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May 24, 2016

**VIA UPS**

Mr. Marcus A. Serrano
City Manager
Rye City Hall
1051 Boston Post Road
Rye, NY 10580

Re: United Hospital Redevelopment FEIS Review
Village of Port Chester, Westchester County, New York
MC Project No. 15001515A

Dear Mr. Serrano:

As requested by the City of Rye, Maser Consulting, P.A. has completed our review of the Traffic and Transportation related portions of the Final Environmental Impact Statement (FEIS) for the United Hospital Redevelopment (UHR), dated April 27, 2016. The FEIS includes responses to comments we had made on the DEIS as outlined in our August 27, 2015 letter. The FEIS also includes responses to other public comments and comments from other involved and interested agencies including the New York State Department of Transportation (NYSDOT), the Village of Rye Brook and the Village of Port Chester and their consultants.

The following summarizes our technical review comments pertaining to the FEIS and provides our opinion on the adequacy of the Applicant's responses to the previous comments. We have also included a summary of our recommendations for potential mitigation measures, which the City should request to offset potential negative traffic impacts resulting from the UHR redevelopment.

## A. Summary of Major Concerns of the FEIS

1. Post Construction Implementation Study
   The concept of a post implementation study is generally reasonable, however in this case because of the nature of the concerns already raised, it may not be adequate. Typically, a post monitoring study will focus on accounting for variation in vehicle distributions and/or trip generation from a project and entails implementing modifications such as

signal timing improvements, other traffic signal upgrades and possibly additional storage lane extensions or items of that nature, which are easily implemented to account for any variations identified. In this case, the nature of the proposed improvements may not allow for the additional necessary improvements to be easily implemented. Also, the amount of the bonding would have to be significant enough to cover the cost of the potential improvements such as those listed below.

As noted below, the concerns are primarily focused on the operational computations of various intersections as well as the ability to implement certain improvements that are identified by the Applicant, which are questionable due to available right of way and other geometric concerns. We also recommend that an additional traffic monitoring study be completed after only half of the project is occupied to allow necessary adjustments to be implemented to mitigate the project traffic if it is not functioning properly. More importantly, if these intersections do not function as projected in the FEIS and/or cannot be improved because of the noted constraints, it is likely that significant traffic will divert to other routes. **This will likely result in more significant increases in traffic on other roadways and intersections in the City of Rye and Village of Rye Brook.**

2. Summary of Specific Intersection Operational Concerns
Based on the revised traffic projections and analyses contained in the FEIS, the following is a summary of the locations with significant operational concerns as a result of the UHR project traffic. It should be noted that certain items such as actual lane widths and roadway intersection approach grades do not appear to be accurately accounted for in the Applicant's analysis. These factors could have a significant impact on the analysis results and therefore the delays, levels of service and queues presented in the Applicant's analysis are likely understated.

- U.S. Route 1 and Route I-287 Exit 11 Off Ramp
The Applicant continues to portray a dual turn lane (i.e. left and shared left/right) movement from the ramp onto U.S. Route 1. A concept for how this widening can be accomplished is provided on Figure III.E-27 of the FEIS, which includes the construction of a retaining wall on the east side of the ramp and striping to separate the left turn movements. **The Approximate Highway Boundary lines identified on the plan should be verified to determine if this work is feasible.** The Applicant has now attempted to consider the severe angle of the left turn movements exiting the ramp, which impacts the capacity of the approach. It should be noted that the proposed improvements would reduce the angle somewhat. However, it is our opinion that the adjustments made by the Applicant are not sufficient based on our observations of traffic, other historical data as well as the present restricted width of the bridge approach proposed width to receive this dual turn movement. **Even with the Applicant's improvements and adjustments, the analysis indicates that the left turn movement from the ramp will operate over capacity under future build conditions with vehicle**

**queues extending from the ramp onto the mainline of I-287 eastbound. Similar concerns were raised in the Adler Consulting memo to the Village of Port Chester dated April 1, 2016.** As a result of a meeting we attended on May 20, 2016, we understand that the Applicant's Engineer will be revising their plan and analyses to indicate their new proposal for widening to provide three lanes on the exit ramp. This plan would maintain a right turn lane for traffic heading towards Rye from the ramp.

Additionally, the left turn movement from U.S. Route 1 to I-95 Southbound at this intersection is problematic. The project is projected to add approximately 100 vehicles to this movement during peak hours resulting in total left turn volumes approaching 600 vehicles which are anticipated to be processed on a shared left turn/through lane. This lane becomes a "defacto" left turn lane, which is not accounted for in the Synchro analysis and significantly impacts the operation of the southbound U.S. Route 1 approach. Typically where left turning volumes exceed 350 to 400 vehicles per hour, a dual left turn lane is warranted.

It should also be noted that recent traffic counts collected by our office at this intersection on Friday May 6th and Saturday May 7th, 2016 indicate during the Saturday peak hour, **the left turn volume from the ramp was observed to be in excess of 100 vehicles higher than the base volume used in the UHR Traffic study (549 vs. 435). The southbound left from U.S. Route 1 onto I-95 southbound was in excess of 75 vehicles higher (457 vs. 374).**

Based on these deficiencies, it is projected that this intersection will operate with significant delays during peak hours, which will cause even more of the UHR site generated traffic to divert to other routes including I-287 Exit 10, Purchase Street, Ridge Street, Hillside Road, and High Street. **The ultimate solution to these issues is to widen the bridge on U.S. Route 1 over I-287 to accommodate a dual left turn lane onto I-95 southbound and wider receiving lanes for the proposed dual left turn lanes from the I-287 eastbound off-ramp, as previously specified in our comments on the DEIS (see attached).** This improvement should not be left to a post monitoring study.

**Note that at the meeting on May 20, 2016, NYSDOT stated that this intersection is within their jurisdiction regarding the implementation of any improvements. This is contrary to their previous indication that it might be the City of Rye jurisdiction. This still has to be verified.**

- I-95 Northbound Off Ramp Weaving Section to UHR Driveway/Kohl's Driveway
  The Applicant proposes changing the lane configuration on U.S. Route 1 to improve the traffic volume lane distribution to allow vehicles to enter onto U.S. Route 1 from the I-95 northbound off-ramp. This concept is reasonable to eliminate the existing left turn conflicts on to High Street however, the weaving movements on this section of U.S. Route 1 between the ramp and the new UHR driveway/existing Kohl's Shopping Center driveway are still a major concern and cannot be accommodated efficiently in the short distance between the ramp and the driveway. The Applicant has conducted a weaving analysis of this section between the ramp and the new driveway to the United Hospital site and the Kohl's Shopping Center, but the limited distance between the intersections is also impacted by the queues that will extend back from the S. Regent Street and UHR Site Access intersections, effectively reducing the weaving distance. This will create conflicts between weaving vehicles and will not allow traffic to exit from the I-95 northbound ramp to U.S. Route 1 as efficiently as indicated in the Applicant's analysis. This in turn will cause additional backups on U.S. Route 1 as well as on the ramp. This section of U.S. Route 1 was also a major concern raised in the Adler Consulting Memorandum dated April 1, 2016. **Improvements such as signalization of the ramp with a two phase operation, similar to what the Applicant now proposes for the High Street intersection with Route 1 southbound, should be explored to accommodate these vehicles in an orderly fashion and to control the weaving section. This may also help reduce the maximum queues that occur on the I-95 off ramp during peak hours.**

- Site Access, U.S. Route 1 and Shopping Center Driveway
  The FEIS analysis indicates that this intersection is still projected to operate with long delays and queues in excess of the storage capacities on all approaches. The northbound left turn queue storage is projected to be exceeded under the Build conditions with the proposed improvements. This left turn storage cannot be extended further if the post monitoring study indicates the need for it due to the proximity of the I-287 overpass, unless the bridge is widened. The capacity of this dual left turn movement will also be impacted by the limited width of the receiving lanes at the site entrance (i.e. two 11-ft lanes). **This does not appear to be accounted for in the Applicant's analysis.** In addition, the queues for vehicles exiting the site are also expected to exceed the storage length. **A third lane exiting the site in the form of a separate right turn lane should be added to accommodate this traffic. The provision of a separate southbound right turn lane on U.S. Route 1 for vehicles turning into the site should also be provided as part of the proposal to improve the capacity of the southbound U.S. Route 1 approach. The Applicant's analysis indicates over 150 vph making this movement during peak hours (see attached sketch).** The operation of this intersection will also be impacted by the northbound queues on U.S. Route 1 at the S. Regent Street intersection, which are projected to extend

through this intersection. Adler Consulting also expressed similar concerns about the operation of this intersection in their Memorandum dated April 1, 2016, recognizing that the operation of the intersection is crucial to the success of the project.

- U.S. Route 1 and South Regent Street
  Only traffic signal timing adjustments and pedestrian improvements are proposed to be completed by the Applicant at this intersection, however, the queuing analysis indicates that the length of the proposed eastbound left turn lane will not accommodate the projected vehicle queues. Therefore, the intersection operation and efficiency of the signal modifications will not function properly since these vehicles will be blocked and will not be able to get into the turning lane. **Note that the Applicant had previously proposed some geometric improvements at this location but are no longer proposed in the FEIS. A detailed plan needs to be prepared to ensure that the feasibility of such improvements is confirmed within the available right of way. Even with the Applicant's proposed improvements, the intersection is expected to operate at poor Levels of Service (LOS "E") with long queues on the northbound and eastbound approaches.**

- Midland Avenue and Peck Avenue
  The UHR is expected to add additional traffic to the Midland Avenue and Peck Avenue intersection. Based on the FEIS, the development will add approximately 50 vehicles per hour during peak hours to the southbound right turn movement from Midland Avenue onto Peck Avenue resulting in over 300 vehicles per hour on this movement. The Applicant should be required to construct a separate right turn lane on Midland Avenue at the intersection to mitigate this added volume (see also Item 4 below).

3. Jitney Service
   The Jitney Service is proposed to commence after significant occupancy of residential units as well as the wellness/office building. **We believe that the service should be provided upon initial project occupancy so that residents and office employees become accustomed to the service and its usage.** Even a few additional vehicle trips at either of the area train stations (i.e. Rye & Port Chester) will create impacts. Also, the Jitney Service's use is critical to many of the assumptions made relative to the trip generation of the project as well as the operation of the area intersections. The Rye Station will be impacted if there are significant numbers of additional drop-offs. The need for the Jitney Service is further supported by the Adler Consulting Memorandum dated April 1, 2016.

In addition, it is indicated that the Jitney Service ridership will be evaluated as part of the Post Implementation study and discontinuation of the Jitney Service will be at the discretion of the Applicant. **At a minimum, discontinuation of the service should require the review and approval of the Village of Port Chester and preferably would be tied to predetermined ridership numbers.**

4. Fair-Share Contributions to City of Rye

   The Applicant now proposes some fair-share contribution towards a future roundabout at the intersection of Purchase Street & Ridge Street/Hillside Road/Wappanocca Avenue. However, until that improvement is implemented, there will be added conflicting movements through the intersection, which in turn may encourage drivers to cut through such streets as Hillside Road, Evergreen Avenue and Grandview Avenue to avoid this area. **Additional mitigation and funds to allow traffic calming measures to be installed should be made part of the Findings and any approvals of the UHR development.** It should also be noted that the fair-share contribution amount is based on the estimated cost for the roundabout indicated in the City of Rye Capital Improvement Plan. This cost is based on 2004 cost estimates. Based on our recent experiences with newly constructed and/or recent bids, the current estimated price for the roundabout construction is likely to cost in excess of $750,000. **Thus, the fair share contribution should be increased accordingly.**

   A fair-share contribution is also proposed to be provided towards future improvements at the intersection of Midland Avenue & Peck Avenue. **Based on the Applicant's volume projections in the FEIS, we believe that the construction of a separate right turn lane on Midland Avenue onto Peck should be provided. Furthermore, we believe that the amounts of the other fair share contributions should be increased significantly to allow implementation of such improvements and especially in light of the concerns for additional potential traffic diversions as noted above.**

5. Diversion Effects on Other Intersections

   Because of the many concerns identified above, especially at the key intersections along Route 1, it is likely there will be more diversions of UHR site traffic onto local streets, many of them in the City of Rye including Evergreen, Hillside Road, Grandview Avenue and Purchase Street. Therefore, additional mitigation measures and funding should be set aside to address these conditions. Our concerns regarding potential traffic diversions and variations in the arrival and departure distributions are further supported in the Adler Consulting Memorandum dated April 1, 2016.

6. Construction Vehicle Impacts

   Any approvals and the Findings statement for the development should specify that all construction vehicles and construction delivery vehicles for the UHR site will not be permitted to use streets such as High Street, Ridge Street and other local streets and should be limited to the Interstate and State Highway System.

7. NYSDOT Coordination/Approvals
   Input is needed from the New York State Department of Transportation relative to the acceptability and feasibility of the improvements along U.S. Route 1 and other areas. This input is critical and should be obtained prior to the close of the comment period on the FEIS.

8. NYSTA Input
   It is our understanding that the New York State Thruway Authority controls the I-95 off ramp and input should be obtained from them prior to the close of the comment period on the FEIS.

**B. Additional Mitigation Measures to be Included for Locations in City of Rye**

Based on the analysis contained in the traffic study, our further review of the existing and proposed levels of service and queuing conditions as well as our observations of existing operating conditions in the area, the following is a list of other items that the City of Rye should request to be included in the Village of Port Chester's SEQRA Findings Statement for the development.

1. I-287 Exit 11 ramp and bridge improvements as identified above.

2. A Fair-Share contribution to the City of Rye for future improvements at the Peck Avenue/Midland Avenue intersection. The amount of this Fair-Share contribution is currently proposed to $34,500 based on the Applicant's estimates and the amount of site generated traffic projected to travel through this intersection. Since there is uncertainty in the Arrival and Departure distributions utilized in the study we would recommend this contribution be increased to $150,000, to account for potentially higher traffic volumes and the need for traffic signal upgrades.

3. A Fair-Share contribution to the City of Rye towards the installation of a roundabout at the Ridge Street, Purchase Street, Wappanocca Avenue and Hillside Road intersection. The amount of this Fair-Share contribution is currently proposed to be $22,500 based on the Applicant's estimates and the amount of site generated traffic projected to travel through this intersection. Since there is uncertainty in the Arrival and Departure distributions utilized in the study we would recommend this contribution be increased to a minimum of $100,000 to account for potentially higher volumes.

4. Implementation of adaptive traffic signal technology as well as timing modifications at the U.S. Route 1 and Peck Avenue intersection to improve the southbound left turn movement to Peck Avenue.

5. Implementation of adaptive traffic signal technology as well as timing modifications at the Midland Avenue and Peck Avenue intersection to improve overall efficiency of the intersection.

6. Hillside Road, Evergreen Avenue and Grandview Avenue will likely experience additional traffic as a result of traffic avoiding the heavy volumes on U.S. Route 1 at the I-287 eastbound off-ramp (Exit 11) as well as left turns into the United Hospital development. Traffic calming and other traffic control measures including possible street closures should be provided by the Applicant to discourage traffic from utilizing these local streets as a cut-through route. ($100,000)

7. Due to the projected congestion and queuing from the UHR project along U.S. Route 1, the installation by the Applicant of adaptive demand response traffic signal improvements should be required. These types of signal system improvements would help accommodate traffic volumes more efficiently throughout the U.S. Route 1 corridor including through the City of Rye and Village of Port Chester. The implementation of the adaptive system should be made a condition of the Findings for the project.

## C. Specific Technical Review Comments

1. Similar to the DEIS, the FEIS traffic analysis continues to indicate that many intersections will operate at poor Levels of Service under future Build Conditions with the Applicant's proposed improvements. Many of the area intersections, even after the Applicant's improvements, are projected to operate with significant increases in delay and worse Levels of Service than No-Build Conditions. All locations where this occurs have been highlighted on the attached LOS Tables from the FEIS Traffic Analysis. Additionally, we have prepared a table summarizing those locations where the future volumes exceed the capacity of a particular movement (i.e. v/c ratios higher than 1.0) which is an indication that future conditions will be worse than the LOS results indicate. **This typically will result in excessive queues, lack of vehicle storage, etc., which in turn will impact the operation at other adjacent intersections.** Note that this information is not presented in the FEIS summary table but can only be identified based on a review of the actual Synchro outputs contained in the FEIS Appendix. (See also Item 8 below)

2. Site Access Route 1 and Kohl's Shopping Center Driveway/UHR Access Road
   As previously indicated, this intersection is still projected to operate with long delays and queues in excess of the storage capacities on all approaches even with the Applicant's currently proposed improvements. The northbound left turn queue storage is projected to be exceeded by as much as 75 feet under the Build conditions with the proposed improvements. This left turn storage cannot be extended further if the post monitoring study indicates the need for it as it would require the widening of the I-287 overpass. It should also be noted that the analysis results for this movement do not consider the

impacts of the narrow receiving lanes entering the site (two 11-ft. wide lanes), which further reduce the capacity of these turning movements (See Item 2 below). The Applicant indicates in Response E.16 that the driveway entrance and exit has been modified to accommodate a WB-50 vehicle. However, no depiction of this is provided and this is no longer an AASHTO design vehicle. Based on the NYSDOT Permit for Commercial driveways for a development of this size and considering that it will be new construction, typically a WB-62 or WB-67 sized vehicle should be accommodated at the driveway which would require a widening of the receiving lanes.

Additionally, the queues for vehicles exiting the site, which are not summarized in Tables III.E-10, 11 and 12, are also expected to exceed the storage length. This is important to consider as this roadway is proposed to become a Village of Port Chester roadway and will not only be utilized by site traffic but also by traffic currently utilizing High Street to access U.S. Route 1 northbound. If this approach cannot efficiently accommodate the site generated traffic and the diverted High Street traffic, it will result in diversions of traffic to other routes. **Other improvements including the provision of an additional right turn lane exiting the site onto U.S. Route 1 southbound as well as a separate right turn lane on U.S. Route 1 southbound entering into the site should be included as part of the proposal.**

Finally, the northbound queues on U.S. Route 1 at the S. Regent Street intersection are projected to extend through the Site Access/Kohl's Shopping Center intersection exceeding the distance between the intersections by some 200 to 300 ft. This will further impact the operation of the Site Access intersection and is also not taken into account in Figure III.E-31 (Queue Analysis Comparison of High Street and Main Site Driveway) of the FEIS.

3. Historical information provided in the previous editions of the Highway Capacity Manual indicates that logically, the capacity of a dual left turn lane is impacted by the angle of an intersection as well as the width of the receiving lanes for this dual movement. For example, see the attached Charts 22 and 23, which are based on data and research dating back to the 1965 HCM. Specific to the site access intersection, the double left turn lane capacity would be reduced due to the limited width of the receiving lanes (i.e. two 11-ft. lanes) as shown in the charts, which is not accounted for in the Applicant's analysis. At the intersection of U.S. Route 1 and the I-287 Eastbound Off-Ramp, the capacity of the double left turn lane from the eastbound off-ramp is impacted by both the angle of the intersection and the limited width of the receiving lanes (approximately 23-ft.). Based on the Charts, the capacity of the double left turn lane when compared to a standard 90° intersection with a 36 ft. wide receiving lane to accommodate the turning vehicles is reduced by approximately 45% when accounting for the angle and width of the receiving lane, which the Applicant did not appropriately account for. Note that this reduction in capacity would occur regardless of the Applicants proposed improvements. The proposed improvements will also increase the traveled distance for a left turning vehicle using the

outer lane, which would further reduce the capacity of the intersection. Therefore, it is our opinion that the adjustments made by the Applicant are not sufficient to reflect actual and projected future operating capacities.

4. Figure III.E-27 depicts a WB-50 vehicle making a left turn from the improved I-287 Eastbound Off-Ramp to U.S. Route 1 Northbound alongside a passenger vehicle making the same maneuver. The WB-50 vehicle is no longer an accepted ASSHTO Design Vehicle. The Applicant should be required to show that a WB-62 vehicle can also make this maneuver or limit the size of vehicles used for deliveries. Based on current conditions; vehicles larger than WB-50 sized vehicles currently utilize this exit ramp to access U.S. Route 1 northbound and thee uses by such sized vehicles are expected to increase with the UHR project.

5. As indicated previously, the Applicant's analysis indicates that northbound queues at the S. Regent Street intersection will extend beyond the Site Access intersection by 200 to 300 ft. during all peak hours. When these queues are combined with the anticipated queues on the northbound approach at the Site Access intersection, the total queues will extend back to the I-95 northbound off-ramp, which will continue to impact the ability to exit this ramp and will increase the queue lengths on the ramp. Note that these results include the Applicant's proposed improvements at the South Regent Street, the Kohl's Shopping Center/Site Access and High Street intersections.

6. The FEIS LOS Tables, including those in the Appendix, summarize the vehicle Delay and LOS for each lane group. However a more detailed look at the analysis results indicates that at many locations lane groups will operate over capacity (v/c ratio greater than 1.0). This is not reported in these tables, however as indicated in the 2010 Highway Capacity Manual (2010 HCM) *"a volume-to-capacity ratio greater than 1.0 is an indication of actual or potential breakdown"* and *"that the overall signal timing and geometric design provide inadequate capacity for the given demand flows.* Based on the 2010 HCM, any lane group with a v/c ratio greater than 1.0 operates at a LOS F regardless of the delay. See the attached V/C summary table we have prepared based on the VHR FEIS Appendix data.

7. Comment E.21 of the FEIS indicates that the Applicant should provide justification for allowing Right Turns on Red (RTOR) from I-287 Eastbound Off Ramp approach to U.S. Route 1 southbound. No justification has been provided in the response to this comment.

8. Response E.23 indicates that the Applicant's proposed improvements will provide an 18% reduction in accident rates along U.S. Route 1 in the vicinity of the site. However, this is likely not accurate considering the significant delays and queues that are expected to persist even with the proposed improvements.

9. Comment E.29 indicated that input should be provided by the Westchester County Department of Public Works and Transportation on the proposed High Street modification relative to its transit usage. This was not provided as part of the FEIS and should be required prior to the close of the comment period on the FEIS to ensure that Westchester County is aware of the proposed modifications and has no objections.

**D. <u>Summary</u>**

As summarized herein, there are still several intersections which will be impacted by the traffic generated by the UHR project and additional mitigation measures will be necessary to accommodate these vehicles. The recommend improvements and funding for fair share contributions should be a requirement for the project to advance and the City should request that the Village of Port Chester as Lead Agency include them in any SEQRA Findings and/or site plan approval resolutions.

Very truly yours,

MASER CONSULTING P.A.

Philip J. Grealy, Ph.D., P.E.
Principal/Department Manager

A. Peter Russillo, P.E., PTOE
Associate/Senior Project Manager

PJG/jr
Enclosures

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# May 2016
# I-287 Exit 11 Traffic Counts and Comparisons

NOT TO SCALE

PURCHASE ST
RIDGE ST
WAPPANOCCA AVE
PURCHASE ST
BOWMAN AVE
WESTCHESTER AVE
HILLSIDE RD
EVERGREEN AVE
GRANDVIEW AVE
HIGH ST
MATCH LINE 'A'
EXISTING SITE DRWY
MATCH LINE 'B'
PEARL ST
BOSTON POST RD
SOUTH MAIN ST
PURDY AVE
SLATER ST
GRACE CHURCH ST
SOUTH REGENT ST
CEDAR ST
I-95 SB ON-RAMP
I-95 NB OFF-RAMP
I-287 EB OFF-RAMP
I-287 WB ON-RAMP
I-95 SB OFF-RAMP
I-95 NB ON-RAMP
PECK AVE
MIDLAND AVE
PRIVATE DRWY
KOHLS DRWY
OLIVIA ST

LEGEND
00 - VPH - PEAK AM HOUR (7:30-8:30)
(00) - VPH - PEAK PM HOUR (5:15-6:15)
[00] - VPH - PEAK SAT HOUR (1:30-2:30)

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Maser Consulting May 2016 Counts
(000) - Peak PM Hour (Friday May 6, 2016)
(000) - Peak SAT Hour (Saturday May 7, 2016)

Project No. 218434, Scale: NTS

2014 Existing Traffic Volumes
United Hospital Redevelopment
Village of Port Chester, New York

# Maser Consulting

11 Bradhurst Avenue
Hawthorne, NY 10532
*Customer Loyality through Client Satisfaction*


File Name : 1-BOSTON_POST_RD_AT_I-287_EB_OFF_RAMP_ON_RAMP_5-7-16_312342_05-07-20
Site Code :
Start Date : 5/7/2016
Page No : 1

Groups Printed- Motorcycles - Cars - Light Goods Vehicles - Buses - Unit Trucks - Articulated Trucks

| | Southbound St. From North | | | | | Westbound St. From East | | | | | Northbound St. From South | | | | | Eastbound St. From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Tota |
| 11:00 AM | 0 | 125 | 89 | 0 | 214 | 0 | 0 | 0 | 0 | 0 | 1 | 157 | 0 | 0 | 158 | 68 | 0 | 121 | 0 | 189 | 56 |
| 11:15 AM | 0 | 113 | 102 | 0 | 215 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 0 | 138 | 58 | 0 | 114 | 0 | 172 | 52 |
| 11:30 AM | 0 | 126 | 91 | 0 | 217 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 0 | 0 | 137 | 72 | 0 | 138 | 0 | 210 | 56 |
| 11:45 AM | 0 | 110 | 91 | 0 | 201 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 0 | 138 | 92 | 0 | 138 | 0 | 230 | 56 |
| Total | 0 | 474 | 373 | 0 | 847 | 0 | 0 | 0 | 0 | 0 | 1 | 570 | 0 | 0 | 571 | 290 | 0 | 511 | 0 | 801 | 221 |
| 12:00 PM | 0 | 130 | 85 | 0 | 215 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 | 132 | 61 | 0 | 139 | 0 | 200 | 54 |
| 12:15 PM | 0 | 112 | 113 | 0 | 225 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 0 | 0 | 136 | 69 | 0 | 126 | 0 | 195 | 55 |
| 12:30 PM | 0 | 131 | 127 | 0 | 258 | 0 | 0 | 0 | 0 | 0 | 0 | 121 | 0 | 0 | 121 | 63 | 0 | 122 | 0 | 185 | 56 |
| 12:45 PM | 0 | 135 | 109 | 0 | 244 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 120 | 73 | 0 | 151 | 0 | 224 | 58 |
| Total | 0 | 508 | 434 | 0 | 942 | 0 | 0 | 0 | 0 | 0 | 0 | 509 | 0 | 0 | 509 | 266 | 0 | 538 | 0 | 804 | 225 |
| 01:00 PM | 0 | 127 | 108 | 0 | 235 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 118 | 59 | 0 | 150 | 0 | 209 | 56 |
| 01:15 PM | 0 | 107 | 102 | 0 | 209 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 0 | 0 | 140 | 69 | 0 | 135 | 0 | 204 | 55 |
| 01:30 PM | 0 | 117 | 107 | 0 | 224 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 0 | 0 | 125 | 64 | 0 | 143 | 0 | 207 | 55 |
| 01:45 PM | 0 | 99 | 105 | 0 | 204 | 0 | 0 | 0 | 0 | 0 | 0 | 134 | 0 | 0 | 134 | 66 | 0 | 139 | 0 | 205 | 54 |
| Total | 0 | 450 | 422 | 0 | 872 | 0 | 0 | 0 | 0 | 0 | 0 | 517 | 0 | 0 | 517 | 258 | 0 | 567 | 0 | 825 | 221 |
| Grand Total | 0 | 1432 | 1229 | 0 | 2661 | 0 | 0 | 0 | 0 | 0 | 1 | 1596 | 0 | 0 | 1597 | 814 | 0 | 1616 | 0 | 2430 | 668 |
| Apprch % | 0 | 53.8 | 46.2 | 0 | | 0 | 0 | 0 | 0 | | 0.1 | 99.9 | 0 | 0 | | 33.5 | 0 | 66.5 | 0 | | |
| Total % | 0 | 21.4 | 18.4 | 0 | 39.8 | 0 | 0 | 0 | 0 | 0 | 0 | 23.9 | 0 | 0 | 23.9 | 12.2 | 0 | 24.2 | 0 | 36.3 | |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ( |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ( |
| Cars | 0 | 1368 | 1142 | 0 | 2510 | 0 | 0 | 0 | 0 | 0 | 1 | 1530 | 0 | 0 | 1531 | 774 | 0 | 1500 | 0 | 2274 | 631 |
| % Cars | 0 | 95.5 | 92.9 | 0 | 94.3 | 0 | 0 | 0 | 0 | 0 | 100 | 95.9 | 0 | 0 | 95.9 | 95.1 | 0 | 92.8 | 0 | 93.6 | 94. |
| ht Goods Vehicles | 0 | 52 | 59 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 56 | 31 | 0 | 104 | 0 | 135 | 30 |
| Light Goods Vehicles | 0 | 3.6 | 4.8 | 0 | 4.2 | 0 | 0 | 0 | 0 | 0 | 0 | 3.5 | 0 | 0 | 3.5 | 3.8 | 0 | 6.4 | 0 | 5.6 | 4. |
| Buses | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 5 | |
| % Buses | 0 | 0.1 | 0.2 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0 | 0.1 | 0 | 0.2 | 0. |
| ngle-Unit Trucks | 0 | 11 | 26 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 5 | 0 | 10 | 0 | 15 | 6 |
| Single-Unit Trucks | 0 | 0.8 | 2.1 | 0 | 1.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0 | 0 | 0.6 | 0.6 | 0 | 0.6 | 0 | 0.6 | 0. |
| ticulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | ( |

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*Customer Loyality through Client Satisfaction*


File Name : 1-BOSTON_POST_RD_AT_I-287_EB_OFF_RAMP_ON_RAMP_5-7-16_312342_05-07-20
Site Code :
Start Date : 5/7/2016


| | Southbound St. From North | | | | | Westbound St. From East | | | | | Northbound St. From South | | | | | Eastbound St. From West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Right | Thru | Left | U-Turn | App. Total | Int. Tota |
| ak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| ak Hour for Entire Intersection Begins at 12:15 PM | | | | | | | | | | | | | | | | | | | | | |
| 12:15 PM | 0 | 112 | 113 | 0 | 225 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 0 | 0 | 136 | 69 | 0 | 126 | 0 | 195 | 556 |
| 12:30 PM | 0 | 131 | 127 | 0 | 258 | 0 | 0 | 0 | 0 | 0 | 0 | 121 | 0 | 0 | 121 | 63 | 0 | 122 | 0 | 185 | 564 |
| 12:45 PM | 0 | 135 | 109 | 0 | 244 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 120 | 73 | 0 | 151 | 0 | 224 | 588 |
| 01:00 PM | 0 | 127 | 108 | 0 | 235 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 118 | 59 | 0 | 150 | 0 | 209 | 562 |
| Total Volume | 0 | 505 | 457 | 0 | 962 | 0 | 0 | 0 | 0 | 0 | 0 | 495 | 0 | 0 | 495 | 264 | 0 | 549 | 0 | 813 | 2270 |
| % App. Total | 0 | 52.5 | 47.5 | 0 | | 0 | 0 | 0 | 0 | | 0 | 100 | 0 | 0 | | 32.5 | 0 | 67.5 | 0 | | |
| PHF | .000 | .935 | .900 | .000 | .932 | .000 | .000 | .000 | .000 | .000 | .000 | .910 | .000 | .000 | .910 | .904 | .000 | .909 | .000 | .907 | .965 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cars | 0 | 484 | 429 | 0 | 913 | 0 | 0 | 0 | 0 | 0 | 0 | 475 | 0 | 0 | 475 | 251 | 0 | 511 | 0 | 762 | 2150 |
| % Cars | 0 | 95.8 | 93.9 | 0 | 94.9 | 0 | 0 | 0 | 0 | 0 | 0 | 96.0 | 0 | 0 | 96.0 | 95.1 | 0 | 93.1 | 0 | 93.7 | 94.7 |
| ht Goods Vehicles | 0 | 18 | 16 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 8 | 0 | 33 | 0 | 41 | 91 |
| Light Goods Vehicles | 0 | 3.6 | 3.5 | 0 | 3.5 | 0 | 0 | 0 | 0 | 0 | 0 | 3.2 | 0 | 0 | 3.2 | 3.0 | 0 | 6.0 | 0 | 5.0 | 4.0 |
| Buses | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 4 |
| % Buses | 0 | 0 | 0.2 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0.2 | 0 | 0.4 | 0.2 |
| ngle-Unit Trucks | 0 | 3 | 11 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 3 | 0 | 4 | 0 | 7 | 25 |
| Single-Unit Trucks | 0 | 0.6 | 2.4 | 0 | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0 | 0.8 | 1.1 | 0 | 0.7 | 0 | 0.9 | 1.7 |
| ticulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Articulated Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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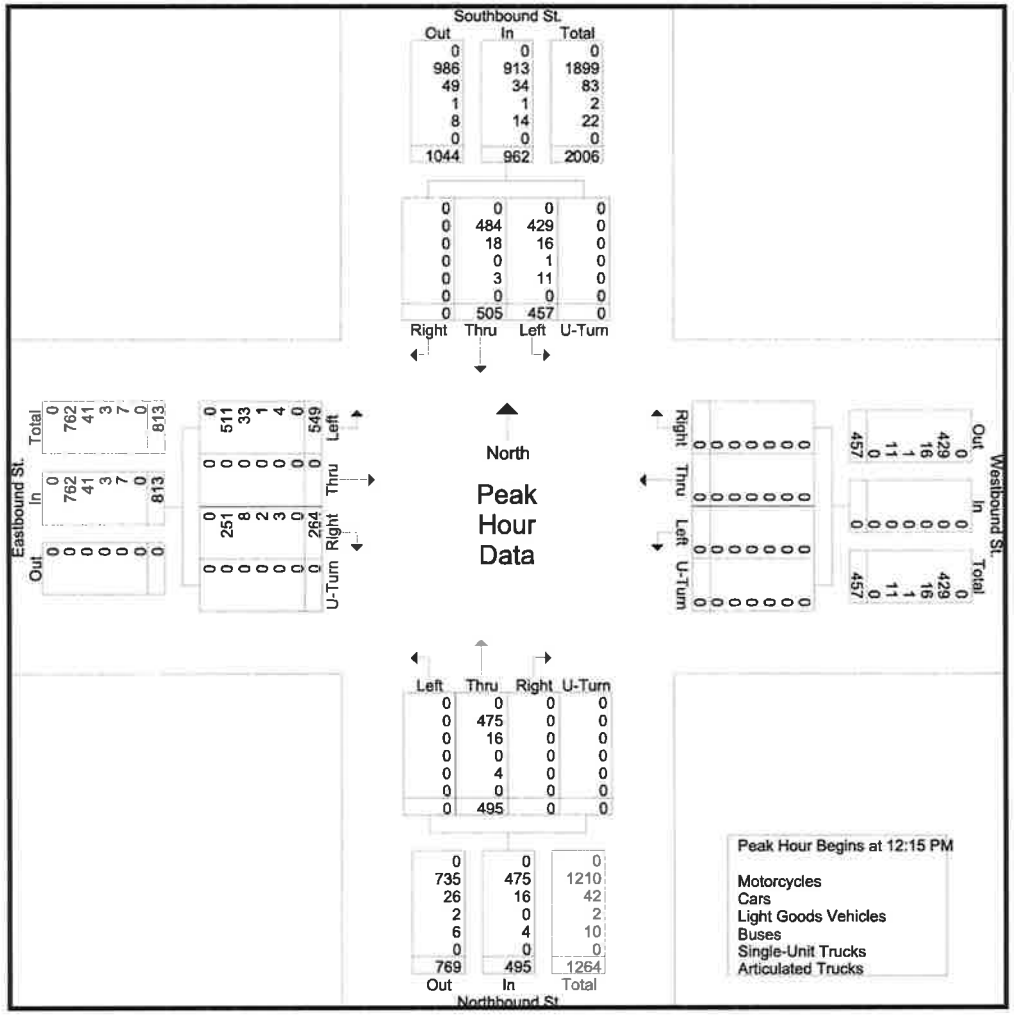
Site Code :
Start Date : 5/7/2016
Page No : 3



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*Customer Loyality through Client Satisfaction*


File Name : 1-BOSTON_POST_RD_AT_I-287_EB_OFF_RAMP_ON_RAMP_5-6-16_312341_05-06-20
Site Code :
Start Date : 5/6/2016
Page No : 1

Groups Printed- Motorcycles - Cars - Light Goods Vehicles - Buses - Unit Trucks - Articulated Trucks

| | Southbound St. From North | | | | Northbound St. From South | | | | Eastbound St. From West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | U-Turn | App. Total | Right | Thru | U-Turn | App. Total | Right | Thru | Left | App. Total | Int. Tot |
| 03:00 PM | 108 | 104 | 0 | 212 | 0 | 104 | 0 | 104 | 68 | 0 | 133 | 201 | 51 |
| 03:15 PM | 103 | 118 | 0 | 221 | 0 | 105 | 0 | 105 | 74 | 0 | 137 | 211 | 53 |
| 03:30 PM | 123 | 104 | 0 | 227 | 1 | 115 | 0 | 116 | 57 | 0 | 122 | 179 | 52 |
| 03:45 PM | 106 | 102 | 0 | 208 | 0 | 122 | 0 | 122 | 67 | 0 | 131 | 198 | 52 |
| Total | 440 | 428 | 0 | 868 | 1 | 446 | 0 | 447 | 266 | 0 | 523 | 789 | 210 |
| | | | | | | | | | | | | | |
| 04:00 PM | 98 | 118 | 0 | 216 | 0 | 121 | 0 | 121 | 81 | 0 | 122 | 203 | 54 |
| 04:15 PM | 113 | 98 | 0 | 211 | 0 | 107 | 0 | 107 | 84 | 0 | 128 | 212 | 53 |
| 04:30 PM | 116 | 127 | 0 | 243 | 0 | 102 | 0 | 102 | 66 | 0 | 115 | 181 | 52 |
| 04:45 PM | 116 | 136 | 0 | 252 | 1 | 103 | 0 | 104 | 72 | 0 | 117 | 189 | 54 |
| Total | 443 | 479 | 0 | 922 | 1 | 433 | 0 | 434 | 303 | 0 | 482 | 785 | 214 |
| | | | | | | | | | | | | | |
| 05:00 PM | 96 | 122 | 0 | 218 | 0 | 117 | 0 | 117 | 63 | 0 | 115 | 178 | 51 |
| 05:15 PM | 105 | 114 | 0 | 219 | 2 | 101 | 0 | 103 | 81 | 0 | 149 | 230 | 55 |
| 05:30 PM | 108 | 108 | 0 | 216 | 0 | 103 | 0 | 103 | 62 | 0 | 131 | 193 | 51 |
| 05:45 PM | 115 | 116 | 0 | 231 | 0 | 109 | 0 | 109 | 63 | 0 | 135 | 198 | 53 |
| Total | 424 | 460 | 0 | 884 | 2 | 430 | 0 | 432 | 269 | 0 | 530 | 799 | 211 |
| | | | | | | | | | | | | | |
| 06:00 PM | 110 | 122 | 0 | 232 | 1 | 79 | 0 | 80 | 53 | 0 | 110 | 163 | 47 |
| 06:15 PM | 103 | 100 | 0 | 203 | 0 | 111 | 0 | 111 | 59 | 0 | 100 | 159 | 47 |
| 06:30 PM | 96 | 113 | 0 | 209 | 0 | 87 | 0 | 87 | 43 | 0 | 115 | 158 | 45 |
| 06:45 PM | 76 | 87 | 0 | 163 | 0 | 79 | 0 | 79 | 58 | 0 | 116 | 174 | 41 |
| Total | 385 | 422 | 0 | 807 | 1 | 356 | 0 | 357 | 213 | 0 | 441 | 654 | 181 |
| | | | | | | | | | | | | | |
| Grand Total | 1692 | 1789 | 0 | 3481 | 5 | 1665 | 0 | 1670 | 1051 | 0 | 1976 | 3027 | 817 |
| Apprch % | 48.6 | 51.4 | 0 | | 0.3 | 99.7 | 0 | | 34.7 | 0 | 65.3 | | |
| Total % | 20.7 | 21.9 | 0 | 42.6 | 0.1 | 20.4 | 0 | 20.4 | 12.9 | 0 | 24.2 | 37 | |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0.1 | 0 | 0 | 0 | 0 | |
| Cars | 1612 | 1661 | 0 | 3273 | 5 | 1591 | 0 | 1596 | 981 | 0 | 1819 | 2800 | 766 |
| % Cars | 95.3 | 92.8 | 0 | 94 | 100 | 95.6 | 0 | 95.6 | 93.3 | 0 | 92.1 | 92.5 | 93. |
| Light Goods Vehicles | 65 | 81 | 0 | 146 | 0 | 60 | 0 | 60 | 50 | 0 | 120 | 170 | 37 |
| % Light Goods Vehicles | 3.8 | 4.5 | 0 | 4.2 | 0 | 3.6 | 0 | 3.6 | 4.8 | 0 | 6.1 | 5.6 | 4. |
| Buses | 6 | 8 | 0 | 14 | 0 | 4 | 0 | 4 | 9 | 0 | 8 | 17 | 3 |
| % Buses | 0.4 | 0.4 | 0 | 0.4 | 0 | 0.2 | 0 | 0.2 | 0.9 | 0 | 0.4 | 0.6 | 0. |
| Single-Unit Trucks | 9 | 34 | 0 | 43 | 0 | 8 | 0 | 8 | 10 | 0 | 25 | 35 | 8 |
| % Single-Unit Trucks | 0.5 | 1.9 | 0 | 1.2 | 0 | 0.5 | 0 | 0.5 | 1 | 0 | 1.3 | 1.2 | 1. |
| Articulated Trucks | 0 | 5 | 0 | 5 | 0 | 1 | 0 | 1 | 1 | 0 | 4 | 5 | 1 |
| % Articulated Trucks | 0 | 0.3 | 0 | 0.1 | 0 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0.2 | 0.2 | 0. |

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Site Code :
Start Date : 5/6/2016
Page No : 2

| | Southbound St. From North | | | | Northbound St. From South | | | | Eastbound St. From West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Left | U-Turn | App. Total | Right | Thru | U-Turn | App. Total | Right | Thru | Left | App. Total | Int. Tota |
| ak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| ak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | |
| 04:00 PM | 98 | 118 | 0 | 216 | 0 | 121 | 0 | 121 | 81 | 0 | 122 | 203 | 54 |
| 04:15 PM | 113 | 98 | 0 | 211 | 0 | 107 | 0 | 107 | 84 | 0 | 128 | 212 | 53 |
| 04:30 PM | 116 | 127 | 0 | 243 | 0 | 102 | 0 | 102 | 66 | 0 | 115 | 181 | 52 |
| 04:45 PM | 116 | 136 | 0 | 252 | 1 | 103 | 0 | 104 | 72 | 0 | 117 | 189 | 54 |
| Total Volume | 443 | 479 | 0 | 922 | 1 | 433 | 0 | 434 | 303 | 0 | 482 | 785 | 214 |
| % App. Total | 48 | 52 | 0 | | 0.2 | 99.8 | 0 | | 38.6 | 0 | 61.4 | | |
| PHF | .955 | .881 | .000 | .915 | .250 | .895 | .000 | .897 | .902 | .000 | .941 | .926 | .98 |
| Motorcycles | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | |
| % Motorcycles | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0. |
| Cars | 426 | 437 | 0 | 863 | 1 | 413 | 0 | 414 | 282 | 0 | 440 | 722 | 199 |
| % Cars | 96.2 | 91.2 | 0 | 93.6 | 100 | 95.4 | 0 | 95.4 | 93.1 | 0 | 91.3 | 92.0 | 93. |
| Light Goods Vehicles | 16 | 26 | 0 | 42 | 0 | 17 | 0 | 17 | 16 | 0 | 34 | 50 | 10 |
| % Light Goods Vehicles | 3.6 | 5.4 | 0 | 4.6 | 0 | 3.9 | 0 | 3.9 | 5.3 | 0 | 7.1 | 6.4 | 5. |
| Buses | 1 | 4 | 0 | 5 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 2 | |
| % Buses | 0.2 | 0.8 | 0 | 0.5 | 0 | 0.2 | 0 | 0.2 | 0.7 | 0 | 0 | 0.3 | 0. |
| Single-Unit Trucks | 0 | 9 | 0 | 9 | 0 | 1 | 0 | 1 | 3 | 0 | 8 | 11 | 2 |
| % Single-Unit Trucks | 0 | 1.9 | 0 | 1.0 | 0 | 0.2 | 0 | 0.2 | 1.0 | 0 | 1.7 | 1.4 | 1. |
| Articulated Trucks | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| % Articulated Trucks | 0 | 0.6 | 0 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0. |

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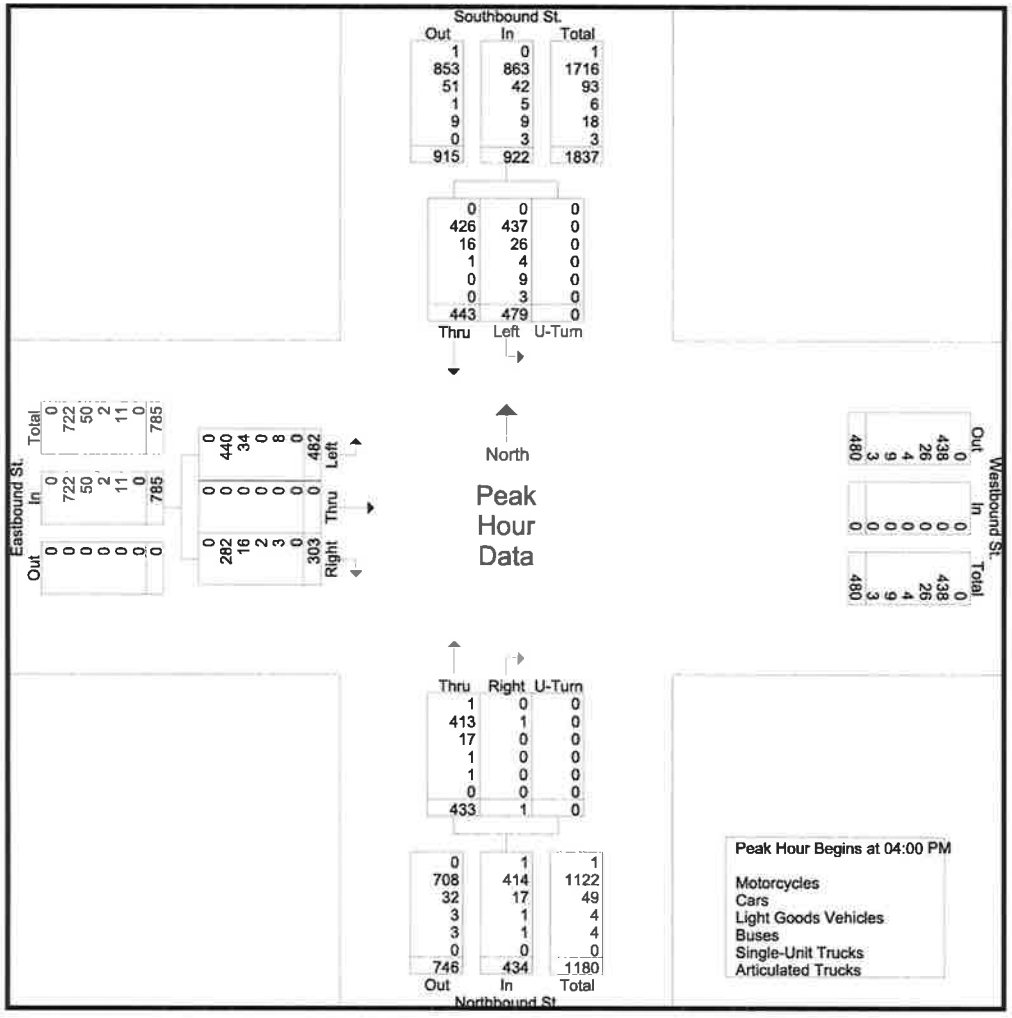
Site Code :
Start Date : 5/6/2016
Page No : 3



# Double Left Turn Lane Capacity Adjustments

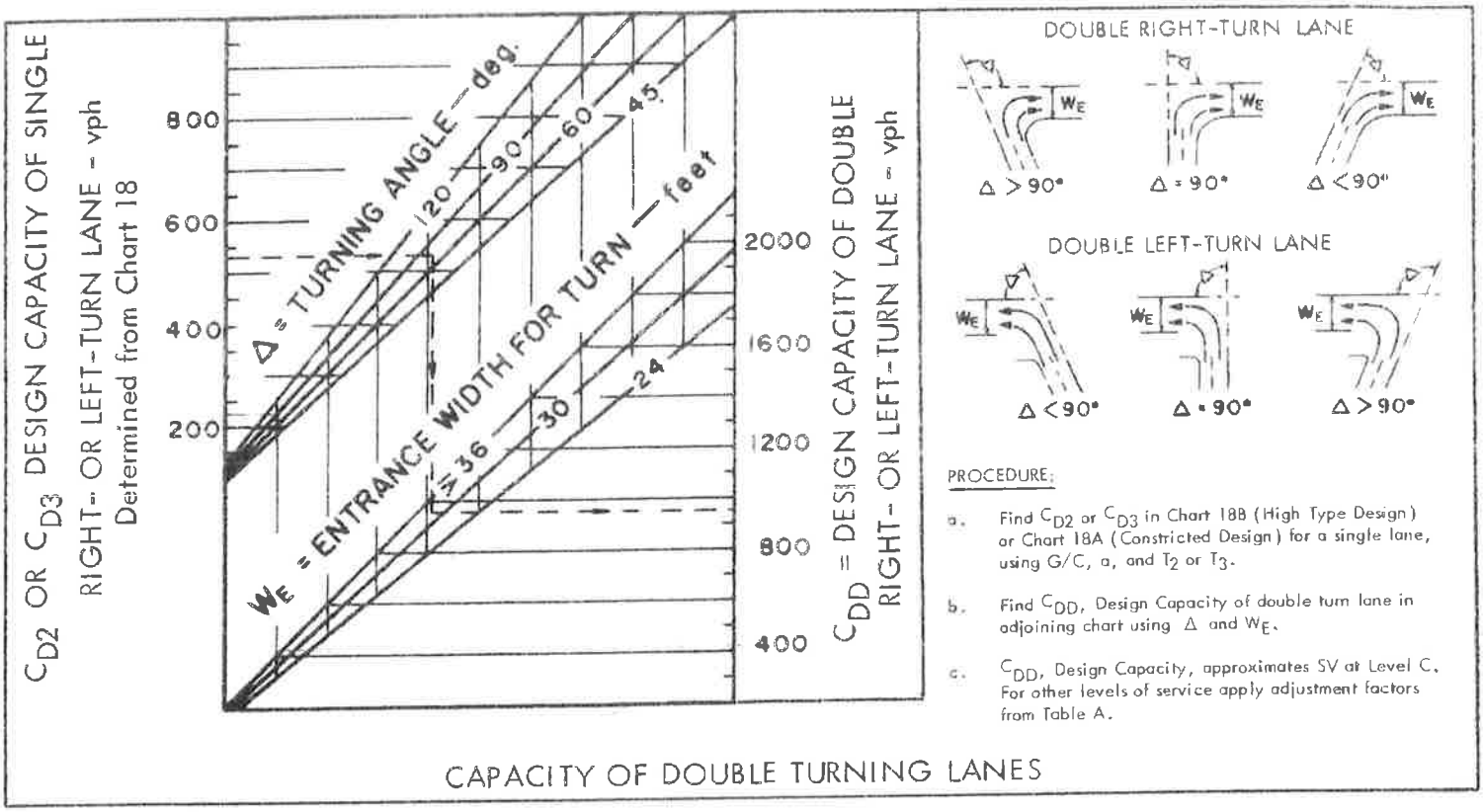
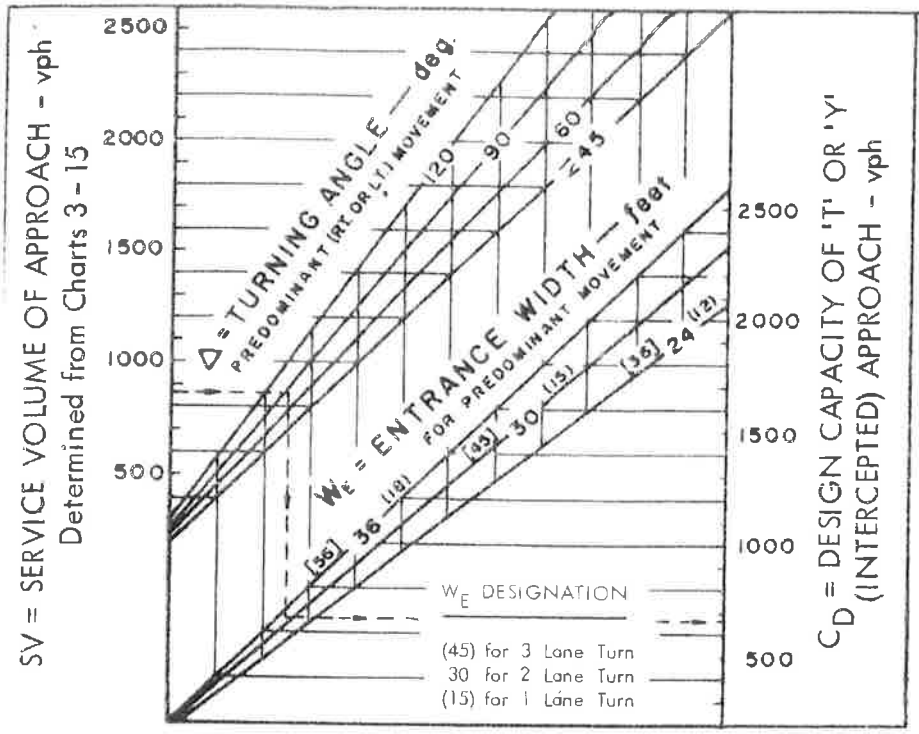



CHART 22

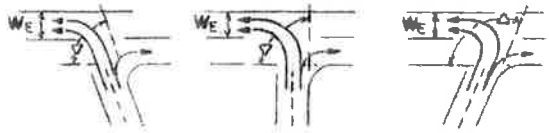
Nomograph and Procedure Developed by
Jack E. Leisch




CAPACITY OF 'T' OR 'Y' INTERSECTIONS

RIGHT TURN - PREDOMINANT MOVEMENT


LEFT-TURN - PREDOMINANT MOVEMENT




PROCEDURE:

a. Find SV in Charts 3 - 15 for intersection approach, using $W_A$, T, R (and L=0% when L is predominant) or L (and R=0% when R is predominant), MP and G/C.

b. Find $C_D$, design capacity of 'T' or 'Y' (intercepted) approach, using Δ and $W_E$.

c. $C_D$ is SV at Level C for Urban (Charts 3 - 14) and Level B for Rural (Chart 15). For other levels of service, apply appropriate "Adjustment Factor (f) for Level of Service" obtained from Charts 3-15.

d. This procedure predicated on properly designated lanes, as illustrated. Additional exclusive right- or left-turn lanes may be added to above, using Charts 17C and 17D, or 18A and 18B.

CHART 23

Published by the Traffic Institute
Northwestern University

S N 3900 B

# Sample of V/C Ratios Greater than 1.0 with UHR and Proposed Mitigation

# TABLE VC-1

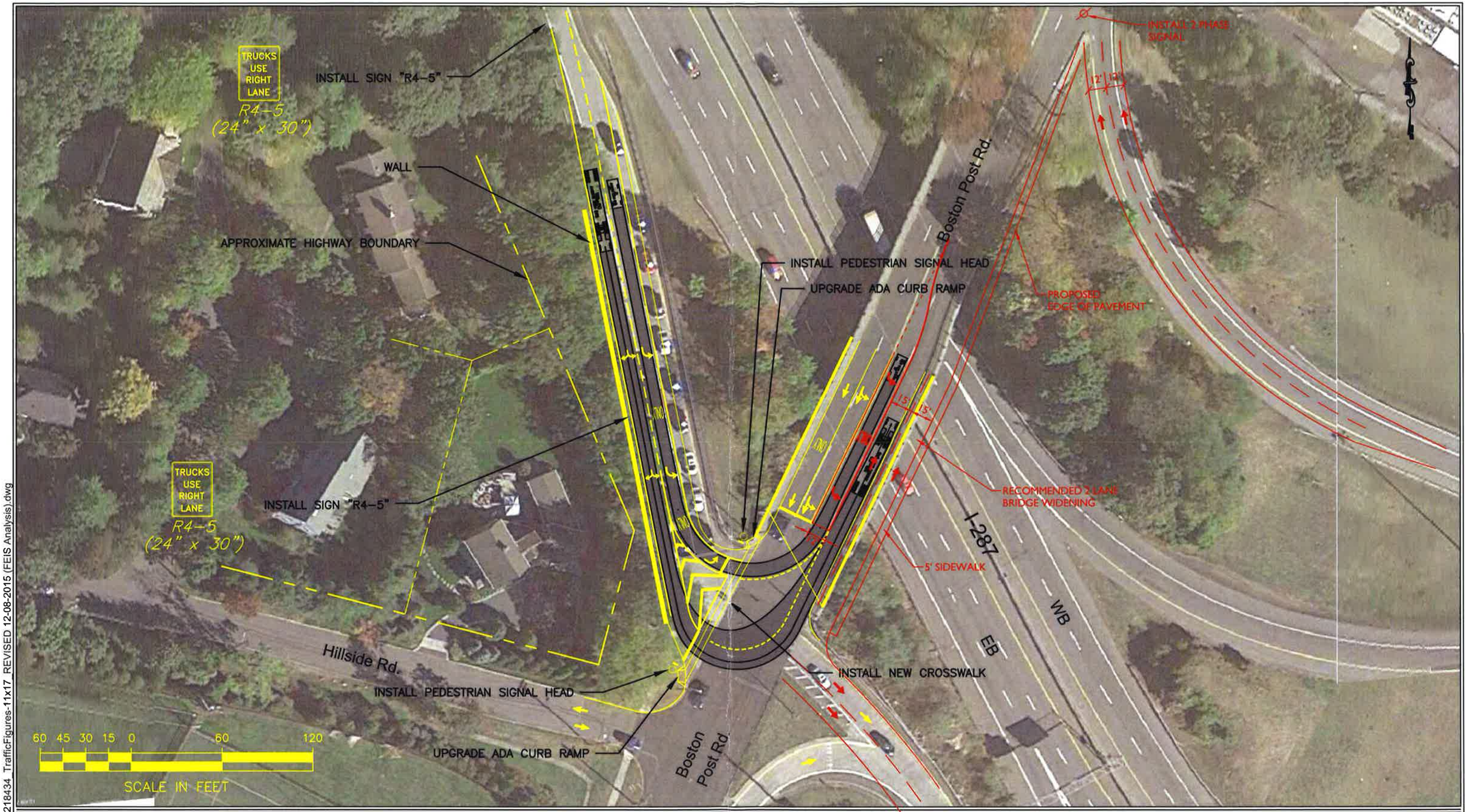
## SUMMARY OF LOCATIONS WITH V/C RATIOS GREATER THAN 1.0 FOR BUILD CONDITIONS WITH APPLICANT IMPROVEMENTS

| INT. ID # | INTERSECTION NAME | APPROACH | AM | PM | SAT |
|---|---|---|---|---|---|
| 5 | MIDLAND AVENUE & PECK AVENUE/DRIVEWAY | EB (PECK AVENUE) | - | - | 1.01 |
| 20 | BOSTON POST ROAD & I-287 OFF-RAMP/I-95 ON-RAMP | EB (I-287 OFF-RAMP) | - | 1.05 | - |
| | | SB (BOSTON POST ROAD) | 1.17 | 1.35 | 1.15 |
| 26 | BOSTON POST ROAD & SITE DRIVEWAY SOUTH/KOHL'S DRIVEWAY | SB (SITE DRIVEWAY) | - | - | 1.00 |
| 75 | RIDGE STREET & WESTCHESTER AVENUE | EB (WESTCHESTER AVENUE) | 1.10 | 1.23 | - |
| | | SB (NORTH RIDGE STREET) | 1.16 | 1.18 | - |

**NOTES:**

1) DATA BASED ON APPENDIX F - CAPACITY ANALYSIS SHEETS CONTAINED IN FEIS DATED APRIL, 2016.

# Potential I-287 Bridge Widening and I-95 Ramp Improvements/Signalized




TRC Engineers, Inc.
7 Skyline Drive
Hawthorne, New York 10532
Tel: (914) 592-4040
Fax: (914) 592-5046
www.trcsolutions.com

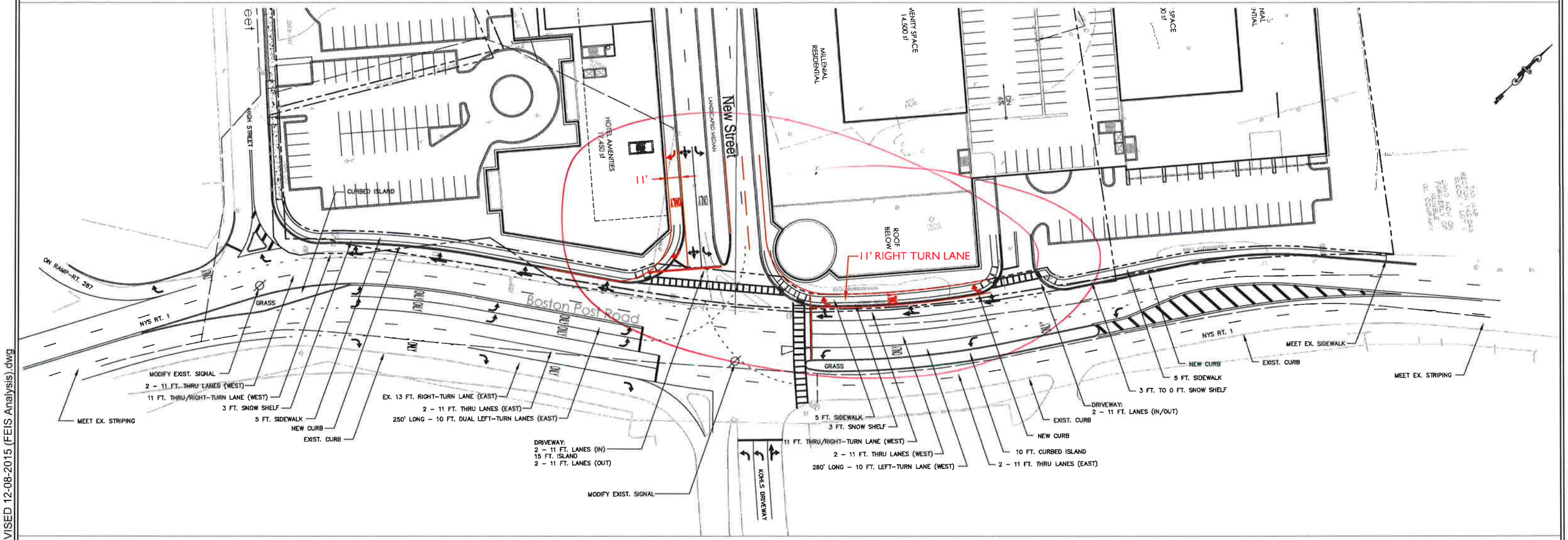


Project No. 218434, Scale: As Shown

# I-287 EB Off-Ramp Concept Plan

United Hospital Redevelopment
Village of Port Chester, New York

# Additional Right Turn Lanes at UHR Site Driveway




POSSIBLE Right turn lane additions

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www.trcsolutions.com

Project No. 218434, Scale: NTS

Conceptual Highway Improvement Plan
United Hospital Redevelopment
Village of Port Chester, New York

# Intersections with LOS Impacts Even After Mitigation

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-1.A**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Proposed Site Driveway West & High Street**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Proposed Site Driveway West** | | | | | | | | | | | | | |
| **SB** | L | b 11.3 | b 11.7 | c 15.5 | b 14.9 | b 12.4 | b 13.0 | c 19.7 | c 18.8 | b 12.3 | b 12.8 | c 19.7 | c 18.7 |
| | ***OVERALL*** | ***b 11.3*** | ***b 11.7*** | c 15.5 | b 14.9 | ***b 12.4*** | ***b 13.0*** | c 19.7 | c 18.8 | ***b 12.3*** | ***b 12.8*** | c 19.7 | c 18.7 |
| **High Street** | | | | | | | | | | | | | |
| **EB** | T | a 0.1 | a 0.1 | a 2 | a 2.0 | a 0.2 | a 0.2 | a 1.2 | a 1.2 | a 0.1 | a 0.1 | a 1.8 | a 1.8 |
| | ***OVERALL*** | ***a 0.1*** | ***a 0.1*** | a 2 | a 2.0 | ***a 0.2*** | ***a 0.2*** | a 1.2 | a 1.2 | ***a 0.1*** | ***a 0.1*** | a 1.8 | a 1.8 |
| **INTERSECTION** | | **b 11.3** | **b 11.7** | **c 15.5** | **b 14.9** | **b 12.4** | **b 13.0** | **c 19.7** | **c 18.8** | **b 12.3** | **b 12.8** | **c 19.7** | **c 18.7** |

**TABLE G-1.B**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Proposed Site Driveway Mid & High Street**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Proposed Site Driveway Mid** | | | | | | | | | | | | | |
| **SB** | L | N/A | N/A | c 18.2 | b 13.4 | N/A | N/A | e 38.5 | e 47.1 | N/A | N/A | d 26.6 | d 29.0 |
| | ***OVERALL*** | N/A | N/A | c 18.2 | b 13.4 | N/A | N/A | e 38.5 | e 47.1 | N/A | N/A | d 26.6 | d 29.0 |
| **High Street** | | | | | | | | | | | | | |
| **EB** | L | N/A | N/A | a 1.2 | a 3.2 | N/A | N/A | d 11.1 | d 13.8 | N/A | N/A | a 1.3 | a 5.0 |
| | ***OVERALL*** | N/A | N/A | a 1.2 | a 3.2 | N/A | N/A | d 11.1 | d 13.8 | N/A | N/A | a 1.3 | a 5.0 |
| **INTERSECTION** | | **N/A** | **N/A** | **c 18.2** | **b 13.4** | **N/A** | **N/A** | **e 38.5** | **e 47.1** | **N/A** | **N/A** | **d 26.6** | **d 29.0** |

**TABLE G-1.C**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Proposed Site Driveway East & High Street**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Proposed Site Driveway East** | | | | | | | | | | | | | |
| **SB** | L | N/A | N/A | c 18.8 | b 10.6 | N/A | N/A | c 21.1 | b 12.4 | N/A | N/A | c 21.5 | b 11.9 |
| | ***OVERALL*** | N/A | N/A | c 18.8 | b 10.6 | N/A | N/A | c 21.1 | b 12.4 | N/A | N/A | c 21.5 | b 11.9 |
| **High Street** | | | | | | | | | | | | | |
| **EB** | L | N/A | N/A | a 0.1 | a 0.4 | N/A | N/A | a 0.1 | a 0.5 | N/A | N/A | a 0.1 | a 0.8 |
| | ***OVERALL*** | N/A | N/A | a 0.1 | a 0.4 | N/A | N/A | a 0.1 | a 0.5 | N/A | N/A | a 0.1 | a 0.8 |
| **INTERSECTION** | | **N/A** | **N/A** | **c 18.8** | **b 10.6** | **N/A** | **N/A** | **c 21.1** | **b 12.4** | **N/A** | **N/A** | **c 21.5** | **b 11.9** |

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-3**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Boston Post Road & Pearl Street**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Boston Post Road** | | | | | | | | | | | | | |
| NB | L | B 11.2 | C 21.2 | C 26.9 | B 18.6 | C 32.2 | E 58.3 | F 93.7 | C 25.7 | B 19.5 | C 29.2 | D 51.0 | B 16.4 |
| | T | A 9.7 | B 15.4 | B 15.8 | B 14.6 | B 13.2 | B 14.6 | B 15.8 | A 9.3 | B 11.1 | B 12.2 | B 13.5 | A 5.9 |
| | ***OVERALL*** | ***B 10.1*** | ***B 17.0*** | ***B 18.8*** | ***B 15.7*** | ***B 18.6*** | ***C 26.9*** | ***D 37.0*** | ***B 13.8*** | ***B 13.2*** | ***B 16.5*** | ***C 22.9*** | ***A 8.6*** |
| SB | T | B 18.8 | C 30.5 | C 33.4 | C 28.5 | C 29.8 | C 34.1 | D 37.8 | C 33.0 | C 25.0 | C 28.6 | C 33.5 | C 20.5 |
| | ***OVERALL*** | ***B 18.8*** | ***C 30.5*** | ***C 33.4*** | ***C 28.5*** | ***C 29.8*** | ***C 34.1*** | ***D 37.8*** | ***C 33.0*** | ***C 25.0*** | ***C 28.6*** | ***C 33.5*** | ***C 20.5*** |
| **Pearl Street** | | | | | | | | | | | | | |
| EB | L | C 33.7 | C 27.4 | C 27.4 | C 27.0 | C 30.2 | C 30.2 | C 29.6 | D 35.9 | C 26.4 | C 26.2 | C 25.6 | C 33.7 |
| | R | F 149.0 | E 71.4 | F 91.2 | E 60.3 | D 48.4 | D 50.8 | D 52.6 | B 14.6 | D 44.9 | D 46.6 | D 48.9 | B 19.0 |
| | ***OVERALL*** | ***F 111.7*** | ***E 57.1*** | ***E 71.3*** | ***D 49.5*** | ***D 41.3*** | ***D 42.7*** | ***D 43.8*** | ***C 22.7*** | ***D 39.4*** | ***D 40.6*** | ***D 42.4*** | ***C 23.1*** |
| **INTERSECTION** | | **D 49.3** | **D 35.3** | **D 41.2** | **C 31.5** | **C 28.4** | **C 33.5** | **D 39.1** | **C 22.3** | **C 23.0** | **C 25.9** | **C 30.8** | **B 15.9** |

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-4**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Boston Post Road & South Regent Street/Private Driveway**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **South Regent Street/Private Driveway** | | | | | | | | | | | | | |
| EB | OVERALL | C 20.7 | C 24.6 | C 31.4 | C 29.9 | B 18.7 | C 20.4 | C 21.2 | C 29.9 | B 17.0 | B 17.6 | C 21.6 | C 22.5 |
| WB | OVERALL | A 8.7 | A 9.2 | A 9.8 | B 10.8 | B 11.3 | A 1.6 | B 10.2 | B 13.4 | B 14.6 | B 15.5 | B 13.0 | B 12.4 |
| **Boston Post Road** | | | | | | | | | | | | | |
| NB | OVERALL | D 42.2 | E 65.6 | F 108.0 | E 74.0 | F 110.0 | F 150.0 | F 159.3 | F 108.7 | E 63.7 | F 119.2 | F 153.5 | F 106.5 |
| SB | OVERALL | C 26.1 | C 32.5 | E 71.4 | D 42.6 | D 46.9 | F 95.2 | F 217.2 | E 61.7 | D 37.8 | F 97.1 | F 222.3 | D 54.1 |
| **INTERSECTION** | | **C 30.0** | **D 42.2** | **E 73.0** | **D 50.4** | **E 67.0** | **F 98.4** | **F 147.7** | **E 73.9** | **D 44.6** | **F 90.6** | **F 154.6** | **E 70.0** |

**NOTES**
- The SimTraffic output results presented in the above table are more reflective of real-world operating conditions
- The SimTraffic model & output results takes into account the effects of all lanes on an approach but only supplies the delay results for approaches as a whole (no lane group breakdown)
- All analyses utilize an Eastbound Right-Turn storage lane of 20 feet on the South Regent Street approach

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-5**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Boston Post Road & Proposed Site Driveway South/Kohl's Shopping Plaza Driveway**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Boston Post Road** | | | | | | | | | | | | | |
| NB | L | - 0.0 | - 0.0 | D 40.8 | E 69.9 | - 0.0 | - 0.0 | D 44.4 | E 79.1 | - 0.0 | - 0.0 | D 43.4 | D 54.6 |
| | T | B 12.6 | B 13.5 | C 26.8 | C 25.6 | C 23.0 | C 27.2 | E 60.1 | D 43.0 | C 21.4 | C 23.4 | D 51.2 | D 52.4 |
| | R | A 0.1 | A 0.1 | A 0.1 | A 0.1 | A 0.4 | A 0.4 | A 0.4 | A 0.4 | A 0.8 | A 0.9 | A 0.9 | A 0.7 |
| | *OVERALL* | ***B*** ***10.8*** | ***B*** ***11.7*** | ***C*** ***25.2*** | ***D*** ***30.3*** | ***B*** ***16.8*** | ***B*** ***19.8*** | ***D*** ***42.5*** | ***D*** ***44.8*** | ***B*** ***12.2*** | ***B*** ***15.3*** | ***C*** ***29.3*** | ***D*** ***35.1*** |
| SB | L | A 6.3 | A 6.5 | B 17.9 | B 18.1 | B 17.4 | B 19.4 | D 52.3 | E 56.1 | C 26.5 | D 49.1 | F 84.2 | D 44.9 |
| | TR | A 6.7 | A 7.2 | C 32.2 | D 46.6 | A 8.6 | A 9.4 | D 38.3 | D 53.9 | A 9.4 | B 10.4 | D 40.0 | E 66.3 |
| | *OVERALL* | ***A*** ***6.7*** | ***A*** ***7.1*** | ***C*** ***31.5*** | ***D*** ***45.1*** | ***B*** ***10.2*** | ***B*** ***11.2*** | ***D*** ***40.6*** | ***D*** ***54.3*** | ***B*** ***14.0*** | ***C*** ***20.7*** | ***D*** ***50.4*** | ***E*** ***61.3*** |
| **Proposed Site Driveway South/Kohl's Shopping Plaza Driveway** | | | | | | | | | | | | | |
| EB | L | - 0.0 | - 0.0 | D 46.9 | D 54.8 | - 0.0 | - 0.0 | D 54.2 | E 74.0 | - 0.0 | - 0.0 | D 51.5 | E 74.8 |
| | TR | - 0.0 | - 0.0 | C 23.6 | D 43.4 | - 0.0 | - 0.0 | C 33.2 | E 58.6 | - 0.0 | - 0.0 | C 28.6 | E 62.0 |
| | R | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 |
| | *OVERALL* | ***-*** ***0.0*** | ***-*** ***0.0*** | ***D*** ***35.6*** | ***D*** ***49.2*** | ***-*** ***0.0*** | ***-*** ***0.0*** | ***D*** ***44.0*** | ***E*** ***66.5*** | ***-*** ***0.0*** | ***-*** ***0.0*** | ***D*** ***40.5*** | ***E*** ***68.5*** |
| WB | L | C 21.1 | C 21.2 | C 29.9 | C 30.4 | C 24.6 | C 24.7 | D 36.8 | D 38.2 | C 26.1 | C 26.3 | D 40.4 | D 54.7 |
| | R | A 8.7 | A 8.5 | B 15.8 | B 15.9 | A 5.7 | A 5.5 | A 8.5 | A 8.5 | A 5.0 | A 4.8 | A 7.6 | A 8.7 |
| | *OVERALL* | ***B*** ***18.0*** | ***B*** ***18.0*** | ***C*** ***25.0*** | ***C*** ***25.4*** | ***B*** ***19.9*** | ***B*** ***20.0*** | ***C*** ***29.4*** | ***C*** ***30.4*** | ***C*** ***20.9*** | ***C*** ***21.0*** | ***C*** ***32.0*** | ***D*** ***42.9*** |
| **INTERSECTION** | | **A 9.1** | **A 9.7** | **C 29.0** | **D 42.2** | **B 14.8** | **B 16.6** | **D 39.9** | **D 48.3** | **B 14.8** | **B 17.7** | **D 37.7** | **D 48.5** |

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-7**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Boston Post Road & I-95 NB Off-Ramp/I-287 WB On-Ramp**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Boston Post Road** | | | | | | | | | | | | | |
| NB | L | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 |
| | LT | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 |
| | R | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 | - 0.0 |
| | *OVERALL* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* | - *0.0* |
| **I-95 NB Off-Ramp/I-287 WB On-Ramp** | | | | | | | | | | | | | |
| WB | R | c 15.9 | c 17.8 | e 35.2 | d 30.8 | c 19.4 | c 23.2 | e 43.8 | e 38.4 | b 14.5 | c 15.7 | c 23.7 | c 22.5 |
| | *OVERALL* | *c 15.9* | *c 17.8* | *e 35.2* | *d 30.8* | *c 19.4* | *c 23.2* | *e 43.8* | *e 38.4* | *b 14.5* | *c 15.7* | *c 23.7* | *c 22.5* |
| **INTERSECTION** | | **c 15.9** | **c 17.8** | **e 35.2** | **d 30.8** | **c 19.4** | **c 23.2** | **e 43.8** | **e 38.4** | **b 14.5** | **c 15.7** | **c 23.7** | **c 22.5** |

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-8**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Boston Post Road & I-287 EB Off-Ramp/I-95 SB On-Ramp**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Boston Post Road** | | | | | | | | | | | | | |
| **NB** | TR | C 30.3 | C 30.6 | C 32.3 | D 40.2 | C 32.2 | C 33.1 | C 34.5 | C 34.4 | C 32.5 | C 34.3 | D 38.2 | C 31.8 |
| | ***OVERALL*** | ***C 30.3*** | ***C 30.6*** | ***C 32.3*** | ***D 40.2*** | ***C 32.2*** | ***C 33.1*** | ***C 34.5*** | ***C 34.4*** | ***C 32.5*** | ***C 34.3*** | ***D 38.2*** | ***C 31.8*** |
| **SB** | LT | B 18.7 | B 20.0 | C 24.8 | C 24.8 | B 19.7 | C 22.5 | C 32.9 | C 31.7 | B 17.1 | B 19.3 | C 25.6 | B 19.9 |
| | ***OVERALL*** | ***B 18.7*** | ***B 20.0*** | ***C 24.8*** | ***C 24.8*** | ***B 19.7*** | ***C 22.5*** | ***C 32.9*** | ***C 31.7*** | ***B 17.1*** | ***B 19.3*** | ***C 25.6*** | ***B 19.9*** |
| **I-287 EB Off-Ramp/I-95 SB On-Ramp** | | | | | | | | | | | | | |
| **EB** | L | D 45.0 | D 53.5 | F 125.6 | D 53.7 | E 59.6 | E 74.1 | F 138.4 | E 77.3 | D 48.8 | D 53.8 | F 95.6 | D 53.8 |
| | R | F 95.6 | F 128.2 | F 128.2 | D 36.8 | D 41.8 | D 46.7 | D 46.7 | C 23.9 | C 30.7 | C 31.2 | C 30.1 | B 17.9 |
| | ***OVERALL*** | ***E 74.1*** | ***F 96.4*** | ***F 127.0*** | ***D 44.2*** | ***D 51.3*** | ***E 61.4*** | ***F 99.7*** | ***D 51.6*** | ***D 41.6*** | ***D 44.8*** | ***E 72.9*** | ***D 36.7*** |
| **INTERSECTION** | | **D 47.6** | **E 59.1** | **E 74.8** | **D 36.4** | **D 35.5** | **D 41.0** | **E 60.8** | **D 40.4** | **C 29.7** | **C 32.1** | **D 45.5** | **C 28.9** |

RESULTS DON'T PROPERLY ACCOUNT FOR THE ANGLE OF RAMP APPROACH AND THE WIDTH OF THE RECIEVING LANES TO ACCEPT THE DOUBLE LEFT TURN MOVEMENT.

THE SOUTHBOUND APPROACH ALSO DOES NOT PROPERLY ACCOUNT FOR THE USE OF THE INSIDE LANE AS A DEFACTO LEFT TURN LANE.

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-9**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Boston Post Road & Hillside Road**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Boston Post Road** | | | | | | | | | | | | | |
| NB | L | a 5.0 | a 5.4 | a 4.9 | N/A | a 3.6 | a 3.9 | a 3.8 | N/A | a 2.1 | a 2.3 | a 2.2 | N/A |
| | T | - 0.0 | - 0.0 | - 0.0 | N/A | - 0.0 | - 0.0 | - 0.0 | N/A | - 0.0 | - 0.0 | - 0.0 | N/A |
| | ***OVERALL*** | ***a 1.8*** | ***a 2.0*** | ***a 1.8*** | N/A | ***a 1.1*** | ***a 1.2*** | ***a 1.2*** | N/A | ***a 0.7*** | ***a 0.8*** | ***a 0.7*** | N/A |
| **Hillside Road** | | | | | | | | | | | | | |
| EB | L | c 17.6 | c 19.6 | c 22.0 | N/A | d 26.0 | d 31.8 | e 39.4 | N/A | c 23.0 | d 26.7 | d 32.3 | N/A |
| | ***OVERALL*** | ***c 17.6*** | ***c 19.6*** | ***c 22.0*** | N/A | ***d 26.0*** | ***d 31.8*** | ***e 39.4*** | N/A | ***c 23.0*** | ***d 26.7*** | ***d 32.3*** | N/A |
| **INTERSECTION** | | **c 17.6** | **c 19.6** | **c 22.0** | **N/A** | **d 26.0** | **d 31.8** | **e 39.4** | **N/A** | **c 23.0** | **d 26.7** | **d 32.3** | **N/A** |

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-15**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Midland Avenue & Peck Avenue/Private Driveway**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Midland Avenue** | | | | | | | | | | | | | |
| **NB** | L | C 25.8 | C 29.7 | D 36.4 | D 50.8 | C 22.1 | C 24.3 | C 26.4 | D 41.7 | C 20.6 | C 22.5 | C 24.7 | D 50.2 |
| | TR | B 16.0 | B 16.2 | B 16.2 | B 18.3 | B 16.4 | B 16.7 | B 16.7 | C 20.3 | B 16.9 | B 17.2 | B 17.2 | C 22.6 |
| | ***OVERALL*** | ***C 21.3*** | ***C 23.5*** | ***C 27.1*** | ***D 35.8*** | ***B 18.7*** | ***B 19.7*** | ***C 20.6*** | ***C 28.9*** | ***B 18.1*** | ***B 18.9*** | ***B 19.6*** | ***C 31.5*** |
| **SB** | LTR | B 17.3 | B 19.0 | C 21.1 | C 25.8 | B 16.4 | B 17.8 | B 19.0 | C 25.6 | B 18.9 | C 20.9 | C 23.4 | D 41.4 |
| | ***OVERALL*** | ***B 17.3*** | ***B 19.0*** | ***C 21.1*** | ***C 25.8*** | ***B 16.4*** | ***B 17.8*** | ***B 19.0*** | ***C 25.6*** | ***B 18.9*** | ***C 20.9*** | ***C 23.4*** | ***D 41.4*** |
| **Peck Avenue/Private Driveway** | | | | | | | | | | | | | |
| **EB** | LTR | D 45.4 | E 62.4 | F 81.4 | E 57.9 | D 44.6 | E 61.1 | F 91.6 | D 52.2 | E 67.4 | F 93.5 | F 125.5 | E 59.6 |
| | ***OVERALL*** | ***D 45.4*** | ***E 62.4*** | ***F 81.4*** | ***E 57.9*** | ***D 44.6*** | ***E 61.1*** | ***F 91.6*** | ***D 52.2*** | ***E 67.4*** | ***F 93.5*** | ***F 125.5*** | ***E 59.6*** |
| **WB** | LTR | A 7.8 | A 7.4 | A 7.4 | A 6.7 | A 9.0 | A 9.0 | A 9.0 | A 7.3 | A 7.4 | A 7.2 | A 7.2 | A 5.3 |
| | ***OVERALL*** | ***A 7.8*** | ***A 7.4*** | ***A 7.4*** | ***A 6.7*** | ***A 9.0*** | ***A 9.0*** | ***A 9.0*** | ***A 7.3*** | ***A 7.4*** | ***A 7.2*** | ***A 7.2*** | ***A 5.3*** |
| **INTERSECTION** | | **C 29.8** | **D 37.8** | **D 46.9** | **D 41.0** | **C 28.2** | **D 35.7** | **D 49.3** | **D 36.8** | **D 38.4** | **D 50.0** | **E 64.4** | **D 46.1** |

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-18**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Boston Post Road/Purdy Avenue & South Main Street/Grace Church Street**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Boston Post Road/Purdy Avenue** | | | | | | | | | | | | | |
| NB | L | B 16.3 | B 17.5 | B 18.5 | N/A | C 21.9 | C 31.5 | D 42.8 | N/A | B 15.4 | B 17.6 | C 20.1 | N/A |
| | TR | B 14.8 | B 16.1 | B 16.0 | N/A | B 14.0 | B 15.7 | B 15.7 | N/A | B 12.5 | B 13.4 | B 13.4 | N/A |
| | ***OVERALL*** | ***B 15.5*** | ***B 16.8*** | ***B 17.2*** | N/A | ***B 18.4*** | ***C 24.4*** | ***C 31.3*** | N/A | ***B 14.0*** | ***B 15.5*** | ***B 16.9*** | N/A |
| SB | LT | C 31.5 | C 32.9 | C 33.1 | N/A | D 35.5 | D 38.2 | D 38.2 | N/A | C 33.4 | C 34.8 | D 35.1 | N/A |
| | R | A 5.9 | A 6.0 | A 6.0 | N/A | A 5.1 | A 5.5 | A 5.5 | N/A | A 5.4 | A 6.1 | A 6.1 | N/A |
| | ***OVERALL*** | ***B 19.2*** | ***B 19.9*** | ***B 20.0*** | N/A | ***C 27.6*** | ***C 29.7*** | ***C 29.7*** | N/A | ***C 27.2*** | ***C 28.4*** | ***C 28.6*** | N/A |
| **South Main Street/Grace Church Street** | | | | | | | | | | | | | |
| EB | L | B 13.0 | B 12.9 | B 13.0 | N/A | B 15.5 | B 15.8 | B 15.8 | N/A | B 15.3 | B 15.8 | B 15.8 | N/A |
| | TR | C 29.1 | C 29.8 | C 30.1 | N/A | C 34.5 | D 37.0 | D 37.0 | N/A | C 32.6 | C 33.7 | C 34.0 | N/A |
| | R | A 2.6 | A 2.5 | A 2.4 | N/A | A 2.9 | A 3.6 | A 4.8 | N/A | A 3.0 | A 3.1 | A 4.0 | N/A |
| | ***OVERALL*** | ***B 18.7*** | ***B 19.0*** | ***B 17.3*** | N/A | ***B 16.1*** | ***B 17.5*** | ***B 17.3*** | N/A | ***B 14.7*** | ***B 15.2*** | ***B 15.0*** | N/A |
| WB | L | B 14.0 | B 14.2 | B 14.3 | N/A | B 16.7 | B 17.3 | B 17.3 | N/A | B 16.2 | B 16.8 | B 16.8 | N/A |
| | T | C 25.9 | C 26.3 | C 26.5 | N/A | C 31.0 | C 29.8 | C 29.8 | N/A | C 32.4 | C 33.6 | C 33.9 | N/A |
| | ***OVERALL*** | ***C 22.4*** | ***C 22.7*** | ***C 22.9*** | N/A | ***C 26.9*** | ***C 26.2*** | ***C 26.2*** | N/A | ***C 29.1*** | ***C 30.2*** | ***C 30.4*** | N/A |
| **INTERSECTION** | | **B 18.5** | **B 19.2** | **B 18.8** | **N/A** | **C 20.5** | **C 23.3** | **C 25.6** | **N/A** | **B 19.0** | **C 20.1** | **C 20.3** | **N/A** |

Project #: 218434
Project: United Hospital Redevelopment
Location: Port Chester, Westchester County, NY

TRC

**TABLE G-22**
**PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE**
**Ridge Street & Westchester Avenue**

| APPROACH | | PEAK AM HOUR (7:30 - 8:30 AM) | | | | PEAK PM HOUR (5:15 - 6:15 PM) | | | | PEAK SAT HOUR (1:30 - 2:30 PM) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. | 2014 EXISTING | 2018 NO-BUILD | 2018 BUILD | 2018 BUILD W/ IMPV. |
| | | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) | LOS DELAY (sec) |
| **Ridge Street** | | | | | | | | | | | | | |
| NB | L | C 33.6 | D 37.0 | D 39.2 | C 30.4 | C 31.1 | C 33.6 | C 32.8 | C 26.5 | C 28.8 | C 31.2 | C 32.7 | C 24.9 |
| | TR | C 26.1 | C 27.2 | C 27.6 | C 22.0 | C 25.8 | C 26.7 | C 25.8 | C 21.4 | C 21.9 | C 22.3 | C 22.5 | B 17.8 |
| | ***OVERALL*** | ***C 28.3*** | ***C 30.0*** | ***C 30.9*** | ***C 24.4*** | ***C 27.2*** | ***C 28.6*** | ***C 27.7*** | ***C 22.8*** | ***C 24.1*** | ***C 25.2*** | ***C 25.8*** | ***C 20.1*** |
| SB | LTR | F 133.0 | F 260.6 | F 320.0 | F 122.7 | F 165.2 | F 318.6 | F 205.8 | F 134.0 | D 45.2 | D 53.4 | E 61.7 | D 45.4 |
| | ***OVERALL*** | ***F 133.0*** | ***F 260.6*** | ***F 320.0*** | ***F 122.7*** | ***F 165.2*** | ***F 318.6*** | ***F 205.8*** | ***F 134.0*** | ***D 45.2*** | ***D 53.4*** | ***E 61.7*** | ***D 45.4*** |
| **Westchester Avenue** | | | | | | | | | | | | | |
| EB | LTR | E 76.3 | F 135.1 | F 145.4 | F 90.9 | F 123.7 | F 191.8 | F 227.0 | F 138.8 | C 27.8 | C 30.9 | C 32.0 | C 22.5 |
| | ***OVERALL*** | ***E 76.3*** | ***F 135.1*** | ***F 145.4*** | ***F 90.9*** | ***F 123.7*** | ***F 191.8*** | ***F 227.0*** | ***F 138.8*** | ***C 27.8*** | ***C 30.9*** | ***C 32.0*** | ***C 22.5*** |
| WB | LTR | D 35.3 | D 48.2 | D 50.7 | C 31.8 | C 26.4 | C 29.5 | C 33.0 | C 21.9 | C 23.0 | C 23.8 | C 24.3 | B 18.3 |
| | ***OVERALL*** | ***D 35.3*** | ***D 48.2*** | ***D 50.7*** | ***C 31.8*** | ***C 26.4*** | ***C 29.5*** | ***C 33.0*** | ***C 21.9*** | ***C 23.0*** | ***C 23.8*** | ***C 24.3*** | ***B 18.3*** |
| **INTERSECTION** | | **E 64.4** | **F 109.8** | **F 125.7** | **E 65.5** | **F 89.0** | **F 142.4** | **F 139.0** | **F 88.1** | **C 29.6** | **C 32.9** | **D 35.3** | **C 26.0** |