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April 4, 2013

Angela N. Foroughi, PE
Transportation & Land Use Director
Fredericksburg District
Department of Transportation
87 Deacon Road
Fredericksburg, VA 22405

RE: Dominion Raceway – TIA/Rezoning Submittal
Access Management Exception Request
Route 606, Spotsylvania County
BCG #4950-01-001

Dear Ms. Foroughi:

We are in receipt of VDOT's comments (dated February 25, 2013) for the Dominion Raceway TIA and Access Management Exception (AM-2) Request. This response narrative and updated Findings and Conclusions explains the changes made in response to the comments for the TIA (only), and introduces additional analyses (including key changes to development assumptions for the Dominion Raceway) and important draft transportation proffer information for your review and consideration. We intend to submit a revised AM-2 Request for the subject development's proposed entrance in the very near future.

Organization of Response Letter

A significant volume of information has been prepared and attached hereto in support of this narrative, and the information is organized in a series of Attachments as follows:

- Attachment A – Response to VDOT Comments dated 2-25-13 for: Dominion Raceway TIA & Dominion Raceway Access Management Exception Request (AM-2)
- Attachment B – Response to Spotsylvania County TIA Comments: 3-18-13 (Letter) & 3-20-2013 (Email)
- Attachment C – DRAFT Dominion Raceway Transportation Proffers
- Attachment D – Special Event Traffic Control Plan
- Attachment E – Dominion Raceway Projected Annual Event Program Data

Bowman Consulting Group, Ltd.
3951 Westerre Parkway • Suite 150 • Richmond, VA 23233
Phone: 804.616.3240 • Fax: 804.270.2008 • www.bowmanconsulting.com

- Attachment F – New Trip Generation Tables: Tables 4.A and 4.B (Dominion Raceway Trips w/1,500 and 3,500 attendee oval race events, respectively) & Table 4.C (Adjacent C-3 By-Right Commercial, By Others)
- Attachment G – Diverted Link Trip Percentages, Assignment Diagrams, and Supporting Traffic Counts
- Attachment H – Updated Figures
- Attachment I – Updated Level of Service and Queuing Tables (Including SimTraffic Analysis Worksheets for Existing and Background Conditions)
- Attachment J – Draft Performance Envelope for Proposed Eastbound Mudd Tavern Road Left-Turn Lane @ Site Entrance
- Attachment K.1 thru K.3 – Total Future (2017) Analysis Worksheets
- Attachment L.1 thru L.3 – Total Future (2023) Analysis Worksheets
- Attachment M – Additional Traffic Count Data
- Attachment N – Access Management Exception Request Documents

<u>Key Points Regarding the Updated Analyses</u>

As you are aware, the transportation context in which this project is located is very complex given the potential for phasing of the site's build-out, build-out of adjacent zoned commercial (C-3) land, and the opportunities for future interchange reconstruction at the nearby I-95/Route 606 (Mudd Tavern Road) interchange. Prior to discussing the results of the updated analyses and the manner in which the Applicant's proffers will mitigate the project's anticipated impacts to traffic, we note the following key points:

1. First and foremost, the original TIA focused on a build-out scenario that included a 3,500 attendee sellout oval track race (Saturday night). It is estimated that the vast majority of the oval track races during the racing season will only draw an average of approximately 1,500 attendees, or slightly over 40% of a capacity sellout. Meanwhile, a sellout oval track event might occur only 2-3 times/year. This fact was documented in "Exhibit A," which was contained in Appendix C of the original TIA (and included again herein in Attachment E). However, it was decided at the time of scoping to analyze Saturday oval race event scenarios using traffic generated by a 3,500 attendee sellout. This approach was very conservative in nature; however, given the infrequent expected occurrence of oval track sellouts as document in Exhibit A (2-3 sellouts per year), the analysis of a 3,500 attendee sellout is somewhat analogous to the analysis of shopping

center traffic during the holiday weekend after Thanksgiving in that the results can show elevated levels of traffic congestion, but they are not representative of typical operating conditions for weekend oval track race events. To address this issue, the data and charts in Attachment E (Dominion Raceway Projected Annual Event Program Data) were created using data derived from Exhibit A and from further consultation with the Applicant. These charts provide a clear illustration of the attendance levels and frequency of event types for a projected annual program of events for the Dominion Raceway, and they likely tell a much different story than what may have been perceived up to this point regarding the facility's program of events and the respective traffic intensity of those events. Before reviewing the remainder of this comment response letter, please take a few minutes to familiarize yourself with the graphics in Attachment E.

Some of the key conclusions found in the Attachment E data graphics are as follows:

- Approximately 98% of all the events in a calendar year will have well under 2,000 attendees and will not require any Special Event Management Traffic Control Plan (TCP)
- Less than 1% of all annual events are expected to trigger full implementation of the Special Event Management TCP
- Less than 35% of the events are expected to occur during the busier months for seasonal increases in local and intersate traffic (June – July – August). All of the traffic analyses conducted in the TIA assumed a 15% increase to account for the seasonal increase; however, that results in a very conservative estimate of traffic for the remaining 65% of the site's non-summer events which were not analyzed separately without the 15% increase.

Given the above, this response letter directs a strong focus on the "typical" weekend oval racing event (1,500 attendees anticipated). Updated analyses of the 3,500 attendee scenarios are also provided herein.

2. After discussion with VDOT Traffic Engineering staff, we have corrected and revised the assignment and analysis of diverted link trips from I-95 and the local street network (see Attachment G). The analyses contained herein reflect these corrections.

3. As requested by VDOT, assumed by-right commercial traffic for the three (3) adjacent parcels which front the proposed Dominion Raceway site (TP 63-((5))-E, TP 63-A-62, TP 63-A-63) has

been included in several of the analyses contained hererin. The following uses were assumed based on consultation with the owners of the parcels:

- Two (2) 3,500 SF Fast-Food Restaurants w/Drive-Thrus
- 14-Vehicle Fueling Station w/Convenience Store
- 90-Room Hotel (analyzed herein as a Motel, due to the greater compatibility of land use code descriptions with the type of hotel described by the prop. owner)

It is reiterated that no approved/unbuilt uses are known to be in place for the subject parcels. The analyses herein with these additional traffic-generating uses are used in determing the level of impact their traffic would have on the network. <u>It is assumed that any development on those parcels would have to bear its own cost for mitigation of off-site transportation impacts associated with their respective site traffic.</u>

4. Based on the addition of a 14-Vehicle Fueling Station w/Convenience Store as a proposed use on the adjacent C-3 parcels, it was decided to eliminate the similar Fueling Station w/Convenience Store use on the Dominion Raceway site and replace it with a different retail use deemed compatible with the development. An 8,000 SF Automobile Parts Sales use was added to replace the Fueling/Convenience use. Appropriate pass-by/diverted link trip adjustments were applied to this new use in accordance with ITE guidelines. This change has a significant downward effect on the projected trip generation of the proposed Dominion Raceway's commercial component, both for peak hour (40% reduction – nearly 200 weekday peak hour trips – for the commercial component of the site) and daily traffic (65% reduction – nearly 4,000 vehicle-trips/day – for the commercial component of the site). Given that the project's Draft Tranpsortation Proffers have thresholds tied to commercial outparcel trip generation (and not use type), this change does not impact the site's proffered conditions. This change, coupled with the emphasis on analyzing a typical 1,500 attendee oval racing event have a noticeably positive effect on the projected future levels of service and queuing as compared to the original TIA, and it is our opionion that they are much more representative of the typical expected operating characteristics of the development at build-out.

5. SimTraffic has been utilized to more accurately project existing queuing and anticipated queuing under background and total future horizon years where congested conditions may occur.

6. Year 2023 (Total Future + 6) analyses have been treated differently in this re-submittal. The conceptual interchange solutions that were analyzed in the original TIA have not been re-evaluated herein. The reason for this change is that the conceptual solutions are not yet funded, a fact that appeared to cause considerable questioning in the TIA comment responses from both VDOT and the County. The Total Future 2023 analyses contained herein do, however, reflect the construction of the VDOT I-95 bridge replacement project over I-95, which is anticipated to be completed with a 4-lane cross-section by 2020, if not sooner. It should be noted that the 2023 anlaysis with alternative interchange concepts are still deemed to hold merit, although it should be noted that they are overly conservative with respect to the amount of projected traffic the site will generate based on the previously mentioned changes in site trip generation characteristics.

7. A draft Left-Turn Lane Performance Envelope has been prepared (see Attachment J) as a decision-making tool for further understanding the operating and characteristics and threshold points for full storage queuing being exceeded at the proposed Mudd Tavern Road eastbound left-turn lane at the proposed site entrance. The draft Performance Envelope chart will be further developed prior to BCG's re-submittal of the AM-2 form for said entrance.

8. The Applicant's current Draft Transportation Proffer statement (Attachment C) provides significant detail on the phasing of development, special event traffic management thresholds, and other critical transportation-related contingencies which may affect access to/from the proposed Dominion Raceway. VDOT is strongly encouraged to review the draft proffer statement carefully in conjunction with the updated analyses contained herein. These items provide a full understanding of the various devleopment thresholds, capacity improvements, and special event management plans which are in place to limit the site's development to only that which can be supported by the existing and proffered improvements. In doing so, the analyses and proffers demonstrate this development's ability to mitigate deficiencies which currently exist in the study area network, preserve the functionality and safety of the local area transportation network, and provide reasonable assurance of a safe, functional operations at the I-95/Mudd Tavern Road interchange and the proposed site access, even while accommodating the potential for development of the commercially zoned land which fronts the site.

9. Since submittal of the TIA, a more refined Special Event Traffic Control Plan (TCP) has been completed and is included herein (see Attachment D). The TCP addresses on-site and off-site staffing and operations, and is an integral part of the Draft Transportation Proffers.

Updated Trip Generation

The anticipated trip generation for the subject development has been revised as follows:

- Convenience / Gas use replaced by 8,000 SF Automobile Parts Store
- Summation of trips has been revised to show Total Trips at Site Driveway at the bottom of each sub-section
- Treatment of Pass-By Trips has been modified based on emphasis on Diverted Link Trips (see further discussion below)
- Two separate tables have been created for the site's trip generation to account for a typical Saturday oval track event with 1,500 attendees (Table 4.A) and for a 3,500 attendee oval track sellout (Table 4.B). The updated tables are contained in Attachment F.

A new trip generation table (Table 4.C) has also been prepared for the assumed land uses on the adjacent C-3 commercial properties which are expected to share the same proposed site entrance as the Dominion Raceway. This table is also included in Attachment F.

Updated Diverted Link Trip Calculations

Pass-by trips from traffic along Mudd Tavern Road in front of the site have been eliminated and absorbed into overall diverted link trip assignments for the proposed site. This change was made to simplify the calculations and results in a slightly conservative analysis by bringing more trips to the site from a further distance. The diverted link trip methodology was substantially revised from the original TIA and was discussed and approved with VDOT Traffic Engineering staff. Attachment G contains a spreadsheet which was used to weight the likelihood for diverted link trips to occur from surrounding roadways and movements using a combination of daily link traffic volumes, number and type of net additional turning movements required to complete the diverted link trip, and overall distance of the diverted link trip. The candidate links from which diverted link trips were drawn and the routing patterns are illustrated in sketches contained in Attachment G.

Updated Analysis Scenarios

The updated analysis scenarios contained herein were designed to generate a wide range of analysis results for a feasible range of build-out scenarios from which to identify potential transportation improvements to be considered in the Applicant's Draft Transportation Proffers. The following scenarios were evaluated and are summarized in Level of Service and Queuing tables contained in Attachment I:

- 2017 Total Future w/up to 1,500 Attendees for Race Events
    - Raceway Only (no commercial – Weeknight PM, Friday PM (800 attendees), Saturday PM (1,500 attendees))
    - Dominion Full Build-Out (Raceway + Commercial), w/same attendance parameters as above; Weekday AM/PM, Friday PM, Sat. PM
    - Dominion Full Build-Out + Adjacent By-Right C3, w/same attendance parameters as above; Weekday AM/PM, Friday PM, Sat. PM
- 2017 Total Future w/3,500 Attendees (Saturday PM Oval track sellout)
    - Raceway elements only
    - Dominion Full Build-Out (Raceway + Commercial)
    - Dominion Full-Build-Out + Adjacent By-Right C3
- 2023 Total Future w/up to 1,500 Attendees for Race Events
    - Dominion Full Build-Out (Raceway + Commercial); Weekday AM/PM, Friday PM (800 attendees), Sat. PM (1,500 attendees)
    - Dominion Full-Build-Out + Adjacent By-Right C3, w/same attendance parameters as above; Weekday AM/PM, Friday PM, Sat. PM
- 2023 Total Future w/3,500 attendee Oval Track Sellout
    - Dominion Full Build-Out (Raceway + Commercial); Sat. PM only
    - Dominion Full Build-Out + Adjacent By-Rights C-3; Sat. PM Only

For the above-listed analysis scenarios, reconstruction and widening of the Route 606 bridge over I-95 was not considered to be in place under projected 2017 conditions; however, it was included as part of the transportation network for the projected 2023 conditions. Also, it is noted that only the scenarios deemed to be worst-case were evaluated in the projected 2023 total future conditions w/3,500 attendee Oval Track Sellout.

Updated Figures

Based on the changes in trip generation, diverted link trip assignments, additional traffic from potential future development on adjacent commercially-zoned (C-3) parcels, and the updated analysis scnearios described above, new figures were created to illustrate the revised traffic scenarios. These figures are included in Attachment H and are generally numbered in accordance with their respective figure numbering in the original TIA, but with an appended letter (i.e. Figure 7 from the TIA has been revised and included herein as Figure 7.A, etc.).

The following figures are included in Attachment H:

- Figure 7.A – Future Lane Use and Traffic Control (2017)
- Figure 7.B – Future Lane Use and Traffic Control (2023)
- Figure 16.A – Site Generated Commercial Primary Trips Full Build-Out
- Figure 16.B – Adjacent C-3 Commercial Primary Trips Full Build-Out
- Figure 17.A – Site Generated Raceway Trips – 1,500 Avg. Saturday Event Attendance
- Figure 17.B – Site Generated Racway Trips – 3,500 Sellout Saturady Event Attendance
- Figure 18.A – Site Generated Commercial Diverted Link Trip Distributions
- Figure 20.A – Site Generated Commercial Diverted Link Trips Full Build-Out
- Figure 20.B – Adjacent C-3 Commercial Diverted Link Trips Full Build-Out
- Figure 23.A – 2017 Total Future Traffic Forecasts – Raceway Only (w/1,500 Avg. Sat. Event Attendance)
- Figure 23.B – 2017 Total Future Traffic Forecasts – Full Build-Out (w/1,500 Avg. Sat. Event Attendance)
- Figure 23.C – 2017 Total Future Traffic Forecasts – Full Build-Out w/Adjacent C-3 (w/1,500 Avg. Sat. Event Attendance)
- Figure 23.D – 2017 Total Future Traffic Forecasts – Raceway Only (w/3,500 Sellout Sat. Event Attendance)
- Figure 23.E – 2017 Total Future Traffic Forecasts – Full Build-out (w/3,500 Sellout Sat. Event Attendance)
- Figure 23.F – 2017 Total Future Traffic Forecasts – Full Build-Out w/Adjacent C-3 (w/3,500 Sellout Sat. Event Attendance)
- Figure 26.A – 2023 Total Future Traffic Forecasts – Full Build-out (w/1,500 Avg.. Stat. Event Attendance)

- Figure 26.B – 2023 Total Future Traffic Forecasts – Full Build-out w/Adjacent C-3 (w/1,500 Avg. Sat. Event Attendance)
- Figure 26.C – 2023 Total Future Traffic Forecasts – Full Build-out w/Adjacent C-3 (w3,500 Sellout Sat. Event Attendance)
- Figure 26.D – 2023 Total Future Traffic Forecasts – Full Build-out w/Adjacent C-3 (w/3,500 Sellout Sat. Event Attendance)

Updated Capacity Analyses

No changes have been made to the Existing or Projected Background 2017 analyses, except that the Level of Service and Queuing tables from the original TIA have been updated using results from SimTraffic. The updated tables (2.A and 3.A) are contained in Attachment I for reference.

The LOS and queuing results for the new 2017 and 2023 analysis scenarios described previously are included in Table 5 and Table 6, respectively, in Attachment I.

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UPDATED FINDINGS AND CONCLUSIONS

Based on the analyses contained herein, the following findings and recommendations are offered:

Mudd Tavern Road and Northbound I-95 Ramps Intersection

- Currently, the the critical movement at this intersection (NB approach) is experiencing failing levels of service during the weekday AM, PM, and Friday PM peak hours. If left unmitigated, these problems will worsen and may result in queuing that backs up to the mainline of I-95 in the next ±7 years. The Applicant proffers to construct a 3-phase traffic signal to offer substantial improvements to existing levels of service and queuing while mitigating the increase in traffic from the site. The proffers provide for construction of this signal prior to receipt of the Applicant's first certificate of occupancy (see Attachment C, Proffer III.A.(2)).
- This improvement will adequately accommodate existing, background and projected Dominion Raceway traffic for all 2017 analysis scenarios evaluated herein, including for a 3,500 attendee sellout for a Saturday night oval track race. The only exception to these results is from those 2017 scenarios which included build-out of the adjacent C-3 commercial property (by others), which triggered increased delays across the range of peak periods and some failing levels of service particularly during the weekday AM peak period.
- Under projected 2023 conditions, this intersection is assumed to have turn lane improvements for its eastbound approach (constructed with the reconstruction of the Mudd Tavern Road bridge over I-95). Under those conditions, with signalization, this intersection operates with acceptable levels of service and queuing for all scenarios analyzed herein, including for all a 3,500 attendee sellout for the oval race track and most (but not all) scenarios with full build-out of the adjacent C-3 commercial properties.

Mudd Tavern Road and Southbound I-95 Ramps Intersection

- Currently, the intersection is experiencing failing levels of service on the critical southbound approach during the weekday PM peak hours, with moderate queuing. Under projected 2017 Background conditions the queuing is anticipated to worsen, with levels of service dropping and delays increasing nearly twofold for the weekday PM peak period.
- Under projected 2017 Total Future conditions with full buid-out of the raceway and commercial components, the intersection continues to operate with approximately equivalent levels of service and peak hour queuing as under 2017 Background conditions. Conditions with a 1,500 attendee oval race have a similar LOS F as other non-event conditions, and the queuing is not too significant.

- The intersection will accommodate projected 2017 Total Future conditions with a sellout race event only (with no commercial development on site or by the adjacent C-3 property) at levels about equal to conditions under projected 2017 No-Build. However, with the addition of any outparcel development (either by Dominion Raceway or the adjacent C-3 commercial parcels), the operations at the southbound off-ramp begin to deteriorate rapidly to very high delays and poor LOS F. The Applicant has proffered to implement a special event management Traffic Control Plan with full deployment in year 1 and partial deployment (years 2+), which would make personnel available to manage this intersection for events with anticipated attendance ranging from 2,000 – 4,000 attendees (see Attachment C, Proffer III.D). This implementation threshold effectively prevents the intersection's level of service from deteriorating farther than level that would exist under Background conditions, and the use of field personnel at this intersection acts as a simulated operation with traffic signalization. BCG has modeled the intersection as a signal (assuming field personnel are directing traffic) under projected 2017 Total Future conditions with a sellout oval racing event and full build-out of both the Dominion Raceway commercial and adjacent C-3 commercial properties. Under these scenarios, without the the C-3 properties' traffic, the intersection operates at overall LOS E without excessive queuing; however, the addition of the C-3 properties' traffic results in delays that are nearly doubled and severe queuing along Mudd Tavern Road.
- The Applicant has proffered to post a bond for the design and construction of a traffic signal at this intersection subject to a traffic signal warrant study showing that a new traffic signal is needed (see Attachment C, Proffer III.A.(4)).
- In the absence of a traffic signal, the Applicant proffers to implement Special Event management Traffic Control Plan as discussed in the proffers (Proffer III.D).
- Under projected 2023 conditions, this intersection is assumed to have turn lane improvements (constructed with the reconstructionof the Mudd Tavern Road bridge over I-95). Under those conditions, with signalization, this intersection operates with acceptable LOS C or better and manageable queuing under all 2023 analysis scenarios evaluated herein, with the excpetion of the 2023 weekday AM peak hour with full build-out of the Dominion Raceway and full build-out of the adjacent C-3 commercial properties, in which case the overall delays drop to LOS E and excessive queuing occurs on Mudd Tavern Road.

Mudd Tavern Road and Proposed Dominion Raceway Entrance

- The Applicant proffers (Attachment C, Proffer III.A.(1)) to contstruct this entrance as a full-movment entrance with dedicated left-turn and right-turn lanes as shown in Attachment N.
- The level of service for this left-turn movement is acceptable under all conditions evaluated herein for both projected 2017 and 2023 conditions.
- The proposed 100' eastbound left-turn lane storage has adequate capacity to handle 95th percentile queues as analyzed in SimTraffic for all projected Total Future 2017 and 2023 scenarios evaluated herein, with the exception of the 2023 Saturday PM Full Build-out of Dominion Raceway (racing + commercial elements w/a sellout 3,500 oval track race) and full build-out of the adjacent C-3 commercial parcels.
- The Applicant's Proffer Statement (Attachment C, Proffers III.B and III.C) provides initiative – if it is necessary – toward the design of a future access redesign in the vicinity of this location to facilitate its future implementation at such at time as becomes otherwise essential to maintain safe and orderly movement of traffic at the I-95 / Mudd Tavern Road interchange.

Based on the analyses contained herein, it is concluded that no additional improvements are needed to accommodate projected 2017 and 2023 build-out peak hour traffic conditions (without build-out of the C-3 commercial property adjacent to the Dominion Raceway's) at the following intersections:

- U.S. Route 1 / Mudd Tavern Road / Morris Road
- Mudd Tavern Road / Mallard Road

Closing

In closing, our team has worked diligently to develop a phasing plan and accompanying proffer statement that is intended to provide mitigation measures to maintain the originally-desired goal to "Do No Harm" to the transportation infrastructure in the vicinity of the project. The vast majority of special events at the site (98%) would not meet the thresholds which would require deployment of the Applicant's Traffic Control Plan; however, when deployed, the proffered commitment would provide adequate manpower to manage the key intersections in the study area network in a manner that complies the performance measures identified in the Applicant's proffer statement. Additionally, the proposed left-turn lane into the site has been demonstrated to function adequately without excessive queuing under all but one (1) analysis scenario, which itself could effectively be managed with the Applicant's Traffic Control Plan.

We hope this information satisfactorily answers the questions posed both by VDOT and the County regarding the information contained in our initial TIA, and we look forward to the opportunity to re-submit a revised AM-2 form for VDOT's consideration for the proposed site's full-movement entrance along Mudd Tavern Road.

Given the continued need to communicate regarding the complexities of this project, we would like to schedule a follow-up coordination meeting with you in the near future once you have and your staff have had time to review the information contained herein.

Should you have any questions or comments, please contact our office at (804) 616-3240.

Sincerely,

BOWMAN CONSULTING GROUP, LTD.

John D. Riley, PE
Senior Project Manager

Attachment A

Response to VDOT Comments dated 2-25-13 for:

Dominion Raceway TIA
&
Dominion Raceway Access Management Exception Request (AM-2)

ATTACHMENT A

Response to VDOT TIA Comments

In response to VDOT's comments dated February 25, 2013 for the Dominion Raceway TIA (submitted by Bowman Consulting Group (BCG) and the Applicant to VDOT on January 24, 2013), BCG offers the following:

TIA/Rezoning Application:

Comment 1: The report is not clear about what improvements are proposed for the phased development implementation.

Response: Attachment C contains the Applicant's Draft Transportation Proffers. Section IV on the last page of the proffers includes a Table of Proffered Phasing and Timing of Contributions and Dedications which discusses the proposed phases of development and associated transportation improvements. Additional discussion is provided in the cover letter.

a. The report does not accurately characterize the comparison of operations for the no build and build conditions, particularly relative to queuing results.

Response: Table 3 of the original TIA shows the Level of Service (LOS) and queuing results for the background (no build) conditions in 2017. Table 5 shows the LOS and queuing results for the Total Future (build) conditions in 2017. As noted below, all queuing results have been updated to show SimTraffic queues. Updated LOS and Queuing Tables are included in Attachment I.

b. Page 15 states an additional turn lane for NB off-ramp, yet on page 10, it states an additional turn lane for SB off-ramp. Please revise and adjust Figure 7 on Page 39.

Response: Based on the updated analyses contained herein, it has been determined that the proffered turn lane extension will be for the I-95 Southbound Off-Ramp. This extension is reflected on Figure 7.A (Attachment H) and is described in the Applicant's Draft Transportation Proffers (Attachment C, section III.A.(3)).

c. All improvements needed to operate at an acceptable LOS for the proposed development need to be borne by the developer & prior to operation.

Response: The developer's proposed Draft Transportation Proffers (see Attachment C) and phasing are described in the Table of Proffered Phasing and Timing of Contributions and Dedications found in Section IV of the proffers.

Additional discussion about the mitigation provided by the proffered improvements is included in the Cover Letter.

Comment 2: Synchro does not necessarily provide accurate results for congested conditions. SimTraffic should be used to provide queuing results in the vicinity of the interchange.

Response: All Level of Service Tables have been updated with 95th percentile SimTraffic queuing results after 5 runs of 30 minutes each and are found in Attachment I.

Comment 3: The performance of the intersection of the SB Ramps and Rte 606 will be significantly degraded in all four scenarios (AM, PM, Fri, Sat) as a result of this development. Please indicate appropriate mitigation measures for this location.

Response: The southbound approach to the intersection of the SB ramps and Rte 606 currently fails in the AM and PM peak and would degrade further under Background 2017 conditions (without Dominion Raceway). As noted above, improvements to the intersection are necessary with or without Dominion Raceway. Nonetheless, the Applicant is proffering to extend the Southbound I-95 Off-Ramp left-turn lane as shown on the GDP, and the Applicant has proffered to bond the design and construction of a traffic signal per the conditions outlined in the Transportation Proffer III.A.(4) (see Attachment C).

Comment 4: The option of realigning the NB off-ramp with the Dominion entrance would cement the operational condition with ramp traffic from both I-95 NB and SB being in direct competition for green time to enter the Raceway, and opposing through traffic on 606 WB that is destined for 95 NB. Compromising interchange traffic flow with event traffic is not acceptable, and this alternative should be removed. Eliminating the left into the Raceway and utilizing the suggested roundabout east of the proposed entrance minimizes conflicts as well as potential impact to the interstate ramps.

Response: We understand that a realigned NB off-ramp that intersects with the proposed Dominion entrance is not desired by VDOT. The updated analyses contained avoid evaluations of unfunded interchange concepts and instead focus on the existing transportation network geometry and anticipated improvements by the Applicant and by VDOT as described in the current VDOT Six-Year Plan (SYIP) and as anticipated to be in place under the projected 2017 and 2023 horizon analysis years.

Additionally, the analyses contained herein define the operating parameters in which the Proposed Eastbound Left-Turn Movement can function without

exceeding its 100' storage capacity. Attachment J contains a Draft Left-Turn Lane Performance Envelope Chart which plots the specific operating points of the Left-Turn movement volumes and respective opposing westbound through movements along Mudd Tavern Road for all Total Future analysis scenarios evaluated herein relative to theoretical "failure points" of the combination of these conflicting movements. This chart has been created specifically for this project with the express purpose of quantifying the buffer that exists between each analysis condition evaluated herein and its nearest theoretical failure points. These buffers are measurable and thus can be converted into equivalent years of annual background traffic growth or equivalent trips from future development (by others) in the Mudd Tavern Road corridor. The intent is to provide VDOT with a decision making tool that can be used in conjunction with your review of the analyses and draft Transportation Proffers included herein. It is anticipated that the Draft Left-Turn Lane Performance Envelope Chart will be finalized at the time of BCG submitting to address VDOT's Access Management (AM-2) form.

Comment 5: The left turn lane into the proposed Raceway entrance does not appear to be adequate as shown. Please run a capacity analysis to determine requirement in ultimate build-out condition.

Response: As shown on Table 5 of the original TIA, in 2017 with full buildout of the Raceway and all outparcels (plus a summertime traffic adjustment), the 95th percentile queue for the eastbound left is projected to be 86 feet during the Saturday peak hour. This was the worst-case result computed in the original TIA; however, it was not computed using SimTraffic.

The analyses contained in this update were all conducted using SimTraffic (5 runs of 30 minutes/run) and contain many additional scenarios of build-out, some of which include additional by-right (C-3) commercial development on three (3) parcels along Mudd Tavern Road which would share the Dominion Raceway's proposed Access Road. Under all scenarios evaluated herein for projected Total Future 2017 and 2023 scenarios, all but one (1) resulted in 95th percentile queuing that is contained within the proposed 100' eastbound left-turn lane. The only scenario which showed 95th percentile queuing exceeding 100' was the projected Total Future 2023 w/Full build-out of Dominion Raceway's racing and commercial elements, full build-out of the adjacent C-3 commercial uses, and a sellout Saturday oval race event (3,500 attendees).

Comment 6: The Synchro analysis codes the SPUI with three approaches (EBTs&R, WBTs, and 2SBRs). Where are the SBLs? Where are the 2SBRs going?

Response: The SPUI was coded using a template from Synchro that models that type of interchange as three intersections clustered to share one controller. The southbound rights are shown in intersection #2, the north and southbound lefts are shown in intersection #10, and the northbound rights are shown in intersection #3. The model only showed one receiving lane west of the interchange for the dual southbound rights. This error has been fixed and the analysis updated to reflect the change. Given that this resubmission no longer focuses on conceptual interchange improvement scenarios, the updated analysis for the SPUI interchange alternatives is not included herein; however, a copy of the updated analysis can be furnished upon request.

Comment 7: Preliminary Turn Lane Exhibit – Should the Access Management Exception be granted, the exact location of the entrance will need to be discussed further based on roadway improvements required.

a. This exhibit shows additional ROW will be needed from the property to the east of the site for the eastbound RT lane taper and drainage improvements. Is this feasible considering the VOF Conservation Easement?

Response: The Access Management Exhibit in the TIA was subsequently revised for the Access Management Exception request and no longer impacts the adjacent property to the east and its associated VOF Conservation Easement. An updated version of the exhibit is included for reference in Attachment N.

b. The proposed entrance road exceeds the width of the existing 50' Frontage Road ROW. This ROW will need to be abandoned per State and local regulations. The entrance road will require an access easement from Parcel 63-A-62. This should be provided, or a Letter of Intent provided, prior to approval of the GDP.

Response: The Applicant is working with the adjacent land owner to provide the requested documentation. The Applicant is also awaiting confirmation from VDOT and/or the County about the exact process to be followed (abandonment or discontinuance?) and whether or not VDOT will initiate the replacement of the R/W with an in-kind easement. The Applicant also understands that VDOT is researching whether Service Road J is part of the primary or secondary state roadway system.

c. The existing and proposed 80' access easements shall provide access to the Speedway Entrance road for parcels 63-A-5E, 63-A-62, or 63-A-63, as well as all commercial parcels within the development.

Response: Noted. The Applicant is working toward development agreements, easement agreements, and internal access roadway design elements that will provide the requested access to the referenced nearby parcels.

Comment 8: TIA & AM-2 reference that the entrance to Dominion Raceway will be the only commercial access constructed on the north side of Mudd Tavern Road. There are two (2) entrances for the existing former gas station immediately west of the Dominion entrance. It is recommended these entrances be removed and internal access be provided for this parcel from the Raceway access road.

Response: The Applicant does not own or control the land that the entrances lead to and therefore cannot permanently close them. The two entrances are abandoned, and it is the Applicant's understanding that they would be subject to VDOT review if ever proposed to be utilized for a new use. The Applicant will provide internal access from the Raceway access road to the parcel.

Comment 9: Page 3 – Friday PM Peak trip generation is based on drag strip event + commercial. Saturday PM Peak trip generation is based on oval track event + commercial, and appears to generate more traffic than the drag strip event + commercial. Will restrictions on types of events be proffered to restrict events to those proposed in the study?

Response: Restrictions on event scheduling are included in the Applicant's draft Transportation Proffers (see Attachment C, section VIII), and they stipulate that – with two (2) exceptions – oval track NASCAR races will not be run at the site on Mondays-Thursdays. The updated analyses contained herein address the typical range of event types likely to occur on Friday and Saturday nights.

Comment 10: Page 9 – Under the 2017 partial build-out w/out improvements to the bridge, Option 1 states 3500 max attendance event, and Option 2 states 2300 max attendance. The TIA needs to provide a maximum trip generation, rather than different scenarios

Response: The Proffered Phasing Chart in Section IV of the Applicant's Draft Transportation Proffers (Attachment C) describes the vehicle trip threshold to which the site will be limited for development prior to improvements being made to the capacity of the Mudd Tavern Road bridge over I-95.

Comment 11: Page 10 – Option 2 Partial Build Out indicates a 6,000 SF quality restaurant, yet on page 2 of the study, it indicates the commercial parcels are assumed as 6,000 SF high-turnover restaurants. These have different ITE codes (931 vs. 932). Please clarify.

Response: The reference to quality restaurant on page 10 was a clerical error and should read high-turnover restaurant. All trip generation was based on high-turnover restaurants (land use code 932). The error has no bearing on the analytical results of the study.

Comment 12: Page 11 – Under Mudd Tavern/Mallard Rd intersection, the 2017 buildout PM Peak goes from a LOS A to a LOS D. While a LOS D is generally acceptable to VDOT, this does not comply with the "Do No Harm". What mitigation is proposed to offset this impact?

Response: As shown on Table 5A, the analysis indicates that under full buildout of the Dominion Raceway project, the northbound left turn lane at the Mudd Tavern Road/Mallard Road intersection would operate at LOS C with an average delay of 23.0 seconds per vehicle and a 95th percentile queue of 57 feet in the Saturday peak hour. These analyses include a sellout oval track event, which is likely to occur only a handful of times/year. The more likely Saturday night oval race event would have only approximately 1,500 attendees on average. Under this more frequently occurring condition in all of the Total Future scenarios (2017 and 2023) evaluated herein (see Tables in Attachment I), the northbound Mallard Road left-turn movement operates with LOS C or better. Based on this result and the lack of peak hour volume for the northbound left-turn movement and the lack of critical upstream blocking caused by the nominal queuing for this movement, no mitigation is recommended.

It is further noted that the level of service calculations do not take into account the gaps provided by the proposed signal (proffered under full buildout) at the I-95 NB ramps intersection with Mudd Tavern Road. It is likely that the signal would allow for gaps and reduce the average delay and queue further.

Comment 13: Page 12 – The discussion for Mudd Tavern Rd/Raceway Entrance does not account for development of parcels 63-A-5E, 63-A-62, or 63-A-63. What impact will development of these parcels (By-Right?) have on the proposed intersection, and the interchange?

Response: The Applicant does not own or control these parcels, and their analysis was not specifically required by the signed Scope of Work for this TIA; however, at VDOT's request – and in coordination with the owner of said parcels – the Applicant has completed a series of analyses described herein which provide estimated by-right development traffic for said parcels. The by-right development assumptions were based on conversations with the parcels' owner, and include a hotel, two (2) fast-food restaurants with drive-thru, and gas/convenience station, all as defined in the cover letter for this attachment and analyzed herein. A discussion

of the incremental impact of this potential additional traffic is described in the Executive Summary section of the cover letter.

Comment 14: Page 13/14 – Mudd Tavern Rd/Raceway Entrance 2023 Build Conditions - Concepts 1 & 2 indicate a LOS F at the NB & SB interchange approaches for full build-out. How is this impact being mitigated? This project should not be dependent on VDOT projects.

Response: The following response is offered to address the question by VDOT; however, as mentioned previously, it is specifically noted that the updated 2023 analyses contained herein attempt only to analyze those improvements that are expected to be proffered by the Applicant or constructed as indicated in VDOT's current SYIP.

Concepts 1 and 2 show LOS C or better in all peak hours for the NB and SB interchange ramps. Both Concepts 1 and 2 have adequate capacity for the projected traffic in 2023 with and without the Dominion Raceway project.

The LOS F described on pages 13/14 occurs at the Mudd Tavern Road intersection with the site entrance/realigned Mallard Road. The northbound approach (Mallard Road) to this intersection operates at LOS F during all peak hours while the southbound approach (site entrance) operates at LOS F during the Saturday peak hour only.

Comment 15: Page 31 – Mudd Tavern Road is actually posted as 35 MPH speed limit. Please correct.

Response: Noted. All references to the speed limit on Mudd Tavern Road have been changed to 35 miles per hour.

Comment 16: Page 33/Figure 6 – Existing Lane Use & Traffic Control exhibit shows a dedicated RT lane for the NB off-ramp. This conflicts with the proposed addition of a RT lane. Please clarify.

Response: The northbound off ramp has approximately 65 feet of pavement width at the stop bar onto Mudd Tavern Road that tapers to approximately 22 feet of pavement at a distance of 50 feet from the stop bar. Field observations indicate that vehicles are using the extra pavement as a de facto right turn lane. Figure 6 (and the analysis) assumes a 50 foot right turn lane in order to accurately depict the existing conditions in the field. As the existing conditions analysis indicates, the 50 right turn lane is not adequate to accommodate the 95th percentile queues during peak hours of the day. The recommendation to add a northbound right turn lane has been retracted based on the ability for this approach to operate acceptably

without the right turn lane; instead, the turn lane improvement has been changed (per the applicants Draft Transportation Proffers in Attachment C) to be at the southbound I-95 Off-Ramp's left-turn lane, in the form of an extension of full-width storage to accommodate projected future 95th percentile queues.

Comment 17: Page 74. Pass-by and Diverted Link Site Trip Distribution and Assignment: The methodology utilized is not acceptable. The proposed commercial uses will clearly draw traffic from the through volumes on I-95, not just diverted ramp traffic. The methodology used will understate the project impacts on these critical ramp intersections. This trip assignment needs to be revised and reanalyzed.

Response: The analyses contained herein reflect adjustments to account for a corrected application of diverted link trips from I-95 through traffic. The Applicant coordinated with VDOT Traffic Engineering staff concerning these changes and received written email approval (from Mr. Peter Hedrich) on Thursday March 28, 2013 to use the methodology defined by the table and flow diagrams contained in Attachment G.

a. Commercial pass-by trips on I-95 diverting to Route 606 should not be considered pass-by trips on Route 606 east of I-95; they are NEW trips on Route 606 east since the vehicles would not otherwise be on Route 606 (i.e. exit the interstate) if the site remained undeveloped. Please adjust pass-by trip discounts accordingly.

Response: Pass-by trip adjustments on Route 606 have been eliminated (for simplicity) and redistributed back into the diverted link trip assignments discussed in the previous comment.

b. Please revise Table 4 – Site Trip Generation Analysis on p.65 to reflect volumes at the site driveway intersection with Route 606 (i.e. diverted link trips should appear as new trips at this intersection).

Response: The Trip Generation table (Table 4) has been revised and now contains a new tabulation at the bottom of the commercial trips section indicating the total number of driveway trips (see Attachment F).

Comment 18: Page 80: 2017 Total Future Peak Hour Levels of Service:

a. Results for the EB through movement queuing in the signalized condition for the NB ramp intersection show very long queues, including some results that are indeterminate using Synchro. The analysis should be done using SimTraffic. The 1,200 foot queuing condition for the full build-out AM peak hour will block the SB off-ramp, Dan Bell Lane and several commercial driveways on the west side of I-95.

Response: As noted above, all Level of Service Tables have been updated with 95th percentile SimTraffic queuing results after 5 runs of 30 minutes each. These results are included in the revised tables in Attachment I. It is noted that the Applicant's draft transportation proffers will significantly limit the development of the site's commercial elements until such time as capacity improvements have been completed (by others) at the Mudd Tavern Road intersections with the I-95 Ramps.

b. Queuing and/or delays for the SB off-ramp are long in the Saturday condition for Phase 1 and all conditions for the full build out condition. This needs to be addressed.

Response: The combination of a southbound turn-lane extension, Traffic Control Plan with event management staff at this intersection, and traffic signal design/construction bonding – all as contained in the Applicant's draft Transportation Proffer Statement (see Attachment C) – have been proposed as a mitigation package for this approach / movement.

Comment 19: Page 82: Last paragraph references Table 6. Should be table 5. Similarly, page 88 should reference Table 6 not Table 7.

Response: Noted. The table references have been corrected.

Comment 20: Page 93: Table 6 2023 analysis results:

a. The Single Point Urban Interchange appears to provide acceptable results pending clarification of the lane use assignments discussed above. Additionally, the Mudd Tavern/Relocated Mallard/Site Entrance intersection shows some long delays entering Mudd Tavern Road from the minor streets.

Response: The following response is offered to address the question by VDOT; however, as mentioned previously, it is specifically noted that the updated 2023 analyses contained herein attempt only to analyze those improvements that are expected to be proffered by the Applicant or constructed as indicated in VDOT's current SYIP.

Please see the response above (to Comment 6) for the clarification of the lane use assignments for the Single Point Urban Interchange.

b. The modified option "C" interchange configuration for the eastbound left to turn into the Dominion entrance is forecast to have a 521 foot queue in the Saturday peak hour, which needs to be addressed. This alternative also calls for a six-lane bridge, however the interchange bridge replacement project is preliminarily planned as a 4 lane bridge, per the attached current Concept C exhibit. Please re-

run the analysis based on this 4-lane section, or proffer two (2) additional lanes for the bridge.

Response: 2023 analyses have been re-analyzed using the 4-lane bridge section currently contemplated by VDOT's SYIP project (UPC # 100829). The results are included in the updated tables in Attachment I and as summarized in the Executive Summary section of the cover letter to these comment responses. No proffers have been offered by the Applicant concerning additional bridge widening. With the proposed 4-lane typical section, the update analyses indicate substantial capacity improvements to continue to accommodate background traffic growth and the Applicant's traffic through the 2023 horizon year.

c. The VDOT Long Range Plan calls for I-95 to be 8 Lanes wide. All proposed concepts need to accommodate this configuration. Therefore, the options should not indicate the on and off-ramps are reconstructed closer to the main line.

Response: Noted. The layout of the concept plans are approximate in nature, and – if constructed – could reasonably be expected to have modifications, including retaining walls along I-95 – to accommodate the long-range widening of I-95 to and 8-lane facility.

Comment 21: Page 99: Improvements recommended supporting the partial build-out scenarios do not include the "northbound left turn lane improvement" indicated to be needed on Page 78, last paragraph. The Synchro file for the 2017 Phase I analysis shows a 200 foot right turn lane while the existing condition shows 50 feet. There is also a 700 foot AM peak hour queue eastbound at the NB ramps that is not discussed relative to impacts.

Response: Page 78 indicates a "northbound turn lane improvement" but does not specify right or left lane. Based on subsequent analyses, it was determined that the turn lane improvement should be implemented on the I-95 Southbound Off-Ramp, and this improvement is included in the Applicant's Draft Transportation Proffers (Attachment C). It is noted that the existing short, northbound off-ramp right-turn lane was included in all the revised Total Future analyses contained herein.

The updated analyses contained herein (with proffered development limits) indicate that the eastbound left-turn queue operates acceptably with Applicant's traffic without blocking the SB off-ramp intersection through the 2023 horizon years, except in numerous scenarios in which adjacent C-3 commercial properties are built out.

Comment 22: Page 104: Indicates the northbound off-ramp turn lane is not necessary for the initial phase that includes the raceway and one out parcel. As noted above, this is in conflict with the statement on Page 78. The phasing of the recommended improvements is not clear.

Response: **See response to Comment 1b above.**

Comment 23: The Report indicates that "special events" that would generate trips in excess of the raceway events would be addressed with a Special Event Management Plan discussed later. There is no substantive discussion of special event traffic in the report. Special Event Traffic Management needs to be addressed in more detail. Though use of the roundabout would significantly reduce special event concerns.

Response: The Applicant's proposed Traffic Control Plan (TCP) for special events is discussed in Section III D. of the Transportation Proffers (Attachment C), and is described in full detail in Attachment D. The TCP in Attachment D describes the times of deployment, number of personnel, and their locations for loading and unloading of a special event. Details are provided for deployment of staff along Mudd Tavern Road (to manage traffic and protect the integrity of interchange operations) as well as on-site (to manage parking). It is specifically noted that the TCP assumes an average vehicle occupancy (AVO) of 2.5 persons/vehicle, which is more oriented toward concert-type events. This AVO is lower than those used in the TIA due to the different type of event, and it generates a maximized on-site parking demand, which is addressed by the TCP.

Attachment D also contains a Special Event Traffic Control Phasing Chart, which illustrates the varying tiers of TCP deployment in Year 1 of the raceway facility and in all subsequent years, as defined by the Applicant's Draft Transportation Proffers.

To illustrate the very limited extended to which the Applicant anticipates the TCP being deployed, a series of charts has been provided in Attachment E as follows:

- **<u>Sample Annual Program Schedule</u> – This spreadsheet shows a likely allocation of events by type throughout a typical calendar year. It serves as a database for the following two (2) charts. Note: This table is intended to be a realistic representation of the type, frequency, and attendance of an annual program of events which might reasonably occur at the proposed Dominion Raceway; however, it is <u>not</u> a proffered plan or guarantee of any type.**

- **<u>Sample Annual Program Schedule (charted by month)</u> – This chart illustrates a potential annual program of events at the Dominion Raceway site, ranging from smaller scale road club and karting events to sellout oval track races, to sellout-plus concerts. It is important to note that approximately 95% of these events are expected to have attendance below the level which requires TCP implementation. Additionally, less than 35% of these events would likely occur during the summertime peak traffic months.**

- **<u>Sample Annual Program Schedule (charted by event type)</u> – This chart presents the information in the previous chart on a per-event basis, to show the relative attendance at each event type.**

a. The Special Event Traffic Management would also need to comply with VDOT Special Event Permit guidelines. This would require a Single Use Permit for each event.

Response: The Applicant will work with VDOT to obtain the necessary Special Event Permits on an as-needed basis. The Applicant anticipates a very low number of Special Events to be held each year as discussed in the cover letter and as illustrated in the Dominion Raceway Projected Annual Event Program Data (see Attachment E).

b. The Report also indicates utilizing the VDOT property for an overflow "jug-handle U-turn". This should not be assumed.

Response: Noted. Use of VDOT property for a "jug-handle U-turn" will not be utilized for overflow for Special Event Traffic Management.

Comment 24: Will the proposed site necessitate a Comp Plan Amendment? What will be the effects of the proposed site on the Regional Travel Demand Model?

Response: The Applicant has filed a Comprehensive Plan Amendment request to change the future land use for the subject parcel to a more commercially oriented designation. VDOT has already provided a review and response comments to the County for the proposed amendment.

The amendment passed 6-1 at the Spotsylvania County Planning Commission; however, it had not been heard by the Board of Supervisors as of this writing.

Additional Items to Consider:

Comment 1: Page 57: Site trip generation. The trip generation is generally acceptable with following notations:

a. Trip forecasts for gas stations with C-Store should be based on an average of the trip generation determined using number of fueling positions and the square feet of store. However in this case, since it is a highway oriented facility, utilizing just the number of pumps is acceptable.

Response: Noted.

b. The "teams" trip generation implies that all members of each team will arrive in one vehicle. Is this the expectation?

Response: Based on years of experience operating the Old Dominion Speedway in Manassas, the Applicant expects that "teams" arriving for the 1/8 mile events would arrive in one vehicle (see footnote 9 of the updated trip generation table (Table 4 Revised, Attachment F)). The Applicant expects that "teams" arriving for the 0.4 mile oval events would arrive in 2 vehicles (see footnote 13 of TIA Table 4 Revised, Attachment F). The trip generation for each event type reflects the Applicants expectations.

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Access Management Exception (AM-2) Request:

Comment 1: While we are not able to grant an exception based on our review of the traffic impact study, and the comments in this letter, we are willing to continue discussion and will make full consideration of your request as we move forward.

Response: Noted. The Applicant and team appreciate VDOT's willingness to continue discussion as the project moves forward.

Comment 2: The following general comments are provided for future submittals of this AM-2.

a. The AM-2 Request document should be modified based on all modifications to the TIA noted above.

Response: Noted.

b. The Access Management Exception Request does not need to include Mallard Road, as this intersection is on the opposite side of the roadway.

Response: Noted. This change will be made.

c. The two (2) abandoned entrances on the north side of Mudd Tavern Rd and the existing entrance for the Shell gas station should not be included for reference, unless these have approved Access Management Exception Request approvals.

Response: Noted. This change will be made.

d. The "Exception to the requirement that an entrance shall not be located within the functional area of intersection or roundabout" needs to be checked as well as "Attached: A traffic engineering study…" since the proposed entrance is within the functional area of the interchange.

Response: Noted. This change will be made.

e. Please revise the Posted Speed Limit to 35 MPH on page 2.

Response: Noted.

f. All future submittals of the AM-2 should be addressed to Mrs. Angela N. Foroughi, PE – Transportation & Land Use Director.

Response: Noted. The pending resubmittal of the AM-2 will be completed at VDOT's request and will be addressed to Mrs. Angela N. Foroughi, PE – Transportation & Land Use Director.

END

Attachment B

Response to Spotsylvania County TIA Comments:

3-18-13 (Letter)
&
3-20-2013 (Email)

ATTACHMENT B

Response to Spotsylvania County TIA Comments

In response to your comments dated March 18, 2013 (by letter) and March 20, 2013 (by email from Leon Hughes), we offer the following:

Comments from March 18, 2013 Letter

Comment 1: There appears to be a discrepancy concerning the collected pm peak hour traffic from the Malone Counts and the peak hour traffic used in the SYNCHRO runs for existing conditions during that time period for the northbound and southbound ramps. Higher volumes were used in the SYNCHRO analysis resulting in existing conditions being shown as worse than what probably exists.

Response: As detailed on page 45 and 46 of the report, the existing traffic counts were obtained from various sources (VDOT, Peggy Malone and Associates, and Bowman Consulting Group (BCG)). A common peak hour was chosen for all intersections and the counts were balanced where necessary. The weekday PM, Friday PM, and Saturday counts at the interchange ramps were then increased by 15% to account for seasonal variation in mainline I-95 traffic and traffic to/from Lake Anna (to the west).

The AM and PM counts at the interchange ramps were obtained from VDOT. The counts were conducted in February, 2012 as a part of the *VDOT Bridge Replacement Scoping Document – UPC 100829* prepared by Kimley-Horn and Associates. The counts are included in Appendix A of that document.

The raw traffic data included in Appendix F of the Dominion Raceway TIA does not include the Kimley-Horn counts. This was an oversight, and the counts are included in Attachment M for reference.

Take for example the southbound right turn from I-95 onto Mudd Tavern Road in the PM peak hour. The Kimley-Horn counts indicate 417 vehicles from 4:45-5:45 PM. Since 4:45-5:45 PM was chosen as the common peak hour across all intersections, no adjustments were made. The 417 vehicles were then grown by 15% to adjust for season variations. This yields the 480 vehicles shown on Figure 9 and included in the Synchro analysis.

Comment 2: In addition to using incorrect collected traffic data for the northbound and southbound ramps under existing conditions during the pm peak hour, the peak hour factors used were incorrect.

Response: The peak hour factors were obtained from the existing traffic counts and may be different that those shown in the Appendix due to chosing a common peak hour and/or seasonal variations.

Comment 3: Under Phase I Build, the ramps and site entrance appear to operate without significant differences from the no-build condition. However, it is not clear when the proposed improvements (signalized northbound ramp and extended right turn lane) are to occur. Will the north ramp be signalized and improved in 2014?

Response: The Applicant has proffered left-turn and right-turn lane improvements along Mudd Tavern Road at the proposed Site Entrance, a new traffic signal at the I-95 Northbound Off-Ramp/Mudd Tavern Road intersection, and a left turn lane extension along the I-95 Southbound Off-Ramp approaching Mudd Tavern Road, all prior to the opening of the proposed raceway facility. The Applicant has also proffered additional transportation improvements which are contingent upon certain performance measures and other factors. For a complete review of the Applicant's proposed proffers, please see the Draft Transportation Proffer's (Attachment C).

Comment 4: Assuming that improvements are completed in Phase 1, traffic conditions appear to operate within an acceptable range of level-of-service during the weekday. However, the same can't be said for Saturday traffic. More detail is needed to evaluate how traffic will be handled during Saturdays when events are scheduled to take place.

Response: The Applicant's response to VDOT Comment 23 (Attachment A), Section III.D of the Applicant's Draft Transportation Proffers (Attachment C), the Special Event Traffic Control Plan (Attachment D), and the Projected Annual Event Program Data (Attachment E) all work together to provide an understanding of the frequency of special event traffic and the Applicant's proffers to manage traffic under those conditions.

Comment 5: Under full build-out conditions the southbound ramp fails with significant delays to traffic. How is this going to be addressed?

Response: As noted in the TIA, the southbound ramp fails under existing (2012) and Background 2017 (without Dominion Raceway) conditions. Improvements to the interchange ramps are necessary with or without Dominion Raceway. The Applicant has proffered to make improvements to the interchange and is willing to do its "fair share" but is not the sole contributor to the problem.

Comment 6: It does not appear that the worst case scenario has been addressed in the TIA that was submitted in January, 2013. The parcel on the northwest side of the proposed development (63-A-62) is likely to be developed at a future time. If the Raceway is approved its development would likely accelerate. How is this addressed in the study?

Response: Analysis for this parcel was not included in the original scoping agreement for the TIA; however, after discussions w/VDOT, this parcel has been analyzed along with two other adjacent commercially-zoned (C-3) parcels. See VDOT Comment Response 13 in Attachment A.

Comment 7: Per an earlier comment by VDOT it does not appear that methodology used to distribute and assign traffic from I-95 is completely accurate. Traffic may be under-assigned and project impacts understated at critical ramp intersections.

Response: The pass-by and diverted link methodology and assignments have been revised per discussions with VDOT. See VDOT Comment Response 17a and 17b (Attachment A).

Comment 8: On February 25th VDOT issued a memorandum saying they could not approve the raceway's request for an entrance into their site 280' from the Interstate 95 ramp without more specific information from the developer. How is this issue being addressed?

Response: VDOT has indicated that "while we are not able to grant an excpetion based on our review of the traffic impact study, and the comments in this letter (refers to AM-2 letter), we are willing to continue discussion and will make full consideration of your request as we move forward."

The Applicant is continuing to work with VDOT on this issue. No final resolution has been made at this time.

<u>Comments from March 20, 2013 Email</u>

Email Comment 1: Although the NB Ramp would operate well during all time periods the same is not true for the left turn movement at the SB Ramp. Delays for left turning vehicles would range anywhere from 2-5 minutes or more. (Full-Build-Out conditions)

Response: The Applicant proposes to extend the SB Ramp left-turn lane and post a bond for traffic signalization, all as defined in the Applicant's Draft Tranportation Proffers (Attachment C).

Email Comment 2: Although the developers consultant shows that two designs, the Single Point Urban Interchange (SPUI) and the Loop Design significantly improves the operation the developer is not proffering this design improvement.

Response: These analyses and interchange concepts were evaluated at VDOT's request; however, the revised analyses contained herein no longer incorporate these potential future conceptual interchanges.

Email Comment 3: The eastbound left turn into Dominion Raceway operates at an acceptable level-of service because opposing traffic volume is low. If there is significant development in the future on Mudd Tavern Road/Stonewall Jackson Road in Caroline County the increase in traffic from the westbound approach could have an adverse effect on the overall LoS at the Raceway Site Entrance & Mudd Tavern Road intersection.

Response: The Applicant has prepared a Performance Envelope Chart for the proposed eastbound Mudd Tavern Road left-turn lane at the site entrance specifically to address this concern (see Attachment J). As noted in the Applicant's Draft Transportation Proffers (Attachment C), the Applicant intends to cooperate with the closure of the left-turn in (if and when it becomes necessary) and its replacement with a suitable transportation alternative to provide access to the site if said left-turn movement is deemed to be operating unacceptably because of the Dominion Raceway's site traffic (solely).

Email Comment 4: The developer needs to submit a VDOT/County approved "special event traffic control plan" to accommodate Saturday traffic or develop some other method to address the Saturday traffic problem.

Response: Please refer to the Comment Response 4 above.

END

Attachment C

DRAFT Dominion Raceway Transportation Proffers

ATTACHMENT C

DRAFT TRANSPORTATION PROFFERS FOR DOMINION RACEWAY

III. Transportation.

A. Capacity Improvements – Applicant agrees to construct, at its sole cost and expense, the following transportation improvements prior to the issuance of the first occupancy permit for the construction of improvements on the Property:

(1) Right-turn lane and left-turn lane improvements along Route 606 (Mudd Tavern Road), including storage and/or tapers and pavement transitions at the proposed Dominion Raceway entrance, as generally shown on the GDP.

(2) Traffic signalization at the Route 606 (Mudd Tavern Road)/I-95 Northbound Ramps intersection as generally shown on the GDP.

(3) Turn lane improvement along the I-95 Southbound Off-Ramp (to Route 606, Mudd Tavern Rd.) consisting of a 200' extension of the existing left-turn lane storage length with a reconstructed taper with dimensions that meet current VDOT Road and Bridge Standards.

(4) Prior to the issuance of a VDOT permit for Applicant's commercial entrance to the Property, the Applicant agrees to bond-off the cost to design and construct traffic signalization at the Route 606 (Mudd Tavern Road)/I-95 Southbound Ramps intersection. The aforesaid signalization will be constructed by the Applicant subject to the following conditions being met:

(a) Approval by VDOT of a traffic signal warrant analysis (to be prepared by the Applicant) for traffic conditions under normal operating conditions which do not require a Traffic Control Plan per Section III D (below);

(b) Signalization is warranted due to Applicant's use of the Property; and,

(c) Applicant's Traffic Control Plan, as defined below under Section III D, fails to satisfy the Performance Measures defined thereunder.

B. Design of Alternative Plan – Within 12 months of receipt of final rezoning approval (plus any applicable appeal periods) for the Dominion Raceway

and provided that the County or VDOT has not already initiated the design of same, the Applicant will prepare and complete a 30% design plan suitable for submission to the County for a roundabout or equivalent intersection type or alternative entrance on Mudd Tavern Road (Route 606) approximately 300' – 600' east of the Property's proposed entrance to Mudd Tavern Road (or at an alternate distance acceptable to the County and VDOT) that shall be of sufficient design to allow for eastbound-to-westbound U-turn movements by a WB-67 design vehicle and for the provision of future access to adjacent, developable parcels along the north and/or south side(s) of Mudd Tavern Road (all of the aforesaid being the "Alternative Plan").

C. Cure of Inadequate Left-Turn Storage on Mudd Tavern Road at Site Entrance – In the event that the Applicant's race event or other entertainment uses of the Property causes observed and measured queues (as defined further below under Subsection III C (3)) to repeatedly exceed the storage length of the proposed eastbound left turn lane at the Property's Mudd Tavern Road entrance as shown on the GDP, such that eastbound through traffic on Mudd Tavern Road is blocked when Applicant's Traffic Control Plan (as defined below) is not implemented, the Applicant will agree to terminate the left turn lane entrance on the Property and commence the process, at its sole cost and expense, in coordination with VDOT and the County, of developing and constructing an alternative access to the site per the Alternative Plan described herein, subject to the following:

(1) the Applicant will not be required to terminate the entrance as noted above if at the time of entrance failure there has been a commencement of improvements to the overall interchange, including without limitation any approved design and/or construction work, or the development of an alternative entrance to the Property; and

(2) the Applicant will be given a reasonable opportunity to cure any continued unacceptable queuing through the utilization of the attached traffic control plan entitled "Traffic Control Plan on Mudd Tavern Road", prepared by RMC Events Inc., and marked as Exhibit A ("Traffic Control Plan"), which plan is incorporated herein by this reference, or other alternative measures that provide reasonable control to traffic movement and queuing, subject to VDOT and County review and approval.

(3) Measured queues shall be defined as 95th percentile queues as modeled in Synchro 8.0 software using updated turning movement counts conducted at the Site Entrance under typical peak hour

conditions during which excessive queuing was observed to take place.

D. Traffic Control Plan – For purposes of above Section III C., the Applicant will implement in partial or in full (as noted below), as reasonably necessary, the Traffic Control Plan for all race or other events on the Property that reasonably anticipate exceeding the following thresholds, and subject to VDOT/County filing requirements and coordination with County Sheriff's as discussed further below:

(1) 2,000 or more persons in attendance for any said event during the first year of operation: full implementation of Mudd Tavern Road element of Traffic Control Plan (only) up to 4,000 attendees, and implementation of Mudd Tavern and on-site elements of plan for attendance of 4,000 or more persons, and;

(2) During subsequent years of operation:

(a) 2,000 – 4,000 persons in attendance: partial implementation of Mudd Tavern Road portion (only) of Traffic Control Plan (1-2 officers only, or 2-4 officers if adjacent parcels (TP 63-A-62, 63-A-63, 63-((5))-E) and Applicant's commercial elements have been fully built-out as evaluated using Institute of Transportation Engineers *Trip Generation* potential as it compares to Tables 4.A, 4.B, and/or 4.C of the Applicant's TIA and if traffic signalization has not already been installed at the I-95 Southbound Ramp/Mudd Tavern Road intersection.

(b) 4,000 or more persons in attendance for any said event: full implementation of Traffic Control Plan;

(3) The Applicant will file an updated Traffic Control Plan that is acceptable to the County and VDOT no less than once per year, or upon completion of any major transportation improvements that lie within the limits of the roadway network covered by the current Traffic Control Plan, subject to said improvements warranting the need for an updated Traffic Control Plan as determined by VDOT and/or the County.

(4) The Applicant further agrees it will coordinate with the Sheriff's Office and other applicable County departments for any Traffic Control Plan requirements noted above, and will pay all expenses directly relating to the same, as

approved by both the Applicant and Sheriff's Office or other applicable county office.

(5) When deployed, Applicant's Traffic Control Plan shall provide traffic operations which meet Performance Measures defined below for traffic operations under typical, non-incident conditions:

(a) Queuing of traffic on the I-95 Northbound and Southbound Off-Ramps shall not extend beyond a point at which traffic exiting from I-95 onto said Off-Ramps no longer has sufficient stopping distance as defined by the current edition of the American Association of State and Highway Transportation Officials (AASHTO) "Green Book."

(b) Queuing of vehicles along eastbound Mudd Tavern Road shall not extend to U.S. Route 1

E. Development of Commercial Out Parcels: The out parcels of the Property described under Phase 1A below may be developed upon completion of Transportation Improvements described in Phase I below. The out parcels of the Property describe under Phase 2 below will be developed (other than the development of infrastructure or accessory uses for Parcel A) only after an updated traffic study acceptable to VDOT and the County is completed and shows that increased traffic to the Property will be accommodated at the Property's entrance on Mudd Tavern Road and at the Thornburg Interchange, except in the event the Alternative Plan or overall interchange improvements are completed as provided above, then the Applicant may proceed with the development of Phase 2 as defined below.

IV. Phasing of Development. Applicant agrees to develop the project in the following phases:

PROFFERED PHASING AND TIMING OF CONTRIBUTIONS AND DEDICATIONS	
Phase or Contribution/Dedication	**Timing**
PHASE 1: All three racetracks and courses, and other improvements shown on Parcels A & B of GDP & improvements shown across ROW easement to Mudd Tavern Road	Estimated completion of 2014
PHASE 1: Transportation Improvements described above under Section III of this proffer statement	Estimated completion of 2014

PHASE 1A: Completion of commercial uses on Parcel B with maximum peak hour trips not to exceed those listed in the "Total Commercial Trips at Site Driveway" in Table 4A of the Applicant's TIA.	Estimated 2014-2015
PHASE 2: Completion of remaining commercial uses on Parcel B and commercial uses for Parcel C. Applicant will not develop remaining commercial uses for Parcels B & C beyond the aforementioned peak hour trip level listed in the "Total Commercial Trips at Site Driveway" of Table 4A of the Applicant's TIA (which is attached hereto and marked as Exhibit B), unless and except the Applicant can demonstrate to the County and VDOT through updated TIA there is adequate transportation capacity for said additional improvements as provided hereunder. Notwithstanding the foregoing, Applicant may utilize and construct improvements on Parcels B & C for accessory uses, including without limitation auto storage facilities for uses related to activities on Parcel A.	Estimated 2017-18

[Sections IV through VII Omitted on Purpose]

VIII. **Oval Racing Events**: The Applicant agrees that there will be no more than two (2) NASCAR sanctioned oval racing events per year during the weekdays of Monday through Thursday. Notwithstanding the foregoing, the Applicant may operate on the oval track during any day of the week the following (including without limitation, except as noted above): driver practicing activities, course events, driver training activities or contractor obligations, or any accessory or related use on said track.

Attachment D

Special Event Traffic Control Plan

RMC Events, Inc.

DCJS 11-3291

Blacksburg Office
1901 South Main St., Suite 4A
Blacksburg, Virginia 24060
Phone: 540.552.7621
Fax: 540.552.7624

Richmond Office
4821 Bethlehem Road
Richmond, Virginia 23230
Phone: 804.353.7621
Fax: 804.353.7626

Charlottesville Office
1924 Arlington Blvd. Suite 201
Charlottesville, Virginia 22903
Phone: 434.984.7622
Fax: 434.984.2689

TRAFFIC CONTROL PLAN ON MUDD TAVERN ROAD

RMC Events previously provided information related to parking management internal to the proposed Dominion Raceway Project in Spotsylvania County, which is attached. We have further been asked to discuss the level of law enforcement support required to minimize traffic impact on Mudd Tavern Road and Interstate 95 for events attracting more than 4,000 visitors to the site.

The following are assumptions that were made to respond to this inquiry:

- Average of 2.5 passengers per vehicle
- No separate charge for parking is collected
- The on-site parking staff deployment plan is followed as outlined on the attachments
- There are no improvements or modifications to the existing traffic pattern or infrastructure
- A concert beginning at 7:00 pm and ending at 10:00 pm was used for planning purposes

Given the above, our current estimate would call for a minimum of four (4) law enforcement officers deployed to the following locations leading up to an event:

- Two officers controlling flow of east & westbound traffic at the southbound exit of I-95 onto Mudd Tavern Road
- One officer controlling flow of east & westbound traffic at the northbound exit of I-95 onto Mudd Tavern Road
- One officer controlling traffic at the intersection of Dominion Raceway Avenue with Mudd Tavern Road

At the end of the event, the minimum number of officers remains four (4) but needs to deployed as follows:

- One officer controlling flow of east & westbound traffic at the southbound exit of I-95 onto Mudd Tavern Road
- One officer controlling flow of east & westbound traffic at the northbound exit of I-95 onto Mudd Tavern Road
- Two officers controlling traffic at the intersection of Dominion Raceway Avenue with Mudd Tavern Road

The officers need to arrive at the speedway by 5:00 pm to review any coordination issues with facility management and parking supervisors. Officers should be at the designated locations beginning at 5:30 pm and depending on concert line up, will need to remain at above locations until at least 7:30 pm. Once the concert is underway, there should be minimal impact to the normal traffic flow along Mudd Tavern Road.

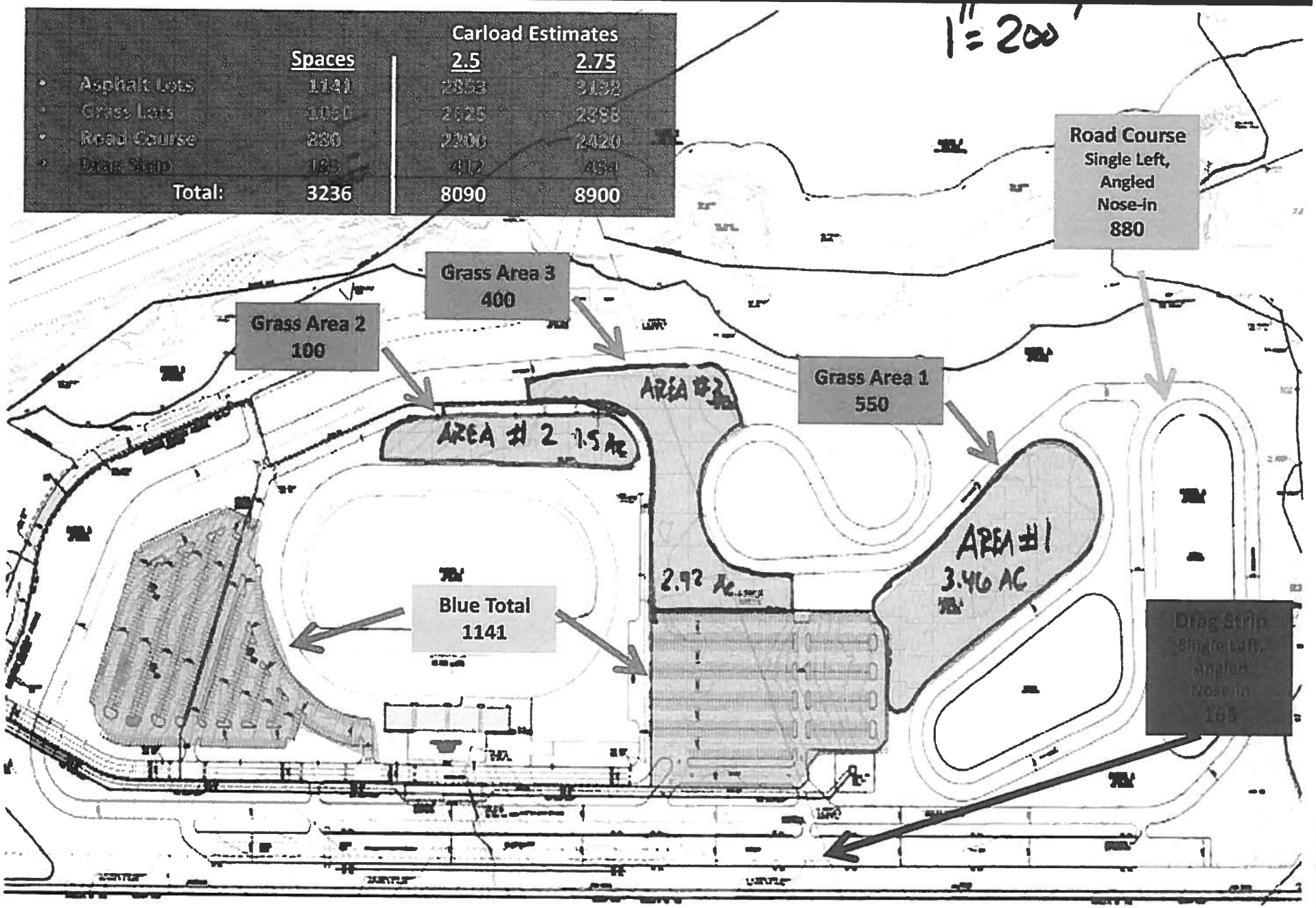
The officers should redeploy by 9:45 pm in anticipation of the completion of the concert and the expected surge in departure from the speedway complex. By 11:00 pm, all significant traffic should have left the property and thus there should be no further need for the law enforcement staff deployed for traffic management purposes.

The above deployment level would be the minimum level adequate to handle traffic for all events between 4,000 and the 8,100 attendees parking on site assuming 2.5 passengers per vehicle and the parking staff deployment that would be scaled according to the previously provided plan. Hours may need to be adjusted to allow for the longer in-out time that may occur, as the attendance level increases.

This plan may need modification based upon experience, addition of manual signaling capability, and to reflect any other improvements or modifications to the interchange.

Parking Allocation Overhead

	Spaces	Carload Estimates 2.5	2.75
• Asphalt Lots	1141	2853	3132
• Grass Lots	1050	2625	2888
• Road Course	880	2200	2420
• Drag Strip	165	412	454
Total:	3236	8090	8900



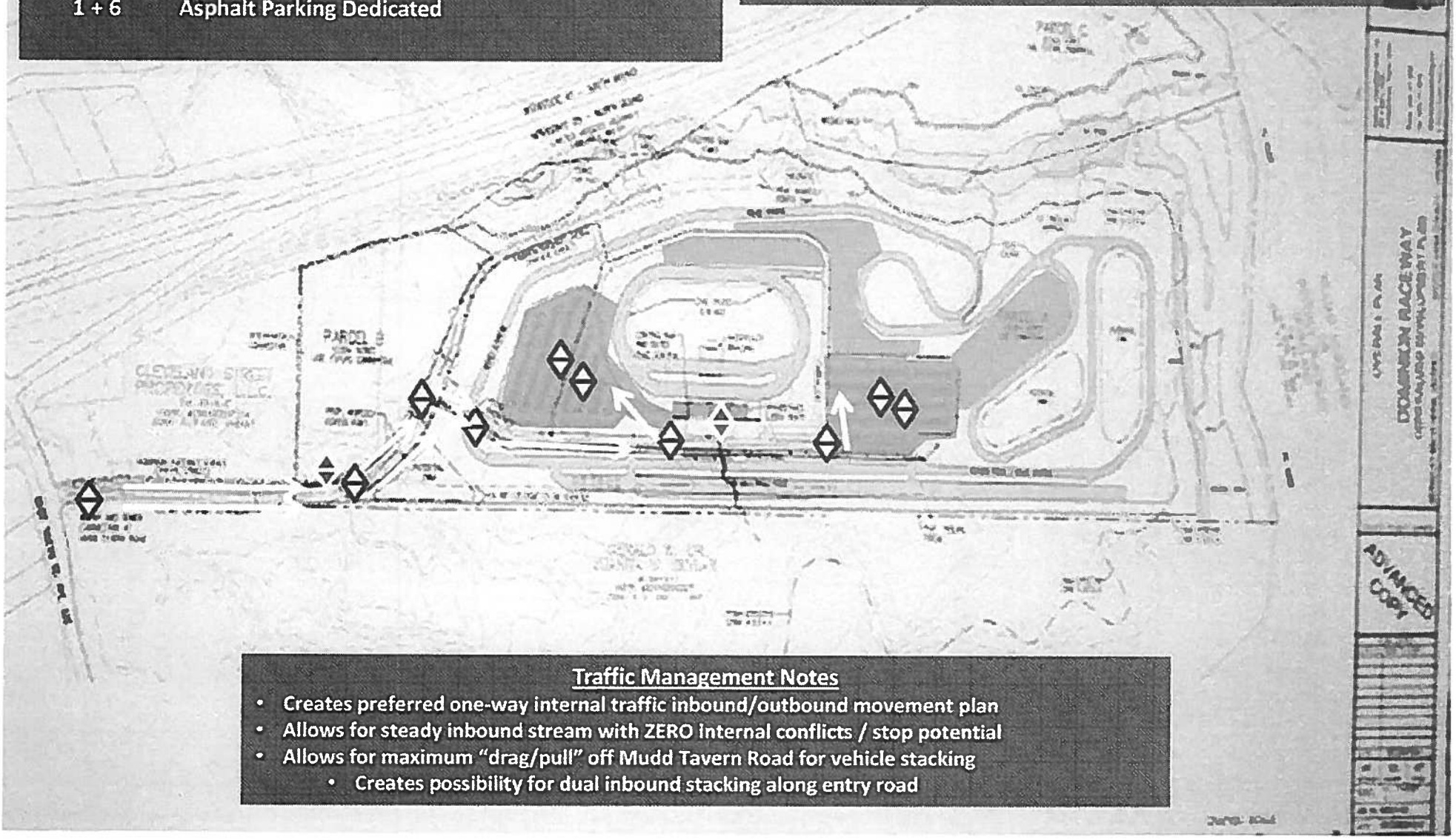
Sample Deployment and Lot Allocation Strategy (1 thru 3000 guests)

◆	Parking Supervisor
◆	Parking Staff Member
1 + 4	Entry Road and Access Directional
1 + 6	Asphalt Parking Dedicated

Estimate Event Day Cost Format

Assumes Saturday Night Event – Staff 5p – 11p (6 hours)

1 + 4	Entry Road and Access Directional	465.00
1 + 6	Asphalt Parking Dedicated	645.00



Traffic Management Notes

- Creates preferred one-way internal traffic inbound/outbound movement plan
- Allows for steady inbound stream with ZERO internal conflicts / stop potential
- Allows for maximum "drag/pull" off Mudd Tavern Road for vehicle stacking
  - Creates possibility for dual inbound stacking along entry road

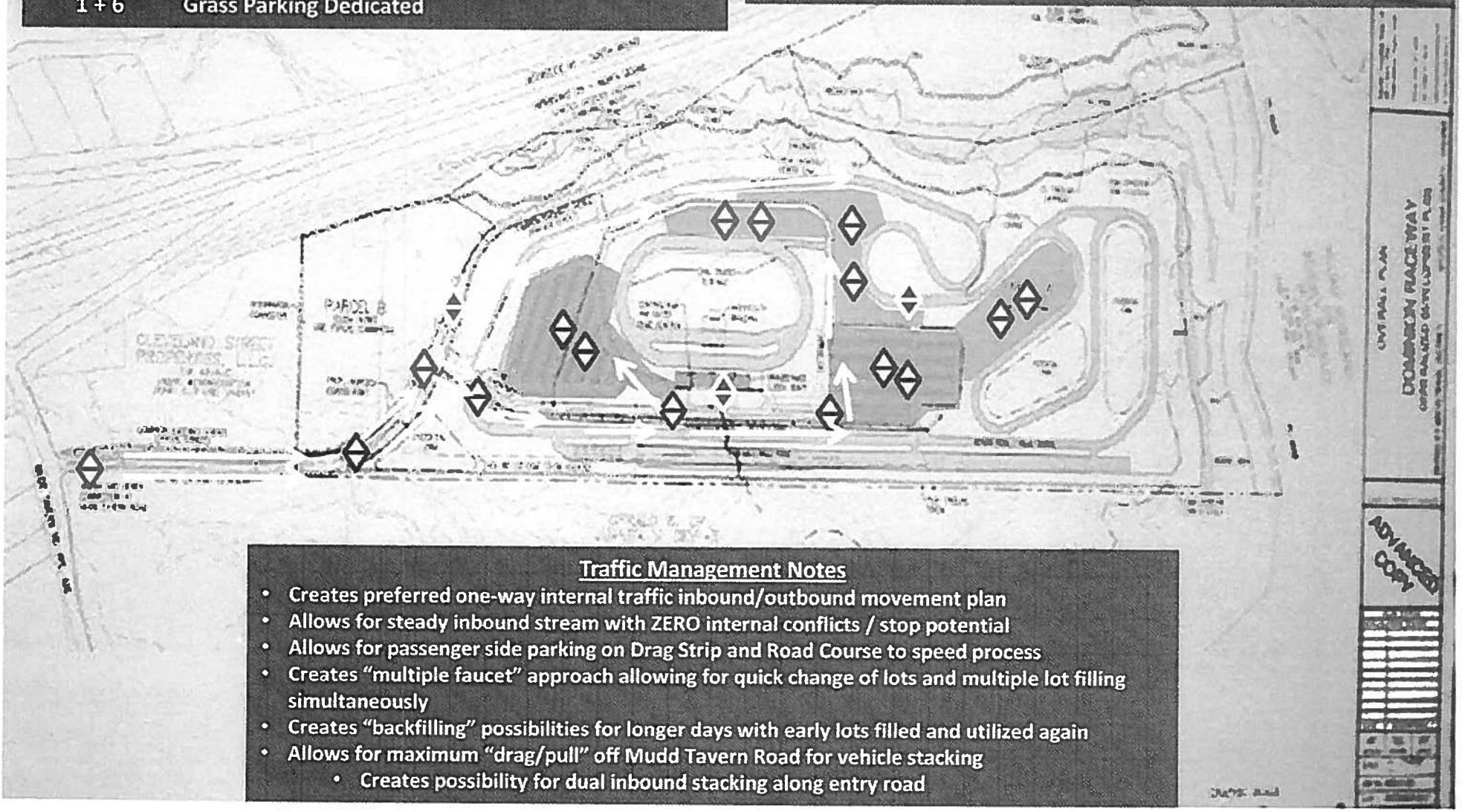
Sample Deployment and Lot Allocation Strategy (3001 – 6000 guests)

◆	Parking Supervisor
◆	Parking Staff Member
1 + 4	Entry Road and Access Directional
1 + 6	Asphalt Parking Dedicated
1 + 6	Grass Parking Dedicated

Estimate Event Day Cost Format

Assumes Saturday Night Event – Staff 5p – 11p (6 hours)

1 + 4	Entry Road and Access Directional	465.00
1 + 6	Asphalt Parking Dedicated	645.00
1 + 6	Grass Parking Dedicated	645.00



Traffic Management Notes

- Creates preferred one-way internal traffic inbound/outbound movement plan
- Allows for steady inbound stream with ZERO internal conflicts / stop potential
- Allows for passenger side parking on Drag Strip and Road Course to speed process
- Creates "multiple faucet" approach allowing for quick change of lots and multiple lot filling simultaneously
- Creates "backfilling" possibilities for longer days with early lots filled and utilized again
- Allows for maximum "drag/pull" off Mudd Tavern Road for vehicle stacking
  - Creates possibility for dual inbound stacking along entry road

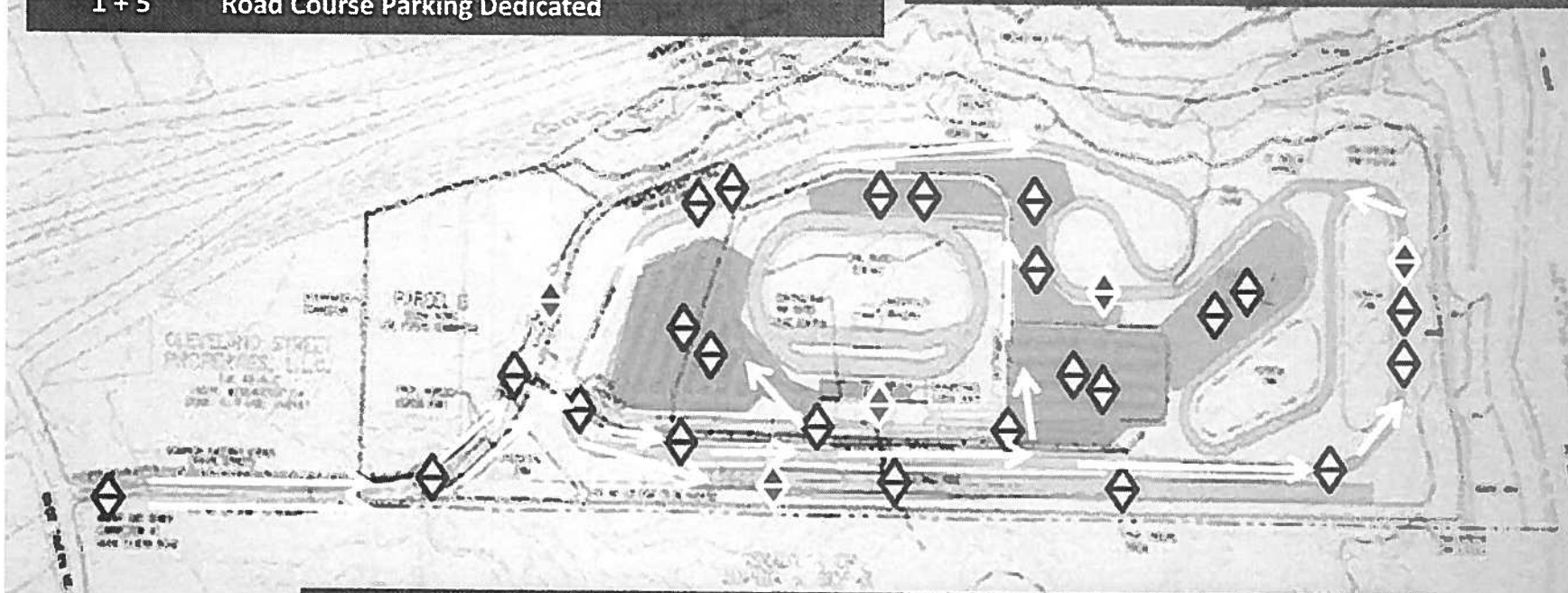
Sample Deployment and Lot Allocation Strategy (6001 – 9000 guests)

◇	Parking Supervisor
◇	Parking Staff Member
1 + 4	Entry Road and Access Directional
1 + 6	Asphalt Parking Dedicated
1 + 6	Grass Parking Dedicated
1 + 3	Drag Strip Parking Dedicated
1 + 5	Road Course Parking Dedicated

Estimate Event Day Cost Format

Assumes Saturday Night Event – Staff 5p – 11p (6 hours)

1 + 4	Entry Road and Access Directional	465.00
1 + 6	Asphalt Parking Dedicated	645.00
1 + 6	Grass Parking Dedicated	645.00
1 + 3	Drag Strip Parking Dedicated	375.00
1 + 5	Road Course Parking Dedicated	555.00



Traffic Management Notes

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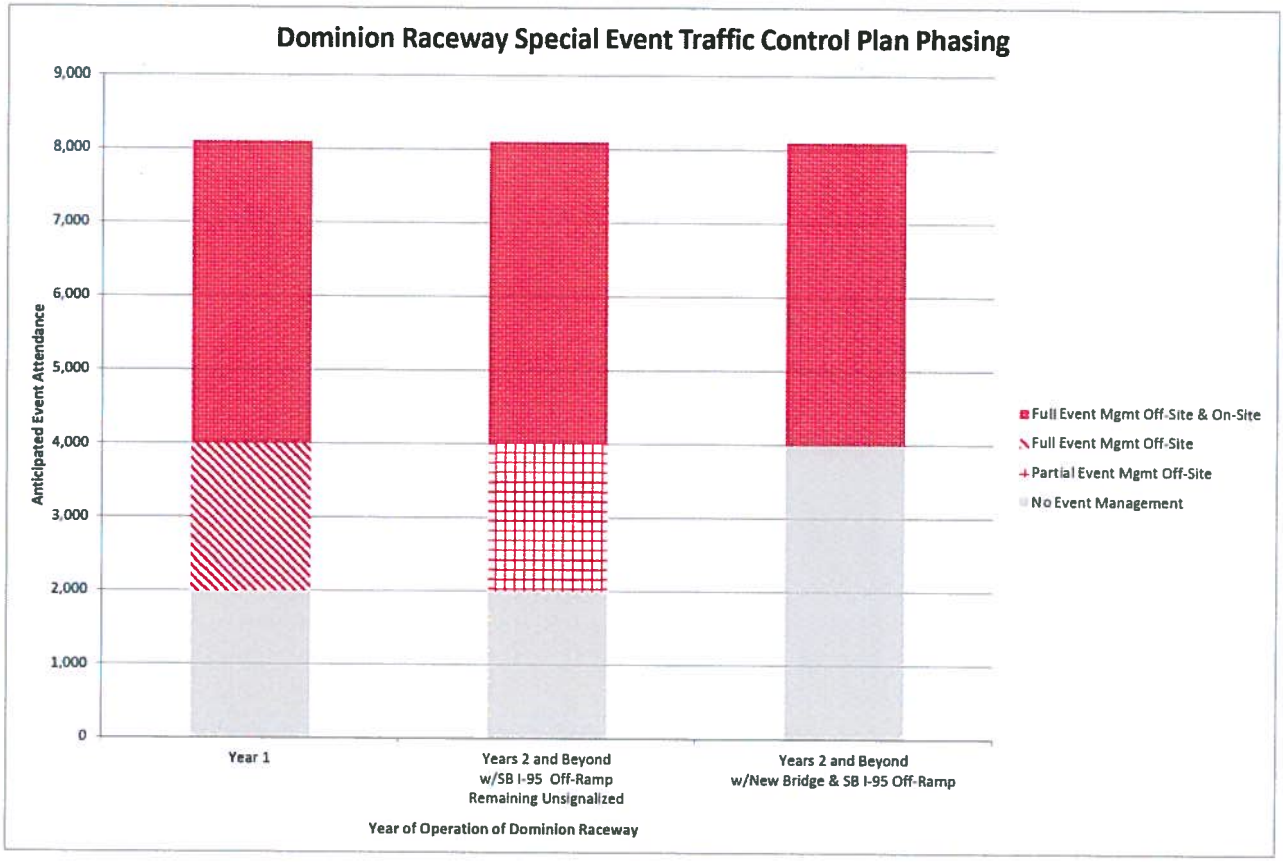
- Creates "multiple faucet" approach allowing for quick change of lots and multiple lot filling simultaneously
- Creates "backfilling" possibilities for longer days with early lots filled and utilized again
- Allows for maximum "drag/pull" off Mudd Tavern Road for vehicle stacking
  - Creates possibility for dual inbound stacking along entry road

Special Event Management - Traffic Control Plan Phasing

Period	Event Attendee Thresholds			
	No Event Management	Partial Event Mgmt Off-Site	Full Event Mgmt Off-Site	Full Event Mgmt Off-Site & On-Site
Year 1	2,000	0	2,000	4,100
Years 2 and Beyond w/SB I-95 Off-Ramp Remaining Unsignalized	2,000	2,000	0	4,100
Years 2 and Beyond w/New Bridge & SB I-95 Off-Ramp	4,000	0	0	4,100



Attachment E

Dominion Raceway

Projected Annual Event Program Data

EXHIBIT A
OVERVIEW OF PROJECT & USES

OVERVIEW:

- Race schedule typically runs from March to October each year
- The three (3) major race venues will be NASCAR oval racing, drag and road racing events.
- Other different types of events include Club, "Bug Out", Concerts, Fairs/Festivals, and corporate events that would have less intensive attendance and arrival characteristics. Other events could include bingo night, drive-in movie night, collector car auctions, etc. (much lower attendance).
- Existing fans and racers base will mainly draw 60% from south (including small portion from west), 20% from the north on I-95, and 20% from the north (Maryland) via 301.
- Each event will provide onsite limited food and beverage services.
- Road racers and crew members will have the benefit of overnight stay, which is customary for race events. This allows for efficient race and safety preparations.
- Race uses will also include the construction of a multi-purpose indoor event space, and support facilities and accessories uses customary for race events.

DRAG STRIP RACES:

- Typically occurs on weekend (Friday or Saturday) night during the race season
- Does include some special events on Sunday and end of the year finals (typically Thursday thru Sunday events only once per year)
- Maximum of 600-800 attendance. Average of 400 persons per event.
- Typically 100-150 racers.
- Typically races occur from 7:00 pm to 11:00 pm

ROAD COURSE EVENTS:

- Occurs typically during the weekday and some weekends (10:00AM - 5:00PM)
- For road clubs, corporate groups, law enforcement and government contractor training, etc. and does not draw many fans
- Could be up to 250 racers

NASCAR EVENTS:

- Typically occurs on Saturday nights during race season (or Sunday as a rain or other bad-weather make-up date)
- Most events would draw around 1,500 persons with 2 or 3 sell out events (3,500) per year

- Gates open for racers at 10:00 AM. Racers arrive between 10:00 AM and 2:00 PM to allow time to obtain fuel, tires, etc. Typically 100-150 teams with at least one additional support vehicle per team.
- Racers will park in infield of track (or pits).
- 45-50 employees for each event
- Races start at 7:00. 5-6 race divisions throughout the night.
- Fans typically arrive between 7:00 and 8:00 PM and most come only in time for the race division they want to see. Fans are more likely to stay to the end of all races than they are at drag strip events.
- End times for races can vary from 9:00PM – 11:00PM
- Race teams stay to clean up and leave after all fans are gone.

CONCERTS/FESTIVALS:

- Could occur on any day of the week from April to October
- Potentially will draw approximately 3,500 persons (concerts); this would likely be largest-attendance event
- Rate of occurrence for this type of event is likely 7-10 times a year
- Approximately 70 employees per event will be required for each event.
- Operation times 4:00 PM to 11:00 PM

DRIVE-IN MOVIE EVENTS:

- Could occur on any day of the week during the season or post/pre season
- Rate of occurrence for this type of event is likely 2-3 times a year during concert season.
- Approximately 25 employees will be required for each event.
- Operation times 6:00 PM to 11:00 PM, depending on schedule.

VARIETY OF COMMERCIAL USES:

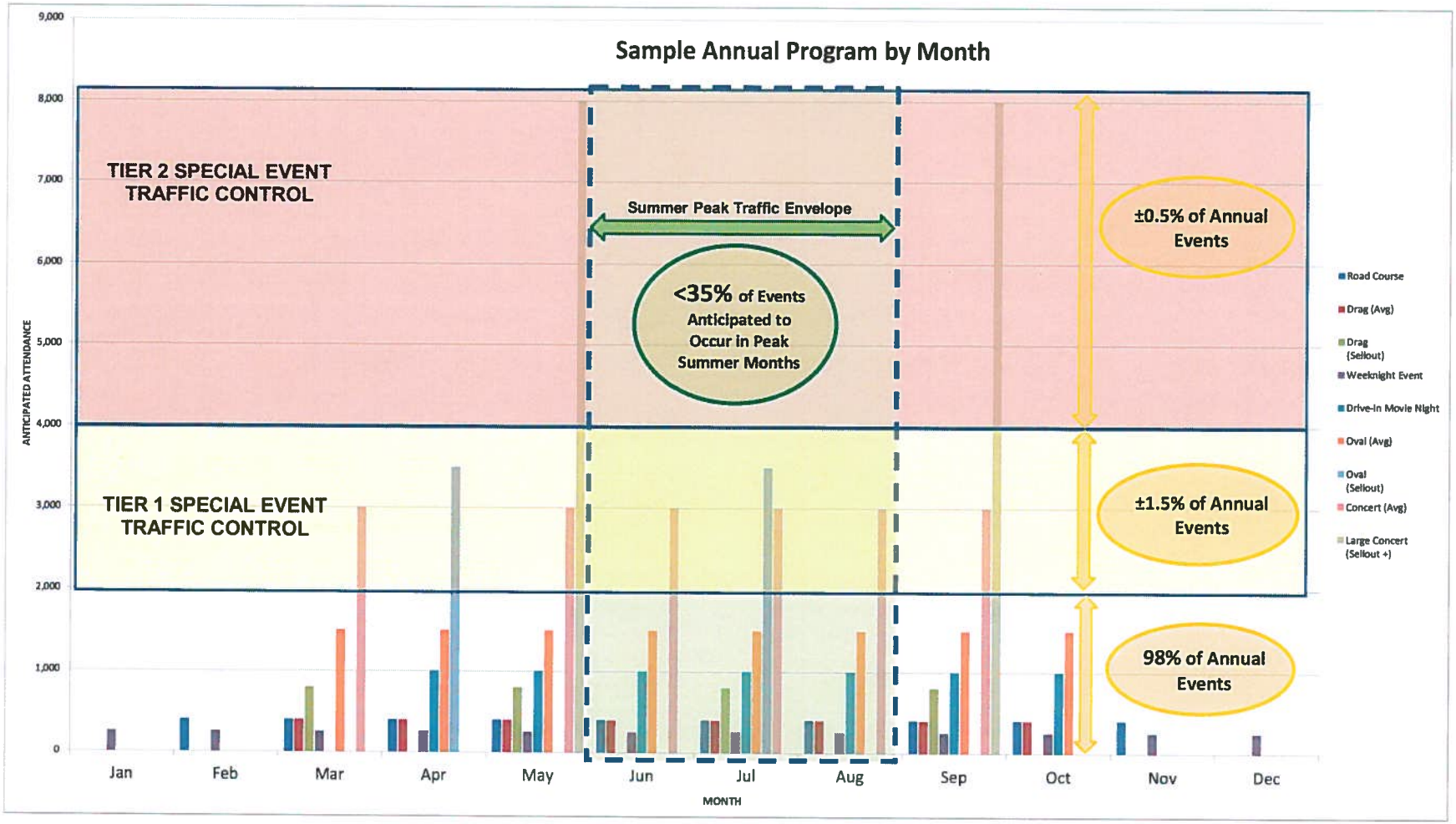
- Retail and restaurants
- Commercial office
- Other as authorized under C-3 zoning district, except as otherwise proffered-out

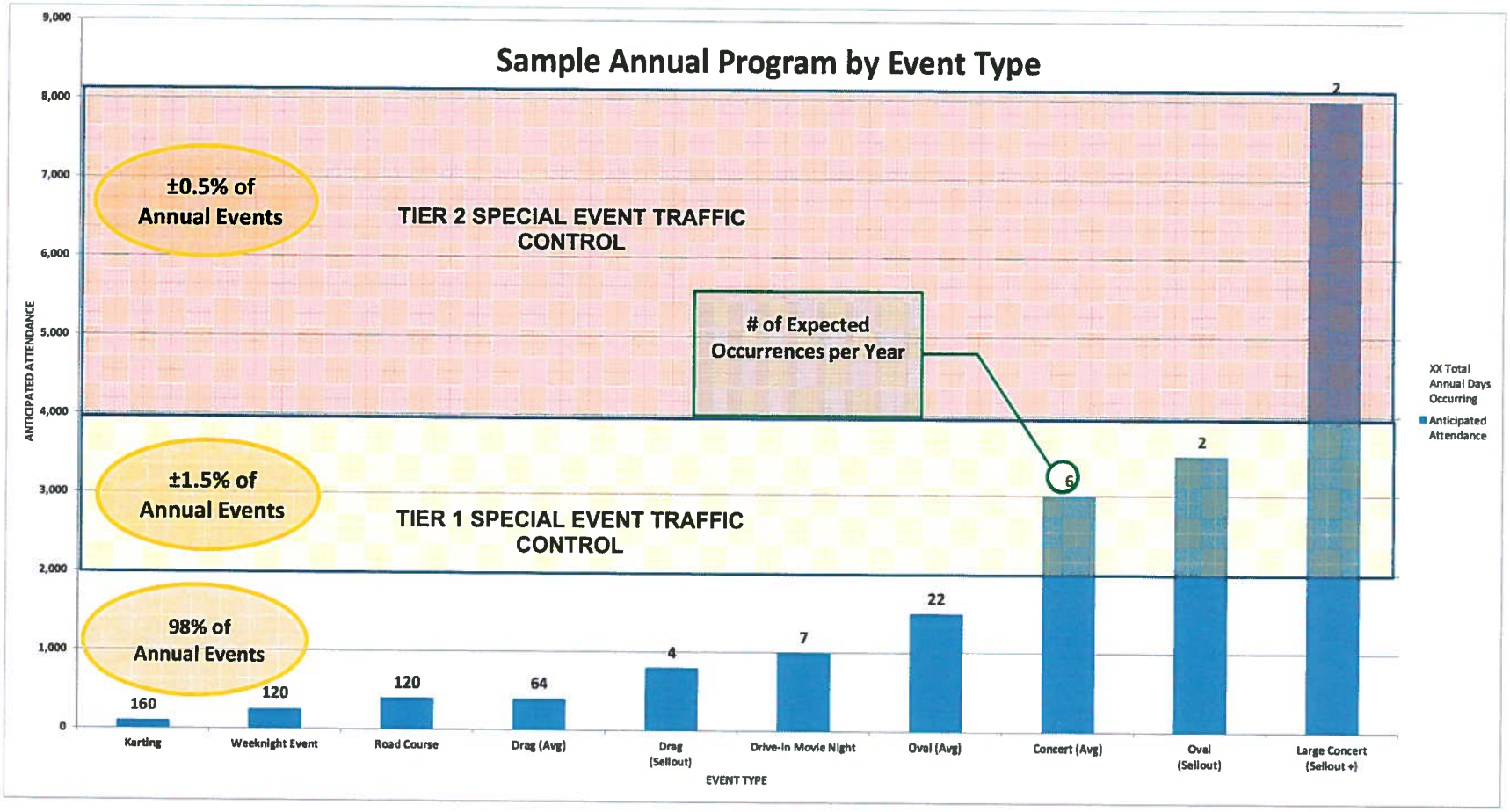
Sample Annual Dominion Raceway Event Program Schedule (non-binding, for informational purposes only)

	Event Type	Anticipated Attendance	XX Total Annual Days Occurring	Special Event Management Tier: None	Tier 1 (2,000 - 4,000)	Tier 2 (4,000+)	Jan # events	Feb # event-days	Mar # event-days	Apr # event-days	May # event-days	Jun # event-days	Jul # event-days	Aug # event-days	Sep # event-days	Oct # event-days	Nov # event-days	Dec # event-days
No Special Event Management	Karting	100	160	160						100 20	100 20	100 20	100 20	100 20	100 20	100 20	100 20	
	Weeknight Event	250	120	120			250 10	250 10	250 10	250 10	250 10	250 10	250 10	250 10	250 10	250 10	250 10	250 10
	Road Course	400	120	120				400 12	400 12	400 12	400 14	400 12	400 12	400 12	400 12	400 12	400 10	
	Drag (Avg)	400	64	64					400 8	400 8	400 8	400 8	400 8	400 8	400 8	400 8		
	Drag (Sellout)	800	4	4					800 1		800 1		800 1		800 1			
	Drive-in Movie Night	1,000	7	7						1,000 1	1,000 1	1,000 1	1,000 1	1,000 1	1,000 1	1,000 1		
	Oval (Avg)	1,500	22	22					1,500 3	1,500 2	1,500 3	1,500 3	1,500 2	1,500 3	1,500 3	1,500 3		
Tier 1 TCP	Concert (Avg)	3,000	6		6				3,000 1		3,000 1	3,000 1	3,000 1	3,000 1	3,000 1			
	Oval (Sellout)	3,500	2		2					3,500 1			3,500 1					
Tier 2 TCP	Large Concert (Sellout +)	8,000	2			2					8,000 1				8,000 1			
		Total	107	497	8	2	Monthy Subtotal	Monthy Subtotal	Monthy Subtotal	Monthy Subtotal	Monthy Subtotal	Monthy Subtotal	Monthly Subtotal	Monthy Subtotal	Monthy Subtotal	Monthy Subtotal	Monthy Subtotal	Monthy Subtotal
				98.0%	1.6%	0.4%	10	22	35	54	59	55	56	55	57	54	40	10

Total Events: 507

Summer Subtotal (June + July + Aug)
166 Events
33% of Annual Total


Sample Annual Program by Month
TIER 2 SPECIAL EVENT TRAFFIC CONTROL
TIER 1 SPECIAL EVENT TRAFFIC CONTROL
Summer Peak Traffic Envelope
<35% of Events Anticipated to Occur in Peak Summer Months
±0.5% of Annual Events
±1.5% of Annual Events
98% of Annual Events
ANTICIPATED ATTENDANCE
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
MONTH
Road Course
Drag (Avg)
Drag (Sellout)
Weeknight Event
Drive-In Movie Night
Oval (Avg)
Oval (Sellout)
Concert (Avg)
Large Concert (Sellout +)


Sample Annual Program by Event Type
±0.5% of Annual Events
TIER 2 SPECIAL EVENT TRAFFIC CONTROL
# of Expected Occurrences per Year
±1.5% of Annual Events
TIER 1 SPECIAL EVENT TRAFFIC CONTROL
98% of Annual Events
ANTICIPATED ATTENDANCE
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
160
120
120
64
4
7
22
6
2
2
Karting
Weeknight Event
Road Course
Drag (Avg)
Drag (Sellout)
Drive-In Movie Night
Oval (Avg)
Concert (Avg)
Oval (Sellout)
Large Concert (Sellout +)
EVENT TYPE
XX Total Annual Days Occurring
Anticipated Attendance

Attachment F

Trip Generation Tables:

Table 4A (Revised Dominion Raceway Trips w/Avg. Sat. Oval Track Attendance (1,500))

&

Table 4B (Revised Dominion Raceway Trips w/Sellout Sat. Oval Track Attendance (3,500))

&

Table 4C Adjacent C-3 By-Right Commercial (By Others)

Table 4 A
Dominion Raceway
Site-Trip Generation Analysis[1]

Land Use	Size	Units	Land Use Code	Average Vehicle Occupancy Weekday	Average Vehicle Occupancy Weekend	Typical Weekday (Tuesday, Wednesday, Thursday) PEAK ANALYSIS HOURS AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Trips	Friday Event PEAK ANALYSIS HOUR 5:00-6:00 PM[3] In	Out	Total	For Info Only 6:00-7:00 PM[4] In	Out	Total	For Info Only 7:00-8:00 PM[4] In	Out	Total	Average Daily Trips	Saturday Event Lunch[5] 12:00-1:00 PM In	Out	Total	For Info Only 4:00-5:00 PM[6] In	Out	Total	For Info Only 5:00-6:00 PM[6] In	Out	Total	PEAK ANALYSIS HOUR 6:00-7:00 PM[6] In	Out	Total	For Info Only 7:00-8:00 PM[6] In	Out	Total	Average Daily Trips
Proposed Commercial Development[2]																																								
"Convenience Commercial"																																								
Automobile Parts Sales[18]	8,000 S.F.		843	-	-	9	9	18	24	24	48	495	24	24	48	21	21	42	15	15	30	495	24	24	48	18	17	35	14	14	28	15	14	29	12	11	23	495
High-Turnover Restaurant (2)	12,000 S.F.		932	-	-	72	66	138	79	55	134	1,526	79	55	134	71	49	120	50	35	85	1,526	90	79	169	80	55	135	63	43	106	67	46	113	52	36	88	1,900
Fast-Food Restaurant with Drive-Through	3,500 S.F.		934	-	-	88	85	173	61	57	118	1,736	61	57	118	55	51	106	39	36	75	1,736	106	102	208	94	86	180	73	68	141	78	72	150	61	56	117	2,527
Total "Convenience Commercial" Trips						169	160	329	164	136	300	3,757	164	136	300	147	121	268	104	86	190	3,757	220	205	425	192	158	350	150	125	275	160	132	292	125	103	228	4,922
Diverted Link Trips[18]																																								
Automobile Part Sales	43%					(4)	(4)	(8)	(10)	(10)	(20)	(213)	(10)	(10)	(20)	(9)	(9)	(18)	(6)	(6)	(12)	(213)	(10)	(10)	(20)	(8)	(7)	(15)	(6)	(6)	(12)	(6)	(6)	(12)	(5)	(5)	(10)	(213)
High-Turnover Restaurant (2)	43%					(31)	(28)	(59)	(34)	(24)	(58)	(656)	(34)	(24)	(58)	(31)	(21)	(52)	(22)	(15)	(37)	(656)	(39)	(34)	(73)	(34)	(24)	(58)	(27)	(18)	(45)	(29)	(20)	(49)	(22)	(15)	(37)	(817)
Fast-Food Restaurant with Drive-Through	49%					(43)	(42)	(85)	(30)	(28)	(58)	(851)	(30)	(28)	(58)	(27)	(25)	(52)	(19)	(18)	(37)	(851)	(52)	(50)	(102)	(46)	(42)	(88)	(36)	(33)	(69)	(36)	(35)	(73)	(30)	(27)	(57)	(1,238)
Total Diverted Link Trips						(78)	(74)	(152)	(74)	(62)	(136)	(1,720)	(74)	(62)	(136)	(67)	(55)	(122)	(47)	(39)	(86)	(1,720)	(101)	(94)	(195)	(88)	(73)	(161)	(69)	(57)	(126)	(73)	(61)	(134)	(57)	(47)	(104)	(2,268)
Total Primary "Convenience Commercial" Trips						91	86	177	90	74	164	2,037	90	74	164	80	66	146	57	47	104	2,037	119	111	230	104	85	189	81	68	149	87	71	158	68	56	124	2,654
New Car Sales	30,000 S.F.		841	-	-	37	29	66	36	45	81	1,000	36	45	81	32	40	72	23	28	51	1,000	45	44	89	20	25	45	16	19	35	17	20	37	13	16	29	631
Total "New" Commercial Trips						128	115	243	126	119	245	3,037	126	119	245	112	106	218	80	75	155	3,037	164	155	319	124	110	234	97	87	184	104	91	195	81	72	153	3,285
Total Commercial Trips at Site Driveway						206	189	395	200	181	381	4,757	200	181	381	179	161	340	127	114	241	4,757	265	249	514	212	183	395	166	144	310	177	152	329	138	119	257	5,553
Proposed Raceway Complex																																								
Weeknight Event[7]																																								
Raceway Employees[16]	25 Employees			-	-				25	1	26	50																												
Patrons[10,17]	1,000 Patrons			2.75	3.00				18	1	19	727																												
Total Weeknight Special Event Trips									43	2	45	777																												
1/8th Mile Race Track Event[7]																																								
Raceway Employees[8]	25 Employees			-	-								25	1	26	0	0	0	0	0	0	50																		
Race Team Trips[9]	150 Teams			-	-								15	1	16	0	0	0	0	0	0	300																		
Patrons[10,11]	800 Patrons			2.75	3.00								0	0	0	145	7	152	146	7	153	582																		
Total 1/8th Mile Race Track Event Trips													40	2	42	145	7	152	146	7	153	932																		
0.4 Mile Oval Track Race Event[7]																																								
Raceway Employees[12]	50 Employees			-	-																		0	0	0	45	2	47	0	0	0	0	0	0	0	0	0	100		
Race Team Trips[13]	150 Teams			-	-																		75	4	79	0	0	0	0	0	0	0	0	0	0	0	0	600		
Patrons[10,14]	1,500 Patrons			2.75	3.00																		0	0	0	0	0	0	125	6	131	250	13	263	125	6	131	1,000		
Total 0.4 Mile Oval Track Race Event Trips																							75	4	79	45	2	47	125	6	131	250	13	263	125	6	131	1,700		
Road Course Event																																								
Raceway Employees[15]	10 Employees			-	-																								0	10	10							20		
Race Team Trips[15]	100 Teams			-	-																								0	100	100							200		
Patrons	0 Patrons			-	-																								0	0	0							0		
Total Road Course Event Trips																													0	110	110							220		
Total Raceway Complex Trips						0	0	0	43	2	45	777	40	2	42	145	7	152	146	7	153	932	75	4	79	45	2	47	125	116	241	250	13	263	125	6	131	1,920		
Total "New" Development Trips						128	115	243	169	121	290	3,814	166	121	287	257	113	370	226	82	308	3,969	239	159	398	169	112	281	222	203	425	354	104	458	206	78	284	5,205		
Total Development Trips at Site Driveway						206	189	395	243	183	426	5,534	240	183	423	324	168	492	273	121	394	5,689	340	253	593	257	185	442	291	260	551	427	165	592	263	125	388	7,473		

Notes. (1) Based on the Institute of Transportation Engineers Trip Generation, 8th Edition for "standard land uses". Trip generation for Raceway based on anticipated visitation profile and average vehicle occupancy (AVO) of similar uses.
(2) Development levels are assumed.
(3) For commercial uses (only), trips calculated from ITE peak hour of adjacent street data.
(4) For commercial uses (only), trips calculated from ITE peak hour of adjacent street data multiplied by percent of I-95 off ramp traffic in the hour vs. the peak hour of off ramp.
(5) For commercial uses (only), trips calculated from ITE peak hour of generator on Saturday.
(6) For commercial uses (only), trips calculated from ITE average daily traffic data multiplied by percent of daily I-95 off ramp traffic that occurs in the hour.
(7) Analysis scenario assumes highest expected attendance for 1/8th mile track race and Weeknight event, and average expected attendance for 0.4 mile oval track race. All outbound traffic from 1/8th mile track, 0.4 mile oval track, and Weeknight Events are calculated as 5% of the inbound.
(8) Assumes all employees arrive between 5:00 PM and 6:00 PM.
(9) Assumes 90% of race teams arrive before 5:00 PM and 10% arrive from 5:00 PM to 6:00 PM. Assumes 1 vehicle/race team.
(10) Assumes an Average Vehicle Occupancy (AVO) for patrons of 2.75 for weekday events and 3.00 for weekend events.
(11) Assumes 50% of patrons arrive from 6:00 to 7:00 PM and the remaining 50% arrive from 7:00 PM to 8:00 PM.
(12) Assumes10% arrive prior to the gates opening at 10:00 AM for race teams. Assumes remaining 90% arrive between 4:00 PM and 5:00 PM.
(13) Assumes race teams arrive between 10:00 AM and 2:00 PM at an average of 25%/hour. Assumes 2 vehicles/race team.
(14) Assumes 25% of patrons arrive from 5:00 to 6:00 PM, 50% arrive from 6:00 PM to 7:00 PM, and remaining 25% arrive from 7:00 PM to 8:00 PM.
(15) Assumes event is from 10:00 AM to 5:00 PM. Assumes all employees and race teams leave between 5:00 PM and 6:00 PM. Assumes no patrons.
(16) Assumes all employees arrive between 5:00 PM and 6:00 PM.
(17) Assumes 5% of patrons arrive during commuter peak hour. All others arrive outside of the commuter peak hour.
(18) Percentages to calculate the assumed diverted link trips were taken using ITE pass-by rates (in accordance with Chapter 527 guidelines) for the various types of commercial land uses. Pass-by rates were then applied entirely for use in computing diverted link trips based on assumption agreed upon with VDOT Fredericksburg District Traffic Engineering staff.
(19) Saturday peak hour trip generation not available for this land use in ITE. Saturday peak hour trips were assumed to be equal to weekday PM peak hour.

Table 4 B
Dominion Raceway
Site-Trip Generation Analysis[1]

Land Use	Size	Units	Land Use Code	Average Vehicle Occupancy Weekday	Average Vehicle Occupancy Weekend	Typical Weekday (Tuesday, Wednesday, Thursday) PEAK ANALYSIS HOURS AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Trips
Proposed Commercial Development[2]												
"Convenience Commercial"												
Automobile Parts Sales	8,000 S.F.		843	-	-	9	9	18	24	24	48	495
High-Turnover Restaurant (2)	12,000 S.F.		932	-	-	72	66	138	79	55	134	1,526
Fast-Food Restaurant with Drive-Through	3,500 S.F.		934	-	-	88	85	173	61	57	118	1,736
Total "Convenience Commercial" Trips						169	160	329	164	136	300	3,757
Diverted Link Trips[18]												
Automobile Part Sales[19]	43%					(4)	(4)	(8)	(10)	(10)	(20)	(213)
High-Turnover Restaurant (2)	43%					(31)	(28)	(59)	(34)	(24)	(58)	(656)
Fast-Food Restaurant with Drive-Through	49%					(43)	(42)	(85)	(30)	(28)	(58)	(851)
Total Diverted Link Trips						(78)	(74)	(152)	(74)	(62)	(136)	(1,720)
Total Primary "Convenience Commercial" Trips						91	86	177	90	74	164	2,037
New Car Sales	30,000 S.F.		841	-	-	37	29	66	36	45	81	1,000
Total "New" Commercial Trips						128	115	243	126	119	245	3,037
Total Commercial Trips at Site Driveway						206	189	395	200	181	381	4,757
Proposed Raceway Complex												
Weeknight Event[7]												
Raceway Employees[16]	25 Employees			-	-				25	1	26	50
Patrons[10,17]	1,000 Patrons			2.75	3.00				18	1	19	727
Total Weeknight Special Event Trips									43	2	45	777
1/8th Mile Race Track Event[7]												
Raceway Employees[8]	25 Employees			-	-							
Race Team Trips[9]	150 Teams			-	-							
Patrons[10,11]	800 Patrons			2.75	3.00							
Total 1/8th Mile Race Track Event Trips												
0.4 Mile Oval Track Race Event[7]												
Raceway Employees[12]	50 Employees			-	-							
Race Team Trips[13]	150 Teams			-	-							
Patrons[10,14]	3,500 Patrons			2.75	3.00							
Total 0.4 Mile Oval Track Race Event Trips												
Road Course Event												
Raceway Employees[15]	10 Employees			-	-							
Race Team Trips[15]	100 Teams			-	-							
Patrons	0 Patrons			-	-							
Total Road Course Event Trips												
Total Raceway Complex Trips						0	0	0	43	2	45	777
Total "New" Development Trips						128	115	243	169	121	290	3,814
Total Development Trips at Site Driveway						206	189	395	243	183	426	5,534

Land Use	Friday Event PEAK ANALYSIS HOUR 5:00-6:00 PM[3] In	Out	Total	For Info Only 6:00-7:00 PM[4] In	Out	Total	For Info Only 7:00-8:00 PM[4] In	Out	Total	Average Daily Trips
Proposed Commercial Development[2]										
"Convenience Commercial"										
Automobile Parts Sales	24	24	48	21	21	42	15	15	30	495
High-Turnover Restaurant (2)	79	55	134	71	49	120	50	35	85	1,526
Fast-Food Restaurant with Drive-Through	61	57	118	55	51	106	39	36	75	1,736
Total "Convenience Commercial" Trips	164	136	300	147	121	268	104	86	190	3,757
Diverted Link Trips[18]										
Automobile Part Sales[19]	(10)	(10)	(20)	(9)	(9)	(18)	(6)	(6)	(12)	(213)
High-Turnover Restaurant (2)	(34)	(24)	(58)	(31)	(21)	(52)	(22)	(15)	(37)	(656)
Fast-Food Restaurant with Drive-Through	(30)	(28)	(58)	(27)	(25)	(52)	(19)	(18)	(37)	(851)
Total Diverted Link Trips	(74)	(62)	(136)	(67)	(55)	(122)	(47)	(39)	(86)	(1,720)
Total Primary "Convenience Commercial" Trips	90	74	164	80	66	146	57	47	104	2,037
New Car Sales	36	45	81	32	40	72	23	28	51	1,000
Total "New" Commercial Trips	126	119	245	112	106	218	80	75	156	3,037
Total Commercial Trips at Site Driveway	200	181	381	179	161	340	127	114	241	4,757
Proposed Raceway Complex										
Weeknight Event[7]										
Raceway Employees[16]										
Patrons[10,17]										
Total Weeknight Special Event Trips										
1/8th Mile Race Track Event[7]										
Raceway Employees[8]	25	1	26	0	0	0	0	0	0	50
Race Team Trips[9]	15	1	16	0	0	0	0	0	0	300
Patrons[10,11]	0	0	0	145	7	152	146	7	153	582
Total 1/8th Mile Race Track Event Trips	40	2	42	145	7	152	146	7	153	932
0.4 Mile Oval Track Race Event[7]										
Raceway Employees[12]										
Race Team Trips[13]										
Patrons[10,14]										
Total 0.4 Mile Oval Track Race Event Trips										
Road Course Event										
Raceway Employees[15]										
Race Team Trips[15]										
Patrons										
Total Road Course Event Trips										
Total Raceway Complex Trips	40	2	42	145	7	152	146	7	153	932
Total "New" Development Trips	166	121	287	257	113	370	226	82	308	3,969
Total Development Trips at Site Driveway	240	183	423	324	168	492	273	121	394	5,689

Land Use	Saturday Event Lunch[5] 12:00-1:00 PM In	Out	Total	For Info Only 4:00-5:00 PM[6] In	Out	Total	For Info Only 5:00-6:00 PM[6] In	Out	Total	PEAK ANALYSIS HOUR 6:00-7:00 PM[6] In	Out	Total	For Info Only 7:00-8:00 PM[6] In	Out	Total	Average Daily Trips
Proposed Commercial Development[2]																
"Convenience Commercial"																
Automobile Parts Sales	24	24	48	18	17	35	14	14	28	15	14	29	12	11	23	495
High-Turnover Restaurant (2)	90	79	169	80	55	135	63	43	106	67	46	113	52	36	88	1,900
Fast-Food Restaurant with Drive-Through	106	102	208	94	86	180	73	68	141	78	72	150	61	56	117	2,527
Total "Convenience Commercial" Trips	220	205	425	192	158	350	150	125	275	160	132	292	125	103	228	4,922
Diverted Link Trips[18]																
Automobile Part Sales[19]	(10)	(10)	(20)	(8)	(7)	(15)	(6)	(6)	(12)	(6)	(6)	(12)	(5)	(5)	(10)	(213)
High-Turnover Restaurant (2)	(39)	(34)	(73)	(34)	(24)	(58)	(27)	(18)	(45)	(29)	(20)	(49)	(22)	(15)	(37)	(817)
Fast-Food Restaurant with Drive-Through	(52)	(50)	(102)	(46)	(42)	(88)	(36)	(33)	(69)	(38)	(35)	(73)	(30)	(27)	(57)	(1,238)
Total Diverted Link Trips	(101)	(94)	(195)	(88)	(73)	(161)	(69)	(57)	(126)	(73)	(61)	(134)	(57)	(47)	(104)	(2,268)
Total Primary "Convenience Commercial" Trips	119	111	230	104	85	189	81	68	149	87	71	158	68	56	124	2,654
New Car Sales	45	44	89	20	25	45	16	19	35	17	20	37	13	16	29	631
Total "New" Commercial Trips	164	155	319	124	110	234	97	87	184	104	91	195	81	72	153	3,285
Total Commercial Trips at Site Driveway	265	249	514	212	183	395	166	144	310	177	152	329	138	119	257	5,553
Proposed Raceway Complex																
Weeknight Event[7]																
Raceway Employees[16]																
Patrons[10,17]																
Total Weeknight Special Event Trips																
1/8th Mile Race Track Event[7]																
Raceway Employees[8]																
Race Team Trips[9]																
Patrons[10,11]																
Total 1/8th Mile Race Track Event Trips																
0.4 Mile Oval Track Race Event[7]																
Raceway Employees[12]	0	0	0	45	2	47	0	0	0	0	0	0	0	0	0	100
Race Team Trips[13]	75	4	79	0	0	0	0	0	0	0	0	0	0	0	0	600
Patrons[10,14]	0	0	0	0	0	0	292	15	307	583	29	612	292	15	307	2,333
Total 0.4 Mile Oval Track Race Event Trips	75	4	79	45	2	47	292	15	307	583	29	612	292	15	307	3,033
Road Course Event																
Raceway Employees[15]							0	10	10							20
Race Team Trips[15]							0	100	100							200
Patrons							0	0	0							0
Total Road Course Event Trips							0	110	110							220
Total Raceway Complex Trips	75	4	79	45	2	47	292	125	417	583	29	612	292	15	307	3,253
Total "New" Development Trips	239	159	398	169	112	281	389	212	601	687	120	807	373	87	460	6,538
Total Development Trips at Site Driveway	340	253	593	257	185	442	458	269	727	760	181	941	430	134	564	8,806

Notes:
(1) Based on the Institute of Transportation Engineers Trip Generation, 8th Edition for "standard land uses". Trip generation for Raceway based on anticipated visitation profile and average vehicle occupancy (AVO) of similar uses.
(2) Development levels are assumed.
(3) For commercial uses (only), trips calculated from ITE peak hour of adjacent street data.
(4) For commercial uses (only), trips calculated from ITE peak hour of adjacent street data multiplied by percent of I-95 off ramp traffic in the hour vs. the peak hour of off ramp.
(5) For commercial uses (only), trips calculated from ITE peak hour of generator on Saturday.
(6) For commercial uses (only), trips calculated from ITE average daily traffic data multiplied by percent of daily I-95 off ramp traffic that occurs in the hour.
(7) To be conservative, assumes highest expected attendance for respective 1/8th mile track race, 0.4 mile oval track race, or Weeknight event. All outbound traffic from 1/8th mile track, 0.4 mile oval track, and Weeknight Events are calculated as 5% of the inbound.
(8) Assumes all employees arrive between 5:00 PM and 6:00 PM.
(9) Assumes 90% of race teams arrive before 5:00 PM and 10% arrive from 5:00 PM to 6:00 PM. Assumes 1 vehicle/race team.
(10) Assumes an Average Vehicle Occupancy (AVO) for patrons of 2.75 for weekday events and 3.00 for weekend events.
(11) Assumes 50% of patrons arrive from 6:00 to 7:00 PM and the remaining 50% arrive from 7:00 PM to 8:00 PM.
(12) Assumes10% arrive prior to the gates opening at 10:00 AM for race teams. Assumes remaining 90% arrive between 4:00 PM and 5:00 PM.
(13) Assumes race teams arrive between 10:00 AM and 2:00 PM at an average of 25%/hour. Assumes 2 vehicles/race team.
(14) Assumes 25% of patrons arrive from 5:00 to 6:00 PM, 50% arrive from 6:00 PM to 7:00 PM, and remaining 25% arrive from 7:00 PM to 8:00 PM.
(15) Assumes event is from 10:00 AM to 5:00 PM. Assumes all employees and race teams leave between 5:00 PM and 6:00 PM. Assumes no patrons.
(16) Assumes all employees arrive between 5:00 PM and 6:00 PM.
(17) Assumes 5% of patrons arrive during commuter peak hour. All others arrive outside of the commuter peak hour.
(18) Percentages to calculate the assumed diverted link trips were taken using ITE pass-by rates (in accordance with Chapter 527 guidelines) for the various types of commercial land uses. Pass-by rates were then applied entirely for use in computing diverted link trips based on assumption agreed upon with VDOT Fredericksburg District Traffic Engineering staff.
(19) Saturday peak hour trip generation not available for this land use in ITE. Saturday peak hour trips were assumed to be equal to weekday PM peak hour.

Table 4.C
Dominion Raceway
Background Development Site-Trip Generation Analysis [1]

Land Use	Size	Units	Land Use Code	Typical Weekday (Tuesday, Wednesday, Thursday) PEAK ANALYSIS HOURS AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Trips	Friday Event PEAK ANALYSIS HOUR 5:00-6:00 PM[3] In	5:00-6:00 PM Out	5:00-6:00 PM Total	For Info Only 6:00-7:00 PM[4] In	6:00-7:00 PM Out	6:00-7:00 PM Total	For Info Only 7:00-8:00 PM[4] In	7:00-8:00 PM Out	7:00-8:00 PM Total	Average Daily Trips	Saturday Event Lunch[5] 12:00-1:00 PM In	Lunch Out	Lunch Total	For Info Only 4:00-5:00 PM[6] In	4:00-5:00 PM Out	4:00-5:00 PM Total	For Info Only 5:00-6:00 PM[6] In	5:00-6:00 PM Out	5:00-6:00 PM Total	PEAK ANALYSIS HOUR 6:00-7:00 PM[6] In	6:00-7:00 PM Out	6:00-7:00 PM Total	For Info Only 7:00-8:00 PM[6] In	7:00-8:00 PM Out	7:00-8:00 PM Total	Average Daily Trips
Adjacent C-3 - Potential Commercial Development[2]																																					
"Convenience Commercial"																																					
Convenience Market with Gasoline Pumps	14	VFP	853	116	116	232	134	133	267	7,596	134	133	267	120	119	239	85	84	169	7,596	71	69	140	102	102	204	80	80	160	85	85	170	67	66	133	2,863
	6.500	S.F.	853	133	133	266	166	165	331	5,496	166	165	331	149	148	297	105	104	209	5,496	152	147	299	335	335	670	80	80	160	85	85	170	67	66	133	9,414
Average Trips Generated				125	125	249	150	149	299	6,546	150	149	299	135	134	268	95	94	189	6,546	112	108	220	219	219	437	80	80	160	85	85	170	67	66	133	6,139
Fast-Food Restaurant with Drive-Through (2)	7,000	S.F.	934	176	169	345	123	114	237	3,473	123	114	237	110	102	212	77	72	149	3,473	212	204	416	187	173	360	147	136	283	156	144	300	122	112	234	5,054
Total "Convenience Commercial" Trips				292	285	577	257	247	504	11,069	257	247	504	230	221	451	162	156	318	11,069	283	273	556	289	275	564	227	216	443	241	229	470	189	178	367	7,917
Diverted Link Trips[7]																																					
Convenience Market with Gasoline Pumps	63%			(78)	(78)	(156)	(95)	(94)	(189)	(4,124)	(95)	(94)	(189)	(85)	(84)	(169)	(60)	(59)	(119)	(4,124)	(70)	(68)	(138)	(138)	(138)	(276)	(50)	(50)	(100)	(54)	(54)	(108)	(42)	(42)	(84)	(3,867)
Fast-Food Restaurant with Drive-Through	49%			(86)	(83)	(169)	(60)	(56)	(116)	(1,702)	(60)	(56)	(116)	(54)	(50)	(104)	(38)	(35)	(73)	(1,702)	(104)	(100)	(204)	(92)	(85)	(177)	(72)	(67)	(139)	(76)	(71)	(147)	(60)	(55)	(115)	(2,476)
Total Diverted Link Trips				(164)	(161)	(325)	(155)	(150)	(305)	(5,826)	(155)	(150)	(305)	(139)	(134)	(273)	(98)	(94)	(192)	(5,826)	(174)	(168)	(342)	(230)	(223)	(453)	(122)	(117)	(239)	(130)	(125)	(255)	(102)	(97)	(199)	(6,343)
Total Primary "Convenience Commercial" Trips				128	124	252	102	97	199	5,243	102	97	199	91	87	178	64	62	126	5,243	109	105	214	59	52	111	105	99	204	111	104	215	87	81	168	1,574
Non "Convenience Commercial"																																					
Motel	90	Rooms	320	15	26	41	23	19	42	507	23	19	42	21	17	38	15	12	27	507	31	37	68	26	31	57	20	25	45	21	26	47	17	20	37	796
Total "New" Commercial Trips				143	150	293	125	116	241	5,750	125	116	241	112	104	216	79	74	153	5,750	140	142	282	85	83	168	125	124	249	132	130	262	104	101	205	2,370
Total Commercial Trips at Site Driveway				307	311	618	280	266	546	11,576	280	266	546	251	238	489	177	168	345	11,576	314	310	624	315	306	621	247	241	488	262	255	517	206	198	404	8,713

Notes: (1) Based on the Institute of Transportation Engineers Trip Generation, 8th Edition for "standard land uses".
(2) Development levels are based on information provided by owners of three (3) adjacent C-3 commercial parcels.
(3) Trips calculated from ITE peak hour of adjacent street data.
(4) Trips calculated from ITE peak hour of adjacent street data multiplied by percent of I-95 off ramp traffic in the hour vs. the peak hour of off ramp.
(5) Trips calculated from ITE peak hour of generator on Saturday.
(6) Trips calculated from ITE average daily traffic data multiplied by percent of daily I-95 off ramp traffic that occurs in the hour.
(7) Percentages to calculate the assumed diverted link trips were taken using ITE pass-by rates (in accordance with Chapter 527 guidelines) for the various types of commercial land uses. Pass-by rates were then applied entirely for use in computing diverted link trips based on assumption agreed upon with VDOT Fredericksburg District Traffic Engineering staff.

Attachment G

Diverted Link Trip Percentages,

Assignment Diagrams,

and Supporting Traffic Counts

Volume Source: VDOT 2011 AADT Vols (I-95 only) and Feb. 2012 Daily Traffic Volumes by Peggy Malone & Associates

Diverted Link Candidate Movements	2012 ADT (Approx.)	Raw Wtg	Net New Left Turn Summary				Net New Right Turn Summary			Total Net New Factored Turns	Total Extra Bridge Crossings	Total Penalties	Pro-Rata Penalty Share
			inbound	leaving	total	factored[1] total	inbound	leaving	total				
I-95 SB mainline [2]	48,000	43%	2	1	3	6	0	1	1	7	2	9	30.0%
I-95 NB mainline [2]	53,000	47%	1	0	1	2	1	2	3	5	0	5	16.7%
I-95 SB off-ramp to WB 606 [3]	3,600	3%	2	0	2	4	-1	1	0	4	2	6	20.0%
I-95 NB off-ramp to WB 606 [3]	2,070	2%	0	0	0	0	1	1	2	2	0	2	6.7%
606 EB to SB 95 [2]	3,750	3%	1	1	2	4	-1	1	0	4	2	6	20.0%
607 EB to NB 95 [2]	2,250	2%	0	0	0	0	0	2	2	2	0	2	6.7%
	112,670	100.0%								24	6	30	100.0%

Diverted Link Candidate Movements	2012 ADT (Approx.)	Adjusted Wtg.[4]
I-95 SB mainline [2]	48,000	32%
I-95 NB mainline [2]	53,000	58%
I-95 SB off-ramp to WB 606 [3]	3,600	1%
I-95 NB off-ramp to WB 606 [3]	2,070	4%
606 EB to SB 95 [2]	3,750	1%
607 EB to NB 95 [2]	2,250	4%
	112,670	100.0%

[1] Left turns are factored x2 to double their penalty relative to right-turn movements

[2] Volume Source = VDOT

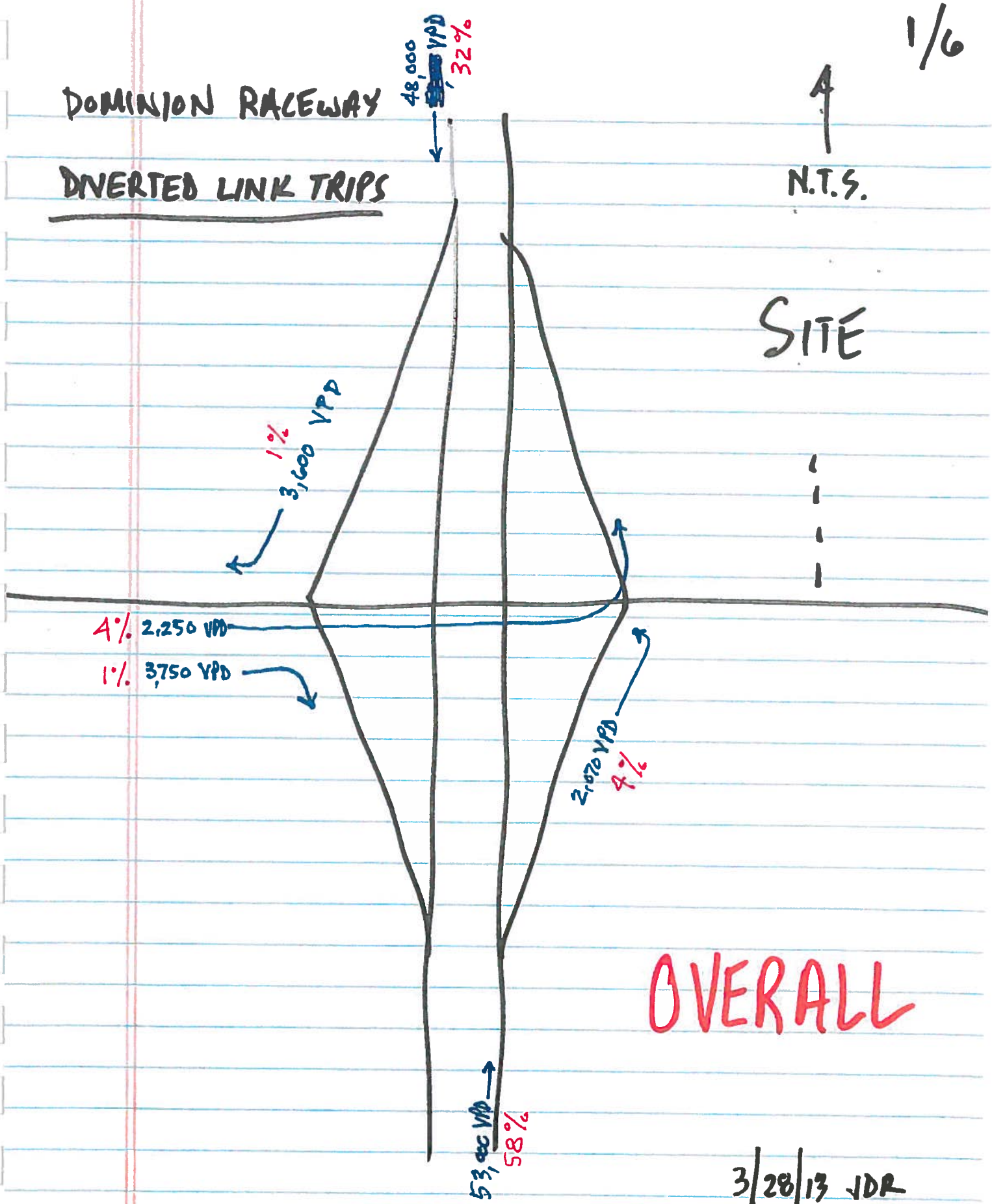
[3] Volume Source = Peggy Malone and Associates

[4] Adjusted weighting takes like movements (i.e. I-95 NB mainline and I-95 SB Mainline) and adjusts them relative to each other to account for total penalties.

DOMINION RACEWAY

DIVERTED LINK TRIPS

N.T.S.

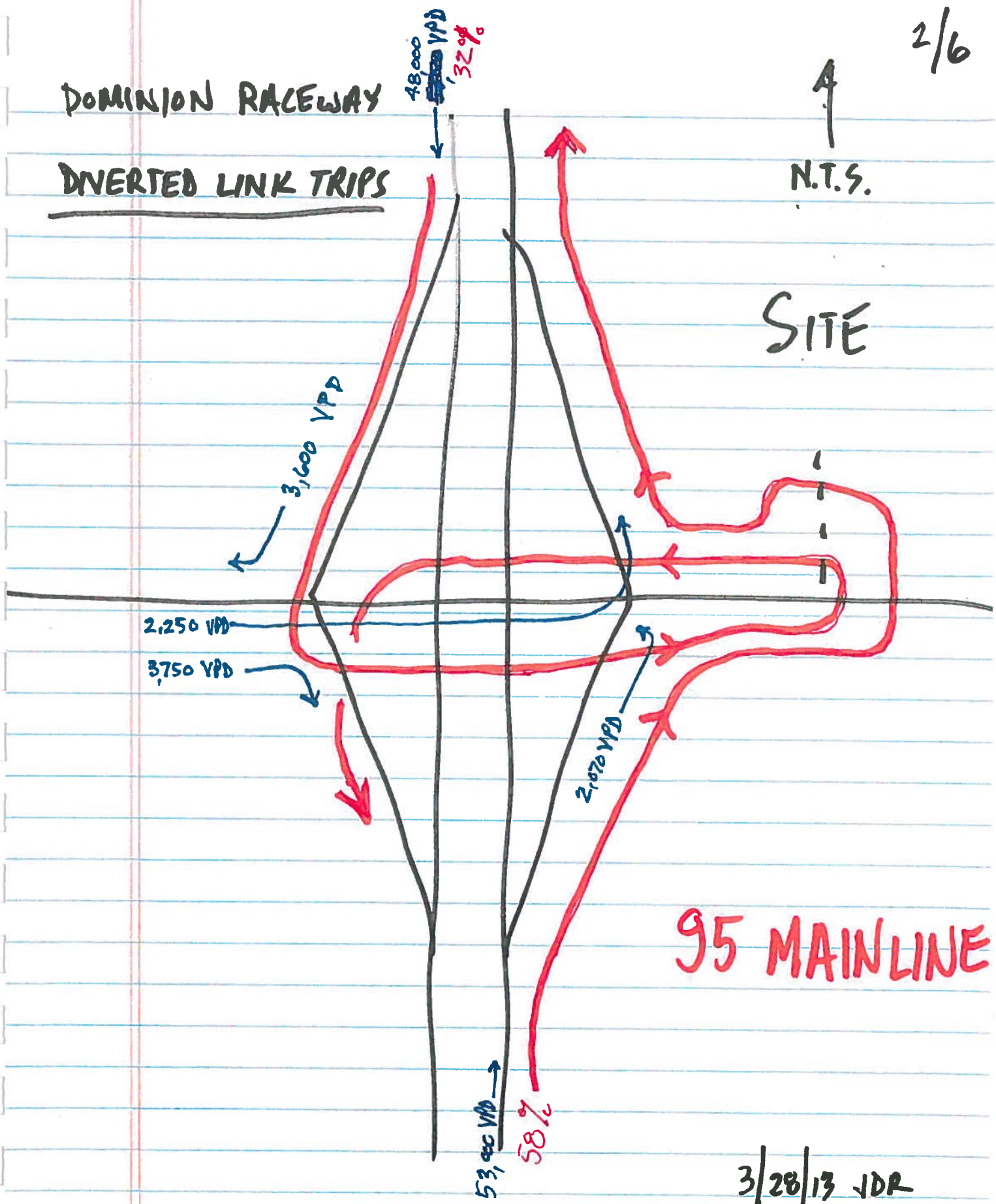


OVERALL

3/28/13 JDR

DOMINION RACEWAY

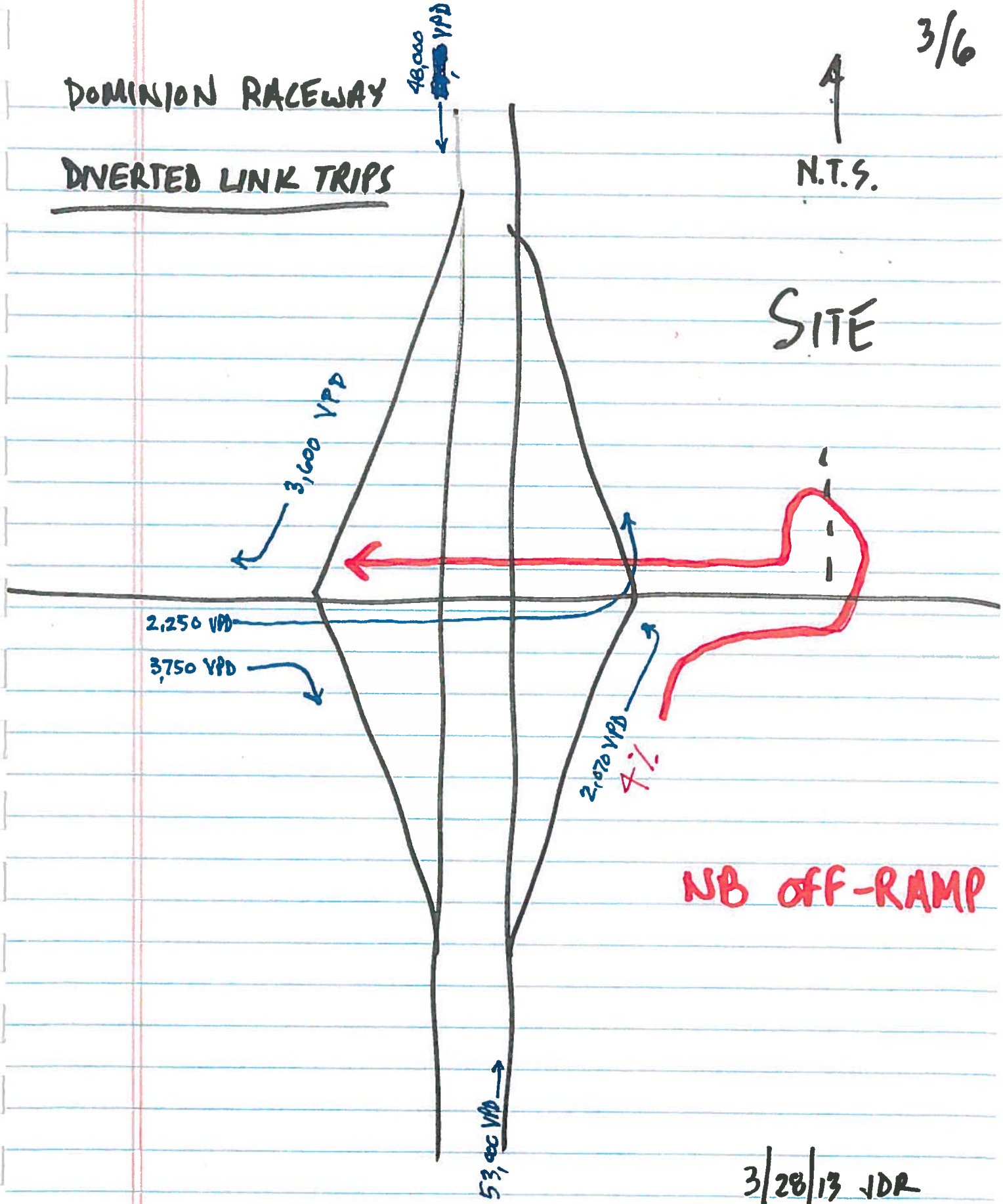
DIVERTED LINK TRIPS



3/28/13 JDR

DOMINION RACEWAY

DIVERTED LINK TRIPS

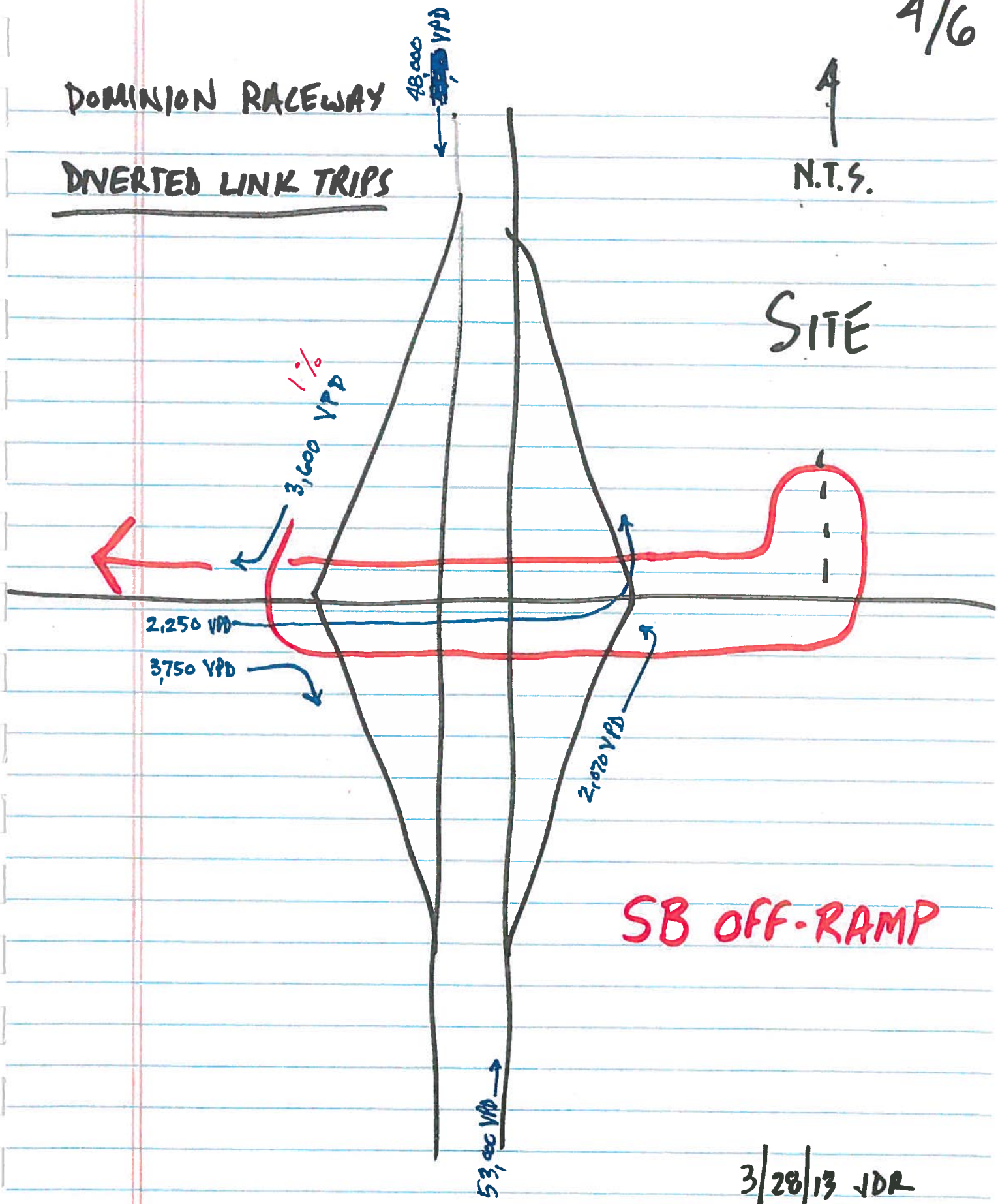


3/28/13 JDR

DOMINION RACEWAY

DIVERTED LINK TRIPS

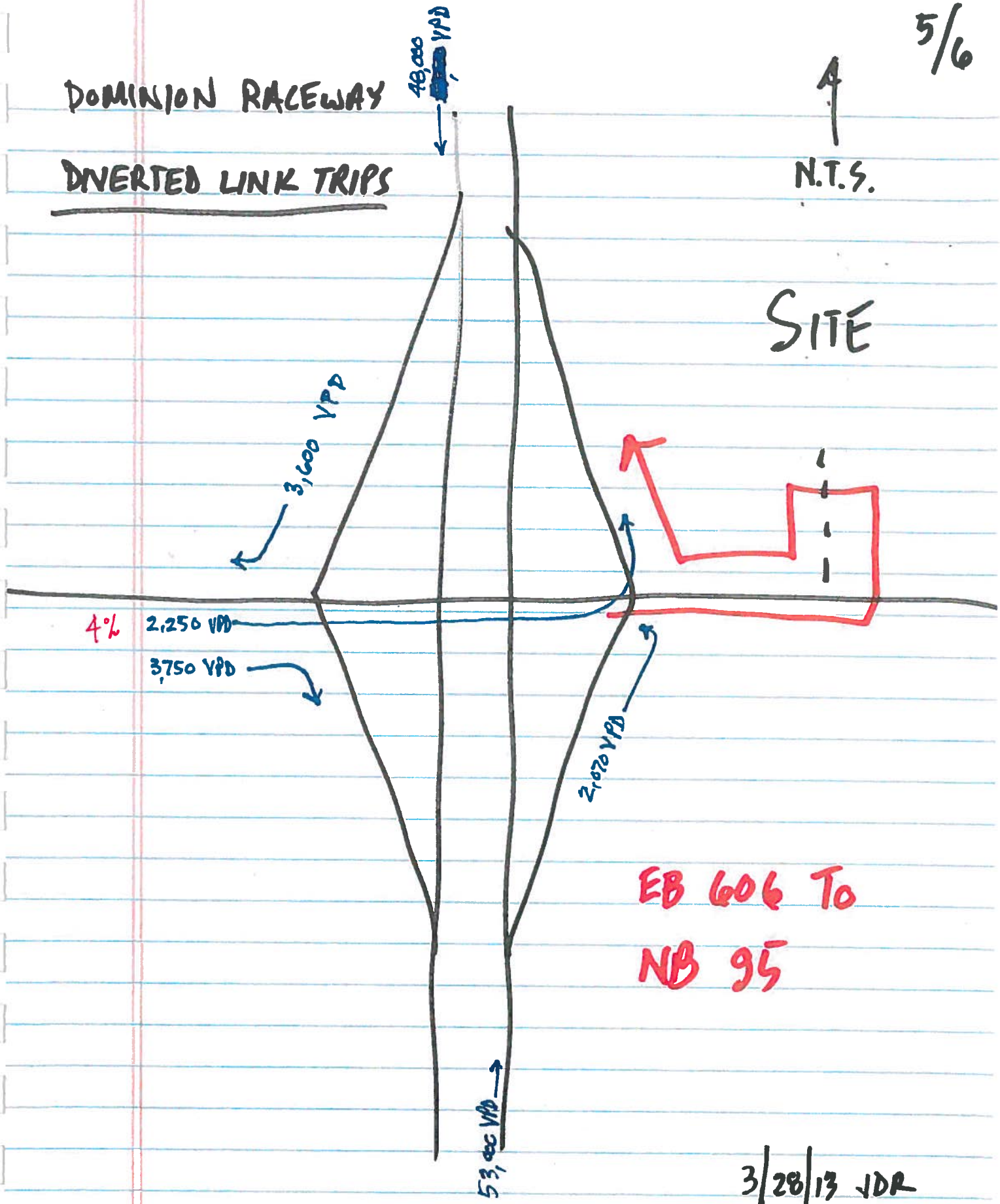
N.T.S.



3/28/13 JDR

DOMINION RACEWAY

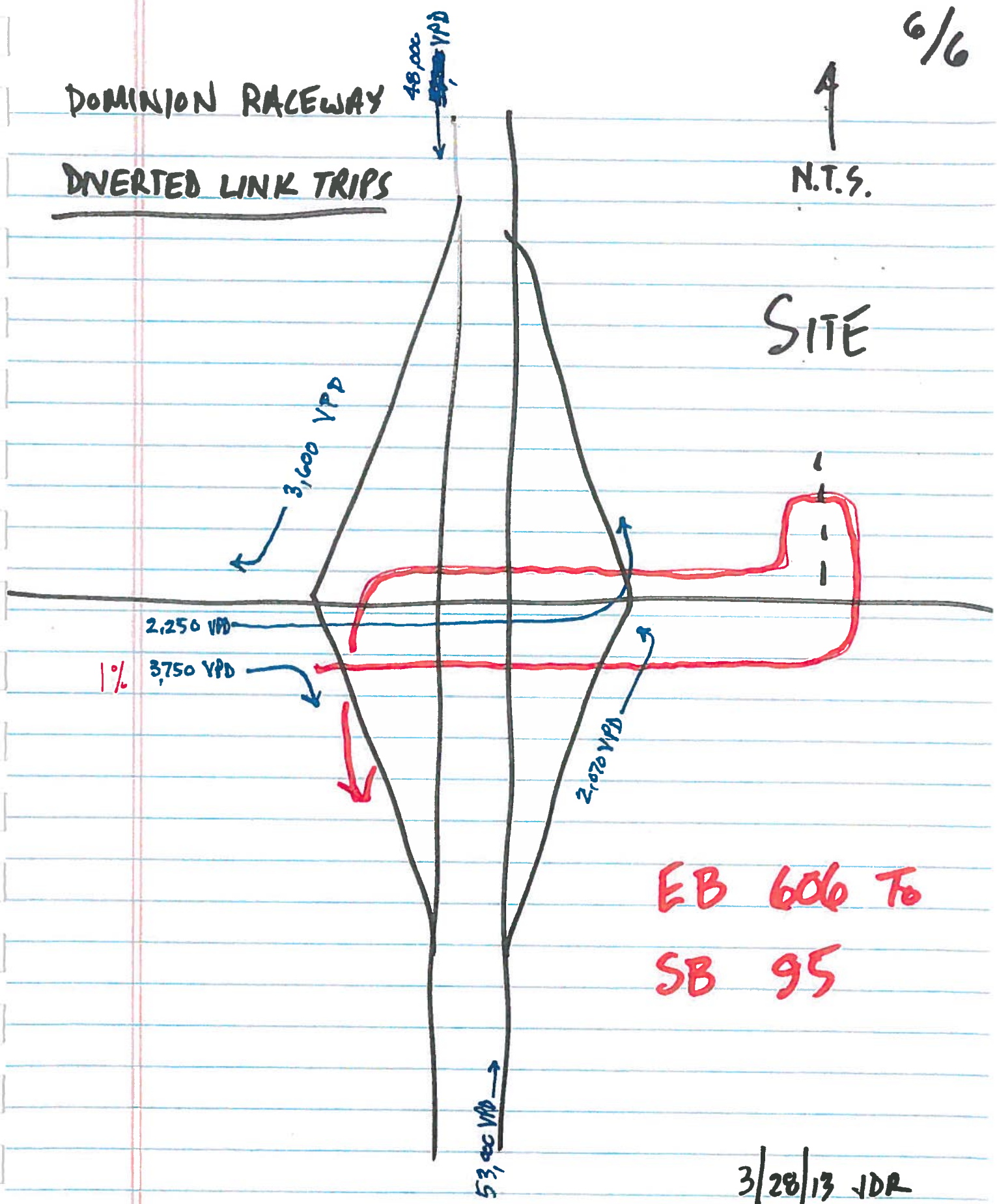
DIVERTED LINK TRIPS



3/28/13 JDR

DOMINION RACEWAY

DIVERTED LINK TRIPS



3/28/13 JDR

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Tue 2/14/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
00:15	0	6	3	1	0	0	0	0	5	0	1	0	0	0	0	16
00:30	0	14	1	0	0	0	0	0	0	0	1	0	0	0	0	16
00:45	0	4	3	0	1	0	0	0	1	0	0	0	0	0	0	9
01:00	0	6	2	0	1	0	0	0	2	0	0	0	0	0	0	11
Hour Total	0	30	9	1	2	0	0	0	8	0	2	0	0	0	0	52
01:15	0	3	1	0	0	0	0	0	1	0	0	0	0	0	0	5
01:30	0	5	0	0	0	0	0	0	3	0	0	0	0	0	0	8
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	14	1	0	0	0	0	0	4	0	0	0	0	0	0	19
02:15	0	2	0	0	0	0	0	1	1	0	0	0	0	0	0	4
02:30	0	2	2	0	0	0	0	1	0	0	0	0	0	0	0	5
02:45	0	3	3	0	1	0	0	1	0	0	0	0	0	0	0	8
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	8	5	0	1	0	0	3	1	0	0	0	0	0	0	18
03:15	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	4
03:30	0	2	1	0	0	0	0	0	1	1	0	0	0	0	0	5
03:45	0	3	0	0	0	0	0	0	1	1	0	0	0	0	0	5
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	9	3	0	0	0	0	0	4	2	0	0	0	0	0	18
04:15	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
04:30	0	3	2	0	0	0	0	0	0	0	1	0	0	0	0	6
04:45	0	6	0	0	0	0	0	1	2	0	0	0	0	0	0	9
05:00	0	0	1	0	0	0	0	1	3	0	0	0	0	0	0	5
Hour Total	0	13	5	0	0	0	0	2	5	0	1	0	0	0	0	26
05:15	0	5	2	0	0	0	0	0	0	0	1	0	0	0	0	8
05:30	0	3	2	0	0	0	0	0	2	0	1	0	0	0	0	8
05:45	0	4	2	0	0	0	0	0	2	0	0	0	0	0	0	8
06:00	0	6	2	0	0	0	0	0	3	0	1	0	0	0	0	12
Hour Total	0	18	8	0	0	0	0	0	7	0	3	0	0	0	0	36
06:15	0	16	4	0	1	0	0	0	2	0	0	0	0	0	0	23
06:30	0	12	5	0	0	0	0	0	1	0	0	0	0	0	0	18
06:45	0	13	8	0	1	0	0	0	3	0	0	0	0	0	0	25
07:00	0	13	8	0	0	2	0	0	1	0	0	1	0	0	0	25
Hour Total	0	54	25	0	2	2	0	0	7	0	0	1	0	0	0	91
07:15	0	30	6	0	0	0	0	0	0	0	1	0	0	0	0	37
07:30	0	21	4	0	2	0	0	1	1	0	0	0	0	0	0	29
07:45	0	25	15	0	0	0	0	0	2	0	0	1	0	0	0	43
08:00	0	27	12	0	2	1	0	0	0	0	0	0	0	0	0	42
Hour Total	0	103	37	0	4	1	0	1	3	0	1	1	0	0	0	151
08:15	0	21	3	0	1	0	0	1	3	0	0	0	0	0	0	29
08:30	0	19	8	0	1	0	0	0	2	0	0	0	0	0	0	30
08:45	0	24	8	0	2	0	0	0	1	0	0	0	0	0	0	35
09:00	0	28	7	0	0	0	0	1	2	0	1	0	0	0	0	39

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Tue 2/14/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	92	26	0	4	0	0	2	8	0	1	0	0	0	0	133
09:15	0	18	4	0	1	0	0	0	1	0	0	0	0	0	0	24
09:30	0	11	8	0	1	0	0	0	4	0	0	0	0	0	0	24
09:45	0	16	11	0	3	1	0	0	3	0	0	0	0	0	0	34
10:00	0	15	7	0	0	0	0	0	1	0	0	0	0	0	0	23
Hour Total	0	60	30	0	5	1	0	0	9	0	0	0	0	0	0	105
10:15	0	16	11	0	1	0	0	1	1	0	0	0	0	0	0	30
10:30	0	23	7	0	2	0	1	1	1	0	0	0	0	0	0	35
10:45	0	16	6	1	3	0	0	0	4	0	0	0	0	0	0	30
11:00	0	26	5	0	4	0	0	0	0	0	1	0	0	0	0	36
Hour Total	0	81	29	1	10	0	1	2	6	0	1	0	0	0	0	131
11:15	0	25	11	0	2	0	0	1	1	0	0	0	0	0	0	40
11:30	0	13	13	0	1	0	0	1	4	0	0	0	0	0	0	32
11:45	0	20	7	0	1	1	0	1	0	0	0	0	0	0	0	30
12:00	0	19	5	0	0	0	0	1	2	0	0	0	0	0	0	27
Hour Total	0	77	36	0	4	1	0	4	7	0	0	0	0	0	0	129
12:15	0	18	3	1	0	0	0	2	4	0	0	0	0	0	0	28
12:30	0	37	9	0	2	0	0	0	3	0	0	0	0	0	0	51
12:45	0	28	12	0	0	0	0	1	2	0	0	0	0	0	0	43
13:00	0	32	16	0	2	0	0	0	4	0	0	0	0	0	0	54
Hour Total	0	115	40	1	4	0	0	3	13	0	0	0	0	0	0	176
13:15	0	29	13	0	1	3	0	1	3	1	0	0	0	0	0	51
13:30	0	39	11	1	2	0	0	0	7	0	0	0	0	0	0	60
13:45	0	31	7	1	0	2	0	0	1	1	0	0	0	0	0	43
14:00	1	33	18	0	1	0	0	0	6	0	0	0	0	0	0	59
Hour Total	1	132	49	2	4	5	0	1	17	2	0	0	0	0	0	213
14:15	1	44	14	0	0	0	0	0	2	0	0	0	0	0	0	61
14:30	0	42	17	1	0	2	0	0	2	0	0	0	0	0	0	64
14:45	0	43	17	0	1	0	0	0	1	1	0	0	0	0	0	63
15:00	0	58	18	0	0	2	1	0	2	0	0	0	0	0	0	81
Hour Total	1	187	66	1	1	4	1	0	7	1	0	0	0	0	0	269
15:15	0	56	17	0	0	0	0	0	2	0	0	0	0	0	0	75
15:30	0	64	21	0	0	0	1	1	2	0	0	0	0	0	0	89
15:45	0	51	23	0	1	0	0	0	1	0	0	0	0	0	0	76
16:00	0	69	18	0	2	0	0	1	2	0	0	0	0	0	0	92
Hour Total	0	240	79	0	3	0	1	2	7	0	0	0	0	0	0	332
16:15	0	75	28	0	0	0	0	1	0	0	0	0	0	0	0	104
16:30	0	71	28	1	2	0	0	0	2	0	0	0	0	0	0	104
16:45	0	70	31	0	0	0	0	0	2	0	0	0	0	0	0	103
17:00	0	81	29	1	1	0	0	0	0	0	0	0	0	0	0	112
Hour Total	0	297	116	2	3	0	0	1	4	0	0	0	0	0	0	423

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Tue 2/14/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
17:15	0	69	23	0	0	1	0	0	6	0	0	0	0	0	0	99
17:30	0	88	29	0	2	0	0	0	5	0	0	0	0	0	0	124
17:45	0	83	24	0	2	0	0	1	1	0	0	0	0	0	0	111
18:00	0	73	15	0	0	0	0	0	0	0	0	0	0	0	0	88
Hour Total	0	313	91	0	4	1	0	1	12	0	0	0	0	0	0	422
18:15	0	82	25	0	3	0	0	0	0	0	0	0	0	0	0	110
18:30	0	66	19	0	0	0	0	1	1	0	0	0	0	0	0	87
18:45	0	54	17	0	1	0	0	1	1	0	0	0	0	0	0	74
19:00	0	44	14	0	0	0	0	0	1	0	1	0	0	0	0	60
Hour Total	0	246	75	0	4	0	0	2	3	0	1	0	0	0	0	331
19:15	0	51	14	0	1	0	0	0	2	0	0	0	0	0	0	68
19:30	0	53	7	0	1	0	0	0	0	0	0	0	0	0	0	61
19:45	1	50	14	0	0	0	0	0	1	0	0	0	0	0	0	66
20:00	0	39	7	0	1	0	0	0	1	0	1	0	0	0	0	49
Hour Total	1	193	42	0	3	0	0	0	4	0	1	0	0	0	0	244
20:15	0	36	7	0	0	0	0	0	1	0	0	0	0	0	0	44
20:30	0	28	9	0	0	0	0	0	0	0	0	0	0	0	0	37
20:45	0	34	7	0	1	0	0	0	0	0	0	0	0	0	0	42
21:00	1	20	8	1	1	0	0	0	1	0	0	0	0	0	0	32
Hour Total	1	118	31	1	2	0	0	0	2	0	0	0	0	0	0	155
21:15	0	29	7	1	0	0	0	0	0	0	0	0	0	0	0	37
21:30	0	30	7	0	0	0	0	0	1	0	0	0	0	0	0	38
21:45	0	20	5	0	0	0	0	0	1	0	0	0	0	0	0	26
22:00	0	19	4	0	1	1	0	0	2	0	0	0	0	0	0	27
Hour Total	0	98	23	1	1	1	0	0	4	0	0	0	0	0	0	128
22:15	0	21	9	0	1	0	0	0	1	0	0	0	0	0	0	32
22:30	0	20	2	0	0	0	0	0	0	0	2	0	0	0	0	24
22:45	0	19	2	0	1	0	0	0	1	0	0	0	0	0	0	23
23:00	0	16	6	0	0	0	0	3	0	0	0	0	0	0	0	25
Hour Total	0	76	19	0	2	0	0	3	2	0	2	0	0	0	0	104
23:15	0	10	2	0	2	0	0	0	0	0	1	0	0	0	0	15
23:30	0	13	0	0	0	0	0	1	0	0	1	0	0	0	0	15
23:45	0	13	4	0	0	0	0	0	0	0	0	0	0	0	0	17
24:00	0	12	4	0	1	0	0	0	0	0	0	0	0	0	0	17
Hour Total	0	48	10	0	3	0	0	1	0	0	2	0	0	0	0	64
DAY TOTAL	4	2622	855	10	66	16	3	28	144	5	15	2	0	0	0	3770
PERCENTS	0.2%	69.6%	22.7%	0.3%	1.8%	0.5%	0.0%	0.7%	3.8%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 92.3% Trucks & Buses 7.6%

AM Times	07:15	07:45	00:30	10:30	06:15	09:45	11:15	09:00	03:00	05:15	07:00	07:15
AM Peaks	103	38	1	11	2	1	4	10	2	3	2	151
PM Times	13:30	17:30	16:15	13:00	17:30	13:00	14:45	22:45	13:15	13:00	22:30	17:00
PM Peaks	2	326	116	2	7	5	2	4	17	2	3	446

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Wed 2/15/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
00:15	0	8	1	0	0	0	0	0	0	0	0	1	0	0	0	10
00:30	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
00:45	0	9	1	0	0	0	0	1	1	0	0	0	0	0	0	12
01:00	0	9	1	0	0	0	0	0	1	0	0	0	0	0	0	11
Hour Total	0	34	4	0	0	0	0	1	2	0	0	1	0	0	0	42
01:15	0	8	1	1	1	0	0	0	2	0	0	0	0	0	0	13
01:30	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
01:45	0	8	2	0	0	0	0	0	1	0	0	0	0	0	0	11
02:00	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	20	6	1	1	0	0	0	3	0	0	0	0	0	0	31
02:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
02:30	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	6
02:45	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	4
03:00	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	6
Hour Total	0	13	4	0	0	0	0	0	3	0	0	0	0	0	0	20
03:15	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3
03:30	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	5
04:00	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	3
Hour Total	0	5	0	0	0	0	0	0	3	1	4	0	0	0	0	13
04:15	0	3	1	0	1	0	0	0	0	0	0	0	0	0	0	5
04:30	0	2	1	1	0	0	0	0	2	0	1	0	0	0	0	7
04:45	0	3	0	0	0	1	0	0	1	0	0	0	0	0	0	5
05:00	0	1	3	0	2	0	0	0	3	1	0	0	0	0	0	10
Hour Total	0	9	5	1	3	1	0	0	6	1	1	0	0	0	0	27
05:15	0	5	4	0	0	0	0	1	1	0	0	0	0	0	0	11
05:30	0	4	2	0	0	0	0	0	4	0	0	0	0	0	0	10
05:45	0	2	1	0	0	0	0	1	3	0	0	0	0	0	0	7
06:00	0	10	1	0	0	1	0	0	5	0	0	0	0	0	0	17
Hour Total	0	21	8	0	0	1	0	2	13	0	0	0	0	0	0	45
06:15	0	13	4	0	0	1	0	0	3	0	0	0	0	0	0	21
06:30	0	10	3	0	1	0	0	0	4	0	1	0	0	0	0	19
06:45	0	23	6	0	0	0	0	0	1	0	0	0	0	0	0	30
07:00	0	25	4	1	2	0	0	0	1	0	0	0	0	0	0	33
Hour Total	0	71	17	1	3	1	0	0	9	0	1	0	0	0	0	103
07:15	0	21	4	0	0	0	0	0	1	0	0	0	0	0	0	26
07:30	0	19	10	0	3	0	0	1	3	0	0	0	0	0	0	36
07:45	0	23	15	0	1	0	0	0	2	0	1	0	0	0	0	42
08:00	0	33	10	0	1	0	0	0	0	0	0	0	0	0	0	44
Hour Total	0	96	39	0	5	0	0	1	6	0	1	0	0	0	0	148
08:15	0	25	10	0	2	0	0	1	1	0	0	0	0	0	0	39
08:30	0	23	6	1	0	0	0	0	2	0	0	0	0	0	0	32
08:45	0	23	12	0	3	3	0	0	1	0	1	0	0	0	0	43
09:00	0	25	11	0	2	0	0	0	1	0	0	0	0	0	0	39

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Wed 2/15/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	96	39	1	7	3	0	1	5	0	1	0	0	0	0	153
09:15	0	22	12	0	0	1	0	0	2	0	0	0	0	0	0	37
09:30	0	16	11	0	0	0	0	0	1	0	0	0	0	0	0	28
09:45	0	22	13	0	1	0	0	1	0	0	0	0	0	0	0	37
10:00	0	32	8	0	2	1	0	1	3	0	0	0	0	0	0	47
Hour Total	0	92	44	0	3	2	0	2	6	0	0	0	0	0	0	149
10:15	0	23	14	0	0	0	0	0	3	0	0	0	0	0	0	40
10:30	0	14	7	0	0	0	2	0	3	0	0	1	0	0	0	27
10:45	0	18	11	0	2	0	0	1	4	0	0	0	0	0	0	36
11:00	0	27	11	0	1	2	0	2	5	1	0	0	0	0	0	49
Hour Total	0	82	43	0	3	2	2	3	15	1	0	1	0	0	0	152
11:15	0	25	7	0	0	2	0	0	2	0	0	0	0	0	0	36
11:30	0	27	8	0	0	1	0	0	1	1	0	0	0	0	0	38
11:45	0	18	9	0	1	1	1	0	1	0	0	0	0	0	0	31
12:00	0	17	8	0	1	0	0	0	2	0	0	0	0	0	0	28
Hour Total	0	87	32	0	2	4	1	0	6	1	0	0	0	0	0	133
12:15	0	27	10	0	1	1	0	0	3	0	0	0	0	0	0	42
12:30	0	41	14	0	1	1	0	0	3	0	0	0	0	0	0	60
12:45	0	31	10	0	2	0	0	0	5	0	0	0	0	0	0	48
13:00	0	29	4	0	1	0	0	0	3	0	0	0	0	0	0	37
Hour Total	0	128	38	0	5	2	0	0	14	0	0	0	0	0	0	187
13:15	0	27	12	0	3	0	0	2	3	0	0	0	0	0	0	47
13:30	0	32	11	1	3	0	0	1	1	0	0	0	0	0	0	49
13:45	0	36	13	0	1	1	0	2	4	0	0	0	0	0	0	57
14:00	0	35	8	0	0	0	0	0	2	0	0	0	0	0	0	45
Hour Total	0	130	44	1	7	1	0	5	10	0	0	0	0	0	0	198
14:15	0	38	14	0	1	0	0	1	3	1	1	0	0	0	0	59
14:30	0	35	13	0	1	1	0	0	2	0	1	0	0	0	0	53
14:45	0	49	17	0	2	0	0	0	1	0	0	0	0	0	0	69
15:00	0	49	23	0	2	0	0	2	1	0	0	0	0	0	0	77
Hour Total	0	171	67	0	6	1	0	3	7	1	2	0	0	0	0	258
15:15	0	62	18	0	2	0	0	0	3	0	0	0	0	0	0	85
15:30	0	84	17	0	3	0	0	1	3	0	0	0	0	0	0	108
15:45	0	56	24	0	1	0	0	0	4	0	0	0	0	0	0	85
16:00	1	87	20	0	0	0	0	2	3	1	0	0	0	0	0	114
Hour Total	1	289	79	0	6	0	0	3	13	1	0	0	0	0	0	392
16:15	0	60	26	0	2	1	0	1	2	0	0	0	0	0	0	92
16:30	0	79	28	0	0	0	0	0	0	1	0	0	0	0	0	108
16:45	0	71	34	0	0	0	0	0	1	0	0	0	0	0	0	106
17:00	0	84	24	0	0	0	0	0	2	0	0	0	0	0	0	110
Hour Total	0	294	112	0	2	1	0	1	5	1	0	0	0	0	0	416

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
17:15	0	79	24	0	1	0	0	0	1	0	0	0	1	0	0	106
17:30	0	88	23	0	2	0	0	0	6	0	0	0	0	0	0	119
17:45	0	104	29	0	0	0	0	0	0	0	1	0	0	0	0	134
18:00	0	96	28	0	1	0	0	0	0	0	0	0	0	0	0	125
Hour Total	0	367	104	0	4	0	0	0	7	0	1	0	1	0	0	484
18:15	1	74	26	0	3	0	0	0	1	0	2	0	0	0	0	107
18:30	0	79	22	0	2	0	0	0	1	0	0	0	0	0	0	104
18:45	0	45	12	0	2	0	0	0	2	0	0	0	0	0	0	61
19:00	1	40	18	0	0	0	0	0	2	1	1	0	0	0	0	63
Hour Total	2	238	78	0	7	0	0	0	6	1	3	0	0	0	0	335
19:15	0	63	15	0	1	1	0	0	1	0	1	0	0	0	0	82
19:30	0	52	18	0	1	0	0	0	2	0	0	0	0	0	0	73
19:45	1	34	10	1	1	0	0	0	2	0	0	0	0	0	0	49
20:00	0	49	10	0	3	0	0	0	2	0	1	0	0	0	0	65
Hour Total	1	198	53	1	6	1	0	0	7	0	2	0	0	0	0	269
20:15	0	40	10	0	2	0	0	0	3	0	0	0	0	0	0	55
20:30	0	50	12	0	1	0	0	0	2	0	0	0	0	0	0	65
20:45	0	28	7	0	0	0	0	0	0	0	0	0	0	0	0	35
21:00	0	29	8	0	1	0	0	0	0	0	0	0	0	0	0	38
Hour Total	0	147	37	0	4	0	0	0	5	0	0	0	0	0	0	193
21:15	0	27	4	0	0	0	0	0	2	0	0	0	0	0	0	33
21:30	0	27	6	1	1	1	0	0	0	0	0	0	0	0	0	36
21:45	0	34	6	0	1	0	0	0	1	0	0	0	0	0	0	42
22:00	0	21	7	0	0	0	0	1	0	0	0	0	0	0	0	29
Hour Total	0	109	23	1	2	1	0	1	3	0	0	0	0	0	0	140
22:15	0	20	8	0	0	0	0	0	1	0	1	0	0	0	0	30
22:30	0	20	3	0	1	0	0	0	0	0	0	0	0	0	0	24
22:45	0	17	5	0	0	0	0	1	0	0	2	0	0	0	0	25
23:00	0	10	2	0	0	0	0	0	2	0	2	0	0	0	0	16
Hour Total	0	67	18	0	1	0	0	1	3	0	5	0	0	0	0	95
23:15	0	13	3	0	0	0	0	1	1	0	1	1	0	0	0	20
23:30	0	14	1	0	2	0	0	0	0	0	0	0	0	0	0	17
23:45	0	9	2	0	1	0	0	0	0	0	0	0	0	0	0	12
24:00	0	12	2	0	0	0	0	0	1	0	0	0	0	0	0	15
Hour Total	0	48	8	0	3	0	0	1	2	0	1	1	0	0	0	64
DAY TOTAL	4	2812	902	7	80	21	3	25	159	8	22	3	1	0	0	4047
PERCENTS	0.1%	69.5%	22.3%	0.2%	2.0%	0.6%	0.1%	0.7%	3.9%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 91.8% Trucks & Buses 8.1%

AM Times	07:45	09:00	00:30	07:30	11:00	09:45	10:15	05:30	10:45	03:00	00:30						07:30
AM Peaks	104	47	1	7	6	2	3	15	2	4	1						161
PM Times	18:15	17:15	16:15	12:45	12:45	12:15		13:00	12:15	15:45	22:15	22:30	16:30				17:30
PM Peaks	2	367	112	1	9	2		5	14	2	5	1	1				485

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Thu 2/16/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
00:15	0	9	3	0	1	0	0	0	1	0	0	0	0	0	0	14
00:30	0	12	2	0	0	1	0	0	0	0	0	0	0	0	0	15
00:45	0	8	7	1	0	0	0	0	1	0	0	0	0	0	0	17
01:00	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
Hour Total	0	37	14	1	1	1	0	0	2	0	0	0	0	0	0	56
01:15	0	4	2	1	0	0	0	1	0	0	0	0	0	0	0	8
01:30	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	4
01:45	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	2	2	0	0	0	0	0	1	0	0	0	0	0	0	5
Hour Total	0	10	7	1	0	0	0	1	3	0	0	0	0	0	0	22
02:15	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	7
02:30	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	5
02:45	0	3	1	0	0	0	0	0	0	0	1	0	0	0	0	5
03:00	0	4	2	0	0	0	0	1	0	0	0	0	0	0	0	7
Hour Total	0	14	8	0	0	0	0	1	0	0	1	0	0	0	0	24
03:15	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	6
03:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	4
04:00	0	5	0	0	0	0	0	0	2	0	2	0	0	0	0	9
Hour Total	0	12	2	0	0	0	0	0	6	0	2	0	0	0	0	22
04:15	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	3
04:30	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
04:45	0	5	0	0	0	1	0	0	2	0	1	0	0	0	0	9
05:00	0	7	2	0	2	2	0	0	2	0	0	0	0	0	0	15
Hour Total	0	16	3	0	2	3	0	0	5	1	1	0	0	0	0	31
05:15	0	8	0	0	0	0	0	0	3	0	0	0	0	0	0	11
05:30	0	7	1	0	1	0	0	0	1	0	0	1	0	0	0	11
05:45	0	1	3	0	0	0	0	0	1	0	0	0	0	0	0	5
06:00	0	5	2	0	0	0	0	0	2	0	1	1	0	0	0	11
Hour Total	0	21	6	0	1	0	0	0	7	0	1	2	0	0	0	38
06:15	0	14	3	0	0	0	0	0	2	0	0	1	0	0	0	20
06:30	0	13	8	0	0	0	0	0	1	0	0	0	0	0	0	22
06:45	0	19	12	0	1	0	0	0	2	0	0	0	0	0	0	34
07:00	0	18	13	0	2	0	0	0	1	0	0	0	0	0	0	34
Hour Total	0	64	36	0	3	0	0	0	6	0	0	1	0	0	0	110
07:15	0	27	10	0	1	0	0	0	1	0	0	0	0	0	0	39
07:30	0	16	12	0	2	0	0	0	1	0	1	0	0	0	0	32
07:45	0	17	7	0	1	0	0	0	1	0	0	0	0	0	0	26
08:00	0	30	11	0	1	0	0	0	3	0	0	0	0	0	0	45
Hour Total	0	90	40	0	5	0	0	0	6	0	1	0	0	0	0	142
08:15	0	15	9	0	0	0	0	0	2	0	0	0	0	0	0	26
08:30	0	26	10	0	1	0	0	0	2	0	0	0	0	0	0	39
08:45	0	22	6	0	1	0	0	0	1	0	0	0	0	0	0	30
09:00	0	27	14	0	0	0	0	0	0	0	0	0	0	0	0	41

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Thu 2/16/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	90	39	0	2	0	0	0	5	0	0	0	0	0	0	136
09:15	0	27	8	0	4	1	0	1	2	0	0	0	0	0	0	43
09:30	0	25	13	0	5	1	1	0	3	0	1	0	0	0	0	49
09:45	0	22	9	1	2	0	0	0	0	0	0	0	0	0	0	34
10:00	0	23	7	1	1	1	0	1	4	0	0	0	0	0	0	38
Hour Total	0	97	37	2	12	3	1	2	9	0	1	0	0	0	0	164
10:15	0	17	6	0	1	1	0	0	5	0	0	0	0	0	0	30
10:30	0	31	3	0	1	0	0	1	6	0	0	0	0	0	0	42
10:45	0	27	9	1	1	0	0	0	2	0	0	0	0	0	0	40
11:00	0	25	10	0	0	1	0	0	3	0	0	0	0	0	0	39
Hour Total	0	100	28	1	3	2	0	1	16	0	0	0	0	0	0	151
11:15	0	25	17	0	1	0	0	0	1	1	0	0	0	0	0	45
11:30	0	25	10	0	0	0	0	0	2	0	0	0	0	0	0	37
11:45	0	29	10	0	0	1	0	0	2	0	0	0	0	0	0	42
12:00	0	35	8	0	1	0	0	1	4	0	0	0	0	0	0	49
Hour Total	0	114	45	0	2	1	0	1	9	1	0	0	0	0	0	173
12:15	0	40	9	0	1	1	0	0	1	0	0	0	0	0	0	52
12:30	0	33	16	0	1	0	0	0	1	0	0	0	0	0	0	51
12:45	0	36	9	0	1	0	0	0	1	0	0	0	0	0	0	47
13:00	0	31	11	1	0	0	0	1	4	0	0	0	0	0	0	48
Hour Total	0	140	45	1	3	1	0	1	7	0	0	0	0	0	0	198
13:15	0	37	21	1	1	0	0	2	4	0	0	0	0	0	0	66
13:30	0	36	10	0	1	0	0	1	6	0	0	0	0	0	0	54
13:45	0	44	20	0	0	1	0	0	4	0	0	0	0	0	0	69
14:00	0	41	15	0	0	0	0	0	2	0	0	0	0	0	0	58
Hour Total	0	158	66	1	2	1	0	3	16	0	0	0	0	0	0	247
14:15	0	48	16	0	1	0	0	0	4	0	0	0	0	0	0	69
14:30	0	52	23	1	3	0	0	0	1	0	1	0	0	0	0	81
14:45	0	41	18	0	3	2	0	0	1	0	0	0	0	0	0	65
15:00	0	47	29	0	3	1	0	0	2	0	0	0	0	0	0	82
Hour Total	0	188	86	1	10	3	0	0	8	0	1	0	0	0	0	297
15:15	0	55	27	0	1	0	0	0	2	0	0	0	0	0	0	85
15:30	0	57	24	0	1	0	1	1	2	0	0	0	0	0	0	86
15:45	0	69	28	0	0	0	0	0	0	0	0	0	0	0	0	97
16:00	0	45	26	0	1	0	0	0	3	0	0	0	0	0	0	75
Hour Total	0	226	105	0	3	0	1	1	7	0	0	0	0	0	0	343
16:15	0	72	20	0	1	0	0	0	0	0	0	0	0	0	0	93
16:30	0	68	23	0	1	1	0	0	1	0	0	0	0	0	0	94
16:45	0	69	24	0	1	0	0	0	2	0	1	0	0	0	0	97
17:00	1	82	28	0	0	0	0	0	1	0	0	0	0	0	0	112
Hour Total	1	291	95	0	3	1	0	0	4	0	1	0	0	0	0	396

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Thu 2/16/2012

Site Ref: Site A
Site ID: 000000009375
Loc: I-95 SB Off
Direction: SOUTH
Lane: 1

File: D0214003.prn
Info: 12-024 GW max
GPS: 38.13508 77.51015

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
17:15	0	67	25	0	1	0	0	1	0	0	0	0	0	0	0	94
17:30	0	88	25	0	0	0	0	0	0	0	0	0	0	0	0	113
17:45	0	99	24	0	1	0	0	1	1	0	0	0	0	0	0	126
18:00	0	91	18	0	1	0	0	1	0	0	0	0	0	0	0	111
Hour Total	0	345	92	0	3	0	0	3	1	0	0	0	0	0	0	444
18:15	0	72	15	0	0	0	0	0	1	0	1	0	0	0	0	89
18:30	0	65	20	0	1	0	0	0	2	0	0	0	0	0	0	88
18:45	0	60	14	0	1	0	0	1	0	0	0	0	0	0	0	76
19:00	0	56	19	0	0	0	0	0	2	0	0	0	0	0	0	77
Hour Total	0	253	68	0	2	0	0	1	5	0	1	0	0	0	0	330
19:15	0	46	10	0	1	0	0	0	1	0	0	0	0	0	0	58
19:30	0	63	10	0	0	0	0	0	1	0	0	0	0	0	0	74
19:45	0	40	18	0	1	0	0	0	2	0	0	0	0	0	0	61
20:00	0	52	15	0	0	0	0	0	6	0	0	0	0	0	0	73
Hour Total	0	201	53	0	2	0	0	0	10	0	0	0	0	0	0	266
20:15	0	47	8	0	0	0	0	0	1	0	0	0	0	0	0	56
20:30	0	36	12	0	0	0	0	0	1	0	0	0	0	0	0	49
20:45	0	34	9	0	0	0	0	0	0	0	0	0	0	0	0	43
21:00	0	38	7	0	0	0	0	1	1	0	0	0	0	0	0	47
Hour Total	0	155	36	0	0	0	0	1	3	0	0	0	0	0	0	195
21:15	0	41	4	0	0	0	0	0	0	0	0	0	0	0	0	45
21:30	0	33	6	0	0	0	0	0	2	0	0	0	0	0	0	41
21:45	0	38	2	0	0	0	0	0	3	0	0	0	0	0	0	43
22:00	0	25	4	0	1	0	0	0	1	0	0	0	0	0	0	31
Hour Total	0	137	16	0	1	0	0	0	6	0	0	0	0	0	0	160
22:15	0	26	3	0	0	0	0	0	0	0	0	0	0	0	0	29
22:30	0	16	3	0	0	0	0	0	3	0	1	0	0	0	0	23
22:45	0	17	3	0	0	0	0	0	3	0	0	0	0	0	0	23
23:00	0	19	0	0	0	0	0	2	1	0	1	0	0	0	0	23
Hour Total	0	78	9	0	0	0	0	2	7	0	2	0	0	0	0	98
23:15	0	9	1	0	0	0	0	0	1	0	0	0	0	0	0	11
23:30	0	20	6	0	0	0	0	0	0	0	0	0	0	0	0	26
23:45	0	16	1	0	0	0	0	0	0	0	0	1	0	0	0	18
24:00	0	17	2	0	1	0	0	0	2	0	0	0	0	0	0	22
Hour Total	0	62	10	0	1	0	0	0	3	0	0	1	0	0	0	77
DAY TOTAL	1	2899	946	8	61	16	2	18	151	2	12	4	0	0	0	4120
PERCENTS	0.1%	70.4%	23.0%	0.2%	1.5%	0.4%	0.1%	0.5%	3.6%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 93.3% Trucks & Buses 6.6%

AM Times	11:15	06:45	00:30	09:15	04:15	08:45	09:15	10:00	03:30	04:00	05:30	11:15
AM Peaks	114	47	2	12	3	1	2	17	1	3	3	173
PM Times	16:15	17:30	15:00	12:30	14:15	14:45	12:45	13:00	22:15	23:00		17:00
PM Peaks	1	350	108	2	10	3	1	4	18	2	1	445

GRAND TOTAL	9	2703	207	8	454	49	1	0	8333	25	53	71	15	9	0	11937
PERCENTS	0.1%	69.9%	22.7%	0.3%	1.8%	0.4%	0.0%	0.5%	3.8%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	100%

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Tue 2/14/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
00:15	1	4	2	0	0	0	0	0	2	0	0	0	0	0	0	9
00:30	0	4	1	0	1	0	0	0	0	0	1	0	0	0	0	7
00:45	0	4	2	0	0	0	0	0	1	0	1	0	0	0	0	8
01:00	0	6	1	0	0	0	0	0	1	0	0	1	0	0	0	9
Hour Total	1	18	6	0	1	0	0	0	4	0	2	1	0	0	0	33
01:15	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	4
01:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	9	1	0	0	0	0	0	2	0	0	0	0	0	0	12
02:15	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
02:30	0	2	3	0	0	0	0	0	2	0	0	0	0	0	0	7
02:45	0	3	0	0	0	0	0	1	3	0	0	0	0	0	0	7
03:00	0	1	0	0	0	0	0	1	1	0	1	0	0	0	0	4
Hour Total	0	7	3	0	0	0	0	2	8	0	1	0	0	0	0	21
03:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	3
Hour Total	0	7	3	0	0	0	0	1	0	0	0	0	0	0	0	11
04:15	0	6	0	0	0	0	0	0	1	0	0	0	0	0	0	7
04:30	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	4
04:45	0	7	1	0	0	0	0	1	2	0	0	0	0	0	0	11
05:00	0	4	0	0	0	0	0	0	2	0	1	0	0	0	0	7
Hour Total	0	18	2	0	0	0	0	2	6	0	1	0	0	0	0	29
05:15	0	1	3	0	1	0	0	0	1	0	0	0	0	0	0	6
05:30	0	4	3	0	1	0	0	0	0	0	0	0	0	0	0	8
05:45	0	7	1	0	0	1	0	0	0	0	0	0	0	0	0	9
06:00	0	10	1	0	1	0	0	1	2	0	0	0	0	0	0	15
Hour Total	0	22	8	0	3	1	0	1	3	0	0	0	0	0	0	38
06:15	0	10	1	0	2	0	0	0	1	0	0	0	0	0	0	14
06:30	0	9	5	0	0	0	0	0	3	0	0	0	0	0	0	17
06:45	0	20	9	0	1	0	0	0	1	0	0	0	0	0	0	31
07:00	0	17	8	0	2	0	0	0	2	0	0	0	0	0	0	29
Hour Total	0	56	23	0	5	0	0	0	7	0	0	0	0	0	0	91
07:15	0	28	7	0	0	0	0	0	4	0	1	0	0	0	0	40
07:30	0	21	7	0	0	1	0	0	3	0	0	0	0	0	0	32
07:45	0	26	1	0	0	0	0	1	1	0	0	0	0	0	0	29
08:00	0	30	9	0	1	0	0	1	4	1	0	0	0	0	0	46
Hour Total	0	105	24	0	1	1	0	2	12	1	1	0	0	0	0	147
08:15	0	23	8	0	2	0	0	0	1	0	0	0	0	0	0	34
08:30	0	26	9	0	2	0	0	1	4	0	0	0	0	0	0	42
08:45	0	30	5	0	1	1	0	0	2	0	0	0	0	0	0	39
09:00	0	21	3	0	3	0	1	1	0	0	0	0	0	0	0	29

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Tue 2/14/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	100	25	0	8	1	1	2	7	0	0	0	0	0	0	144
09:15	0	15	4	0	2	0	0	0	3	0	1	0	0	0	0	25
09:30	0	12	7	0	2	1	0	2	3	1	0	0	0	0	0	28
09:45	0	19	7	0	1	0	0	0	4	0	0	0	0	0	0	31
10:00	0	16	5	0	3	0	0	1	3	0	0	0	0	0	0	28
Hour Total	0	62	23	0	8	1	0	3	13	1	1	0	0	0	0	112
10:15	0	20	3	0	0	0	0	2	8	1	0	0	0	0	0	34
10:30	0	12	4	0	1	0	0	3	1	0	0	0	0	0	0	21
10:45	0	15	3	0	0	1	0	1	3	0	0	0	0	0	0	23
11:00	0	15	5	0	0	0	0	0	4	0	1	0	0	0	0	25
Hour Total	0	62	15	0	1	1	0	6	16	1	1	0	0	0	0	103
11:15	0	19	6	0	1	0	0	1	4	1	1	0	0	0	0	33
11:30	0	14	8	0	0	0	0	2	3	0	0	0	0	0	0	27
11:45	0	14	5	0	1	2	0	1	3	0	0	0	0	0	0	26
12:00	0	11	9	0	2	0	0	0	3	0	0	1	0	0	0	26
Hour Total	0	58	28	0	4	2	0	4	13	1	1	1	0	0	0	112
12:15	0	19	8	0	1	0	0	1	2	0	0	0	0	0	0	31
12:30	0	22	2	0	0	0	0	2	2	0	1	0	0	0	0	29
12:45	0	16	11	0	0	0	0	0	2	0	0	0	0	0	0	29
13:00	0	17	6	0	1	0	0	0	2	0	0	0	0	0	0	26
Hour Total	0	74	27	0	2	0	0	3	8	0	1	0	0	0	0	115
13:15	0	15	5	0	0	0	0	1	0	1	0	0	0	0	0	22
13:30	0	19	6	0	0	0	0	1	3	0	0	0	0	0	0	29
13:45	0	20	12	0	0	0	0	0	4	0	0	0	0	0	0	36
14:00	0	15	5	0	2	0	1	1	3	0	0	0	0	0	0	27
Hour Total	0	69	28	0	2	0	1	3	10	1	0	0	0	0	0	114
14:15	0	12	5	0	0	0	0	0	6	0	0	0	0	0	0	23
14:30	0	16	3	2	2	1	0	0	3	0	0	0	0	0	0	27
14:45	0	19	5	0	1	0	0	2	1	1	0	0	0	0	0	29
15:00	0	20	3	0	0	0	0	0	3	0	0	0	0	0	0	26
Hour Total	0	67	16	2	3	1	0	2	13	1	0	0	0	0	0	105
15:15	0	31	6	0	0	1	0	2	2	2	0	0	0	0	0	44
15:30	0	30	8	0	0	0	0	0	2	2	1	0	0	0	0	43
15:45	0	28	6	0	0	0	0	0	5	1	0	1	0	0	0	41
16:00	0	25	6	0	1	0	0	0	1	0	0	0	0	0	0	33
Hour Total	0	114	26	0	1	1	0	2	10	5	1	1	0	0	0	161
16:15	0	30	4	0	0	0	0	0	3	0	0	0	0	0	0	37
16:30	0	32	6	0	0	0	0	1	2	0	1	0	0	0	0	42
16:45	0	37	16	0	1	0	0	1	0	0	0	1	0	0	0	56
17:00	0	42	9	0	0	0	0	0	1	0	0	0	0	0	0	52
Hour Total	0	141	35	0	1	0	0	2	6	0	1	1	0	0	0	187

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Tue 2/14/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
17:15	0	42	14	0	0	1	0	0	2	0	0	0	0	0	0	59
17:30	0	41	8	0	2	0	0	0	0	0	0	0	0	0	0	51
17:45	0	39	7	0	0	0	0	0	3	0	0	0	0	0	0	49
18:00	0	47	4	0	0	0	0	1	1	0	0	0	0	0	0	53
Hour Total	0	169	33	0	2	1	0	1	6	0	0	0	0	0	0	212
18:15	0	38	5	0	0	1	0	1	1	0	0	0	0	0	0	46
18:30	0	36	7	0	0	0	0	0	1	0	0	0	0	0	0	44
18:45	0	20	5	0	0	0	0	0	1	0	0	0	0	0	0	26
19:00	0	20	4	0	0	0	0	0	0	0	0	0	0	0	0	24
Hour Total	0	114	21	0	0	1	0	1	3	0	0	0	0	0	0	140
19:15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
19:30	0	16	5	0	0	2	0	0	3	0	0	0	0	0	0	26
19:45	0	12	2	0	1	0	0	0	1	0	0	0	0	0	0	16
20:00	0	13	1	0	0	0	0	1	0	0	0	0	0	0	0	15
Hour Total	0	56	8	0	1	2	0	1	4	0	0	0	0	0	0	72
20:15	0	11	4	0	0	0	0	0	2	0	0	1	0	0	0	18
20:30	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	16
20:45	0	11	2	0	0	0	0	0	1	1	0	0	0	0	0	15
21:00	0	11	1	0	0	0	0	0	0	0	0	1	0	0	0	13
Hour Total	0	48	8	0	0	0	0	0	3	1	0	2	0	0	0	62
21:15	0	8	2	0	0	0	0	0	1	0	0	0	0	0	0	11
21:30	0	12	2	0	0	0	0	1	2	0	0	0	0	0	0	17
21:45	0	11	0	0	0	0	0	0	1	0	0	0	0	0	0	12
22:00	0	10	2	0	0	0	0	0	0	0	2	0	0	0	0	14
Hour Total	0	41	6	0	0	0	0	1	4	0	2	0	0	0	0	54
22:15	0	11	0	0	0	0	0	1	0	0	0	0	0	0	0	12
22:30	0	9	3	0	0	0	0	0	1	0	0	0	0	0	0	13
22:45	0	7	1	0	0	0	0	0	1	0	0	0	0	0	0	9
23:00	0	5	2	0	0	0	0	0	1	0	0	0	0	0	0	8
Hour Total	0	32	6	0	0	0	0	1	3	0	0	0	0	0	0	42
23:15	0	7	2	0	0	0	0	0	1	0	0	0	0	0	0	10
23:30	0	8	1	0	0	0	0	1	3	0	0	0	0	0	0	13
23:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
24:00	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0	5
Hour Total	0	23	4	0	0	0	0	1	5	0	0	0	0	0	0	33
DAY TOTAL	1	1472	379	2	43	13	2	41	166	12	13	6	0	0	0	2150
PERCENTS	0.1%	68.5%	17.7%	0.1%	2.1%	0.6%	0.0%	1.9%	7.7%	0.5%	0.6%	0.2%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 86.1% Trucks & Buses 13.8%

AM Times	00:30	08:00	06:45		08:15	08:45	08:15	10:00	09:30	09:30		00:15				08:00
AM Peaks	1	109	31		8	2	1	7	18	2	2	1				161
PM Times		17:15	16:45	13:45	14:00	14:30	13:15	14:30	13:30	14:45	21:15	20:15				16:45
PM Peaks		169	47	2	5	2	1	4	16	5	2	2				218

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Wed 2/15/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
00:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
00:30	0	6	0	0	0	0	0	0	2	0	0	0	0	0	0	8
00:45	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	13	2	0	1	0	0	0	2	0	0	0	0	0	0	18
01:15	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	4
01:30	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	3
01:45	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	4
02:00	0	2	0	0	1	0	0	0	1	0	0	0	0	0	0	4
Hour Total	0	7	1	0	1	0	0	1	4	0	0	1	0	0	0	15
02:15	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	4
02:30	0	4	0	0	0	0	0	0	5	0	0	0	0	0	0	9
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Hour Total	0	5	2	0	0	0	0	0	8	0	0	0	0	0	0	15
03:15	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
03:30	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	4
03:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	4	0	0	2	0	0	0	1	0	0	0	0	0	0	7
Hour Total	0	9	1	0	2	0	0	0	3	0	1	0	0	0	0	16
04:15	0	3	0	0	0	0	0	0	1	0	1	0	0	0	0	5
04:30	0	4	1	0	0	0	0	0	2	0	1	0	0	0	0	8
04:45	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00	0	2	2	0	0	0	0	0	1	0	0	0	0	0	0	5
Hour Total	0	14	4	0	0	0	0	0	4	0	2	0	0	0	0	24
05:15	0	5	2	0	1	0	0	0	0	0	1	0	0	0	0	9
05:30	0	1	3	0	1	0	0	0	1	0	0	0	0	0	0	6
05:45	0	5	4	0	0	0	0	1	1	0	0	0	0	0	0	11
06:00	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
Hour Total	0	19	11	0	2	0	0	1	2	0	1	0	0	0	0	36
06:15	1	6	3	0	1	0	0	0	2	0	0	0	0	0	0	13
06:30	0	13	2	0	1	0	0	0	1	0	0	0	0	0	0	17
06:45	0	17	7	0	0	0	0	0	0	0	0	0	0	0	0	24
07:00	0	26	5	0	1	0	0	0	1	0	0	0	0	0	0	33
Hour Total	1	62	17	0	3	0	0	0	4	0	0	0	0	0	0	87
07:15	0	12	4	0	0	0	0	2	2	0	0	0	0	0	0	20
07:30	0	19	6	0	1	0	0	0	4	0	0	0	0	0	0	30
07:45	0	28	11	0	1	1	0	0	1	0	1	0	0	0	0	43
08:00	0	26	8	0	1	1	0	0	1	1	0	0	0	0	0	38
Hour Total	0	85	29	0	3	2	0	2	8	1	1	0	0	0	0	131
08:15	0	31	3	0	2	0	0	1	3	0	0	0	0	0	0	40
08:30	0	34	6	0	2	0	1	0	2	1	0	0	0	0	0	46
08:45	0	23	9	0	1	1	0	2	1	0	0	0	0	0	0	37
09:00	0	20	7	0	0	0	0	2	1	0	0	0	0	0	0	30

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Wed 2/15/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	108	25	0	5	1	1	5	7	1	0	0	0	0	0	153
09:15	0	16	7	0	0	1	0	2	1	0	1	0	0	0	0	28
09:30	0	14	8	0	4	0	0	1	5	0	0	0	0	0	0	32
09:45	0	16	7	0	3	0	0	0	5	0	0	0	0	0	0	31
10:00	0	23	3	0	1	0	0	0	7	0	0	1	0	0	0	35
Hour Total	0	69	25	0	8	1	0	3	18	0	1	1	0	0	0	126
10:15	0	20	6	0	2	0	0	1	5	0	0	0	0	0	0	34
10:30	0	21	6	0	2	0	0	0	4	0	0	0	0	0	0	33
10:45	0	16	9	0	3	0	0	2	2	0	0	0	0	0	0	32
11:00	0	25	4	0	1	0	0	0	1	0	0	0	0	0	0	31
Hour Total	0	82	25	0	8	0	0	3	12	0	0	0	0	0	0	130
11:15	0	17	4	0	0	1	0	2	2	0	0	0	0	0	0	26
11:30	0	24	5	0	1	0	0	1	1	0	0	0	0	0	0	32
11:45	0	18	5	0	3	2	0	0	2	0	0	0	0	0	0	30
12:00	0	16	4	0	0	0	0	1	4	1	0	0	0	0	0	26
Hour Total	0	75	18	0	4	3	0	4	9	1	0	0	0	0	0	114
12:15	0	11	5	0	1	0	0	0	3	0	0	0	0	0	0	20
12:30	0	26	8	0	2	1	0	1	3	0	0	0	0	0	0	41
12:45	0	21	4	0	0	0	0	1	1	0	0	0	0	0	0	27
13:00	0	13	7	0	0	0	0	1	4	0	0	0	0	0	0	25
Hour Total	0	71	24	0	3	1	0	3	11	0	0	0	0	0	0	113
13:15	0	21	5	0	0	0	0	1	0	0	0	0	0	0	0	27
13:30	1	16	3	0	1	0	0	0	6	0	0	0	0	0	0	27
13:45	0	25	4	0	2	0	0	1	0	0	0	0	0	0	0	32
14:00	0	14	2	0	0	0	0	0	2	0	0	0	0	0	0	18
Hour Total	1	76	14	0	3	0	0	2	8	0	0	0	0	0	0	104
14:15	0	21	4	0	0	0	0	0	3	0	1	0	0	0	0	29
14:30	0	24	3	0	0	0	0	1	1	0	0	0	0	0	0	29
14:45	0	14	5	0	2	0	0	1	5	1	0	0	0	0	0	28
15:00	0	17	8	0	1	0	0	1	0	0	0	0	0	0	0	27
Hour Total	0	76	20	0	3	0	0	3	9	1	1	0	0	0	0	113
15:15	0	23	12	0	1	0	0	2	1	0	0	0	0	0	0	39
15:30	0	35	8	0	2	0	0	0	1	0	0	0	0	0	0	46
15:45	0	25	6	0	0	0	0	0	5	1	0	0	0	0	0	37
16:00	0	30	17	0	0	0	0	0	1	0	0	0	0	0	0	48
Hour Total	0	113	43	0	3	0	0	2	8	1	0	0	0	0	0	170
16:15	0	35	8	0	0	1	0	0	3	0	0	0	0	0	0	47
16:30	0	33	11	0	2	0	0	0	2	0	0	0	0	0	0	48
16:45	0	38	8	0	0	0	0	2	2	0	0	0	0	0	0	50
17:00	0	38	7	0	0	0	0	1	2	0	0	0	0	0	0	48
Hour Total	0	144	34	0	2	1	0	3	9	0	0	0	0	0	0	193

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Wed 2/15/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
17:15	0	39	10	0	0	0	0	0	0	0	0	0	0	0	0	49
17:30	0	48	14	0	1	0	0	1	0	0	0	0	0	0	0	64
17:45	1	52	6	0	0	0	0	0	0	0	0	0	0	0	0	59
18:00	0	49	3	0	0	0	0	0	1	0	0	0	0	0	0	53
Hour Total	1	188	33	0	1	0	0	1	1	0	0	0	0	0	0	225
18:15	0	38	8	0	0	0	0	0	1	0	0	0	0	0	0	47
18:30	0	33	7	0	0	0	0	0	4	0	0	0	0	0	0	44
18:45	0	21	2	0	0	0	0	0	3	0	0	0	0	0	0	26
19:00	0	21	3	0	0	0	0	0	0	0	0	0	0	0	0	24
Hour Total	0	113	20	0	0	0	0	0	8	0	0	0	0	0	0	141
19:15	0	21	2	0	0	0	0	1	2	0	0	0	0	0	0	26
19:30	0	17	4	0	0	0	0	0	2	0	0	0	0	0	0	23
19:45	0	10	2	0	0	0	0	1	3	0	0	0	0	0	0	16
20:00	0	10	2	0	0	1	0	0	4	0	0	0	0	0	0	17
Hour Total	0	58	10	0	0	1	0	2	11	0	0	0	0	0	0	82
20:15	0	9	6	0	0	1	0	0	1	0	0	0	0	0	0	17
20:30	0	13	4	0	0	0	0	0	1	0	0	1	0	0	0	19
20:45	0	12	3	0	1	0	0	1	4	0	0	0	0	0	0	21
21:00	0	13	5	0	0	0	0	0	0	0	0	1	0	0	0	19
Hour Total	0	47	18	0	1	1	0	1	6	0	0	2	0	0	0	76
21:15	0	16	4	0	1	0	0	0	2	0	0	0	0	0	0	23
21:30	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	11
21:45	0	12	1	0	0	0	0	1	1	0	0	0	0	0	0	15
22:00	0	10	0	0	0	0	0	0	1	0	1	0	0	0	0	12
Hour Total	0	48	6	0	1	0	0	1	4	0	1	0	0	0	0	61
22:15	0	14	3	0	0	0	0	0	2	0	0	0	0	0	0	19
22:30	0	10	3	0	0	0	0	0	1	0	0	0	0	0	0	14
22:45	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	5
23:00	0	4	2	0	0	0	0	0	2	0	0	0	0	0	0	8
Hour Total	0	32	8	0	0	0	0	1	5	0	0	0	0	0	0	46
23:15	0	10	1	0	1	0	0	1	0	0	1	0	0	0	0	14
23:30	0	6	0	0	0	0	0	0	2	0	0	0	0	0	0	8
23:45	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
24:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	17	1	0	1	0	0	1	4	0	1	0	0	0	0	25
DAY TOTAL	3	1531	391	0	55	11	1	39	165	5	9	4	0	0	0	2214
PERCENTS	0.2%	69.2%	17.7%	0.0%	2.5%	0.5%	0.1%	1.7%	7.4%	0.2%	0.4%	0.1%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 86.9% Trucks & Buses 13.0%

AM Times	05:30	07:45	08:45	09:30	11:00	07:45	08:45	09:30	07:45	03:45	00:45	07:45
AM Peaks	1	119	31	10	3	1	7	22	2	2	1	167
PM Times	12:45	17:15	16:00	14:45	19:30	14:30	12:15	14:00	13:30	20:15		17:15
PM Peaks	1	188	44	6	2	5	11	1	1	2		225

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Thu 2/16/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
00:15	0	5	0	0	0	1	0	0	2	0	0	0	0	0	0	8
00:30	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
00:45	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
01:00	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	6
Hour Total	0	21	1	0	0	1	0	0	3	0	0	0	0	0	0	26
01:15	0	4	0	0	0	1	0	0	2	0	0	0	0	0	0	7
01:30	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	4
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	3
Hour Total	0	9	0	0	0	2	0	0	5	0	0	0	0	0	0	16
02:15	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	3
02:30	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	3
02:45	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	3
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	8	0	0	0	0	0	0	3	0	0	0	0	0	0	11
03:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
03:30	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
03:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	4
Hour Total	0	4	3	0	0	0	0	0	2	0	1	0	0	0	0	10
04:15	0	4	1	0	1	0	0	0	0	0	0	0	0	0	0	6
04:30	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	4
04:45	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
05:00	0	5	1	0	0	0	0	0	2	0	1	0	0	0	0	9
Hour Total	0	17	4	0	1	0	0	0	3	0	1	0	0	0	0	26
05:15	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	3
05:30	0	3	1	0	1	0	0	0	2	0	0	0	0	0	0	7
05:45	0	7	1	0	2	0	0	1	2	0	0	0	0	0	0	13
06:00	0	12	0	0	0	0	0	0	3	0	0	0	0	0	0	15
Hour Total	0	24	2	0	3	0	0	1	8	0	0	0	0	0	0	38
06:15	0	6	2	0	1	0	0	0	2	1	0	0	0	0	0	12
06:30	0	9	2	0	2	0	0	0	3	0	0	0	0	0	0	16
06:45	0	15	7	0	0	0	0	1	1	0	0	0	0	0	0	24
07:00	0	19	4	0	1	0	0	0	2	0	0	0	0	0	0	26
Hour Total	0	49	15	0	4	0	0	1	8	1	0	0	0	0	0	78
07:15	0	17	4	0	0	0	0	0	2	0	0	0	0	0	0	23
07:30	0	20	5	0	0	1	0	1	3	0	0	0	0	0	0	30
07:45	0	21	8	0	0	1	0	2	1	1	0	0	0	0	0	34
08:00	0	21	5	0	2	0	2	1	3	0	0	0	0	0	0	34
Hour Total	0	79	22	0	2	2	2	4	9	1	0	0	0	0	0	121
08:15	0	26	9	0	0	2	0	1	1	0	0	0	0	0	0	39
08:30	0	26	6	0	0	0	0	1	0	0	0	0	0	0	0	33
08:45	0	22	14	0	0	1	0	0	2	1	0	0	0	0	0	40
09:00	0	13	8	1	0	1	0	1	2	0	0	0	0	0	0	26

Malone & Associates Inc.
CLASSIFICATION SUMMARY
Thu 2/16/2012

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	87	37	1	0	4	0	3	5	1	0	0	0	0	0	138
09:15	0	22	2	0	0	0	0	0	2	1	1	0	0	0	0	28
09:30	0	18	9	0	0	0	0	2	4	0	1	0	0	0	0	34
09:45	0	29	6	0	2	1	0	2	1	0	0	0	0	0	0	41
10:00	0	18	3	0	1	0	0	0	4	1	0	0	0	0	0	27
Hour Total	0	87	20	0	3	1	0	4	11	2	2	0	0	0	0	130
10:15	0	10	6	1	2	0	0	1	3	0	1	0	0	0	0	24
10:30	0	22	6	0	2	0	0	0	4	0	0	0	0	0	0	34
10:45	0	23	5	0	1	0	0	0	0	0	0	0	0	0	0	29
11:00	0	11	2	0	2	0	0	0	2	2	0	0	0	0	0	19
Hour Total	0	66	19	1	7	0	0	1	9	2	1	0	0	0	0	106
11:15	0	19	2	0	1	0	0	0	2	1	0	0	0	0	0	25
11:30	0	19	6	0	0	0	0	0	2	0	0	0	0	0	0	27
11:45	0	17	4	0	1	0	0	1	3	1	0	0	0	0	0	27
12:00	0	27	12	0	2	0	0	2	2	0	0	0	0	0	0	45
Hour Total	0	82	24	0	4	0	0	3	9	2	0	0	0	0	0	124
12:15	0	22	2	0	1	1	0	1	3	0	0	0	0	0	0	30
12:30	0	25	8	0	1	1	0	0	2	0	0	0	0	0	0	37
12:45	0	24	10	0	3	0	0	0	3	0	0	0	0	0	0	40
13:00	0	23	7	0	2	0	0	1	0	1	0	0	0	0	0	34
Hour Total	0	94	27	0	7	2	0	2	8	1	0	0	0	0	0	141
13:15	0	22	5	0	0	0	0	1	6	0	0	0	0	0	0	34
13:30	0	27	5	0	0	0	0	2	1	0	0	0	0	0	0	35
13:45	0	18	5	0	0	1	0	1	2	0	0	0	0	0	0	27
14:00	0	25	8	0	0	0	0	2	4	0	0	0	0	0	0	39
Hour Total	0	92	23	0	0	1	0	6	13	0	0	0	0	0	0	135
14:15	0	20	4	0	1	0	0	1	2	0	0	0	0	0	0	28
14:30	0	20	7	0	2	0	0	0	1	0	0	0	0	0	0	30
14:45	0	27	6	0	0	0	0	1	4	0	0	0	0	0	0	38
15:00	0	19	5	0	0	0	0	1	2	0	1	0	0	0	0	28
Hour Total	0	86	22	0	3	0	0	3	9	0	1	0	0	0	0	124
15:15	0	25	7	0	0	1	0	1	3	0	0	0	0	0	0	37
15:30	0	30	4	0	2	0	0	0	0	0	0	0	0	0	0	36
15:45	0	18	6	0	0	2	0	0	1	0	0	1	0	0	0	28
16:00	0	34	12	0	0	1	0	1	4	0	0	0	0	0	0	52
Hour Total	0	107	29	0	2	4	0	2	8	0	0	1	0	0	0	153
16:15	0	25	3	0	1	0	0	0	2	0	0	0	0	0	0	31
16:30	0	38	12	0	0	0	0	2	5	0	0	0	0	0	0	57
16:45	0	34	11	0	2	0	0	1	4	0	0	0	0	0	0	52
17:00	0	41	5	0	1	0	0	2	0	0	0	0	0	0	0	49
Hour Total	0	138	31	0	4	0	0	5	11	0	0	0	0	0	0	189

Site Ref: Site D
Site ID: 000000003806
Loc: I-95 NB Off
Direction: NORTH
Lane: 1

File: D0214004.prn
Info: 12-024 GW Max
GPS: 38.12986 77.51212

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
17:15	0	40	5	0	0	0	0	0	1	0	0	0	0	0	0	46
17:30	0	68	4	0	0	0	0	0	2	0	0	1	0	0	0	75
17:45	0	52	7	0	1	0	0	0	0	0	0	0	0	0	0	60
18:00	0	37	5	0	0	0	0	0	4	0	0	1	0	0	0	47
Hour Total	0	197	21	0	1	0	0	0	7	0	0	2	0	0	0	228
18:15	0	37	9	0	0	0	0	0	2	0	0	0	0	0	0	48
18:30	0	32	8	0	1	0	0	0	2	0	0	0	0	0	0	43
18:45	0	27	4	1	0	0	0	0	1	0	0	0	0	0	0	33
19:00	0	29	2	0	0	0	0	2	1	0	0	0	0	0	0	34
Hour Total	0	125	23	1	1	0	0	2	6	0	0	0	0	0	0	158
19:15	0	18	4	0	0	1	0	1	3	0	0	0	0	0	0	27
19:30	0	22	6	0	0	0	0	0	1	0	0	0	0	0	0	29
19:45	0	15	3	0	2	0	0	0	2	0	0	0	0	0	0	22
20:00	0	20	5	0	0	0	0	1	1	0	0	0	0	0	0	27
Hour Total	0	75	18	0	2	1	0	2	7	0	0	0	0	0	0	105
20:15	0	13	3	0	0	0	0	0	2	0	0	0	0	0	0	18
20:30	0	25	3	0	0	0	0	0	1	0	0	0	0	0	0	29
20:45	0	25	2	0	0	0	0	0	1	0	0	1	0	0	0	29
21:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
Hour Total	0	71	9	0	0	0	0	0	4	0	0	1	0	0	0	85
21:15	0	17	4	0	0	0	0	0	1	0	0	0	0	0	0	22
21:30	0	17	1	0	0	0	0	0	1	0	0	1	0	0	0	20
21:45	0	8	2	1	0	0	0	1	0	0	0	0	0	0	0	12
22:00	0	12	3	0	0	0	0	0	0	0	1	0	0	0	0	16
Hour Total	0	54	10	1	0	0	0	1	2	0	1	1	0	0	0	70
22:15	0	13	0	0	0	0	0	1	0	0	0	0	0	0	0	14
22:30	0	14	2	0	0	0	0	0	2	0	1	0	0	0	0	19
22:45	0	8	1	0	0	0	0	0	0	0	2	0	0	0	0	11
23:00	0	14	0	0	0	0	0	0	1	0	0	0	0	0	0	15
Hour Total	0	49	3	0	0	0	0	1	3	0	3	0	0	0	0	59
23:15	0	6	2	0	0	0	0	0	3	0	1	0	0	0	0	12
23:30	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
23:45	0	11	2	0	0	0	0	1	0	0	1	0	0	0	0	15
24:00	0	8	1	0	0	0	0	0	1	0	0	0	0	0	0	10
Hour Total	0	36	6	0	0	0	0	1	4	0	2	0	0	0	0	49
DAY TOTAL	0	1657	369	4	44	18	2	42	157	10	12	5	0	0	0	2320
PERCENTS	0.0%	71.5%	16.0%	0.2%	1.9%	0.8%	0.0%	1.8%	6.7%	0.4%	0.5%	0.2%	0.0%	0.0%	0.0%	100%

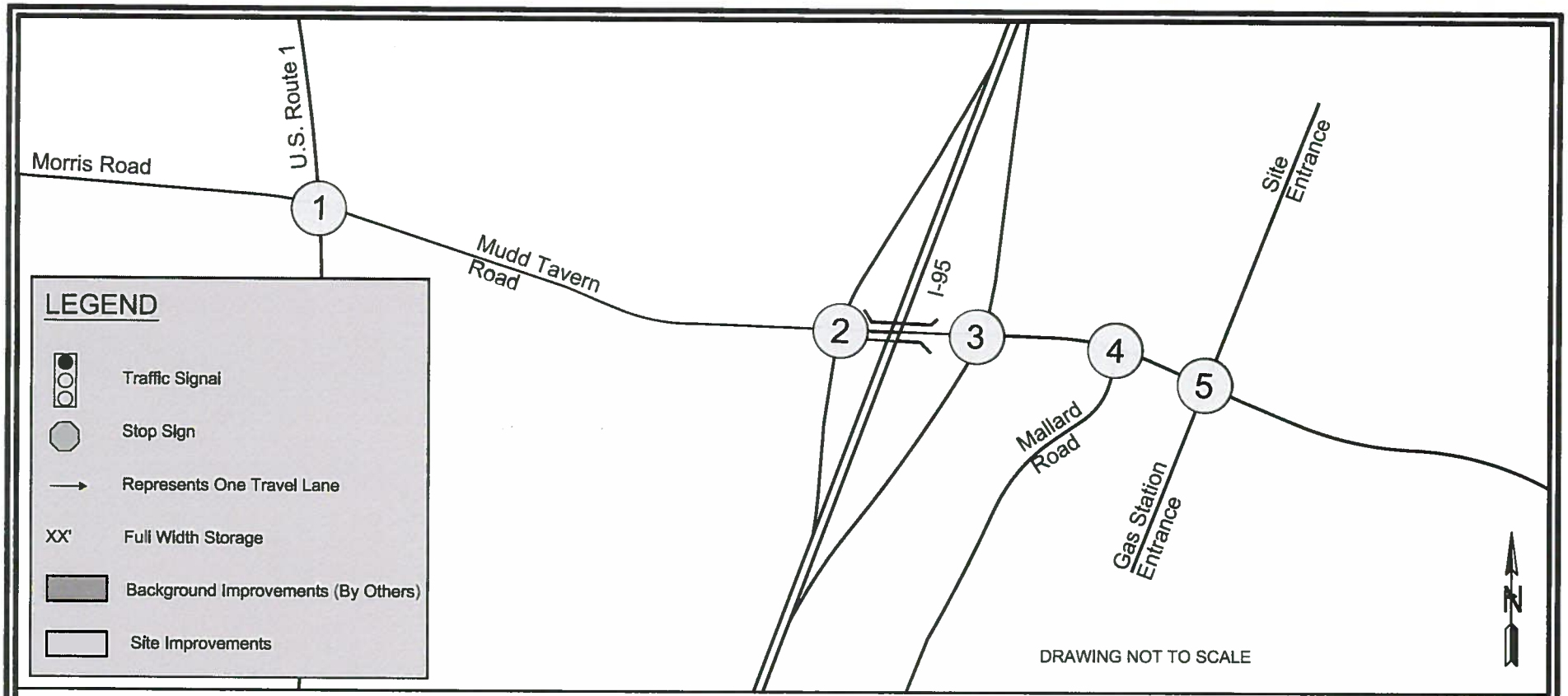
Passenger Vehicles 87.3% Trucks & Buses 12.6%

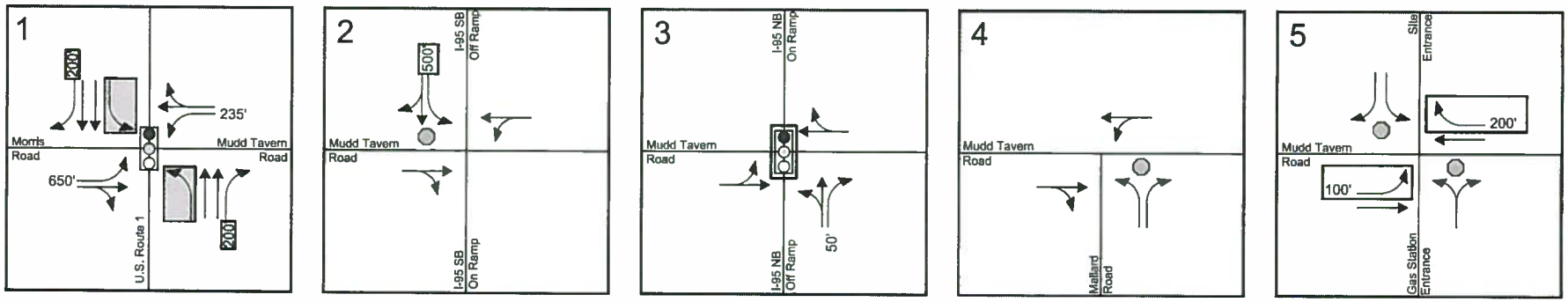
AM Times	08:00	08:15	08:15	09:45	07:30	07:15	07:30	09:30	11:00	08:45	08:00
AM Peaks	95	37	1	7	4	2	5	12	4	2	146
PM Times	17:00	16:00	18:00	12:15	15:15	13:15	16:00	12:15	22:00	17:15	17:00
PM Peaks	201	38	1	7	4	6	15	1	4	2	230

GRAND TOTAL	4	1139	142	5	488	34	0	0								
	4660	6	42	122	27	15	0	6684								
PERCENTS	0.1%	69.8%	17.1%	0.1%	2.1%	0.6%	0.0%	1.8%	7.3%	0.4%	0.5%	0.2%	0.0%	0.0%	0.0%	100%

Attachment H

Updated Figures



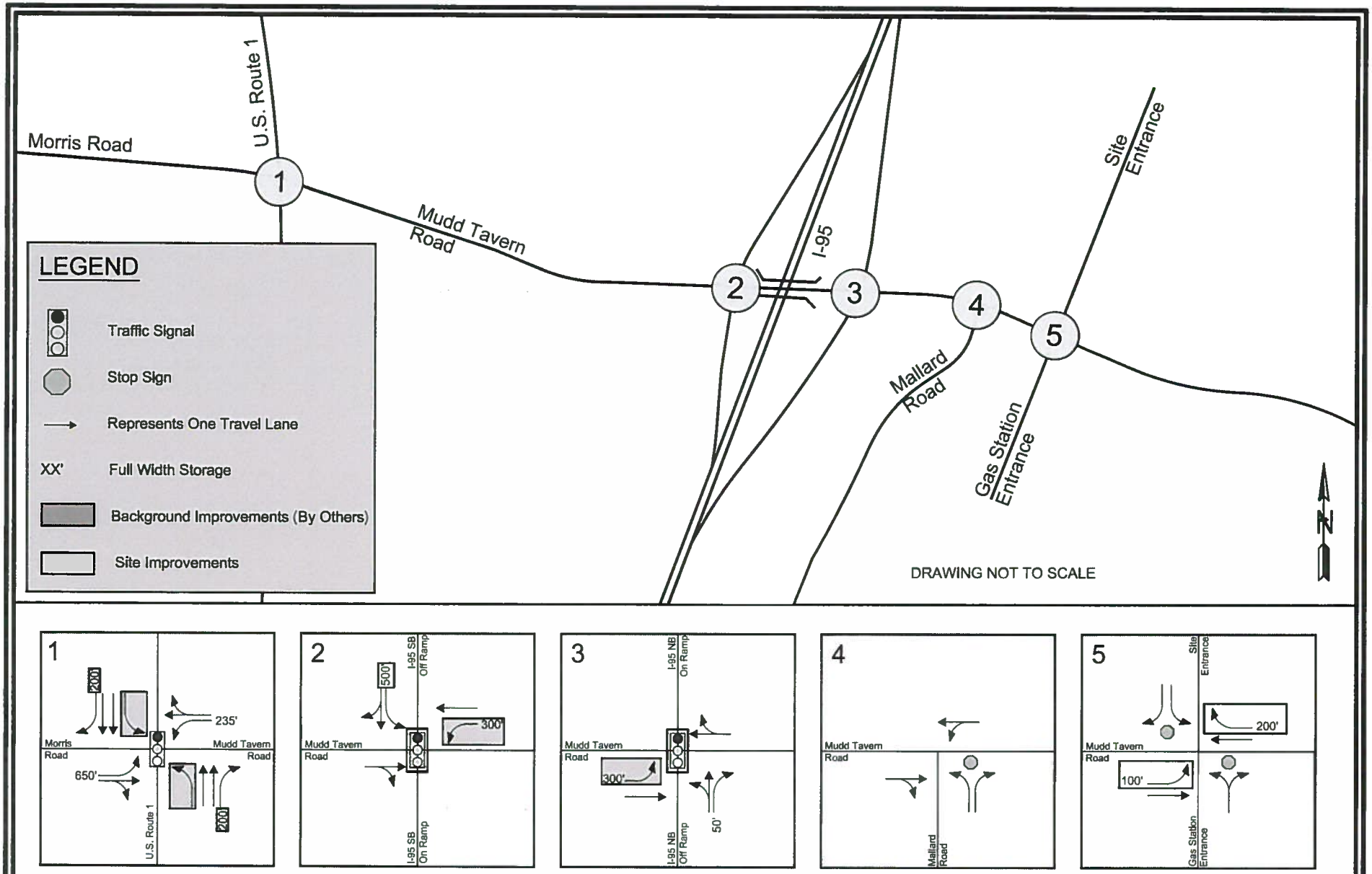


Bowman CONSULTING

Future Lane Use and Traffic Control (2017)
Dominion Raceway
Spotsylvania County, Virginia

Figure 7.A

Job # 4950-01-001

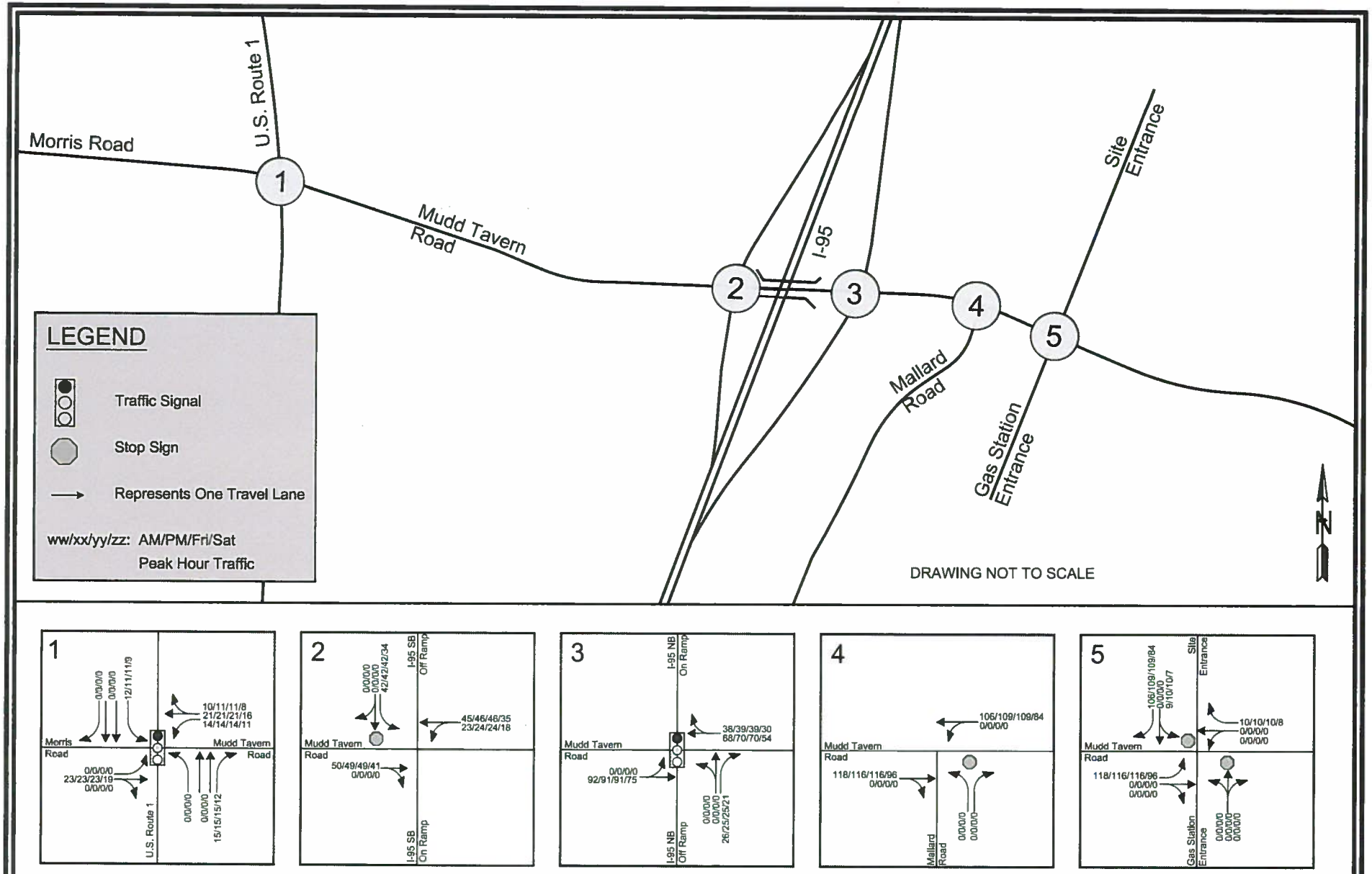


Bowman CONSULTING

Future Lane Use and Traffic Control (2023)
Dominion Raceway
Spotsylvania County, Virginia

Figure 7.B

Job # 4950-01-001

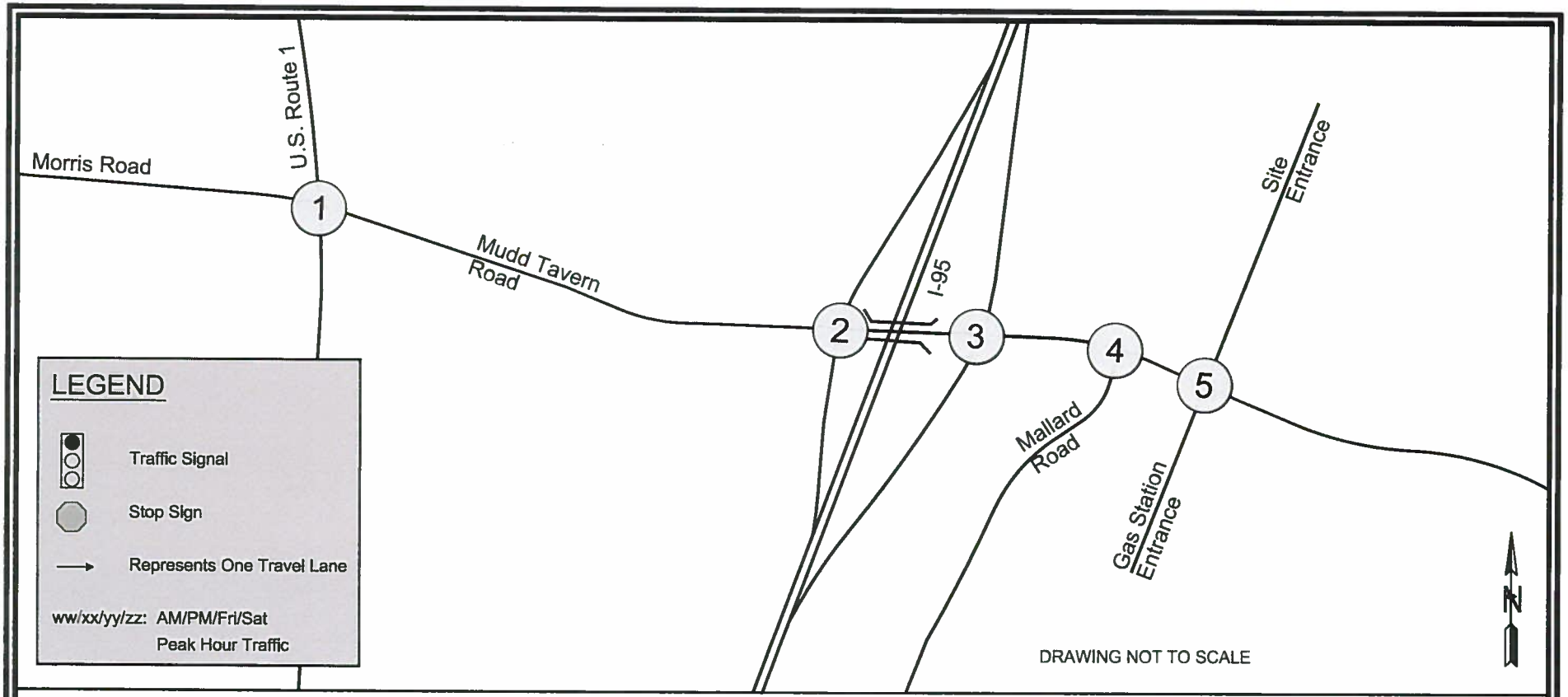


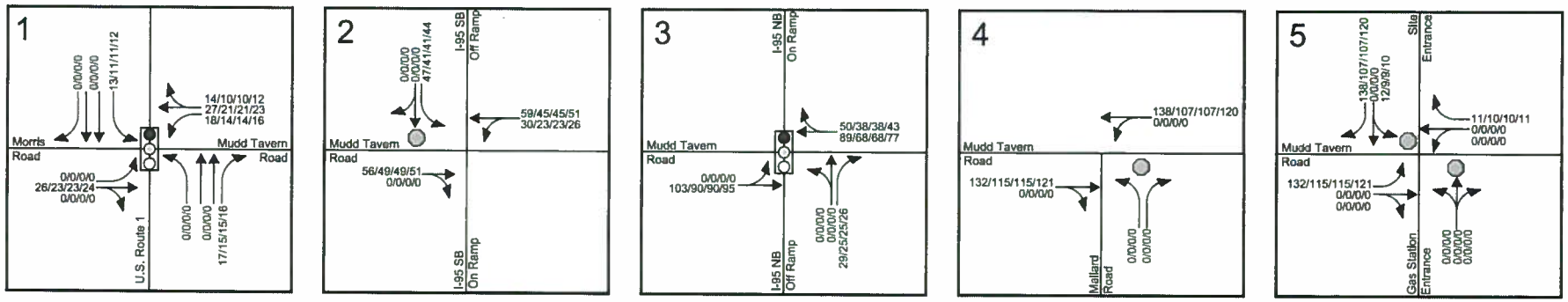
Bowman CONSULTING

Site Generated Commercial Primary Trips
Full Build-out
Dominion Raceway
Spotsylvania County, Virginia

Figure 16.A

Job # 4950-01-001



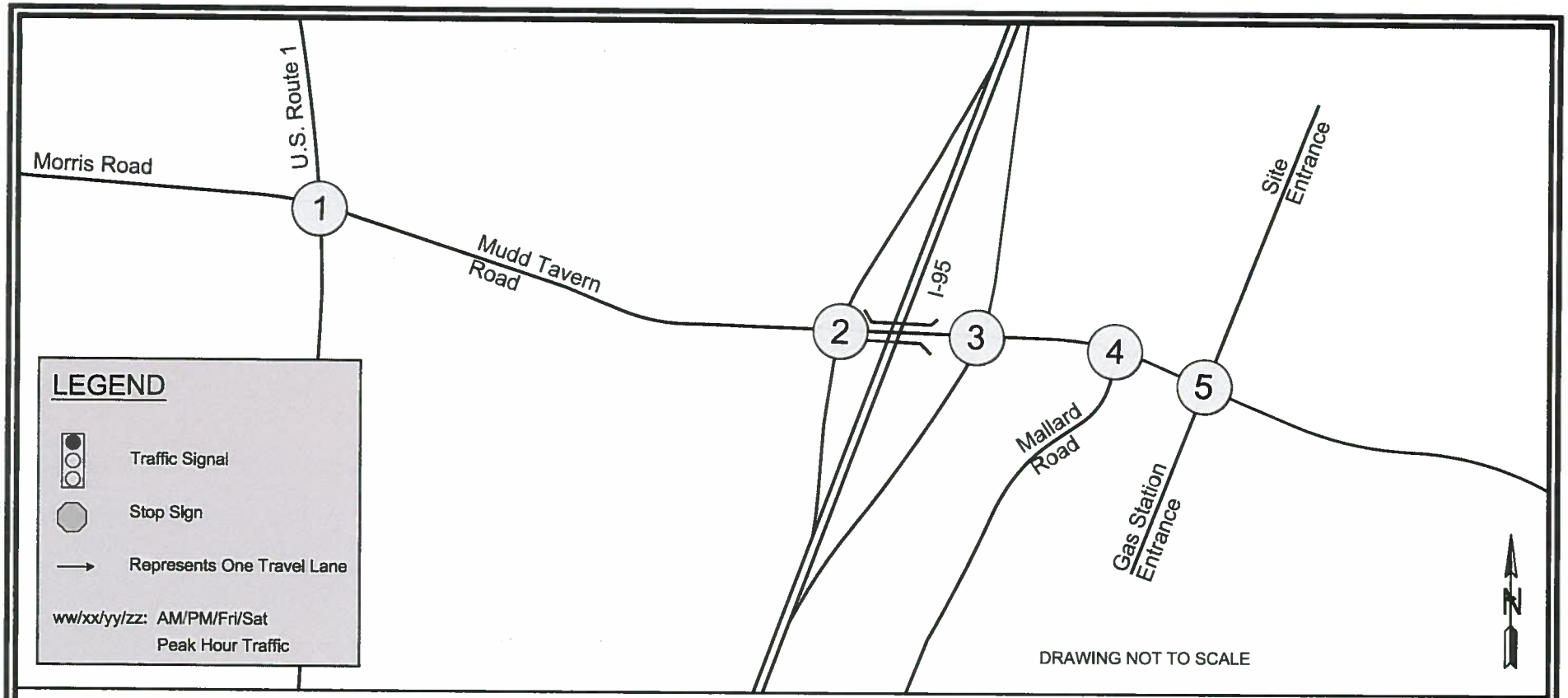


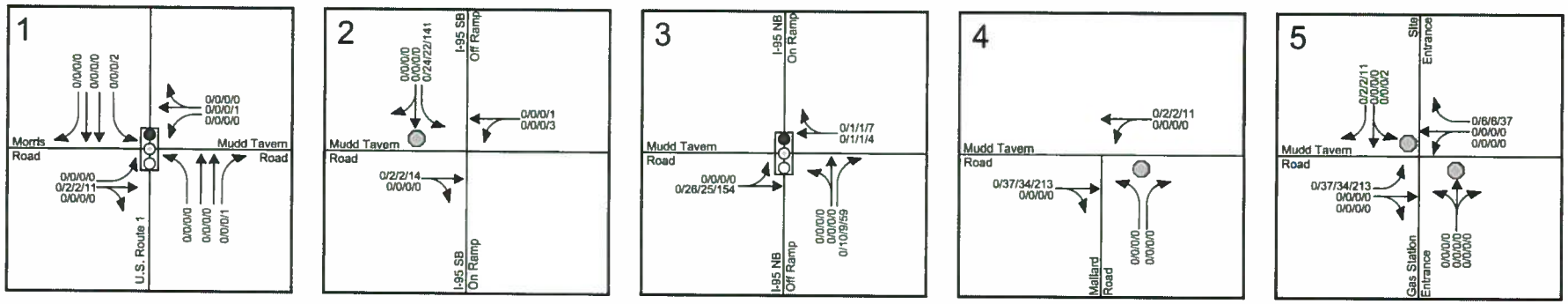
Bowman CONSULTING

Adjacent C-3 Commercial Primary Trips
Full Build-out
Dominion Raceway
Spotsylvania County, Virginia

Figure 16.B

Job # 4950-01-001





Bowman CONSULTING

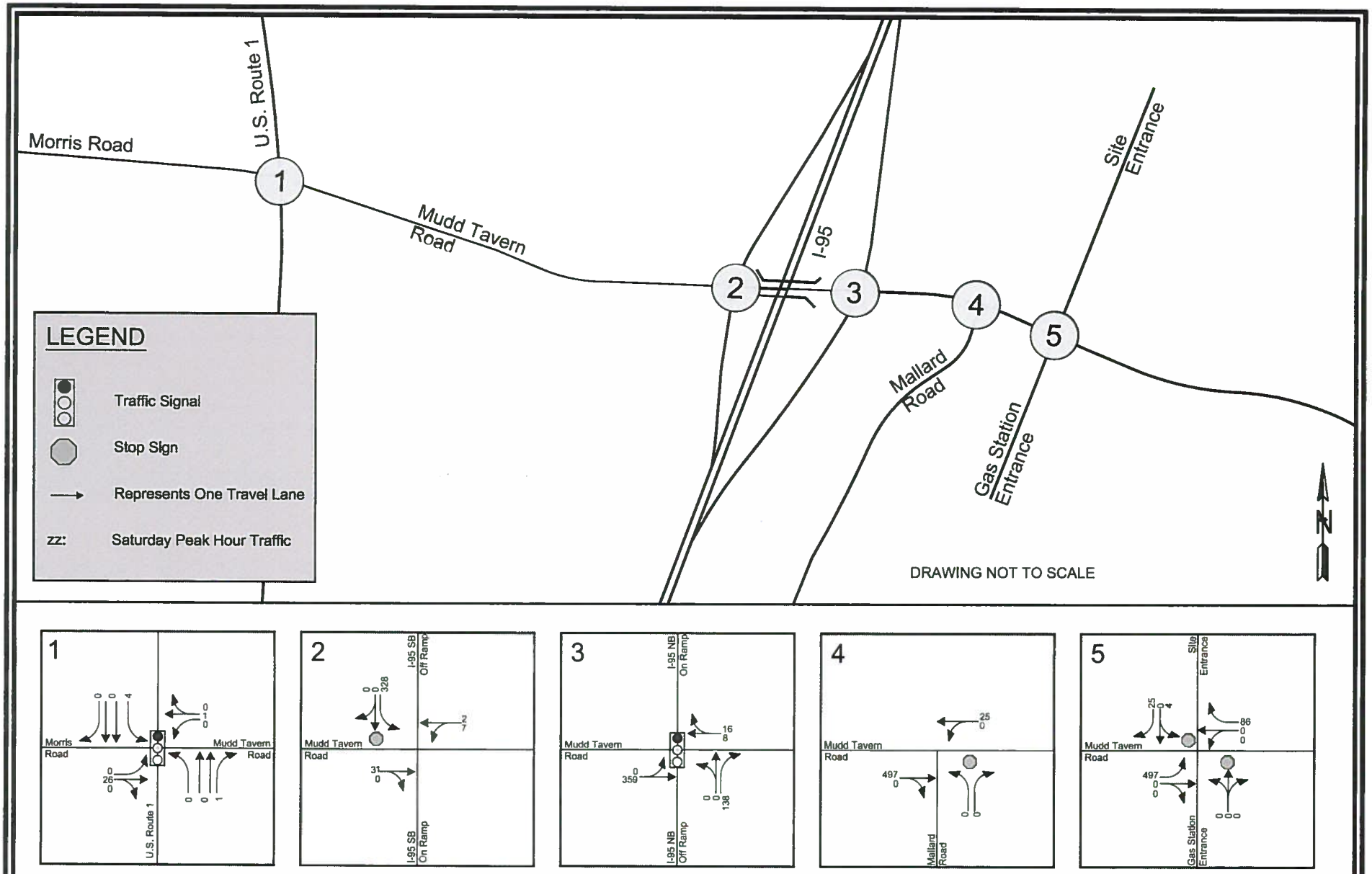
Site Generated Raceway Trips - 1,500 Average Saturday Event Attendance

Dominion Raceway

Spotsylvania County, Virginia

Figure 17.A

Job # 4950-01-001

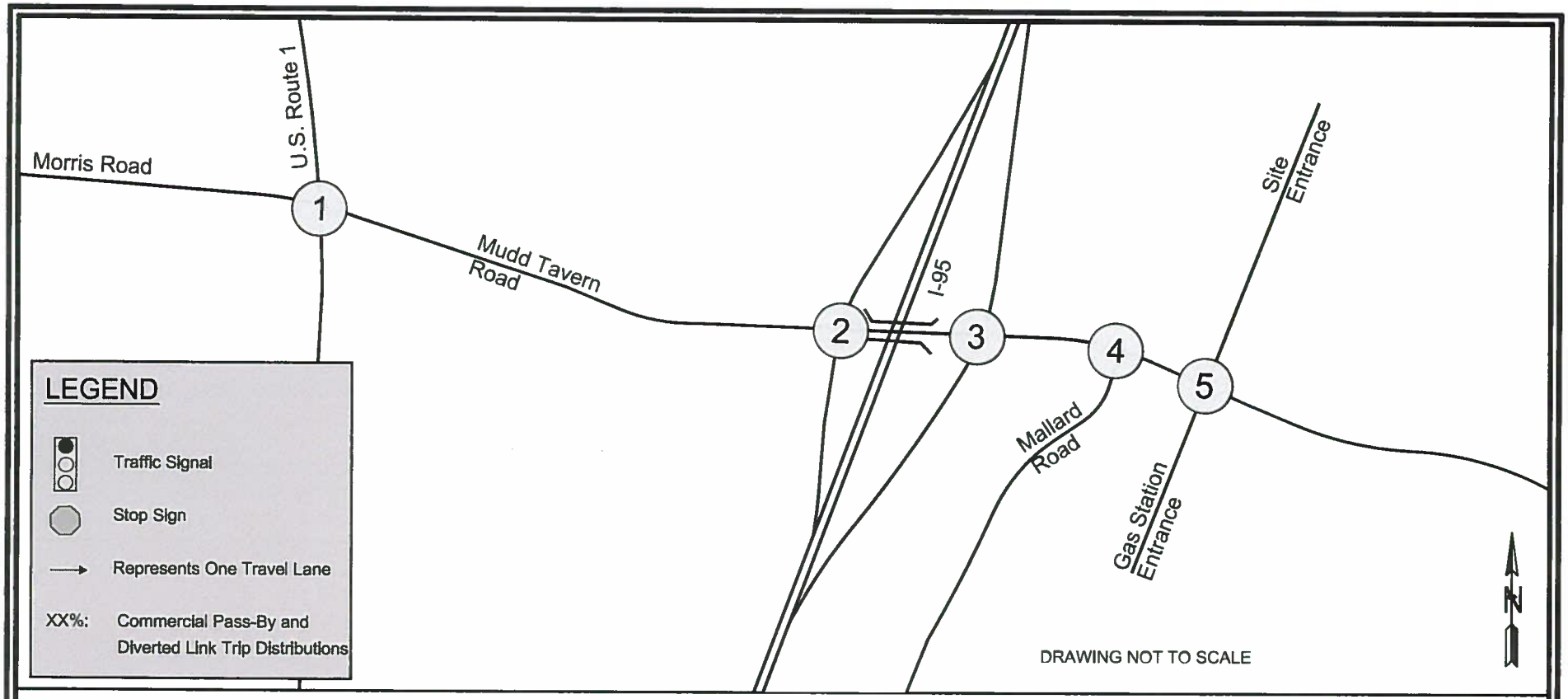


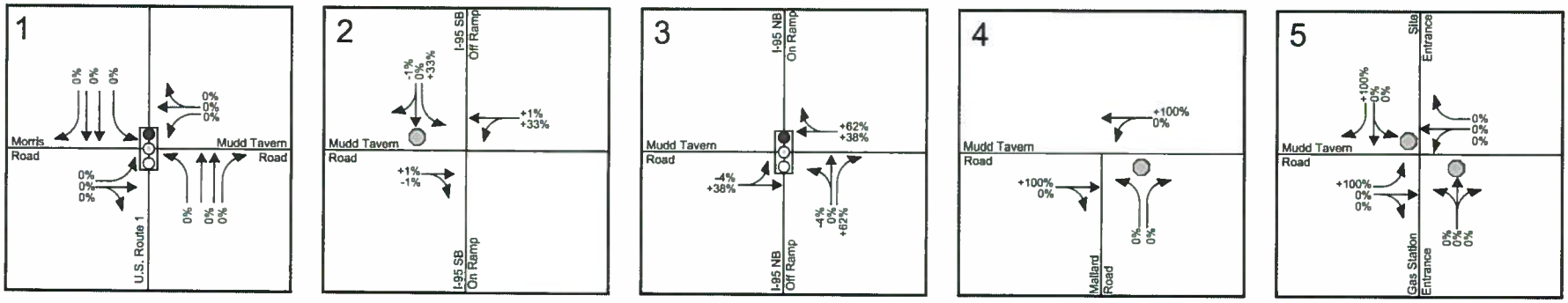
Bowman CONSULTING

Site Generated Raceway Trips - 3,500
Sellout Saturday Event Attendance
Dominion Raceway
Spotsylvania County, Virginia

Figure 17.B

Job # 4950-01-001



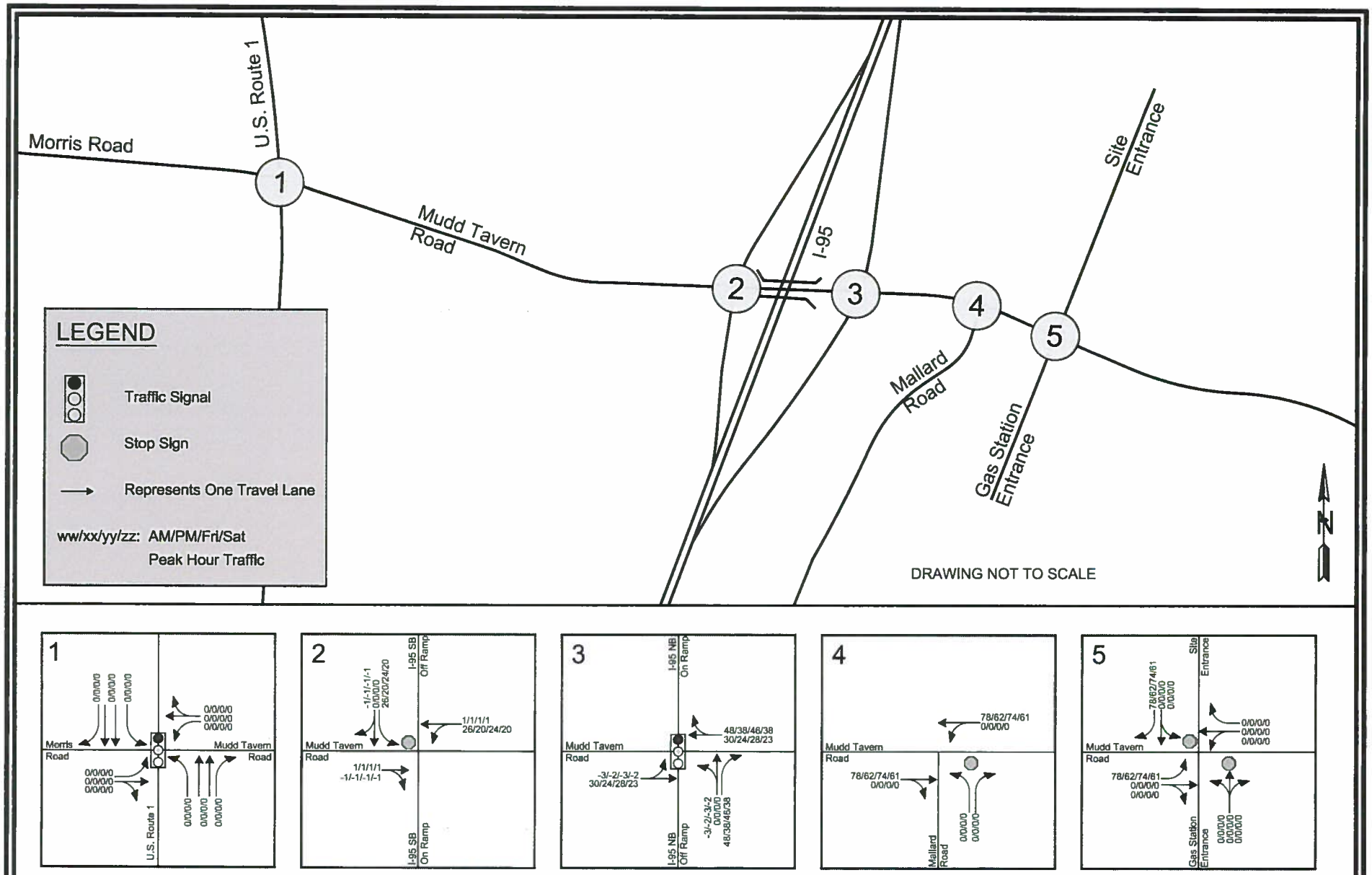


Bowman CONSULTING

Site Generated Commercial Diverted Link Trip Distributions
Dominion Raceway
Spotsylvania County, Virginia

Figure 18.A

Job # 4950-01-001



Bowman CONSULTING

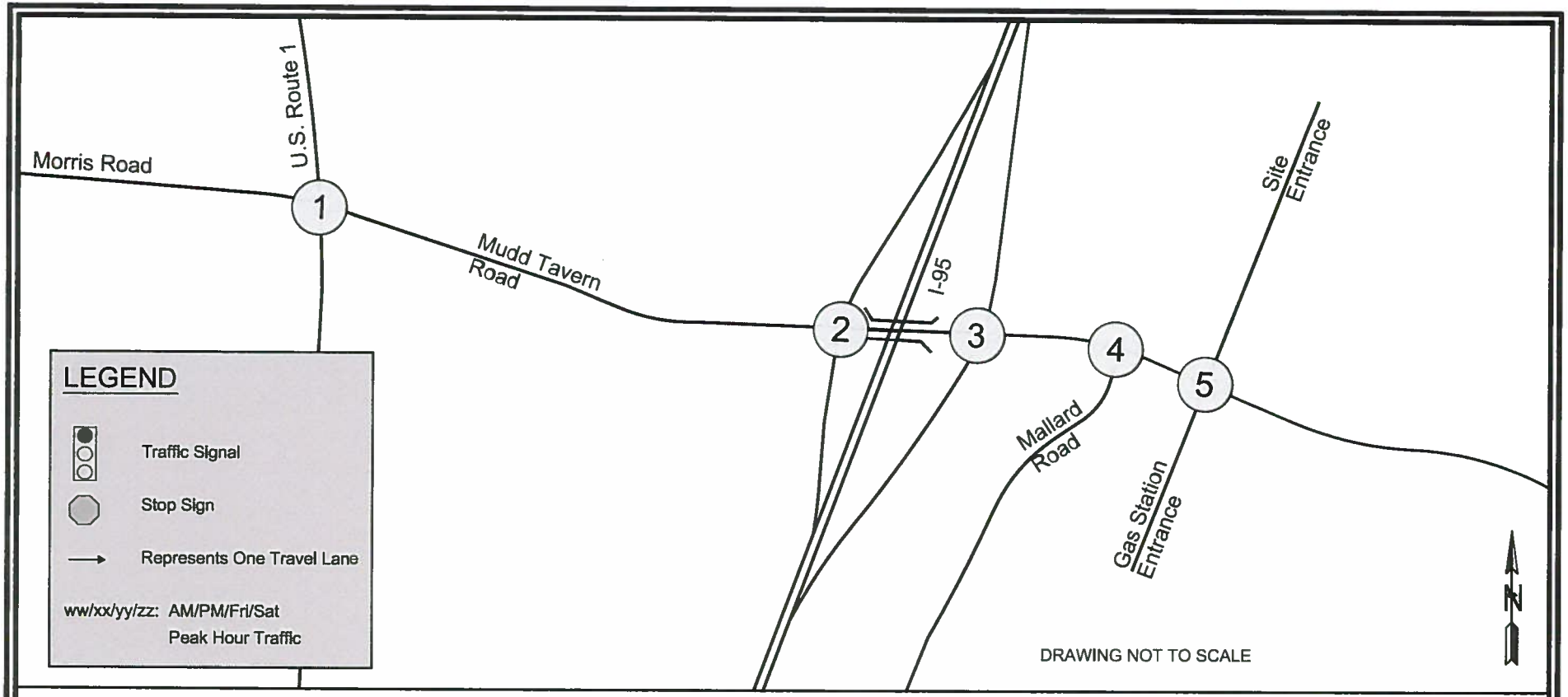
Site Generated Commercial Diverted Link Trips Full Build-out

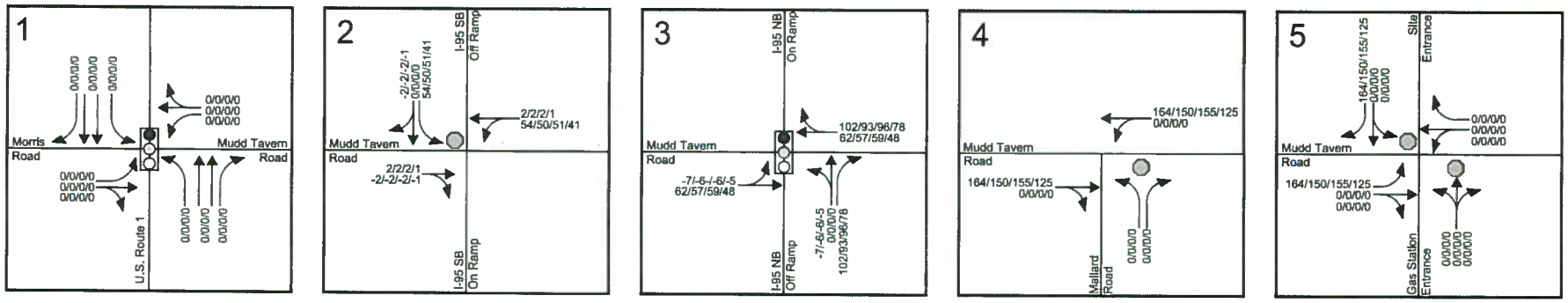
Dominion Raceway

Spotsylvania County, Virginia

Figure 20.A

Job # 4950-01-001



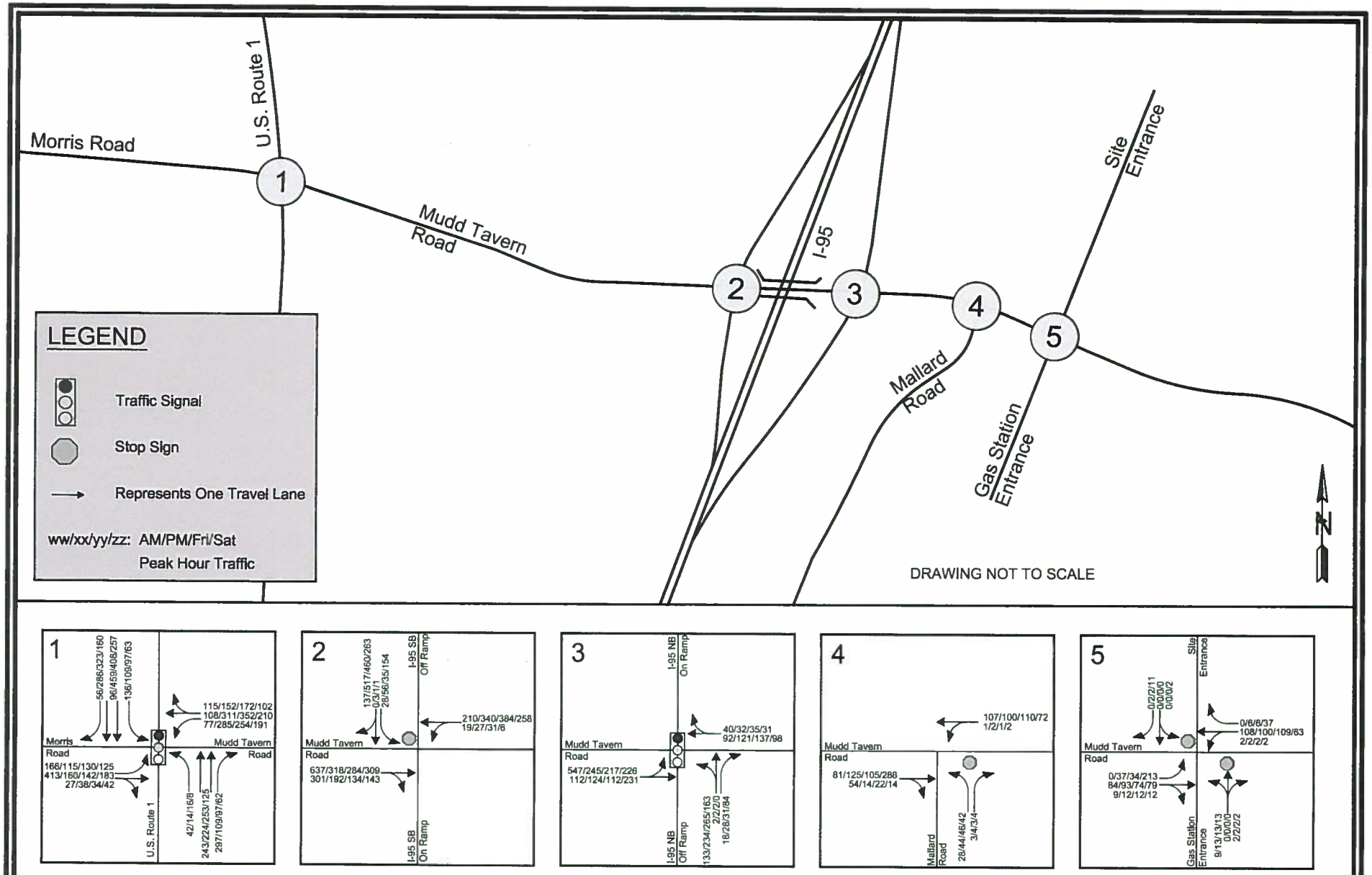


Bowman CONSULTING

Adjacent C-3 Commercial Diverted Link Trips
Full Build-out
Dominion Raceway
Spotsylvania County, Virginia

Figure 20.B

Job # 4950-01-001



Bowman CONSULTING

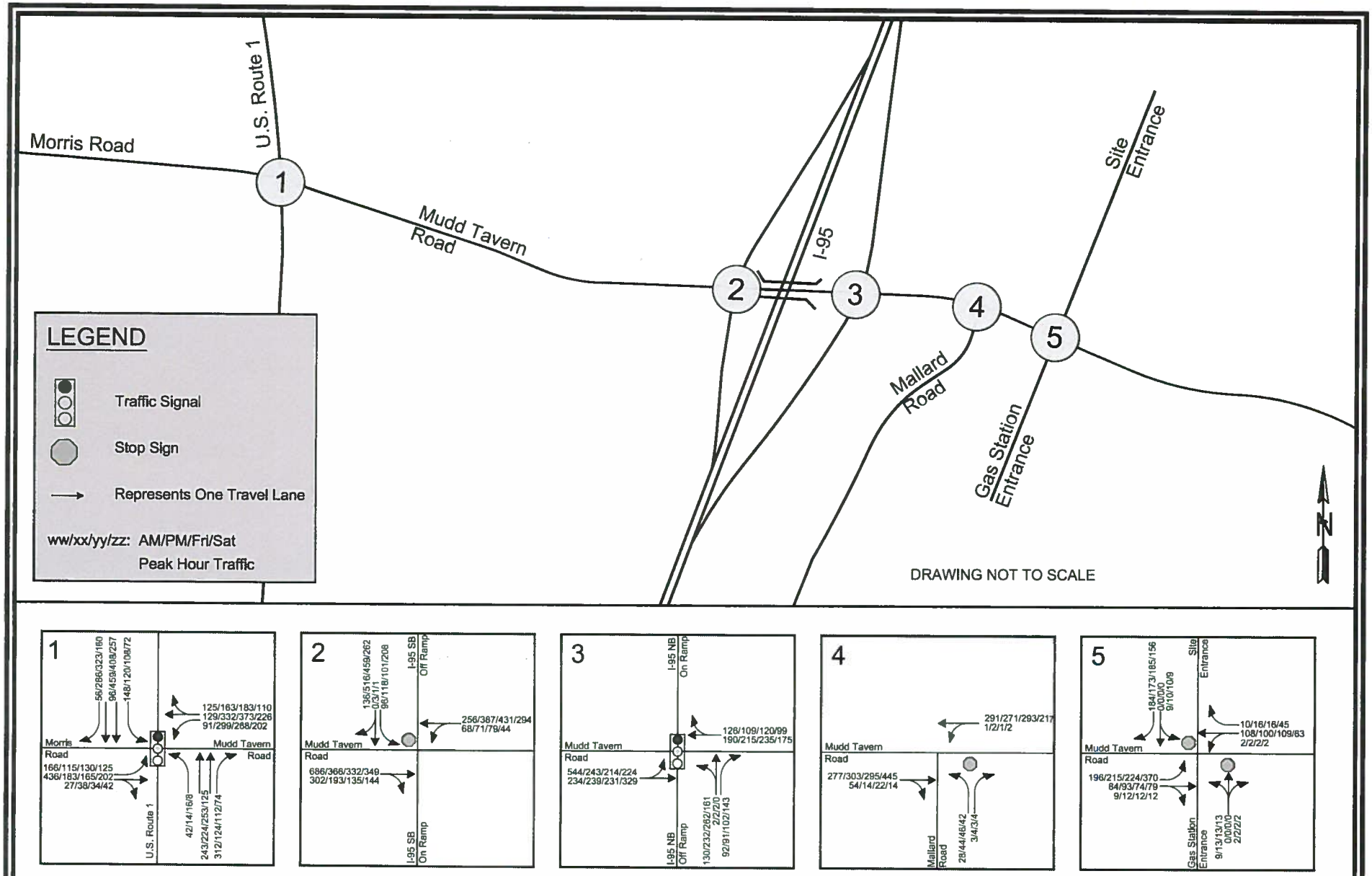
2017 Total Future Traffic Forecasts - Raceway Only (w/ 1,500 Avg. Sat. Event Attendance)

Dominion Raceway

Spotsylvania County, Virginia

Figure 23.A

Job # 4950-01-001



Bowman CONSULTING

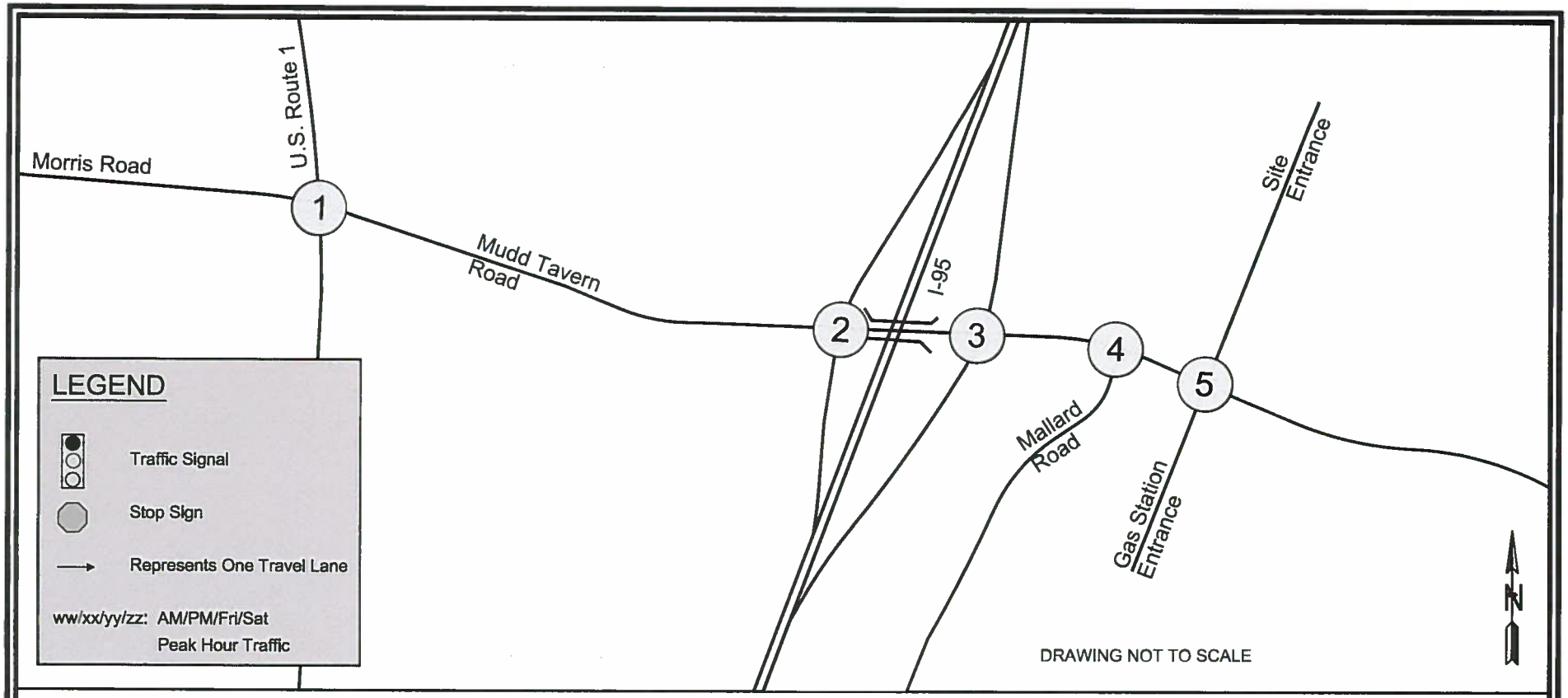
2017 Total Future Traffic Forecasts - Full Build-out (w/ 1,500 Avg. Sat. Event Attendance)

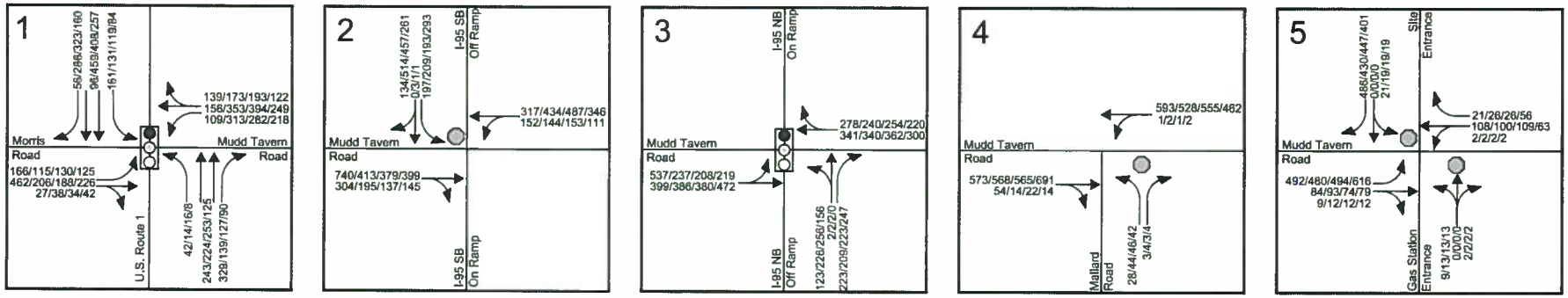
Dominion Raceway

Spotsylvania County, Virginia

Figure 23.B

Job # 4950-01-001





Bowman CONSULTING

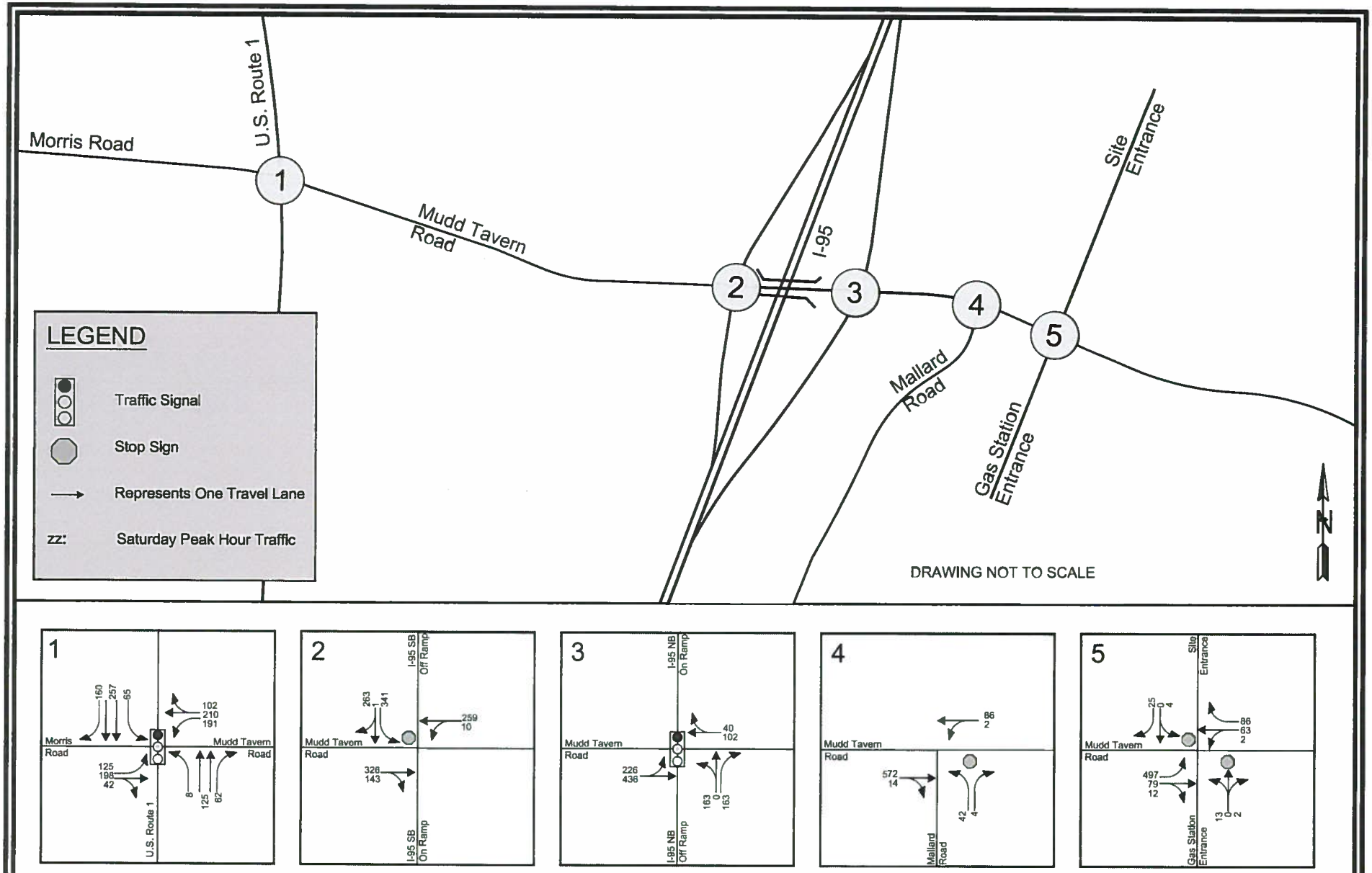
2017 Total Future Traffic Forecasts - Full Build-out with Adjacent C-3 (w/ 1,500 Avg. Sat. Event Attendance)

Dominion Raceway

Spotsylvania County, Virginia

Figure 23.C

Job # 4950-01-001



Bowman CONSULTING

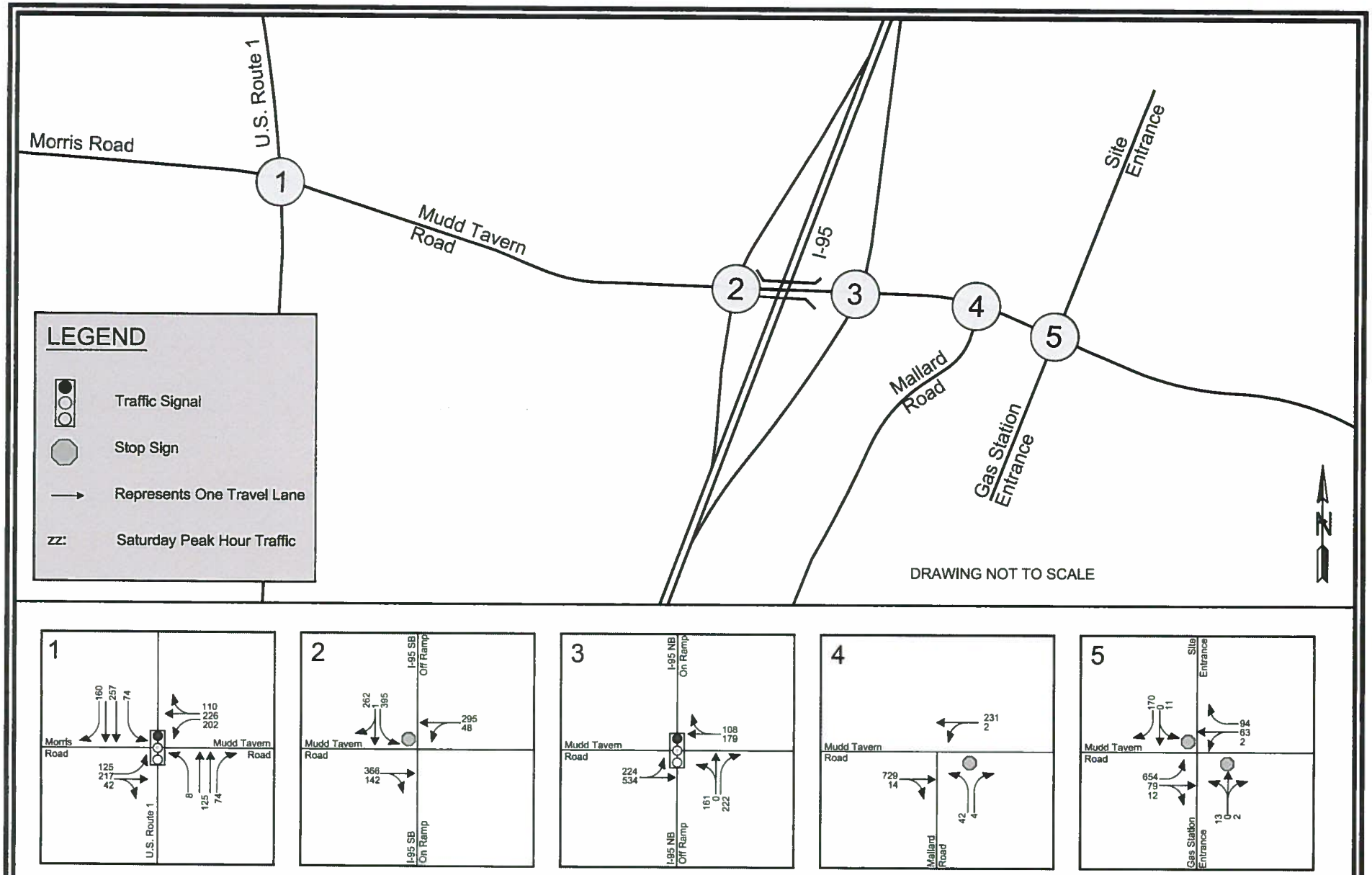
2017 Total Future Traffic Forecasts - Raceway Only (w/ 3,500 Sellout Sat. Event Attendance)

Dominion Raceway

Spotsylvania County, Virginia

Figure 23.D

Job # 4950-01-001



Bowman CONSULTING

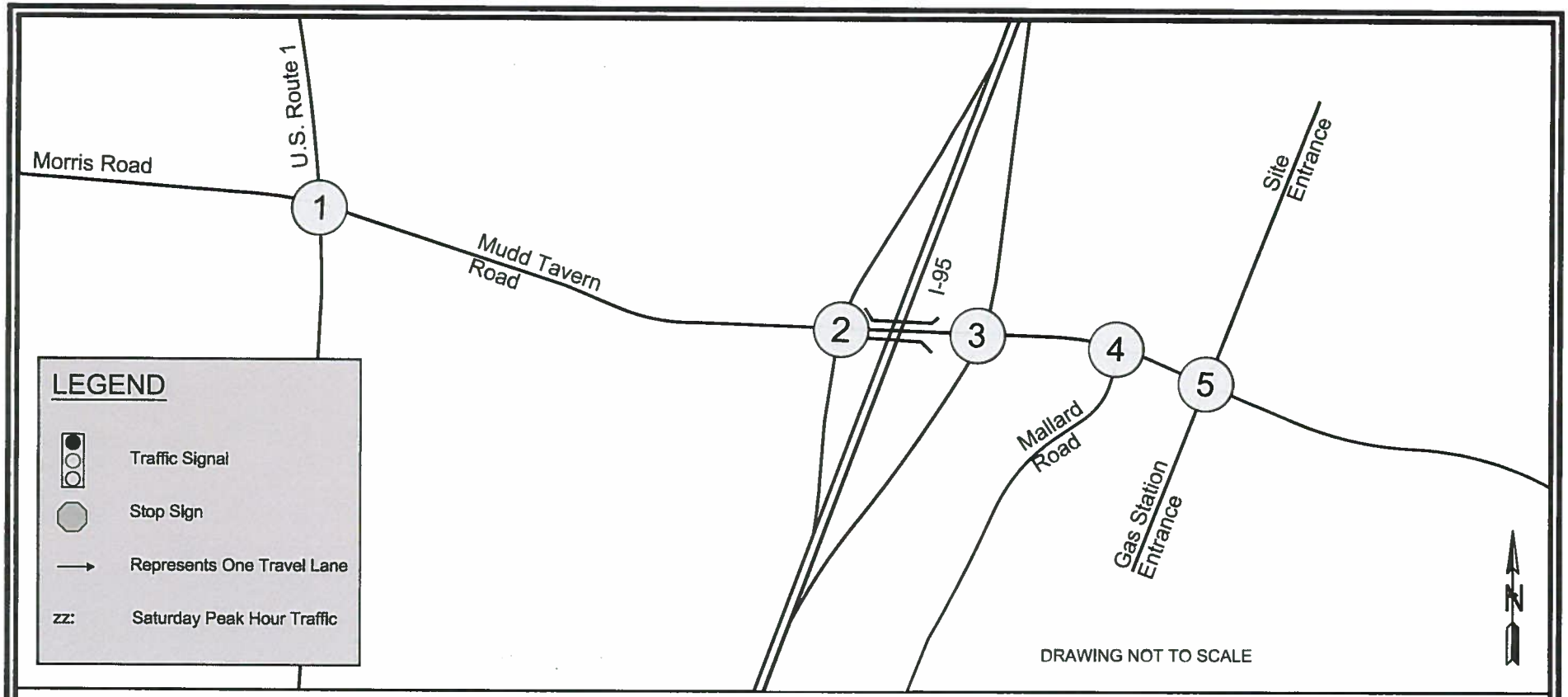
2017 Total Future Traffic Forecasts - Full Build-out (w/ 3,500 Sellout Sat. Event Attendance)

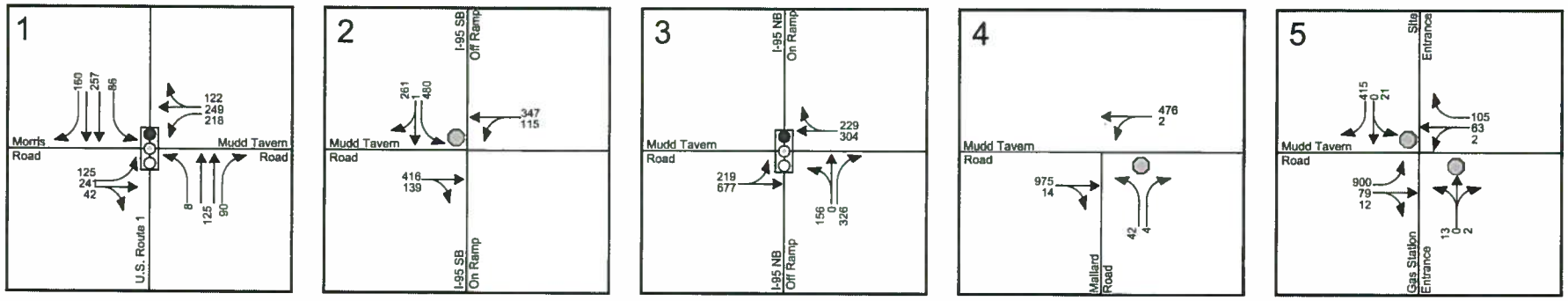
Dominion Raceway

Spotsylvania County, Virginia

Figure 23.E

Job # 4950-01-001



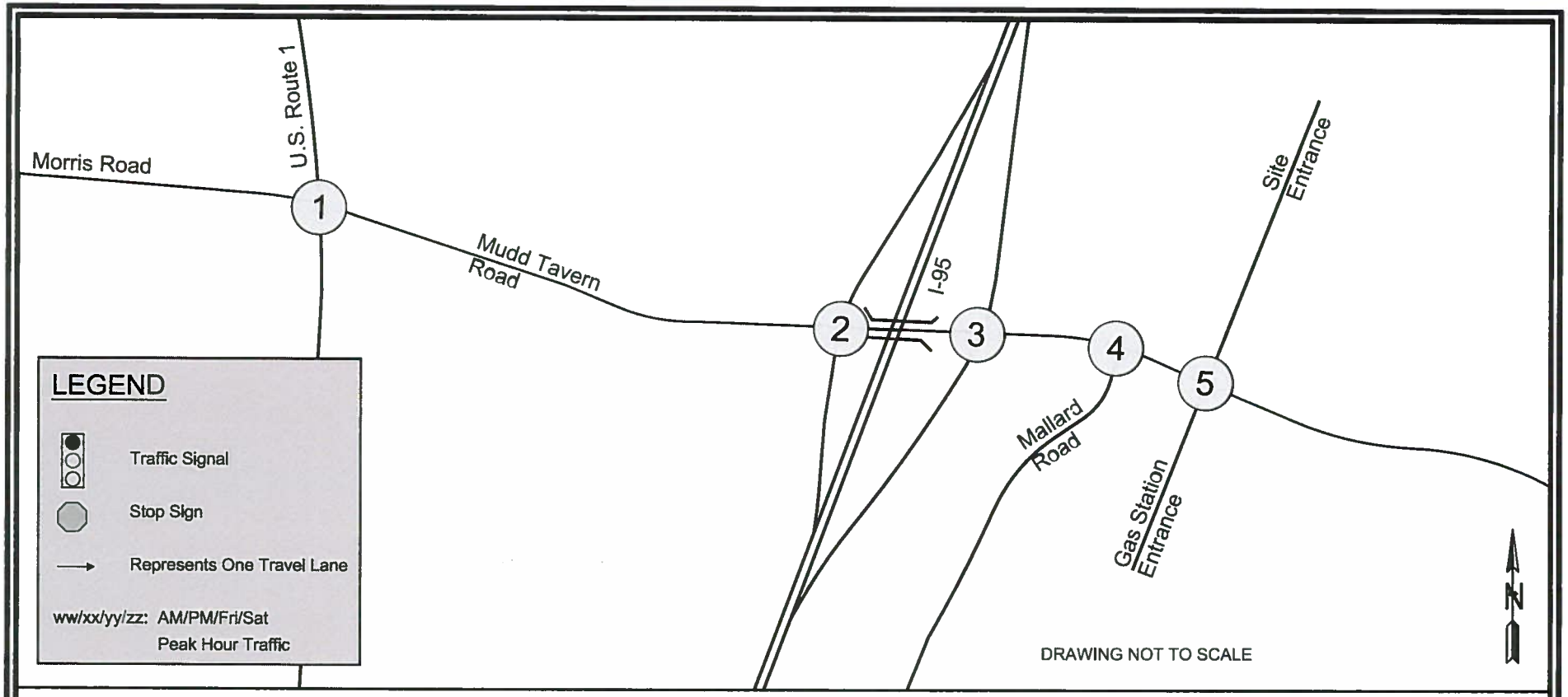


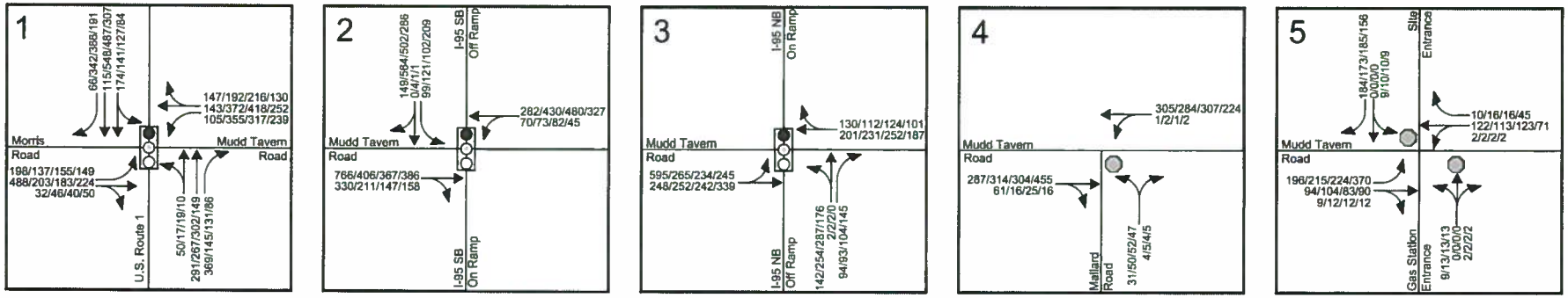
Bowman CONSULTING

2017 Total Future Traffic Forecasts - Full Build-out with Adjacent C-3 (w/ 3,500 Sellout Sat. Event Attendance)
Dominion Raceway
Spotsylvania County, Virginia

Figure 23.F

Job # 4950-01-001





Bowman CONSULTING

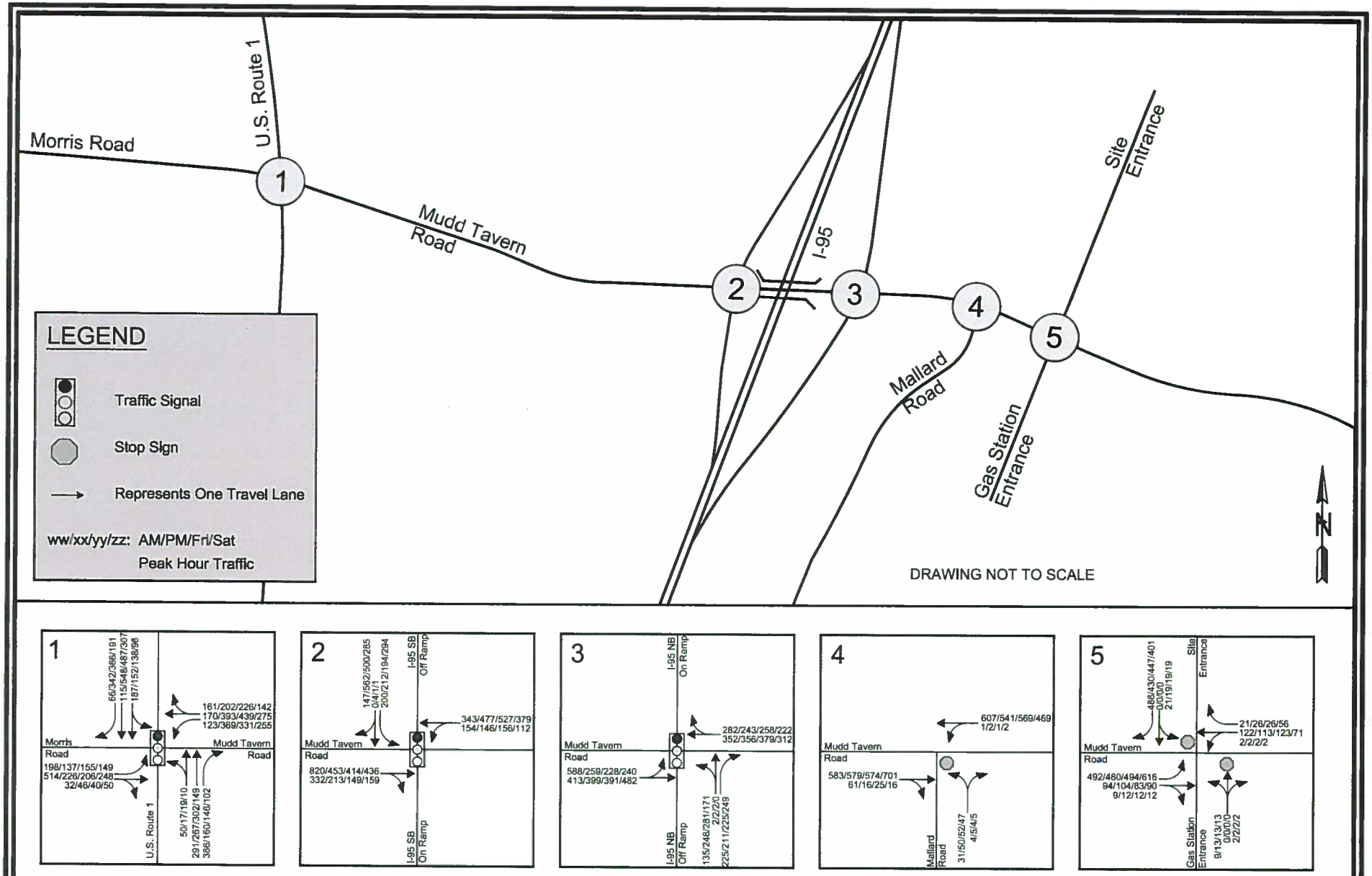
2023 Total Future Traffic Forecasts - Full Build-out (w/ 1,500 Avg. Sat. Event Attendance)

Dominion Raceway

Spotsylvania County, Virginia

Figure 26.A

Job # 4950-01-001



Bowman CONSULTING

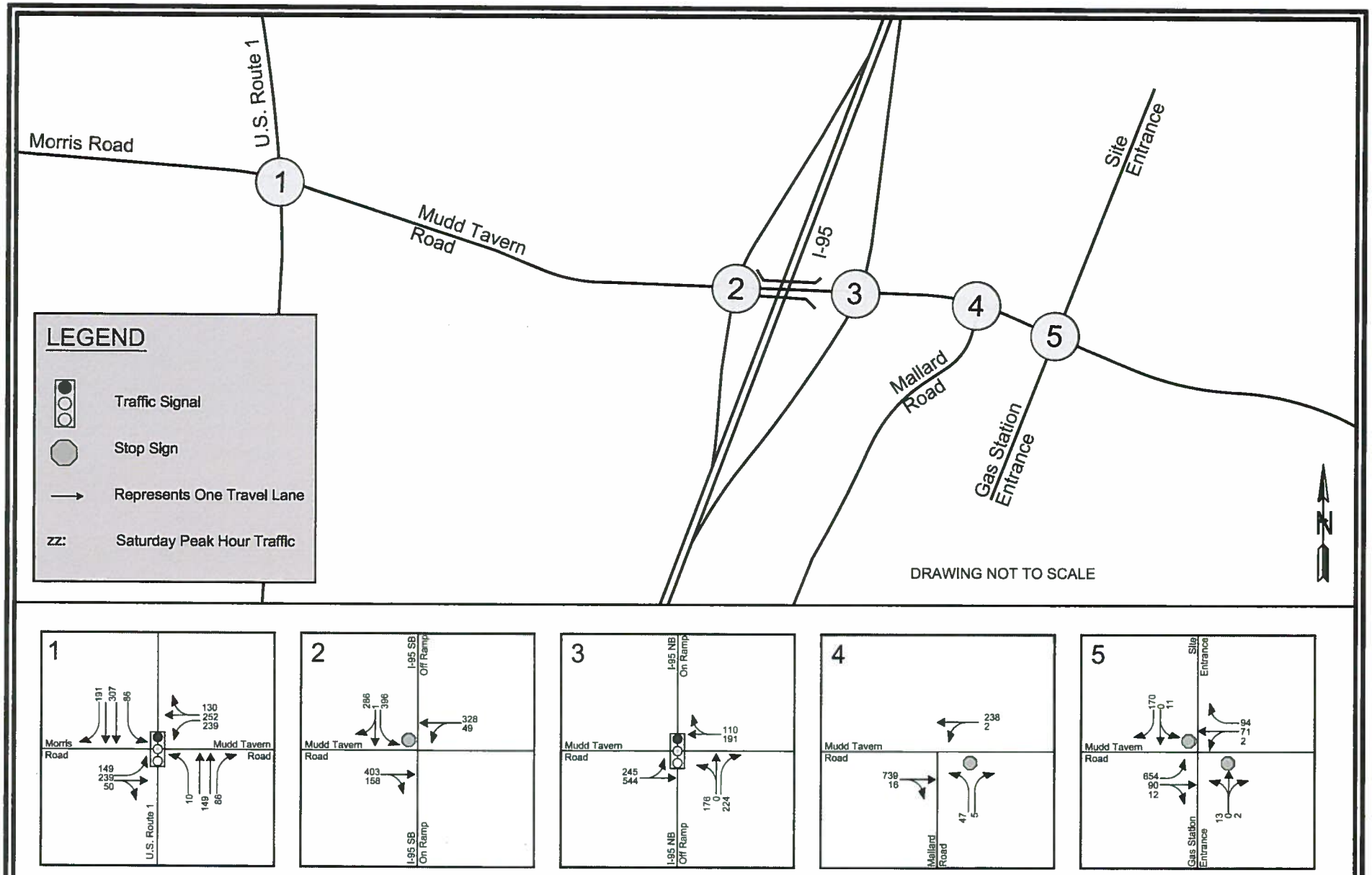
2023 Total Future Traffic Forecasts - Full Build-out with Adjacent C-3 (w/ 1,500 Avg. Sat. Event Attendance)

Dominion Raceway

Spotsylvania County, Virginia

Figure 26.B

Job # 4950-01-001



Bowman CONSULTING

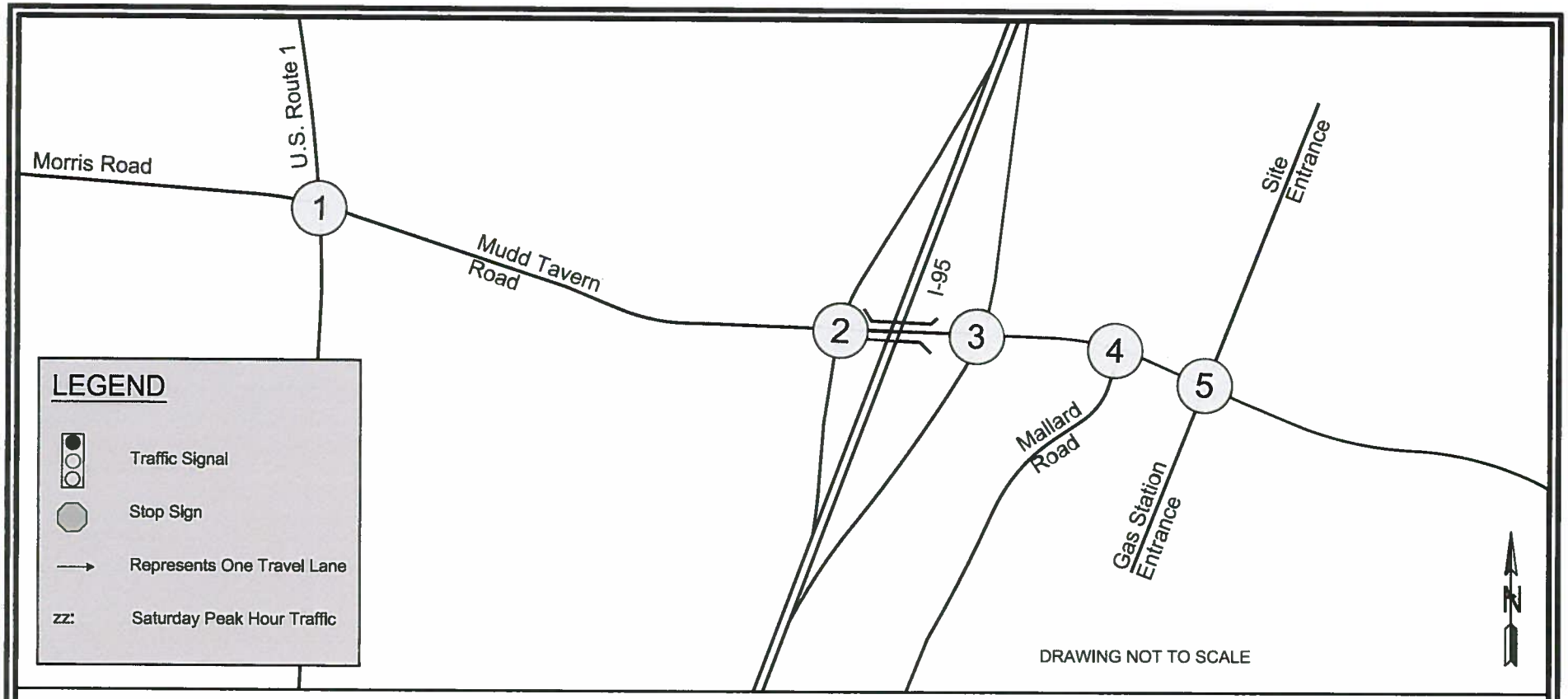
2023 Total Future Traffic Forecasts - Full Build-out (w/ 3,500 Sellout Sat. Event Attendance)

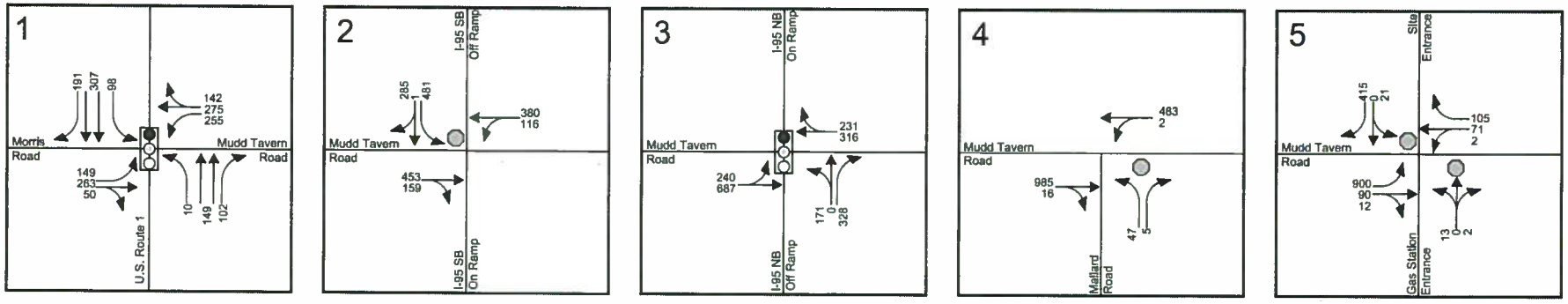
Dominion Raceway

Spotsylvania County, Virginia

Figure 26.C

Job # 4950-01-001





Bowman CONSULTING

2023 Total Future Traffic Forecasts - Full Build-out with Adjacent C-3 (w/ 3,500 Sellout Sat. Event Attendance)

Dominion Raceway

Spotsylvania County, Virginia

Figure 26.D

Job # 4950-01-001

Attachment I

Updated Level of Service and Queuing Tables (Includes SimTraffic Analysis Worksheets for Existing and Background Conditions)

Table 2A - Analysis Summary of 2012 Peak Hour Conditions

Intersection	Control	Lane Group	Available Storage[1] (ft)	Existing, 2012 (Summer) AM Peak Hour Lane LOS	AM Peak Hour Lane Delay (sec/veh)	AM Peak Hour Queue[2] (ft)	PM Peak Hour Lane LOS	PM Peak Hour Lane Delay (sec/veh)	PM Peak Hour Queue[2] (ft)	Friday Peak Hour Lane LOS	Friday Peak Hour Lane Delay (sec/veh)	Friday Peak Hour Queue[2] (ft)	Saturday Peak Hour Lane LOS	Saturday Peak Hour Lane Delay (sec/veh)	Saturday Peak Hour Queue[2] (ft)
1. U.S. Route 1 (N-S)/		NBTL	~	C	28.2	143	C	27.3	145	C	28.3	159	C	23.2	88
Mudd Tavern Road (E-W)/		NBR	50	C	25.6	85	C	25.0	67	C	25.2	73	C	22.2	53
Morris Road (E-W)		SBTL	~	C	28.2	184	D	36.8	279	D	35.3	270	C	25.2	171
		SBR	50	C	24.6	44	C	27.8	90	C	28.4	86	C	22.5	63
	Signal	EBL	650	B	17.0	128	C	32.1	111	C	32.7	121	C	23.6	106
		EBTR	~	C	28.4	242	D	40.6	147	D	36.6	156	C	27.8	130
		WBTL	~	C	33.4	139	D	40.5	368	D	35.8	421	C	25.2	247
		WBR	235	C	25.5	56	B	17.8	234	B	16.6	253	B	16.7	79
	Overall Intersection			C	27.2		C	33.8		C	31.7		C	24.3	
2. Mudd Tavern Road (E-W)/	Stop	SBL	300	F	52.9	43	D	27.7	49	C	19.7	75	C	16.7	32
I-95 SB On/Off Ramps (N-S)	Stop	SBTR	~	B	10.5	61	F	67.7	255	C	22.8	238	B	12.7	82
		WBTL	~	A	5.0	75	A	0.7	60	A	1.5	69	A	0.4	10
3. Mudd Tavern Road (E-W)/	Stop	NBTL	~	F	627.7	115	F	138.0	131	F	144.1	124	D	33.9	79
I-95 NB On/Off Ramps (N-S)	Stop	NBR	50	F	627.7	54	F	138.0	31	F	144.1	53	D	33.9	46
		EBTL	~	A	8.5	110	A	6.3	65	A	6.2	68	A	6.6	59
4. Mudd Tavern Road (E-W)/	Stop	NBL	~	B	10.6	53	B	10.2	53	B	10.1	61	A	9.7	50
Mallard Road (N-S)	Stop	NBR	~	A	9.0	22	A	9.1	31	A	9	26	A	8.8	26
		WBTL		A	0.2	0	A	0.3	0	A	0.2	0	A	0.5	0
5. Mudd Tavern Road (E-W)/		SBL	310	-	-	-	-	-	-	-	-	-	-	-	-
Site Entrance (N-S)		SBR	~	-	-	-	-	-	-	-	-	-	-	-	-
		EBL	150	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

(1) ~ Indicates a continuous lane.

(2) Queues are 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

Table 3A - Analysis Summary of 2017 Background Peak Hour Conditions

Intersection	Control	Lane Group	Available Storage[1] (ft)	Background, 2017 (Summer) AM Peak Hour Lane LOS	AM Peak Hour Lane Delay (sec/veh)	AM Peak Hour Queue [2] (ft)	PM Peak Hour Lane LOS	PM Peak Hour Lane Delay (sec/veh)	PM Peak Hour Queue [2] (ft)	Friday Peak Hour Lane LOS	Friday Peak Hour Lane Delay (sec/veh)	Friday Peak Hour Queue [2] (ft)	Saturday Peak Hour Lane LOS	Saturday Peak Hour Lane Delay (sec/veh)	Saturday Peak Hour Queue [2] (ft)
1. U.S. Route 1 (N-S)/		NBL	200	C	21.5	56	C	22.6	34	C	25.8	45	C	21.0	25
Mudd Tavern Road (E-W)/		NBT	~	C	28.5	215	C	25.4	133	C	29.0	151	C	22.6	86
Morris Road (E-W)		NBR	50	B	17.8	86	B	10.4	82	B	14.1	77	A	9.7	59
		SBL	200	C	25.5	165	C	22.1	105	C	26.6	114	B	19.2	82
	Signal	SBT	~	C	25.2	75	C	26.6	223	C	30.8	242	C	22.2	124
		SBR	50	B	14.1	66	B	15.0	87	B	17.0	85	A	9.8	80
with planned improvements		EBL	650	B	13.2	82	C	21.1	98	B	17.7	107	B	14.3	89
by VDOT		EBTR	~	C	33.6	269	C	25.5	141	B	19.4	133	C	23.2	141
		WBL	235	B	17.2	108	B	13.8	217	B	11.9	222	B	13.0	96
		WBTR	~	B	18.7	155	C	31.4	266	C	33.5	309	C	26.4	172
	Overall Intersection			**C**	**24.2**		**C**	**22.9**		**C**	**24.5**		**B**	**19.5**	
2. Mudd Tavern Road (E-W)/	Stop	SBL	300	F	74.6	53	D	33.6	115	C	22.0	107	C	18.4	32
I-95 SB On/Off Ramps (N-S)	Stop	SBTR	~	B	10.8	69	F	119.7	314	D	30.1	333	B	13.6	93
		WBTL	~	A	5.7	138	A	0.8	87	A	1.5	78	A	0.3	0
3. Mudd Tavern Road (E-W)/	Stop	NBTL	~	F	1000.2	170	F	238.6	126	F	244.4	168	F	50.7	88
I-95 NB On/Off Ramps (N-S)	Stop	NBR	50	F	1000.2	59	F	238.6	49	F	244.4	64	F	50.7	50
		EBTL	~	A	8.9	111	A	6.4	74	A	6.3	73	A	6.7	58
4. Mudd Tavern Road (E-W)/	Stop	NBL	~	B	10.8	52	B	10.4	58	B	10.4	54	A	9.9	50
Mallard Road (N-S)	Stop	NBR	~	A	9.0	13	A	9.2	27	A	9.1	29	A	8.9	26
		WBTL	~	A	0.2	0	A	0.3	0	A	0.1	0	A	0.5	0
5. Mudd Tavern Road (E-W)/		NBLTR	~	-	-	-	-	-	-	-	-	-	-	-	-
Site Entrance (N-S)		SBL	~	-	-	-	-	-	-	-	-	-	-	-	-
		SBR	~	-	-	-	-	-	-	-	-	-	-	-	-
		EBL	150	-	-	-	-	-	-	-	-	-	-	-	-
		WBTL	~	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

(1) ~ Indicates a continuous lane.

(2) Queues are 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

Table 5 - Analysis Summary of 2017 Peak Hour Conditions

Intersection	Control	Lane Group	Available Storage[1] (ft)	Total Future - Raceway Only (1,500 Raceway Attendance), 2017 (Summer): AM Peak Hour (No Event) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	PM Peak Hour (Weeknight Event) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Friday Peak Hour (800 Attendees) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Saturday Peak Hour (1,500 Attendees) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Total Future - Full Buildout (up to 1,500 Raceway Attendance), 2017 (Summer): AM Peak Hour (No Event) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	PM Peak Hour (Weeknight Event) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Friday Peak Hour (800 Attendees) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Saturday Peak Hour (1,500 Attendees) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)
1. U.S. Route 1 (N-S)/		NBL	200	C	23.4	57	C	23.0	37	C	23.9	46	C	20.4	28	C	23.8	61	C	23.7	39	C	24.8	41	C	21.3	24
Mudd Tavern Road (E-W)/		NBT	–	C	26.6	199	C	25.5	139	C	27.0	136	C	21.7	86	C	27.1	252	C	25.8	127	C	27.8	158	C	22.7	95
Morris Road (E-W)		NBR	50	B	16.1	85	A	10.0	71	B	11.6	80	A	9.0	62	B	16.9	84	B	10.4	86	B	12.5	89	A	9.6	69
		SBL	200	B	19.3	132	B	18.7	126	C	23.3	112	B	18.2	77	C	20.1	149	B	19.7	130	C	24.8	130	B	17.5	76
	Signal	SBT	–	C	21.9	72	C	24.1	249	C	27.5	266	C	21.1	119	C	22.4	82	C	24.8	249	C	28.6	277	C	21.0	141
		SBR	50	B	10.7	62	B	13.2	89	B	15.5	84	A	9.3	84	B	11.1	65	B	13.8	92	B	16.4	85	A	9.5	86
with planned improvements		EBL	650	B	13.7	101	C	20.5	98	B	18.5	114	B	14.3	78	B	13.8	113	C	21.0	98	B	19.5	127	B	15.3	86
by VDOT		EBTR	–	C	30.6	282	C	25.2	163	C	21.2	146	C	22.4	157	C	32.0	279	C	25.9	186	C	21.3	165	C	24.6	170
		WBL	235	B	16.8	69	B	13.4	203	B	11.4	240	B	12.4	128	B	17.2	67	B	14.1	204	B	11.4	199	B	13.1	135
		WBTR	–	C	21.8	173	C	30.7	253	C	32.4	343	C	24.4	172	C	22.2	169	C	32.9	299	C	33.7	341	C	26.8	212
	Overall Intersection			C	22.2		C	21.8		C	23.2		B	18.5		C	22.9		C	22.8		C	24.0		B	19.6	
2. Mudd Tavern Road (E-W)/	Stop	SBL	300	D	29.4	55	C	22.8	186	C	20.7	90	C	24.5	81	F	120.1	196	F	60.0	267	E	49.4	88	F	67.9	155
I-95 SB On/Off Ramps (N-S)	Stop	SBTR	–	B	10.6	75	D	33.6	364	D	29.4	296	B	12.8	93	B	11.1	76	E	44.1	424	E	36.6	221	B	13.5	88
		WBTL	–	A	1.2	121	A	0.9	60	A	0.9	70	A	0.3	25	A	3.6	286	A	2.2	106	A	2.2	129	A	1.6	54
with Traffic Control Plan	Traffic Control Personnel	SBL	300																								
		SBTR	–																								
		EBTR	–																								
		WBTL	–																								
	Overall Intersection																										
3. Mudd Tavern Road (E-W)/	Stop	NBTL	–	F	618.2	165	F	112.6	134	F	115.3	150	E	49.7	110	F	Err	544	F	382.5	259	F	406.7	325	F	178.1	189
I-95 NB On/Off Ramps (N-S)	Stop	NBR	50	F	618.2	57	F	112.6	63	F	115.3	67	E	49.7	69	F	Err	106	F	382.5	96	F	406.7	100	F	178.1	91
		EBTL	–	A	5.4	114	A	6.0	64	A	5.9	75	A	4.8	71	A	9.4	178	A	5.7	109	A	5.4	109	A	4.8	104
with signalization		NBTL	–	E	73.0	222	B	13.5	153	B	14.4	143	B	16.2	103	F	89.1	313	B	19.2	160	C	22.3	219	C	21.8	180
	Signal	NBR	50	D	54.6	53	B	10.6	62	B	11.0	66	B	14.4	68	E	61.4	95	B	15.1	88	B	17.2	89	C	20.0	87
		EBTL	–	B	10.5	283	B	12.4	150	B	13.6	160	B	11.7	162	C	31.0	531	B	16.0	256	B	18.3	244	B	13.4	259
		WBTR	–	A	3.5	52	A	7.8	68	A	8.4	81	A	9.2	50	A	3.5	103	A	7.7	118	A	8.8	120	A	8.2	104
	Overall Intersection			B	19.3		B	11.8		B	12.6		B	12.0		C	32.3		B	14.2		B	16.2		B	13.7	
4. Mudd Tavern Road (E-W)/	Stop	NBL	–	B	10.2	52	B	10.5	60	B	10.4	60	B	11.5	51	B	14.4	55	B	14.6	59	B	14.9	67	C	15.7	53
Mallard Road (N-S)	Stop	NBR	–	A	9.0	18	A	9.3	30	A	9.2	24	B	10.1	16	B	10.2	15	B	10.5	26	B	10.5	24	B	11.4	20
		WBTL	–	A	0.1	0	A	0.2	6	A	0.1	6	A	0.2	6	A	0.0	0	A	0.1	4	A	0.0	13	A	0.1	6
5. Mudd Tavern Road (E-W)/		NBLTR	–	A	9.7	31	B	10.6	37	B	10.4	36	C	15.2	35	C	21.5	35	C	23.4	38	C	24.7	36	E	36.2	40
Site Entrance (N-S)		SBL	–	A	0.0	0	A	0.0	0	A	0.0	0	C	15.4	5	C	15.8	24	C	16.8	27	C	17.0	29	D	25.6	29
		SBR	–	A	0.0	0	A	8.8	9	A	8.9	13	A	8.7	17	A	9.9	72	A	9.8	72	A	9.9	74	A	9.4	59
		EBL	100	A	0.0	0	A	7.5	20	A	7.5	19	A	7.9	43	A	7.9	44	A	7.9	45	A	8.0	55	A	8.4	67
		WBTL	–	A	0.1	0	A	0.2	0	A	0.1	0	A	0.2	0	A	0.1	4	A	0.2	0	A	0.1	0	A	0.2	0

Table 5 Cont'd - Analysis Summary of 2017 Peak Hour Conditions

Intersection	Control	Lane Group	Available Storage[1] (ft)	Total Future - Full Buildout With Adjacent By-Right C-3 (up to 1,500 Raceway Attendance), 2017 (Summer): AM Peak Hour (No Event) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	PM Peak Hour (Weeknight Event) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Friday Peak Hour (800 Attendees) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Saturday Peak Hour (1,500 Attendees) Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Total Future Saturday Peak Hour with Sell-Out Raceway Attendance (3,500): Raceway Only Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Full Build Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)	Full Build w Adjacent By-Right C-3 Lane LOS	Lane Delay (sec/veh)	Queue [2] (ft)
1. U.S. Route 1 (N-S)/		NBL	200	C	24.3	94	C	25.4	41	C	25.4	41	C	22.2	29	C	20.5	32	C	21.4	31	C	22.2	26
Mudd Tavern Road (E-W)/		NBT	–	C	27.5	797	C	27.7	144	C	28.8	132	C	23.6	90	C	21.8	93	C	22.8	89	C	23.8	91
Morris Road (E-W)		NBR	50	B	17.9	79	B	11.6	82	B	13.1	85	B	10.3	72	A	9.0	60	A	9.7	64	B	10.3	69
		SBL	200	C	20.9	272	C	20.5	141	C	26.3	113	B	18.6	80	B	18.4	66	B	17.6	73	B	18.6	66
	Signal	SBT	–	C	22.8	722	C	25.5	221	C	29.7	259	C	21.9	128	C	21.2	121	C	21.1	138	C	21.9	125
		SBR	50	B	11.6	69	B	14.7	89	B	17.2	85	B	10.2	87	A	9.4	82	A	9.5	85	B	10.2	85
with planned improvements		EBL	850	B	14.2	731	C	23.0	94	C	20.6	113	B	15.3	82	B	14.3	85	B	15.2	90	B	15.3	83
by VDOT		EBTR	–	C	33.9	1,502	C	27.3	188	C	21.4	180	C	24.9	184	C	23.3	146	C	25.5	159	C	26.0	179
		WBL	235	B	18.2	120	B	15.8	215	B	11.5	169	B	13.0	137	B	12.4	150	B	13.1	120	B	13.2	118
		WBTR	–	C	23.3	239	D	35.5	279	D	35.6	275	C	27.6	215	C	24.1	201	C	26.4	194	C	27.6	184
	Overall Intersection			C	24.0		C	24.4		C	25.0		C	20.2		B	18.7		B	19.8		C	20.5	
2. Mudd Tavern Road (E-W)/	Stop	SBL	300	F	Err	325	F	549.5	420	F	478.7	185	F	492.6	386	F	119.8	190	F	377.3	387	F	Err	325
I-95 SB On/Off Ramps (N-S)	Stop	SBTR	–	B	11.7	507	F	60.9	663	E	47.1	206	B	14.6	526	B	12.8	93	B	13.3	585	B	14.7	532
		WBTL	–	A	7.2	597	A	4.1	177	A	3.9	90	A	3.3	139	A	0.4	33	A	1.7	70	A	3.5	111
with Traffic Control Plan	Traffic Control Personnel	SBL	300													D	42.1	279	D	47.9	310	F	149.8	326
		SBTR	–													C	25.1	133	C	24.7	266	D	39.0	509
		EBTR	–													D	47.2	471	E	71.4	537	F	124.9	1,599
		WBTL	–													D	50.7	226	E	67.7	402	E	60.9	442
	Overall Intersection															D	42.3		E	58.3		F	102.2	
3. Mudd Tavern Road (E-W)/	Stop	NBTL	–	F	Err	482	F	Err	519	F	Err	593	F	659.7	518	F	203.1	182	F	496.6	501	F	Err	520
I-95 NB On/Off Ramps (N-S)	Stop	NBR	50	F	Err	32	F	Err	108	F	Err	87	F	659.7	108	F	203.1	92	F	496.6	94	F	Err	104
		EBTL	–	B	14.5	777	A	8.3	329	A	5.9	96	A	5.4	311	A	4.1	62	A	4.4	144	A	5.6	259
with signalization		NBTL	–	F	86.4	529	C	30.3	290	E	67.0	600	D	44.4	496	C	23.9	182	C	33.5	304	E	74.2	613
	Signal	NBR	50	E	71.3	95	C	22.5	92	C	34.5	89	D	41.4	86	C	22.2	92	C	31.3	89	F	96.2	81
		EBTL	–	F	239.7	576	F	105.8	650	D	45.6	648	C	24.1	435	B	13.7	295	B	16.4	370	D	40.2	613
		WBTR	–	A	4.6	153	A	8.4	154	A	7.4	158	A	5.6	148	A	5.4	55	A	5.3	98	A	4.7	147
	Overall Intersection			F	133.4		D	50.3		C	33.4		C	22.8		B	15.4		B	18.4		D	42.6	
4. Mudd Tavern Road (E-W)/	Stop	NBL	–	D	31.3	68	D	30.0	65	D	31.7	60	D	31.0	61	C	15.6	56	C	23.0	57	F	54.8	62
Mallard Road (N-S)	Stop	NBR	–	B	13.0	17	B	13.1	30	B	13.1	16	B	14.1	22	B	12.7	22	B	14.7	16	C	18.9	14
		WBTL	–	A	0.0	58	A	0.1	29	A	0.0	0	A	0.1	14	A	0.2	6	A	0.1	21	A	0.0	41
5. Mudd Tavern Road (E-W)/		NBLTR	–	F	278.7	32	F	235.1	32	F	284.6	39	F	394.5	39	E	42.6	41	F	187.6	39	F	Err	43
Site Entrance (N-S)		SBL	–	F	51.1	241	E	47.2	36	E	49.6	0	F	86.0	31	E	40.3	20	F	92.2	33	F	731.6	54
		SBR	–	B	13.7	294	B	12.5	122	B	13.0	166	B	11.4	130	A	8.7	28	A	9.4	62	B	11.6	129
		EBL	100	A	9.0	62	A	8.9	73	A	9.0	62	A	9.6	80	A	9.1	75	B	10.1	75	B	13.4	84
		WBTL	–	A	0.1	335	A	0.2	0	A	0.1	9	A	0.2	0	A	0.2	0	A	0.2	0	A	0.2	15

Notes:

(1) – Indicates a continuous lane

(2) Queues are 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each

Table 6 - Analysis Summary of 2023 Peak Hour Conditions (With assumed bridge replacement)

Intersection	Control	Lane Group	Available Storage[1] (ft)	Total Future - Full Buildout (1,500 Race Attendance), 2023 (Summer): AM Peak Hour Lane LOS	AM Peak Hour Lane Delay (sec/veh)	AM Peak Hour Queue[2] (ft)	PM Peak Hour Lane LOS	PM Peak Hour Lane Delay (sec/veh)	PM Peak Hour Queue[2] (ft)	Friday Peak Hour Lane LOS	Friday Peak Hour Lane Delay (sec/veh)	Friday Peak Hour Queue[2] (ft)	Saturday Peak Hour Lane LOS	Saturday Peak Hour Lane Delay (sec/veh)	Saturday Peak Hour Queue[2] (ft)
1. U.S. Route 1 (N-S)/		NBL	200	C	25.3	105	C	27.2	48	C	28.6	72	C	22.9	31
Mudd Tavern Road (E-W)/		NBT	–	C	29.0	292	C	30.6	171	C	32.8	186	C	24.4	103
Morris Road (E-W)		NBR	50	B	19.0	84	B	16.8	90	B	18.3	86	B	12.1	73
		SBL	200	C	26.1	284	C	24.6	193	C	26.1	180	B	19.3	83
	Signal	SBT	–	C	24.7	716	C	33	304	C	33.1	323	C	23.0	151
		SBR	50	B	12.9	76	B	16.4	91	B	18.3	89	B	10.5	91
		EBL	650	B	14.6	126	B	18.8	118	C	23.7	122	B	14.3	93
		EBTR	–	D	36.6	315	B	19.9	190	B	18.9	170	C	21.3	153
		WBL	235	B	17.5	124	C	21.9	314	B	17.2	328	B	15.4	157
		WBTR	–	C	22.1	201	D	44.6	555	E	56.3	836	C	28.7	231
	Overall Intersection			C	25.3		C	28.5		C	31.8		C	20.4	
2. Mudd Tavern Road (E-W)/	Signal	SBL	300	E	76.4	140	C	26.4	128	C	27.1	109	D	39.2	204
I-95 SB On/Off Ramps (N-S)		SBTR	–	D	39.4	79	D	48.5	275	D	44.9	245	C	31.1	122
		EBTR	–	C	27.3	569	C	23	441	B	18.1	308	B	13.1	234
with assumed bridge replacement		WBL	300	E	63.8	101	B	15.9	92	B	11.2	80	B	10.2	59
and widening (by VDOT)		WBT	–	A	4.4	124	A	9.9	233	A	8.7	216	A	7.6	132
	Overall Intersection			C	28.9		C	27.8		C	23.7		B	19.2	
3. Mudd Tavern Road (E-W)/		NBTL	–	D	41.2	198	D	41.3	280	D	40.6	294	D	39.7	236
I-95 NB On/Off Ramps (N-S)	Signal	NBR	50	C	33.6	93	C	28.5	96	C	27.1	95	C	31.9	93
		EBL	300	B	10.7	271	A	4.7	148	A	7.3	129	A	6.8	138
with assumed bridge replacement		EBT	–	A	1.9	135	A	3.7	104	A	5.8	134	A	6.8	154
and widening (by VDOT)		WBTR	–	C	24.1	162	B	17.9	163	B	19.8	162	B	13.3	142
	Overall Intersection			B	16.9		B	17.8		C	20.2		B	16.3	
4. Mudd Tavern Road (E-W)/	Stop	NBL	–	B	13.6	258	B	14.1	59	B	14.1	61	C	16.0	56
Mallard Road (N-S)	Stop	NBR	–	B	10.1	258	B	10.1	25	B	10.0	20	B	11.2	23
		WBTL	–	A	0.0	74	A	0.1	68	A	0.0	69	A	0.1	45
5. Mudd Tavern Road (E-W)/		NBLTR	–	C	22.3	36	C	24.4	34	D	25.7	36	E	37.4	36
Site Entrance (N-S)		SBL	–	C	16.3	22	C	17.3	24	C	17.5	25	D	26.4	24
		SBR	–	B	10.0	85	A	9.9	66	B	10.0	59	A	9.4	51
		EBL	100	A	7.9	53	A	8.0	49	A	8.0	46	A	8.4	67
		WBTL	–	A	0.1	37	A	0.1	11	A	0.1	11	A	0.2	0

Intersection	Total Future - Full Buildout (1,500 Race Attendance) With Adjacent By-Right C3, 2023 (Summer): AM Peak Hour Lane LOS	AM Peak Hour Lane Delay (sec/veh)	AM Peak Hour Queue[2] (ft)	PM Peak Hour Lane LOS	PM Peak Hour Lane Delay (sec/veh)	PM Peak Hour Queue[2] (ft)	Friday Peak Hour Lane LOS	Friday Peak Hour Lane Delay (sec/veh)	Friday Peak Hour Queue[2] (ft)	Saturday Peak Hour Lane LOS	Saturday Peak Hour Lane Delay (sec/veh)	Saturday Peak Hour Queue[2] (ft)	Total Future Saturday Peak Hour with Sell-Out Raceway Attendance (3,500): Full Build Lane LOS	Full Build Lane Delay (sec/veh)	Full Build Queue[2] (ft)	Full Build w Adjacent By-Right C-3 Lane LOS	Full Build w Adjacent By-Right C-3 Lane Delay (sec/veh)	Full Build w Adjacent By-Right C-3 Queue[2] (ft)
1. U.S. Route 1 (N-S)/	C	26.0	73	C	28.0	51	C	28.6	29	C	23.5	30	C	22.9	36	C	23.5	37
Mudd Tavern Road (E-W)/	C	29.7	364	C	31.5	171	C	32.8	1148	C	25.1	103	C	24.4	107	C	25.1	102
Morris Road (E-W)	C	20.2	83	B	17.7	92	B	18.4	74	B	12.7	80	B	12.1	78	B	12.7	77
	C	28.7	225	C	27.2	212	C	26.9	271	C	20.2	97	B	19.3	92	C	20.2	90
	C	25.4	836	C	34.8	336	C	33.1	950	C	23.7	151	C	23.0	164	C	23.7	161
	B	13.5	81	B	17.4	91	B	18.3	87	B	11.1	90	B	10.5	88	B	11.1	87
	B	15.1	394	B	19.4	115	C	24.2	175	B	14.5	104	B	14.3	101	B	14.5	107
	D	39.6	792	B	19.8	192	B	19.2	1844	C	21.6	190	C	21.9	190	C	22.2	203
	B	19.0	138	C	24.0	316	B	18.8	274	B	16.2	170	B	15.8	171	B	16.7	200
	C	23.0	231	D	47.2	635	E	69.6	1690	C	30.5	257	C	28.7	234	C	30.5	251
	C	26.8		C	30.0		D	35.1		C	21.3		C	20.6		C	21.5	
2. Mudd Tavern Road (E-W)/	F	101.9	279	C	28.0	180	C	29.4	666	D	41.1	244	D	42.0	295	D	43.0	353
I-95 SB On/Off Ramps (N-S)	D	35.4	82	D	51.7	364	D	47.4	1,475	C	28.1	119	C	24.4	131	C	21.6	128
	E	75.4	2,907	C	29.4	550	C	21.1	3,732	B	19.5	362	C	21.1	326	C	34.3	442
with assumed bridge replacement	F	92.8	230	C	24.6	220	B	11.3	78	C	21.3	117	B	15.4	73	C	28.5	168
and widening (by VDOT)	B	10.2	140	A	9.8	251	A	6.3	193	B	10.8	176	B	10.7	162	B	12.5	215
	E	65.2		C	30.5		C	23.9		C	22.9		C	24.5		C	29.8	
3. Mudd Tavern Road (E-W)/	D	40.4	251	D	47.6	390	D	50.2	578	D	41.6	272	D	38.9	253	D	39.5	400
I-95 NB On/Off Ramps (N-S)	C	34.4	66	C	30.5	93	C	29.6	71	C	33.1	92	C	33.0	91	D	37.7	82
	C	29.5	323	B	15.0	164	C	21.0	138	A	9.6	145	A	8.4	192	B	10.5	232
with assumed bridge replacement	A	4.5	232	A	5.6	172	A	8.9	769	A	6.0	236	B	10.0	278	A	8.2	385
and widening (by VDOT)	F	98.1	143	C	24.0	150	C	27.2	126	B	17.0	153	B	13.8	149	B	18.1	147
	D	47.4		C	22.6		C	26.4		B	17.7		B	17.4		B	18.8	
4. Mudd Tavern Road (E-W)/	D	33.6	297	D	32.7	85	D	34.9	258	E	36.0	70	D	25.2	61	F	94.5	272
Mallard Road (N-S)	B	12.8	167	B	12.5	25	B	12.5	258	B	14.1	29	B	14.7	23	C	20.2	23
	A	0.0	82	A	0.1	105	A	0.0	74	A	0.1	103	A	0.1	64	A	0.1	202
5. Mudd Tavern Road (E-W)/	F	309.0	32	F	258.7	41	F	314.4	430	F	422.3	42	F	178.0	37	F	Err	43
Site Entrance (N-S)	F	53.9	409	E	49.6	38	F	52.2	136	F	90.4	36	F	96.6	29	F	778.4	69
	B	14.1	373	B	12.7	300	B	13.3	370	B	11.5	187	A	9.5	62	B	11.7	140
	A	9.0	66	A	9.0	74	A	9.1	83	A	9.6	80	B	10.2	81	B	13.6	333[3]
	A	0.1	89	A	0.1	75	A	0.1	1,129	A	0.2	44	A	0.2	9	A	0.2	234

Table 6 Cont'd - Analysis Summary of 2023 Peak Hour Conditions (With assumed bridge replacement)

Intersection	Control	Lane Group	Available Storage[1] (ft)	Total Future Saturday Peak Hour with Sell-Out Raceway Attendance (3,500): Full Build Lane LOS	Full Build Lane Delay (sec/veh)	Full Build Queue[2] (ft)	Full Build w Adjacent By-Right C-3 Lane LOS	Full Build w Adjacent By-Right C-3 Lane Delay (sec/veh)	Full Build w Adjacent By-Right C-3 Queue[2] (ft)
1. U.S. Route 1 (N-S)/		NBL	200	C	22.9	36	C	23.5	37
Mudd Tavern Road (E-W)/		NBT	–	C	24.4	107	C	25.1	102
Morris Road (E-W)		NBR	50	B	12.1	78	B	12.7	77
		SBL	200	B	19.3	92	C	20.2	90
	Signal	SBT	–	C	23.0	164	C	23.7	161
		SBR	50	B	10.5	88	B	11.1	87
		EBL	650	B	14.3	101	B	14.5	107
		EBTR	–	C	21.9	190	C	22.2	203
		WBL	235	B	15.8	171	B	16.7	200
		WBTR	–	C	28.7	234	C	30.5	251
	Overall Intersection			C	20.6		C	21.5	
2. Mudd Tavern Road (E-W)/	Signal	SBL	300	D	42.0	295	D	43.0	353
I-95 SB On/Off Ramps (N-S)		SBTR	–	C	24.4	131	C	21.6	128
		EBTR	–	C	21.1	326	C	34.3	442
with assumed bridge replacement		WBL	300	B	15.4	73	C	28.5	168
and widening (by VDOT)		WBT	–	B	10.7	162	B	12.5	215
	Overall Intersection			C	24.5		C	29.8	
3. Mudd Tavern Road (E-W)/		NBTL	–	D	38.9	253	D	39.5	400
I-95 NB On/Off Ramps (N-S)	Signal	NBR	50	C	33.0	91	D	37.7	82
		EBL	300	A	8.4	192	B	10.5	232
with assumed bridge replacement		EBT	–	B	10.0	278	A	8.2	385
and widening (by VDOT)		WBTR	–	B	13.8	149	B	18.1	147
	Overall Intersection			B	17.4		B	18.8	
4. Mudd Tavern Road (E-W)/	Stop	NBL	–	D	25.2	61	F	94.5	272
Mallard Road (N-S)	Stop	NBR	–	B	14.7	23	C	20.2	23
		WBTL	–	A	0.1	64	A	0.1	202
5. Mudd Tavern Road (E-W)/		NBLTR	–	F	178.0	37	F	Err	43
Site Entrance (N-S)		SBL	–	F	96.6	29	F	778.4	69
		SBR	–	A	9.5	62	B	11.7	140
		EBL	100	B	10.2	81	B	13.6	333[3]
		WBTL	–	A	0.2	9	A	0.2	234

(1) – Indicates a continuous lane
(2) Queues are 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each
(3) Reported queue includes eastbound through-right queue at Mallard Road

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	LT	T	R	LT	T	R
Maximum Queue (ft)	176	314	195	103	158	242	79	238	203	75
Average Queue (ft)	69	154	79	28	84	55	62	102	29	17
95th Queue (ft)	128	242	139	56	137	143	85	184	117	44
Link Distance (ft)		1348	2668		848	848		692	692	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	650			235			50			50
Storage Blk Time (%)						3	19		2	0
Queuing Penalty (veh)						7	20		1	0

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	40	140	49	84
Average Queue (ft)	1	21	17	34
95th Queue (ft)	11	75	43	61
Link Distance (ft)	2668	550		482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	166	21	176	75
Average Queue (ft)	52	1	61	16
95th Queue (ft)	110	7	115	54
Link Distance (ft)	550	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			19	0
Queuing Penalty (veh)			3	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	67	31
Average Queue (ft)	21	5
95th Queue (ft)	53	22
Link Distance (ft)	464	464
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 32

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	LT	T	R	LT	T	R
Maximum Queue (ft)	176	196	493	260	179	184	75	387	366	75
Average Queue (ft)	61	86	227	81	84	38	38	190	140	62
95th Queue (ft)	111	147	368	234	145	107	67	279	252	90
Link Distance (ft)		1348	2668		848	848		692	692	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	650			235			50			50
Storage Blk Time (%)			8	0		6	1		21	6
Queuing Penalty (veh)			11	0		6	1		51	13

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	WB	SB	SB
Directions Served	LT	L	TR
Maximum Queue (ft)	110	77	366
Average Queue (ft)	15	18	140
95th Queue (ft)	60	49	255
Link Distance (ft)	550		482
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		300	
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	76	21	333	71
Average Queue (ft)	28	1	64	9
95th Queue (ft)	65	6	131	31
Link Distance (ft)	550	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			12	0
Queuing Penalty (veh)			2	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	68	66
Average Queue (ft)	25	6
95th Queue (ft)	53	31
Link Distance (ft)	464	464
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 84

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	LT	T	R	LT	T	R
Maximum Queue (ft)	134	190	632	260	176	154	75	283	281	75
Average Queue (ft)	65	81	245	87	98	49	38	186	141	63
95th Queue (ft)	121	156	421	253	159	117	73	270	251	86
Link Distance (ft)		1348	2668		848	848		692	692	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	650			235			50			50
Storage Blk Time (%)			10	0		8	1		18	8
Queuing Penalty (veh)			14	0		6	1		51	15

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	20	158	321	400
Average Queue (ft)	0	16	12	120
95th Queue (ft)	4	69	75	238
Link Distance (ft)	2668	550		482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				1
Queuing Penalty (veh)				0

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	103	21	180	75
Average Queue (ft)	26	0	73	17
95th Queue (ft)	68	4	124	53
Link Distance (ft)	550	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			17	0
Queuing Penalty (veh)			3	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	78	49
Average Queue (ft)	29	5
95th Queue (ft)	61	26
Link Distance (ft)	464	464
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 92

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	LT	T	R	LT	T	R
Maximum Queue (ft)	138	172	365	260	116	79	78	223	173	75
Average Queue (ft)	57	74	144	27	49	14	27	99	36	33
95th Queue (ft)	106	130	247	79	88	42	53	171	111	63
Link Distance (ft)		1348	2668		848	848		692	692	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	650			235			50			50
Storage Blk Time (%)			1			0	0		2	1
Queuing Penalty (veh)			1			0	0		3	1

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	WB	SB	SB
Directions Served	LT	L	TR
Maximum Queue (ft)	50	65	123
Average Queue (ft)	1	9	47
95th Queue (ft)	10	32	82
Link Distance (ft)	550		482
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		300	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	92	21	119	74
Average Queue (ft)	22	1	46	14
95th Queue (ft)	59	6	79	46
Link Distance (ft)	550	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			5	0
Queuing Penalty (veh)			1	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	55	31
Average Queue (ft)	26	6
95th Queue (ft)	50	26
Link Distance (ft)	464	464
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 6

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	94	357	255	232	71	172	264	76	196	97	92	75
Average Queue (ft)	49	172	49	89	26	84	121	68	91	39	20	30
95th Queue (ft)	82	269	108	155	56	129	215	86	165	75	60	66
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				0			4	32	0		2	3
Queuing Penalty (veh)				0			13	39	0		1	2

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	50	309	111	111
Average Queue (ft)	2	36	19	39
95th Queue (ft)				
Link Distance (ft)	26			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

BG

Sim

Intersection: 3: I-95 NB

Movement	I
Directions Served	
Maximum Queue (ft)	2
Average Queue (ft)	
95th Queue (ft)	1
Link Distance (ft)	5
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Movement				
Directions Served				
Maximum Queue (ft)				
Average Queue (ft)				
95th Queue (ft)				
Link Distance (ft)				
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			36	0
Queuing Penalty (veh)			6	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	76	31
Average Queue (ft)	18	2
95th Queue (ft)	52	13
Link Distance (ft)	464	464
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 61

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	155	196	260	362	31	175	149	75	139	225	266	75
Average Queue (ft)	53	76	115	167	11	80	45	42	60	130	125	67
95th Queue (ft)	98	141	217	266	34	133	108	82	105	201	223	87
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	1			6	8		1	16	24
Queuing Penalty (veh)			1	3			7	9		1	45	55

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	20	207	325	533
Average Queue (ft)	0	24	30	152
95th Queue (ft)	4	87	115	314
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				2
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			0	5
Queuing Penalty (veh)			0	2

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	NB	NB
Directions Served	LT	LT	R
Maximum Queue (ft)	137	181	75
Average Queue (ft)	29	73	14
95th Queue (ft)	74	126	49
Link Distance (ft)	553	472	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			50
Storage Blk Time (%)		17	0
Queuing Penalty (veh)		3	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	73	50
Average Queue (ft)	25	6
95th Queue (ft)	58	27
Link Distance (ft)	464	464
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 125

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	158	174	259	378	91	176	200	75	224	282	277	75
Average Queue (ft)	57	71	105	198	16	96	51	40	56	136	148	70
95th Queue (ft)	107	133	222	309	45	151	112	77	114	215	242	85
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				4			10	7		2	19	29
Queuing Penalty (veh)				9			9	9		2	63	60

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	21	140	324	520
Average Queue (ft)	1	25	21	151
95th Queue (ft)	6	78	107	333
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				4
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				7
Queuing Penalty (veh)				1

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	139	21	246	75
Average Queue (ft)	32	0	91	22
95th Queue (ft)	73	5	168	64
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			26	0
Queuing Penalty (veh)			6	0

Intersection: 4: Mallard & Rt 606

Movement	EB	NB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	54	73	49
Average Queue (ft)	1	26	6
95th Queue (ft)	12	54	29
Link Distance (ft)	127	464	464
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 159

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	114	193	113	213	51	118	101	75	136	160	139	75
Average Queue (ft)	51	74	62	107	5	54	15	25	40	75	40	49
95th Queue (ft)	89	141	96	172	25	86	52	59	82	124	101	80
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)							1	2			2	9
Queuing Penalty (veh)							0	1			4	11

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (ft)	48	131
Average Queue (ft)	9	56
95th Queue (ft)	32	93
Link Distance (ft)		480
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	75	36	136	75
Average Queue (ft)	21	1	51	19
95th Queue (ft)	58	9	88	50
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			7	0
Queuing Penalty (veh)			2	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	54	31
Average Queue (ft)	26	6
95th Queue (ft)	50	26
Link Distance (ft)	464	464
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

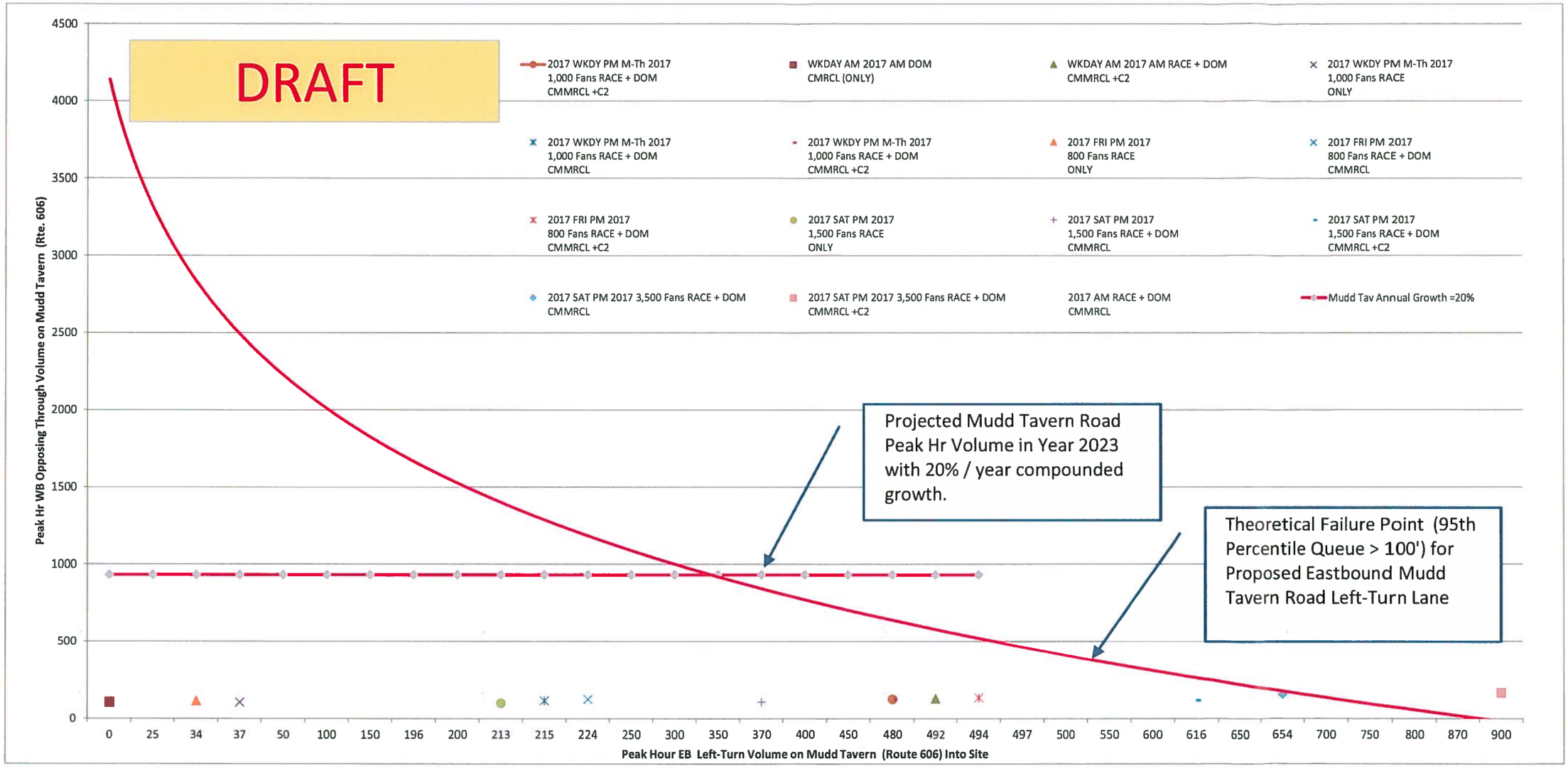
Network wide Queuing Penalty: 19

Attachment J

Performance Envelope for

Proposed Eastbound Mudd Tavern Road Left-Turn Lane

@ Site Entrance


DRAFT
2017 WKDY PM M-Th 2017 1,000 Fans RACE + DOM CMMRCL +C2
WKDAY AM 2017 AM DOM CMRCL (ONLY)
WKDAY AM 2017 AM RACE + DOM CMMRCL +C2
2017 WKDY PM M-Th 2017 1,000 Fans RACE ONLY
2017 WKDY PM M-Th 2017 1,000 Fans RACE + DOM CMMRCL
2017 WKDY PM M-Th 2017 1,000 Fans RACE + DOM CMMRCL +C2
2017 FRI PM 2017 800 Fans RACE ONLY
2017 FRI PM 2017 800 Fans RACE + DOM CMMRCL
2017 FRI PM 2017 800 Fans RACE + DOM CMMRCL +C2
2017 SAT PM 2017 1,500 Fans RACE ONLY
2017 SAT PM 2017 1,500 Fans RACE + DOM CMMRCL
2017 SAT PM 2017 1,500 Fans RACE + DOM CMMRCL +C2
2017 SAT PM 2017 3,500 Fans RACE + DOM CMMRCL
2017 SAT PM 2017 3,500 Fans RACE + DOM CMMRCL +C2
2017 AM RACE + DOM CMMRCL
Mudd Tav Annual Growth =20%
Projected Mudd Tavern Road Peak Hr Volume in Year 2023 with 20% / year compounded growth.
Theoretical Failure Point (95th Percentile Queue > 100') for Proposed Eastbound Mudd Tavern Road Left-Turn Lane
Peak Hr WB Opposing Through Volume on Mudd Tavern (Rte. 606)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0 25 34 37 50 100 150 196 200 213 215 224 250 300 350 370 400 450 480 492 494 497 500 550 600 616 650 654 700 750 800 870 900
Peak Hour EB Left-Turn Volume on Mudd Tavern (Route 606) Into Site

Attachment K.1

Total Future (2017) Dominion Raceway Elements Only

Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	413	27	77	108	115	42	243	297	136	96	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1846		1770	1718		1770	3539	1583	1770	3539	1583
Flt Permitted	0.49	1.00		0.27	1.00		0.69	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	905	1846		502	1718		1279	3539	1583	860	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	449	29	84	117	125	46	264	323	148	104	61
RTOR Reduction (vph)	0	3	0	0	47	0	0	0	162	0	0	32
Lane Group Flow (vph)	180	475	0	84	195	0	46	264	161	148	104	29
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.5	23.9		27.3	21.3		16.4	14.2	28.2	24.2	18.1	34.7
Effective Green, g (s)	32.5	23.9		27.3	21.3		16.4	14.2	28.2	24.2	18.1	34.7
Actuated g/C Ratio	0.44	0.32		0.37	0.29		0.22	0.19	0.38	0.33	0.24	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	496	594		287	493		297	677	601	355	863	740
v/s Ratio Prot	c0.04	c0.26		0.02	0.11		0.00	0.07	0.10	c0.03	0.03	0.02
v/s Ratio Perm	0.12			0.08			0.03			c0.10		
v/c Ratio	0.36	0.80		0.29	0.40		0.15	0.39	0.27	0.42	0.12	0.04
Uniform Delay, d1	13.2	23.0		16.2	21.3		23.1	26.2	15.9	18.5	21.8	10.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	7.6		0.6	0.5		0.2	0.4	0.2	0.8	0.1	0.0
Delay (s)	13.7	30.6		16.8	21.8		23.4	26.6	16.1	19.3	21.9	10.7
Level of Service	B	C		B	C		C	C	B	B	C	B
Approach Delay (s)		26.0			20.5			21.0			18.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	637	301	19	210	0	0	0	0	28	0	137
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	692	327	21	228	0	0	0	0	30	0	149
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	228			1020			1274	1126	856	1126	1289	228
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	228			1020			1274	1126	856	1126	1289	228
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	100			97			100	100	100	83	100	81
cM capacity (veh/h)	1340			677			114	199	357	178	159	792

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	1020	249	30	149
Volume Left	0	21	30	0
Volume Right	327	0	0	149
cSH	1700	677	178	792
Volume to Capacity	0.60	0.03	0.17	0.19
Queue Length 95th (ft)	0	2	15	17
Control Delay (s)	0.0	1.2	29.4	10.6
Lane LOS		A	D	B
Approach Delay (s)	0.0	1.2	13.8	
Approach LOS			B	

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	547	112	0	0	92	40	133	2	18	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	595	122	0	0	100	43	145	2	20	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	143			122			1433	1454	122	1443	1433	122
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			122			1433	1454	122	1443	1433	122
tC, single (s)	4.1			4.1			7.2	7.0	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.5	3.3	3.5	4.0	3.3
p0 queue free %	59			100			0	96	98	100	100	100
cM capacity (veh/h)	1439			1466			71	60	929	71	79	929

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	716	143	166
Volume Left	595	0	145
Volume Right	0	43	20
cSH	1439	1700	79
Volume to Capacity	0.41	0.08	2.09
Queue Length 95th (ft)	52	0	375
Control Delay (s)	8.4	0.0	618.2
Lane LOS	A		F
Approach Delay (s)	8.4	0.0	618.2
Approach LOS			F

Intersection Summary			
Average Delay	106.0		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	81	54	1	107	28	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	59	1	116	30	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			147		236	117
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			147		236	117
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.4
p0 queue free %			100		96	100
cM capacity (veh/h)			1435		724	911

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	147	117	30	3
Volume Left	0	1	30	0
Volume Right	59	0	0	3
cSH	1700	1435	724	911
Volume to Capacity	0.09	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	3	0
Control Delay (s)	0.0	0.1	10.2	9.0
Lane LOS		A	B	A
Approach Delay (s)	0.0	0.1	10.1	
Approach LOS			B	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	84	9	2	108	0	9	0	2	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	91	10	2	117	0	10	0	2	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	117			101			218	218	96	215	223	117
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	117			101			218	218	96	215	223	117
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1471			1491			737	679	960	739	675	935

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	0	101	120	0	12	0	0
Volume Left	0	0	2	0	10	0	0
Volume Right	0	10	0	0	2	0	0
cSH	1700	1700	1491	1700	770	1700	1700
Volume to Capacity	0.00	0.06	0.00	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	1	0	0
Control Delay (s)	0.0	0.0	0.1	0.0	9.7	0.0	0.0
Lane LOS			A		A	A	A
Approach Delay (s)	0.0		0.1		9.7	0.0	
Approach LOS					A	A	

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	160	38	285	311	152	14	224	109	109	459	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1809		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.33	1.00		0.41	1.00		0.47	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	611	1809		773	1771		874	3539	1583	877	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	174	41	310	338	165	15	243	118	118	499	311
RTOR Reduction (vph)	0	10	0	0	22	0	0	0	61	0	0	124
Lane Group Flow (vph)	125	205	0	310	481	0	15	243	57	118	499	187
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	21.8	16.6		35.3	24.1		15.1	14.5	35.2	23.1	18.5	31.7
Effective Green, g (s)	21.8	16.6		35.3	24.1		15.1	14.5	35.2	23.1	18.5	31.7
Actuated g/C Ratio	0.30	0.23		0.49	0.33		0.21	0.20	0.49	0.32	0.26	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	267	414		551	589		189	708	769	336	904	693
v/s Ratio Prot	0.03	0.11		c0.10	c0.27		0.00	0.07	0.04	c0.02	c0.14	0.12
v/s Ratio Perm	0.11			0.18			0.02			0.09		
v/c Ratio	0.47	0.50		0.56	0.82		0.08	0.34	0.07	0.35	0.55	0.27
Uniform Delay, d1	19.2	24.3		12.1	22.1		22.9	24.9	9.9	18.1	23.4	13.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.9		1.3	8.6		0.2	0.3	0.0	0.6	0.7	0.2
Delay (s)	20.5	25.2		13.4	30.7		23.0	25.2	10.0	18.7	24.1	13.2
Level of Service	C	C		B	C		C	C	A	B	C	B
Approach Delay (s)		23.5			24.1			20.3			19.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	318	192	27	340	0	0	0	0	56	3	517
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	346	209	29	370	0	0	0	0	61	3	562
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	370			554			1442	878	450	878	983	370
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	370			554			1442	878	450	878	983	370
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	100			97			100	100	100	77	98	16
cM capacity (veh/h)	1189			1011			17	278	609	262	214	672

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	554	399	61	565
Volume Left	0	29	61	0
Volume Right	209	0	0	562
cSH	1700	1011	262	663
Volume to Capacity	0.33	0.03	0.23	0.85
Queue Length 95th (ft)	0	2	22	242
Control Delay (s)	0.0	0.9	22.8	33.6
Lane LOS		A	C	D
Approach Delay (s)	0.0	0.9	32.5	
Approach LOS			D	

Intersection Summary			
Average Delay	13.1		
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	245	124	0	0	121	32	234	2	28	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	266	135	0	0	132	35	254	2	30	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	166			135			816	834	135	833	816	149
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	166			135			816	834	135	833	816	149
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			100			0	99	97	100	100	100
cM capacity (veh/h)	1388			1450			248	246	914	236	252	898

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	401	166	287
Volume Left	266	0	254
Volume Right	0	35	30
cSH	1388	1700	271
Volume to Capacity	0.19	0.10	1.06
Queue Length 95th (ft)	18	0	286
Control Delay (s)	6.0	0.0	112.6
Lane LOS	A		F
Approach Delay (s)	6.0	0.0	112.6
Approach LOS			F

Intersection Summary			
Average Delay	40.7		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	125	14	2	100	44	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	136	15	2	109	48	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			151		257	143
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			151		257	143
tC, single (s)			4.1		6.5	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.5
p0 queue free %			100		93	99
cM capacity (veh/h)			1430		704	849

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	151	111	48	4
Volume Left	0	2	48	0
Volume Right	15	0	0	4
cSH	1700	1430	704	849
Volume to Capacity	0.09	0.00	0.07	0.01
Queue Length 95th (ft)	0	0	5	0
Control Delay (s)	0.0	0.2	10.5	9.3
Lane LOS		A	B	A
Approach Delay (s)	0.0	0.2	10.4	
Approach LOS			B	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	93	12	2	100	6	13	0	2	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	101	13	2	109	7	14	0	2	0	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	115			114			303	308	108	297	308	109
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			114			303	308	108	297	308	109
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	100	100	100	100	100
cM capacity (veh/h)	1474			1475			633	589	946	640	589	945

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	40	114	111	7	16	0	2
Volume Left	40	0	2	0	14	0	0
Volume Right	0	13	0	7	2	0	2
cSH	1474	1700	1475	1700	663	1700	945
Volume to Capacity	0.03	0.07	0.00	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	2	0	0	0	2	0	0
Control Delay (s)	7.5	0.0	0.2	0.0	10.6	0.0	8.8
Lane LOS	A		A		B	A	A
Approach Delay (s)	2.0		0.1		10.6	8.8	
Approach LOS					B	A	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	22.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	142	34	254	352	172	16	253	97	97	408	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1809		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.23	1.00		0.51	1.00		0.50	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	422	1809		955	1771		923	3539	1583	975	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	154	37	276	383	187	17	275	105	105	443	351
RTOR Reduction (vph)	0	10	0	0	22	0	0	0	58	0	0	161
Lane Group Flow (vph)	141	181	0	276	548	0	17	275	47	105	443	190
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.0	22.7		39.2	27.8		16.3	15.0	34.4	19.7	16.7	31.0
Effective Green, g (s)	29.0	22.7		39.2	27.8		16.3	15.0	34.4	19.7	16.7	31.0
Actuated g/C Ratio	0.38	0.30		0.52	0.37		0.21	0.20	0.45	0.26	0.22	0.41
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	272	539		614	646		212	697	715	283	776	644
v/s Ratio Prot	0.04	0.10		c0.07	c0.31		0.00	0.08	0.03	c0.01	c0.13	0.12
v/s Ratio Perm	0.15			0.16			0.02			0.08		
v/c Ratio	0.52	0.34		0.45	0.85		0.08	0.39	0.07	0.37	0.57	0.30
Uniform Delay, d1	16.8	20.8		10.9	22.2		23.7	26.6	11.8	22.5	26.5	15.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.4		0.5	10.1		0.2	0.4	0.0	0.8	1.0	0.3
Delay (s)	18.5	21.2		11.4	32.4		23.9	27.0	11.8	23.3	27.5	15.5
Level of Service	B	C		B	C		C	C	B	C	C	B
Approach Delay (s)		20.1			25.5			22.8			22.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	284	134	31	384	0	0	0	0	35	1	460
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	309	146	34	417	0	0	0	0	38	1	500
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	417			454			1367	866	382	866	939	417
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	417			454			1367	866	382	866	939	417
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	100			97			100	100	100	86	100	21
cM capacity (veh/h)	1142			1101			25	282	666	267	227	631

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	454	451	38	501
Volume Left	0	34	38	0
Volume Right	146	0	0	500
cSH	1700	1101	267	629
Volume to Capacity	0.27	0.03	0.14	0.80
Queue Length 95th (ft)	0	2	12	197
Control Delay (s)	0.0	0.9	20.7	29.4
Lane LOS		A	C	D
Approach Delay (s)	0.0	0.9	28.8	
Approach LOS			D	

Intersection Summary			
Average Delay	11.0		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	217	112	0	0	137	35	265	2	31	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	236	122	0	0	149	38	288	2	34	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	187			122			761	780	122	779	761	168
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	187			122			761	780	122	779	761	168
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			100			0	99	96	100	100	100
cM capacity (veh/h)	1364			1466			275	270	929	260	277	876

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	358	187	324
Volume Left	236	0	288
Volume Right	0	38	34
cSH	1364	1700	299
Volume to Capacity	0.17	0.11	1.09
Queue Length 95th (ft)	16	0	318
Control Delay (s)	5.9	0.0	115.3
Lane LOS	A		F
Approach Delay (s)	5.9	0.0	115.3
Approach LOS			F

Intersection Summary			
Average Delay	45.4		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	105	22	1	110	46	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	24	1	120	50	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			138		248	126
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			138		248	126
tC, single (s)			4.1		6.5	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.5
p0 queue free %			100		93	100
cM capacity (veh/h)			1446		713	868

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	138	121	50	3
Volume Left	0	1	50	0
Volume Right	24	0	0	3
cSH	1700	1446	713	868
Volume to Capacity	0.08	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	6	0
Control Delay (s)	0.0	0.1	10.4	9.2
Lane LOS		A	B	A
Approach Delay (s)	0.0	0.1	10.4	
Approach LOS			B	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	74	12	2	109	6	13	0	2	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	80	13	2	118	7	14	0	2	0	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	125			93			286	290	87	279	290	118
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	125			93			286	290	87	279	290	118
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	100	100	100	100	100
cM capacity (veh/h)	1462			1501			651	604	972	658	604	933

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	37	93	121	7	16	0	2
Volume Left	37	0	2	0	14	0	0
Volume Right	0	13	0	7	2	0	2
cSH	1462	1700	1501	1700	681	1700	933
Volume to Capacity	0.03	0.05	0.00	0.00	0.02	0.00	0.00
Queue Length 95th (ft)	2	0	0	0	2	0	0
Control Delay (s)	7.5	0.0	0.1	0.0	10.4	0.0	8.9
Lane LOS	A		A		B	A	A
Approach Delay (s)	2.1		0.1		10.4	8.9	
Approach LOS					B	A	

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	22.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	183	42	191	210	102	8	125	62	63	257	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1810		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.46	1.00		0.48	1.00		0.58	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	848	1810		897	1771		1081	3539	1583	1049	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	199	46	208	228	111	9	136	67	68	279	174
RTOR Reduction (vph)	0	10	0	0	22	0	0	0	36	0	0	93
Lane Group Flow (vph)	136	235	0	208	317	0	9	136	31	68	279	81
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.0	14.3		25.8	16.2		11.6	11.0	28.6	15.6	13.0	28.7
Effective Green, g (s)	22.0	14.3		25.8	16.2		11.6	11.0	28.6	15.6	13.0	28.7
Actuated g/C Ratio	0.36	0.23		0.42	0.26		0.19	0.18	0.47	0.25	0.21	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	418	420		512	466		210	632	736	296	748	738
v/s Ratio Prot	0.04	0.13		c0.06	c0.18		0.00	0.04	0.02	c0.01	c0.08	0.05
v/s Ratio Perm	0.08			0.11			0.01			0.05		
v/c Ratio	0.33	0.56		0.41	0.68		0.04	0.22	0.04	0.23	0.37	0.11
Uniform Delay, d1	13.8	20.8		11.9	20.3		20.3	21.6	9.0	17.8	20.8	9.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.6		0.5	4.1		0.1	0.2	0.0	0.4	0.3	0.1
Delay (s)	14.3	22.4		12.4	24.4		20.4	21.7	9.0	18.2	21.1	9.3
Level of Service	B	C		B	C		C	C	A	B	C	A
Approach Delay (s)		19.5			19.8			17.7			16.8	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	309	143	6	258	0	0	0	0	154	1	263
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	336	155	7	280	0	0	0	0	167	1	286
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	280			491			993	707	414	707	785	280
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	280			491			993	707	414	707	785	280
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	52	100	62
cM capacity (veh/h)	1282			1072			138	358	639	348	323	751

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	491	287	167	287
Volume Left	0	7	167	0
Volume Right	155	0	0	286
cSH	1700	1072	348	748
Volume to Capacity	0.29	0.01	0.48	0.38
Queue Length 95th (ft)	0	0	62	45
Control Delay (s)	0.0	0.3	24.5	12.8
Lane LOS		A	C	B
Approach Delay (s)	0.0	0.3	17.1	
Approach LOS			C	

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	226	231	0	0	98	31	163	0	84	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	246	251	0	0	107	34	177	0	91	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	140			251			866	883	251	911	866	123
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	140			251			866	883	251	911	866	123
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			100			24	100	88	100	100	100
cM capacity (veh/h)	1419			1314			233	235	788	195	241	927

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	497	140	268
Volume Left	246	0	177
Volume Right	0	34	91
cSH	1419	1700	330
Volume to Capacity	0.17	0.08	0.81
Queue Length 95th (ft)	16	0	172
Control Delay (s)	4.8	0.0	49.7
Lane LOS	A		E
Approach Delay (s)	4.8	0.0	49.7
Approach LOS			E

Intersection Summary			
Average Delay	17.4		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	288	14	2	72	42	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	313	15	2	78	46	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			328		403	321
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			328		403	321
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		92	99
cM capacity (veh/h)			1231		596	709

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	328	80	46	4
Volume Left	0	2	46	0
Volume Right	15	0	0	4
cSH	1700	1231	596	709
Volume to Capacity	0.19	0.00	0.08	0.01
Queue Length 95th (ft)	0	0	6	0
Control Delay (s)	0.0	0.2	11.5	10.1
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.2	11.4	
Approach LOS			B	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	213	79	12	2	63	37	13	0	2	2	0	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	232	86	13	2	68	40	14	0	2	2	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	109			99			640	668	92	624	635	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	109			99			640	668	92	624	635	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			100			96	100	100	99	100	99
cM capacity (veh/h)	1482			1494			337	319	965	349	334	995

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	232	99	71	40	16	2	12
Volume Left	232	0	2	0	14	2	0
Volume Right	0	13	0	40	2	0	12
cSH	1482	1700	1494	1700	369	349	995
Volume to Capacity	0.16	0.06	0.00	0.02	0.04	0.01	0.01
Queue Length 95th (ft)	14	0	0	0	3	0	1
Control Delay (s)	7.9	0.0	0.2	0.0	15.2	15.4	8.7
Lane LOS	A		A		C	C	A
Approach Delay (s)	5.5		0.2		15.2	9.7	
Approach LOS					C	A	

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	130	367	89	217	72	178	220	75	179	96	86	75
Average Queue (ft)	57	173	34	95	25	92	113	69	78	37	16	25
95th Queue (ft)	101	282	69	173	57	147	199	85	132	72	46	62
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				0			6	35			1	4
Queuing Penalty (veh)				0			18	43			0	2

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	51	213	73	107
Average Queue (ft)	2	36	22	42
95th Queue (ft)	17	121	55	75
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	160	12	223	75
Average Queue (ft)	60	0	87	17
95th Queue (ft)	114	4	165	57
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			33	0
Queuing Penalty (veh)			6	0

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	79	31
Average Queue (ft)	22	3
95th Queue (ft)	52	18
Link Distance (ft)	458	458
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Rt 606 & Site Entrance

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	31
Link Distance (ft)	263
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 70

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	149	236	258	317	53	162	173	75	224	290	283	75
Average Queue (ft)	53	88	112	157	12	87	39	35	64	137	148	68
95th Queue (ft)	98	163	203	253	37	139	102	71	126	222	249	89
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	1			4	5		1	18	27
Queuing Penalty (veh)			1	4			4	5		1	51	62

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	21	133	324	496
Average Queue (ft)	1	16	49	190
95th Queue (ft)	8	60	186	364
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				4
Queuing Penalty (veh)				2

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	95	20	197	75
Average Queue (ft)	29	1	77	23
95th Queue (ft)	64	7	134	63
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			21	0
Queuing Penalty (veh)			6	1

Intersection: 4: Mallard & Rt 606

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	29	79	54
Average Queue (ft)	0	27	6
95th Queue (ft)	6	60	30
Link Distance (ft)	83	458	458
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	NB	SB
Directions Served	L	TR	LTR	R
Maximum Queue (ft)	26	16	31	20
Average Queue (ft)	4	0	13	1
95th Queue (ft)	20	3	37	9
Link Distance (ft)		83	233	111
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 139

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	199	213	260	450	72	180	184	77	224	253	373	78
Average Queue (ft)	57	76	117	200	17	85	50	40	60	131	158	71
95th Queue (ft)	114	146	240	343	46	136	123	80	112	210	266	84
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	5		0	7	8		1	17	32
Queuing Penalty (veh)			0	13		0	7	10		1	55	65

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	WB	SB	SB
Directions Served	LT	L	TR
Maximum Queue (ft)	116	324	427
Average Queue (ft)	21	28	155
95th Queue (ft)	70	90	296
Link Distance (ft)	553		480
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		300	
Storage Blk Time (%)			2
Queuing Penalty (veh)			1

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	98	20	221	75
Average Queue (ft)	31	1	82	28
95th Queue (ft)	75	9	150	67
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			22	0
Queuing Penalty (veh)			7	1

Intersection: 4: Mallard & Rt 606

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	31	78	48
Average Queue (ft)	0	32	4
95th Queue (ft)	6	60	24
Link Distance (ft)	68	458	458
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	NB	SB
Directions Served	L	LTR	R
Maximum Queue (ft)	46	31	22
Average Queue (ft)	3	12	2
95th Queue (ft)	19	36	13
Link Distance (ft)		256	157
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 159

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	112	229	252	241	53	132	87	74	112	158	156	75
Average Queue (ft)	42	93	65	100	7	51	16	26	43	71	43	50
95th Queue (ft)	78	157	128	172	28	86	48	62	77	119	106	84
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				0			2	3			4	10
Queuing Penalty (veh)				0			1	2			6	13

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	WB	SB	SB
Directions Served	LT	L	TR
Maximum Queue (ft)	74	112	130
Average Queue (ft)	3	48	59
95th Queue (ft)	25	81	93
Link Distance (ft)	553		480
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		300	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	88	20	159	75
Average Queue (ft)	29	1	59	36
95th Queue (ft)	71	5	110	69
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			11	1
Queuing Penalty (veh)			9	1

Intersection: 4: Mallard & Rt 606

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	31	76	31
Average Queue (ft)	0	26	3
95th Queue (ft)	6	51	16
Link Distance (ft)	83	458	458
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	R	LTR	LT	R
Maximum Queue (ft)	57	40	22	31	24	20
Average Queue (ft)	16	1	1	11	0	4
95th Queue (ft)	43	8	9	35	5	17
Link Distance (ft)		83		180	114	114
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 31

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	198	42	191	210	102	8	125	62	65	257	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1814		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.46	1.00		0.45	1.00		0.58	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	856	1814		841	1771		1081	3539	1583	1049	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	215	46	208	228	111	9	136	67	71	279	174
RTOR Reduction (vph)	0	9	0	0	22	0	0	0	36	0	0	93
Lane Group Flow (vph)	136	252	0	208	317	0	9	136	31	71	279	81
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.1	14.4		26.1	16.4		11.6	11.0	28.7	15.6	13.0	28.7
Effective Green, g (s)	22.1	14.4		26.1	16.4		11.6	11.0	28.7	15.6	13.0	28.7
Actuated g/C Ratio	0.36	0.23		0.42	0.27		0.19	0.18	0.47	0.25	0.21	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	420	423		501	470		209	630	736	295	745	736
v/s Ratio Prot	0.04	0.14		c0.07	c0.18		0.00	0.04	0.02	c0.01	c0.08	0.05
v/s Ratio Perm	0.08			0.11			0.01			0.05		
v/c Ratio	0.32	0.60		0.42	0.67		0.04	0.22	0.04	0.24	0.37	0.11
Uniform Delay, d1	13.8	21.1		11.8	20.3		20.4	21.7	9.0	18.0	20.9	9.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	2.3		0.6	3.8		0.1	0.2	0.0	0.4	0.3	0.1
Delay (s)	14.3	23.3		12.4	24.1		20.5	21.8	9.0	18.4	21.2	9.4
Level of Service	B	C		B	C		C	C	A	B	C	A
Approach Delay (s)		20.2			19.6			17.7			16.9	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	326	143	10	259	0	0	0	0	341	1	263
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	354	155	11	282	0	0	0	0	371	1	286
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	282			510			1022	735	432	735	813	282
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	282			510			1022	735	432	735	813	282
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	0	100	62
cM capacity (veh/h)	1281			1055			131	343	623	332	309	750

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	510	292	371	287
Volume Left	0	11	371	0
Volume Right	155	0	0	286
cSH	1700	1055	332	746
Volume to Capacity	0.30	0.01	1.11	0.38
Queue Length 95th (ft)	0	1	360	45
Control Delay (s)	0.0	0.4	119.8	12.8
Lane LOS		A	F	B
Approach Delay (s)	0.0	0.4	73.1	
Approach LOS			F	

Intersection Summary			
Average Delay	33.0		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	326	143	10	259	0	0	0	0	341	1	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0			7.0					7.0	7.0	
Lane Util. Factor		1.00			1.00					1.00	1.00	
Frt		0.96			1.00					1.00	0.85	
Flt Protected		1.00			1.00					0.95	1.00	
Satd. Flow (prot)		1742			1825					1770	1539	
Flt Permitted		1.00			1.00					0.95	1.00	
Satd. Flow (perm)		1742			1825					1770	1539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	354	155	11	282	0	0	0	0	371	1	286
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	214	0
Lane Group Flow (vph)	0	492	0	0	293	0	0	0	0	371	73	0
Heavy Vehicles (%)	2%	4%	6%	2%	4%	2%	2%	2%	2%	2%	2%	5%
Turn Type		NA		Split	NA					Perm	NA	
Protected Phases		4		8	8						6	
Permitted Phases										6		
Actuated Green, G (s)		26.4			16.1					21.5	21.5	
Effective Green, g (s)		26.4			16.1					21.5	21.5	
Actuated g/C Ratio		0.31			0.19					0.25	0.25	
Clearance Time (s)		7.0			7.0					7.0	7.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		541			345					447	389	
v/s Ratio Prot		c0.28			c0.16						0.05	
v/s Ratio Perm										c0.21		
v/c Ratio		0.91			0.85					0.83	0.19	
Uniform Delay, d1		28.1			33.3					30.0	24.9	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		19.1			17.4					12.1	0.2	
Delay (s)		47.2			50.7					42.1	25.1	
Level of Service		D			D					D	C	
Approach Delay (s)		47.2			50.7			0.0			34.7	
Approach LOS		D			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	226	436	0	0	102	40	163	0	163	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	246	474	0	0	111	43	177	0	177	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	154			474			1098	1120	474	1186	1098	133
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	154			474			1098	1120	474	1186	1098	133
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			100			0	100	70	100	100	100
cM capacity (veh/h)	1402			1088			162	170	590	100	176	917

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	720	154	354
Volume Left	246	0	177
Volume Right	0	43	177
cSH	1402	1700	269
Volume to Capacity	0.18	0.09	1.32
Queue Length 95th (ft)	16	0	450
Control Delay (s)	4.1	0.0	203.1
Lane LOS	A		F
Approach Delay (s)	4.1	0.0	203.1
Approach LOS			F

Intersection Summary			
Average Delay	61.0		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	226	436	0	0	102	40	163	0	163	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0			
Lane Util. Factor		1.00			1.00			1.00	1.00			
Frt		1.00			0.96			1.00	0.85			
Flt Protected		0.98			1.00			0.95	1.00			
Satd. Flow (prot)		1807			1793			1703	1583			
Flt Permitted		0.83			1.00			0.95	1.00			
Satd. Flow (perm)		1517			1793			1703	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	474	0	0	111	43	177	0	177	0	0	0
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	83	0	0	0
Lane Group Flow (vph)	0	720	0	0	140	0	0	177	94	0	0	0
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		39.4			39.4			13.3	13.3			
Effective Green, g (s)		39.4			39.4			13.3	13.3			
Actuated g/C Ratio		0.61			0.61			0.21	0.21			
Clearance Time (s)		6.0			6.0			6.0	6.0			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		923			1091			350	325			
v/s Ratio Prot					0.08							
v/s Ratio Perm		c0.47						0.10	0.06			
v/c Ratio		0.78			0.13			0.51	0.29			
Uniform Delay, d1		9.4			5.4			22.8	21.7			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		4.3			0.1			1.2	0.5			
Delay (s)		13.7			5.4			23.9	22.2			
Level of Service		B			A			C	C			
Approach Delay (s)		13.7			5.4			23.1			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	572	14	2	86	42	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	622	15	2	93	46	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			637		727	629
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			637		727	629
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		88	99
cM capacity (veh/h)			947		386	473

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	637	96	46	4
Volume Left	0	2	46	0
Volume Right	15	0	0	4
cSH	1700	947	386	473
Volume to Capacity	0.37	0.00	0.12	0.01
Queue Length 95th (ft)	0	0	10	1
Control Delay (s)	0.0	0.2	15.6	12.7
Lane LOS		A	C	B
Approach Delay (s)	0.0	0.2	15.3	
Approach LOS			C	

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	578	247	319	347
Average Queue (ft)	259	147	181	65
95th Queue (ft)	471	226	279	133
Link Distance (ft)	1344	550		482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			1	0

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	354	86	314	77
Average Queue (ft)	173	26	86	55
95th Queue (ft)	295	55	182	92
Link Distance (ft)	550	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			23	4
Queuing Penalty (veh)			37	7

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	97	31	79	31
Average Queue (ft)	4	0	26	3
95th Queue (ft)	28	6	54	18
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	TR	LT	R	LT	R
Maximum Queue (ft)	82	112	22	55	24	44
Average Queue (ft)	45	19	1	6	1	13
95th Queue (ft)	82	72	6	27	7	29
Link Distance (ft)		83	805		114	114
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	2				
Storage Bay Dist (ft)	150			200		
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	1				

Network Summary

Network wide Queuing Penalty: 49

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	497	79	12	2	63	86	13	0	2	4	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	540	86	13	2	68	93	14	0	2	4	0	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	162			99			1273	1339	92	1241	1252	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			99			1273	1339	92	1241	1252	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	62			100			86	100	100	96	100	97
cM capacity (veh/h)	1417			1494			99	94	965	106	106	995

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	540	99	71	93	16	4	27
Volume Left	540	0	2	0	14	4	0
Volume Right	0	13	0	93	2	0	27
cSH	1417	1700	1494	1700	112	106	995
Volume to Capacity	0.38	0.06	0.00	0.05	0.15	0.04	0.03
Queue Length 95th (ft)	45	0	0	0	12	3	2
Control Delay (s)	9.1	0.0	0.2	0.0	42.6	40.3	8.7
Lane LOS	A		A		E	E	A
Approach Delay (s)	7.7		0.1		42.6	13.1	
Approach LOS					E	B	

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	114	188	260	344	50	116	69	74	75	156	143	75
Average Queue (ft)	48	85	73	112	9	54	17	24	39	73	42	43
95th Queue (ft)	85	146	150	201	32	93	46	60	66	121	91	82
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				1			1	2			3	9
Queuing Penalty (veh)				1			1	1			5	11

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	50	115	315	132
Average Queue (ft)	1	6	103	58
95th Queue (ft)	12	33	190	93
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			0	
Queuing Penalty (veh)			1	

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	NB	NB
Directions Served	LT	LT	R
Maximum Queue (ft)	89	246	77
Average Queue (ft)	25	96	60
95th Queue (ft)	62	182	92
Link Distance (ft)	553	472	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			50
Storage Blk Time (%)		30	4
Queuing Penalty (veh)		50	6

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	54	29	74	31
Average Queue (ft)	2	0	26	4
95th Queue (ft)	14	6	56	22
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	R	LTR	LT	R
Maximum Queue (ft)	82	99	51	52	24	39
Average Queue (ft)	44	8	4	16	5	10
95th Queue (ft)	75	47	22	41	20	28
Link Distance (ft)		83		180	114	114
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	1				
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	1				

Network Summary

Network wide Queuing Penalty: 77

Attachment K.2

Total Future (2017) Dominion

Raceway & Commercial Elements

Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	436	27	91	129	125	42	243	312	148	96	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1847		1770	1725		1770	3539	1583	1770	3539	1583
Flt Permitted	0.44	1.00		0.24	1.00		0.69	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	829	1847		449	1725		1279	3539	1583	862	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	474	29	99	140	136	46	264	339	161	104	61
RTOR Reduction (vph)	0	3	0	0	42	0	0	0	149	0	0	33
Lane Group Flow (vph)	180	500	0	99	234	0	46	264	190	161	104	28
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.4	24.8		28.4	22.3		16.5	14.3	28.4	24.3	18.2	34.8
Effective Green, g (s)	33.4	24.8		28.4	22.3		16.5	14.3	28.4	24.3	18.2	34.8
Actuated g/C Ratio	0.44	0.33		0.38	0.30		0.22	0.19	0.38	0.32	0.24	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	475	608		276	510		294	672	597	351	855	731
v/s Ratio Prot	c0.04	c0.27		0.03	0.14		0.00	0.07	0.12	c0.04	0.03	0.02
v/s Ratio Perm	0.12			0.11			0.03			c0.11		
v/c Ratio	0.38	0.82		0.36	0.46		0.16	0.39	0.32	0.46	0.12	0.04
Uniform Delay, d1	13.3	23.2		16.4	21.6		23.6	26.7	16.6	19.1	22.3	11.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	8.8		0.8	0.7		0.2	0.4	0.3	1.0	0.1	0.0
Delay (s)	13.8	32.0		17.2	22.2		23.8	27.1	16.9	20.1	22.4	11.1
Level of Service	B	C		B	C		C	C	B	C	C	B
Approach Delay (s)		27.2			20.9			21.5			19.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	686	302	68	256	0	0	0	0	96	0	136
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	746	328	74	278	0	0	0	0	104	0	148
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	278			1074			1484	1336	910	1336	1500	278
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	278			1074			1484	1336	910	1336	1500	278
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	100			89			100	100	100	12	100	80
cM capacity (veh/h)	1284			645			75	136	333	119	108	742

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	1074	352	104	148
Volume Left	0	74	104	0
Volume Right	328	0	0	148
cSH	1700	645	119	742
Volume to Capacity	0.63	0.11	0.88	0.20
Queue Length 95th (ft)	0	10	135	18
Control Delay (s)	0.0	3.6	120.1	11.1
Lane LOS		A	F	B
Approach Delay (s)	0.0	3.6	56.2	
Approach LOS			F	

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	544	234	0	0	190	126	130	2	92	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	591	254	0	0	207	137	141	2	100	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	343			254			1712	1780	254	1763	1712	275
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	343			254			1712	1780	254	1763	1712	275
tC, single (s)	4.1			4.1			7.2	7.0	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.5	3.3	3.5	4.0	3.3
p0 queue free %	51			100			0	93	87	100	100	100
cM capacity (veh/h)	1216			1311			41	32	784	34	46	764

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	846	343	243
Volume Left	591	0	141
Volume Right	0	137	100
cSH	1216	1700	67
Volume to Capacity	0.49	0.20	3.64
Queue Length 95th (ft)	69	0	Err
Control Delay (s)	9.4	0.0	Err
Lane LOS	A		F
Approach Delay (s)	9.4	0.0	Err
Approach LOS			F

Intersection Summary			
Average Delay	1704.9		
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	277	54	1	291	28	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	301	59	1	316	30	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			360		649	330
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			360		649	330
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.4
p0 queue free %			100		93	100
cM capacity (veh/h)			1199		414	691

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	360	317	30	3
Volume Left	0	1	30	0
Volume Right	59	0	0	3
cSH	1700	1199	414	691
Volume to Capacity	0.21	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	6	0
Control Delay (s)	0.0	0.0	14.4	10.2
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.0	14.0	
Approach LOS			B	

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	196	84	9	2	108	10	9	0	2	9	0	184
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	213	91	10	2	117	11	10	0	2	10	0	200
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	128			101			844	655	96	641	649	117
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	128			101			844	655	96	641	649	117
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			100			95	100	100	97	100	79
cM capacity (veh/h)	1458			1491			197	329	960	343	331	935

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	213	101	120	11	12	10	200
Volume Left	213	0	2	0	10	10	0
Volume Right	0	10	0	11	2	0	200
cSH	1458	1700	1491	1700	231	343	935
Volume to Capacity	0.15	0.06	0.00	0.01	0.05	0.03	0.21
Queue Length 95th (ft)	13	0	0	0	4	2	20
Control Delay (s)	7.9	0.0	0.1	0.0	21.5	15.8	9.9
Lane LOS	A		A		C	C	A
Approach Delay (s)	5.4		0.1		21.5	10.2	
Approach LOS					C	B	

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	183	38	299	332	163	14	224	124	120	459	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1815		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.29	1.00		0.39	1.00		0.47	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	531	1815		719	1771		874	3539	1583	881	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	199	41	325	361	177	15	243	135	130	499	311
RTOR Reduction (vph)	0	8	0	0	22	0	0	0	70	0	0	125
Lane Group Flow (vph)	125	232	0	325	516	0	15	243	65	130	499	186
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.9	17.7		36.8	25.6		15.4	14.8	35.9	23.4	18.8	32.0
Effective Green, g (s)	22.9	17.7		36.8	25.6		15.4	14.8	35.9	23.4	18.8	32.0
Actuated g/C Ratio	0.31	0.24		0.50	0.35		0.21	0.20	0.48	0.32	0.25	0.43
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	250	432		542	611		188	705	765	332	896	682
v/s Ratio Prot	0.03	0.13		c0.11	c0.29		0.00	0.07	0.04	c0.02	c0.14	0.12
v/s Ratio Perm	0.12			0.19			0.02			0.10		
v/c Ratio	0.50	0.54		0.60	0.85		0.08	0.34	0.09	0.39	0.56	0.27
Uniform Delay, d1	19.4	24.7		12.3	22.5		23.5	25.5	10.3	18.9	24.1	13.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	1.3		1.8	10.4		0.2	0.3	0.0	0.8	0.8	0.2
Delay (s)	21.0	25.9		14.1	32.9		23.7	25.8	10.4	19.7	24.8	13.8
Level of Service	C	C		B	C		C	C	B	B	C	B
Approach Delay (s)		24.3			25.8			20.4			20.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	366	193	71	387	0	0	0	0	118	3	516
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	398	210	77	421	0	0	0	0	128	3	561
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	421			608			1640	1078	503	1078	1183	421
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	421			608			1640	1078	503	1078	1183	421
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	100			92			100	100	100	30	98	11
cM capacity (veh/h)	1138			966			8	201	569	184	153	629

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	608	498	128	564
Volume Left	0	77	128	0
Volume Right	210	0	0	561
cSH	1700	966	184	617
Volume to Capacity	0.36	0.08	0.70	0.91
Queue Length 95th (ft)	0	6	107	290
Control Delay (s)	0.0	2.2	60.0	44.1
Lane LOS		A	F	E
Approach Delay (s)	0.0	2.2	47.0	
Approach LOS			E	

Intersection Summary			
Average Delay	18.7		
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	243	239	0	0	215	109	232	2	91	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	264	260	0	0	234	118	252	2	99	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	352			260			1081	1140	260	1132	1081	293
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	352			260			1081	1140	260	1132	1081	293
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	78			100			0	99	87	100	100	100
cM capacity (veh/h)	1185			1305			159	156	779	129	169	746

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	524	352	353
Volume Left	264	0	252
Volume Right	0	118	99
cSH	1185	1700	206
Volume to Capacity	0.22	0.21	1.72
Queue Length 95th (ft)	21	0	599
Control Delay (s)	5.7	0.0	382.5
Lane LOS	A		F
Approach Delay (s)	5.7	0.0	382.5
Approach LOS			F

Intersection Summary			
Average Delay	112.3		
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	303	14	2	271	44	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	329	15	2	295	48	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			345		636	337
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			345		636	337
tC, single (s)			4.1		6.5	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.5
p0 queue free %			100		89	99
cM capacity (veh/h)			1214		421	658

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	345	297	48	4
Volume Left	0	2	48	0
Volume Right	15	0	0	4
cSH	1700	1214	421	658
Volume to Capacity	0.20	0.00	0.11	0.01
Queue Length 95th (ft)	0	0	10	0
Control Delay (s)	0.0	0.1	14.6	10.5
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.1	14.3	
Approach LOS			B	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	215	93	12	2	100	16	13	0	2	10	0	173
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	234	101	13	2	109	17	14	0	2	11	0	188
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	126			114			876	705	108	684	695	109
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	126			114			876	705	108	684	695	109
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			100			93	100	100	97	100	80
cM capacity (veh/h)	1460			1475			189	303	946	317	307	945

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	234	114	111	17	16	11	188
Volume Left	234	0	2	0	14	11	0
Volume Right	0	13	0	17	2	0	188
cSH	1460	1700	1475	1700	212	317	945
Volume to Capacity	0.16	0.07	0.00	0.01	0.08	0.03	0.20
Queue Length 95th (ft)	14	0	0	0	6	3	18
Control Delay (s)	7.9	0.0	0.2	0.0	23.4	16.8	9.8
Lane LOS	A		A		C	C	A
Approach Delay (s)	5.3		0.1		23.4	10.1	
Approach LOS					C	B	

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	165	34	268	373	183	16	253	112	108	408	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1815		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.20	1.00		0.48	1.00		0.50	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	376	1815		897	1771		923	3539	1583	982	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	179	37	291	405	199	17	275	122	117	443	351
RTOR Reduction (vph)	0	8	0	0	21	0	0	0	68	0	0	163
Lane Group Flow (vph)	141	208	0	291	583	0	17	275	54	117	443	188
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.5	24.3		41.3	29.7		16.6	15.2	34.8	19.8	16.8	31.0
Effective Green, g (s)	30.5	24.3		41.3	29.7		16.6	15.2	34.8	19.8	16.8	31.0
Actuated g/C Ratio	0.39	0.31		0.53	0.38		0.21	0.19	0.45	0.25	0.22	0.40
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	257	564		604	673		211	688	705	279	761	628
v/s Ratio Prot	0.04	0.11		c0.07	c0.33		0.00	0.08	0.03	c0.02	c0.13	0.12
v/s Ratio Perm	0.17			0.18			0.02			0.09		
v/c Ratio	0.55	0.37		0.48	0.87		0.08	0.40	0.08	0.42	0.58	0.30
Uniform Delay, d1	17.1	20.9		10.8	22.4		24.4	27.5	12.4	23.8	27.5	16.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.4		0.6	11.3		0.2	0.4	0.0	1.0	1.1	0.3
Delay (s)	19.5	21.3		11.4	33.7		24.6	27.8	12.5	24.8	28.6	16.4
Level of Service	B	C		B	C		C	C	B	C	C	B
Approach Delay (s)		20.6			26.4			23.2			23.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	332	135	79	431	0	0	0	0	101	1	459
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	361	147	86	468	0	0	0	0	110	1	499
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	468			508			1574	1074	434	1074	1148	468
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	468			508			1574	1074	434	1074	1148	468
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	100			92			100	100	100	41	99	16
cM capacity (veh/h)	1093			1052			13	202	622	185	160	591

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	508	554	110	500
Volume Left	0	86	110	0
Volume Right	147	0	0	499
cSH	1700	1052	185	587
Volume to Capacity	0.30	0.08	0.59	0.85
Queue Length 95th (ft)	0	7	81	232
Control Delay (s)	0.0	2.2	49.4	36.6
Lane LOS		A	E	E
Approach Delay (s)	0.0	2.2	38.9	
Approach LOS			E	

Intersection Summary			
Average Delay	14.9		
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	214	231	0	0	235	120	262	2	102	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	233	251	0	0	255	130	285	2	111	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	386			251			1037	1102	251	1093	1037	321
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	386			251			1037	1102	251	1093	1037	321
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	80			100			0	99	86	100	100	100
cM capacity (veh/h)	1151			1314			174	169	788	138	184	720

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	484	386	398
Volume Left	233	0	285
Volume Right	0	130	111
cSH	1151	1700	223
Volume to Capacity	0.20	0.23	1.78
Queue Length 95th (ft)	19	0	682
Control Delay (s)	5.4	0.0	406.7
Lane LOS	A		F
Approach Delay (s)	5.4	0.0	406.7
Approach LOS			F

Intersection Summary			
Average Delay	129.7		
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	295	22	1	293	46	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	321	24	1	318	50	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			345		653	333
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			345		653	333
tC, single (s)			4.1		6.5	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.5
p0 queue free %			100		88	100
cM capacity (veh/h)			1214		412	661

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	345	320	50	3
Volume Left	0	1	50	0
Volume Right	24	0	0	3
cSH	1700	1214	412	661
Volume to Capacity	0.20	0.00	0.12	0.00
Queue Length 95th (ft)	0	0	10	0
Control Delay (s)	0.0	0.0	14.9	10.5
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.0	14.7	
Approach LOS			B	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	224	74	12	2	109	16	13	0	2	10	0	185
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	243	80	13	2	118	17	14	0	2	11	0	201
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	136			93			898	714	87	692	703	118
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	136			93			898	714	87	692	703	118
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			100			92	100	100	97	100	78
cM capacity (veh/h)	1448			1501			178	296	972	311	301	933

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	243	93	121	17	16	11	201
Volume Left	243	0	2	0	14	11	0
Volume Right	0	13	0	17	2	0	201
cSH	1448	1700	1501	1700	199	311	933
Volume to Capacity	0.17	0.05	0.00	0.01	0.08	0.03	0.22
Queue Length 95th (ft)	15	0	0	0	7	3	20
Control Delay (s)	8.0	0.0	0.1	0.0	24.7	17.0	9.9
Lane LOS	A		A		C	C	A
Approach Delay (s)	5.8		0.1		24.7	10.3	
Approach LOS					C	B	

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	202	42	202	226	110	8	125	74	72	257	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1814		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.41	1.00		0.43	1.00		0.58	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	761	1814		796	1771		1081	3539	1583	970	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	220	46	220	246	120	9	136	80	78	279	174
RTOR Reduction (vph)	0	9	0	0	22	0	0	0	43	0	0	92
Lane Group Flow (vph)	136	257	0	220	344	0	9	136	37	78	279	82
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.6	14.9		27.2	17.2		12.1	11.5	29.5	18.5	14.7	30.4
Effective Green, g (s)	22.6	14.9		27.2	17.2		12.1	11.5	29.5	18.5	14.7	30.4
Actuated g/C Ratio	0.35	0.23		0.42	0.27		0.19	0.18	0.46	0.29	0.23	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	388	421		488	474		210	633	727	326	810	749
v/s Ratio Prot	0.04	0.14		c0.07	c0.19		0.00	0.04	0.02	c0.01	c0.08	0.05
v/s Ratio Perm	0.08			0.12			0.01			0.05		
v/c Ratio	0.35	0.61		0.45	0.73		0.04	0.21	0.05	0.24	0.34	0.11
Uniform Delay, d1	14.7	22.1		12.4	21.4		21.2	22.5	9.6	17.1	20.7	9.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	2.5		0.7	5.5		0.1	0.2	0.0	0.4	0.3	0.1
Delay (s)	15.3	24.6		13.1	26.8		21.3	22.7	9.6	17.5	21.0	9.5
Level of Service	B	C		B	C		C	C	A	B	C	A
Approach Delay (s)		21.4			21.7			18.0			16.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	349	144	44	294	0	0	0	0	208	1	262
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	379	157	48	320	0	0	0	0	226	1	285
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	320			536			1158	873	458	873	951	320
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	320			536			1158	873	458	873	951	320
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			100	100	100	13	100	60
cM capacity (veh/h)	1240			1032			100	275	603	261	248	714

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	536	367	226	286
Volume Left	0	48	226	0
Volume Right	157	0	0	285
cSH	1700	1032	261	709
Volume to Capacity	0.32	0.05	0.87	0.40
Queue Length 95th (ft)	0	4	182	49
Control Delay (s)	0.0	1.6	67.9	13.5
Lane LOS		A	F	B
Approach Delay (s)	0.0	1.6	37.5	
Approach LOS			E	

Intersection Summary			
Average Delay	14.0		
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	224	329	0	0	175	99	161	0	143	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	243	358	0	0	190	108	175	0	155	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	298			358			1089	1142	358	1166	1089	244
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	298			358			1089	1142	358	1166	1089	244
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	80			100			0	100	77	100	100	100
cM capacity (veh/h)	1241			1201			161	161	687	112	173	795

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	601	298	330
Volume Left	243	0	175
Volume Right	0	108	155
cSH	1241	1700	265
Volume to Capacity	0.20	0.18	1.25
Queue Length 95th (ft)	18	0	399
Control Delay (s)	4.8	0.0	178.1
Lane LOS	A		F
Approach Delay (s)	4.8	0.0	178.1
Approach LOS			F

Intersection Summary			
Average Delay	50.2		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	445	14	2	217	42	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	484	15	2	236	46	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			499		732	491
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			499		732	491
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		88	99
cM capacity (veh/h)			1065		383	567

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	499	238	46	4
Volume Left	0	2	46	0
Volume Right	15	0	0	4
cSH	1700	1065	383	567
Volume to Capacity	0.29	0.00	0.12	0.01
Queue Length 95th (ft)	0	0	10	1
Control Delay (s)	0.0	0.1	15.7	11.4
Lane LOS		A	C	B
Approach Delay (s)	0.0	0.1	15.3	
Approach LOS			C	

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	79	12	2	63	45	13	0	2	9	0	156
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	402	86	13	2	68	49	14	0	2	10	0	170
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	117			99			1139	1018	92	965	976	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	117			99			1139	1018	92	965	976	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	73			100			88	100	100	95	100	83
cM capacity (veh/h)	1471			1494			117	172	965	184	182	995

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	402	99	71	49	16	10	170
Volume Left	402	0	2	0	14	10	0
Volume Right	0	13	0	49	2	0	170
cSH	1471	1700	1494	1700	132	184	995
Volume to Capacity	0.27	0.06	0.00	0.03	0.12	0.05	0.17
Queue Length 95th (ft)	28	0	0	0	10	4	15
Control Delay (s)	8.4	0.0	0.2	0.0	36.1	25.6	9.4
Lane LOS	A		A		E	D	A
Approach Delay (s)	6.7		0.1		36.1	10.2	
Approach LOS					E	B	

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	135	352	112	204	94	213	360	75	201	160	119	78
Average Queue (ft)	62	174	44	99	31	102	139	70	89	37	17	27
95th Queue (ft)	113	279	87	169	61	162	252	84	149	82	55	65
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)						0	6	39	0		1	3
Queuing Penalty (veh)						0	20	48	0		1	1

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	21	466	272	107
Average Queue (ft)	5	115	92	43
95th Queue (ft)	20	286	196	76
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	287	12	511	75
Average Queue (ft)	104	1	331	61
95th Queue (ft)	178	7	544	106
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)			14	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			90	2
Queuing Penalty (veh)			83	3

Intersection: 4: Mallard & Rt 606

Movement	NB	NB
Directions Served	L	R
Maximum Queue (ft)	71	31
Average Queue (ft)	24	2
95th Queue (ft)	55	15
Link Distance (ft)	458	458
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LT	LTR	LT	R
Maximum Queue (ft)	62	74	19	31	26	145
Average Queue (ft)	16	2	0	11	7	37
95th Queue (ft)	44	20	4	35	24	72
Link Distance (ft)		72	815	263	235	235
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)	150					
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				

Network Summary

Network wide Queuing Penalty: 155

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	130	235	260	408	52	166	140	75	224	271	348	75
Average Queue (ft)	54	94	109	188	13	77	47	47	68	133	148	67
95th Queue (ft)	98	166	204	299	39	127	109	86	130	206	249	92
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				3			6	10		1	15	27
Queuing Penalty (veh)				8			7	11		1	42	61

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	58	216	325	515
Average Queue (ft)	3	42	101	213
95th Queue (ft)	20	106	267	424
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				2
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			0	11
Queuing Penalty (veh)			0	13

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	159	48	312	75
Average Queue (ft)	58	3	136	52
95th Queue (ft)	109	15	259	96
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			50	1
Queuing Penalty (veh)			45	2

Intersection: 4: Mallard & Rt 606

Movement	EB	NB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	22	76	50
Average Queue (ft)	0	27	6
95th Queue (ft)	4	59	26
Link Distance (ft)	127	458	458
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	WB	NB	SB	SB
Directions Served	L	R	LTR	LT	R
Maximum Queue (ft)	56	22	31	25	126
Average Queue (ft)	18	0	13	8	39
95th Queue (ft)	45	5	38	27	72
Link Distance (ft)			233	111	111
Upstream Blk Time (%)					0
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	150	200			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 192

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	220	253	260	557	72	197	166	75	224	335	304	75
Average Queue (ft)	64	86	100	198	13	100	63	48	70	141	151	68
95th Queue (ft)	127	165	199	341	41	158	133	89	130	231	277	85
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	3		0	10	12		1	20	32
Queuing Penalty (veh)			1	9		0	11	16		1	64	64

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	30	193	137	292
Average Queue (ft)	1	50	47	127
95th Queue (ft)	9	129	88	221
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	179	49	506	77
Average Queue (ft)	55	2	149	57
95th Queue (ft)	109	13	325	100
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)			2	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			46	1
Queuing Penalty (veh)			47	3

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	78	54	88	66
Average Queue (ft)	2	1	34	4
95th Queue (ft)	19	13	67	24
Link Distance (ft)	127	68	458	458
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	NB	SB	SB
Directions Served	L	TR	LTR	LT	R
Maximum Queue (ft)	66	68	53	26	138
Average Queue (ft)	26	2	11	9	40
95th Queue (ft)	55	21	36	29	74
Link Distance (ft)		68	256	157	157
Upstream Blk Time (%)	0	0			0
Queuing Penalty (veh)	0	0			0
Storage Bay Dist (ft)	150				
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Network Summary

Network wide Queuing Penalty: 216

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	111	253	260	358	31	118	96	75	94	184	136	75
Average Queue (ft)	46	96	71	111	5	55	15	36	42	86	50	49
95th Queue (ft)	86	170	135	212	24	95	52	69	76	141	107	86
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				1			1	5		0	6	9
Queuing Penalty (veh)				2			1	3		0	10	11

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	21	92	221	103
Average Queue (ft)	1	18	82	59
95th Queue (ft)	6	54	155	88
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	170	41	267	78
Average Queue (ft)	52	1	94	54
95th Queue (ft)	104	11	189	91
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				50
Storage Blk Time (%)			33	4
Queuing Penalty (veh)			47	6

Intersection: 4: Mallard & Rt 606

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	28	79	31
Average Queue (ft)	0	24	4
95th Queue (ft)	6	53	20
Link Distance (ft)	83	458	458
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	R	LTR	LT	R
Maximum Queue (ft)	71	55	21	53	46	86
Average Queue (ft)	33	1	1	13	9	34
95th Queue (ft)	67	11	7	40	29	59
Link Distance (ft)		83		180	114	114
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Network Summary

Network wide Queuing Penalty: 80

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	217	42	202	226	110	8	125	74	74	257	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1817		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.41	1.00		0.40	1.00		0.58	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	764	1817		750	1771		1081	3539	1583	970	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	236	46	220	246	120	9	136	80	80	279	174
RTOR Reduction (vph)	0	8	0	0	22	0	0	0	43	0	0	92
Lane Group Flow (vph)	136	274	0	220	344	0	9	136	37	80	279	82
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.8	15.1		27.4	17.4		12.1	11.5	29.5	18.5	14.7	30.4
Effective Green, g (s)	22.8	15.1		27.4	17.4		12.1	11.5	29.5	18.5	14.7	30.4
Actuated g/C Ratio	0.35	0.23		0.43	0.27		0.19	0.18	0.46	0.29	0.23	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	390	426		477	478		209	631	725	325	807	747
v/s Ratio Prot	0.04	0.15		c0.07	c0.19		0.00	0.04	0.02	c0.01	c0.08	0.05
v/s Ratio Perm	0.08			0.12			0.01			0.06		
v/c Ratio	0.35	0.64		0.46	0.72		0.04	0.22	0.05	0.25	0.35	0.11
Uniform Delay, d1	14.7	22.2		12.4	21.3		21.3	22.6	9.7	17.2	20.8	9.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	3.3		0.7	5.2		0.1	0.2	0.0	0.4	0.3	0.1
Delay (s)	15.2	25.5		13.1	26.4		21.4	22.8	9.7	17.6	21.1	9.5
Level of Service	B	C		B	C		C	C	A	B	C	A
Approach Delay (s)		22.2			21.4			18.1			16.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	366	144	48	295	0	0	0	0	395	1	262
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	398	157	52	321	0	0	0	0	429	1	285
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	321			554			1186	901	476	901	979	321
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	321			554			1186	901	476	901	979	321
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			100	100	100	0	100	60
cM capacity (veh/h)	1239			1016			95	264	589	249	237	713

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	554	373	429	286
Volume Left	0	52	429	0
Volume Right	157	0	0	285
cSH	1700	1016	249	708
Volume to Capacity	0.33	0.05	1.73	0.40
Queue Length 95th (ft)	0	4	707	49
Control Delay (s)	0.0	1.7	377.3	13.5
Lane LOS		A	F	B
Approach Delay (s)	0.0	1.7	231.9	
Approach LOS			F	

Intersection Summary			
Average Delay	101.4		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	366	144	48	295	0	0	0	0	395	1	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0					6.0	6.0	
Lane Util. Factor		1.00			1.00					1.00	1.00	
Frt		0.96			1.00					1.00	0.85	
Flt Protected		1.00			0.99					0.95	1.00	
Satd. Flow (prot)		1748			1819					1770	1539	
Flt Permitted		1.00			0.99					0.95	1.00	
Satd. Flow (perm)		1748			1819					1770	1539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	398	157	52	321	0	0	0	0	429	1	285
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	207	0
Lane Group Flow (vph)	0	539	0	0	373	0	0	0	0	429	79	0
Heavy Vehicles (%)	2%	4%	6%	2%	4%	2%	2%	2%	2%	2%	2%	5%
Turn Type		NA		Split	NA					Perm	NA	
Protected Phases		4		8	8						6	
Permitted Phases										6		
Actuated Green, G (s)		27.0			19.0					24.2	24.2	
Effective Green, g (s)		27.0			19.0					24.2	24.2	
Actuated g/C Ratio		0.31			0.22					0.27	0.27	
Clearance Time (s)		6.0			6.0					6.0	6.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		535			391					485	422	
v/s Ratio Prot		c0.31			c0.21						0.05	
v/s Ratio Perm										c0.24		
v/c Ratio		1.01			0.95					0.88	0.19	
Uniform Delay, d1		30.6			34.2					30.7	24.5	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		40.8			33.5					17.2	0.2	
Delay (s)		71.4			67.7					47.9	24.7	
Level of Service		E			E					D	C	
Approach Delay (s)		71.4			67.7			0.0			38.6	
Approach LOS		E			E			A			D	

Intersection Summary			
HCM 2000 Control Delay	56.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	224	534	0	0	179	108	161	0	222	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	243	580	0	0	195	117	175	0	241	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	312			580			1321	1379	580	1441	1321	253
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	312			580			1321	1379	580	1441	1321	253
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	80			100			0	100	53	100	100	100
cM capacity (veh/h)	1226			994			111	116	514	50	126	785

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	824	312	416
Volume Left	243	0	175
Volume Right	0	117	241
cSH	1226	1700	210
Volume to Capacity	0.20	0.18	1.98
Queue Length 95th (ft)	18	0	771
Control Delay (s)	4.4	0.0	496.6
Lane LOS	A		F
Approach Delay (s)	4.4	0.0	496.6
Approach LOS			F

Intersection Summary			
Average Delay	135.5		
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	534	0	0	179	108	161	0	222	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0			
Lane Util. Factor		1.00			1.00			1.00	1.00			
Frt		1.00			0.95			1.00	0.85			
Flt Protected		0.99			1.00			0.95	1.00			
Satd. Flow (prot)		1815			1768			1703	1583			
Flt Permitted		0.79			1.00			0.95	1.00			
Satd. Flow (perm)		1453			1768			1703	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	580	0	0	195	117	175	0	241	0	0	0
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	113	0	0	0
Lane Group Flow (vph)	0	823	0	0	291	0	0	175	128	0	0	0
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		55.4			55.4			14.6	14.6			
Effective Green, g (s)		55.4			55.4			14.6	14.6			
Actuated g/C Ratio		0.68			0.68			0.18	0.18			
Clearance Time (s)		6.0			6.0			6.0	6.0			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		981			1194			303	281			
v/s Ratio Prot					0.16							
v/s Ratio Perm		c0.57						0.10	0.08			
v/c Ratio		0.84			0.24			0.58	0.45			
Uniform Delay, d1		10.0			5.2			30.9	30.1			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		6.4			0.1			2.7	1.2			
Delay (s)		16.4			5.3			33.5	31.3			
Level of Service		B			A			C	C			
Approach Delay (s)		16.4			5.3			32.2			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	729	14	2	231	42	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	792	15	2	251	46	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			808		1055	800
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			808		1055	800
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		81	99
cM capacity (veh/h)			818		246	377

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	808	253	46	4
Volume Left	0	2	46	0
Volume Right	15	0	0	4
cSH	1700	818	246	377
Volume to Capacity	0.48	0.00	0.19	0.01
Queue Length 95th (ft)	0	0	17	1
Control Delay (s)	0.0	0.1	23.0	14.7
Lane LOS		A	C	B
Approach Delay (s)	0.0	0.1	22.2	
Approach LOS			C	

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	654	79	12	2	63	94	13	0	2	11	0	170
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	711	86	13	2	68	102	14	0	2	12	0	185
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	171			99			1772	1689	92	1583	1593	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	171			99			1772	1689	92	1583	1593	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	49			100			55	100	100	77	100	81
cM capacity (veh/h)	1407			1494			32	46	965	53	53	995

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	711	99	71	102	16	12	185
Volume Left	711	0	2	0	14	12	0
Volume Right	0	13	0	102	2	0	185
cSH	1407	1700	1494	1700	36	53	995
Volume to Capacity	0.51	0.06	0.00	0.06	0.45	0.23	0.19
Queue Length 95th (ft)	74	0	0	0	38	19	17
Control Delay (s)	10.1	0.0	0.2	0.0	167.8	92.2	9.4
Lane LOS	B		A		F	F	A
Approach Delay (s)	8.9		0.1		167.8	14.5	
Approach LOS					F	B	

Intersection Summary			
Average Delay	10.7		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	112	192	257	252	31	110	111	72	96	182	177	78
Average Queue (ft)	50	93	65	108	9	52	14	28	42	82	55	54
95th Queue (ft)	90	159	120	194	31	89	47	64	73	138	131	85
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				0			1	4		0	6	12
Queuing Penalty (veh)				1			1	3		0	9	15

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	49	133	325	544
Average Queue (ft)	1	20	240	236
95th Queue (ft)	11	70	387	585
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				19
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			34	0
Queuing Penalty (veh)			90	1

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	236	12	524	75
Average Queue (ft)	67	1	256	70
95th Queue (ft)	144	6	501	94
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)			12	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			64	18
Queuing Penalty (veh)			141	29

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	74	96	72	31
Average Queue (ft)	2	2	29	3
95th Queue (ft)	20	21	57	16
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	R	LTR	LT	R
Maximum Queue (ft)	82	110	22	52	49	96
Average Queue (ft)	51	17	7	14	10	34
95th Queue (ft)	75	67	23	39	33	62
Link Distance (ft)		83		180	114	114
Upstream Blk Time (%)	0	0				0
Queuing Penalty (veh)	0	1				0
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	1				

Network Summary

Network wide Queuing Penalty: 292

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	670	457	325	497
Average Queue (ft)	331	244	208	92
95th Queue (ft)	537	402	310	266
Link Distance (ft)	1344	550		482
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			3	
Queuing Penalty (veh)			7	

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	483	130	420	77
Average Queue (ft)	221	51	142	66
95th Queue (ft)	370	98	304	89
Link Distance (ft)	550	127	472	
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)				50
Storage Blk Time (%)			34	12
Queuing Penalty (veh)			75	19

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	136	74	71	53
Average Queue (ft)	8	1	31	5
95th Queue (ft)	54	17	60	24
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	1	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	SB	SB
Directions Served	L	TR	R	LT	R
Maximum Queue (ft)	82	112	47	46	106
Average Queue (ft)	54	25	6	8	35
95th Queue (ft)	83	86	24	29	64
Link Distance (ft)		83		114	114
Upstream Blk Time (%)	1	0			0
Queuing Penalty (veh)	0	3			0
Storage Bay Dist (ft)	150		200		
Storage Blk Time (%)	1	0			
Queuing Penalty (veh)	1	3			

Network Summary

Network wide Queuing Penalty: 109

Attachment K.3

Total Future (2017) Dominion

Raceway & Commercial Elements +

Adjacent By-Right Commercial (C-3 Zoning)

Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	462	27	109	156	139	42	243	329	161	96	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1847		1770	1731		1770	3539	1583	1770	3539	1583
Flt Permitted	0.39	1.00		0.21	1.00		0.69	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	726	1847		395	1731		1279	3539	1583	870	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	502	29	118	170	151	46	264	358	175	104	61
RTOR Reduction (vph)	0	3	0	0	38	0	0	0	136	0	0	33
Lane Group Flow (vph)	180	528	0	118	283	0	46	264	222	175	104	28
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.8	26.2		29.8	23.7		17.2	15.0	29.1	25.0	18.9	35.5
Effective Green, g (s)	34.8	26.2		29.8	23.7		17.2	15.0	29.1	25.0	18.9	35.5
Actuated g/C Ratio	0.45	0.34		0.39	0.31		0.22	0.19	0.38	0.32	0.24	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	442	625		260	530		298	685	595	351	864	726
v/s Ratio Prot	c0.05	c0.29		0.04	0.16		0.00	0.07	0.14	c0.04	0.03	0.02
v/s Ratio Perm	0.14			0.14			0.03			c0.12		
v/c Ratio	0.41	0.85		0.45	0.53		0.15	0.39	0.37	0.50	0.12	0.04
Uniform Delay, d1	13.6	23.7		16.9	22.3		24.0	27.2	17.5	19.8	22.8	11.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	10.2		1.3	1.0		0.2	0.4	0.4	1.1	0.1	0.0
Delay (s)	14.2	33.9		18.2	23.3		24.3	27.5	17.9	20.9	22.8	11.6
Level of Service	B	C		B	C		C	C	B	C	C	B
Approach Delay (s)		28.9			21.9			22.2			19.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	740	304	152	317	0	0	0	0	197	0	134
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	804	330	165	345	0	0	0	0	214	0	146
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	345			1135			1790	1645	970	1645	1810	345
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			1135			1790	1645	970	1645	1810	345
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.4
p0 queue free %	100			73			100	100	100	0	100	79
cM capacity (veh/h)	1214			612			39	73	307	63	57	680

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	1135	510	214	146
Volume Left	0	165	214	0
Volume Right	330	0	0	146
cSH	1700	612	63	680
Volume to Capacity	0.67	0.27	3.40	0.21
Queue Length 95th (ft)	0	27	Err	20
Control Delay (s)	0.0	7.2	Err	11.7
Lane LOS		A	F	B
Approach Delay (s)	0.0	7.2	5955.8	
Approach LOS			F	

Intersection Summary			
Average Delay	1070.9		
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	537	399	0	0	341	278	123	2	223	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	584	434	0	0	371	302	134	2	242	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	673			434			2123	2274	434	2245	2123	522
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	673			434			2123	2274	434	2245	2123	522
tC, single (s)	4.1			4.1			7.2	7.0	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.5	3.3	3.5	4.0	3.3
p0 queue free %	36			100			0	79	61	100	100	100
cM capacity (veh/h)	918			1126			16	11	622	8	18	555

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1017	673	378
Volume Left	584	0	134
Volume Right	0	302	242
cSH	918	1700	43
Volume to Capacity	0.64	0.40	8.74
Queue Length 95th (ft)	118	0	Err
Control Delay (s)	14.5	0.0	Err
Lane LOS	B		F
Approach Delay (s)	14.5	0.0	Err
Approach LOS			F

Intersection Summary			
Average Delay	1835.7		
Intersection Capacity Utilization	102.6%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	573	54	1	593	28	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	623	59	1	645	30	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			682		1299	652
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			682		1299	652
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.4
p0 queue free %			100		82	99
cM capacity (veh/h)			911		167	452

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	682	646	30	3
Volume Left	0	1	30	0
Volume Right	59	0	0	3
cSH	1700	911	167	452
Volume to Capacity	0.40	0.00	0.18	0.01
Queue Length 95th (ft)	0	0	16	1
Control Delay (s)	0.0	0.0	31.3	13.0
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.0	29.5	
Approach LOS			D	

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	492	84	9	2	108	21	9	0	2	21	0	486
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	535	91	10	2	117	23	10	0	2	23	0	528
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	140			101			1816	1310	96	1285	1292	117
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	140			101			1816	1310	96	1285	1292	117
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	63			100			47	100	100	77	100	43
cM capacity (veh/h)	1443			1491			19	100	960	100	102	935

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	535	101	120	23	12	23	528
Volume Left	535	0	2	0	10	23	0
Volume Right	0	10	0	23	2	0	528
cSH	1443	1700	1491	1700	23	100	935
Volume to Capacity	0.37	0.06	0.00	0.01	0.53	0.23	0.57
Queue Length 95th (ft)	43	0	0	0	39	20	91
Control Delay (s)	9.0	0.0	0.1	0.0	278.7	51.1	13.7
Lane LOS	A		A		F	F	B
Approach Delay (s)	7.5		0.1		278.7	15.3	
Approach LOS					F	C	

Intersection Summary			
Average Delay	12.3		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	206	38	313	353	173	14	224	139	131	459	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1820		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.24	1.00		0.36	1.00		0.47	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	456	1820		669	1771		874	3539	1583	884	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	224	41	340	384	188	15	243	151	142	499	311
RTOR Reduction (vph)	0	8	0	0	21	0	0	0	80	0	0	126
Lane Group Flow (vph)	125	257	0	340	551	0	15	243	71	142	499	185
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.6	19.5		39.1	28.0		15.7	15.0	36.6	25.1	20.4	33.5
Effective Green, g (s)	24.6	19.5		39.1	28.0		15.7	15.0	36.6	25.1	20.4	33.5
Actuated g/C Ratio	0.31	0.25		0.50	0.36		0.20	0.19	0.47	0.32	0.26	0.43
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	229	453		525	634		183	678	740	352	923	678
v/s Ratio Prot	0.04	0.14		c0.11	c0.31		0.00	0.07	0.04	c0.03	c0.14	0.12
v/s Ratio Perm	0.14			0.21			0.02			0.10		
v/c Ratio	0.55	0.57		0.65	0.87		0.08	0.36	0.10	0.40	0.54	0.27
Uniform Delay, d1	20.4	25.7		13.0	23.4		25.2	27.4	11.6	19.7	24.9	14.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	1.6		2.8	12.1		0.2	0.3	0.1	0.8	0.6	0.2
Delay (s)	23.0	27.3		15.8	35.5		25.4	27.7	11.6	20.5	25.5	14.7
Level of Service	C	C		B	D		C	C	B	C	C	B
Approach Delay (s)		25.9			28.2			21.7			21.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	413	195	144	434	0	0	0	0	209	3	514
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	449	212	157	472	0	0	0	0	227	3	559
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	472			661			1900	1340	555	1340	1446	472
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	472			661			1900	1340	555	1340	1446	472
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	100			83			100	100	100	0	97	5
cM capacity (veh/h)	1090			923			2	127	531	113	94	588

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	661	628	227	562
Volume Left	0	157	227	0
Volume Right	212	0	0	559
cSH	1700	923	113	571
Volume to Capacity	0.39	0.17	2.01	0.98
Queue Length 95th (ft)	0	15	471	350
Control Delay (s)	0.0	4.1	549.5	60.9
Lane LOS		A	F	F
Approach Delay (s)	0.0	4.1	201.5	
Approach LOS			F	

Intersection Summary			
Average Delay	77.8		
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	237	386	0	0	340	240	226	2	209	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	258	420	0	0	370	261	246	2	227	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	630			420			1435	1565	420	1549	1435	500
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	630			420			1435	1565	420	1549	1435	500
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	72			100			0	97	64	100	100	100
cM capacity (veh/h)	933			1140			86	81	634	46	97	571

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	677	630	475
Volume Left	258	0	246
Volume Right	0	261	227
cSH	933	1700	147
Volume to Capacity	0.28	0.37	3.23
Queue Length 95th (ft)	28	0	Err
Control Delay (s)	6.3	0.0	Err
Lane LOS	A		F
Approach Delay (s)	6.3	0.0	Err
Approach LOS			F

Intersection Summary			
Average Delay	2666.8		
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	568	14	2	528	44	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	617	15	2	574	48	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			633		1203	625
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			633		1203	625
tC, single (s)			4.1		6.5	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.5
p0 queue free %			100		75	99
cM capacity (veh/h)			950		191	447

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	633	576	48	4
Volume Left	0	2	48	0
Volume Right	15	0	0	4
cSH	1700	950	191	447
Volume to Capacity	0.37	0.00	0.25	0.01
Queue Length 95th (ft)	0	0	24	1
Control Delay (s)	0.0	0.1	30.0	13.1
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.1	28.6	
Approach LOS			D	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	480	93	12	2	100	26	13	0	2	19	0	430
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	522	101	13	2	109	28	14	0	2	21	0	467
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	137			114			1732	1292	108	1260	1271	109
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	137			114			1732	1292	108	1260	1271	109
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	64			100			44	100	100	80	100	51
cM capacity (veh/h)	1447			1475			25	104	946	106	107	945

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	522	114	111	28	16	21	467
Volume Left	522	0	2	0	14	21	0
Volume Right	0	13	0	28	2	0	467
cSH	1447	1700	1475	1700	29	106	945
Volume to Capacity	0.36	0.07	0.00	0.02	0.56	0.20	0.49
Queue Length 95th (ft)	42	0	0	0	45	17	70
Control Delay (s)	8.9	0.0	0.2	0.0	235.1	47.2	12.5
Lane LOS	A		A		F	E	B
Approach Delay (s)	7.3		0.1		235.1	13.9	
Approach LOS					F	B	

Intersection Summary			
Average Delay	12.0		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	188	34	282	394	193	16	253	127	119	408	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1820		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.18	1.00		0.45	1.00		0.50	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	330	1820		847	1771		923	3539	1583	982	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	204	37	307	428	210	17	275	138	129	443	351
RTOR Reduction (vph)	0	7	0	0	21	0	0	0	77	0	0	166
Lane Group Flow (vph)	141	234	0	307	617	0	17	275	61	129	443	185
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.0	25.8		43.2	31.4		16.6	15.2	35.0	19.8	16.8	31.0
Effective Green, g (s)	32.0	25.8		43.2	31.4		16.6	15.2	35.0	19.8	16.8	31.0
Actuated g/C Ratio	0.40	0.32		0.54	0.39		0.21	0.19	0.44	0.25	0.21	0.39
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	244	588		595	696		206	674	694	273	745	614
v/s Ratio Prot	0.04	0.13		c0.08	c0.35		0.00	0.08	0.04	c0.02	c0.13	0.12
v/s Ratio Perm	0.19			0.20			0.02			0.10		
v/c Ratio	0.58	0.40		0.52	0.89		0.08	0.41	0.09	0.47	0.59	0.30
Uniform Delay, d1	17.3	21.0		10.7	22.5		25.3	28.4	13.1	25.0	28.4	16.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.4		0.8	13.1		0.2	0.4	0.1	1.3	1.3	0.3
Delay (s)	20.6	21.4		11.5	35.6		25.4	28.8	13.1	26.3	29.7	17.2
Level of Service	C	C		B	D		C	C	B	C	C	B
Approach Delay (s)		21.1			27.8			23.6			24.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	379	137	153	478	0	0	0	0	193	1	457
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	412	149	166	520	0	0	0	0	210	1	497
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	520			561			1836	1339	486	1339	1413	520
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	520			561			1836	1339	486	1339	1413	520
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	100			83			100	100	100	0	99	10
cM capacity (veh/h)	1047			1005			5	128	581	113	99	552

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	561	686	210	498
Volume Left	0	166	210	0
Volume Right	149	0	0	497
cSH	1700	1005	113	547
Volume to Capacity	0.33	0.17	1.85	0.91
Queue Length 95th (ft)	0	15	419	273
Control Delay (s)	0.0	3.9	478.7	47.1
Lane LOS		A	F	E
Approach Delay (s)	0.0	3.9	175.0	
Approach LOS			F	

Intersection Summary			
Average Delay	64.8		
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	208	380	0	0	362	254	256	2	223	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	226	413	0	0	393	276	278	2	242	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	670			413			1397	1535	413	1519	1397	532
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	670			413			1397	1535	413	1519	1397	532
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	75			100			0	98	62	100	100	100
cM capacity (veh/h)	902			1146			94	87	639	48	106	548

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	639	670	523
Volume Left	226	0	278
Volume Right	0	276	242
cSH	902	1700	155
Volume to Capacity	0.25	0.39	3.37
Queue Length 95th (ft)	25	0	Err
Control Delay (s)	5.9	0.0	Err
Lane LOS	A		F
Approach Delay (s)	5.9	0.0	Err
Approach LOS			F

Intersection Summary			
Average Delay	2856.4		
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	565	22	1	555	46	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	614	24	1	603	50	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			638		1232	626
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			638		1232	626
tC, single (s)			4.1		6.5	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.5
p0 queue free %			100		73	99
cM capacity (veh/h)			946		184	447

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	638	604	50	3
Volume Left	0	1	50	0
Volume Right	24	0	0	3
cSH	1700	946	184	447
Volume to Capacity	0.38	0.00	0.27	0.01
Queue Length 95th (ft)	0	0	26	1
Control Delay (s)	0.0	0.0	31.7	13.1
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.0	30.6	
Approach LOS			D	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	494	74	12	2	109	26	13	0	2	19	0	447
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	537	80	13	2	118	28	14	0	2	21	0	486
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	147			93			1770	1312	87	1279	1290	118
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	147			93			1770	1312	87	1279	1290	118
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	63			100			36	100	100	80	100	48
cM capacity (veh/h)	1435			1501			22	99	972	101	102	933

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	537	93	121	28	16	21	486
Volume Left	537	0	2	0	14	21	0
Volume Right	0	13	0	28	2	0	486
cSH	1435	1700	1501	1700	25	101	933
Volume to Capacity	0.37	0.05	0.00	0.02	0.64	0.20	0.52
Queue Length 95th (ft)	44	0	0	0	49	18	77
Control Delay (s)	9.0	0.0	0.1	0.0	284.6	49.6	13.0
Lane LOS	A		A		F	E	B
Approach Delay (s)	7.7		0.1		284.6	14.5	
Approach LOS					F	B	

Intersection Summary			
Average Delay	12.9		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	226	42	218	249	122	8	125	90	84	257	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1819		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.36	1.00		0.39	1.00		0.58	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	677	1819		729	1771		1081	3539	1583	974	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	246	46	237	271	133	9	136	98	91	279	174
RTOR Reduction (vph)	0	8	0	0	21	0	0	0	54	0	0	94
Lane Group Flow (vph)	136	284	0	237	383	0	9	136	44	91	279	80
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.2	16.5		29.4	19.1		12.3	11.7	30.0	18.7	14.9	30.6
Effective Green, g (s)	24.2	16.5		29.4	19.1		12.3	11.7	30.0	18.7	14.9	30.6
Actuated g/C Ratio	0.37	0.25		0.44	0.29		0.19	0.18	0.45	0.28	0.22	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	374	452		484	510		206	624	716	320	795	730
v/s Ratio Prot	0.04	0.16		c0.08	c0.22		0.00	0.04	0.03	c0.02	c0.08	0.05
v/s Ratio Perm	0.09			0.14			0.01			0.06		
v/c Ratio	0.36	0.63		0.49	0.75		0.04	0.22	0.06	0.28	0.35	0.11
Uniform Delay, d1	14.7	22.2		12.2	21.4		22.1	23.4	10.2	18.1	21.6	10.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	2.7		0.8	6.1		0.1	0.2	0.0	0.5	0.3	0.1
Delay (s)	15.3	24.9		13.0	27.6		22.2	23.6	10.3	18.6	21.9	10.2
Level of Service	B	C		B	C		C	C	B	B	C	B
Approach Delay (s)		21.8			22.2			18.1			17.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	399	145	111	346	0	0	0	0	293	1	261
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	434	158	121	376	0	0	0	0	318	1	284
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	376			591			1414	1130	512	1130	1209	376
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	376			591			1414	1130	512	1130	1209	376
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			88			100	100	100	0	99	57
cM capacity (veh/h)	1182			984			59	179	562	164	160	664

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	591	497	318	285
Volume Left	0	121	318	0
Volume Right	158	0	0	284
cSH	1700	984	164	656
Volume to Capacity	0.35	0.12	1.94	0.43
Queue Length 95th (ft)	0	10	606	55
Control Delay (s)	0.0	3.3	492.6	14.6
Lane LOS		A	F	B
Approach Delay (s)	0.0	3.3	267.0	
Approach LOS			F	

Intersection Summary			
Average Delay	96.2		
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	219	472	0	0	300	220	156	0	247	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	238	513	0	0	326	239	170	0	268	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	565			513			1435	1554	513	1569	1435	446
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	565			513			1435	1554	513	1569	1435	446
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			100			0	100	52	100	100	100
cM capacity (veh/h)	987			1052			89	86	561	38	101	613

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	751	565	438
Volume Left	238	0	170
Volume Right	0	239	268
cSH	987	1700	187
Volume to Capacity	0.24	0.33	2.34
Queue Length 95th (ft)	24	0	898
Control Delay (s)	5.4	0.0	659.7
Lane LOS	A		F
Approach Delay (s)	5.4	0.0	659.7
Approach LOS			F

Intersection Summary			
Average Delay	167.0		
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	691	14	2	462	42	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	751	15	2	502	46	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			766		1265	759
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			766		1265	759
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		75	99
cM capacity (veh/h)			847		184	399

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	766	504	46	4
Volume Left	0	2	46	0
Volume Right	15	0	0	4
cSH	1700	847	184	399
Volume to Capacity	0.45	0.00	0.25	0.01
Queue Length 95th (ft)	0	0	24	1
Control Delay (s)	0.0	0.1	31.0	14.1
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.1	29.5	
Approach LOS			D	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	616	79	12	2	63	56	13	0	2	19	0	401
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	670	86	13	2	68	61	14	0	2	21	0	436
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	129			99			1940	1565	92	1500	1511	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	129			99			1940	1565	92	1500	1511	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	54			100			20	100	100	68	100	56
cM capacity (veh/h)	1456			1494			18	60	965	64	65	995

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	670	99	71	61	16	21	436
Volume Left	670	0	2	0	14	21	0
Volume Right	0	13	0	61	2	0	436
cSH	1456	1700	1494	1700	20	64	995
Volume to Capacity	0.46	0.06	0.00	0.04	0.80	0.32	0.44
Queue Length 95th (ft)	62	0	0	0	56	29	57
Control Delay (s)	9.6	0.0	0.2	0.0	394.5	86.0	11.4
Lane LOS	A		A		F	F	B
Approach Delay (s)	8.3		0.1		394.5	14.8	
Approach LOS					F	B	

Intersection Summary			
Average Delay	14.3		
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	675	1376	259	380	224	856	882	75	225	738	719	75
Average Queue (ft)	252	620	40	91	30	239	342	73	156	271	174	25
95th Queue (ft)	731	1502	120	239	94	631	797	79	272	722	559	69
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)		26				1	12			8	0	
Queuing Penalty (veh)		0				0	0			0	0	
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)	0	28		1		3	6	57	45	0	8	2
Queuing Penalty (veh)	0	47		2		1	19	68	21	0	4	1

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	2675	569	325	533
Average Queue (ft)	1895	255	318	492
95th Queue (ft)	3399	597	325	507
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)	6	12		100
Queuing Penalty (veh)	57	56		0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			100	0
Queuing Penalty (veh)			134	0

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	577	136	487	75
Average Queue (ft)	491	32	467	4
95th Queue (ft)	777	110	482	32
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)	26	13	100	
Queuing Penalty (veh)	242	81	0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			100	0
Queuing Penalty (veh)			223	0

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	68	79	93	31
Average Queue (ft)	2	14	26	3
95th Queue (ft)	17	58	68	17
Link Distance (ft)	127	72	458	458
Upstream Blk Time (%)		13		
Queuing Penalty (veh)		77		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	71	101	684	225	31	287	288
Average Queue (ft)	27	8	64	3	10	70	150
95th Queue (ft)	62	46	335	46	32	241	294
Link Distance (ft)		72	815		263	235	235
Upstream Blk Time (%)	0	0				15	35
Queuing Penalty (veh)	0	1				0	0
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	0	0	10				
Queuing Penalty (veh)	0	1	2				

Network Summary

Network wide Queuing Penalty: 1039

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	114	237	259	309	72	226	226	75	223	230	267	75
Average Queue (ft)	53	108	126	168	13	89	51	49	75	134	137	69
95th Queue (ft)	94	188	215	279	41	144	124	82	141	199	221	89
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	2		0	6	11		1	20	26
Queuing Penalty (veh)			0	7		0	8	12		1	58	60

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	98	241	325	544
Average Queue (ft)	6	76	278	403
95th Queue (ft)	33	177	420	663
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				53
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			37	28
Queuing Penalty (veh)			192	59

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	567	12	535	75
Average Queue (ft)	143	2	495	60
95th Queue (ft)	329	9	519	108
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)	1		99	
Queuing Penalty (veh)	4		0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			92	11
Queuing Penalty (veh)			192	24

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	31	73	79	79
Average Queue (ft)	0	4	31	6
95th Queue (ft)	6	29	65	30
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	R	LTR	LT	R
Maximum Queue (ft)	82	87	22	31	64	172
Average Queue (ft)	45	8	1	10	14	71
95th Queue (ft)	73	43	6	32	36	122
Link Distance (ft)		83		233	111	111
Upstream Blk Time (%)	0	0				2
Queuing Penalty (veh)	0	0				0
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				

Network Summary

Network wide Queuing Penalty: 619

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	163	308	260	382	54	181	167	75	158	250	292	75
Average Queue (ft)	61	97	82	176	13	84	52	51	65	126	154	69
95th Queue (ft)	113	180	169	275	41	132	112	85	113	196	259	85
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				2		0	9	12		0	16	30
Queuing Penalty (veh)				5		0	11	15		0	51	62

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	38	118	324	361
Average Queue (ft)	2	42	88	109
95th Queue (ft)	13	90	165	206
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			300	
Storage Blk Time (%)				0
Queuing Penalty (veh)				1

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	163	11	535	75
Average Queue (ft)	44	0	307	73
95th Queue (ft)	96	3	593	87
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)			33	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			64	14
Queuing Penalty (veh)			143	36

Intersection: 4: Mallard & Rt 606

Movement	EB	NB	NB
Directions Served	TR	L	R
Maximum Queue (ft)	99	90	50
Average Queue (ft)	5	30	2
95th Queue (ft)	33	60	16
Link Distance (ft)	127	458	458
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	LT	R	LTR	R
Maximum Queue (ft)	67	84	30	21	51	166
Average Queue (ft)	39	11	1	1	13	166
95th Queue (ft)	62	50	9	8	39	166
Link Distance (ft)		68	786		256	157
Upstream Blk Time (%)	0	0				100
Queuing Penalty (veh)	0	1				0
Storage Bay Dist (ft)	150			200		
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	1				

Network Summary

Network wide Queuing Penalty: 326

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	110	290	260	302	53	115	135	75	114	170	156	75
Average Queue (ft)	45	104	73	122	7	55	21	37	45	80	49	52
95th Queue (ft)	82	184	137	215	29	90	64	72	80	128	117	87
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				0			1	6			6	11
Queuing Penalty (veh)				1			1	4			10	14

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	53	312	325	544
Average Queue (ft)	3	53	234	204
95th Queue (ft)	17	139	386	526
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				15
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			30	1
Queuing Penalty (veh)			79	3

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	567	56	535	75
Average Queue (ft)	132	4	492	60
95th Queue (ft)	311	24	516	108
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)	0		99	
Queuing Penalty (veh)	2		0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			88	20
Queuing Penalty (veh)			218	31

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	49	72	78	31
Average Queue (ft)	2	1	29	4
95th Queue (ft)	15	14	61	22
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	R	LTR	LT	R
Maximum Queue (ft)	82	87	22	74	64	129
Average Queue (ft)	44	15	3	12	10	80
95th Queue (ft)	80	64	15	39	31	130
Link Distance (ft)		83		180	114	114
Upstream Blk Time (%)	0	0				3
Queuing Penalty (veh)	0	1				0
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	1				

Network Summary

Network wide Queuing Penalty: 364

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	241	42	218	249	122	8	125	90	86	257	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1821		1770	1771		1770	3539	1583	1770	3539	1583
Flt Permitted	0.36	1.00		0.37	1.00		0.58	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	677	1821		683	1771		1081	3539	1583	974	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	262	46	237	271	133	9	136	98	93	279	174
RTOR Reduction (vph)	0	8	0	0	21	0	0	0	54	0	0	94
Lane Group Flow (vph)	136	300	0	237	383	0	9	136	44	93	279	80
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.2	16.5		29.4	19.1		12.3	11.7	30.0	18.7	14.9	30.6
Effective Green, g (s)	24.2	16.5		29.4	19.1		12.3	11.7	30.0	18.7	14.9	30.6
Actuated g/C Ratio	0.37	0.25		0.44	0.29		0.19	0.18	0.45	0.28	0.22	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	374	453		471	510		206	624	716	320	795	730
v/s Ratio Prot	0.04	0.17		c0.08	c0.22		0.00	0.04	0.03	c0.02	c0.08	0.05
v/s Ratio Perm	0.09			0.14			0.01			0.07		
v/c Ratio	0.36	0.66		0.50	0.75		0.04	0.22	0.06	0.29	0.35	0.11
Uniform Delay, d1	14.7	22.4		12.3	21.4		22.1	23.4	10.2	18.1	21.6	10.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	3.6		0.8	6.1		0.1	0.2	0.0	0.5	0.3	0.1
Delay (s)	15.3	26.0		13.2	27.6		22.2	23.6	10.3	18.6	21.9	10.2
Level of Service	B	C		B	C		C	C	B	B	C	B
Approach Delay (s)		22.8			22.2			18.1			17.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	416	145	115	347	0	0	0	0	480	1	261
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	452	158	125	377	0	0	0	0	522	1	284
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	377			610			1442	1158	531	1158	1237	377
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	377			610			1442	1158	531	1158	1237	377
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			87			100	100	100	0	99	57
cM capacity (veh/h)	1181			969			56	171	548	156	153	663

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	610	502	522	285
Volume Left	0	125	522	0
Volume Right	158	0	0	284
cSH	1700	969	156	655
Volume to Capacity	0.36	0.13	3.35	0.44
Queue Length 95th (ft)	0	11	Err	55
Control Delay (s)	0.0	3.5	Err	14.7
Lane LOS		A	F	B
Approach Delay (s)	0.0	3.5	6473.5	
Approach LOS			F	

Intersection Summary			
Average Delay	2722.4		
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	416	145	115	347	0	0	0	0	480	1	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0					6.0	6.0	
Lane Util. Factor		1.00			1.00					1.00	1.00	
Frt		0.97			1.00					1.00	0.85	
Flt Protected		1.00			0.99					0.95	1.00	
Satd. Flow (prot)		1754			1813					1770	1539	
Flt Permitted		1.00			0.99					0.95	1.00	
Satd. Flow (perm)		1754			1813					1770	1539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	452	158	125	377	0	0	0	0	522	1	284
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	213	0
Lane Group Flow (vph)	0	601	0	0	502	0	0	0	0	522	72	0
Heavy Vehicles (%)	2%	4%	6%	2%	4%	2%	2%	2%	2%	2%	2%	5%
Turn Type		NA		Split	NA					Perm	NA	
Protected Phases		4		8	8						6	
Permitted Phases										6		
Actuated Green, G (s)		40.1			40.6					33.1	33.1	
Effective Green, g (s)		40.1			40.6					33.1	33.1	
Actuated g/C Ratio		0.30			0.31					0.25	0.25	
Clearance Time (s)		6.0			6.0					6.0	6.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		533			558					444	386	
v/s Ratio Prot		c0.34			c0.28						0.05	
v/s Ratio Perm										c0.29		
v/c Ratio		1.13			0.90					1.18	0.19	
Uniform Delay, d1		45.9			43.6					49.4	38.8	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		79.0			17.2					100.4	0.2	
Delay (s)		124.9			60.9					149.8	39.0	
Level of Service		F			E					F	D	
Approach Delay (s)		124.9			60.9			0.0			110.7	
Approach LOS		F			E			A			F	

Intersection Summary			
HCM 2000 Control Delay	102.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	131.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	219	677	0	0	304	229	156	0	326	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	238	736	0	0	330	249	170	0	354	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	579			736			1667	1791	736	1844	1667	455
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	579			736			1667	1791	736	1844	1667	455
tC, single (s)	4.2			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			100			0	100	15	100	100	100
cM capacity (veh/h)	975			870			61	61	419	7	73	605

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	974	579	524
Volume Left	238	0	170
Volume Right	0	249	354
cSH	975	1700	146
Volume to Capacity	0.24	0.34	3.58
Queue Length 95th (ft)	24	0	Err
Control Delay (s)	5.6	0.0	Err
Lane LOS	A		F
Approach Delay (s)	5.6	0.0	Err
Approach LOS			F

Intersection Summary			
Average Delay	2524.6		
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	219	677	0	0	304	229	156	0	326	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0	6.0			
Lane Util. Factor		1.00			1.00			1.00	1.00			
Frt		1.00			0.94			1.00	0.85			
Flt Protected		0.99			1.00			0.95	1.00			
Satd. Flow (prot)		1823			1755			1703	1583			
Flt Permitted		0.68			1.00			0.95	1.00			
Satd. Flow (perm)		1256			1755			1703	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	238	736	0	0	330	249	170	0	354	0	0	0
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	174	0	0	0
Lane Group Flow (vph)	0	974	0	0	559	0	0	170	180	0	0	0
Heavy Vehicles (%)	6%	2%	2%	2%	2%	2%	6%	2%	2%	2%	2%	2%
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		101.0			101.0			16.1	16.1			
Effective Green, g (s)		101.0			101.0			16.1	16.1			
Actuated g/C Ratio		0.78			0.78			0.12	0.12			
Clearance Time (s)		6.0			6.0			6.0	6.0			
Vehicle Extension (s)		3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)		982			1373			212	197			
v/s Ratio Prot					0.32							
v/s Ratio Perm		c0.78						0.10	c0.11			
v/c Ratio		0.99			0.41			0.80	0.91			
Uniform Delay, d1		13.7			4.5			54.9	55.8			
Progression Factor		1.00			1.00			1.00	1.00			
Incremental Delay, d2		26.6			0.2			19.2	40.4			
Delay (s)		40.2			4.7			74.2	96.2			
Level of Service		D			A			E	F			
Approach Delay (s)		40.2			4.7			89.0			0.0	
Approach LOS		D			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	129.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	975	14	2	476	42	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1060	15	2	517	46	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1075		1589	1067
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1075		1589	1067
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			100		61	98
cM capacity (veh/h)			649		116	264

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	1075	520	46	4
Volume Left	0	2	46	0
Volume Right	15	0	0	4
cSH	1700	649	116	264
Volume to Capacity	0.63	0.00	0.39	0.02
Queue Length 95th (ft)	0	0	41	1
Control Delay (s)	0.0	0.1	54.8	18.9
Lane LOS		A	F	C
Approach Delay (s)	0.0	0.1	51.6	
Approach LOS			F	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	900	79	12	2	63	105	13	0	2	21	0	415
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	978	86	13	2	68	114	14	0	2	23	0	451
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	183			99			2573	2236	92	2117	2128	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	183			99			2573	2236	92	2117	2128	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	30			100			0	100	100	0	100	55
cM capacity (veh/h)	1392			1494			4	13	965	16	15	995

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	978	99	71	114	16	23	451
Volume Left	978	0	2	0	14	23	0
Volume Right	0	13	0	114	2	0	451
cSH	1392	1700	1494	1700	5	16	995
Volume to Capacity	0.70	0.06	0.00	0.07	3.49	1.45	0.45
Queue Length 95th (ft)	158	0	0	0	Err	85	60
Control Delay (s)	13.4	0.0	0.2	0.0	Err	731.6	11.6
Lane LOS	B		A		F	F	B
Approach Delay (s)	12.2		0.1		Err	46.3	
Approach LOS					F	E	

Intersection Summary			
Average Delay	113.1		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	110	230	178	211	31	97	113	75	116	163	153	75
Average Queue (ft)	45	100	65	100	6	53	14	35	46	74	50	47
95th Queue (ft)	83	179	118	164	26	91	53	69	86	125	107	85
Link Distance (ft)		1342		2663		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)							0	6			5	10
Queuing Penalty (veh)							0	4			7	13

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	58	214	325	544
Average Queue (ft)	3	49	325	508
95th Queue (ft)	17	111	325	532
Link Distance (ft)	2663	553		480
Upstream Blk Time (%)				96
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			98	1
Queuing Penalty (veh)			258	7

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	405	45	535	78
Average Queue (ft)	123	3	495	68
95th Queue (ft)	259	16	520	104
Link Distance (ft)	553	127	472	
Upstream Blk Time (%)			100	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			80	30
Queuing Penalty (veh)			262	47

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	135	97	78	31
Average Queue (ft)	10	6	29	2
95th Queue (ft)	57	41	62	14
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	1	1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	82	127	31	53	53	93	153
Average Queue (ft)	59	34	2	8	15	19	79
95th Queue (ft)	84	99	15	30	43	54	129
Link Distance (ft)		83	804		180	114	114
Upstream Blk Time (%)	1	1					4
Queuing Penalty (veh)	0	8					0
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	1	1					
Queuing Penalty (veh)	1	7					

Network Summary

Network wide Queuing Penalty: 616

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	1408	506	325	521
Average Queue (ft)	1224	320	324	499
95th Queue (ft)	1599	442	326	509
Link Distance (ft)	1344	550		482
Upstream Blk Time (%)	59			69
Queuing Penalty (veh)	0			0
Storage Bay Dist (ft)			300	
Storage Blk Time (%)			70	0
Queuing Penalty (veh)			185	0

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	R
Maximum Queue (ft)	576	132	524	77
Average Queue (ft)	375	86	435	74
95th Queue (ft)	613	147	613	81
Link Distance (ft)	550	127	472	
Upstream Blk Time (%)	1	2	41	
Queuing Penalty (veh)	10	11	0	
Storage Bay Dist (ft)				50
Storage Blk Time (%)			50	48
Queuing Penalty (veh)			162	75

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	147	98	175	52
Average Queue (ft)	43	19	47	4
95th Queue (ft)	127	67	104	22
Link Distance (ft)	127	83	458	458
Upstream Blk Time (%)	1	0		
Queuing Penalty (veh)	8	2		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrance

Movement	EB	EB	WB	SB	SB
Directions Served	L	TR	R	LT	R
Maximum Queue (ft)	86	137	86	68	129
Average Queue (ft)	69	71	12	18	69
95th Queue (ft)	96	145	38	46	113
Link Distance (ft)		83		114	114
Upstream Blk Time (%)	4	3			1
Queuing Penalty (veh)	0	27			0
Storage Bay Dist (ft)	150		200		
Storage Blk Time (%)	4	3			
Queuing Penalty (veh)	3	25			

Network Summary

Network wide Queuing Penalty: 508

Attachment L.1

Total Future (2023) Dominion

Raceway & Commercial Elements

Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	488	32	105	143	147	50	291	369	174	115	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1845		1770	1721		1770	3539	1583	1770	3539	1583
Flt Permitted	0.43	1.00		0.17	1.00		0.67	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	804	1845		322	1721		1253	3539	1583	886	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	530	35	114	155	160	54	316	401	189	125	72
RTOR Reduction (vph)	0	3	0	0	44	0	0	0	118	0	0	40
Lane Group Flow (vph)	215	562	0	114	271	0	54	316	283	189	125	32
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.4	28.6		34.6	27.2		18.6	16.4	31.8	24.4	19.3	36.1
Effective Green, g (s)	37.4	28.6		34.6	27.2		18.6	16.4	31.8	24.4	19.3	36.1
Actuated g/C Ratio	0.46	0.35		0.42	0.33		0.23	0.20	0.39	0.30	0.24	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	473	647		268	574		299	712	617	320	838	701
v/s Ratio Prot	0.05	c0.30		0.04	0.16		0.00	0.09	c0.18	c0.04	0.04	0.02
v/s Ratio Perm	0.16			0.14			0.04			c0.14		
v/c Ratio	0.45	0.87		0.43	0.47		0.18	0.44	0.46	0.59	0.15	0.05
Uniform Delay, d1	13.9	24.7		16.4	21.5		25.0	28.5	18.5	23.2	24.6	12.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	11.9		1.1	0.6		0.3	0.4	0.5	2.9	0.1	0.0
Delay (s)	14.6	36.6		17.5	22.1		25.3	29.0	19.0	26.1	24.7	12.9
Level of Service	B	D		B	C		C	C	B	C	C	B
Approach Delay (s)		30.6			20.9			23.5			23.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	766	330	70	282	0	0	0	0	99	0	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1738		1752	1759					1770	1468	
Flt Permitted		1.00		0.09	1.00					0.95	1.00	
Satd. Flow (perm)		1738		169	1759					1770	1468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	833	359	76	307	0	0	0	0	108	0	162
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	150	0
Lane Group Flow (vph)	0	1175	0	76	307	0	0	0	0	108	12	0
Heavy Vehicles (%)	2%	4%	7%	3%	8%	2%	2%	2%	2%	2%	2%	10%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		64.2		73.4	71.4					6.6	6.6	
Effective Green, g (s)		64.2		73.4	71.4					6.6	6.6	
Actuated g/C Ratio		0.71		0.82	0.79					0.07	0.07	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1239		194	1395					129	107	
v/s Ratio Prot		c0.68		c0.01	0.17						0.01	
v/s Ratio Perm				0.31						c0.06		
v/c Ratio		0.95		0.39	0.22					0.84	0.11	
Uniform Delay, d1		11.4		24.9	2.3					41.2	39.0	
Progression Factor		1.00		2.52	1.73					1.00	1.00	
Incremental Delay, d2		15.8		1.2	0.3					35.3	0.5	
Delay (s)		27.3		63.8	4.4					76.4	39.4	
Level of Service		C		E	A					E	D	
Approach Delay (s)		27.3			16.1			0.0			54.2	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	595	248	0	0	201	130	142	2	94	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1845			1743			1775	1583			
Flt Permitted	0.36	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	676	1845			1743			1775	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	647	270	0	0	218	141	154	2	102	0	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	88	0	0	0
Lane Group Flow (vph)	647	270	0	0	337	0	0	156	14	0	0	0
Heavy Vehicles (%)	2%	3%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	65.3	65.3			34.3			12.7	12.7			
Effective Green, g (s)	65.3	65.3			34.3			12.7	12.7			
Actuated g/C Ratio	0.73	0.73			0.38			0.14	0.14			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	800	1338			664			250	223			
v/s Ratio Prot	c0.23	0.15			0.19							
v/s Ratio Perm	c0.36							0.09	0.01			
v/c Ratio	0.81	0.20			0.51			0.62	0.06			
Uniform Delay, d1	8.1	4.0			21.4			36.4	33.5			
Progression Factor	1.03	0.46			1.00			1.00	1.00			
Incremental Delay, d2	2.3	0.1			2.8			4.8	0.1			
Delay (s)	10.7	1.9			24.1			41.2	33.6			
Level of Service	B	A			C			D	C			
Approach Delay (s)		8.1			24.1			38.2			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	287	61	1	305	31	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	312	66	1	332	34	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200			148		
pX, platoon unblocked			0.96		0.97	0.96
vC, conflicting volume			378		679	345
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			328		596	293
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		93	99
cM capacity (veh/h)			1179		452	714

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	378	333	34	4
Volume Left	0	1	34	0
Volume Right	66	0	0	4
cSH	1700	1179	452	714
Volume to Capacity	0.22	0.00	0.07	0.01
Queue Length 95th (ft)	0	0	6	0
Control Delay (s)	0.0	0.0	13.6	10.1
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.0	13.2	
Approach LOS			B	

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	196	94	9	2	122	10	9	0	2	9	0	184
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	213	102	10	2	133	11	10	0	2	10	0	200
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	143			112			870	681	107	667	675	133
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			112			870	681	107	667	675	133
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			100			95	100	100	97	100	78
cM capacity (veh/h)	1439			1478			188	317	947	329	320	917

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	213	112	135	11	12	10	200
Volume Left	213	0	2	0	10	10	0
Volume Right	0	10	0	11	2	0	200
cSH	1439	1700	1478	1700	220	329	917
Volume to Capacity	0.15	0.07	0.00	0.01	0.05	0.03	0.22
Queue Length 95th (ft)	13	0	0	0	4	2	21
Control Delay (s)	7.9	0.0	0.1	0.0	22.3	16.3	10.0
Lane LOS	A		A		C	C	B
Approach Delay (s)	5.2		0.1		22.3	10.3	
Approach LOS					C	B	

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	203	46	355	372	192	17	267	145	141	548	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1811		1770	1767		1770	3539	1583	1770	3539	1583
Flt Permitted	0.13	1.00		0.54	1.00		0.38	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	241	1811		999	1767		699	3539	1583	866	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	221	50	386	404	209	18	290	158	153	596	372
RTOR Reduction (vph)	0	9	0	0	21	0	0	0	98	0	0	130
Lane Group Flow (vph)	149	262	0	386	592	0	18	290	60	153	596	242
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	39.5	30.9		38.5	30.4		17.1	15.7	31.8	24.5	19.4	36.0
Effective Green, g (s)	39.5	30.9		38.5	30.4		17.1	15.7	31.8	24.5	19.4	36.0
Actuated g/C Ratio	0.47	0.37		0.46	0.36		0.20	0.19	0.38	0.29	0.23	0.43
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	270	667		533	641		160	663	600	308	819	680
v/s Ratio Prot	0.06	0.14		c0.07	c0.33		0.00	0.08	0.04	c0.03	c0.17	0.15
v/s Ratio Perm	0.20			0.26			0.02			0.11		
v/c Ratio	0.55	0.39		0.72	0.92		0.11	0.44	0.10	0.50	0.73	0.36
Uniform Delay, d1	16.3	19.5		17.0	25.6		26.8	30.1	16.8	23.4	29.8	16.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.4		4.8	19.0		0.3	0.5	0.1	1.3	3.3	0.3
Delay (s)	18.8	19.9		21.9	44.6		27.2	30.6	16.8	24.6	33.0	16.4
Level of Service	B	B		C	D		C	C	B	C	C	B
Approach Delay (s)		19.5			35.8			25.8			26.4	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	406	211	73	430	0	0	0	0	121	4	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.95		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1693		1752	1810					1770	1552	
Flt Permitted		1.00		0.25	1.00					0.95	1.00	
Satd. Flow (perm)		1693		470	1810					1770	1552	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	441	229	79	467	0	0	0	0	132	4	613
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	257	0
Lane Group Flow (vph)	0	652	0	79	467	0	0	0	0	132	360	0
Heavy Vehicles (%)	2%	4%	13%	3%	5%	2%	2%	2%	2%	2%	33%	4%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		46.4		55.9	53.9					24.1	24.1	
Effective Green, g (s)		46.4		55.9	53.9					24.1	24.1	
Actuated g/C Ratio		0.52		0.62	0.60					0.27	0.27	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		872		341	1083					473	415	
v/s Ratio Prot		c0.39		0.01	c0.26						c0.23	
v/s Ratio Perm				0.13						0.07		
v/c Ratio		0.75		0.23	0.43					0.28	0.87	
Uniform Delay, d1		17.2		18.1	9.8					26.1	31.4	
Progression Factor		1.00		0.86	0.90					1.00	1.00	
Incremental Delay, d2		5.8		0.3	1.1					0.3	17.1	
Delay (s)		23.0		15.9	9.9					26.4	48.5	
Level of Service		C		B	A					C	D	
Approach Delay (s)		23.0			10.7			0.0			44.6	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	265	252	0	0	231	112	254	2	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.96			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1845			1752			1775	1583			
Flt Permitted	0.40	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	748	1845			1752			1775	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	274	0	0	251	122	276	2	101	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	80	0	0	0
Lane Group Flow (vph)	288	274	0	0	356	0	0	278	21	0	0	0
Heavy Vehicles (%)	2%	3%	6%	2%	4%	3%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	59.1	59.1			41.8			18.9	18.9			
Effective Green, g (s)	59.1	59.1			41.8			18.9	18.9			
Actuated g/C Ratio	0.66	0.66			0.46			0.21	0.21			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	625	1211			813			372	332			
v/s Ratio Prot	c0.06	0.15			0.20							
v/s Ratio Perm	c0.24							0.16	0.01			
v/c Ratio	0.46	0.23			0.44			0.75	0.06			
Uniform Delay, d1	7.5	6.2			16.2			33.3	28.5			
Progression Factor	0.57	0.54			1.00			1.00	1.00			
Incremental Delay, d2	0.4	0.3			1.7			8.0	0.1			
Delay (s)	4.7	3.7			17.9			41.3	28.5			
Level of Service	A	A			B			D	C			
Approach Delay (s)		4.2			17.9			37.9			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	314	16	2	284	50	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	341	17	2	309	54	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200			148		
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			359		663	350
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			292		583	283
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		88	99
cM capacity (veh/h)			1200		452	714

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	359	311	54	5
Volume Left	0	2	54	0
Volume Right	17	0	0	5
cSH	1700	1200	452	714
Volume to Capacity	0.21	0.00	0.12	0.01
Queue Length 95th (ft)	0	0	10	1
Control Delay (s)	0.0	0.1	14.1	10.1
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.1	13.7	
Approach LOS			B	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	215	104	12	2	113	16	13	0	2	10	0	173
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	234	113	13	2	123	17	14	0	2	11	0	188
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	140			126			902	732	120	710	721	123
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	140			126			902	732	120	710	721	123
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			100			92	100	100	96	100	80
cM capacity (veh/h)	1443			1460			180	292	932	304	296	928

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	234	126	125	17	16	11	188
Volume Left	234	0	2	0	14	11	0
Volume Right	0	13	0	17	2	0	188
cSH	1443	1700	1460	1700	202	304	928
Volume to Capacity	0.16	0.07	0.00	0.01	0.08	0.04	0.20
Queue Length 95th (ft)	14	0	0	0	7	3	19
Control Delay (s)	8.0	0.0	0.1	0.0	24.4	17.3	9.9
Lane LOS	A		A		C	C	A
Approach Delay (s)	5.2		0.1		24.4	10.3	
Approach LOS					C	B	

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	183	40	317	418	216	19	302	131	127	487	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1813		1770	1767		1770	3539	1583	1770	3539	1583
Flt Permitted	0.11	1.00		0.58	1.00		0.43	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	214	1813		1080	1767		797	3539	1583	851	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	199	43	345	454	235	21	328	142	138	529	420
RTOR Reduction (vph)	0	8	0	0	20	0	0	0	90	0	0	170
Lane Group Flow (vph)	168	234	0	345	669	0	21	328	52	138	529	250
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.5	34.8		42.1	34.1		18.0	16.5	32.5	25.0	20.0	36.7
Effective Green, g (s)	43.5	34.8		42.1	34.1		18.0	16.5	32.5	25.0	20.0	36.7
Actuated g/C Ratio	0.49	0.39		0.48	0.39		0.20	0.19	0.37	0.28	0.23	0.42
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	258	714		577	682		178	661	582	292	801	657
v/s Ratio Prot	c0.06	0.13		0.05	c0.38		0.00	0.09	0.03	c0.03	c0.15	0.16
v/s Ratio Perm	0.26			0.23			0.02			0.11		
v/c Ratio	0.65	0.33		0.60	0.98		0.12	0.50	0.09	0.47	0.66	0.38
Uniform Delay, d1	17.9	18.6		15.6	26.8		28.3	32.2	18.2	24.9	31.1	17.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	0.3		1.7	29.5		0.3	0.6	0.1	1.2	2.1	0.4
Delay (s)	23.7	18.9		17.2	56.3		28.6	32.8	18.3	26.1	33.1	18.3
Level of Service	C	B		B	E		C	C	B	C	C	B
Approach Delay (s)		20.8			43.2			28.4			26.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	367	147	82	480	0	0	0	0	102	1	502
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1714		1752	1810					1770	1553	
Flt Permitted		1.00		0.34	1.00					0.95	1.00	
Satd. Flow (perm)		1714		628	1810					1770	1553	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	399	160	89	522	0	0	0	0	111	1	546
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	223	0
Lane Group Flow (vph)	0	546	0	89	522	0	0	0	0	111	324	0
Heavy Vehicles (%)	2%	4%	13%	3%	5%	2%	2%	2%	2%	2%	33%	4%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		47.1		57.2	55.2					22.8	22.8	
Effective Green, g (s)		47.1		57.2	55.2					22.8	22.8	
Actuated g/C Ratio		0.52		0.64	0.61					0.25	0.25	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		896		450	1110					448	393	
v/s Ratio Prot		c0.32		0.01	c0.29						c0.21	
v/s Ratio Perm				0.12						0.06		
v/c Ratio		0.61		0.20	0.47					0.25	0.83	
Uniform Delay, d1		15.0		13.2	9.5					26.8	31.7	
Progression Factor		1.00		0.83	0.79					1.00	1.00	
Incremental Delay, d2		3.1		0.2	1.2					0.3	13.2	
Delay (s)		18.1		11.2	8.7					27.1	44.9	
Level of Service		B		B	A					C	D	
Approach Delay (s)		18.1			9.1			0.0			41.9	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	234	242	0	0	252	124	287	2	104	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.96			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1845			1751			1775	1583			
Flt Permitted	0.36	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	675	1845			1751			1775	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	254	263	0	0	274	135	312	2	113	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	87	0	0	0
Lane Group Flow (vph)	254	263	0	0	393	0	0	314	26	0	0	0
Heavy Vehicles (%)	2%	3%	6%	2%	4%	3%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	57.2	57.2			40.5			20.8	20.8			
Effective Green, g (s)	57.2	57.2			40.5			20.8	20.8			
Actuated g/C Ratio	0.64	0.64			0.45			0.23	0.23			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	565	1172			787			410	365			
v/s Ratio Prot	c0.06	0.14			c0.22							
v/s Ratio Perm	0.23							0.18	0.02			
v/c Ratio	0.45	0.22			0.50			0.77	0.07			
Uniform Delay, d1	8.5	7.0			17.6			32.3	27.1			
Progression Factor	0.80	0.77			1.00			1.00	1.00			
Incremental Delay, d2	0.5	0.4			2.3			8.3	0.1			
Delay (s)	7.3	5.8			19.8			40.6	27.1			
Level of Service	A	A			B			D	C			
Approach Delay (s)		6.5			19.8			37.1			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	304	25	1	307	52	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	330	27	1	334	57	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200			148		
pX, platoon unblocked			0.94		0.96	0.94
vC, conflicting volume			358		680	344
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			291		587	277
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		87	99
cM capacity (veh/h)			1201		451	720

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	358	335	57	4
Volume Left	0	1	57	0
Volume Right	27	0	0	4
cSH	1700	1201	451	720
Volume to Capacity	0.21	0.00	0.13	0.01
Queue Length 95th (ft)	0	0	11	0
Control Delay (s)	0.0	0.0	14.1	10.0
Lane LOS		A	B	B
Approach Delay (s)	0.0	0.0	13.8	
Approach LOS			B	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	224	83	12	2	123	16	13	0	2	10	0	185
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	243	90	13	2	134	17	14	0	2	11	0	201
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	151			103			923	739	97	717	728	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	151			103			923	739	97	717	728	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			100			92	100	100	96	100	78
cM capacity (veh/h)	1430			1489			170	286	960	298	290	915

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	243	103	136	17	16	11	201
Volume Left	243	0	2	0	14	11	0
Volume Right	0	13	0	17	2	0	201
cSH	1430	1700	1489	1700	191	298	915
Volume to Capacity	0.17	0.06	0.00	0.01	0.09	0.04	0.22
Queue Length 95th (ft)	15	0	0	0	7	3	21
Control Delay (s)	8.0	0.0	0.1	0.0	25.7	17.5	10.0
Lane LOS	A		A		D	C	B
Approach Delay (s)	5.6		0.1		25.7	10.4	
Approach LOS					D	B	

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	224	50	239	252	130	10	149	86	84	307	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1812		1770	1768		1770	3539	1583	1770	3539	1583
Flt Permitted	0.29	1.00		0.48	1.00		0.55	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	544	1812		902	1768		1025	3539	1583	963	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	243	54	260	274	141	11	162	93	91	334	208
RTOR Reduction (vph)	0	11	0	0	23	0	0	0	54	0	0	111
Lane Group Flow (vph)	162	286	0	260	392	0	11	162	39	91	334	97
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.9	20.4		28.3	20.1		13.1	12.5	28.7	19.5	15.7	32.2
Effective Green, g (s)	28.9	20.4		28.3	20.1		13.1	12.5	28.7	19.5	15.7	32.2
Actuated g/C Ratio	0.42	0.30		0.41	0.29		0.19	0.18	0.42	0.28	0.23	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	379	536		473	515		201	642	659	317	806	739
v/s Ratio Prot	0.05	0.16		c0.07	c0.22		0.00	0.05	0.02	c0.02	c0.09	0.06
v/s Ratio Perm	0.13			0.16			0.01			0.07		
v/c Ratio	0.43	0.53		0.55	0.76		0.05	0.25	0.06	0.29	0.41	0.13
Uniform Delay, d1	13.5	20.3		14.1	22.2		22.7	24.2	12.0	18.7	22.7	10.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.0		1.3	6.5		0.1	0.2	0.0	0.5	0.3	0.1
Delay (s)	14.3	21.3		15.4	28.7		22.9	24.4	12.1	19.3	23.0	10.5
Level of Service	B	C		B	C		C	C	B	B	C	B
Approach Delay (s)		18.8			23.6			20.0			18.4	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	24.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	386	158	45	327	0	0	0	0	209	1	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1746		1736	1863					1770	1539	
Flt Permitted		1.00		0.35	1.00					0.95	1.00	
Satd. Flow (perm)		1746		647	1863					1770	1539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	420	172	49	355	0	0	0	0	227	1	311
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	252	0
Lane Group Flow (vph)	0	578	0	49	355	0	0	0	0	227	60	0
Heavy Vehicles (%)	2%	4%	6%	4%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		53.7		62.9	60.9					17.1	17.1	
Effective Green, g (s)		53.7		62.9	60.9					17.1	17.1	
Actuated g/C Ratio		0.60		0.70	0.68					0.19	0.19	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1041		490	1260					336	292	
v/s Ratio Prot		c0.33		0.00	c0.19						0.04	
v/s Ratio Perm				0.07						c0.13		
v/c Ratio		0.56		0.10	0.28					0.68	0.21	
Uniform Delay, d1		10.9		8.9	5.8					33.9	30.7	
Progression Factor		1.00		1.13	1.22					1.00	1.00	
Incremental Delay, d2		2.1		0.1	0.5					5.3	0.4	
Delay (s)		13.1		10.2	7.6					39.2	31.1	
Level of Service		B		B	A					D	C	
Approach Delay (s)		13.1			7.9			0.0			34.5	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	339	0	0	187	101	176	0	145	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1863			1774			1770	1583			
Flt Permitted	0.48	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	888	1863			1774			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	368	0	0	203	110	191	0	158	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	0	0	131	0	0	0
Lane Group Flow (vph)	266	368	0	0	297	0	0	191	27	0	0	0
Heavy Vehicles (%)	2%	2%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	62.9	62.9			46.9			15.1	15.1			
Effective Green, g (s)	62.9	62.9			46.9			15.1	15.1			
Actuated g/C Ratio	0.70	0.70			0.52			0.17	0.17			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	723	1302			924			296	265			
v/s Ratio Prot	c0.04	0.20			0.17							
v/s Ratio Perm	c0.21							0.11	0.02			
v/c Ratio	0.37	0.28			0.32			0.65	0.10			
Uniform Delay, d1	5.3	5.1			12.4			35.0	31.7			
Progression Factor	1.23	1.26			1.00			1.00	1.00			
Incremental Delay, d2	0.3	0.5			0.9			4.8	0.2			
Delay (s)	6.8	6.8			13.3			39.7	31.9			
Level of Service	A	A			B			D	C			
Approach Delay (s)		6.8			13.3			36.2			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	455	16	2	224	47	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	495	17	2	243	51	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200			148		
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			512		751	503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			434		692	424
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		87	99
cM capacity (veh/h)			1043		379	584

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	512	246	51	5
Volume Left	0	2	51	0
Volume Right	17	0	0	5
cSH	1700	1043	379	584
Volume to Capacity	0.30	0.00	0.13	0.01
Queue Length 95th (ft)	0	0	12	1
Control Delay (s)	0.0	0.1	16.0	11.2
Lane LOS		A	C	B
Approach Delay (s)	0.0	0.1	15.5	
Approach LOS			C	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	90	12	2	71	45	13	0	2	9	0	156
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	402	98	13	2	77	49	14	0	2	10	0	170
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	126			111			1160	1039	104	986	997	77
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	126			111			1160	1039	104	986	997	77
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	72			100			87	100	100	95	100	83
cM capacity (veh/h)	1460			1479			112	167	950	178	177	984

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	402	111	79	49	16	10	170
Volume Left	402	0	2	0	14	10	0
Volume Right	0	13	0	49	2	0	170
cSH	1460	1700	1479	1700	127	178	984
Volume to Capacity	0.28	0.07	0.00	0.03	0.13	0.05	0.17
Queue Length 95th (ft)	28	0	0	0	11	4	16
Control Delay (s)	8.4	0.0	0.2	0.0	37.4	26.4	9.4
Lane LOS	A		A		E	D	A
Approach Delay (s)	6.6		0.1		37.4	10.3	
Approach LOS					E	B	

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	218	394	260	344	225	385	374	75	225	719	684	75
Average Queue (ft)	67	206	56	103	41	135	179	72	198	344	267	36
95th Queue (ft)	126	315	124	201	105	248	292	84	284	716	631	76
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)										1	0	
Queuing Penalty (veh)										0	0	
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				1		2	14	43	70	0	12	6
Queuing Penalty (veh)				1		1	51	63	40	0	8	4

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	798	137	181	179	134
Average Queue (ft)	319	51	53	81	46
95th Queue (ft)	569	101	124	140	79
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	324	446	147	297	78
Average Queue (ft)	168	46	105	102	50
95th Queue (ft)	271	135	162	198	93
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			11		
Queuing Penalty (veh)			36		
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)	1			36	1
Queuing Penalty (veh)	1			34	2

Intersection: 4: Mallard & Rt 606

Movement	WB	NB	NB
Directions Served	LT	L	R
Maximum Queue (ft)	89	67	31
Average Queue (ft)	26	20	4
95th Queue (ft)	79	48	22
Link Distance (ft)	74	258	258
Upstream Blk Time (%)	4		
Queuing Penalty (veh)	13		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	LT	R	LTR	LT	R
Maximum Queue (ft)	67	96	21	31	24	140
Average Queue (ft)	22	6	0	12	6	41
95th Queue (ft)	53	37	4	36	22	85
Link Distance (ft)		814		350	316	316
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Network Summary

Network wide Queuing Penalty: 253

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	175	256	260	709	74	190	221	75	224	295	361	75
Average Queue (ft)	65	108	198	317	17	106	85	57	101	169	188	69
95th Queue (ft)	118	190	314	555	48	159	171	90	193	262	304	91
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			1	17		0	16	16	1	4	35	29
Queuing Penalty (veh)			4	59		0	23	22	1	6	120	78

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	561	114	303	162	344
Average Queue (ft)	256	47	127	74	166
95th Queue (ft)	441	92	233	128	275
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	201	154	166	381	75
Average Queue (ft)	86	50	99	156	45
95th Queue (ft)	148	104	163	280	96
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			7		
Queuing Penalty (veh)			25		
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)				44	1
Queuing Penalty (veh)				41	3

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	68	77	88	31
Average Queue (ft)	1	19	31	6
95th Queue (ft)	14	68	59	25
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)		2		
Queuing Penalty (veh)		6		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	54	20	31	22	31	47	105
Average Queue (ft)	21	0	1	0	11	6	35
95th Queue (ft)	49	4	11	4	34	24	66
Link Distance (ft)		74	814		350	316	316
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Network Summary

Network wide Queuing Penalty: 389

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	172	236	260	1046	224	270	178	75	224	334	374	76
Average Queue (ft)	65	93	211	456	22	120	78	56	93	168	211	71
95th Queue (ft)	122	170	328	836	72	186	152	86	180	255	323	89
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	29		0	13	17	1	4	24	33
Queuing Penalty (veh)			3	93		0	18	25	2	4	94	80

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	372	113	266	135	344
Average Queue (ft)	156	41	111	61	138
95th Queue (ft)	308	80	216	109	245
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	163	200	149	412	75
Average Queue (ft)	77	64	106	174	48
95th Queue (ft)	129	134	162	294	95
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			8		
Queuing Penalty (veh)			28		
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)				46	1
Queuing Penalty (veh)				48	3

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	50	77	93	31
Average Queue (ft)	1	22	31	4
95th Queue (ft)	15	69	61	20
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)		2		
Queuing Penalty (veh)		5		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	LT	R	LTR	LT	R
Maximum Queue (ft)	50	31	22	52	24	87
Average Queue (ft)	20	1	0	11	7	33
95th Queue (ft)	46	11	4	36	25	59
Link Distance (ft)		814		350	316	316
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 403

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	135	194	259	378	31	141	127	75	96	193	162	78
Average Queue (ft)	52	91	80	133	9	62	21	37	48	91	72	56
95th Queue (ft)	93	153	157	231	31	103	64	73	83	151	150	91
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				1			1	7		0	7	15
Queuing Penalty (veh)				2			1	5		0	13	23

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	346	71	172	366	154
Average Queue (ft)	134	28	61	110	69
95th Queue (ft)	234	59	132	204	122
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	188	184	146	292	75
Average Queue (ft)	78	82	79	132	58
95th Queue (ft)	142	154	138	236	93
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			3		
Queuing Penalty (veh)			7		
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)				40	4
Queuing Penalty (veh)				57	8

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	51	75	72	31
Average Queue (ft)	1	9	31	5
95th Queue (ft)	12	45	56	23
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)		1		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	R	LTR	LT	R
Maximum Queue (ft)	72	104	42	55	24	85
Average Queue (ft)	34	9	1	11	6	28
95th Queue (ft)	67	48	11	36	24	51
Link Distance (ft)		74		350	316	316
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)	150		200			
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				

Network Summary

Network wide Queuing Penalty: 118

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	239	50	239	252	130	10	149	86	86	307	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1815		1770	1768		1770	3539	1583	1770	3539	1583
Flt Permitted	0.29	1.00		0.46	1.00		0.55	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	544	1815		853	1768		1025	3539	1583	963	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	260	54	260	274	141	11	162	93	93	334	208
RTOR Reduction (vph)	0	10	0	0	23	0	0	0	54	0	0	111
Lane Group Flow (vph)	162	304	0	260	392	0	11	162	39	93	334	97
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.9	20.4		28.3	20.1		13.1	12.5	28.7	19.5	15.7	32.2
Effective Green, g (s)	28.9	20.4		28.3	20.1		13.1	12.5	28.7	19.5	15.7	32.2
Actuated g/C Ratio	0.42	0.30		0.41	0.29		0.19	0.18	0.42	0.28	0.23	0.47
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	379	537		459	515		201	642	659	317	806	739
v/s Ratio Prot	0.05	0.17		c0.07	c0.22		0.00	0.05	0.02	c0.02	c0.09	0.06
v/s Ratio Perm	0.13			0.17			0.01			0.07		
v/c Ratio	0.43	0.57		0.57	0.76		0.05	0.25	0.06	0.29	0.41	0.13
Uniform Delay, d1	13.5	20.5		14.2	22.2		22.7	24.2	12.0	18.8	22.7	10.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.4		1.6	6.5		0.1	0.2	0.0	0.5	0.3	0.1
Delay (s)	14.3	21.9		15.8	28.7		22.9	24.4	12.1	19.3	23.0	10.5
Level of Service	B	C		B	C		C	C	B	B	C	B
Approach Delay (s)		19.3			23.7			20.0			18.4	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	24.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	403	158	49	328	0	0	0	0	396	1	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1748		1736	1863					1770	1539	
Flt Permitted		1.00		0.29	1.00					0.95	1.00	
Satd. Flow (perm)		1748		530	1863					1770	1539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	438	172	53	357	0	0	0	0	430	1	311
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	221	0
Lane Group Flow (vph)	0	596	0	53	357	0	0	0	0	430	91	0
Heavy Vehicles (%)	2%	4%	6%	4%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		45.2		54.0	52.0					26.0	26.0	
Effective Green, g (s)		45.2		54.0	52.0					26.0	26.0	
Actuated g/C Ratio		0.50		0.60	0.58					0.29	0.29	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		877		355	1076					511	444	
v/s Ratio Prot		c0.34		0.00	c0.19						0.06	
v/s Ratio Perm				0.08						c0.24		
v/c Ratio		0.68		0.15	0.33					0.84	0.20	
Uniform Delay, d1		16.9		16.7	9.9					30.1	24.2	
Progression Factor		1.00		0.91	1.00					1.00	1.00	
Incremental Delay, d2		4.2		0.2	0.8					11.9	0.2	
Delay (s)		21.1		15.4	10.7					42.0	24.4	
Level of Service		C		B	B					D	C	
Approach Delay (s)		21.1			11.3			0.0			34.6	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	544	0	0	191	110	176	0	224	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1863			1771			1770	1583			
Flt Permitted	0.46	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	862	1863			1771			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	591	0	0	208	120	191	0	243	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	167	0	0	0
Lane Group Flow (vph)	266	591	0	0	311	0	0	191	76	0	0	0
Heavy Vehicles (%)	2%	2%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	62.6	62.6			46.5			15.4	15.4			
Effective Green, g (s)	62.6	62.6			46.5			15.4	15.4			
Actuated g/C Ratio	0.70	0.70			0.52			0.17	0.17			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	706	1295			915			302	270			
v/s Ratio Prot	0.04	c0.32			0.18							
v/s Ratio Perm	0.22							0.11	0.05			
v/c Ratio	0.38	0.46			0.34			0.63	0.28			
Uniform Delay, d1	5.5	6.1			12.7			34.7	32.5			
Progression Factor	1.47	1.51			1.00			1.00	1.00			
Incremental Delay, d2	0.2	0.8			1.0			4.3	0.6			
Delay (s)	8.4	10.0			13.8			38.9	33.0			
Level of Service	A	B			B			D	C			
Approach Delay (s)		9.5			13.8			35.6			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	739	16	2	238	47	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	803	17	2	259	51	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200					
pX, platoon unblocked			0.85		0.85	0.85
vC, conflicting volume			821		1075	812
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			702		1001	692
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		78	99
cM capacity (veh/h)			762		229	378

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	821	261	51	5
Volume Left	0	2	51	0
Volume Right	17	0	0	5
cSH	1700	762	229	378
Volume to Capacity	0.48	0.00	0.22	0.01
Queue Length 95th (ft)	0	0	21	1
Control Delay (s)	0.0	0.1	25.2	14.7
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.1	24.2	
Approach LOS			C	

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	654	90	12	2	71	94	13	0	2	11	0	170
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	711	98	13	2	77	102	14	0	2	12	0	185
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	179			111			1792	1710	104	1603	1614	77
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	179			111			1792	1710	104	1603	1614	77
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	49			100			54	100	100	76	100	81
cM capacity (veh/h)	1396			1479			30	44	950	51	51	984

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	711	111	79	102	16	12	185
Volume Left	711	0	2	0	14	12	0
Volume Right	0	13	0	102	2	0	185
cSH	1396	1700	1479	1700	35	51	984
Volume to Capacity	0.51	0.07	0.00	0.06	0.47	0.24	0.19
Queue Length 95th (ft)	75	0	0	0	39	20	17
Control Delay (s)	10.2	0.0	0.2	0.0	178.0	96.6	9.5
Lane LOS	B		A		F	F	A
Approach Delay (s)	8.8		0.1		178.0	14.8	
Approach LOS					F	B	

Intersection Summary			
Average Delay	10.8		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	178	267	259	295	53	140	141	75	116	202	177	75
Average Queue (ft)	51	107	90	153	11	64	27	42	49	94	80	61
95th Queue (ft)	101	190	171	234	36	107	79	78	92	150	164	88
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	1			2	8		0	11	13
Queuing Penalty (veh)			0	2			2	6		0	21	20

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	408	160	242	333	209
Average Queue (ft)	194	31	84	194	71
95th Queue (ft)	326	73	162	295	131
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	324	335	145	330	77
Average Queue (ft)	94	154	91	152	67
95th Queue (ft)	192	278	149	253	91
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			5		
Queuing Penalty (veh)			14		
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)	0	0		34	17
Queuing Penalty (veh)	0	1		76	29

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	134	79	96	31
Average Queue (ft)	18	18	31	5
95th Queue (ft)	74	64	61	23
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)	0	1		
Queuing Penalty (veh)	1	3		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	87	108	31	48	52	24	126
Average Queue (ft)	52	35	1	8	13	10	33
95th Queue (ft)	81	100	9	28	37	29	62
Link Distance (ft)		74	814		350	316	316
Upstream Blk Time (%)	1	1					
Queuing Penalty (veh)	0	6					
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	1	1					
Queuing Penalty (veh)	1	5					

Network Summary

Network wide Queuing Penalty: 188

Attachment L.2

Total Future (2023) Dominion

Raceway & Commercial Elements +

Adjacent By-Right Commercial (C-3 Zoning)

Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	514	32	123	170	161	50	291	386	187	115	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1846		1770	1727		1770	3539	1583	1770	3539	1583
Flt Permitted	0.38	1.00		0.15	1.00		0.67	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	717	1846		275	1727		1253	3539	1583	890	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	559	35	134	185	175	54	316	420	203	125	72
RTOR Reduction (vph)	0	3	0	0	40	0	0	0	107	0	0	41
Lane Group Flow (vph)	215	591	0	134	320	0	54	316	313	203	125	31
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.9	30.1		36.5	28.9		19.1	16.9	32.5	24.9	19.8	36.6
Effective Green, g (s)	38.9	30.1		36.5	28.9		19.1	16.9	32.5	24.9	19.8	36.6
Actuated g/C Ratio	0.46	0.36		0.44	0.35		0.23	0.20	0.39	0.30	0.24	0.44
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	443	663		255	596		299	714	614	318	837	692
v/s Ratio Prot	0.05	c0.32		0.05	0.19		0.00	0.09	c0.20	c0.04	0.04	0.02
v/s Ratio Perm	0.17			0.18			0.04			c0.15		
v/c Ratio	0.49	0.89		0.53	0.54		0.18	0.44	0.51	0.64	0.15	0.05
Uniform Delay, d1	14.2	25.3		17.0	22.0		25.7	29.3	19.5	24.5	25.3	13.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	14.3		2.0	0.9		0.3	0.4	0.7	4.2	0.1	0.0
Delay (s)	15.1	39.6		19.0	23.0		26.0	29.7	20.2	28.7	25.4	13.5
Level of Service	B	D		B	C		C	C	C	C	C	B
Approach Delay (s)		33.1			21.9			24.4			24.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	820	332	154	343	0	0	0	0	200	0	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1741		1752	1759					1770	1468	
Flt Permitted		1.00		0.06	1.00					0.95	1.00	
Satd. Flow (perm)		1741		115	1759					1770	1468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	891	361	167	373	0	0	0	0	217	0	160
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	140	0
Lane Group Flow (vph)	0	1236	0	167	373	0	0	0	0	217	20	0
Heavy Vehicles (%)	2%	4%	7%	3%	8%	2%	2%	2%	2%	2%	2%	10%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		58.0		69.0	67.0					11.0	11.0	
Effective Green, g (s)		58.0		69.0	67.0					11.0	11.0	
Actuated g/C Ratio		0.64		0.77	0.74					0.12	0.12	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1121		179	1309					216	179	
v/s Ratio Prot		c0.71		c0.05	0.21						0.01	
v/s Ratio Perm				0.66						c0.12		
v/c Ratio		1.10		0.93	0.28					1.00	0.11	
Uniform Delay, d1		16.0		38.3	3.7					39.5	35.1	
Progression Factor		1.00		1.73	2.67					1.00	1.00	
Incremental Delay, d2		59.4		26.6	0.2					62.4	0.3	
Delay (s)		75.4		92.8	10.2					101.9	35.4	
Level of Service		E		F	B					F	D	
Approach Delay (s)		75.4			35.7			0.0			73.7	
Approach LOS		E			D			A			E	

Intersection Summary			
HCM 2000 Control Delay	65.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	588	413	0	0	352	282	135	2	225	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.94			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1845			1732			1775	1583			
Flt Permitted	0.11	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	204	1845			1732			1775	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	639	449	0	0	383	307	147	2	245	0	0	0
RTOR Reduction (vph)	0	0	0	0	32	0	0	0	211	0	0	0
Lane Group Flow (vph)	639	449	0	0	658	0	0	149	34	0	0	0
Heavy Vehicles (%)	2%	3%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	65.4	65.4			31.0			12.6	12.6			
Effective Green, g (s)	65.4	65.4			31.0			12.6	12.6			
Actuated g/C Ratio	0.73	0.73			0.34			0.14	0.14			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	651	1340			596			248	221			
v/s Ratio Prot	c0.32	0.24			c0.38							
v/s Ratio Perm	0.40							0.08	0.02			
v/c Ratio	0.98	0.34			1.10			0.60	0.16			
Uniform Delay, d1	25.0	4.4			29.5			36.3	34.0			
Progression Factor	0.90	1.01			1.00			1.00	1.00			
Incremental Delay, d2	7.0	0.1			68.6			4.1	0.3			
Delay (s)	29.5	4.5			98.1			40.4	34.4			
Level of Service	C	A			F			D	C			
Approach Delay (s)		19.2			98.1			36.6			0.0	
Approach LOS		B			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	583	61	1	607	31	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	634	66	1	660	34	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200					
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			700		1329	667
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			620		1312	584
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		79	99
cM capacity (veh/h)			873		159	465

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	700	661	34	4
Volume Left	0	1	34	0
Volume Right	66	0	0	4
cSH	1700	873	159	465
Volume to Capacity	0.41	0.00	0.21	0.01
Queue Length 95th (ft)	0	0	19	1
Control Delay (s)	0.0	0.0	33.6	12.8
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.0	31.3	
Approach LOS			D	

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	492	94	9	2	122	21	9	0	2	21	0	486
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	535	102	10	2	133	23	10	0	2	23	0	528
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	155			112			1842	1336	107	1311	1318	133
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155			112			1842	1336	107	1311	1318	133
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	62			100			43	100	100	76	100	42
cM capacity (veh/h)	1425			1478			17	96	947	96	98	917

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	535	112	135	23	12	23	528
Volume Left	535	0	2	0	10	23	0
Volume Right	0	10	0	23	2	0	528
cSH	1425	1700	1478	1700	21	96	917
Volume to Capacity	0.38	0.07	0.00	0.01	0.57	0.24	0.58
Queue Length 95th (ft)	44	0	0	0	41	21	95
Control Delay (s)	9.0	0.0	0.1	0.0	309.0	53.9	14.1
Lane LOS	A		A		F	F	B
Approach Delay (s)	7.5		0.1		309.0	15.8	
Approach LOS					F	C	

Intersection Summary			
Average Delay	12.6		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	226	46	369	393	202	17	267	160	152	548	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1816		1770	1768		1770	3539	1583	1770	3539	1583
Flt Permitted	0.12	1.00		0.51	1.00		0.36	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	227	1816		948	1768		669	3539	1583	876	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	246	50	401	427	220	18	290	174	165	596	372
RTOR Reduction (vph)	0	8	0	0	21	0	0	0	109	0	0	132
Lane Group Flow (vph)	149	288	0	401	626	0	18	290	65	165	596	240
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.4	32.8		40.4	32.3		17.3	15.8	31.9	24.3	19.3	35.9
Effective Green, g (s)	41.4	32.8		40.4	32.3		17.3	15.8	31.9	24.3	19.3	35.9
Actuated g/C Ratio	0.48	0.38		0.47	0.38		0.20	0.18	0.37	0.28	0.23	0.42
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	264	695		524	666		154	652	589	300	796	663
v/s Ratio Prot	0.06	0.16		c0.07	c0.35		0.00	0.08	0.04	c0.03	c0.17	0.15
v/s Ratio Perm	0.22			0.29			0.02			0.12		
v/c Ratio	0.56	0.41		0.77	0.94		0.12	0.44	0.11	0.55	0.75	0.36
Uniform Delay, d1	16.7	19.4		17.4	25.8		27.6	31.1	17.6	25.0	30.9	17.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.4		6.6	21.5		0.3	0.5	0.1	2.2	3.9	0.3
Delay (s)	19.4	19.8		24.0	47.2		28.0	31.5	17.7	27.2	34.8	17.4
Level of Service	B	B		C	D		C	C	B	C	C	B
Approach Delay (s)		19.7			38.4			26.4			28.0	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	453	213	146	477	0	0	0	0	212	4	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1701		1752	1810					1770	1552	
Flt Permitted		1.00		0.20	1.00					0.95	1.00	
Satd. Flow (perm)		1701		371	1810					1770	1552	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	492	232	159	518	0	0	0	0	230	4	611
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	236	0
Lane Group Flow (vph)	0	706	0	159	518	0	0	0	0	230	379	0
Heavy Vehicles (%)	2%	4%	13%	3%	5%	2%	2%	2%	2%	2%	33%	4%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		44.6		55.3	53.3					24.7	24.7	
Effective Green, g (s)		44.6		55.3	53.3					24.7	24.7	
Actuated g/C Ratio		0.50		0.61	0.59					0.27	0.27	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		842		300	1071					485	425	
v/s Ratio Prot		c0.42		c0.03	0.29						c0.24	
v/s Ratio Perm				0.30						0.13		
v/c Ratio		0.84		0.53	0.48					0.47	0.89	
Uniform Delay, d1		19.6		25.0	10.5					27.2	31.4	
Progression Factor		1.00		0.93	0.83					1.00	1.00	
Incremental Delay, d2		9.8		1.2	1.1					0.7	20.4	
Delay (s)		29.4		24.6	9.8					28.0	51.7	
Level of Service		C		C	A					C	D	
Approach Delay (s)		29.4			13.3			0.0			45.3	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	259	399	0	0	356	243	248	2	211	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1845			1734			1775	1583			
Flt Permitted	0.20	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	378	1845			1734			1775	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	434	0	0	387	264	270	2	229	0	0	0
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	185	0	0	0
Lane Group Flow (vph)	282	434	0	0	626	0	0	272	44	0	0	0
Heavy Vehicles (%)	2%	3%	6%	2%	4%	3%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	60.8	60.8			44.1			17.2	17.2			
Effective Green, g (s)	60.8	60.8			44.1			17.2	17.2			
Actuated g/C Ratio	0.68	0.68			0.49			0.19	0.19			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	428	1246			849			339	302			
v/s Ratio Prot	c0.08	0.24			c0.36							
v/s Ratio Perm	0.36							0.15	0.03			
v/c Ratio	0.66	0.35			0.74			0.80	0.14			
Uniform Delay, d1	11.3	6.2			18.3			34.8	30.3			
Progression Factor	1.10	0.82			1.00			1.00	1.00			
Incremental Delay, d2	2.6	0.5			5.7			12.8	0.2			
Delay (s)	15.0	5.6			24.0			47.6	30.5			
Level of Service	B	A			C			D	C			
Approach Delay (s)		9.3			24.0			39.8			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	579	16	2	541	50	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	629	17	2	588	54	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200					
pX, platoon unblocked			0.90		0.90	0.90
vC, conflicting volume			647		1230	638
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			551		1200	542
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		70	99
cM capacity (veh/h)			916		183	486

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	647	590	54	5
Volume Left	0	2	54	0
Volume Right	17	0	0	5
cSH	1700	916	183	486
Volume to Capacity	0.38	0.00	0.30	0.01
Queue Length 95th (ft)	0	0	29	1
Control Delay (s)	0.0	0.1	32.7	12.5
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.1	30.9	
Approach LOS			D	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	480	104	12	2	113	26	13	0	2	19	0	430
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	522	113	13	2	123	28	14	0	2	21	0	467
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	151			126			1758	1318	120	1286	1297	123
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	151			126			1758	1318	120	1286	1297	123
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	64			100			40	100	100	80	100	50
cM capacity (veh/h)	1430			1460			24	100	932	101	103	928

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	522	126	125	28	16	21	467
Volume Left	522	0	2	0	14	21	0
Volume Right	0	13	0	28	2	0	467
cSH	1430	1700	1460	1700	27	101	928
Volume to Capacity	0.36	0.07	0.00	0.02	0.60	0.20	0.50
Queue Length 95th (ft)	42	0	0	0	47	18	72
Control Delay (s)	9.0	0.0	0.1	0.0	258.7	49.6	12.7
Lane LOS	A		A		F	E	B
Approach Delay (s)	7.2		0.1		258.7	14.3	
Approach LOS					F	B	

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	206	40	331	439	226	19	302	146	138	487	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1818		1770	1768		1770	3539	1583	1770	3539	1583
Flt Permitted	0.11	1.00		0.55	1.00		0.43	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	214	1818		1023	1768		797	3539	1583	851	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	224	43	360	477	246	21	328	159	150	529	420
RTOR Reduction (vph)	0	8	0	0	20	0	0	0	100	0	0	166
Lane Group Flow (vph)	168	259	0	360	703	0	21	328	59	150	529	254
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.5	34.8		42.1	34.1		18.0	16.5	32.5	25.0	20.0	36.7
Effective Green, g (s)	43.5	34.8		42.1	34.1		18.0	16.5	32.5	25.0	20.0	36.7
Actuated g/C Ratio	0.49	0.39		0.48	0.39		0.20	0.19	0.37	0.28	0.23	0.42
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	258	716		555	682		178	661	582	292	801	657
v/s Ratio Prot	c0.06	0.14		0.06	c0.40		0.00	0.09	0.04	c0.03	c0.15	0.16
v/s Ratio Perm	0.26			0.25			0.02			0.12		
v/c Ratio	0.65	0.36		0.65	1.03		0.12	0.50	0.10	0.51	0.66	0.39
Uniform Delay, d1	18.5	18.9		16.2	27.1		28.3	32.2	18.3	25.3	31.1	18.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	0.3		2.6	42.5		0.3	0.6	0.1	1.5	2.1	0.4
Delay (s)	24.2	19.2		18.8	69.6		28.6	32.8	18.4	26.9	33.1	18.3
Level of Service	C	B		B	E		C	C	B	C	C	B
Approach Delay (s)		21.2			52.7			28.1			26.6	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	414	149	156	527	0	0	0	0	194	1	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1722		1752	1810					1770	1553	
Flt Permitted		1.00		0.29	1.00					0.95	1.00	
Satd. Flow (perm)		1722		539	1810					1770	1553	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	450	162	170	573	0	0	0	0	211	1	543
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	213	0
Lane Group Flow (vph)	0	599	0	170	573	0	0	0	0	211	331	0
Heavy Vehicles (%)	2%	4%	13%	3%	5%	2%	2%	2%	2%	2%	33%	4%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		45.7		57.3	55.3					22.7	22.7	
Effective Green, g (s)		45.7		57.3	55.3					22.7	22.7	
Actuated g/C Ratio		0.51		0.64	0.61					0.25	0.25	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		874		418	1112					446	391	
v/s Ratio Prot		c0.35		0.03	c0.32						c0.21	
v/s Ratio Perm				0.23						0.12		
v/c Ratio		0.69		0.41	0.52					0.47	0.85	
Uniform Delay, d1		16.7		17.3	9.8					28.6	32.0	
Progression Factor		1.00		0.63	0.53					1.00	1.00	
Incremental Delay, d2		4.4		0.4	1.1					0.8	15.4	
Delay (s)		21.1		11.3	6.3					29.4	47.4	
Level of Service		C		B	A					C	D	
Approach Delay (s)		21.1			7.4			0.0			42.4	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	391	0	0	379	258	281	2	225	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1845			1734			1775	1583			
Flt Permitted	0.17	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	313	1845			1734			1775	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	425	0	0	412	280	305	2	245	0	0	0
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	195	0	0	0
Lane Group Flow (vph)	248	425	0	0	667	0	0	307	50	0	0	0
Heavy Vehicles (%)	2%	3%	6%	2%	4%	3%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	59.5	59.5			43.5			18.5	18.5			
Effective Green, g (s)	59.5	59.5			43.5			18.5	18.5			
Actuated g/C Ratio	0.66	0.66			0.48			0.21	0.21			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	376	1219			838			364	325			
v/s Ratio Prot	c0.08	0.23			c0.38							
v/s Ratio Perm	0.36							0.17	0.03			
v/c Ratio	0.66	0.35			0.80			0.84	0.15			
Uniform Delay, d1	12.8	6.7			19.5			34.4	29.3			
Progression Factor	1.38	1.23			1.00			1.00	1.00			
Incremental Delay, d2	3.4	0.6			7.7			16.1	0.2			
Delay (s)	21.0	8.9			27.2			50.5	29.6			
Level of Service	C	A			C			D	C			
Approach Delay (s)		13.4			27.2			41.2			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	574	25	1	569	52	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	624	27	1	618	57	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200					
pX, platoon unblocked			0.90		0.90	0.90
vC, conflicting volume			651		1258	638
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			555		1231	540
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		68	99
cM capacity (veh/h)			912		176	487

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	651	620	57	4
Volume Left	0	1	57	0
Volume Right	27	0	0	4
cSH	1700	912	176	487
Volume to Capacity	0.38	0.00	0.32	0.01
Queue Length 95th (ft)	0	0	33	1
Control Delay (s)	0.0	0.0	34.9	12.5
Lane LOS		A	D	B
Approach Delay (s)	0.0	0.0	33.3	
Approach LOS			D	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	494	83	12	2	123	26	13	0	2	19	0	447
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	537	90	13	2	134	28	14	0	2	21	0	486
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	162			103			1795	1337	97	1304	1315	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			103			1795	1337	97	1304	1315	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	62			100			31	100	100	79	100	47
cM capacity (veh/h)	1417			1489			21	95	960	96	98	915

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	537	103	136	28	16	21	486
Volume Left	537	0	2	0	14	21	0
Volume Right	0	13	0	28	2	0	486
cSH	1417	1700	1489	1700	24	96	915
Volume to Capacity	0.38	0.06	0.00	0.02	0.69	0.21	0.53
Queue Length 95th (ft)	45	0	0	0	51	19	80
Control Delay (s)	9.1	0.0	0.1	0.0	314.4	52.2	13.3
Lane LOS	A		A		F	F	B
Approach Delay (s)	7.6		0.1		314.4	14.9	
Approach LOS					F	B	

Intersection Summary			
Average Delay	13.2		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	248	50	255	275	142	10	149	102	96	307	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.97		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1816		1770	1768		1770	3539	1583	1770	3539	1583
Flt Permitted	0.25	1.00		0.45	1.00		0.55	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	474	1816		838	1768		1025	3539	1583	965	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	270	54	277	299	154	11	162	111	104	334	208
RTOR Reduction (vph)	0	9	0	0	23	0	0	0	66	0	0	113
Lane Group Flow (vph)	162	315	0	277	430	0	11	162	45	104	334	95
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.3	21.8		29.7	21.5		13.2	12.6	28.8	19.6	15.8	32.3
Effective Green, g (s)	30.3	21.8		29.7	21.5		13.2	12.6	28.8	19.6	15.8	32.3
Actuated g/C Ratio	0.43	0.31		0.42	0.31		0.19	0.18	0.41	0.28	0.22	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	360	562		462	539		198	633	647	312	794	726
v/s Ratio Prot	0.05	0.17		c0.07	c0.24		0.00	0.05	0.03	c0.02	c0.09	0.06
v/s Ratio Perm	0.14			0.18			0.01			0.07		
v/c Ratio	0.45	0.56		0.60	0.80		0.06	0.26	0.07	0.33	0.42	0.13
Uniform Delay, d1	13.6	20.3		14.1	22.5		23.4	24.9	12.7	19.6	23.4	11.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.3		2.1	8.1		0.1	0.2	0.0	0.6	0.4	0.1
Delay (s)	14.5	21.6		16.2	30.5		23.5	25.1	12.7	20.2	23.7	11.1
Level of Service	B	C		B	C		C	C	B	C	C	B
Approach Delay (s)		19.2			25.1			20.2			19.1	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	436	159	112	379	0	0	0	0	294	1	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1752		1736	1863					1770	1539	
Flt Permitted		1.00		0.28	1.00					0.95	1.00	
Satd. Flow (perm)		1752		514	1863					1770	1539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	474	173	122	412	0	0	0	0	320	1	310
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	238	0
Lane Group Flow (vph)	0	633	0	122	412	0	0	0	0	320	73	0
Heavy Vehicles (%)	2%	4%	6%	4%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		47.8		59.0	57.0					21.0	21.0	
Effective Green, g (s)		47.8		59.0	57.0					21.0	21.0	
Actuated g/C Ratio		0.53		0.66	0.63					0.23	0.23	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		930		407	1179					413	359	
v/s Ratio Prot		c0.36		0.02	c0.22						0.05	
v/s Ratio Perm				0.18						c0.18		
v/c Ratio		0.68		0.30	0.35					0.77	0.20	
Uniform Delay, d1		15.5		15.7	7.8					32.3	27.8	
Progression Factor		1.00		1.34	1.30					1.00	1.00	
Incremental Delay, d2		4.0		0.3	0.7					8.8	0.3	
Delay (s)		19.5		21.3	10.8					41.1	28.1	
Level of Service		B		C	B					D	C	
Approach Delay (s)		19.5			13.2			0.0			34.7	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	482	0	0	312	222	171	0	249	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.94			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1863			1758			1770	1583			
Flt Permitted	0.28	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	530	1863			1758			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	524	0	0	339	241	186	0	271	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	228	0	0	0
Lane Group Flow (vph)	261	524	0	0	556	0	0	186	43	0	0	0
Heavy Vehicles (%)	2%	2%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	63.8	63.8			48.1			14.2	14.2			
Effective Green, g (s)	63.8	63.8			48.1			14.2	14.2			
Actuated g/C Ratio	0.71	0.71			0.53			0.16	0.16			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	516	1320			939			279	249			
v/s Ratio Prot	c0.06	0.28			c0.32							
v/s Ratio Perm	0.30							0.11	0.03			
v/c Ratio	0.51	0.40			0.59			0.67	0.17			
Uniform Delay, d1	7.5	5.3			14.3			35.7	32.8			
Progression Factor	1.19	1.02			1.00			1.00	1.00			
Incremental Delay, d2	0.6	0.7			2.7			5.9	0.3			
Delay (s)	9.6	6.0			17.0			41.6	33.1			
Level of Service	A	A			B			D	C			
Approach Delay (s)		7.2			17.0			36.6			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	701	16	2	469	47	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	762	17	2	510	51	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			779		1285	771
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			683		1256	673
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		69	99
cM capacity (veh/h)			803		166	401

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	779	512	51	5
Volume Left	0	2	51	0
Volume Right	17	0	0	5
cSH	1700	803	166	401
Volume to Capacity	0.46	0.00	0.31	0.01
Queue Length 95th (ft)	0	0	31	1
Control Delay (s)	0.0	0.1	36.0	14.1
Lane LOS		A	E	B
Approach Delay (s)	0.0	0.1	33.8	
Approach LOS			D	

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	616	90	12	2	71	56	13	0	2	19	0	401
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	670	98	13	2	77	61	14	0	2	21	0	436
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		348										
pX, platoon unblocked												
vC, conflicting volume	138			111			1961	1586	104	1521	1532	77
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	138			111			1961	1586	104	1521	1532	77
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	54			100			16	100	100	66	100	56
cM capacity (veh/h)	1446			1479			17	58	950	62	63	984

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	670	111	79	61	16	21	436
Volume Left	670	0	2	0	14	21	0
Volume Right	0	13	0	61	2	0	436
cSH	1446	1700	1479	1700	19	62	984
Volume to Capacity	0.46	0.07	0.00	0.04	0.84	0.34	0.44
Queue Length 95th (ft)	63	0	0	0	57	31	58
Control Delay (s)	9.6	0.0	0.2	0.0	422.3	90.4	11.5
Lane LOS	A		A		F	F	B
Approach Delay (s)	8.3		0.1		422.3	15.1	
Approach LOS					F	C	

Intersection Summary			
Average Delay	14.5		
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	675	1357	260	316	111	378	442	75	225	767	719	75
Average Queue (ft)	118	373	64	125	35	140	227	73	225	717	324	29
95th Queue (ft)	394	792	138	231	73	248	364	83	225	759	836	81
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)		0								92	8	
Queuing Penalty (veh)		0								0	0	
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)	0	5	0	1		0	8	57	100	2	28	4
Queuing Penalty (veh)	0	10	0	2		0	32	83	57	5	19	3

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	2674	262	181	355	113
Average Queue (ft)	2232	138	77	172	50
95th Queue (ft)	2907	230	140	279	82
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)	1				
Queuing Penalty (veh)	10				
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	325	580	148	330	76
Average Queue (ft)	215	82	133	137	68
95th Queue (ft)	323	232	143	251	86
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)		0	42		
Queuing Penalty (veh)		1	270		
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)	2			36	14
Queuing Penalty (veh)	10			80	19

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	68	91	274	266
Average Queue (ft)	5	76	123	35
95th Queue (ft)	29	82	297	167
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)		39	20	4
Queuing Penalty (veh)		240	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	73	108	115	22	72	355	368
Average Queue (ft)	40	15	41	1	8	323	331
95th Queue (ft)	66	63	89	9	32	409	373
Link Distance (ft)		74	814		350	316	316
Upstream Blk Time (%)	1	1				87	97
Queuing Penalty (veh)	0	3				0	0
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	1	1					
Queuing Penalty (veh)	1	3					

Network Summary

Network wide Queuing Penalty: 845

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	193	215	260	1004	92	184	192	75	225	367	394	76
Average Queue (ft)	60	117	224	439	18	108	82	59	112	190	220	70
95th Queue (ft)	115	192	316	835	51	170	171	92	212	300	336	91
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			5	21		0	12	18	1	6	31	27
Queuing Penalty (veh)			28	78		0	19	24	1	10	106	75

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	732	321	304	241	508
Average Queue (ft)	335	117	152	108	221
95th Queue (ft)	550	220	251	180	364
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)			0		0
Queuing Penalty (veh)			0		0

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	249	280	148	486	76
Average Queue (ft)	94	97	128	216	67
95th Queue (ft)	164	172	150	390	93
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			23	2	
Queuing Penalty (veh)			136	0	
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)				48	13
Queuing Penalty (veh)				102	33

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	141	91	116	53
Average Queue (ft)	8	66	44	5
95th Queue (ft)	56	105	85	25
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)	0	17		
Queuing Penalty (veh)	1	92		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	73	108	149	41	52	65	331
Average Queue (ft)	46	26	22	1	15	14	144
95th Queue (ft)	74	83	75	11	41	38	300
Link Distance (ft)		74	814		350	316	316
Upstream Blk Time (%)	1	1					2
Queuing Penalty (veh)	0	4					0
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	1	1					
Queuing Penalty (veh)	1	3					

Network Summary

Network wide Queuing Penalty: 715

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	675	1357	260	2294	52	861	854	75	225	719	744	75
Average Queue (ft)	36	876	79	459	7	563	552	59	171	515	528	29
95th Queue (ft)	175	1844	274	1690	29	1138	1148	74	271	950	936	87
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)		58				56	56			62	61	
Queuing Penalty (veh)		0				0	0			0	0	
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)		62	0	16		0	4	73	66	2	10	13
Queuing Penalty (veh)		96	1	54		0	6	110	161	2	40	31

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	2662	128	492	496	1074
Average Queue (ft)	1975	21	54	386	804
95th Queue (ft)	3732	78	193	666	1475
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)	67				70
Queuing Penalty (veh)	330				0
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)			0	72	72
Queuing Penalty (veh)			1	361	139

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	324	559	147	486	75
Average Queue (ft)	30	452	34	430	56
95th Queue (ft)	138	769	126	578	71
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)		76	7	78	
Queuing Penalty (veh)		462	46	0	
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)		77		12	81
Queuing Penalty (veh)		175		28	230

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	144	77	269	269
Average Queue (ft)	105	17	218	182
95th Queue (ft)	186	68	328	370
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)	78	6	70	69
Queuing Penalty (veh)	479	35	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LT	LTR	LT	R
Maximum Queue (ft)	72	135	820	353	327	331
Average Queue (ft)	63	99	592	210	24	295
95th Queue (ft)	83	166	1129	430	136	370
Link Distance (ft)		74	814	350	316	316
Upstream Blk Time (%)	78	78	67	36	1	82
Queuing Penalty (veh)	0	452	0	0	0	0
Storage Bay Dist (ft)	150					
Storage Blk Time (%)	78	78	75			
Queuing Penalty (veh)	74	386	20			

Network Summary

Network wide Queuing Penalty: 3717

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	180	278	260	359	31	136	159	75	136	162	210	75
Average Queue (ft)	55	109	92	148	9	63	35	45	54	97	74	58
95th Queue (ft)	104	190	170	257	30	103	97	80	97	146	151	90
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)				2			3	11			11	14
Queuing Penalty (veh)				4			3	8			22	22

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	434	179	265	321	237
Average Queue (ft)	198	64	92	156	66
95th Queue (ft)	362	117	176	244	119
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	201	356	147	313	75
Average Queue (ft)	91	125	123	149	66
95th Queue (ft)	145	236	153	272	92
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			15		
Queuing Penalty (veh)			79		
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)		0		32	14
Queuing Penalty (veh)		1		80	25

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	116	80	114	31
Average Queue (ft)	15	54	34	8
95th Queue (ft)	65	103	70	29
Link Distance (ft)	129	74	258	258
Upstream Blk Time (%)	0	9		
Queuing Penalty (veh)	0	44		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	73	116	99	41	53	45	295
Average Queue (ft)	46	32	11	4	15	15	89
95th Queue (ft)	80	94	44	19	42	36	187
Link Distance (ft)		74	814		350	316	316
Upstream Blk Time (%)	1	1					
Queuing Penalty (veh)	0	6					
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	1	1					
Queuing Penalty (veh)	1	6					

Network Summary

Network wide Queuing Penalty: 300

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	263	50	255	275	142	10	149	102	98	307	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1818		1770	1768		1770	3539	1583	1770	3539	1583
Flt Permitted	0.25	1.00		0.43	1.00		0.55	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	474	1818		794	1768		1025	3539	1583	965	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	286	54	277	299	154	11	162	111	107	334	208
RTOR Reduction (vph)	0	8	0	0	23	0	0	0	66	0	0	113
Lane Group Flow (vph)	162	332	0	277	430	0	11	162	45	107	334	95
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pt+ov	pm+pt	NA	pt+ov
Protected Phases	7	4		3	8		5	2	2 3	1	6	6 7
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.3	21.8		29.7	21.5		13.2	12.6	28.8	19.6	15.8	32.3
Effective Green, g (s)	30.3	21.8		29.7	21.5		13.2	12.6	28.8	19.6	15.8	32.3
Actuated g/C Ratio	0.43	0.31		0.42	0.31		0.19	0.18	0.41	0.28	0.22	0.46
Clearance Time (s)	6.0	6.0		6.0	6.0		4.0	8.0		4.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	360	562		448	539		198	633	647	312	794	726
v/s Ratio Prot	0.05	0.18		c0.07	c0.24		0.00	0.05	0.03	c0.02	c0.09	0.06
v/s Ratio Perm	0.14			0.19			0.01			0.08		
v/c Ratio	0.45	0.59		0.62	0.80		0.06	0.26	0.07	0.34	0.42	0.13
Uniform Delay, d1	13.6	20.5		14.2	22.5		23.4	24.9	12.7	19.6	23.4	11.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.7		2.5	8.1		0.1	0.2	0.0	0.7	0.4	0.1
Delay (s)	14.5	22.2		16.7	30.5		23.5	25.1	12.7	20.2	23.7	11.1
Level of Service	B	C		B	C		C	C	B	C	C	B
Approach Delay (s)		19.7			25.3			20.2			19.1	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	453	159	116	380	0	0	0	0	481	1	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		4.0	6.0					6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	1.00	
Frt		0.96		1.00	1.00					1.00	0.85	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1754		1736	1863					1770	1539	
Flt Permitted		1.00		0.20	1.00					0.95	1.00	
Satd. Flow (perm)		1754		359	1863					1770	1539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	492	173	126	413	0	0	0	0	523	1	310
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	206	0
Lane Group Flow (vph)	0	651	0	126	413	0	0	0	0	523	105	0
Heavy Vehicles (%)	2%	4%	6%	4%	2%	2%	2%	2%	2%	2%	2%	5%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		39.3		49.9	47.9					30.1	30.1	
Effective Green, g (s)		39.3		49.9	47.9					30.1	30.1	
Actuated g/C Ratio		0.44		0.55	0.53					0.33	0.33	
Clearance Time (s)		6.0		4.0	6.0					6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		765		269	991					591	514	
v/s Ratio Prot		c0.37		c0.02	0.22						0.07	
v/s Ratio Perm				0.24						c0.30		
v/c Ratio		0.85		0.47	0.42					0.88	0.20	
Uniform Delay, d1		22.7		27.2	12.7					28.3	21.4	
Progression Factor		1.00		1.01	0.90					1.00	1.00	
Incremental Delay, d2		11.5		1.1	1.1					14.7	0.2	
Delay (s)		34.3		28.5	12.5					43.0	21.6	
Level of Service		C		C	B					D	C	
Approach Delay (s)		34.3			16.2			0.0			35.0	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	108.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	687	0	0	316	231	171	0	328	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0			6.0			6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.94			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.95	1.00			
Satd. Flow (prot)	1770	1863			1756			1770	1583			
Flt Permitted	0.27	1.00			1.00			0.95	1.00			
Satd. Flow (perm)	501	1863			1756			1770	1583			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	747	0	0	343	251	186	0	357	0	0	0
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	206	0	0	0
Lane Group Flow (vph)	261	747	0	0	569	0	0	186	151	0	0	0
Heavy Vehicles (%)	2%	2%	6%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)	63.1	63.1			47.3			14.9	14.9			
Effective Green, g (s)	63.1	63.1			47.3			14.9	14.9			
Actuated g/C Ratio	0.70	0.70			0.53			0.17	0.17			
Clearance Time (s)	5.5	6.0			6.0			6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0			3.0	3.0			
Lane Grp Cap (vph)	496	1306			922			293	262			
v/s Ratio Prot	0.06	c0.40			c0.32							
v/s Ratio Perm	0.31							0.11	0.10			
v/c Ratio	0.53	0.57			0.62			0.63	0.58			
Uniform Delay, d1	8.2	6.7			15.0			35.0	34.6			
Progression Factor	1.22	1.08			1.00			1.00	1.00			
Incremental Delay, d2	0.5	0.9			3.1			4.5	3.0			
Delay (s)	10.5	8.2			18.1			39.5	37.7			
Level of Service	B	A			B			D	D			
Approach Delay (s)		8.8			18.1			38.3			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	108.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	985	16	2	483	47	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1071	17	2	525	51	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	200					
pX, platoon unblocked			0.79		0.79	0.79
vC, conflicting volume			1088		1609	1079
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			975		1638	964
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		41	98
cM capacity (veh/h)			555		86	243

Direction, Lane #	EB 1	WB 1	NB 1	NB 2
Volume Total	1088	527	51	5
Volume Left	0	2	51	0
Volume Right	17	0	0	5
cSH	1700	555	86	243
Volume to Capacity	0.64	0.00	0.59	0.02
Queue Length 95th (ft)	0	0	67	2
Control Delay (s)	0.0	0.1	94.5	20.2
Lane LOS		A	F	C
Approach Delay (s)	0.0	0.1	87.3	
Approach LOS			F	

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	900	90	12	2	71	105	13	0	2	21	0	415
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	978	98	13	2	77	114	14	0	2	23	0	451
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		508										
pX, platoon unblocked												
vC, conflicting volume	191			111			2593	2257	104	2138	2149	77
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			111			2593	2257	104	2138	2149	77
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	29			100			0	100	100	0	100	54
cM capacity (veh/h)	1382			1479			4	12	950	15	14	984

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	978	111	79	114	16	23	451
Volume Left	978	0	2	0	14	23	0
Volume Right	0	13	0	114	2	0	451
cSH	1382	1700	1479	1700	4	15	984
Volume to Capacity	0.71	0.07	0.00	0.07	3.68	1.51	0.46
Queue Length 95th (ft)	161	0	0	0	Err	86	61
Control Delay (s)	13.6	0.0	0.2	0.0	Err	778.4	11.7
Lane LOS	B		A		F	F	B
Approach Delay (s)	12.2		0.1		Err	48.6	
Approach LOS					F	E	

Intersection Summary			
Average Delay	112.5		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection: 1: US Route 1 & Rt 606

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	154	295	260	300	53	138	117	75	112	208	254	75
Average Queue (ft)	58	113	107	149	11	60	27	43	50	94	74	55
95th Queue (ft)	107	203	200	251	37	102	82	77	90	150	161	87
Link Distance (ft)		1342		2661		848	848			704	704	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	650		235		200			50	200			50
Storage Blk Time (%)			0	1			2	10		0	9	13
Queuing Penalty (veh)			0	2			2	7		0	18	20

Intersection: 2: I-96 SB On Ramp/I-95 SB Off Ramp & Rt 606

Movement	EB	WB	WB	SB	SB
Directions Served	TR	L	T	L	TR
Maximum Queue (ft)	509	243	291	382	208
Average Queue (ft)	270	85	121	235	70
95th Queue (ft)	442	168	215	353	128
Link Distance (ft)	2661		555		1063
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		300		500	
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 3: I-95 NB Off-Ramp/I-95 NB On-Ramp & Rt 606

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	LT	R
Maximum Queue (ft)	324	506	148	505	75
Average Queue (ft)	123	214	129	217	72
95th Queue (ft)	232	385	147	400	82
Link Distance (ft)		555	129	471	
Upstream Blk Time (%)			20	2	
Queuing Penalty (veh)			107	0	
Storage Bay Dist (ft)	300				50
Storage Blk Time (%)		2		24	39
Queuing Penalty (veh)		5		79	67

Intersection: 4: Mallard & Rt 606

Movement	EB	WB	NB	NB
Directions Served	TR	LT	L	R
Maximum Queue (ft)	144	247	274	50
Average Queue (ft)	25	95	150	5
95th Queue (ft)	102	202	272	23
Link Distance (ft)	129	234	258	258
Upstream Blk Time (%)	1	0	4	
Queuing Penalty (veh)	7	1	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Rt 606 & Site Entrnace

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	LT	R	LTR	LT	R
Maximum Queue (ft)	174	249	78	51	72	132	259
Average Queue (ft)	124	65	3	11	13	24	72
95th Queue (ft)	204	234	23	32	43	69	140
Link Distance (ft)		234	814		350	316	316
Upstream Blk Time (%)		1					
Queuing Penalty (veh)		6					
Storage Bay Dist (ft)	150			200			
Storage Blk Time (%)	8						
Queuing Penalty (veh)	8						

Network Summary

Network wide Queuing Penalty: 329

Attachment M

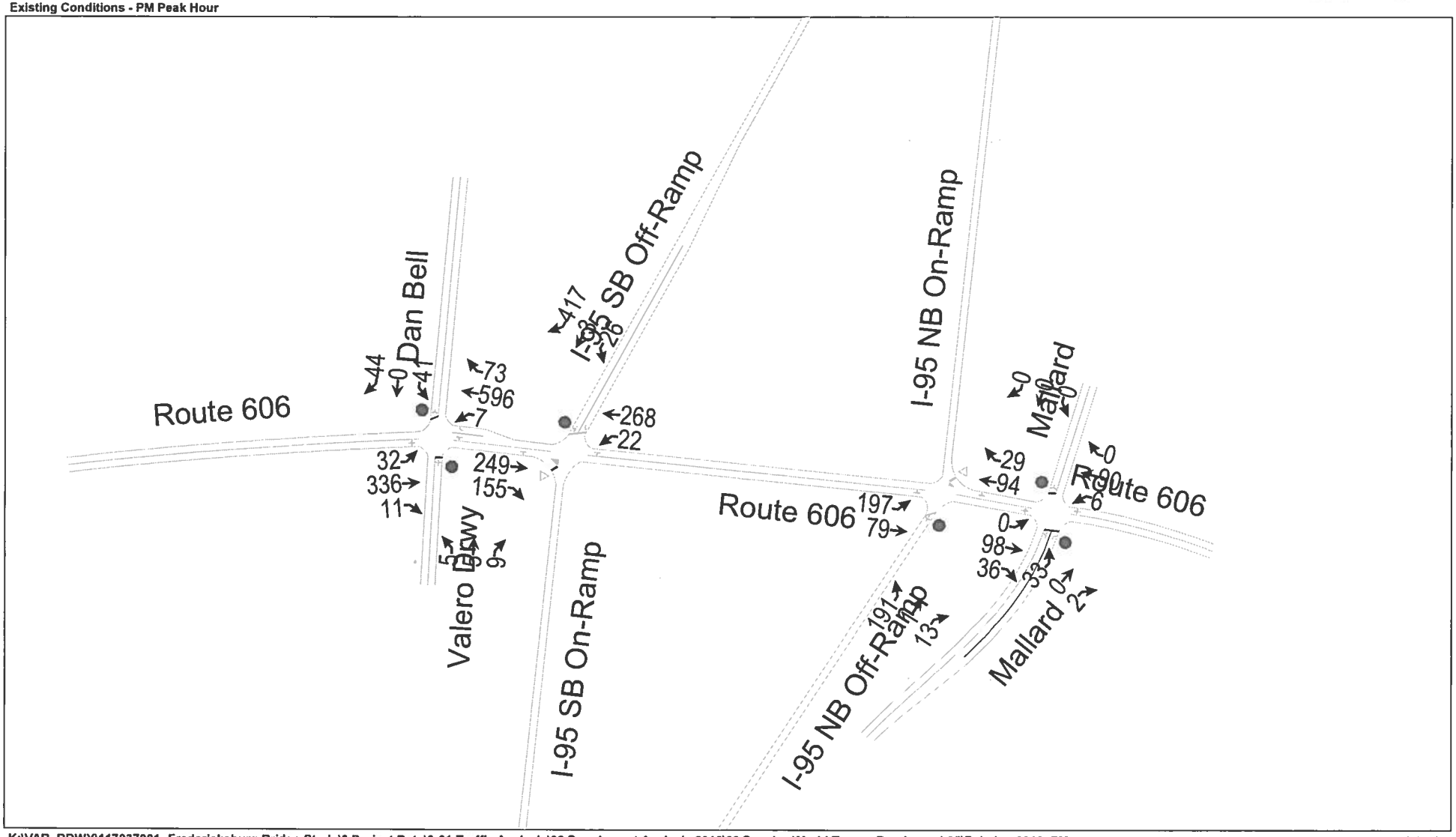
Additional Traffic Counts

(not included in original TIA Appendix)

Route 606
Dan Bell
Valero Pkwy
I-95 SB On-Ramp
I-95 SB Off-Ramp
I-95 NB On-Ramp
I-95 NB Off-Ramp
Route 606
Mallard
Mallard
Route 606
12
0
25
36
258
5
127
26
190
18
12
710
13
577
279
4
0
12
508
101
37
83
0
75
54
29
123
24
17
0
2
0
0
0
0
0
1

Map - Mudd Tavern Road over I-95
Existing Conditions - PM Peak Hour

Timing Plan: PM Peak Hour



K:\VAB_RDWY\117037001- Fredericksburg Bridge Study\3 Project Data\3-01 Traffic Analysis\02 Supplement Analysis 2012\03 Synchro\Mudd Tavern Road over I-95\Existing 2012_PM.syn
Kimley-Horn and Associates, Inc.

6/4/2012

Attachment N

Access Management Exception Request Documents

NOTES
1. EXISTING LANE WIDTHS ON RTE. 606 ARE 11.5'
2. ALL PROPOSED LANE WIDTHS SHOWN ARE TO BE DETERMINED.
3. MUDD TAVERN ROAD IMPROVEMENTS SHOWN ARE CONCEPTUAL ONLY.

Bowman CONSULTING

Bowman Consulting Group, Ltd.
3951 Westerra Parkway
Suite 150
Richmond, Virginia 23233
Phone: (804) 816-3240
Fax: (804) 270-2008
www.bowmanconsulting.com
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ACCESS MANAGEMENT EXHIBIT
DOMINION RACEWAY
SPOTSYLVANIA COUNTY, VIRGINIA

COUNTY PROJECT NUMBER

PLAN STATUS

DATE	DESCRIPTION	
KLL DESIGN	KLL DRAWN	JDR CHKD
SCALE	H: 1"=40' V:	
JOB No. 4950-01-001		
DATE : 04-03-2013		
FILE No.		

FIGURE 5

Path: P:\4950 - Dominion Raceway\4950-01-001 (ENG) - Traffic\Engineering\Engineering Plans\Mudd Tavern Rd Access Mnt 4-3-13 revision.dwg, Plot Created Apr 03, 2013 - 10:09am by sschmidt