For the purpose of this preliminary assessment, a 25 percent reduction was applied to the base ITE trip-generation calculations in order to account for internal trips, diverted trips and the use of alternative modes of transportation to single-occupancy vehicles (SOVs). This adjustment will be refined as a part of the subsequent final TIA that will accompany the filings with the MEPA Office. Table 2 summarizes the anticipated traffic characteristics of currently envisioned development program for SWNAS using the above methodology.

Table 2
TRAFFIC-VOLUME COMPARISON TABLE

Time Period	Vehicle Trips			
	(A) 2007 FEIR Development Program	(B) 2017 NPC Development Program	(C) 2023 Modified Development Program ^a	Difference (C-A/C-B)
<i>Average Weekday</i>	34,300	79,990	47,752	+13,452/-32,238
<i>Weekday Morning Peak Hour</i>	2,137	4,984 ^b	3,766	+1,629/-1,218
<i>Weekday Evening Peak Hour</i>	3,099	7,227 ^b	4,396	+1,297/-2,831

^aBased on ITE trip rates and applying a 25 percent reduction for internal trips and use of non-SOV modes of transportation.

^bEstimated based on the ratio of the respective weekday peak-hour traffic volume to the average weekday traffic volume for the 2007 FEIR development program applied to the average weekday traffic volume for the 2017 NPC development program.

Traffic-Volume Summary

As can be seen in Table 2, the modified development program for SWNAS is expected to generate 47,752 vehicle trips on an average weekday (two-way, 24-hour volume), with 3,766 vehicle trips expected during the weekday morning peak-hour and 4,396 vehicle trips expected during the weekday evening peak-hour.

In comparison to the development program that was the subject of the 2007 FEIR, the 2023 modified development program is predicted to generate 13,452 *additional* vehicle trips on an average weekday, with 1,629 *additional* vehicle trips expected during the weekday morning peak-hour and 1,297 *additional* vehicle trips expected during the weekday evening peak-hour.

With regard to the 2017 NPC development program, the 2023 modified development program is predicted to generate 32,238 *fewer* vehicle trips on an average weekday, with 1,218 *fewer* vehicle trips expected during the weekday morning peak-hour and 2,831 *fewer* vehicle trips expected during the weekday evening peak-hour.

It is clear that the 2023 modified development program will be significantly less impactful on the transportation infrastructure than the development program that was defined in the 2017 NPC. As it relates to the 2007 FEIR development program, the additional traffic that is associated with the 2023 modified development program can be accommodated by the transportation infrastructure with consideration of: i) planned roadway, intersection and traffic control improvements that are being advanced by others and those that will be constructed as a part of the Project; and ii) the dispersal of trips between the three (3) gateways and the MBTA Station that serve the Project site over the respective peak hours. The analysis completed for the 2007 FEIR Development program and the mitigation approved in connection therewith contemplated a majority of the vehicle trips anticipated for the 2023



development program. The final TIA will analyze the additional vehicle trips anticipated for the 2023 program and refine what additional mitigation may be required.

Trip Distribution and Assignment

Separate trip-distribution patterns were developed for the residential and commercial components of the Project given the differing nature and purpose of the trips associated with these uses. For the residential component, the directional distribution was determined based on a review of Journey-to-Work data obtained from the U.S. Census for persons residing in Abington, Rockland, and Weymouth, and then refined based on a review of existing traffic patterns within the study area during the peak periods. For the commercial component, the directional distribution was determined based on a review of Journey-to-Work data obtained from the U.S. Census for persons employed in Abington, Rockland, and Weymouth, and then refined based on a review of existing traffic patterns within the study area. The general trip distribution for the residential and commercial components of the Project are graphically depicted on Figures 11 and 12 (A through D), respectively.

SUMMARY

VAI has conducted a PTIA in support of the modifications to the master plan development program for the mixed-use development that is being advanced on the site of the former SWNAS in the Towns of Abington, Rockland and Weymouth, Massachusetts. This preliminary assessment has been prepared in advance of the final Transportation Impact Assessment that will accompany the required filings with the Massachusetts Environmental Policy Act (MEPA) Office for the modifications to the development program for the Project, and includes the following: i) an update of the existing conditions context of the transportation infrastructure that serves the entire site; ii) trip characteristics of the modified master plan development program; iii) identification of the primary roadway corridors that serve the Project; and iv) the scope of the analysis to ascertain the final definitive impacts and transportation infrastructure improvements that may be required to support the continued build-out of the Project as currently envisioned.

The following conditions have been identified as a part of this PTIA as they relate to the Project:

1. **Transportation Alternatives** - Vehicular access is support by three primary gateways: Shea Memorial Drive (via Main Street (Route 18), Bill Delahunt Parkway (via Route 228 to Route 3) and Patriot Parkway (via Trotter Road to Route 18), with public transportation alternatives available from South Weymouth Station on the MBTA Commuter Rail system (Kingston Line) which is situated off Trotter Road and immediately adjacent to the Project site. Within the Project site, an interconnected network of sidewalks, pathways and bicycle accommodations continues to evolve to support multimodal access to and within the Project site;
2. **Existing Conditions** – A comprehensive data collection effort has been undertaken that included the collection of traffic volumes, an inventory of public transportation services and the location of pedestrian and bicycle facilities was undertaken at 73 intersections and ramp junctions that included 30 intersection in Weymouth; 17 intersections in Rockland; 10 intersections in Hingham; 9 intersections in Abington; 3 intersections in Braintree; and 2 intersections each in Norwell and Whitman;
3. **Existing Traffic Operations** - A review of existing traffic operations (i.e., levels of service) within the study area indicated that the majority of the study area intersections are operating under acceptable conditions during the peak hours, illustrating the benefits that have been attained as a



result of recent improvements that have been completed in the area, including the reconstruction of Route 18, many of which have been advanced to support the continued build-out of the Project;

4. **Modified Development Program** - The modified development program is predicted to generate 13,452 *additional* vehicle trips on an average weekday, with 1,629 *additional* vehicle trips expected during the weekday morning peak-hour and 1,297 *additional* vehicle trips during the weekday evening peak-hour when compared to the 2007 FEIR development program. In comparison to the development program that was defined as a part of the 2017 NPC, the modified development program is predicted to generate 32,238 *fewer* vehicle trips on an average weekday, with 1,218 *fewer* vehicle trips expected during the weekday morning peak-hour and 2,831 *fewer* vehicle trips expected during the weekday evening peak-hour; and
5. **Trip Dispersal** – The Project site is served by three primary gateways that convey trips to and from arterial and collector roadways that serve to disperse trips in an efficient manner. This trip dispersal and opportunities to advance expanded public transportation and pedestrian and bicycle options as a part of the Project will serve to reduce the impacts of the Project on the transportation infrastructure.

In consideration of these preliminary findings, it is clear that the 2023 modified development program will be significantly less impactful on the transportation infrastructure than the development program that was defined in the 2017 NPC. As it relates to the 2007 FEIR development program, the additional traffic that is associated with the 2023 modified development program can be accommodated by the transportation infrastructure with consideration of: i) planned roadway, intersection and traffic control improvements that are being advanced by others and those that will be constructed as a part of the Project; and ii) the dispersal of trips between the three (3) gateways and the MBTA Station that serve the Project site over the respective peak hours. The analysis completed for the 2007 FEIR Development program and the mitigation approved in connection therewith contemplated a majority of the vehicle trips anticipated for the 2023 development program. The final TIA will analyze the additional vehicle trips anticipated for the 2023 program and refine what additional mitigation may be required.

NEXT STEPS

A final Transportation Impact Assessment (TIA) is currently being prepared to accompany the required filings with the MEPA Office. The data collection effort that was undertaken as a part of this PTIA will serve as the basis of the TIA. The TIA will be completed in accordance with the Massachusetts Department of Transportation (MassDOT) *Transportation Impact Assessment (TIA) Guidelines* and will include an assessment of traffic volumes, public transportation services, pedestrian/bicycle facilities and safety, both with and without the modifications to the development program. The study area will include the roadways and the 73 intersections that are included as a part of this PTIA, and will include the following analysis conditions:

- 2022 Existing Conditions
- 2043 No-Build Conditions
- 2043 Build Conditions
- 2043 Build Conditions with Improvements

These analyses will support the development of a comprehensive transportation improvement program for the Project and will include a review of the status of the previous commitments to mitigations, an update on improvements that are currently being undertaken or that will be advanced by others, including those at Columbian Square in Weymouth and VFW Drive/Weymouth Street in Rockland, and the development of



a robust Transportation Demand Management (TDM) program that will be supported by a comprehensive Traffic Monitoring and Reporting Program. Table 3 summarizes the elements of the transportation improvement program for SWNAS that were defined in the 2007 FEIR, the current status, and the additional improvements that will be further evaluated for the 2023 modified development program in the final TIA that is currently being prepared to accompany the required filings with the MEPA Office.

cc: File



Table 3
SWNAS TRANSPORTATION IMPROVEMENT PROGRAM SUMMARY

Improvement Location Identified in the 2007 FEIR	Improvement Description	Responsible Party	Complete?	Potential Additional Improvements Required to Support 2023 Modified Development Program
Bill Delahunt Parkway	Widen to two lanes per direction	SWNAS	Yes – initial phase is one lane per direction; additional improvements required for full build-out of SWNAS	No
Shea Memorial Drive	Widen to two lanes per direction	SWNAS	Yes – initial phase is one lane per direction; roadway extension required for full build-out of SWNAS	No
Multi-Modal Transportation Facility	Build a multi-modal transportation facility	SWNAS	No	No
Route 18/Shea Memorial Drive	Widen to provide 2 general-purpose lanes on Route 18 northbound and 1 left-turn and 2 through lanes on Route 18 southbound	MassDOT	Yes	Add a second left-turn lane to Rte. 18 southbound
Route 18/Trotter Road	Widen to provide 2 general-purpose lanes on Route 18 northbound and 1 left-turn and 2 through lanes on Route 18 southbound	MassDOT	Yes – initial phase; add a second left-turn lane on Trotter Road and an additional through lane and right-turn lane on Rte. 18 northbound for full build-out of SWNAS	Optimize traffic signal timing
Hingham Street/Reservoir Park Drive	Widen to provide an additional right-turn lane on Hingham Street southbound and upgrade traffic signal system	SWNAS	No	Optimize traffic signal timing
Hingham Street/Commerce Road	Widen to provide left-turn lane on both Route 18 approaches and upgrade traffic signal system	SWNAS	No	Optimize traffic signal timing
Hingham Street/Route 3 southbound ramps	Widen to provide an additional left-turn lane on Route 3 southbound off-ramp and modify traffic signal system	SWNAS	No	Optimize traffic signal timing
Hingham Street/Pond Street	Widen to provide additional turn lanes on Hingham Street northbound and Pond Street westbound approaches; upgrade traffic signal system	SWNAS	No	Optimize traffic signal timing
Weymouth Street/Reservoir Park Drive/ Bill Delahunt Parkway	Add Bill Delahunt Parkway as the fourth leg to the intersection and upgrade traffic signal system	SWNAS	Yes	Add an additional through lane on both Weymouth St. approaches and on Reservoir Park Dr.
Route 18/Park Avenue	Widen to provide turn lanes at the intersection and upgrade traffic signal system	MassDOT	Yes	Optimize traffic signal timing
Route 18/Columbian Street	Widen to provide turn lanes at the intersection and upgrade traffic signal system	MassDOT	Yes	Optimize traffic signal timing
Route 18/West Street/Middle Street	Widen to provide turn lanes at the intersection and upgrade traffic signal system	MassDOT	Yes	Optimize traffic signal timing
Route 18/Pond Street/Pleasant Street	Widen to provide turn lanes at the intersection and upgrade traffic signal system	MassDOT	Yes	Optimize traffic signal timing
Route 18/Pond Street	Widen to provide turn lanes at the intersection and upgrade traffic signal system	MassDOT	Yes	Optimize traffic signal timing
Route 18/Route 139	Widen to provide turn lanes at the intersection and upgrade traffic signal system	MassDOT	Yes	Optimize traffic signal timing



Table 3 (Continued)
TRANSPORTATION IMPROVEMENT PROGRAM SUMMARY

Improvement Location Identified in the 2007 FEIR	Improvement Description	Responsible Party	Complete?	Potential Additional Improvements Required to Support 2023 Modified Development Program
Columbian Square	Widen to provide turn lanes at the intersection, improve mobility and intersection geometry, and upgrade traffic signal system	Town of Weymouth (Previously SWNAS)	This Project is under construction and is being advanced by the Town of Weymouth using monies from the American Rescue Plan Act and a state grant	Optimize traffic signal timing
Columbian Street/Park Street West	Install traffic signal system	SWNAS	No	Optimize traffic signal timing
Derby Street/Pond Street/Hollis Street	Widen to provide turn lanes on Hollis Street and Derby Street approaches and upgrade traffic control system	SWNAS	No	Optimize traffic signal timing
Columbian Street/Forest Street	Widen to provide turn lanes at the intersection and install traffic signal system	SWNAS	No	Optimize traffic signal timing
Route 58/Route 139	Widen to provide turn lanes at the intersection and upgrade traffic signal system	SWNAS	No	Add a left-turn lane on Rte. 58 southbound
Randolph Street/Forest Street	Widen to provide turn lanes at the intersection and install traffic control signal system	SWNAS	No	Optimize traffic signal timing
Route 18/Route 123	Widen to provide turn lanes at the intersection and upgrade traffic signal system	SWNAS	No	Optimize traffic signal timing
Weymouth St/Abington St	Widen to provide turn lanes at the intersection and install traffic signal system	SWNAS	No	Optimize traffic signal timing
Abington Street/Pine Street/Oak Street (traffic calming)	Install traffic calming measures	SWNAS	No	No
Thicket Street (traffic Calming)	Install traffic calming measures	SWNAS	No	No
Forest Street (traffic calming)	Install traffic calming measures	SWNAS	No	No
Gardner Street (traffic calming)	Install traffic calming measures	SWNAS	No	No
Route 18	Widen Route 18 to two travel lanes per direction	MassDOT	Yes	Provide a center turn lane between West St. and Shea Memorial Dr.
Hingham Street	Not required	SWNAS	Not required for 2007 FEIR Program	Widen Hingham St. to provide a four-lane cross-section between the Rte. 3 southbound ramps to Reservoir Park Dr.
Reservoir Park Drive	Not required	SWNAS	Not required for 2007 FEIR Program	Widen Reservoir Park Dr. to provide a four-lane cross-section

