

DEL MAR COLLEGE SOUTHSIDE CAMPUS CORPUS CHRISTI, TEXAS TRAFFIC IMPACT ANALYSIS (TIA)



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Executive Summary

A. Purpose

The purpose of this Traffic Impact Analysis (TIA) is to address the traffic and transportation impacts of the proposed **Del Mar College Southside Campus** on the adjacent street network and recommend any capacity related improvements. The site is located on Yorktown Boulevard with Rodd Field Road. One specific objective of this study is to determine **if Bronx Drive roadway extension from Master Channel 31 Ditch to Yorktown Boulevard can be eliminated from the City's Urban Transportation Plan (UTP) without having sufficient traffic impacts on adjacent streets and intersections with ultimate build-out of land use in the area. This study will also determine the existing and future Level of Service (LOS) associated with the new development** at selected study intersections of: (1.) Yorktown Boulevard @ Cimarron Boulevard, (2.) Yorktown Boulevard @ Rodd Field Road, (3.) Rodd Field Road @ Presidents Drive, (4.) Rodd Field Road @ Airline Road/Slough Road, (5) Airline Road @ Lipps Boulevard, (6.) **Bronx Drive @ Lipps Boulevard and (7.) Cimarron Boulevard @ Lipps Boulevard.** This study also includes the five (5) proposed driveways from the new development.

On March 27, 2017 Del Mar College officially requested the City Transportation Advisory Commission (CTAC) to consider the deletion of Bronx Drive between Master Channel 31 Ditch to Yorktown Boulevard from the UTP. The outcome was to expand this TIA to support Del Mar College's request.

B. Development

The planned development will include the following:

- Bronx Drive extension possible removal from UTP.
- Phase 1: 6,000 Students (Year 2020). **720 AM and 720 PM peak-hour trips generated.**
- Phase 2: **12,000 Total Students (Year 2025). 1440 AM and 1440 PM peak-hour trips generated.**
- Phase 3: **20,000 Total Students Year 2030). 2400 AM and 2400 PM peak-hour trips generated.**
- **The new development will generate 24,600 trips for a typical weekday.**

The **95.4 Acre Del Mar College Southside Campus** will have five (5) access points. Three (3) on Yorktown Boulevard and two (2) on Rodd Field Road.

C. Studies

Studies include gathering 24 HR traffic data, AM & PM peak hour turning movement counts, traffic signal warrants, queuing and intersection LOS for seven (7) intersections and five (5) new driveways.

D. Findings

Scenario 1: (without Bronx Drive Extension)

- Phase 1 (2020) – LOS C or better.
- Phase 2 (2025) – LOS C or better.
- Phase 3 (2030) – LOS D or better.

Scenario 2: (with Bronx Drive Open)

- Phase 1 (2020) – LOS B or better.
- Phase 2 (2025) – LOS C or better.
- Phase 3 (2030) – LOS D or better.

Scenario 3: (with LJA Rodd Field roadway design)

- Phase 1 (2020) – LOS C or better.



- Phase 2 (2025) – LOS C or better.
- Phase 3 (2030) – LOS D or better.

E. Conclusions

The City of Corpus Christi has Rodd Field Road scheduled for pavement rehabilitation construction for late 2017. The improvements will include a T-Intersection at Yorktown Boulevard, a new traffic signal and proposed improvements to intersection #2, #3, #4, #DW4 and #DW5.

The Del Mar Southside Campus will generate a significant number of trips for both the AM and PM peaks for all Phases of development. The LOS for the roadway transportation system remains at LOS D or better with recommended improvements for phases 1, 2 and 3.

Del Mar College has officially requested the City Transportation Advisory Commission (CTAC) to consider the deletion of Bronx Drive between Master Channel 31 Ditch to Yorktown Boulevard from the UTP. Bronx Drive removal from the UTP will have some traffic impact to the existing roadway network. Local traffic heading to Yorktown Boulevard will have to continue to use Cimarron Boulevard or Airline Road to get to Yorktown. Fire Station No.17 would have a longer response time for all emergency calls for the Bronx Drive neighborhood. The LOS for the roadway network will be the same with or without Bronx Drive extension.

Scenario 1 (without Bronx), Scenario 2 (with Bronx) and Scenario 3 (with LJA design) will operate at a LOS D or better, for all Phases of construction.

F. Recommendations

Proposed Site Plan

Recommend the Developer to consider providing circulation access within the proposed site plan for better internal traffic movements. Recommend that the Developer provide transit, Pedestrian and Bicyclist facilities. Recommend the developer prepare a letter of intent allowing for a multi-use path for bicycles and pedestrians along Bronx Drive/ DW1.

Street Improvements

For Intersection #DW5 (Rodd Field Road with DW5) an intersection design with a traffic signal will handle traffic better than a U-turn configuration on Rodd Field Road. A Synchro output comparison was conducted with the U-turn design versus the intersection at DW5. Synchro output showed the intersection design to be slightly better. See Appendix for comparison U-turn versus intersection design report.

Due to the analysis performed for the street network for all Scenarios and Phases of construction, we recommend Scenario 1: (without Bronx Drive Extension) be implemented. Recommend the City to consider the removal of Bronx Drive extension from Master Channel 31 Ditch to Yorktown Boulevard. The removal of Bronx Drive will have some; but not sufficient impact to the existing roadway network to warrant its continued inclusion in the UTP.

Recommend traffic signals be coordinated and maintained for signals along Yorktown Boulevard and Rodd Field Road.



I. Introduction

A. Purpose

Maldonado-Burkett Intelligent Transportation Systems, LLP (MBITS) has been retained by Urban Engineering to perform a Traffic Impact Analysis (TIA) for the new **Del Mar College Southside Campus**. The project site is located on Yorktown Boulevard with Rodd Field Road. The new development is bound by Yorktown Boulevard on the South, Airline Road on the North, Cimarron Boulevard on the West and Rodd Field Road on the East.

The purpose of this study is to address the traffic and transportation impacts of the proposed development on the adjacent street network and recommend any capacity related improvements. The specific objectives of this study is to determine **if Bronx Drive roadway extension from Master Channel 31 Ditch to Yorktown Boulevard can be eliminated from the City's Urban Transportation Plan (UTP) without having any traffic impacts on adjacent streets and intersections with ultimate build-out of land use in the area. This study will also determine the existing and future Level of Service (LOS) associated with the new development at selected study intersections of: (1.) Yorktown Boulevard @ Cimarron Boulevard, (2.) Yorktown Boulevard @ Rodd Field Road, (3.) Rodd Field Road @ Presidents Drive, (4.) Rodd Field Road @ Airline Road/Slough Road, (5) Airline Road @ Lipes Boulevard, (6.) Bronx Drive @ Lipes Boulevard and (7.) Cimarron Boulevard @ Lipes Boulevard.** This study also includes the five (5) proposed driveways from the new development.

On March 27, 2017 Urban Engineering, representing Del Mar College, officially requested the City Transportation Advisory Commission (CTAC) to consider the deletion of Bronx Drive between Master Channel 31 Ditch to Yorktown Boulevard from the UTP.

B. Studies

Studies include gathering 24 HR traffic data, AM & PM peak hour turning movement counts, traffic signal warrants, queuing and intersection LOS.

C. Methodology

The traffic evaluation was comprised of AM and PM peak hour Level of Service (LOS) analyses. This included the existing conditions, background (opening day) conditions for the three (3) phases of construction. Analysis was accomplished via Synchro 9 and OTISS software. All of the information was completed in accordance with Trip Generation, 9th Edition, Highway Capacity Manual 2010 designing to a LOS Standard – D or better.

OTISS is a cloud-based application for traffic and transportation engineers who need to perform traffic impact assessments. Featuring data from over 5,500 studies included in the *9th Edition Institute of Transportation Engineering (ITE) Trip Generation Manual*, OTISS is the most complete trip generation and analysis tool available today with 24-hour availability. OTISS software was used for the AM and PM peak period analysis reports.

Synchro Studio 9 provides the best in traffic analysis, optimization, and simulation applications. It combines the modeling capabilities of Synchro and the microsimulation and animation capabilities of SimTraffic to create the ultimate tool kit for viewing. Synchro 9 is a macroscopic analysis and optimization software application. Synchro supports the *Highway Capacity Manual's methodology (2000 & 2010 methods)* for signalized intersections and roundabouts. Synchro also implements the intersection Capacity Utilization method for determining intersection capacity. Synchro's signal optimization routine allows the user to weight specific phases, thus providing users more options when developing signal timing plans.



II. Proposed Development

A. Site Location/Study Area

This TIA studies the adverse traffic impacts of the new development. The project site is located on Yorktown Boulevard with Rodd Field Road. See **Exhibit 1** for a location map within the City of Corpus Christi. See **Exhibit 2** for the new Del Mar College **Southside Conceptual Campus** site plan as of February 23, 2017.

B. Proposed Zoning (**Del Mar College Southside Campus**) (**95.4 Acres**)

The planned development will include the following:

- Phase 1: 6,000 Students (Year 2020)
- Phase 2: 6,000 Additional Students (Year 2025)
- Phase 3: 8,000 Additional Students Year 2030)

The **95.4** Acre Del Mar College **Southside** Campus will have five (5) access points. Three (3) on Yorktown Boulevard and two (2) on Rodd Field Road. **Exhibit 3** illustrates existing AM and PM peak hour volumes, prior to opening day. The proposed development was analyzed using 3 Scenarios for this report; Scenario 1; (without Bronx Drive), Scenario 2: (with Bronx Drive) and Scenario 3: (with LJA Rodd Field Road design).

This area is currently zoned as **mixed use acreage**:

The proposed educational facility was studied using Code 540 – Junior/Community College land use.

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III. Existing Area Conditions

A. Existing Traffic Volumes

The following are documented traffic volumes gathered from the Corpus Christi Metropolitan Planning Organization (CCMO).

- Rodd Field Road – YR 2012 – 8,400 ADT
YR 2015 – 15,550 ADT
- Yorktown Boulevard – YR 2011 – 9,577 ADT
YR 2012 – 9,780 ADT
YR 2012 – 9,560 ADT
YR 2012 – 6,060 ADT
- Airline Road – YR 2013 – 3,301 ADT

B. Proposed Zoning Codes and Land Uses

The Del Mar Southside Campus is zoned as an educational facility, CODE 540, Junior/Community College land use.

C. Approved Developments in Area

Manhattan Apartments located on 7001 Lipes Boulevard is under construction and should be fully functional within mid-2017. The 300 dwelling units Apartment Complex is expected to generate **164 AM** trips and **195 PM** trips. These trips were incorporated within this study and distributed throughout the roadway network.

D. Existing Street System

The existing roadway network within the study area includes the following un-signalized & signalized intersections:

- Intersection 1: Yorktown Boulevard @ Cimarron Boulevard (Existing Signal)
- Intersection 2: Yorktown Boulevard @ Rodd Field Road (City Programmed Signal)
- Intersection 3: Rodd Field Road @ President Drive (Stop Control)
- Intersection 4: Rodd Field Road @ Airline Road/Slough Road (Existing Signal)
- Intersection 5: Airline Road @ Lipes Boulevard (Stop Control)
- **Intersection 6: Lipes Boulevard @ Bronx Drive (Stop Control)**
- **Intersection 7: Cimarron Boulevard @ Lipes Boulevard (Existing Signal)**

There are several major roadways within the study area. The following is a description of the existing conditions as of January 2017.

Yorktown Boulevard (A3 Primary Arterial) is a four-lane divided arterial, with raised median containing left turn lanes, curb and gutter, bike lanes and sidewalks. The street runs in an east-west direction on the south side of development. The posted speed limit is 45 mph.

Rodd Field Road (A3 Primary Arterial) is a two-lane undivided arterial; that runs generally in a north-south direction and is located to the east of the project area and intersects Yorktown Boulevard. The posted speed limit is 50 mph.

Cimarron Boulevard (A1 Undivided Minor Arterial) is a five-lane un-divided arterial, with left turn lanes, curb and gutter, and sidewalks. The street runs in a north-south direction on the west side of the development. The posted speed limit is 35 mph.



Airline Road (A1 Undivided Minor Arterial) is a five-lane un-divided arterial, with left turn lanes, curb and gutter, bike lanes and sidewalks. The street runs generally in a north-south direction on the north side of development. The posted speed limit is 40 mph.

Lipes Boulevard (C3 Primary Collector) is a two-lane un-divided collector, with curb and gutter and sidewalks on the north side. The street runs generally in an east-west direction on the north side of development. The posted speed limit is 30 mph.

Bronx Drive (C1 Minor Residential Collector) is a two-lane un-divided collector with curb and gutter and sidewalks. The street runs generally in a north-south direction on the north side of development. The posted speed limit is 30 mph.

E. Scheduled Projects in the Area

CCMPO's Strategic Plan for Active Mobility – Bicycle Mobility Plan, adopted by City Council, includes various bicycle infrastructures in the area:

- One-way cycle tracks on Rodd Field Road.
- One-way cycle tracks on Yorktown Boulevard.
- One-way cycle tracks on Bronx Drive.
- Off-road multi-use trail on Master Channel 31.

Projects planned in “Mobility CC” are:

- ADA Master Plan Pedestrian Infrastructure Improvements Phase 3 ADA Accessible Routes interconnecting places of Public Accommodation: Yorktown Road from Staples Street to Rodd Field Road.
- Hike Bike CC – Bill Witt Trail. See **Appendix** for Proposed Bill Witt Trail Priority Network recommendations and Plan Layout.

Projects planned in the “Bond” street are:

- Bond 2012 – E10100 – Yorktown Blvd (Rodd Field to Cimarron) (Landscape) -Complete.
- Bond 2014 – E15112 – Rodd Field Road Expansion – Scheduled late 2017.

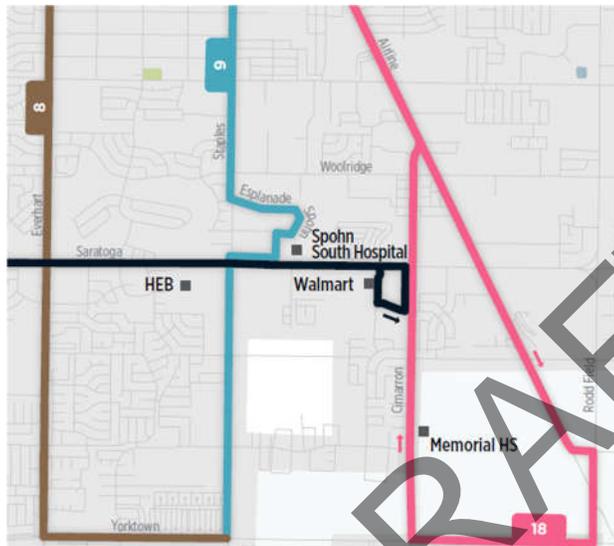
Projects planned in the “FY 2017-2020 Transportation Improvement Plan (TIP)/2015-2040 Metropolitan Transportation Plan (MTP) Amendment 1”:

- Rodd Field Road Extension from Yorktown Boulevard to South of Oso Creek.



CCRTA current transit services is Route 26 from Airline Road to Cimarron Boulevard to Lipes Boulevard to Staples Street.

CCRTA transit plan for YR 2020 is shown below:



Emergency routes for CCFD and CCPD to respond to a 911-emergency call within the Bronx Drive/Lipes Boulevard intersection are Yorktown Boulevard, Cimarron Boulevard, Rodd Field Road and Airline Road. Fire Station No. 17 is located on 6869 Yorktown Boulevard.

For demonstration purposes only, responding to a 911-emergency call to the focus point of Lipes Boulevard @ Bronx Drive using Bronx Drive would take 1 minute 22 seconds at an average speed of 30 mph (44"/Second). See table below for several routes arrival times.

Start	Route	FT	Avg Speed	Arrival time
Fire Station 17	(1) New Bronx Drive (UTP) to Lipes @ Bronx	3,612	30 MPH	1 min 22 sec
Fire Station 17	(2) Yorktown West to Cimarron North to Lipes @ Bronx	7,688	30 MPH	2 min 55 sec
Fire Station 17	(3) Yorktown East to Rodd Field North to Airline Northwest to Lipes @ Bronx	8,518	30 MPH	3 min 14 sec



IV. Projected Traffic

A. Proposed Street Improvements

The following are new proposed driveways within the study area:

- **Driveway DW1:** Yorktown Boulevard @ Bill Witt Entrance/ Bronx Drive/DW1
- **Driveway DW2:** Yorktown Boulevard @ Bichon Drive/ DW2
- **Driveway DW3:** Yorktown Boulevard @ Bay Drive/DW3
- **Driveway DW4:** Rodd Field Road @ DW4
- **Driveway DW5:** Rodd Field Road @ DW5

The Proposed driveways are critical to maintain a decent traffic pattern flow coming in and out of the Campus. See **Table 1, 2 and 3** for driveway distribution.

B. Data Used for Intersection Analysis

MBITS and the City of Corpus Christi collected data for this study.

Collected 24-hour radar volume traffic counts:

- Yorktown Boulevard (2 locations), Rodd Field Road, Airline Road (Short Section), Bill Witt Park Entrance, Bichon Drive, Bay Drive, Lipes Boulevard and Bronx Drive.

Collected AM & PM turning movement traffic counts:

- Yorktown Boulevard @ Cimarron Boulevard, Yorktown Boulevard @ Rodd Field Road, Rodd Field Road @ Presidents Drive, Rodd Field Road @ Airline Road/ Slough Road, Airline Road @ Lipes Boulevard and Cimarron Boulevard @ Lipes Boulevard.

C. Existing Traffic Data

Proposed Regional Parkway Study identifies traffic volumes of:

- 2035 Future No Build – Yorktown Boulevard 16,150 and 18,374 ADT. Rodd Field Road 22,396 ADT.
- 2035 Future Build – Yorktown Boulevard 11,915 and 12,616 ADT. Rodd Field Road 28,306 ADT. Rodd Field Road Extension 17,674 ADT.

The following are 2040 projected traffic volumes from the regional demand model by CCMPO:

- Rodd Field Road – 23,775 and 13,227 ADT.
- Yorktown Boulevard – 22,154, 19,912 and 17,771 ADT.
- Airline Road – 11,547 and 22,062 ADT.

D. Proposed Trip Generation

The Del Mar College **Southside Campus** development includes the following facilities: Phase 1: 6,000 Students, Phase 2: 6,000 Students and Phase 3: 8,000 Students. Trips were generated by applying the appropriate land use codes found in the *Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition*.

The Del Mar College **Southside Campus** development is expected to generate **720** AM peak-hour trips and **720** PM peak-hour trips for Phase 1 development.

For the completion of Phase 2 development the trip generation shall increase to **1440** AM peak-hour trips and **1440** PM peak-hour trips.

For the completion of Phase 3 development the trip generation shall increase to **2400** AM peak-hour trips and **2400** PM peak-hour trips. Trip Generation for a typical weekday is **24,600** trips per day.



The 300 dwelling units Manhattan Apartments Construction is expected to generate **164 AM trips and 195 PM trips**. These trips were incorporated within this study and distributed throughout the roadway network.

See **Appendix** for the trip generation rates for **all 3 Scenarios** for Phase 1, Phase 2 and total trips generated by land use assuming full development and occupancy for Phase 3. Trip reductions were not used for this study per recommendations of the Institute of Transportation Engineers OTISS software and *Institute of Transportation Engineers Trip Generation Manual, 9th Edition*.

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V. Transportation Analysis

A. Amendment to Urban Transportation Plan (UTP)

Del Mar College has officially requested the City of Corpus Christi for the removal of Bronx Drive extension from Master Channel 31 Ditch to Yorktown Boulevard.

As proposed in the UTP it would serve as a minor residential collector for the area south of Lipes Boulevard and would provide access to Yorktown Boulevard just across Bill Witt Park.

Without Bronx Drive the network connectivity for residents north of Yorktown Boulevard will have to use Cimarron Boulevard or Airline Road to get to Yorktown Boulevard. Bronx Drive extension is currently planned for a one-way cycle track tying in to Master Channel 31 Ditch and South to Yorktown Boulevard. The Build-out of neighborhood was included in this report by using the growth rate factor. Bronx Drive extension would also be utilized by the CCFD as an emergency route to the neighborhood.

Existing trails were identified along Master Channel 31 Ditch and along Bill Witt Park south to south of LaSalle Drive. Currently, there are sidewalks that run east and west on Yorktown Boulevard. These facilities should not be affected much by the proposed development. All facilities affected during construction should be adjusted accordingly to city specifications and requirements.

Sidewalks are proposed on Rodd Field Road under the programmed street improvements. The MPO's Bicycle Mobility Plan has programmed a one-way cycle tracks on both sides of Bronx Drive from Yorktown Boulevard to Brockhampton Street. The Transportation Planning Director will consider an alternative off-road multi-use path infrastructure independent of the proposed roadway for the section of proposed UTP amendment. Del Mar Collage has expressed consent to accommodating a multi-use path within Del Mar property and will prepare a letter of intent.

B. Background (Opening Day) Trip Generation

Based on the City of Corpus Christi Travel Demand Model, a 1.3% for Airline Road, 2.3% for Rodd Field Road and a 2.6% for Yorktown Boulevard annually compounded growth rates were used to reflect the growth of the background traffic. These rates were applied to the background traffic volumes for each year to determine the traffic volume growth that can be expected throughout all 3 phases of development within the study area.

Scenario 1: Development Phase 1, 2 and 3 were analyzed without Bronx Drive extension build-out. Lipes Boulevard extension to Bronx Drive was analyzed as open for this Scenario.

See Exhibit 4 for generated traffic data Scenario 1 without Bronx Drive for Phase 1 (2020) peak hour volumes. See Exhibit 5 for generated traffic data Scenario 1 without Bronx Drive for Phase 2 (2025) peak hour volumes. See Exhibit 6 for generated traffic data Scenario 1 without Bronx Drive for Phase 3 (2030) peak hour volumes.

Scenario 2: Development Phase 1, 2 and 3 were analyzed with Bronx Drive and Lipes Boulevard extended as proposed in the Urban Transportation Plan (UTP).

See Exhibit 7 for generated traffic data Scenario 2 with Bronx Drive for Phase 1 (2020) peak hour volumes. See Exhibit 8 for generated traffic data Scenario 2 with Bronx Drive for Phase 2 (2025) peak hour volumes. See Exhibit 9 for generated traffic data Scenario 2 with Bronx Drive for Phase 3 (2030) peak hour volumes.

Scenario 3: Development Phase 1, 2 and 3 were analyzed with LJA's Rodd Field Road design utilizing a U-turn lane near Yorktown Boulevard. See Exhibit 16 for LJA's roadway design.



See **Exhibit 10** for generated traffic data Scenario 3 with LJA's Design on Rodd Field Road for Phase 1 (2020) peak hour volumes. See **Exhibit 11** for generated traffic data Scenario 3 with LJA's Design on Rodd Field Road for Phase 2 (2025) peak hour volumes. See **Exhibit 12** for generated traffic data Scenario 3 with LJA's Design on Rodd Field Road for Phase 3 (2030) peak hour volumes.

All projected traffic does not include the Rodd Field Road Extension from Yorktown Boulevard to future Regional Parkway. See **Exhibit 14** for the vicinity LAND USE within the proposed development. The surrounding area has approximately 103 acres of undeveloped residential and approximately 10 acres of undeveloped commercial. The growth rates used for this study should encumber the final buildout of all undeveloped LAND USE.

C. Queuing

Queuing analysis was performed for the intersection of Rodd Field Road with Yorktown Boulevard, Rodd Field Road with Driveway DW4, Rodd Field Road with Airline Road, Yorktown Boulevard with Bronx Drive / DW1 and Yorktown Boulevard with Cimarron Boulevard. See **Appendix** for each intersection describing the Queue length 50th (ft) and 95th (ft) stacking for each approach.

D. Net Increased Trip Generation, Distribution and Assignment

The additional site-generated traffic associated with the development was assigned to the study area roadway network. See **Exhibit 13** for Existing Transportation System. The distribution and assignment were determined based on engineering judgment through generated traffic counts, knowledge of the study area network, and the proposed access locations to and from the development. See **Table 1** for distribution percentage (%) **Scenario 1** for the new driveways. See **Table 2** for distribution percentage (%) **Scenario 2** for the new driveways. See **Table 3** for distribution percentage (%) **Scenario 3** for the new driveways. See **Appendix** for Trip Generation, Distribution and Assignments for all Scenarios.

E. Level of Service (LOS) Evaluations

The analysis consists of both AM and PM intersection LOS analyses for all 3 Scenarios. The purpose of this analysis was to determine if any deficiencies within the network exist and to establish a standard condition.

“Level-of-Service (LOS)” represents the capacity or volume of traffic that a roadway can accommodate. LOS is a qualitative measure used to relate to the quality of traffic service. LOS is used to analyze highways by categorizing traffic flow and assigning quality levels of traffic based on performance measure such as speed, density, etc. These levels range from LOS A (free flowing) to LOS F (a congested, forced flow condition). The target LOS for this study area is a LOS D or better with all improvements and development resulting from the Del Mar College **Southside Campus** development. A description of each operational state for signalized intersections, as defined by *2010 Highway Capacity Manual*, is presented in **Table 4**.

Table 5 summarizes the LOS results of the existing signalized intersections, **Table 6** summarizes the LOS results of Phase 1 (2020) background signalized intersections for Scenarios 1, 2 and 3, **Table 7** summarizes the LOS results of Phase 2 (2025) background signalized intersections for Scenarios 1, 2 and 3 and **Table 8** summarizes the LOS results of Phase 3 (2030) background signalized intersections for Scenarios 1, 2 and 3. Signal timings were assumed optimized and actuated. Synchro output reports are provided in the **Appendix**.

For Two-Way Stop Control, LOS for non-signalized two-way intersections is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue position to first-in-queue position.



The levels of service criteria are given in **Table 9**.

Table 10 summarizes the LOS results of the existing un-signalized intersections. **Table 11** summarizes the LOS results of the Phase 1 (2020) background un-signalized intersections for Scenarios 1, 2 and 3, **Table 12** summarizes the LOS results of the Phase 2 (2025) background un-signalized intersections for Scenarios 1, 2 and 3. **Table 13** summarizes the LOS results of the Phase 3 (2030) background un-signalized intersections for Scenarios 1, 2 and 3.

Synchro output sheets are provided in the **Appendix for all Scenarios**.

Based on the analysis of the new development and Bronx Drive amendment from the UTP, the LOS outcome for each Scenario are as follows:

- Existing conditions for signalized intersections – LOS C or better.
- Existing conditions for un-signalized intersections – LOS C or better.

Scenario 1: (without Bronx Drive Extension)

- Phase 1 (2020) – LOS C or better.
- Phase 2 (2025) – LOS C or better.
- Phase 3 (2030) – LOS D or better.

Scenario 2: (with Bronx Drive Open)

- Phase 1 (2020) – LOS B or better.
- Phase 2 (2025) – LOS C or better.
- Phase 3 (2030) – LOS D or better.

Scenario 3: (with LJA Rodd Field roadway design)

- Phase 1 (2020) – LOS C or better.
- Phase 2 (2025) – LOS C or better.
- Phase 3 (2030) – LOS D or better.

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VI.Improvement Analysis

A. Transportation Improvements

Traffic impacts for all Phases of the Del Mar Southside Campus development will have an impact to the existing roadway network. The existing roadway network, with the proposed Rodd Field Road improvements were analyzed with additional improvements to improve the LOS throughout the study area.

For each Phase of Construction and for three different Scenarios, the LOS was analyzed with network improvements consisting of left-turn lanes, right-turn lanes, right-in right-outs, right out only, stop control and signalization control to accomplish the Cities requirements of LOS as stated in the Unified Development Code (UDC).

For Scenario 1: (without Bronx Drive Extension), See **Exhibit 17a, Exhibit 17b** and **Exhibit 17c** for recommended transportation improvements for Phase 1, Phase 2 and Phase 3 of Development.

For Scenario 2 (with Bronx Drive), See **Exhibit 18a, Exhibit 18b** and **Exhibit 18c** for recommended transportation improvements for Phase 1, Phase 2 and Phase 3 of development.

For Scenario 3 (with LJA Rodd Field Road Design), See **Exhibit 19** for recommended transportation improvements for Phase 1 of development. No improvements required for Phase 2 and Phase 3 on Rodd Field Road.

Query spill backs will occur for Year 2035 as defined in the Synchro Output reports in the **Appendix**. Proposed driveways for the Del Mar Southside Campus are located within the recommended spacing as per the UDC and TxDOT Access Management Manual.

The proposed driveways within the site circulate around the student parking only and share only one connection from the east parking to the west parking.

The City's policy for funding proposed improvements normally falls on the Developer.

B. Signal Warrant Studies and Applications:

The *Texas Manual on Uniform Traffic Control Devices (TMUTCD)* defines nine warrants, or justifying sets of conditions, which at least one should be fully satisfied before signalization is considered as an option for traffic control. Traffic volumes, the number of traffic lanes, the prevailing traffic speeds, traffic accident experience, and measure delay for minor street traffic are the factors included in the evaluation of these warrants. The traffic volumes used for the analysis will be the existing traffic plus a projection of traffic exiting and entering the opening day occupied by the Del Mar College **Southside Campus** development. Traffic was projected using standard trip generation and traffic assignment procedures.

Signal Warrant Analysis that **DID MEET** Signal Warrants:

- **Yorktown Boulevard with Bill Witt Entrance/Bronx Drive/DW1 for Phase 1 development, Scenario 1, 2 and 3.**
- **Rodd Field Road with DW5 for Phase 2 development, Scenario 1 and 2.**
- **Airline Road with Lipes Boulevard for Phase 3 development, Scenario 1 and 2.**

Signal Warrant Analysis that **DID NOT MEET** Signal Warrants:

- **Rodd Field Road with Presidents Drive.**



The detailed warrant analysis worksheets, including the warrant curves are included in the **Appendix**.

Spacing Between proposed traffic signals

- On **Yorktown Boulevard** traffic signal spacing's are as follows:

Rodd Field Road to Bill Witt Entrance/Bronx Dr/DW1 is approximately 2,958 feet.

Bill Witt Entrance/Bronx Dr/DW1 to Cimarron Boulevard is approximately 2,270 feet.

- On **Rodd Field Road** traffic signal spacing's are as follows:

Yorktown Boulevard to DW5 is approximately 1,080 feet.

DW5 to Airline Road/Slough Road is approximately 1,578 feet.

The posted speed limit on Yorktown Boulevard is 45 MPH. Rodd Field Road has a posted speed limit of 50 MPH and proposed speed zone of 40 MPH after construction.

C. Driveway Design Guidelines

The proposed driveway locations balances spacing with the other adjacent driveway within the project site. The proposed driveways are essential to handle the projected traffic volumes for full occupancy. Examples of practical driveway designs to accommodate the type of vehicles expected is shown on **Exhibit 15**. Recommend a minimum Type 2 design for all proposed driveways.

FINAL DRAFT



VII. Conclusions

A. Site Accessibility

The Del Mar Southside Campus will have 3 access driveways on Yorktown Boulevard and 2 access Driveways on Rodd Field Road.

B. Transportation Impacts

The City of Corpus Christi has Rodd Field Road scheduled for pavement rehabilitation construction for late 2017. The improvements will include a T-Intersection at Yorktown Boulevard, a new traffic signal and proposed improvements to intersection #2, #3, #4, #DW4 and #DW5.

The Del Mar Southside Campus will generate a significant number of trips for both the AM and PM peaks for all Phases of development. The LOS for the roadway transportations system remains at LOS D or better with recommended improvements for phases 1, 2 and 3.

Del Mar College has officially requested the City Transportation Advisory Commission (CTAC) to consider the deletion of Bronx Drive between Master Channel 31 Ditch to Yorktown Boulevard from the UTP. Bronx Drive removal from the UTP will have some traffic impact to the existing roadway network. Local traffic heading to Yorktown Boulevard will have to continue to use Cimarron Boulevard or Airline Road to get to Yorktown. Fire Station No.17 would have a longer response time for all emergency calls for the Bronx Drive neighborhood. The LOS for the roadway network will be the same with or without Bronx Drive extension.

Scenario 1 (without Bronx), Scenario 2 (with Bronx) and Scenario 3 (with LJA design) will operate at a LOS D or better, for all Phases of construction.

C. Need for Improvements

Depending on which Scenario for all 3 phases of constructions, recommended roadway improvements, signalization, right-in right-out designs are recommended as detailed in Exhibits 17a, 17b, 17c, 18a, 18b, 18c and 19.

This study was prepared in compliance with applicable local codes and plans, Unified Development Code and Urban Transportation Plan (UTP).



VIII. Recommendations:

A. Proposed Site Plan

Recommend the Developer to consider providing circulation access within the proposed site plan for better internal traffic movements. Recommend that the Developer provide transit, Pedestrian and Bicyclist facilities. Recommend the developer prepare a letter of intent allowing for a multi-use path for bicycles and pedestrians along Bronx Drive/ DW1.

B. Street Improvements

For Intersection #DW5 (Rodd Field Road with DW5) an intersection design with a traffic signal will handle traffic better than a U-turn configuration on Rodd Field Road. A Synchro output comparison was conducted with the U-turn design versus the intersection at DW5. Synchro output showed the intersection design to be slightly better. See **Appendix** for comparison U-turn versus intersection design report.

Due to the analysis performed for the street network for all Scenarios and Phases of construction, we recommend **Scenario 1: (without Bronx Drive Extension)** be implemented. Recommend the City to consider the removal of Bronx Drive extension from Master Channel 31 Ditch to Yorktown Boulevard. The removal of Bronx Drive will have some; but not sufficient impact to the existing roadway network to warrant its continued inclusion in the UTP.

Recommend traffic signals be coordinated and maintained for signals along Yorktown Boulevard and Rodd Field Road.

Below is a breakdown of proposed improvements for Scenario 1.

Phase 1: Improvements

Intersection #DW1 (Yorktown Boulevard @ Bill Witt Ent/Bronx Drive/DW1)

Recommend a 300' storage left turn lane on Yorktown Boulevard EB, a 150' storage right-turn lane on Yorktown Boulevard WB, 2 out-bound lanes, a left-turn lane and a shared straight-right lane on Bronx Drive/DW1 and traffic signal control.

Intersection #DW2 (Yorktown Boulevard with Bichon Drive/DW2)

Recommend a 150' storage right-turn lane on Yorktown WB, 2 out-bound lanes, a left-turn lane and a shared straight-right lane on DW2, at least 1 in bound lane and stop sign control.

Intersection #DW3 (Yorktown Boulevard with Bay/DW3)

Recommend a 150' storage left turn lane on Yorktown Boulevard EB, a 150' storage right-turn lane on Yorktown Boulevard WB, 2 out-bound lanes, a left-turn lane and a shared straight-right lane on DW3, at least 1 in-bound lane and stop sign control.

Intersection #DW4 (Rodd Field Road with DW4)

Recommend a 150' storage right-turn lane on Rodd Field Road SB, a right in right out on DW4, 1 in-bound lane and stop sign control.

Intersection #DW5 (Rodd Field Road with DW5)

Recommend a 150' storage left turn lane on Rodd Field Road NB, a 150' right-turn lane on Rodd Field Road SB, 2 out-bound lanes, a left-turn lane and a right-turn lane on DW5, 2 in-bound lanes and stop sign control.



Intersection #3 (Rodd Field Road with Presidents Drive)

Recommend a right-in right-out on Presidents Drive and stop sign control.

Phase 2: Improvements

Intersection #DW2 (Yorktown Boulevard with Bichon Drive/DW2)

Recommend a right-out only on Bichon Drive and DW2 and stop sign control.

Intersection #DW3 (Yorktown Boulevard with Bay/DW3)

Recommend a right-out only on Bay Drive and DW3 and stop sign control.

Intersection #DW5 (Rodd Field Road with DW5)

Recommend a traffic signal control.

Phase 3: Improvements

Intersection #DW1 (Yorktown Boulevard @ Bill Witt Ent/Bronx Drive/ DW1)

Recommend 300' storage dual left-turn lanes on Yorktown Boulevard EB.

Modify traffic signal to accommodate dual left turns.

Intersection #5 (Airline Road with Lipes Boulevard)

Recommend a traffic signal control. Installation and maintenance shall be the responsibility of the City of Corpus Christi.

C. Funding

Based on prior projects the Cities funding practices required Developer participation to fund improvements necessary to the on-site and off-site street network. Recommended improvements are necessary in order to provide a functioning street network for the City to maintain. Discussions between Del Mar College and City of Corpus Christi concerning funding are necessary and encouraged.

FINAL DRAFT



References:

1. *Trip Generations, 9th Edition, by the Institute of Transportation Engineers (ITE) and the Highway Capacity Manual 2010.*
2. *American Association of State Highway and Transportation Officials (AASHTO) and published in the 2004 edition of A Policy on Geometric Design of Highways and Streets (Green Book).*
3. *Highway Capacity Manual, (SR 209), Transportation Research Board, Washington, DC, 2010.*
4. *Texas Department of Transportation's, Transportation Divisions Statewide Planning Map, 2013.*
5. *Texas Department of Transportation's Guidelines for Conducting a Traffic Signal Warrant Analysis, 2nd Edition.*
6. *Texas Manual on Uniform Traffic Control Device (TMUTCD).*
7. *Texas Department of Transportation's Access Management Manual.*
8. *Regional Parkway – Planning and Environmental Linkages (PEL) Study Traffic Analysis Technical Memorandum*

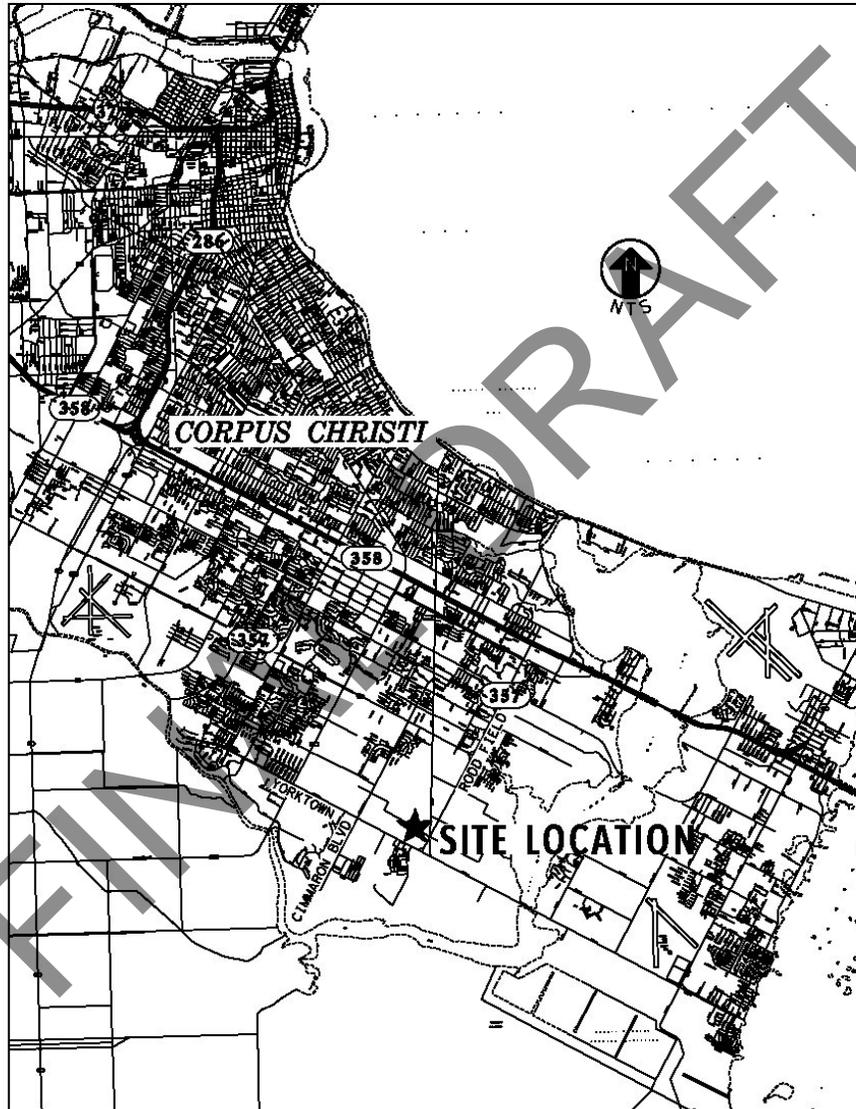
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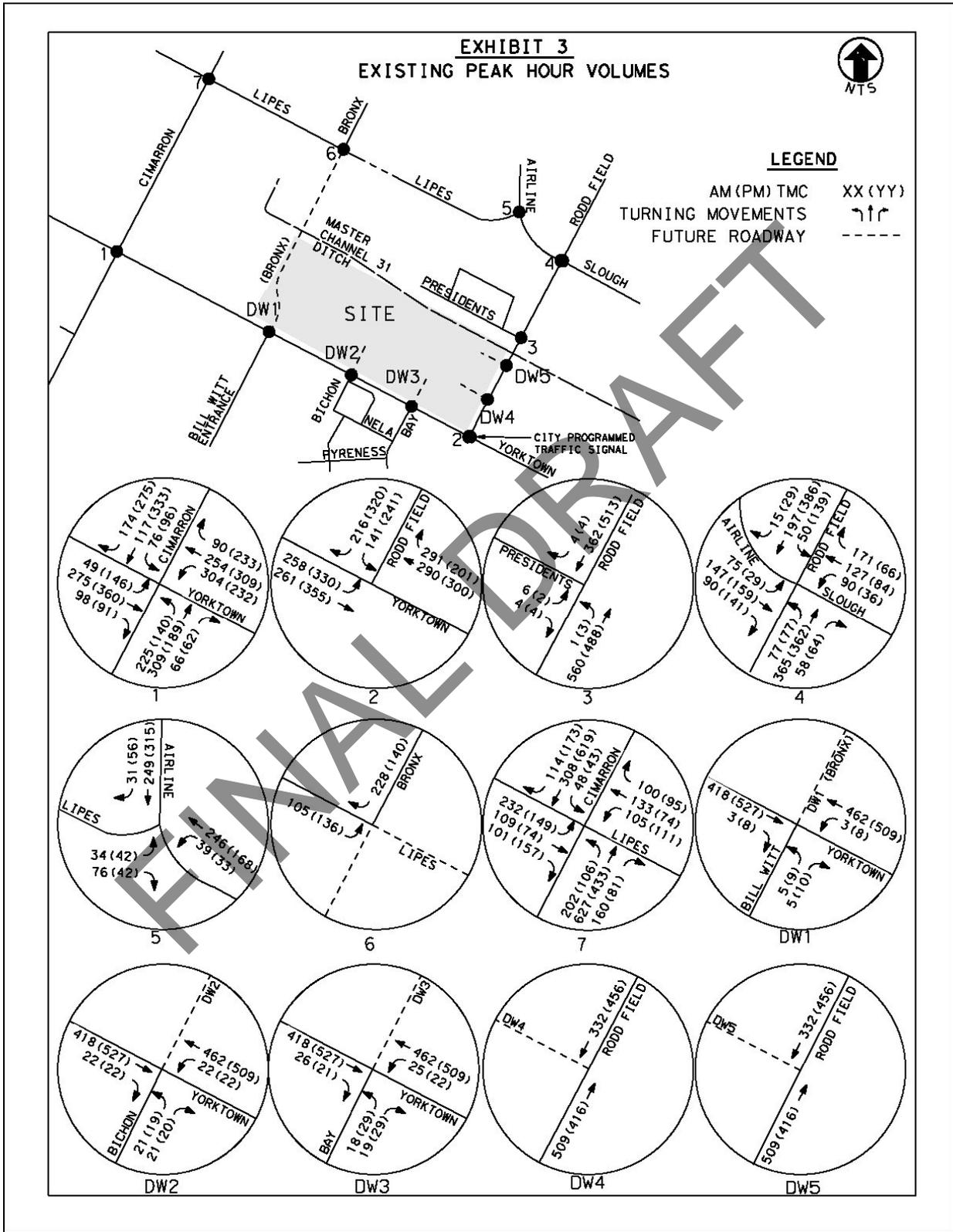
Exhibits

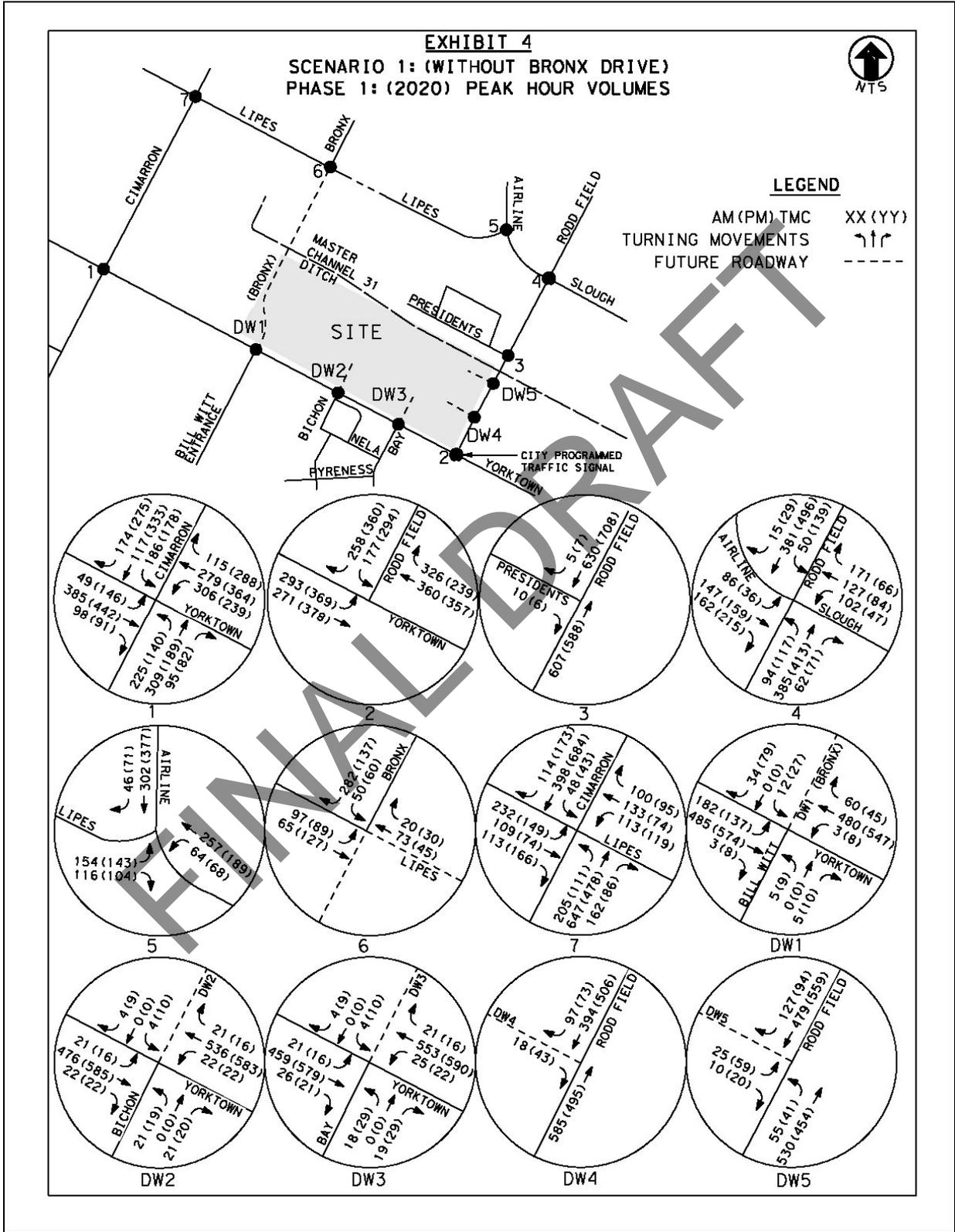
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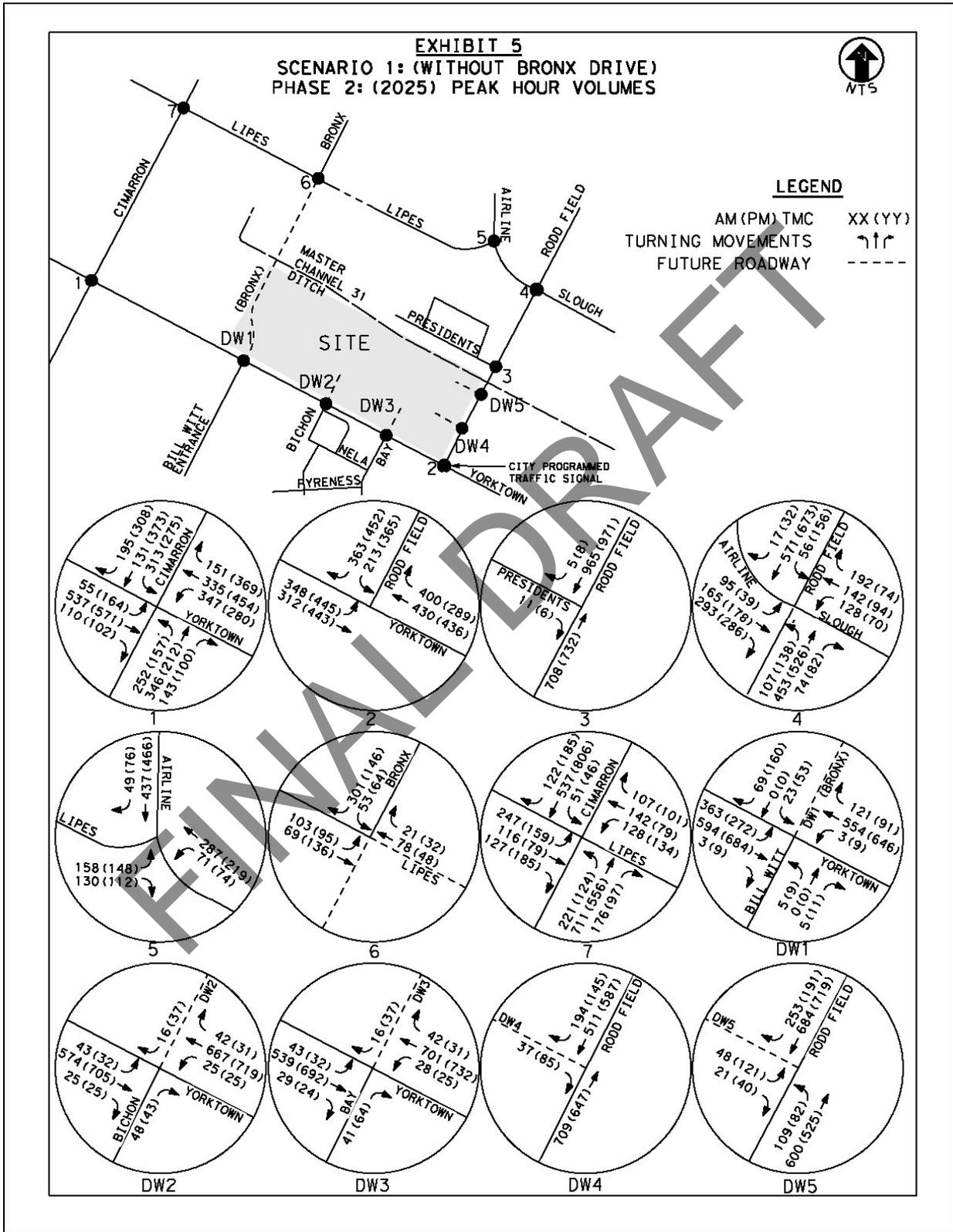
EXHIBIT 1
LOCATION MAP

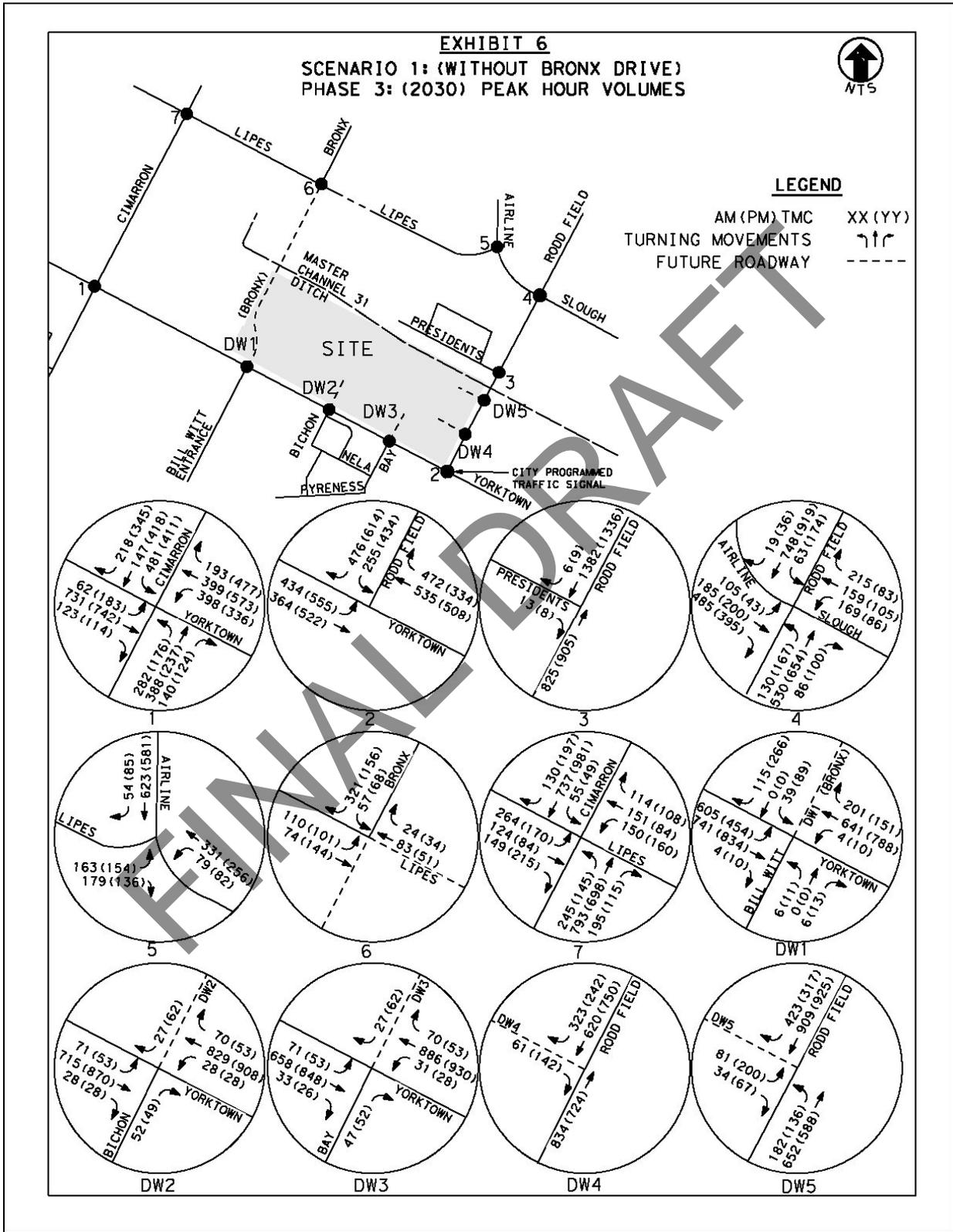


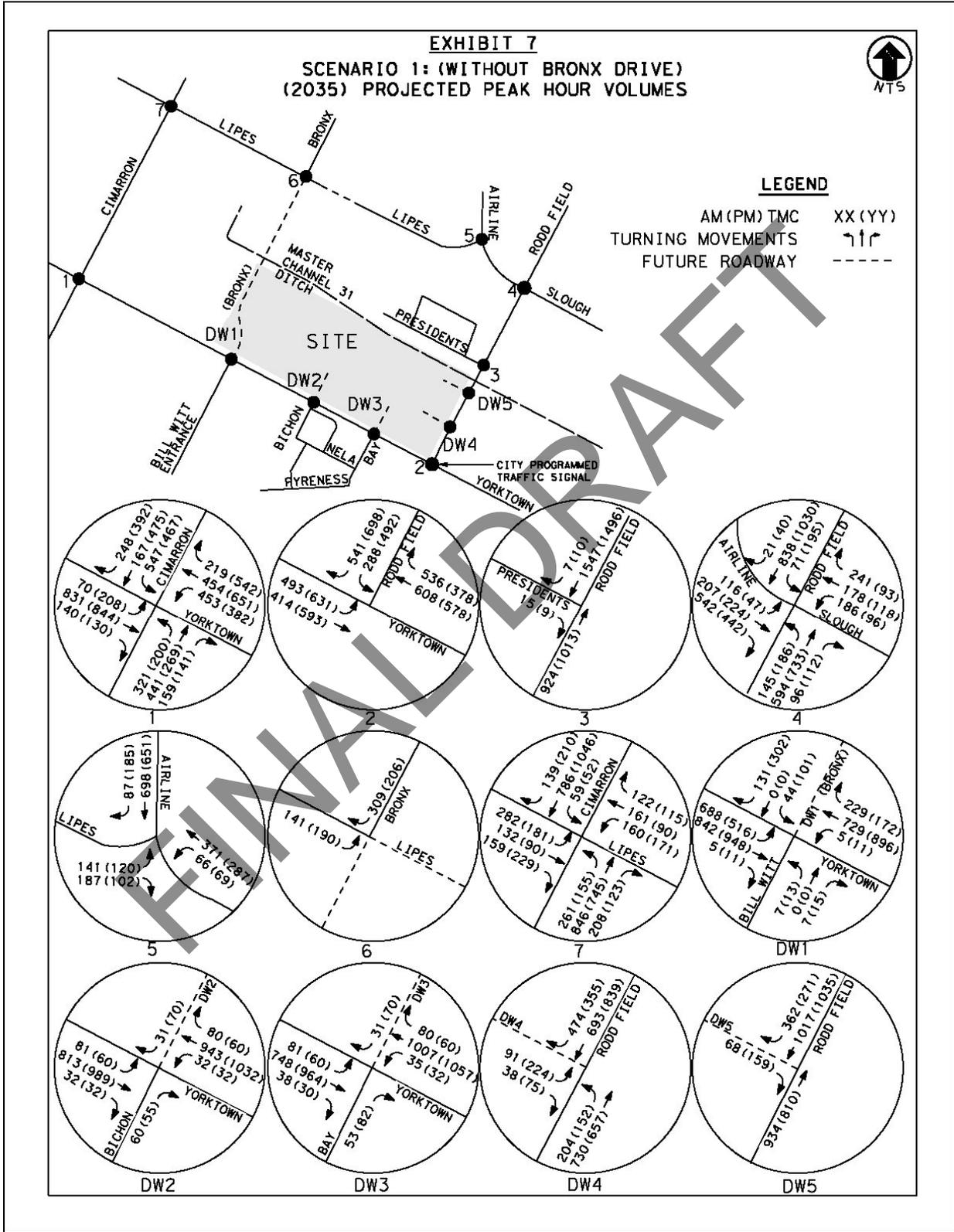


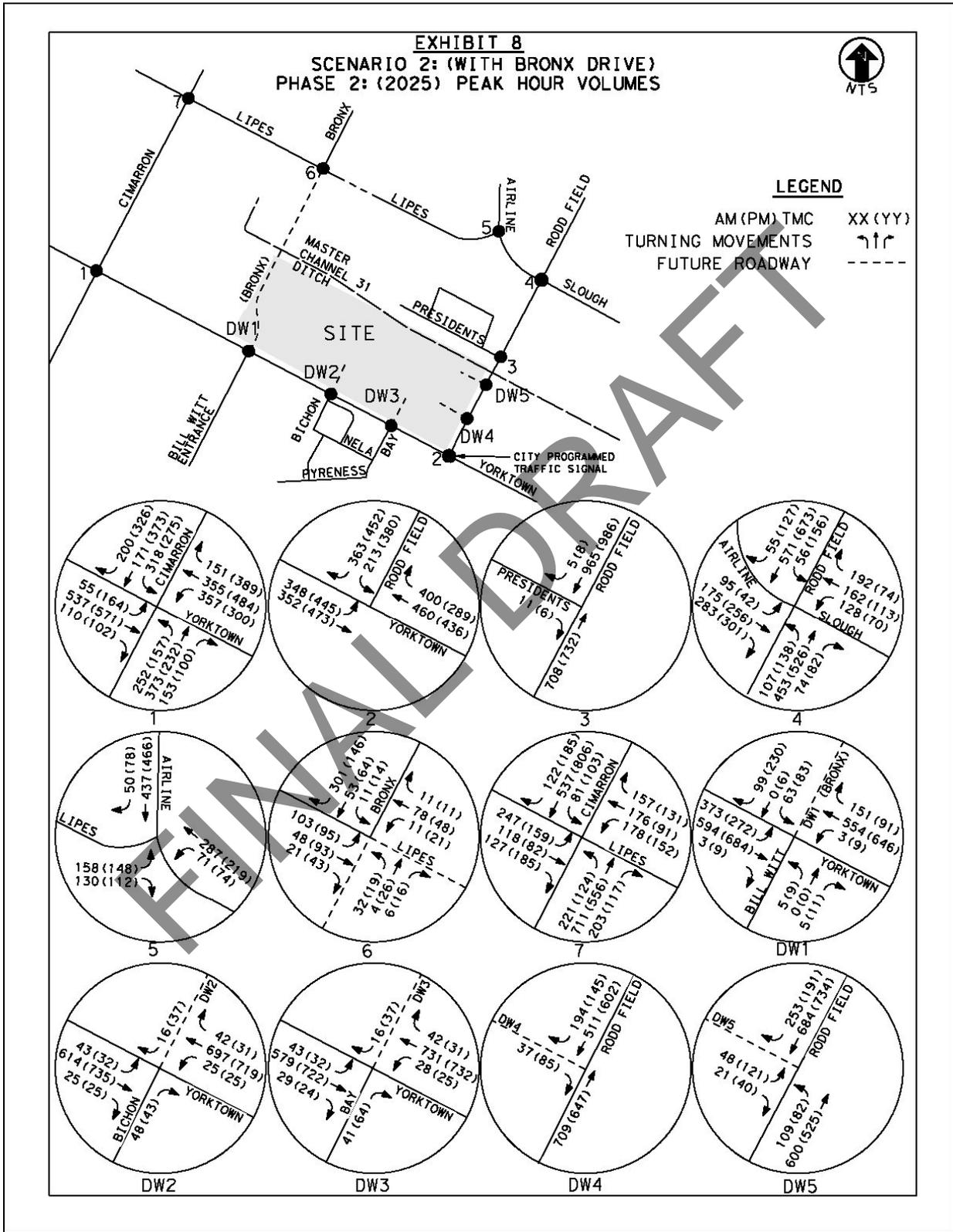












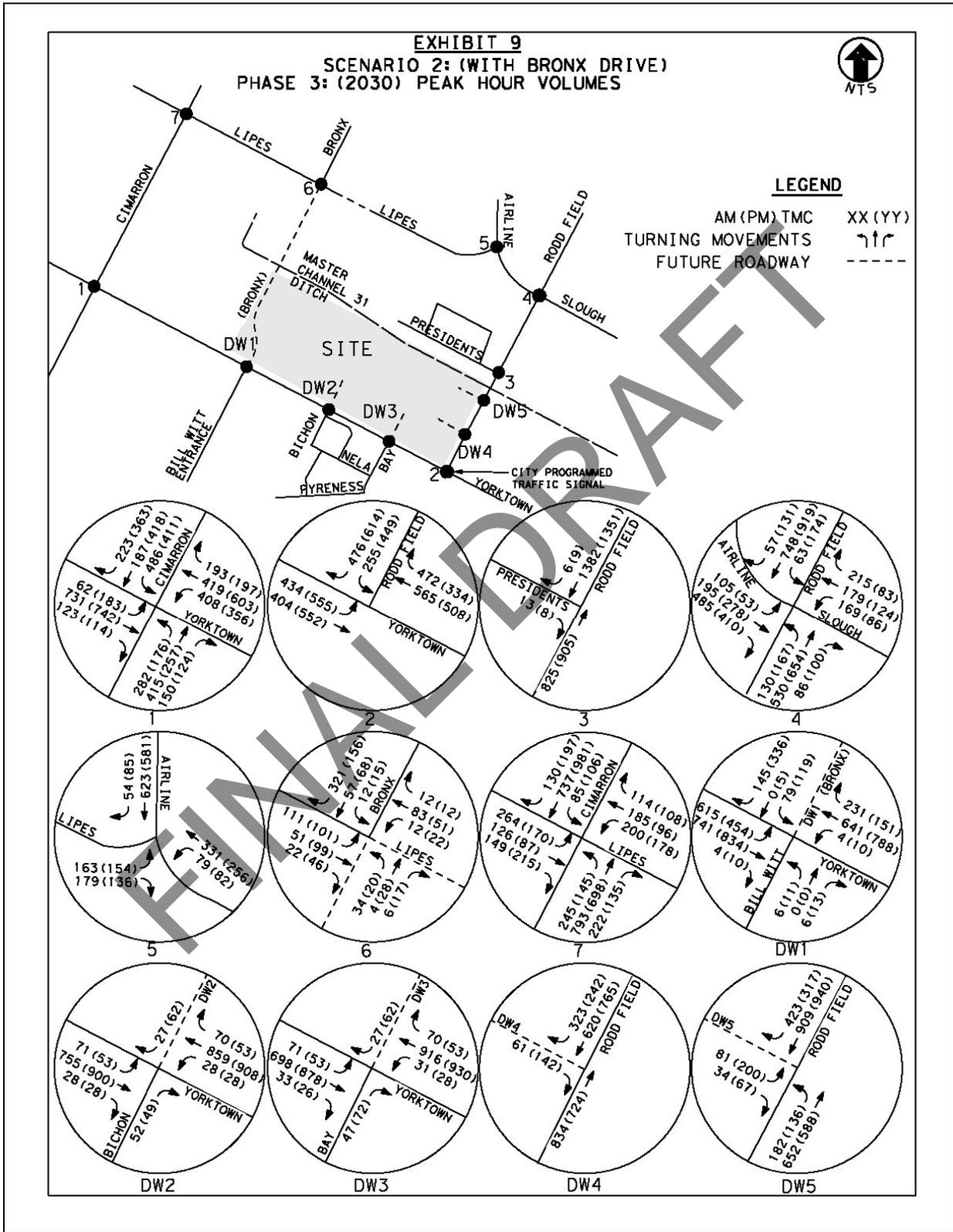




EXHIBIT 10

**SCENARIO 3: (WITH LJA DESIGN ON RODD FIELD RD)
PHASE 1: (2020) PEAK HOUR VOLUMES**

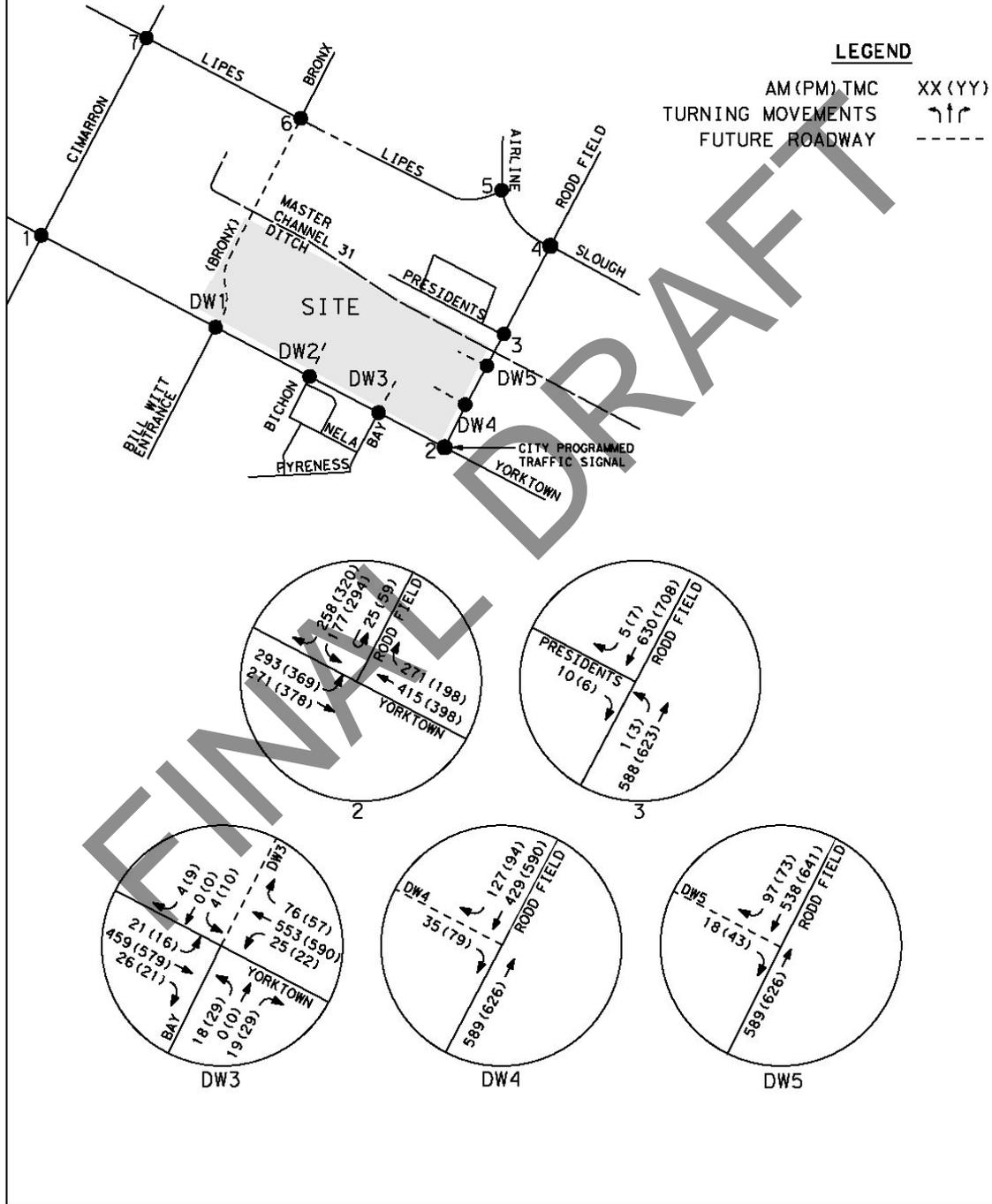




EXHIBIT 11
SCENARIO 3: (WITH LJA DESIGN ON RODD FIELD RD)
PHASE 2: (2025) PEAK HOUR VOLUMES



LEGEND

AM (PM) TMC XX (YY)
TURNING MOVEMENTS ↗ ↘
FUTURE ROADWAY - - - -

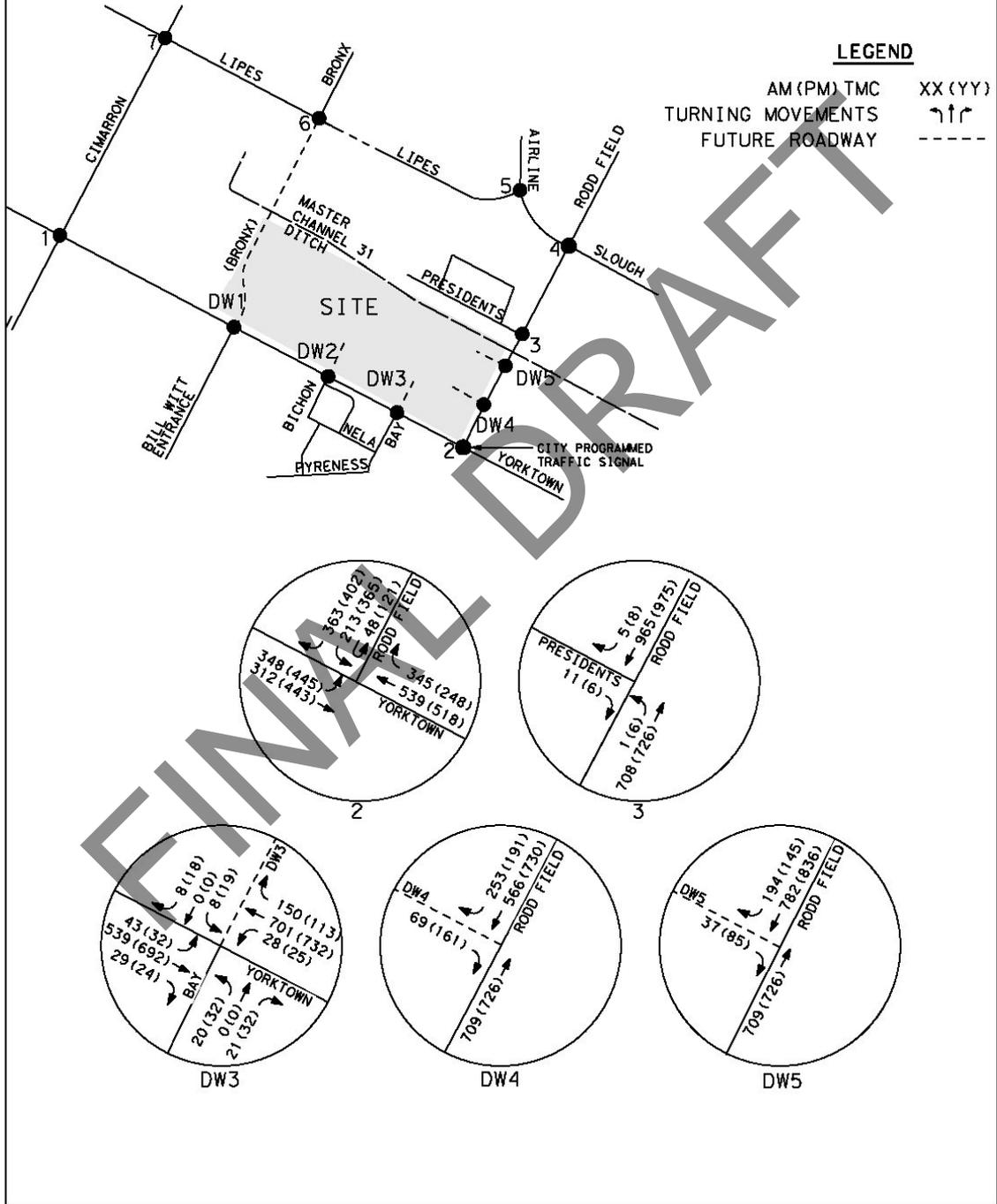


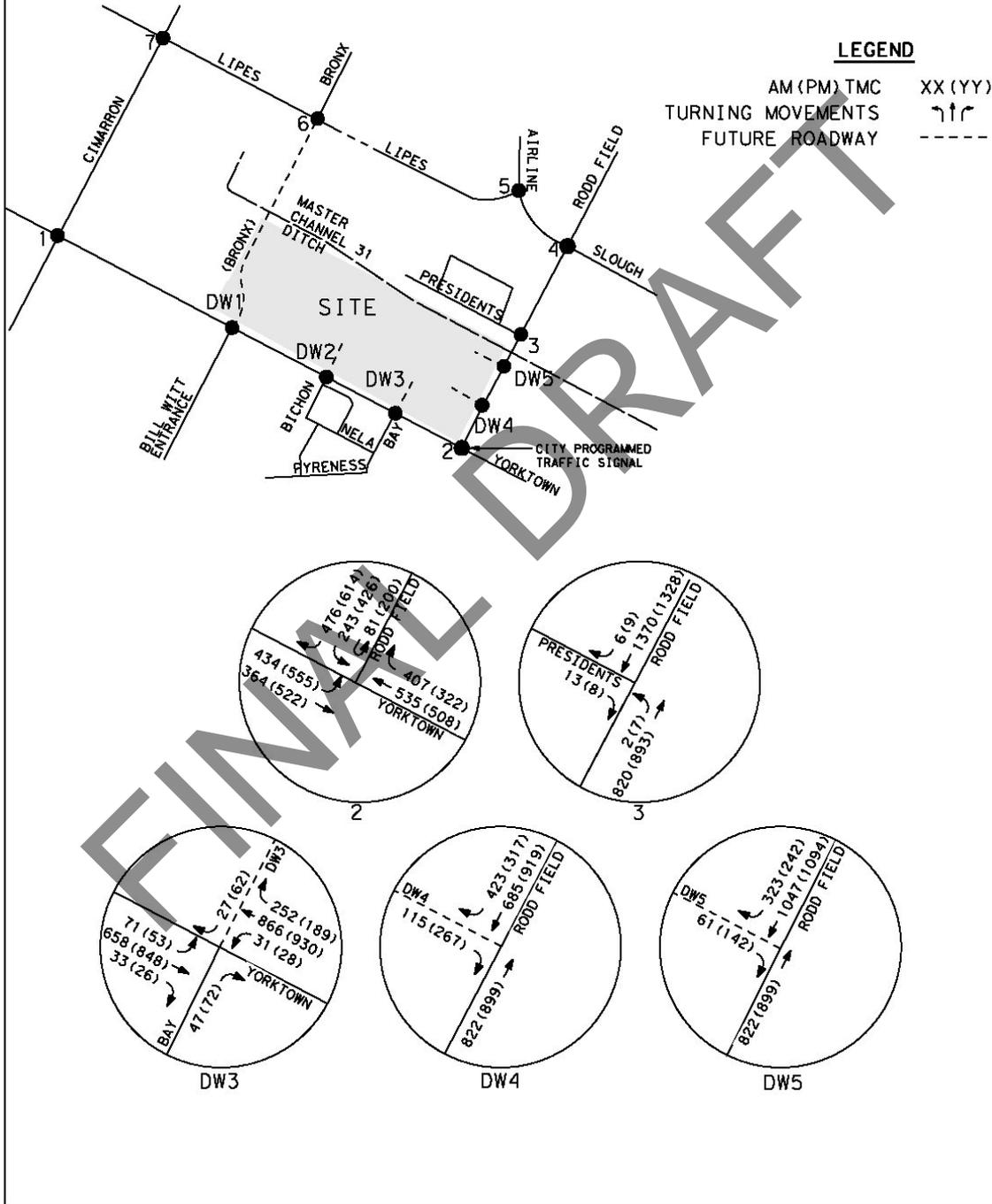


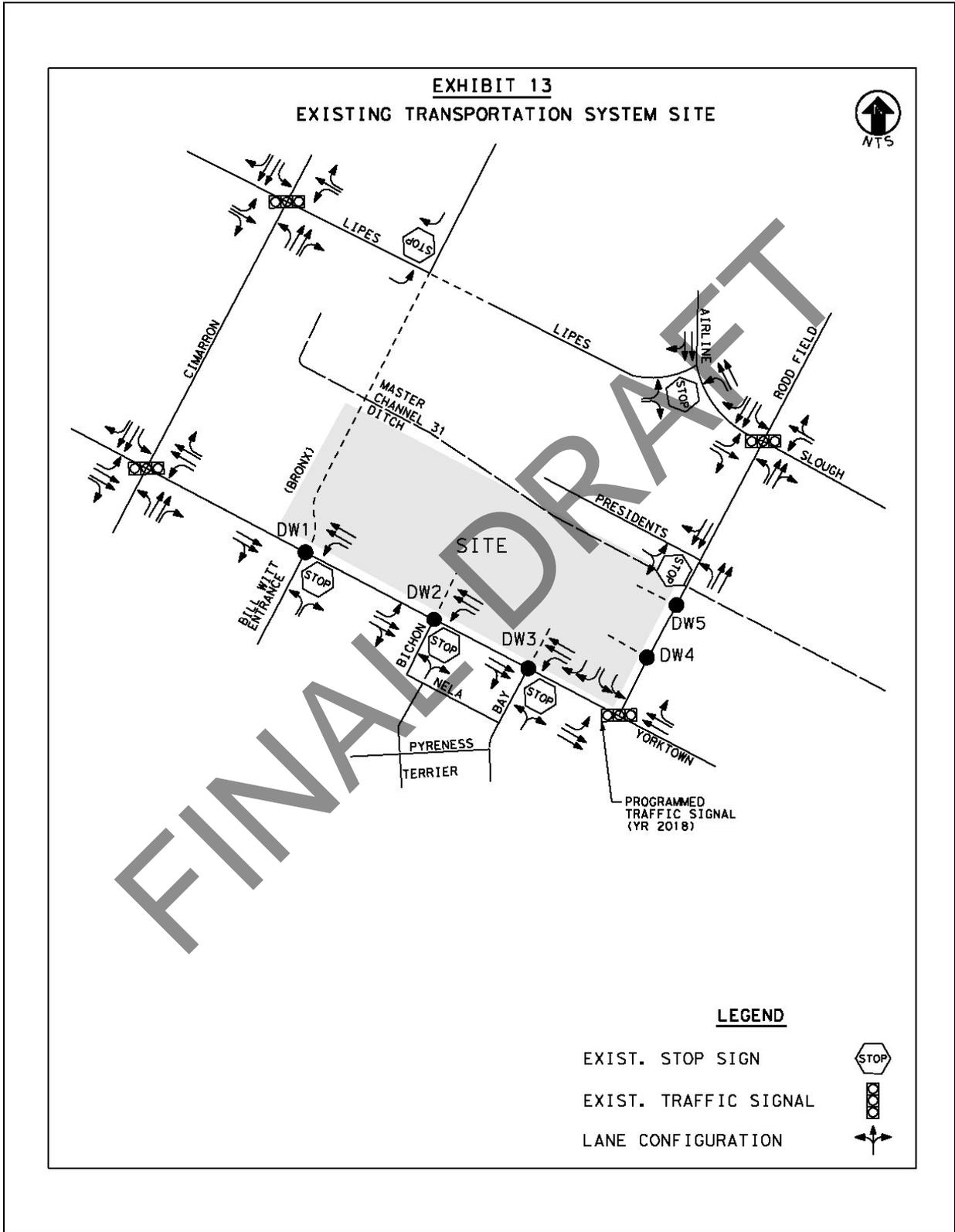
EXHIBIT 12
SCENARIO 3: (WITH LJA DESIGN ON RODD FIELD RD)
PHASE 3: (2030) PEAK HOUR VOLUMES

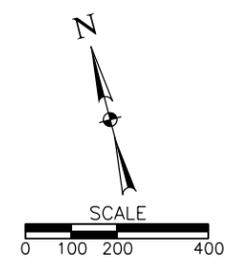
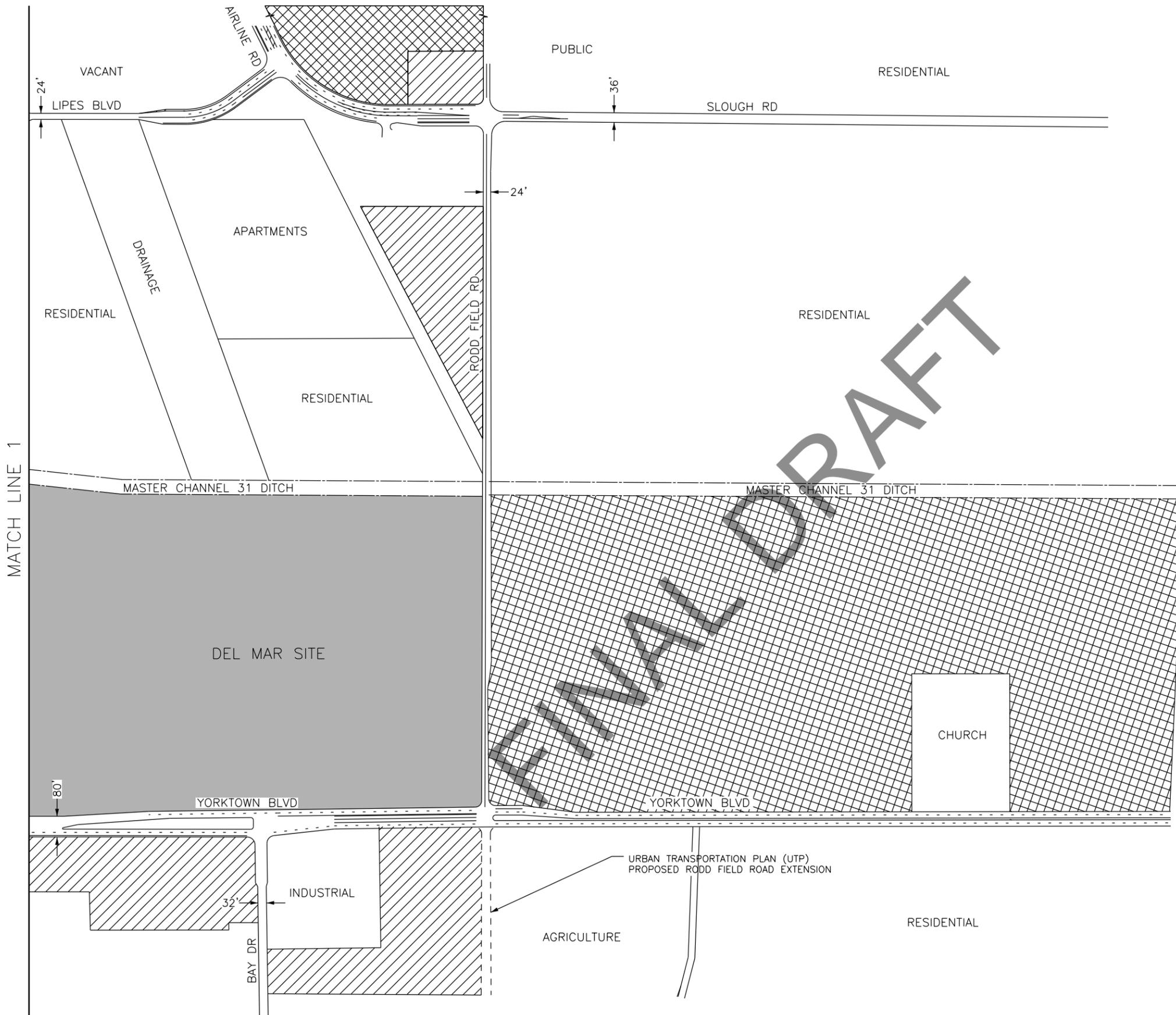


LEGEND

AM (PM) TMC XX (YY)
TURNING MOVEMENTS ↗ ↘
FUTURE ROADWAY - - - -







UNAPPROVED DRAFT

EXHIBIT 14
SHEET 2 OF 2

- LEGEND**
- UNDEVELOPED PROPERTY (COMMERCIAL)
 - UNDEVELOPED PROPERTY (RESIDENTIAL)

MATCH LINE 1

							CONSULTANT'S SHEET No.
							 MALDONADO - BURKETT <small>INTELLIGENT TRANSPORTATION SYSTEMS, LLP 3833 SOUTH STAPLES STREET, SUITE 2014 CORPUS CHRISTI, TEXAS 78411 PH: (361) 256-4646 WWW.MBLOGS.COM T&E REG. # F-10238</small>
							 CITY of CORPUS CHRISTI TEXAS <i>Department of Capital Programs</i>
							DEL MAR COLLEGE SOUTHSIDE CAMPUS VICINITY LAND USE
							SHEET ____ of ____ RECORD DRAWING NO.
							CITY PROJECT # ____

**EXHIBIT 15
PROPOSED DRIVEWAY**

LEGEND:
 ETW-EDGE OF TRAVEL WAY
 EP-EDGE OF PAVEMENT

TYPICAL DRIVEWAY DESIGNS

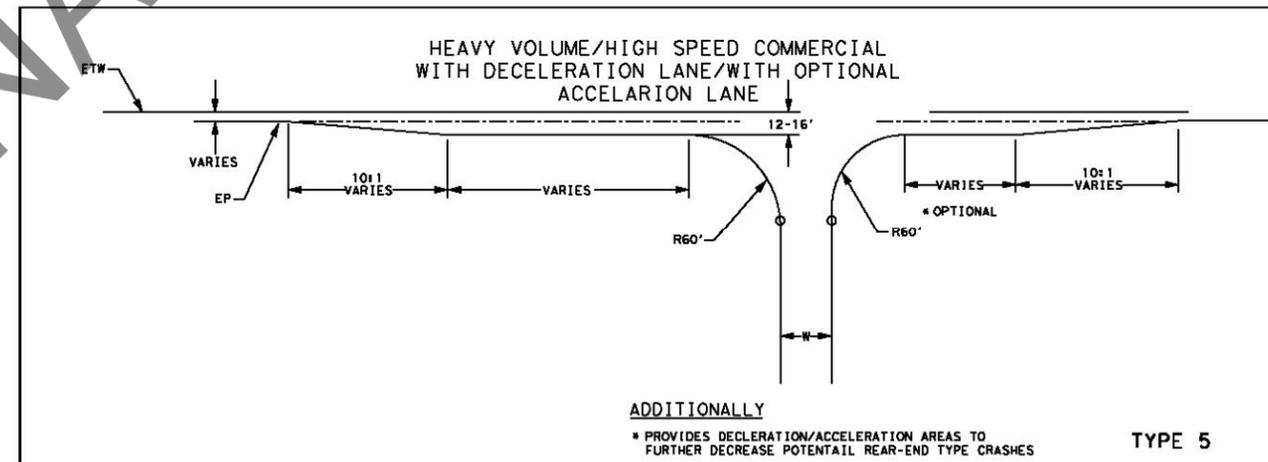
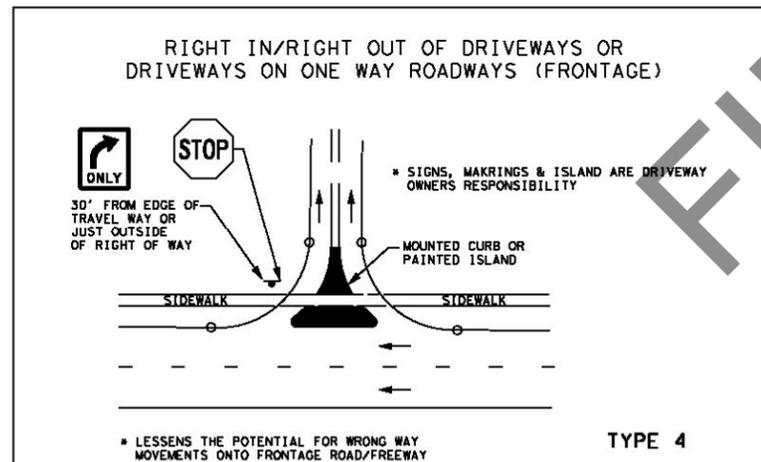
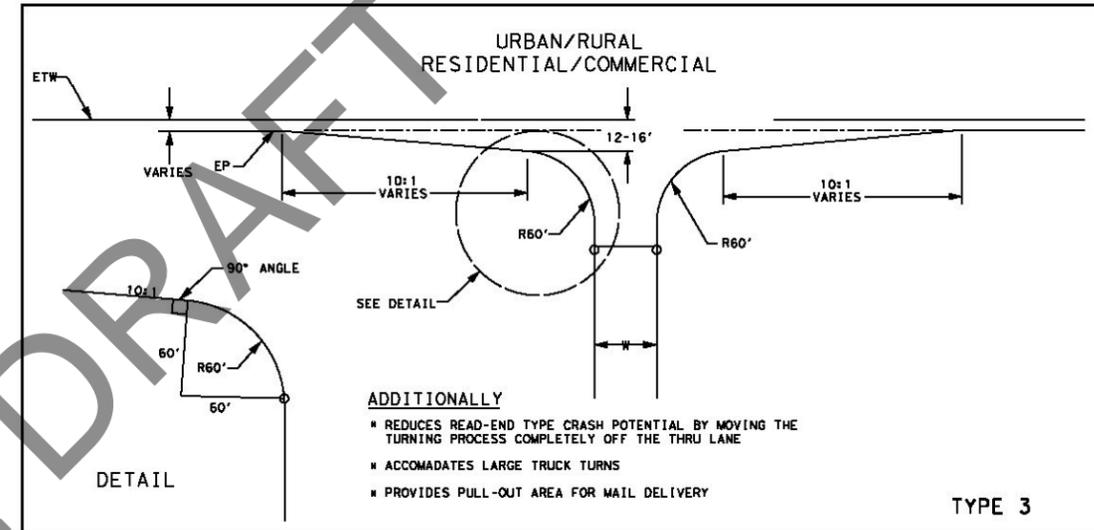
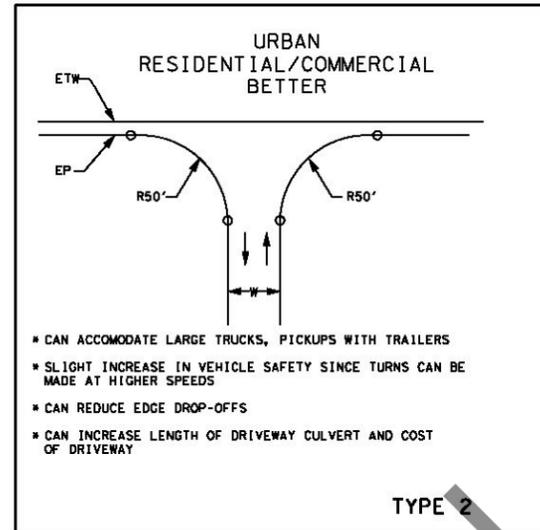
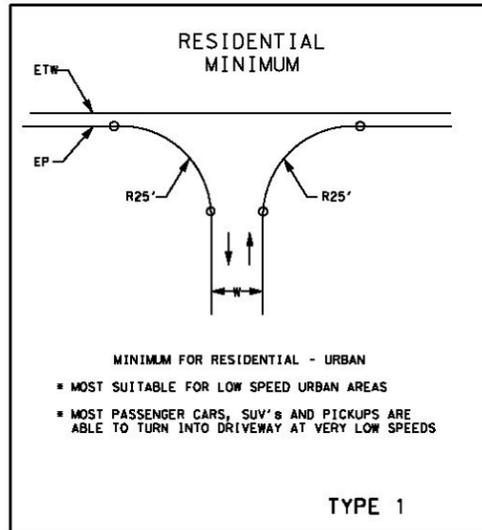
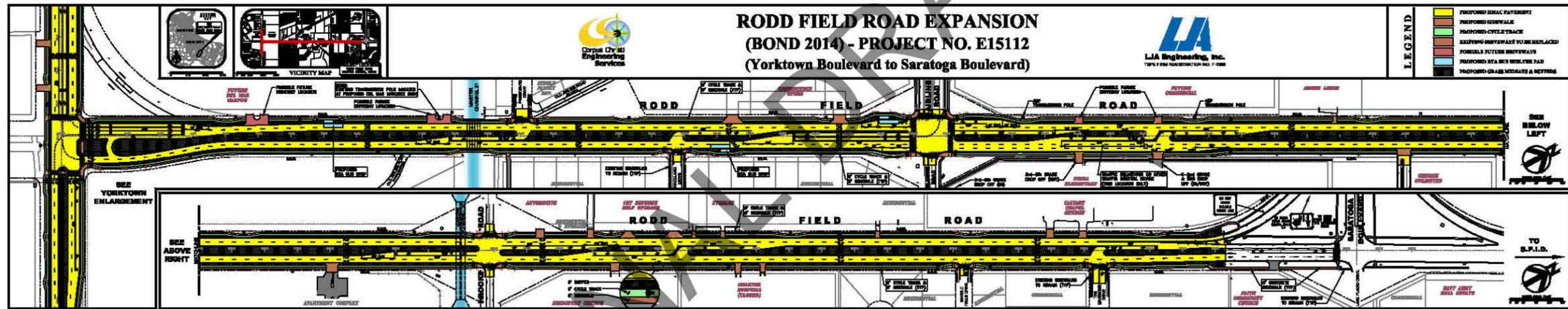


EXHIBIT 16



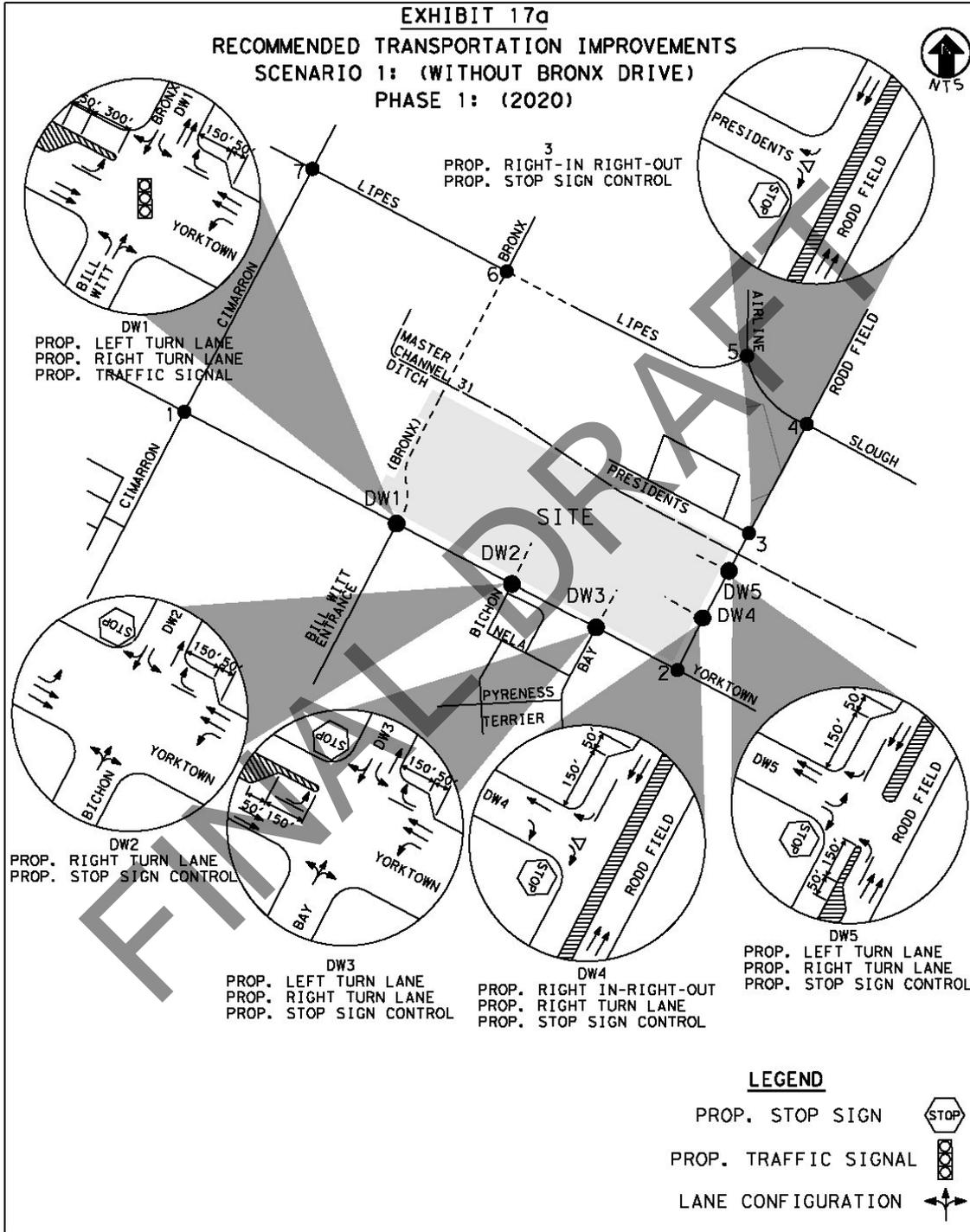




EXHIBIT 17b
RECOMMENDED TRANSPORTATION IMPROVEMENTS
SCENARIO 1: (WITHOUT BRONX DRIVE)
PHASE 2: (2025)

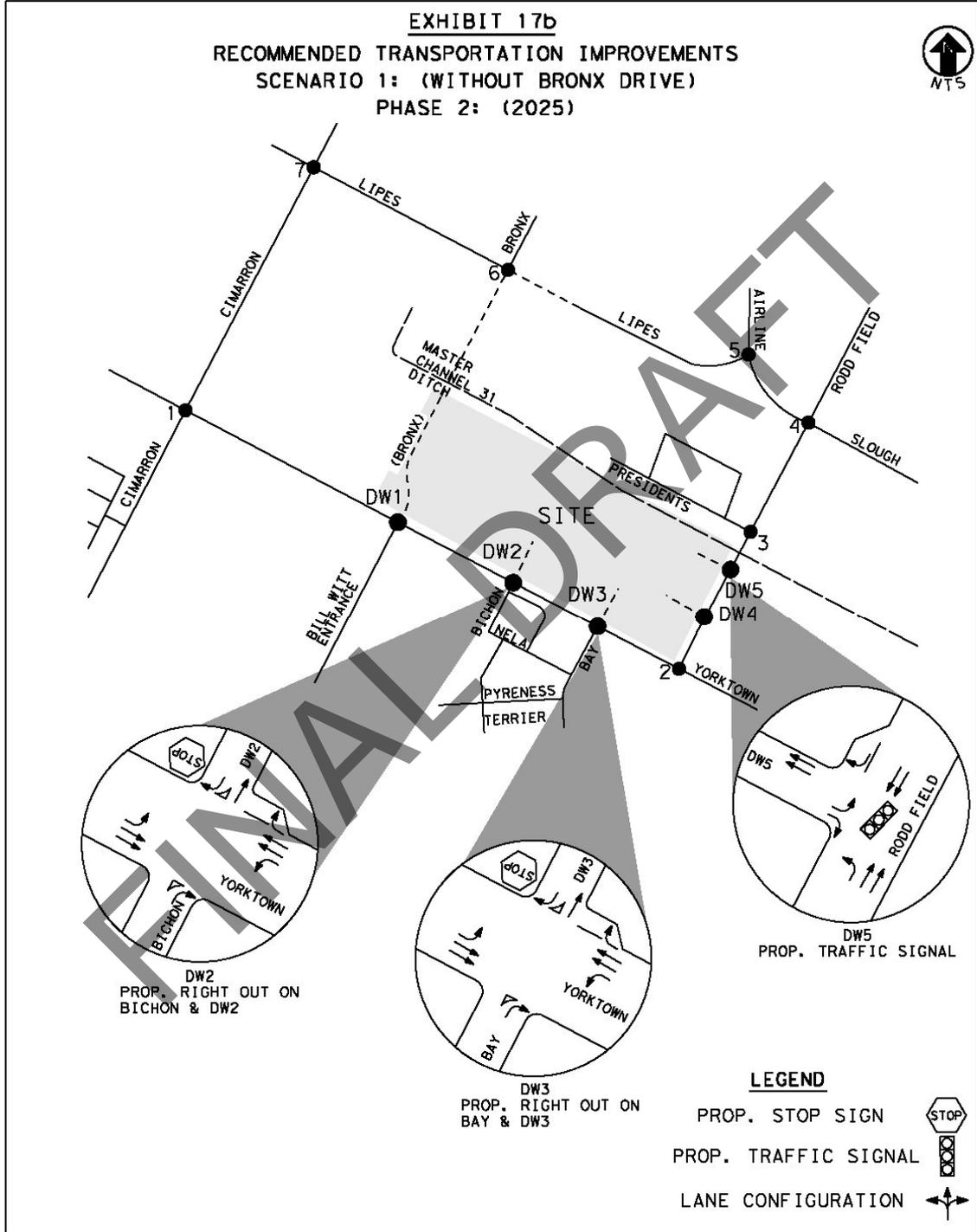
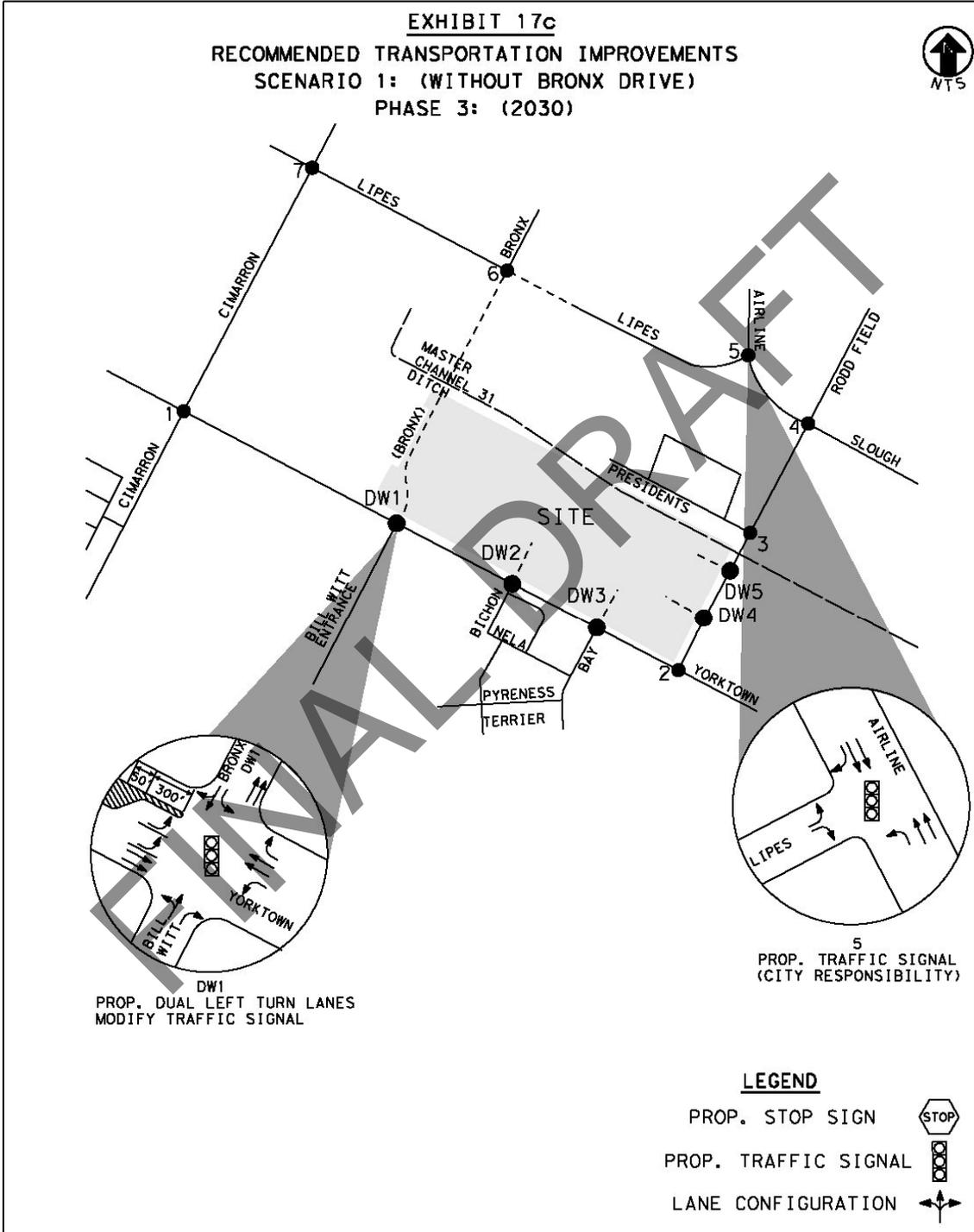




EXHIBIT 17c
RECOMMENDED TRANSPORTATION IMPROVEMENTS
SCENARIO 1: (WITHOUT BRONX DRIVE)
PHASE 3: (2030)



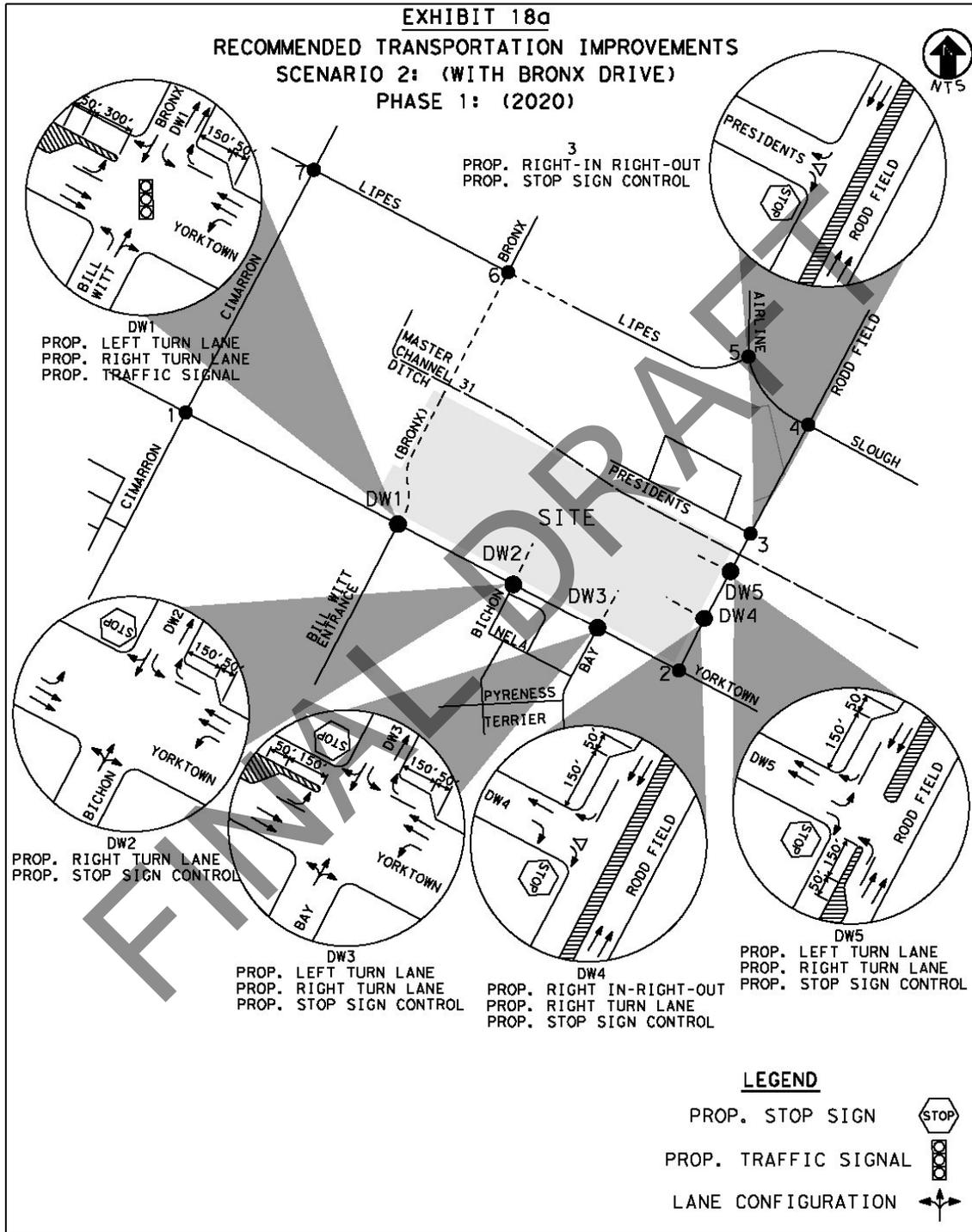




EXHIBIT 18b
RECOMMENDED TRANSPORTATION IMPROVEMENTS
SCENARIO 2: (WITH BRONX DRIVE)
PHASE 2: (2025)

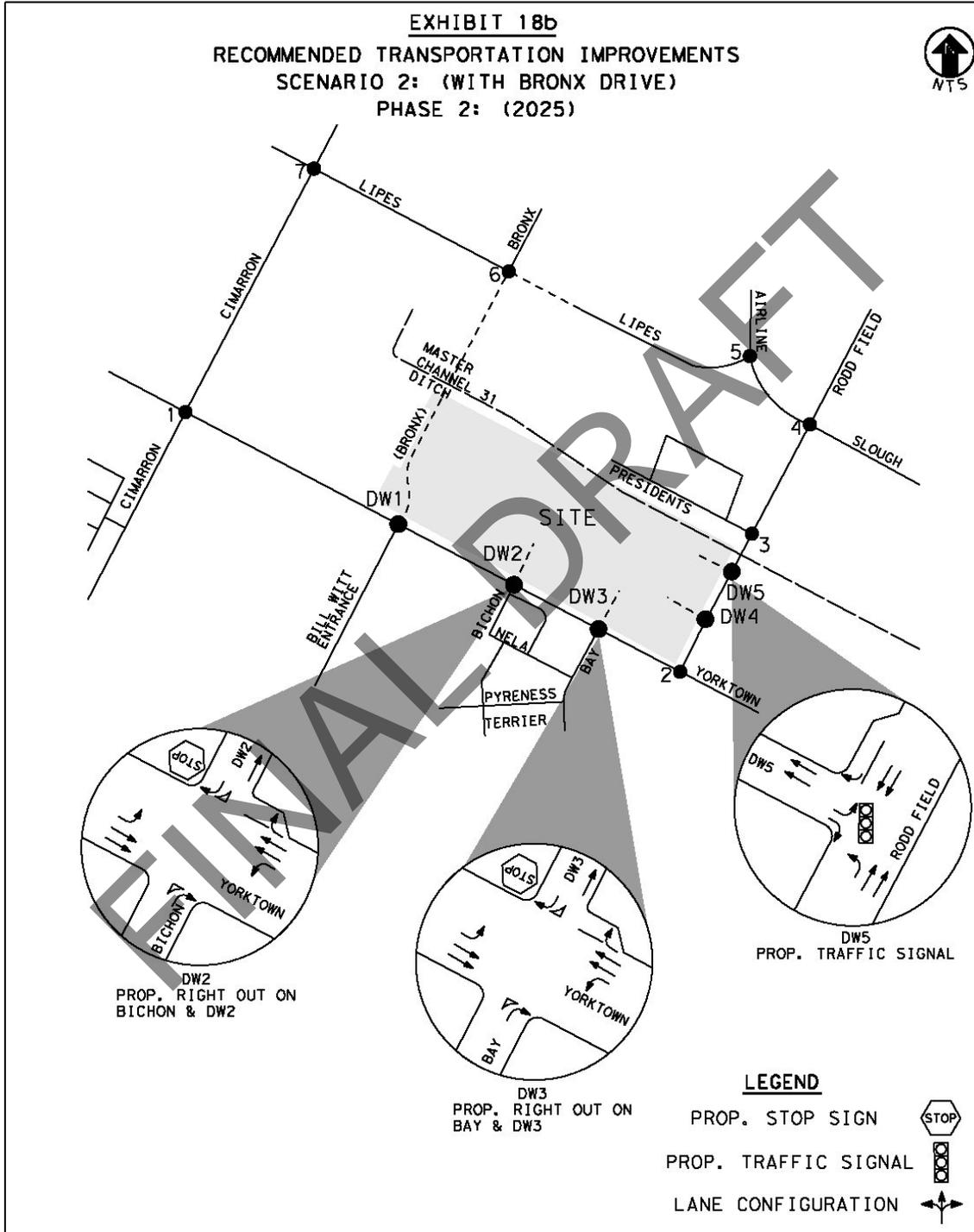




EXHIBIT 18c
RECOMMENDED TRANSPORTATION IMPROVEMENTS
SCENARIO 2: (WITH BRONX DRIVE)
PHASE 3: (2030)

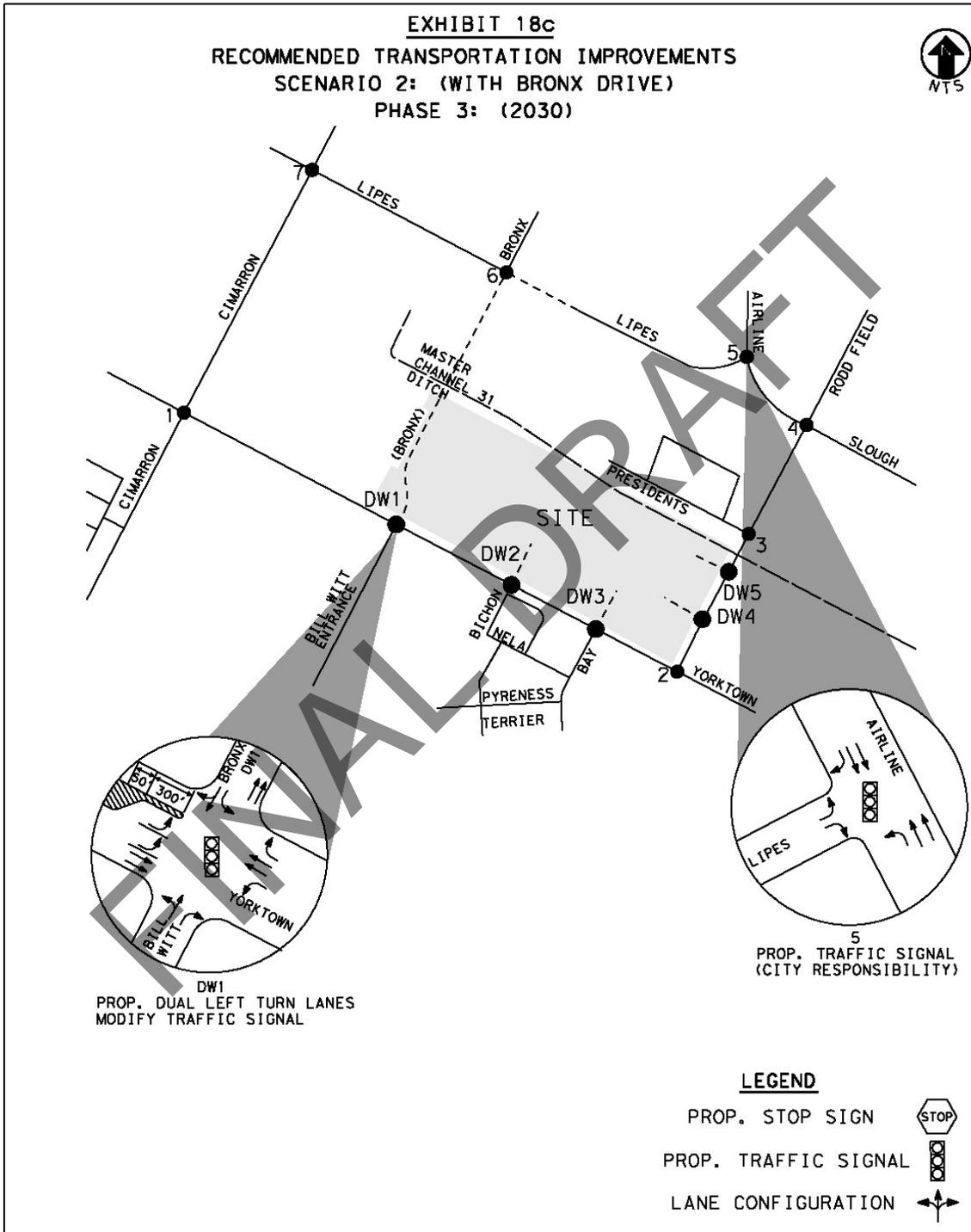
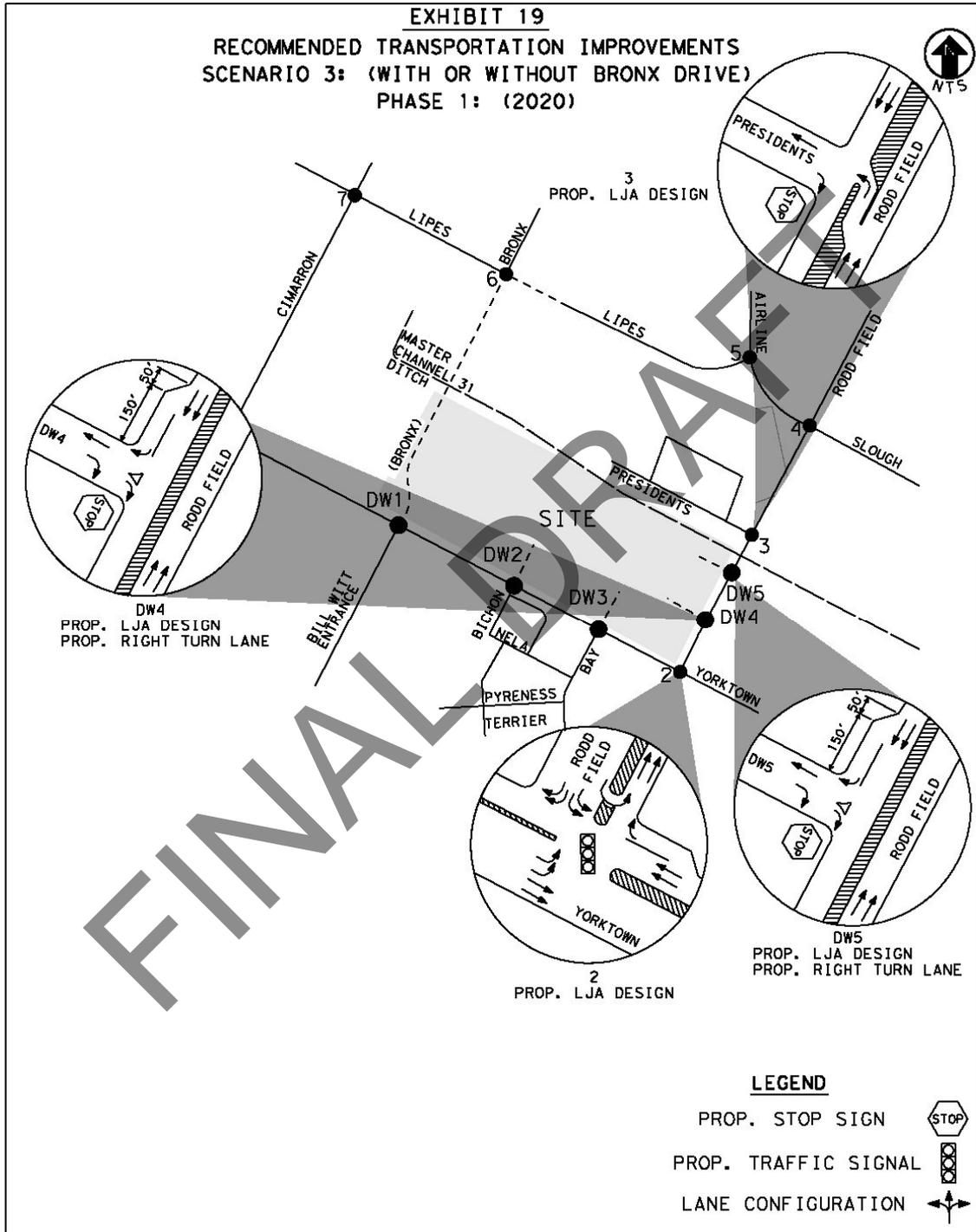




EXHIBIT 19
RECOMMENDED TRANSPORTATION IMPROVEMENTS
SCENARIO 3: (WITH OR WITHOUT BRONX DRIVE)
PHASE 1: (2020)





Tables

FINAL DRAFT

TABLE 1
SCENARIO 1 - TRAFFIC DISTRIBUTION (2020)

TRIP DISTRIBUTION % (AM & PM)						
DRIVEWAY	INBOUND			OUTBOUND		
	LEFT (←)	STRAIGHT (↑)	RIGHT (→)	LEFT (←)	STRAIGHT (↑)	RIGHT (→)
Bronx Dr/DW1	75%	0%	25%	25%	0%	75%
DW2	50%	0%	50%	50%	0%	50%
DW3	50%	0%	50%	50%	0%	50%
DW4	30%	-	70%	70%	-	30%
DW5	-	-	100%	-	-	100%

DRIVEWAY DISTRIBUTION % (AM & PM)		
DRIVEWAY	INBOUND	OUTBOUND
Bronx Dr/DW1	40%	40%
DW2	7%	7%
DW3	7%	7%
DW4	30%	30%
DW5	16%	16%
TOTAL	100%	100%

TABLE 2
SCENARIO 2 - TRAFFIC DISTRIBUTION (2020)

TRIP DISTRIBUTION % (AM & PM)						
DRIVEWAY	INBOUND			OUTBOUND		
	LEFT (←)	STRAIGHT (↑)	RIGHT (→)	LEFT (←)	STRAIGHT (↑)	RIGHT (→)
Bronx Dr/DW1	75%	0%	25%	25%	0%	75%
DW2	50%	0%	50%	50%	0%	50%
DW3	50%	0%	50%	50%	0%	50%
DW4	30%	-	70%	70%	-	30%
DW5	-	-	100%	-	-	100%

DRIVEWAY DISTRIBUTION % (AM & PM)		
DRIVEWAY	INBOUND	OUTBOUND
Bronx Dr/DW1	40%	40%
DW2	7%	7%
DW3	7%	7%
DW4	30%	30%
DW5	16%	16%
TOTAL	100%	100%

TABLE 3
SCENARIO 3 - TRAFFIC DISTRIBUTION (2020)

TRIP DISTRIBUTION % (AM & PM)						
DRIVEWAY	INBOUND			OUTBOUND		
	LEFT (←)	STRAIGHT (↑)	RIGHT (→)	LEFT (←)	STRAIGHT (↑)	RIGHT (→)
Bronx Dr/DW1	75%	0%	25%	25%	0%	75%
DW2	50%	0%	50%	50%	0%	50%
DW3	40%	0%	60%	50%	0%	50%
DW4	-	-	100%	-	-	100%
DW5	-	-	100%	-	-	100%

DRIVEWAY DISTRIBUTION % (AM & PM)		
DRIVEWAY	INBOUND	OUTBOUND
Bronx Dr/DW1	40%	40%
DW2	7%	7%
DW3	10%	7%
DW4	28%	28%
DW5	15%	18%
TOTAL	100%	100%



Table 4
Definition of Level of Service for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (sec/veh)	Description
A	≤ 10	LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersections without stopping.
B	> 10 and ≤ 20	LOS B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	> 20 and ≤ 35	LOS C describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual <i>cycle failures</i> (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	> 35 and ≤ 55	LOS D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	> 55 and ≤ 80	LOS E describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	> 80	LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycle fail to clear the queue.

Source: 2010 Highway Capacity Manual



TABLE 5
LOS FOR SIGNALIZED INTERSECTIONS
EXISTING

Intersection #	Intersection Delay (HCM)	AM		PM	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Intersection 1: Cimarron Blvd & Yorktown Blvd	Overall	25	C	17	B
Intersection 2: Rodd Field Rd & Yorktown Blvd	N/A	N/A	N/A	N/A	N/A
Intersection 4: Rodd Field Rd & Airline Rd/ Slough Rd	Overall	17	B	13	B
Intersection 7: Cimarron Blvd & Lipes Blvd	Overall	10	A	8	A



TABLE 6
LOS FOR SIGNALIZED INTERSECTIONS
SCENARIO 1, 2 AND 3 (SC) OPENING DAY PHASE 1 (2020)

Intersection #	Intersection Delay (HCM) Scenario	AM						PM					
		Delay (sec/veh)			LOS			Delay (sec/veh)			LOS		
		SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3
Intersection 1: Cimarron Blvd & Yorktown Blvd	Overall	24	20	24 20	C	B	C B	18	20	18 20	B	B	B B
Intersection 2: Rodd Field Rd & Yorktown Blvd	Overall	9	9	10	A	A	A	9	10	10	A	A	A
Intersection 4: Rodd Field Rd & Airline Rd/ Slough Rd	Overall	17	17	17 17	B	B	B B	14	15	14 15	B	B	B B
Intersection 7: Cimarron Blvd & Lipes Blvd	Overall	11	13	11 13	B	B	B B	9	8	9 8	A	A	A A
Intersection DW1: Yorktown Blvd & Bill Witt Ent/ Bronx Dr/DW1	Overall	14	14	14 14	B	B	B B	14	14	14 14	B	B	B B



TABLE 7
LOS FOR SIGNALIZED INTERSECTIONS
SCENARIO 1, 2 AND 3 (SC) OPENING DAY PHASE 2 (2025)

Intersection #	Intersection Delay (HCM) Scenario	AM						PM					
		Delay (sec/veh)			LOS			Delay (sec/veh)			LOS		
		SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3
Intersection 1: Cimarron Blvd & Yorktown Blvd	Overall	25	26	25 26	C	C	C C	21	21	21 21	C	C	C C
Intersection 2: Rodd Field Rd & Yorktown Blvd	Overall	10	10	11	A	A	B	12	12	12	B	B	B
Intersection 4: Rodd Field Rd & Airline Rd/ Slough Rd	Overall	17	18	17 18	B	B	B B	16	17	16 17	B	B	B B
Intersection 7: Cimarron Blvd & Lipes Blvd	Overall	13	14	13 14	B	B	B B	10	11	10 11	A	B	A B
Intersection DW1: Yorktown Blvd & Bill Witt Ent/ Bronx Dr/DW1	Overall	21	22	21 22	C	C	C C	17	17	17 17	B	B	B B
Intersection DW5: Rodd Field Rd & DW5	Overall	6	6	N/A	A	A	N/A	10	8	N/A	A	A	N/A



TABLE 8
LOS FOR SIGNALIZED INTERSECTIONS
SCENARIO 1, 2 AND 3 (SC) OPENING DAY PHASE 3 (2030)

Intersection #	Intersection Delay (HCM) Scenario	AM						PM					
		Delay (sec/veh)			LOS			Delay (sec/veh)			LOS		
		SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3
Intersection 1: Cimarron Blvd & Yorktown Blvd	Overall	49	51	49 51	D	D	D D	30	32	30 32	C	C	C C
Intersection 2: Rodd Field Rd & Yorktown Blvd	Overall	11	11	11	B	B	B	13	13	12	B	B	B
Intersection 4: Rodd Field Rd & Airline Rd/ Slough Rd	Overall	22	22	22 22	C	C	C C	20	21	20 21	C	C	C C
Intersection 5: Airline Rd & Lipes Blvd	Overall	8	7	7	A	A	A	7	7	7	A	A	A
Intersection 7: Cimarron Blvd & Lipes Blvd	Overall	17	24	17 24	B	C	B C	12	12	12 12	B	B	B B
Interesection DW1: Yorktown Blvd & Bill Witt Ent/ Bronx Dr/DW1	Overall	32	35	32 35	C	C	C C	27	30	27 30	C	C	C C
Intersection DW5: Rodd Field Rd & DW5	Overall	12	13	N/A	B	B	N/A	16	16	N/A	B	B	N/A



Table 9: LOS Criteria for Stop Sign Controlled Intersections

LEVEL OF SERVICE	DELAY RANGE (seconds)
A	≤ 10 SEC.
B	> 10 and ≤ 15 sec.
C	> 15 and ≤ 25 sec.
D	> 25 and ≤ 35 sec.
E	> 35 and ≤ 50 sec.
F	> 50 sec.

Source: 2010 Highway Capacity Manual

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TABLE 10
LOS FOR UN-SIGNALIZED INTERSECTIONS
EXISTING

Intersection #	Approach Delay	AM				PM			
		EAST BOUND	WEST BOUND	SOUTH BOUND	NORTH BOUND	EAST BOUND	WEST BOUND	SOUTH BOUND	NORTH BOUND
Intersection 3: Rodd Field Rd & Presidents Dr	LOS	B	N/A	FREE	FREE	B	N/A	FREE	FREE
	(s/veh)	13	N/A	FREE	FREE	12	N/A	FREE	FREE
Intersection 5: Airline Rd & Lipes Blvd	LOS	B	N/A	FREE	FREE	B	N/A	FREE	FREE
	(s/veh)	11	N/A	FREE	FREE	11	N/A	FREE	FREE
Intersection 6: Lipes Blvd & Bronx Dr	LOS	FREE	N/A	FREE	N/A	FREE	N/A	FREE	N/A
	(s/veh)	FREE	N/A	FREE	N/A	FREE	N/A	FREE	N/A
Intersection DW1: Yorktown Blvd & Bill Witt Ent	LOS	FREE	FREE	N/A	B	FREE	FREE	N/A	B
	(s/veh)	FREE	FREE	N/A	12	FREE	FREE	N/A	14
Intersection DW2: Yorktown Blvd & Bichon Dr	LOS	FREE	FREE	N/A	B	FREE	FREE	N/A	B
	(s/veh)	FREE	FREE	N/A	14	FREE	FREE	N/A	15
Intersection DW3: Yorktown Blvd & Bay Dr	LOS	FREE	FREE	N/A	B	FREE	FREE	N/A	C
	(s/veh)	FREE	FREE	N/A	14	FREE	FREE	N/A	16

**TABLE 11
LOS FOR UN-SIGNALIZED INTERSECTIONS
SCENARIO 1, 2 AND 3 (SC) OPENING DAY PHASE 1 (2020)**

Intersection #	Approach Delay SCENARIO	AM												PM																	
		EAST BOUND			WEST BOUND			SOUTH BOUND			NORTH BOUND			EAST BOUND			WEST BOUND			SOUTH BOUND			NORTH BOUND								
		SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3						
Intersection 3: Rodd Field Rd & Presidents Dr	LOS	B	B	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
	(s/veh)	11	11	11	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	11	11	11	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
Intersection 5: Airline Rd & Lipes Blvd	LOS	C	C	B C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	C	C	B C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
	(s/veh)	16	16	14 16	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	17	17	14 17	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
Intersection 6: Lipes Blvd & Bronx Dr	LOS	FREE	FREE	FREE	N/A	FREE	FREE	B	B	B	N/A	C	C	FREE	FREE	FREE	N/A	FREE	FREE	B	B	B	N/A	B	B						
	(s/veh)	FREE	FREE	FREE	N/A	FREE	FREE	12	13	13	N/A	19	19	FREE	FREE	FREE	N/A	FREE	FREE	11	12	12	N/A	14	14						
Intersection DW2: Yorktown Blvd & Bichon Dr/DW2	LOS	FREE	FREE	FREE	FREE	FREE	FREE	C	C	C	C	C	C	FREE	FREE	FREE	FREE	FREE	FREE	C	C	C	C	C	C						
	(s/veh)	FREE	FREE	FREE	FREE	FREE	FREE	17	18	17 18	17	19	17 19	FREE	FREE	FREE	FREE	FREE	FREE	19	20	19 20	20	21	20 21						
Intersection DW3: Yorktown Blvd & Bay Dr/DW3	LOS	FREE	FREE	FREE	FREE	FREE	FREE	C	C	C	C	C	C	FREE	FREE	FREE	FREE	FREE	FREE	C	C	C	B	B	B						
	(s/veh)	FREE	FREE	FREE	FREE	FREE	FREE	17	18	18	17	18	17	FREE	FREE	FREE	FREE	FREE	FREE	20	20	20	11	11	11						
Intersection DW4: Rodd Field Rd & DW4	LOS	A	A	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE						
	(s/veh)	10	10	11	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	11	11	12	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE						
Intersection DW5: Rodd Field Rd & DW5	LOS	C	C	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	C	C	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE						
	(s/veh)	20	20	11	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	23	23	11	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE						

**TABLE 12
LOS FOR UN-SIGNALIZED INTERSECTIONS
SCENARIO 1, 2 AND 3 (SC) OPENING DAY PHASE 2 (2025)**

Intersection #	Approach Delay SCENARIO	AM												PM																	
		EAST BOUND			WEST BOUND			SOUTH BOUND			NORTH BOUND			EAST BOUND			WEST BOUND			SOUTH BOUND			NORTH BOUND								
		SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3						
Intersection 3: Rodd Field Rd & Presidents Dr	LOS	B	B	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
	(s/veh)	12	12	12	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	12	13	12	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
Intersection 5: Airline Rd & Lipes Blvd	LOS	C	C	C/C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	D	C	C/C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
	(s/veh)	22	22	17/22	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	26	21	17/21	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE
Intersection 6: Lipes Blvd & Bronx Dr	LOS	FREE	FREE	FREE	N/A	FREE	FREE	B	B	B	N/A	C	C	FREE	FREE	FREE	N/A	FREE	FREE	B	B	B	N/A	B	B	N/A	B	B			
	(s/veh)	FREE	FREE	FREE	N/A	FREE	FREE	12	13	13	N/A	21	21	FREE	FREE	FREE	N/A	FREE	FREE	11	13	13	N/A	14	14	N/A	14	14			
Intersection DW2: Yorktown Blvd & Bichon Dr/DW2	LOS	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B/B	B	B	B/B	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B/B	B	B	B/B	B	B	B/B			
	(s/veh)	FREE	FREE	FREE	FREE	FREE	FREE	11	11	11/11	11	11	11/11	FREE	FREE	FREE	FREE	FREE	FREE	11	11	11/11	12	12	12/12	12	12	12/12			
Intersection DW3: Yorktown Blvd & Bay Dr/DW3	LOS	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	B	B	B	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	B	B	B	B	B	B			
	(s/veh)	FREE	FREE	FREE	FREE	FREE	FREE	11	11	11	11	11	11	FREE	FREE	FREE	FREE	FREE	FREE	11	11	11	12	12	12	12	12	12			
Intersection DW4: Rodd Field Rd & DW4	LOS	B	B	B	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE	B	B	C	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE	N/A	N/A	FREE			
	(s/veh)	11	11	12	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE	12	12	16	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE	N/A	N/A	FREE			
Intersection DW5: Rodd Field Rd & DW5	LOS	N/A	N/A	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	N/A	N/A	B	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE			
	(s/veh)	N/A	N/A	13	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	N/A	N/A	14	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE	FREE			

TABLE 13
LOS FOR UN-SIGNALIZED INTERSECTIONS
SCENARIO 1, 2 AND 3 (SC) OPENING DAY PHASE 3 (2030)

Intersection #	Approach Delay SCENARIO	AM												PM											
		EAST BOUND			WEST BOUND			SOUTH BOUND			NORTH BOUND			EAST BOUND			WEST BOUND			SOUTH BOUND			NORTH BOUND		
		SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2	SC3
Intersection 3: Rodd Field Rd & Presidents Dr	LOS	C	C	C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	C	C	C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE
	(s/veh)	16	16	16	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	15	15	15	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE
Intersection 6: Lipes Blvd & Bronx Dr	LOS	FREE	FREE	FREE	N/A	FREE	FREE	B	B	B	N/A	C	C	FREE	FREE	FREE	N/A	FREE	FREE	B	B	B	N/A	C	C
	(s/veh)	FREE	FREE	FREE	N/A	FREE	FREE	13	14	14	N/A	23	23	FREE	FREE	FREE	N/A	FREE	FREE	12	13	13	N/A	15	15
Intersection DW2: Yorktown Blvd & Bichon Dr/DW2	LOS	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	B	B	B	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	B	B	B
	(s/veh)	FREE	FREE	FREE	FREE	FREE	FREE	12	12	12	12	12	12	FREE	FREE	FREE	FREE	FREE	FREE	13	13	13	13	13	13
Intersection DW3: Yorktown Blvd & Bay Dr/DW3	LOS	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	B	B	B	FREE	FREE	FREE	FREE	FREE	FREE	B	B	B	B	B	B
	(s/veh)	FREE	FREE	FREE	FREE	FREE	FREE	12	12	12	11	12	11	FREE	FREE	FREE	FREE	FREE	FREE	13	13	13	13	13	13
Intersection DW4: Rodd Field Rd & DW4	LOS	B	B	C	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE	C	C	D	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE
	(s/veh)	13	13	16	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE	16	16	35	N/A	N/A	N/A	N/A	N/A	FREE	N/A	N/A	FREE
Intersection DW5: Rodd Field Rd & DW5	LOS	N/A	N/A	C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	N/A	N/A	C	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE
	(s/veh)	N/A	N/A	17	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE	N/A	N/A	22	N/A	N/A	N/A	FREE	FREE	FREE	FREE	FREE	FREE



Appendix

FINAL DRAFT

TRIP GENERATION DATA - Phase 1

Project Information	
Project Name:	Del Mar Southside Campus TIA-Phase 1
Date:	2/7/2017
City:	Corpus Christi
State/Province:	Texas
Zip/Postal Code:	78414
Country:	United States
Client Name:	Del Mar Southside Campus
Analyst's Name:	Maldonado Burkett
Edition:	ITE-TGM 9th Edition

Land Use	Size	AM		PM	
		Entry	Exit	Entry	Exit
540 - Junior/Community College	6000 Students	605	115	454	266
Reduction		0	0	0	0
Internal		0	0	0	0
Pass-by		0	0	0	0
Non-pass-by		605	115	454	266
Total		605	115	454	266
Total Reduction		0	0	0	0
Total Internal		0	0	0	0
Total Pass-by		0	0	0	0
Total Non-pass-by		605	115	454	266

FINAL DRAFT

TRIP GENERATION DATA - Phase 2

Project Information	
Project Name:	Del Mar Southside Campus TIA-Phase 2
Date:	2/7/2017
City:	Corpus Christi
State/Province:	Texas
Zip/Postal Code:	78414
Country:	United States
Client Name:	Del Mar Southside Campus
Analyst's Name:	Maldonado Burkett
Edition:	ITE-TGM 9th Edition

Land Use	Size	AM		PM	
		Entry	Exit	Entry	Exit
540 - Junior/Community College	12000 Students	1210	230	907	533
Reduction		0	0	0	0
Internal		0	0	0	0
Pass-by		0	0	0	0
Non-pass-by		1210	230	907	533
Total		1210	230	907	533
Total Reduction		0	0	0	0
Total Internal		0	0	0	0
Total Pass-by		0	0	0	0
Total Non-pass-by		1210	230	907	533

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TRIP GENERATION DATA - Phase 3

Project Information	
Project Name:	Del Mar Southside Campus TIA-Phase 3
Date:	2/7/2017
City:	Corpus Christi
State/Province:	Texas
Zip/Postal Code:	78414
Country:	United States
Client Name:	Del Mar Southside Campus
Analyst's Name:	Maldonado Burkett
Edition:	ITE-TGM 9th Edition

Land Use	Size	AM		PM	
		Entry	Exit	Entry	Exit
540 - Junior/Community College	20000 Students	2016	384	1512	888
Reduction		0	0	0	0
Internal		0	0	0	0
Pass-by		0	0	0	0
Non-pass-by		2016	384	1512	888
Total		2016	384	1512	888
Total Reduction		0	0	0	0
Total Internal		0	0	0	0
Total Pass-by		0	0	0	0
Total Non-pass-by		2016	384	1512	888

FINAL DRAFT

TRIP GENERATION DATA - Phase 3 (Weekday)

Project Information	
Project Name:	Del Mar College Full TIA - Phase 3 (Weekday)
Date:	6/7/2017
City:	Corpus Christi
State/Province:	Texas
Zip/Postal Code:	78414
Country:	United States
Client Name:	Del Mar College
Analyst's Name:	Maldonado Burkett
Edition:	ITE-TGM 9th Edition

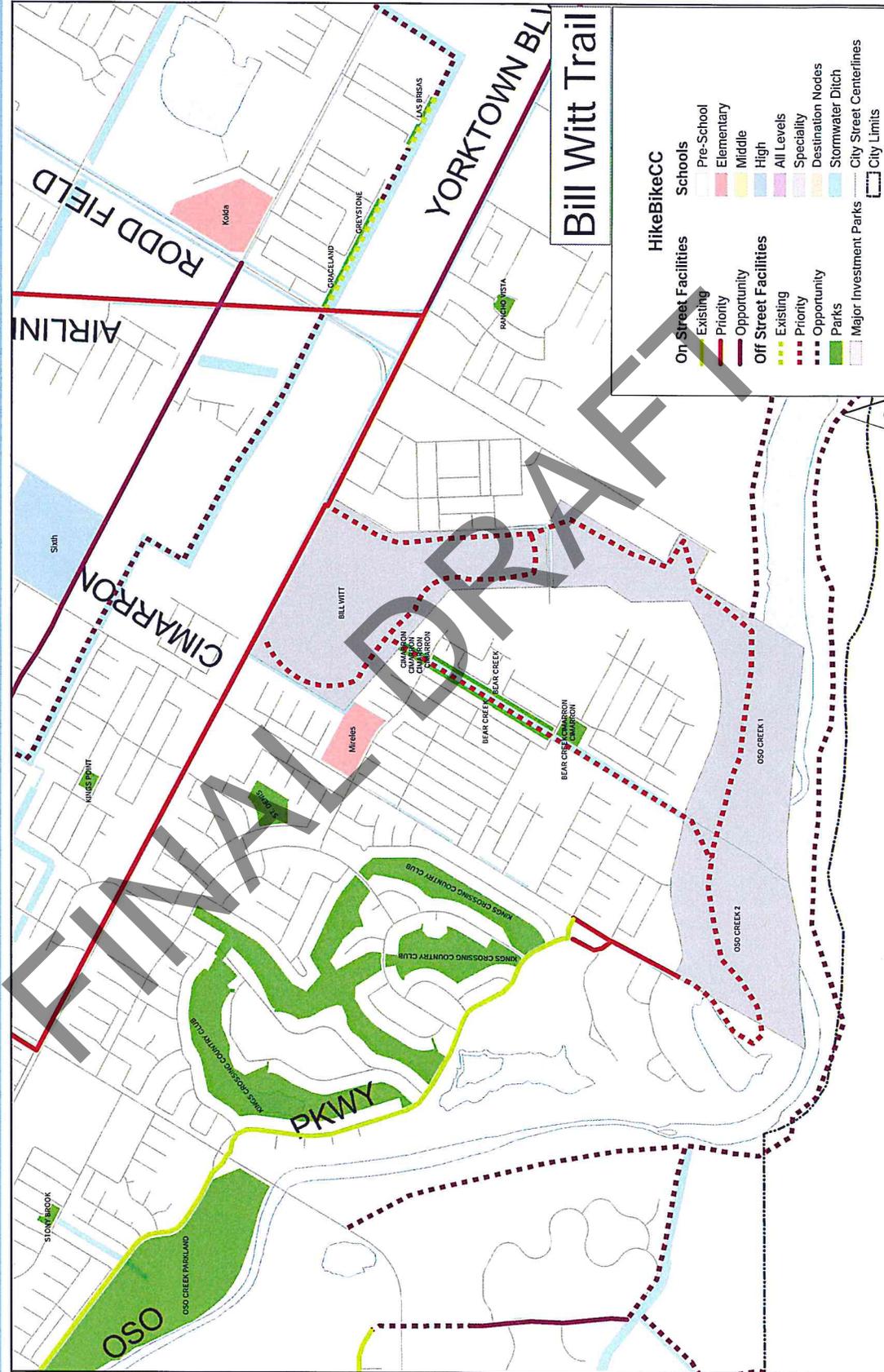
Land Use	Size	Weekday	
		Entry	Exit
540 - Junior/Community College	20000 Students	12300	12300
Reduction		0	0
Internal		0	0
Pass-by		0	0
Non-pass-by		12300	12300
Total		12300	12300
Total Reduction		0	0
Total Internal		0	0
Total Pass-by		0	0
Total Non-pass-by		12300	12300

FINAL DRAFT

PRIORITY NETWORK RECOMMENDATIONS

Bill Witt Trail				
<i>Recreational</i>				
On-Street	Street	From	To	Length (Miles)
Existing	Oso Parkway	FM 43 (Weber Road)	Cimarron Boulevard	4.13
Existing	South Oso Parkway	Lago Vista Drive	Lago Vista Drive	0.33
Priority	Yorktown Boulevard	CR 2444 (South Staples Street)	Airline Road	2.14
Priority	Airline Road	SH 358 (S.P.I.D.)	Yorktown Boulevard	3.64
Priority	Cimarron Boulevard	Oso Parkway	Park	0.24
Opportunity	Yorktown Boulevard	Airline Road	Flour Bluff Drive	2.87
Opportunity	Lipes Boulevard	CR 2444 (South Staples Street)	Rodd Field Road	1.76
Off-Street	Trail	From	To	Length (Miles)
Priority	Bear Creek	Bill Witt Park	Oso Creek Park	1.05
Priority	Bill Witt Park	Yorktown Boulevard	Cimarron Boulevard	3.79
Opportunity	Trail	Bill Witt Park	Mary Carroll Ditch	4.43
Opportunity	Trail following Oso Creek (South Bank)	Lago Vista Drive	Yorktown Boulevard	5.42
Opportunity	Master Channel 31	Timbergate Drive	End	3.66

HikeBikeCC Bill Witt Trail



Driveway	Trip Distribution															
	Southbound				Yorktown WB				Northbound				Yorktown EB			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW1	Movement	0	0	0	3	462	0	5	0	5	0	0	0	418	3	
	Background Traffic	12	0	34	*	60	*	182	*	0	0	0	0	*	*	
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Pass by ‡	12	0	34	3	462	60	5	0	5	0	0	182	418	3	
	DW1 Total	4	0	4	22	462	21	21	0	21	0	21	21	418	22	

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bichon Dr				Yorktown EB			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW2	Movement	0	0	0	22	462	0	21	0	21	0	21	0	418	22	
	Background Traffic	4	0	4	*	21	*	21	*	0	0	0	21	*	*	
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Pass by ‡	4	0	4	22	462	21	21	0	21	0	21	21	418	22	
	DW2 Total	4	0	4	22	462	21	21	0	21	0	21	21	418	22	

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bay NB				Yorktown EB			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW3	Movement	0	0	0	25	462	0	18	0	19	0	19	0	418	26	
	Background Traffic	4	0	4	*	21	*	21	*	0	0	0	21	*	*	
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Pass by ‡	4	0	4	25	462	21	18	0	19	0	19	21	418	26	
	DW3 Total	4	0	4	25	462	21	18	0	19	0	19	21	418	26	

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW4	Movement	-	332	0	-	-	0	509	-	-	-	-	-	-	0	
	Background Traffic	-	*	127	-	-	55	*	-	25	-	-	-	-	10	
	Non-pass-by †	-	0	0	-	0	0	0	-	-	-	-	-	-	0	
	Pass by ‡	-	332	127	-	-	55	509	-	25	-	-	-	-	10	
	DW4 Total	-	332	127	-	-	55	509	-	25	-	-	-	-	10	

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW5	Movement	-	332	0	-	-	-	509	-	-	-	-	-	-	0	
	Background Traffic	-	*	97	-	-	-	*	-	-	-	-	-	-	18	
	Non-pass-by †	-	0	0	-	-	-	0	-	-	-	-	-	-	0	
	Pass by ‡	-	332	97	-	-	-	509	-	-	-	-	-	-	18	
	DW5 Total	-	332	97	-	-	-	509	-	-	-	-	-	-	18	

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution												
	Southbound			Yorktown WB			Northbound			Yorktown EB			
DW1	Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
	Background Traffic	0	0	0	8	509	0	9	0	10	0	527	8
	Non-pass-by †	27	0	79	*	*	45	*	0	*	137	*	*
	Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0
	DW1 Total	27	0	79	8	509	45	9	0	10	137	527	8

Driveway	Southbound						Yorktown WB						Bichon Dr						Yorktown EB						
	DW2	Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑
Background Traffic		0	0	0	22	462	0	19	0	20	0	527	22												
Non-pass-by †		10	0	9	*	*	16	*	0	*	16	*	*												
Pass by ‡		0	0	0	0	0	0	0	0	0	0	0	0												
DW2 Total		10	0	9	22	462	16	19	0	20	16	527	22												

Driveway	Southbound			Yorktown WB			Bay NB			Yorktown EB			
	DW3	Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑
Background Traffic		0	0	0	22	509	0	29	0	29	0	527	21
Non-pass-by †		10	0	9	*	*	16	*	0	*	16	*	*
Pass by ‡		0	0	0	0	0	0	0	0	0	0	0	0
DW3 Total		10	0	9	22	509	16	29	0	29	16	527	21

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound			
	DW4	Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑
Background Traffic		-	456	0	-	-	0	416	-	-	-	-	0
Non-pass-by †		-	*	94	-	-	41	*	-	-	59	-	20
Pass by ‡		-	0	0	-	-	0	0	-	-	-	-	0
DW4 Total		-	456	94	-	-	41	416	-	-	59	-	20

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound			
	DW5	Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑
Background Traffic		-	456	0	-	-	-	416	-	-	-	-	0
Non-pass-by †		-	*	73	-	-	-	*	-	-	-	-	43
Pass by ‡		-	0	0	-	-	-	0	-	-	-	-	0
DW5 Total		-	456	73	-	-	-	416	-	-	-	-	43

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Northbound				Yorktown EB			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW1	Movement	0	0	0	0	3	518	0	6	0	6	0	0	0	468	3
	Background Traffic	23	0	69	*	121	*	121	*	0	*	363	*	*	*	*
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	23	0	69	3	518	121	121	6	0	6	363	468	3	0	0
	DW1 Total	0	0	0	0	25	518	121	121	6	0	6	468	3	0	0

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bichon Dr				Yorktown EB			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW2	Movement	0	0	0	0	25	518	0	24	0	24	0	24	0	468	25
	Background Traffic	0	0	16	*	42	*	42	*	0	*	43	*	*	*	*
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	0	0	16	25	518	42	42	24	0	24	43	468	25	0	0
	DW2 Total	0	0	16	25	518	42	42	24	0	24	43	468	25	0	0

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bay NB				Yorktown EB			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW3	Movement	0	0	0	0	28	518	0	20	0	21	0	21	0	468	29
	Background Traffic	0	0	16	*	42	*	42	*	0	*	43	*	*	*	*
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	0	0	16	28	518	42	42	20	0	21	43	468	29	0	0
	DW3 Total	0	0	16	28	518	42	42	20	0	21	43	468	29	0	0

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW4	Movement	-	372	0	-	-	570	0	0	570	-	-	-	-	-	0
	Background Traffic	-	*	253	-	-	109	*	109	*	-	-	48	-	-	21
	Non-pass-by †	-	0	0	-	-	0	0	0	0	-	-	-	-	-	0
	Pass by ‡	-	372	253	-	-	109	570	109	570	-	-	48	-	-	21
	DW4 Total	-	372	253	-	-	109	570	109	570	-	-	48	-	-	21

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW5	Movement	-	372	0	-	-	570	0	0	570	-	-	-	-	-	0
	Background Traffic	-	*	194	-	-	*	*	*	*	-	-	-	-	-	37
	Non-pass-by †	-	0	0	-	-	0	0	0	0	-	-	-	-	-	0
	Pass by ‡	-	372	194	-	-	194	570	194	570	-	-	37	-	-	0
	DW5 Total	-	372	194	-	-	194	570	194	570	-	-	37	-	-	0

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution												
	Southbound			Yorktown WB			Northbound			Yorktown EB			
DW1	Movement	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑
	Background Traffic	0	0	9	570	0	10	0	11	0	590	9	
	Non-pass-by †	53	0	*	91	*	*	0	*	272	*	*	
	Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0
	DW1 Total	53	0	9	570	91	10	0	11	272	590	9	

Driveway	Southbound						Yorktown WB						Bichon Dr						Yorktown EB							
	DW2	Movement	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑
Background Traffic		0	0	0	0	25	570	0	21	0	22	0	22	0	590	25										
Non-pass-by †		0	0	0	37	*	31	*	*	0	*	32	*	*												
Pass by ‡		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DW2 Total		0	0	0	37	25	570	31	21	0	22	32	22	590	25											

Driveway	Southbound			Yorktown WB			Bay NB			Yorktown EB			
	DW3	Movement	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔
Background Traffic		0	0	25	570	0	32	0	32	0	590	24	
Non-pass-by †		0	0	*	31	*	*	0	*	32	*	*	
Pass by ‡		0	0	0	0	0	0	0	0	0	0	0	0
DW3 Total		0	0	25	570	31	32	0	32	32	590	24	

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound			
	DW4	Movement	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔
Background Traffic		-	511	0	-	0	466	-	0	-	0	-	0
Non-pass-by †		-	*	191	-	82	*	-	121	-	40	-	40
Pass by ‡		-	0	0	-	0	0	-	0	-	0	-	0
DW4 Total		-	511	191	-	82	466	-	121	-	40	-	40

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound			
	DW5	Movement	↔	↑	↔	↑	↔	↑	↔	↑	↔	↑	↔
Background Traffic		-	511	0	-	466	-	-	-	-	0	-	0
Non-pass-by †		-	*	145	-	*	-	-	-	-	85	-	85
Pass by ‡		-	0	0	-	0	-	-	-	-	0	-	0
DW5 Total		-	511	145	-	466	-	-	-	-	85	-	85

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution																
	Southbound				Yorktown WB				Northbound				Yorktown EB				
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	
DW1	Movement	0	0	0	0	4	580	0	6	0	6	0	0	525	4		
	Background Traffic	39	0	115	*	201			*	0	*	605	*				
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	39	0	115	4	580	201	6	0	6	0	605	525	4			
	DW1 Total	0	0	0	0	27	70	26	0	26	0	71	525	28			

Driveway	Trip Distribution																
	Southbound				Yorktown WB				Bichon Dr				Yorktown EB				
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	
DW2	Movement	0	0	0	0	28	580	0	26	0	26	0	525	28			
	Background Traffic	0	0	27	*	70			*	0	*	71	*				
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	0	0	0	0	28	580	70	26	26	0	71	525	28			
	DW2 Total	0	0	0	0	27	70	26	0	26	0	71	525	28			

Driveway	Trip Distribution																
	Southbound				Yorktown WB				Bay NB				Yorktown EB				
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	
DW3	Movement	0	0	0	0	31	580	0	23	0	24	0	525	33			
	Background Traffic	0	0	27	*	70			*	0	*	71	*				
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	0	0	0	0	31	580	70	23	24	0	71	525	33			
	DW3 Total	0	0	0	0	27	70	23	0	24	0	71	525	33			

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW4	Movement	-	417	0	-	-	639	-	0	639	-	-	0	-	0	
	Background Traffic	-	*	423	-	182	*	-	81	*	-	34	-	-	0	
	Non-pass-by †	-	0	0	-	0	0	-	0	0	-	0	-	-	0	
	Pass by ‡	-	417	423	-	182	639	-	81	639	-	34	-	-	0	
	DW4 Total	-	417	423	-	182	639	-	81	639	-	34	-	-	0	

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW5	Movement	-	417	0	-	-	639	-	0	639	-	-	0	-	0	
	Background Traffic	-	*	323	-	-	*	-	-	*	-	61	-	-	0	
	Non-pass-by †	-	0	0	-	0	0	-	0	0	-	0	-	-	0	
	Pass by ‡	-	417	323	-	-	639	-	-	639	-	61	-	-	0	
	DW5 Total	-	417	323	-	-	639	-	-	639	-	61	-	-	0	

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution											
	Southbound			Yorktown WB			Northbound			Yorktown EB		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Movement	0	0	0	10	639	0	11	0	13	0	662	10
Background Traffic	89	0	266	*	151	*	*	0	*	454	*	*
Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0
Pass by ‡	89	0	266	10	639	151	11	0	13	454	662	10
DW1 Total												

Driveway	Southbound						Yorktown WB			Bichon Dr			Yorktown EB		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Movement	0	0	0	28	639	0	24	0	25	0	662	28			
Background Traffic	0	0	62	*	53	*	*	0	*	53	*	*			
Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0			
Pass by ‡	0	0	62	28	639	53	24	0	25	53	662	28			
DW2 Total															

Driveway	Southbound			Yorktown WB			Bay NB			Yorktown EB		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Movement	0	0	0	28	639	0	36	0	36	0	662	26
Background Traffic	0	0	62	*	53	*	*	0	*	53	*	*
Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0
Pass by ‡	0	0	62	28	639	53	36	0	36	53	662	26
DW3 Total												

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Movement	-	572	0	-	-	-	0	522	-	0	-	0
Background Traffic	-	*	317	-	-	-	136	*	-	200	-	67
Non-pass-by †	-	0	0	-	-	-	0	0	-	0	-	0
Pass by ‡	-	572	317	-	-	-	136	522	-	200	-	67
DW4 Total												

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Movement	-	572	0	-	-	-	-	522	-	-	-	0
Background Traffic	-	*	242	-	-	-	-	*	-	-	-	142
Non-pass-by †	-	0	0	-	-	-	-	0	-	-	-	0
Pass by ‡	-	572	242	-	-	-	-	522	-	-	-	142
DW5 Total												

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Northbound				Yorktown EB			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW1	Movement	0	0	0	3	462	0	5	0	5	0	0	0	418	3	
	Background Traffic	12	0	34	*	60	*	182	*	0	0	0	0	*	*	
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Pass by ‡	12	0	34	3	462	60	5	0	5	0	0	0	418	3	
	DW1 Total	4	0	4	22	462	21	21	0	21	0	21	0	418	22	

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bichon Dr				Yorktown EB			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW2	Movement	0	0	0	22	462	0	21	0	21	0	0	0	418	22	
	Background Traffic	4	0	4	*	21	*	21	*	0	0	0	0	*	*	
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Pass by ‡	4	0	4	22	462	21	21	0	21	0	21	0	418	22	
	DW2 Total	4	0	4	22	462	21	21	0	21	0	21	0	418	22	

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bay NB				Yorktown EB			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW3	Movement	0	0	0	25	462	0	18	0	19	0	0	0	418	26	
	Background Traffic	4	0	4	*	76	*	21	*	0	0	0	0	*	*	
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Pass by ‡	4	0	4	25	462	76	18	0	19	0	19	0	418	26	
	DW3 Total	4	0	4	25	462	76	18	0	19	0	19	0	418	26	

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW4	Movement	-	332	0	-	-	-	-	509	-	-	-	-	-	0	
	Background Traffic	-	*	127	-	-	-	-	*	-	-	-	-	-	35	
	Non-pass-by †	-	0	0	-	-	-	-	0	-	-	-	-	-	0	
	Pass by ‡	-	332	127	-	-	-	-	509	-	-	-	-	-	35	
	DW4 Total	-	332	127	-	-	-	-	509	-	-	-	-	-	35	

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	
DW5	Movement	-	332	0	-	-	-	-	509	-	-	-	-	-	0	
	Background Traffic	-	*	97	-	-	-	-	*	-	-	-	-	-	18	
	Non-pass-by †	-	0	0	-	-	-	-	0	-	-	-	-	-	0	
	Pass by ‡	-	332	97	-	-	-	-	509	-	-	-	-	-	18	
	DW5 Total	-	332	97	-	-	-	-	509	-	-	-	-	-	18	

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution											
	Southbound			Yorktown WB			Northbound			Yorktown EB		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
DW1	Movement	0	0	8	509	0	9	0	10	0	527	8
	Background Traffic	27	0	79	*	45	*	0	*	137	*	*
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	27	0	79	8	509	9	0	10	137	527	8
DW1 Total	10	0	9	22	462	16	19	0	20	16	527	22

Driveway	Southbound						Yorktown WB			Bichon Dr			Yorktown EB		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
DW2	Movement	0	0	0	22	462	0	19	0	20	0	527	22		
	Background Traffic	10	0	9	*	16	*	0	*	16	*	*	*		
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0		
	Pass by ‡	10	0	9	22	462	16	19	0	20	16	527	22		
DW2 Total	10	0	9	22	462	16	19	0	20	16	527	22			

Driveway	Southbound			Yorktown WB			Bay NB			Yorktown EB		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
DW3	Movement	0	0	22	509	0	29	0	29	0	527	21
	Background Traffic	10	0	9	*	57	*	0	*	16	*	*
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	10	0	9	22	509	57	29	0	29	16	527
DW3 Total	10	0	9	22	509	57	29	0	29	16	527	21

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
DW4	Movement	-	456	0	-	-	-	416	-	-	-	0
	Background Traffic	-	*	94	-	-	-	*	-	-	-	79
	Non-pass-by †	-	0	0	-	-	-	0	-	-	-	0
	Pass by ‡	-	456	94	-	-	-	416	-	-	-	79
DW4 Total	-	456	94	-	-	-	416	-	-	-	79	

Driveway	Rodd Field SB			Westbound			Rodd Field NB			Eastbound		
	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
DW5	Movement	-	456	0	-	-	-	416	-	-	-	0
	Background Traffic	-	*	73	-	-	-	*	-	-	-	43
	Non-pass-by †	-	0	0	-	-	-	0	-	-	-	0
	Pass by ‡	-	456	73	-	-	-	416	-	-	-	43
DW5 Total	-	456	73	-	-	-	416	-	-	-	43	

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution																
	Southbound				Yorktown WB				Northbound				Yorktown EB				
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	
DW1	Movement	0	0	0	0	3	518	0	6	0	6	0	0	468	3		
	Background Traffic	23	0	69	*	121			*	0	*	363	*				
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	23	0	69	3	518	121	6	0	6	0	363	468	3			

Driveway	Yorktown WB								Bichon Dr								Yorktown EB			
	Southbound				Yorktown WB				Bichon Dr				Yorktown EB							
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘				
DW2	Movement	0	0	0	25	518	0	24	0	24	0	24	0	468	25					
	Background Traffic	0	0	16	*	42			*	0	*	43	*							
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	Pass by ‡	0	0	16	25	518	42	24	0	24	0	43	468	25						

Driveway	Southbound				Yorktown WB				Bay NB				Yorktown EB				
	Southbound				Yorktown WB				Bay NB				Yorktown EB				
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	
DW3	Movement	0	0	0	28	518	0	20	0	21	0	21	0	468	29		
	Background Traffic	0	0	16	*	150			*	0	*	43	*				
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	0	0	16	28	518	150	20	0	21	0	43	468	29			

Driveway	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW4	Movement	-	372	0	-	-	-	570	-	-	-	-	-	-	0	
	Background Traffic	-	*	253	-	-	-	*	-	-	-	-	-	-	69	
	Non-pass-by †	-	0	0	-	-	-	0	-	-	-	-	-	-	0	
	Pass by ‡	-	372	253	-	-	-	570	-	-	-	-	-	-	69	

Driveway	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW5	Movement	-	372	0	-	-	-	570	-	-	-	-	-	-	0	
	Background Traffic	-	*	194	-	-	-	*	-	-	-	-	-	-	37	
	Non-pass-by †	-	0	0	-	-	-	0	-	-	-	-	-	-	0	
	Pass by ‡	-	372	194	-	-	-	570	-	-	-	-	-	-	37	

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Northbound				Yorktown EB			
Movement	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
Background Traffic	0	0	0	9	570	0	10	0	11	0	11	0	0	590	9	
Non-pass-by †	53	0	160	*	91	*	*	0	*	0	0	0	272	*	*	
Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DW1 Total	53	0	160	9	570	91	10	0	11	0	11	0	272	590	9	

Driveway	Bichon Dr															
	Southbound				Yorktown WB				Bay NB				Yorktown EB			
Movement	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
Background Traffic	0	0	0	25	570	0	21	0	22	0	22	0	0	590	25	
Non-pass-by †	0	0	37	*	31	*	*	0	*	0	0	0	32	*	*	
Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DW2 Total	0	0	37	25	570	31	21	0	22	0	22	0	32	590	25	

Driveway	Yorktown WB															
	Southbound				Yorktown WB				Bay NB				Yorktown EB			
Movement	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
Background Traffic	0	0	0	25	570	0	32	0	32	0	32	0	0	590	24	
Non-pass-by †	0	0	37	*	113	*	*	0	*	0	*	0	32	*	*	
Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DW3 Total	0	0	37	25	570	113	32	0	32	0	32	0	32	590	24	

Driveway	Westbound															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
Movement	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
Background Traffic	-	511	0	-	-	-	466	-	-	-	-	-	-	-	-	0
Non-pass-by †	-	*	191	-	-	-	*	-	-	-	-	-	-	-	-	161
Pass by ‡	-	0	0	-	-	-	0	-	-	-	-	-	-	-	-	0
DW4 Total	-	511	191	-	-	-	466	-	-	-	-	-	-	-	-	161

Driveway	Rodd Field NB															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
Movement	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
Background Traffic	-	511	0	-	-	-	466	-	-	-	-	-	-	-	-	0
Non-pass-by †	-	*	145	-	-	-	*	-	-	-	-	-	-	-	-	85
Pass by ‡	-	0	0	-	-	-	0	-	-	-	-	-	-	-	-	0
DW5 Total	-	511	145	-	-	-	466	-	-	-	-	-	-	-	-	85

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Northbound				Yorktown EB			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW1	Movement	0	0	0	0	4	580	0	6	0	6	0	0	525	4	
	Background Traffic	39	0	115	*	201	*	0	*	0	*	605	*			
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	39	0	115	4	580	201	6	0	6	0	605	525	4		
	DW1 Total	0	0	0	0	28	580	70	26	26	0	71	525	28		

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bichon Dr				Yorktown EB			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW2	Movement	0	0	0	0	28	580	0	26	0	26	0	525	28		
	Background Traffic	0	0	27	*	70	*	0	*	0	*	71	*			
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	0	0	27	31	580	252	23	23	23	0	71	525	28		
	DW2 Total	0	0	0	0	28	580	70	26	26	0	71	525	28		

Driveway	Trip Distribution															
	Southbound				Yorktown WB				Bay NB				Yorktown EB			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW3	Movement	0	0	0	0	31	580	0	23	0	24	0	525	33		
	Background Traffic	0	0	27	*	252	*	0	*	0	*	71	*			
	Non-pass-by †	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pass by ‡	0	0	27	31	580	252	23	23	23	0	71	525	33		
	DW3 Total	0	0	0	0	31	580	252	23	23	0	71	525	33		

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW4	Movement	-	417	0	-	-	-	639	-	-	-	-	-	0		
	Background Traffic	-	*	423	-	-	-	*	-	-	-	-	-	115		
	Non-pass-by †	-	0	0	-	-	-	0	-	-	-	-	-	0		
	Pass by ‡	-	417	423	-	-	-	639	-	-	-	-	-	115		
	DW4 Total	-	417	423	-	-	-	639	-	-	-	-	-	115		

Driveway	Trip Distribution															
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound			
	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘	↵	↑	↗	↘
DW5	Movement	-	417	0	-	-	-	639	-	-	-	-	-	0		
	Background Traffic	-	*	323	-	-	-	*	-	-	-	-	-	61		
	Non-pass-by †	-	0	0	-	-	-	0	-	-	-	-	-	0		
	Pass by ‡	-	417	323	-	-	-	639	-	-	-	-	-	61		
	DW5 Total	-	417	323	-	-	-	639	-	-	-	-	-	61		

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.

Driveway	Trip Distribution														
	Southbound				Yorktown WB				Northbound				Yorktown EB		
Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Background Traffic	0	0	0	10	639	0	11	0	13	0	662	10	0	662	10
Non-pass-by †	89	0	266	*	151	*	*	0	*	0	454	*	0	454	*
Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DW1 Total	89	0	266	10	639	151	11	0	13	0	454	662	0	454	10

Driveway	Bichon Dr														
	Southbound				Yorktown WB				Bay NB				Yorktown EB		
Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Background Traffic	0	0	0	28	639	0	24	0	25	0	662	28	0	662	28
Non-pass-by †	0	0	62	*	53	*	*	0	*	0	53	*	0	53	*
Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DW2 Total	0	0	62	28	639	53	24	0	25	0	53	662	0	53	28

Driveway	Yorktown WB														
	Southbound				Yorktown WB				Bay NB				Yorktown EB		
Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Background Traffic	0	0	0	28	639	0	36	0	36	0	662	26	0	662	26
Non-pass-by †	0	0	62	*	189	*	*	0	*	0	53	*	0	53	*
Pass by ‡	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DW3 Total	0	0	62	28	639	189	36	0	36	0	53	662	0	53	26

Driveway	Westbound														
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound		
Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Background Traffic	-	572	0	-	-	-	-	522	-	-	-	-	-	-	0
Non-pass-by †	-	*	317	-	-	-	-	*	-	-	-	-	-	-	267
Pass by ‡	-	0	0	-	-	-	-	0	-	-	-	-	-	-	0
DW4 Total	-	572	317	-	-	-	-	522	-	-	-	-	-	-	267

Driveway	Rodd Field NB														
	Rodd Field SB				Westbound				Rodd Field NB				Eastbound		
Movement	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪	↩	↑	↪
Background Traffic	-	572	0	-	-	-	-	522	-	-	-	-	-	-	0
Non-pass-by †	-	*	242	-	-	-	-	*	-	-	-	-	-	-	142
Pass by ‡	-	0	0	-	-	-	-	0	-	-	-	-	-	-	0
DW5 Total	-	572	242	-	-	-	-	522	-	-	-	-	-	-	142

† Character "*" denotes a movement that does not access the driveway and therefore cannot be considered for Non-pass-by trips.

‡ A negative value in the pass-by row denotes trips that have been diverted to an inbound movement.



Scenario 1

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 1_PHASE 1 - AM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	385	98	306	279	115	225	309	95	186	117	174
Future Volume (vph)	49	385	98	306	279	115	225	309	95	186	117	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.567			0.357			0.661			0.541		
Satd. Flow (perm)	1056	3539	1583	665	3539	1583	1231	3539	1583	1008	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			176			176			189
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2654
Travel Time (s)		14.4			30.2			16.0				51.7
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
Adj. Flow (vph)	53	418	107	333	303	125	245	336	103	202	127	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	418	107	333	303	125	245	336	103	202	127	189
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 1_PHASE 1 OPENING DAY AM

Synchro 9 Report

Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1 9.5 s	 Ø2 (R) 22.6 s	 Ø3 10.4 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 22.6 s	 Ø7 9.5 s	 Ø8 23.4 s

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 1_PHASE 1 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	442	91	239	364	288	140	189	82	178	333	275
Future Volume (vph)	146	442	91	239	364	288	140	189	82	178	333	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.504			0.334			0.536			0.581		
Satd. Flow (perm)	939	3539	1583	622	3539	1583	998	3539	1583	1082	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			313			176			299
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		953			1990			821			2664	
Travel Time (s)		14.4			30.2			16.0			51.9	
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
Adj. Flow (vph)	159	480	99	260	396	313	152	205	89	193	362	299
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	480	99	260	396	313	152	205	89	193	362	299
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 1_PHASE 1 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1 9.5 s	 Ø2 (R) 23 s	 Ø3 10 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 23 s	 Ø7 9.6 s	 Ø8 22.9 s

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

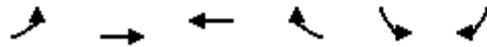
SCENARIO 1_PHASE 1 - AM
5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	293	271	360	326	177	258
Future Volume (vph)	293	271	360	326	177	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.354				0.950	
Satd. Flow (perm)	1279	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				354		280
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	318	295	391	354	192	280
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	295	391	354	192	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 1 - AM
5/15/2017

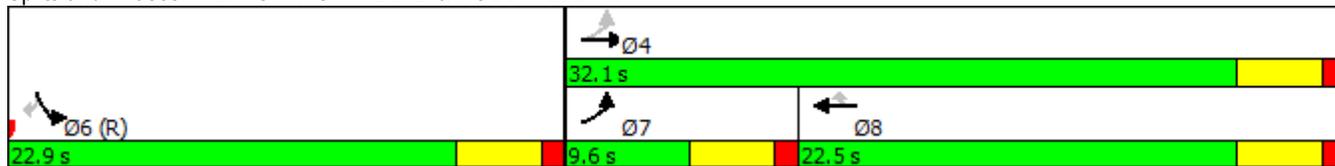


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	9.6	32.1	22.5	22.5	22.9	22.9
Total Split (%)	17.5%	58.4%	40.9%	40.9%	41.6%	41.6%
Maximum Green (s)	5.1	27.6	18.0	18.0	18.4	18.4
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	22.2	22.2	12.6	12.6	23.8	23.8
Actuated g/C Ratio	0.40	0.40	0.23	0.23	0.43	0.43
v/c Ratio	0.44	0.21	0.48	0.56	0.13	0.21
Control Delay	8.2	6.3	19.7	5.9	10.9	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	6.3	19.7	5.9	10.9	2.4
LOS	A	A	B	A	B	A
Approach Delay		7.3	13.1		5.9	
Approach LOS		A	B		A	
Queue Length 50th (ft)	40	37	59	0	18	0
Queue Length 95th (ft)	11	11	81	47	40	22
Internal Link Dist (ft)		754	715		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	716	1775	1158	756	1483	1363
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.17	0.34	0.47	0.13	0.21

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
Intersection Signal Delay: 9.3 **Intersection LOS: A**
 Intersection Capacity Utilization 36.0% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD

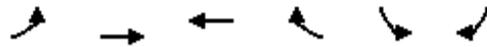


FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 1 - PM

5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙↙	↑↑	↑↑	↘	↙↙	↘↘
Traffic Volume (vph)	369	378	357	239	294	360
Future Volume (vph)	369	378	357	239	294	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.351				0.950	
Satd. Flow (perm)	1268	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				260		391
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	401	411	388	260	320	391
Shared Lane Traffic (%)						
Lane Group Flow (vph)	401	411	388	260	320	391
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

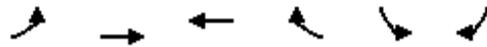
SCENARIO 1_PHASE 1 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 1 - PM

5/15/2017

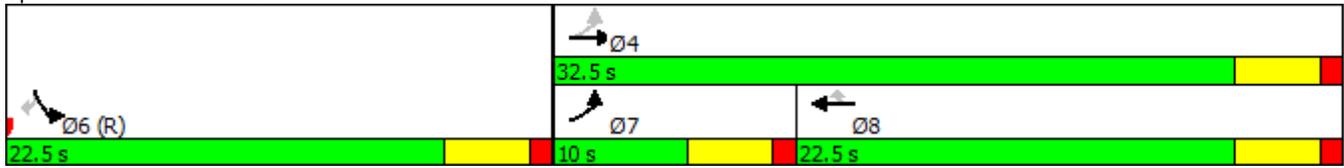


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	22.2	22.2	12.2	12.2	23.8	23.8
Actuated g/C Ratio	0.40	0.40	0.22	0.22	0.43	0.43
v/c Ratio	0.55	0.29	0.49	0.47	0.22	0.27
Control Delay	9.4	6.9	20.2	5.6	11.2	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	6.9	20.2	5.6	11.2	2.2
LOS	A	A	C	A	B	A
Approach Delay		8.1	14.4		6.3	
Approach LOS		A	B		A	
Queue Length 50th (ft)	50	52	58	0	31	0
Queue Length 95th (ft)	15	16	82	42	62	25
Internal Link Dist (ft)		754	715		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	729	1801	1158	692	1482	1426
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.23	0.34	0.38	0.22	0.27

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
Intersection Signal Delay: 9.4 **Intersection LOS: A**
 Intersection Capacity Utilization 40.0% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	10	0	607	630	5
Future Vol, veh/h	0	10	0	607	630	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	660	685	5
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	345	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	651	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	651	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.6		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	651	-	-		
HCM Lane V/C Ratio	-	0.017	-	-		
HCM Control Delay (s)	-	10.6	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Intersection							
Int Delay, s/veh	0.1						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	6	0	588	708	7	
Future Vol, veh/h	0	6	0	588	708	7	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	7	0	639	770	8	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	389	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	610	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	610	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	11		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	610	-	-			
HCM Lane V/C Ratio	-	0.011	-	-			
HCM Control Delay (s)	-	11	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0	-	-			

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD /SLOUGH RD

SCENARIO 1_PHASE 1 - AM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗		↘↗	↑↑	↗	↘	↑↑	↗
Traffic Volume (vph)	86	147	162	102	127	171	94	385	62	50	381	15
Future Volume (vph)	86	147	162	102	127	171	94	385	62	50	381	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.914				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1703	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.296			0.630			0.465			0.507		
Satd. Flow (perm)	551	1863	1583	1174	1703	0	1680	3539	1583	944	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176		103				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	93	160	176	111	138	186	102	418	67	54	414	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	160	176	111	324	0	102	418	67	54	414	16
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD /SLOUGH RD

SCENARIO 1_PHASE 1 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.6	22.5	22.5	9.6	22.5		9.5	23.4	23.4	9.5	23.4	23.4
Total Split (%)	14.8%	34.6%	34.6%	14.8%	34.6%		14.6%	36.0%	36.0%	14.6%	36.0%	36.0%
Maximum Green (s)	5.1	18.0	18.0	5.1	18.0		5.0	18.9	18.9	5.0	18.9	18.9
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	17.6	13.5	13.5	17.6	13.5		32.1	28.5	28.5	31.2	26.4	26.4
Actuated g/C Ratio	0.27	0.21	0.21	0.27	0.21		0.49	0.44	0.44	0.48	0.41	0.41
v/c Ratio	0.38	0.41	0.38	0.30	0.74		0.10	0.27	0.08	0.10	0.29	0.02
Control Delay	17.5	24.4	6.1	15.6	26.5		10.0	15.5	0.2	10.5	16.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	24.4	6.1	15.6	26.5		10.0	15.5	0.2	10.5	16.6	0.1
LOS	B	C	A	B	C		A	B	A	B	B	A
Approach Delay		15.4			23.7			12.8			15.4	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	24	55	0	29	80		10	65	0	10	64	0
Queue Length 95th (ft)	46	95	40	54	149		23	106	0	30	105	0
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	245	515	565	364	546		986	1554	794	526	1439	748
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.31	0.31	0.30	0.59		0.10	0.27	0.08	0.10	0.29	0.02

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.5 **Intersection LOS: B**
 Intersection Capacity Utilization 51.7% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 4: RODD FIELD RD & AIRLINE RD /SLOUGH RD

Ø1 9.5 s	Ø2 (R) 23.4 s	Ø3 9.6 s	Ø4 22.5 s
Ø5 9.5 s	Ø6 (R) 23.4 s	Ø7 9.6 s	Ø8 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 1_PHASE 1 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	159	215	47	84	66	117	413	71	139	496	29
Future Volume (vph)	36	159	215	47	84	66	117	413	71	139	496	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.934				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1740	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.654			0.547			0.420			0.446		
Satd. Flow (perm)	1218	1863	1583	1019	1740	0	1518	3539	1583	831	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			234		61				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	39	173	234	51	91	72	127	449	77	151	539	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	173	234	51	163	0	127	449	77	151	539	32
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 1_PHASE 1 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 1_PHASE 1 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	23.0	23.0	10.0	23.5	23.5
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%		14.6%	35.4%	35.4%	15.4%	36.2%	36.2%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0		5.0	18.5	18.5	5.5	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	14.5	11.5	11.5	15.4	13.4		34.2	29.0	29.0	36.3	30.0	30.0
Actuated g/C Ratio	0.22	0.18	0.18	0.24	0.21		0.53	0.45	0.45	0.56	0.46	0.46
v/c Ratio	0.12	0.53	0.50	0.17	0.40		0.13	0.28	0.10	0.26	0.33	0.04
Control Delay	15.3	29.5	7.4	16.0	16.5		8.2	15.4	0.2	9.4	15.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	29.5	7.4	16.0	16.5		8.2	15.4	0.2	9.4	15.0	0.1
LOS	B	C	A	B	B		A	B	A	A	B	A
Approach Delay		16.6			16.4			12.2			13.1	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	11	63	0	14	29		11	68	0	27	81	0
Queue Length 95th (ft)	25	107	47	31	77		26	115	0	64	136	0
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	313	515	607	298	540		986	1576	803	570	1632	825
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.34	0.39	0.17	0.30		0.13	0.28	0.10	0.26	0.33	0.04

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

 Ø1 10 s	 Ø2 (R) 23 s	 Ø3 9.5 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 23.5 s	 Ø7 9.5 s	 Ø8 22.5 s

FINAL DRAFT

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↗
Traffic Vol, veh/h	154	116	64	257	302	46
Future Vol, veh/h	154	116	64	257	302	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	126	70	279	328	50
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	164	328	0	-	0
Stage 1	328	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	428	852	1228	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	404	852	1228	-	-	-
Mov Cap-2 Maneuver	404	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.8		1.6		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1228	-	404	852	-	-
HCM Lane V/C Ratio	0.057	-	0.414	0.148	-	-
HCM Control Delay (s)	8.1	-	20.1	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2	0.5	-	-

Intersection							
Int Delay, s/veh	5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	
Traffic Vol, veh/h	143	104	68	189	377	71	
Future Vol, veh/h	143	104	68	189	377	71	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	150	-	-	0	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	155	113	74	205	410	77	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	661	205	410	0	-	0	
Stage 1	410	-	-	-	-	-	
Stage 2	251	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	395	802	1145	-	-	-	
Stage 1	638	-	-	-	-	-	
Stage 2	768	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	369	802	1145	-	-	-	
Mov Cap-2 Maneuver	369	-	-	-	-	-	
Stage 1	638	-	-	-	-	-	
Stage 2	718	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	16.9		2.2		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1145	-	369	802	-	-	
HCM Lane V/C Ratio	0.065	-	0.421	0.141	-	-	
HCM Control Delay (s)	8.4	-	21.7	10.2	-	-	
HCM Lane LOS	A	-	C	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	2	0.5	-	-	

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	97	65	73	20	50	282
Future Vol, veh/h	97	65	73	20	50	282
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	71	79	22	54	307
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	101	0	-	0	372	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	282	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1491	-	-	-	629	968
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1491	-	-	-	583	968
Mov Cap-2 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	710	-
Approach	EB		WB		SB	
HCM Control Delay, s	4.5		0		11.9	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1491	-	-	-	880	
HCM Lane V/C Ratio	0.071	-	-	-	0.41	
HCM Control Delay (s)	7.6	0	-	-	11.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	2	

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	89	127	45	30	60	137
Future Vol, veh/h	89	127	45	30	60	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	138	49	33	65	149
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	82	0	-	0	397	65
Stage 1	-	-	-	-	65	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1515	-	-	-	608	999
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	727	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1515	-	-	-	566	999
Mov Cap-2 Maneuver	-	-	-	-	566	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	677	-
Approach	EB		WB		SB	
HCM Control Delay, s	3.1		0		11	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1515	-	-	-	810	
HCM Lane V/C Ratio	0.064	-	-	-	0.264	
HCM Control Delay (s)	7.5	0	-	-	11	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.1	

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 1 - AM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	109	113	113	133	100	205	647	162	48	398	114
Future Volume (vph)	232	109	113	113	133	100	205	647	162	48	398	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		100	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.936				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1744	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.581			0.681			0.500			0.356		
Satd. Flow (perm)	1082	1863	1583	1269	1744	0	931	3539	1583	663	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			123		100				176			124
Link Speed (mph)		30			30			30				35
Link Distance (ft)		687			2097			2654				451
Travel Time (s)		15.6			47.7			60.3				8.8
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
Adj. Flow (vph)	252	118	123	123	145	109	223	703	176	52	433	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	118	123	123	254	0	223	703	176	52	433	124
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 1_PHASE 1 OPENING DAY AM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

Ø2 (R) 22.5 s	Ø4 22.5 s
Ø6 (R) 22.5 s	Ø8 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 1 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	74	166	119	74	95	111	478	86	43	684	173
Future Volume (vph)	149	74	166	119	74	95	111	478	86	43	684	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.916				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1706	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.642			0.705			0.352			0.460		
Satd. Flow (perm)	1196	1863	1583	1313	1706	0	656	3539	1583	857	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129		103				93			188
Link Speed (mph)		30			30			35				35
Link Distance (ft)		717			2063			2664				697
Travel Time (s)		16.3			46.9			51.9				13.6
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
Adj. Flow (vph)	162	80	180	129	80	103	121	520	93	47	743	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	80	180	129	183	0	121	520	93	47	743	188
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 1_PHASE 1 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 1 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		27.5	27.5	27.5	27.5	27.5	27.5
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		55.0%	55.0%	55.0%	55.0%	55.0%	55.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		23.0	23.0	23.0	23.0	23.0	23.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	12.2	12.2	12.2	12.2	12.2		28.8	28.8	28.8	28.8	28.8	28.8
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24		0.58	0.58	0.58	0.58	0.58	0.58
v/c Ratio	0.55	0.18	0.37	0.40	0.37		0.32	0.26	0.10	0.10	0.36	0.19
Control Delay	22.7	13.9	7.3	18.1	8.8		10.5	6.7	2.5	7.2	7.3	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	13.9	7.3	18.1	8.8		10.5	6.7	2.5	7.2	7.3	2.1
LOS	C	B	A	B	A		B	A	A	A	A	A
Approach Delay		14.5			12.7			6.8				6.3
Approach LOS		B			B			A				A
Queue Length 50th (ft)	42	19	12	32	19		16	33	0	5	51	0
Queue Length 95th (ft)	74	37	42	58	49		58	73	18	22	108	25
Internal Link Dist (ft)		637			1983			2584				617
Turn Bay Length (ft)	150		150	100			200		200	200		200
Base Capacity (vph)	430	670	652	472	680		377	2036	950	493	2036	991
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.12	0.28	0.27	0.27		0.32	0.26	0.10	0.10	0.36	0.19

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 8.7 Intersection LOS: A

Intersection Capacity Utilization 58.0% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

 27.5 s	 22.5 s
 27.5 s	 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 1 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	182	485	3	3	480	60	5	0	5	12	0	34
Future Volume (vph)	182	485	3	3	480	60	5	0	5	12	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.983			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3479	0	1770	1583	0	1770	1583	0
Flt Permitted	0.284			0.455			0.733			0.754		
Satd. Flow (perm)	529	3536	0	848	3479	0	1365	1583	0	1405	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			26			345			341	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	198	527	3	3	522	65	5	0	5	13	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	530	0	3	587	0	5	5	0	13	37	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	10.0	23.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	18.2%	41.8%		17.3%	40.9%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.5	18.5		5.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	23.6	22.5		19.4	14.4		21.6	21.6		21.6	21.6	
Actuated g/C Ratio	0.43	0.41		0.35	0.26		0.39	0.39		0.39	0.39	
v/c Ratio	0.56	0.37		0.01	0.63		0.01	0.01		0.02	0.04	
Control Delay	16.0	12.4		3.7	15.8		12.2	0.0		12.2	0.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.0	12.4		3.7	15.8		12.2	0.0		12.2	0.1	
LOS	B	B		A	B		B	A		B	A	
Approach Delay		13.3			15.7			6.1			3.3	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	37	54		0	100		1	0		3	0	
Queue Length 95th (ft)	63	106		m1	122		7	0		12	0	
Internal Link Dist (ft)		182			494			445			345	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	351	1447		382	1156		536	831		551	828	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.37		0.01	0.51		0.01	0.01		0.02	0.04	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
Intersection Signal Delay: 13.9 **Intersection LOS: B**
 Intersection Capacity Utilization 43.8% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD

 22.5 s	 9.5 s	 23 s
 22.5 s	 10 s	 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 1 - PM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	137	574	8	8	547	45	9	0	10	27	0	79
Future Volume (vph)	137	574	8	8	547	45	9	0	10	27	0	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.989			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3500	0	1770	1583	0	1770	1583	0
Flt Permitted	0.264			0.412			0.701			0.750		
Satd. Flow (perm)	492	3532	0	767	3500	0	1306	1583	0	1397	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			16			310			314	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	149	624	9	9	595	49	10	0	11	29	0	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	633	0	9	644	0	10	11	0	29	86	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 1 - PM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	10.0	23.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	18.2%	41.8%		17.3%	40.9%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.5	18.5		5.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	22.4	21.3		19.2	15.2		22.8	22.8		22.8	22.8	
Actuated g/C Ratio	0.41	0.39		0.35	0.28		0.41	0.41		0.41	0.41	
v/c Ratio	0.45	0.46		0.03	0.66		0.02	0.01		0.05	0.10	
Control Delay	13.0	13.5		4.4	16.3		12.7	0.0		12.8	0.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.0	13.5		4.4	16.3		12.7	0.0		12.8	0.2	
LOS	B	B		A	B		B	A		B	A	
Approach Delay		13.4			16.2			6.0				3.4
Approach LOS		B			B			A				A
Queue Length 50th (ft)	26	65		1	110		2	0		6	0	
Queue Length 95th (ft)	49	128		m2	133		11	0		21	0	
Internal Link Dist (ft)		182			494			445				345
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	328	1468		359	1156		540	836		578	839	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.43		0.03	0.56		0.02	0.01		0.05	0.10	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.7 **Intersection LOS: B**
 Intersection Capacity Utilization 43.6% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD

 22.5 s	 9.5 s	 23 s
 22.5 s	 10 s	 22.5 s

FINAL DRAFT

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕		↖	↕	
Traffic Vol, veh/h	21	476	22	22	536	21	21	0	21	4	0	4
Future Vol, veh/h	21	476	22	22	536	21	21	0	21	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	517	24	24	583	23	23	0	23	4	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	605	0	0	541	0	0	914	1228	271	946	1229	303
Stage 1	-	-	-	-	-	-	575	575	-	642	642	-
Stage 2	-	-	-	-	-	-	339	653	-	304	587	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	969	-	-	1024	-	-	228	177	727	216	177	693
Stage 1	-	-	-	-	-	-	470	501	-	429	467	-
Stage 2	-	-	-	-	-	-	649	462	-	681	495	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	969	-	-	1024	-	-	219	169	727	202	169	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	169	-	202	169	-
Stage 1	-	-	-	-	-	-	459	489	-	419	456	-
Stage 2	-	-	-	-	-	-	630	451	-	644	483	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			17.3			16.7		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	337	969	-	-	1024	-	-	202	693			
HCM Lane V/C Ratio	0.135	0.024	-	-	0.023	-	-	0.022	0.006			
HCM Control Delay (s)	17.3	8.8	-	-	8.6	-	-	23.2	10.2			
HCM Lane LOS	C	A	-	-	A	-	-	C	B			
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.1	0			

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↕			↖	↕	
Traffic Vol, veh/h	16	585	22	22	583	16	19	0	20	10	0	9
Future Vol, veh/h	16	585	22	22	583	16	19	0	20	10	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	636	24	24	634	17	21	0	22	11	0	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	651	0	0	660	0	0	1048	1382	330	1043	1385	326
Stage 1	-	-	-	-	-	-	683	683	-	690	690	-
Stage 2	-	-	-	-	-	-	365	699	-	353	695	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	931	-	-	924	-	-	182	143	666	184	142	670
Stage 1	-	-	-	-	-	-	405	447	-	401	444	-
Stage 2	-	-	-	-	-	-	627	440	-	637	442	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	931	-	-	924	-	-	173	137	666	172	136	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	173	137	-	172	136	-
Stage 1	-	-	-	-	-	-	398	439	-	394	432	-
Stage 2	-	-	-	-	-	-	602	429	-	605	434	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			20.2			19.3		
HCM LOS	C			C			C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	279	931	-	-	924	-	-	172	670			
HCM Lane V/C Ratio	0.152	0.019	-	-	0.026	-	-	0.063	0.015			
HCM Control Delay (s)	20.2	8.9	-	-	9	-	-	27.3	10.5			
HCM Lane LOS	C	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.2	0			

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕	↗	↖	↕	↗		↕		↖	↕	↗
Traffic Vol, veh/h	21	459	26	25	553	21	18	0	19	4	0	4
Future Vol, veh/h	21	459	26	25	553	21	18	0	19	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	499	28	27	601	23	20	0	21	4	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	624	0	0	527	0	0	914	1237	264	962	1240	312
Stage 1	-	-	-	-	-	-	559	559	-	667	667	-
Stage 2	-	-	-	-	-	-	355	678	-	295	573	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	953	-	-	1036	-	-	228	175	734	210	174	684
Stage 1	-	-	-	-	-	-	481	509	-	414	455	-
Stage 2	-	-	-	-	-	-	635	450	-	689	502	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	953	-	-	1036	-	-	218	166	734	196	165	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	218	166	-	196	165	-
Stage 1	-	-	-	-	-	-	469	497	-	404	443	-
Stage 2	-	-	-	-	-	-	615	438	-	653	490	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.4			17			17.1		
HCM LOS	C			C			C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	341	953	-	-	1036	-	-	196	684			
HCM Lane V/C Ratio	0.118	0.024	-	-	0.026	-	-	0.022	0.006			
HCM Control Delay (s)	17	8.9	-	-	8.6	-	-	23.8	10.3			
HCM Lane LOS	C	A	-	-	A	-	-	C	B			
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.1	0			

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕			↕		↔	↕	
Traffic Vol, veh/h	16	579	21	22	590	16	29	0	29	10	0	9
Future Vol, veh/h	16	579	21	22	590	16	29	0	29	10	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	629	23	24	641	17	32	0	32	11	0	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	659	0	0	652	0	0	1044	1383	326	1047	1385	329
Stage 1	-	-	-	-	-	-	676	676	-	698	698	-
Stage 2	-	-	-	-	-	-	368	707	-	349	687	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	925	-	-	930	-	-	183	143	670	182	142	667
Stage 1	-	-	-	-	-	-	409	451	-	397	440	-
Stage 2	-	-	-	-	-	-	624	436	-	640	446	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	925	-	-	930	-	-	174	137	670	168	136	667
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	137	-	168	136	-
Stage 1	-	-	-	-	-	-	401	443	-	390	429	-
Stage 2	-	-	-	-	-	-	599	425	-	599	438	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			10.6			19.7		
HCM LOS	B			B			B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	670	925	-	-	930	-	-	168	667			
HCM Lane V/C Ratio	0.047	0.019	-	-	0.026	-	-	0.065	0.015			
HCM Control Delay (s)	10.6	9	-	-	9	-	-	27.9	10.5			
HCM Lane LOS	B	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.2	0			

Intersection							
Int Delay, s/veh	0.2						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	18	0	585	394	97	
Future Vol, veh/h	0	18	0	585	394	97	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	20	0	636	428	105	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	267	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	731	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	731	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	10.1		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	731	-	-			
HCM Lane V/C Ratio	-	0.027	-	-			
HCM Control Delay (s)	-	10.1	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.1	-	-			

Intersection							
Int Delay, s/veh	0.4						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	43	0	495	506	73	
Future Vol, veh/h	0	43	0	495	506	73	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	47	0	538	550	79	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	315	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	681	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	681	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	10.7		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	681	-	-			
HCM Lane V/C Ratio	-	0.069	-	-			
HCM Control Delay (s)	-	10.7	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.2	-	-			

Intersection							
Int Delay, s/veh	1						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	
Traffic Vol, veh/h	25	10	55	530	479	127	
Future Vol, veh/h	25	10	55	530	479	127	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	300	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	27	11	60	576	521	138	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	998	329	659	0	-	0	
Stage 1	590	-	-	-	-	-	
Stage 2	408	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	240	667	925	-	-	-	
Stage 1	517	-	-	-	-	-	
Stage 2	640	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	224	667	925	-	-	-	
Mov Cap-2 Maneuver	224	-	-	-	-	-	
Stage 1	517	-	-	-	-	-	
Stage 2	598	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	19.6		0.9		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	925	-	224	667	-	-	
HCM Lane V/C Ratio	0.065	-	0.121	0.016	-	-	
HCM Control Delay (s)	9.2	-	23.3	10.5	-	-	
HCM Lane LOS	A	-	C	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.4	0.1	-	-	

Intersection							
Int Delay, s/veh	1.8						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	
Traffic Vol, veh/h	59	20	41	454	559	94	
Future Vol, veh/h	59	20	41	454	559	94	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	300	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	64	22	45	493	608	102	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	995	355	710	0	-	0	
Stage 1	659	-	-	-	-	-	
Stage 2	336	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	242	641	885	-	-	-	
Stage 1	476	-	-	-	-	-	
Stage 2	696	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	230	641	885	-	-	-	
Mov Cap-2 Maneuver	230	-	-	-	-	-	
Stage 1	476	-	-	-	-	-	
Stage 2	661	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	22.6		0.8		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	885	-	230	641	-	-	
HCM Lane V/C Ratio	0.05	-	0.279	0.034	-	-	
HCM Control Delay (s)	9.3	-	26.6	10.8	-	-	
HCM Lane LOS	A	-	D	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	1.1	0.1	-	-	

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 1_PHASE 2 - AM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	537	110	347	335	151	252	346	143	313	131	195
Future Volume (vph)	55	537	110	347	335	151	252	346	143	313	131	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.535			0.200			0.662			0.406		
Satd. Flow (perm)	997	3539	1583	373	3539	1583	1233	3539	1583	756	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			205			164			205			212
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2687
Travel Time (s)		14.4			30.2			16.0				52.3
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
Adj. Flow (vph)	60	584	120	377	364	164	274	376	155	340	142	212
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	584	120	377	364	164	274	376	155	340	142	212
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 1_PHASE 2 OPENING DAY AM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1 14 s	 Ø2 (R) 24.4 s	 Ø3 19 s	 Ø4 22.6 s
 Ø5 12.6 s	 Ø6 (R) 25.8 s	 Ø7 9.6 s	 Ø8 32 s

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 1_PHASE 2 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	571	102	280	454	369	157	212	100	275	373	308
Future Volume (vph)	164	571	102	280	454	369	157	212	100	275	373	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.464			0.197			0.478			0.588		
Satd. Flow (perm)	864	3539	1583	367	3539	1583	890	3539	1583	1095	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			401			164			335
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2659
Travel Time (s)		14.4			30.2			16.0				51.8
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
Adj. Flow (vph)	178	621	111	304	493	401	171	230	109	299	405	335
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	621	111	304	493	401	171	230	109	299	405	335
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 1_PHASE 2 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

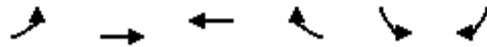
Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1 10 s	 Ø2 (R) 24.3 s	 Ø3 13.2 s	 Ø4 22.5 s
 Ø5 9.6 s	 Ø6 (R) 24.7 s	 Ø7 9.6 s	 Ø8 26.1 s

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 2 - AM
5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	348	312	430	400	213	363
Future Volume (vph)	348	312	430	400	213	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.314				0.950	
Satd. Flow (perm)	1135	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				435		395
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	339	467	435	232	395
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	339	467	435	232	395
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

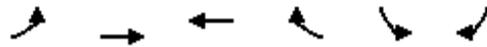
SCENARIO 1_PHASE 2 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 2 - AM

5/15/2017

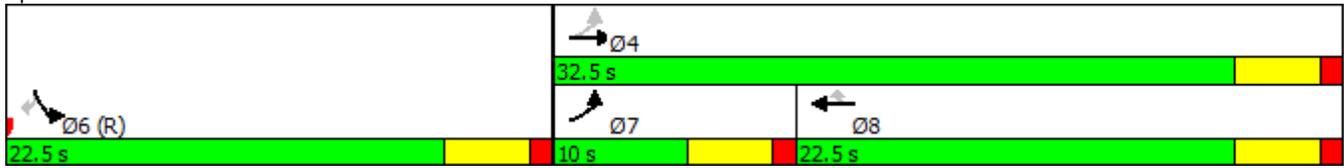


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	24.0	24.0	14.0	14.0	22.0	22.0
Actuated g/C Ratio	0.44	0.44	0.25	0.25	0.40	0.40
v/c Ratio	0.52	0.22	0.52	0.60	0.17	0.29
Control Delay	11.9	9.4	19.1	5.7	11.4	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	9.4	19.1	5.7	11.4	2.4
LOS	B	A	B	A	B	A
Approach Delay		10.7	12.6		5.7	
Approach LOS		B	B		A	
Queue Length 50th (ft)	38	34	68	0	19	0
Queue Length 95th (ft)	52	47	95	51	43	19
Internal Link Dist (ft)		754	715		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	725	1801	1158	810	1370	1349
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.19	0.40	0.54	0.17	0.29

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
Intersection Signal Delay: 10.1 **Intersection LOS: B**
 Intersection Capacity Utilization 42.2% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD

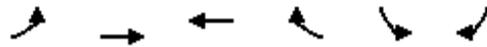


FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 2 - PM

5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	445	443	436	289	365	452
Future Volume (vph)	445	443	436	289	365	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.309				0.950	
Satd. Flow (perm)	1117	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				314		491
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	482	474	314	397	491
Shared Lane Traffic (%)						
Lane Group Flow (vph)	484	482	474	314	397	491
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

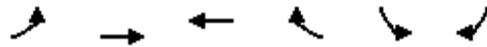
SCENARIO 1_PHASE 2 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 2 - PM

5/15/2017

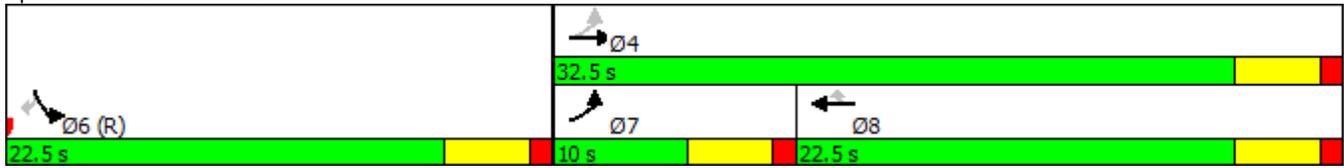


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	24.0	24.0	14.0	14.0	22.0	22.0
Actuated g/C Ratio	0.44	0.44	0.25	0.25	0.40	0.40
v/c Ratio	0.67	0.31	0.53	0.49	0.29	0.35
Control Delay	14.9	10.2	19.3	5.1	13.7	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	10.2	19.3	5.1	13.7	4.1
LOS	B	B	B	A	B	A
Approach Delay		12.5	13.6		8.4	
Approach LOS		B	B		A	
Queue Length 50th (ft)	50	50	70	0	31	0
Queue Length 95th (ft)	65	66	96	44	82	46
Internal Link Dist (ft)		754	715		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	718	1801	1158	729	1374	1410
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.27	0.41	0.43	0.29	0.35

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
Intersection Signal Delay: 11.5 **Intersection LOS: B**
 Intersection Capacity Utilization 46.4% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	11	0	708	965	5
Future Vol, veh/h	0	11	0	708	965	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	0	770	1049	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	527	-	0	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	
Pot Cap-1 Maneuver	0	496	0	-	-	
Stage 1	0	-	0	-	-	
Stage 2	0	-	0	-	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	496	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Approach	EB	NB		SB		
HCM Control Delay, s	12.4	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	496	-	-		
HCM Lane V/C Ratio	-	0.024	-	-		
HCM Control Delay (s)	-	12.4	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	6	0	732	971	8
Future Vol, veh/h	0	6	0	732	971	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	0	796	1055	9
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	532	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	492	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	492	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	492	-	-		
HCM Lane V/C Ratio	-	0.013	-	-		
HCM Control Delay (s)	-	12.4	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0	-	-		

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 1_PHASE 2 - AM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖↗	↑↑	↗	↖	↑↑	↗
Traffic Volume (vph)	95	165	293	128	142	192	107	453	74	56	571	17
Future Volume (vph)	95	165	293	128	142	192	107	453	74	56	571	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.914				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1703	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.274			0.597			0.319			0.452		
Satd. Flow (perm)	510	1863	1583	1112	1703	0	1153	3539	1583	842	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			318		104				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	103	179	318	139	154	209	116	492	80	61	621	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	179	318	139	363	0	116	492	80	61	621	18
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 1_PHASE 2 - AM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.6	22.5	22.5	9.6	22.5		9.5	23.4	23.4	9.5	23.4	23.4
Total Split (%)	14.8%	34.6%	34.6%	14.8%	34.6%		14.6%	36.0%	36.0%	14.6%	36.0%	36.0%
Maximum Green (s)	5.1	18.0	18.0	5.1	18.0		5.0	18.9	18.9	5.0	18.9	18.9
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	18.6	14.6	14.6	18.6	14.6		31.0	27.7	27.7	30.2	25.6	25.6
Actuated g/C Ratio	0.29	0.22	0.22	0.29	0.22		0.48	0.43	0.43	0.46	0.39	0.39
v/c Ratio	0.42	0.43	0.53	0.38	0.79		0.16	0.33	0.10	0.13	0.45	0.02
Control Delay	18.1	24.0	6.2	16.6	29.0		10.6	16.4	0.3	11.1	18.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	24.0	6.2	16.6	29.0		10.6	16.4	0.3	11.1	18.6	0.1
LOS	B	C	A	B	C		B	B	A	B	B	A
Approach Delay		13.5			25.6			13.5				17.4
Approach LOS		B			C			B				B
Queue Length 50th (ft)	26	60	0	35	94		12	82	0	12	108	0
Queue Length 95th (ft)	50	106	52	65	173		26	125	0	33	159	0
Internal Link Dist (ft)		350			777			686				643
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	245	515	668	370	546		748	1509	776	470	1395	730
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.35	0.48	0.38	0.66		0.16	0.33	0.10	0.13	0.45	0.02

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 17.1

Intersection LOS: B

Intersection Capacity Utilization 59.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

Ø1 9.5 s	Ø2 (R) 23.4 s	Ø3 9.6 s	Ø4 22.5 s
Ø5 9.5 s	Ø6 (R) 23.4 s	Ø7 9.6 s	Ø8 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 1_PHASE 2 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	178	286	70	94	74	138	526	82	156	673	32
Future Volume (vph)	39	178	286	70	94	74	138	526	82	156	673	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.934				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1740	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.633			0.516			0.302			0.326		
Satd. Flow (perm)	1179	1863	1583	961	1740	0	1091	3539	1583	607	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			311		60				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	42	193	311	76	102	80	150	572	89	170	732	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	193	311	76	182	0	150	572	89	170	732	35
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 1_PHASE 2 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 1_PHASE 2 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	23.0	23.0	10.0	23.5	23.5
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%		14.6%	35.4%	35.4%	15.4%	36.2%	36.2%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0		5.0	18.5	18.5	5.5	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	16.4	12.4	12.4	17.3	14.3		30.4	24.2	24.2	33.4	27.2	27.2
Actuated g/C Ratio	0.25	0.19	0.19	0.27	0.22		0.47	0.37	0.37	0.51	0.42	0.42
v/c Ratio	0.12	0.54	0.56	0.24	0.42		0.20	0.43	0.13	0.38	0.49	0.05
Control Delay	13.9	28.6	7.1	15.4	17.1		9.7	18.5	0.5	12.6	18.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	28.6	7.1	15.4	17.1		9.7	18.5	0.5	12.6	18.2	0.1
LOS	B	C	A	B	B		A	B	A	B	B	A
Approach Delay		15.2			16.6			14.9			16.5	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	11	70	0	21	43		13	94	0	32	121	0
Queue Length 95th (ft)	25	113	52	40	84		31	147	2	76	192	0
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	343	515	663	318	533		735	1315	699	442	1483	765
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.37	0.47	0.24	0.34		0.20	0.43	0.13	0.38	0.49	0.05

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 51.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

 Ø1 10 s	 Ø2 (R) 23 s	 Ø3 9.5 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 23.5 s	 Ø7 9.5 s	 Ø8 22.5 s

FINAL DRAFT

Intersection							
Int Delay, s/veh	6.1						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	
Traffic Vol, veh/h	158	130	71	287	437	49	
Future Vol, veh/h	158	130	71	287	437	49	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	150	-	-	0	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	172	141	77	312	475	53	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	785	238	475	0	-	0	
Stage 1	475	-	-	-	-	-	
Stage 2	310	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	330	763	1083	-	-	-	
Stage 1	592	-	-	-	-	-	
Stage 2	717	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	307	763	1083	-	-	-	
Mov Cap-2 Maneuver	307	-	-	-	-	-	
Stage 1	592	-	-	-	-	-	
Stage 2	666	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	21.7		1.7		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1083	-	307	763	-	-	
HCM Lane V/C Ratio	0.071	-	0.559	0.185	-	-	
HCM Control Delay (s)	8.6	-	30.6	10.8	-	-	
HCM Lane LOS	A	-	D	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	3.2	0.7	-	-	

Intersection							
Int Delay, s/veh	6.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	↗
Traffic Vol, veh/h	148	112	74	219	466	76	
Future Vol, veh/h	148	112	74	219	466	76	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	150	-	-	0	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	161	122	80	238	507	83	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	787	253	507	0	-	0	
Stage 1	507	-	-	-	-	-	
Stage 2	280	-	-	-	-	-	
Critical Hdwy	7.54	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	6.54	-	-	-	-	-	
Critical Hdwy Stg 2	6.54	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	282	746	1054	-	-	-	
Stage 1	516	-	-	-	-	-	
Stage 2	703	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	266	746	1054	-	-	-	
Mov Cap-2 Maneuver	266	-	-	-	-	-	
Stage 1	477	-	-	-	-	-	
Stage 2	650	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	25.9		2.2		0		
HCM LOS	D						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1054	-	266	746	-	-	
HCM Lane V/C Ratio	0.076	-	0.605	0.163	-	-	
HCM Control Delay (s)	8.7	-	37.3	10.8	-	-	
HCM Lane LOS	A	-	E	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	3.6	0.6	-	-	

Intersection						
Int Delay, s/veh	8.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	103	69	78	21	53	301
Future Vol, veh/h	103	69	78	21	53	301
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	75	85	23	58	327
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	108	0	-	0	395	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1483	-	-	-	610	960
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1483	-	-	-	562	960
Mov Cap-2 Maneuver	-	-	-	-	562	-
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	693	-
Approach	EB		WB		SB	
HCM Control Delay, s	4.6		0		12.4	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1483	-	-	-	868	
HCM Lane V/C Ratio	0.075	-	-	-	0.443	
HCM Control Delay (s)	7.6	0	-	-	12.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	2.3	

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	95	136	48	32	64	146
Future Vol, veh/h	95	136	48	32	64	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	148	52	35	70	159
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	87	0	-	0	424	70
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	354	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1509	-	-	-	587	993
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1509	-	-	-	544	993
Mov Cap-2 Maneuver	-	-	-	-	544	-
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	657	-
Approach	EB		WB		SB	
HCM Control Delay, s	3.1		0		11.4	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1509	-	-	-	793	
HCM Lane V/C Ratio	0.068	-	-	-	0.288	
HCM Control Delay (s)	7.6	0	-	-	11.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 2 - AM
5/15/2017

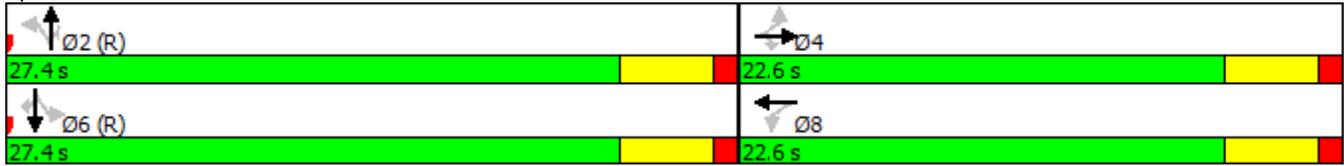
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	116	127	128	142	107	221	711	176	51	537	122
Future Volume (vph)	247	116	127	128	142	107	221	711	176	51	537	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.936				0.850		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1744	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.537			0.676			0.421			0.319		
Satd. Flow (perm)	1000	1863	1583	1259	1744	0	784	3539	1583	594	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			85			191			133
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		820			2077			2687			921	
Travel Time (s)		18.6			47.2			52.3			17.9	
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
Adj. Flow (vph)	268	126	138	139	154	116	240	773	191	55	584	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	126	138	139	270	0	240	773	191	55	584	133
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 1_PHASE 2 OPENING DAY AM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD



FINAL DRAFT

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 2 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	79	185	134	79	101	124	556	97	46	806	185
Future Volume (vph)	159	79	185	134	79	101	124	556	97	46	806	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		100	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor										0.79		0.57
Frt			0.850		0.916				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1706	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.604			0.701			0.293			0.420		
Satd. Flow (perm)	1125	1863	1583	1306	1706	0	546	3539	1583	615	3539	900
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			30		110				105			201
Link Speed (mph)		30			30			35				35
Link Distance (ft)		523			2086			2659				749
Travel Time (s)		11.9			47.4			51.8				14.6
Confl. Peds. (#/hr)										373		275
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
Adj. Flow (vph)	173	86	201	146	86	110	135	604	105	50	876	201
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	86	201	146	196	0	135	604	105	50	876	201
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15		15		9	15		9	15	9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm

SCENARIO 1_PHASE 2 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 2 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		32.5	32.5	32.5	32.5	32.5	32.5
Total Split (%)	40.9%	40.9%	40.9%	40.9%	40.9%		59.1%	59.1%	59.1%	59.1%	59.1%	59.1%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		28.0	28.0	28.0	28.0	28.0	28.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	13.1	13.1	13.1	13.1	13.1		32.9	32.9	32.9	32.9	32.9	32.9
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24		0.60	0.60	0.60	0.60	0.60	0.60
v/c Ratio	0.65	0.19	0.50	0.47	0.40		0.41	0.29	0.11	0.14	0.41	0.32
Control Delay	29.5	16.0	18.8	21.9	10.0		12.8	6.6	2.2	7.6	7.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	16.0	18.8	21.9	10.0		12.8	6.6	2.2	7.6	7.5	3.0
LOS	C	B	B	C	B		B	A	A	A	A	A
Approach Delay		22.3			15.1			7.0				6.7
Approach LOS		C			B			A				A
Queue Length 50th (ft)	51	22	48	41	23		20	43	0	6	69	0
Queue Length 95th (ft)	93	45	87	75	58		73	84	18	24	129	26
Internal Link Dist (ft)		443			2066			2579				669
Turn Bay Length (ft)	150		150	100			200		200	200		200
Base Capacity (vph)	368	609	538	427	632		326	2118	989	367	2118	619
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.14	0.37	0.34	0.31		0.41	0.29	0.11	0.14	0.41	0.32

Intersection Summary

Area Type:	Other
Cycle Length:	55
Actuated Cycle Length:	55
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	10.4
Intersection LOS:	B
Intersection Capacity Utilization:	63.3%
ICU Level of Service:	B

Analysis Period (min) 15

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

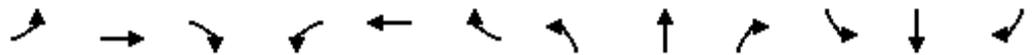
 Ø2 (R)	 Ø4
32.5 s	22.5 s
 Ø6 (R)	 Ø8
32.5 s	22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 2 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	363	594	3	3	554	121	5	0	5	23	0	69
Future Volume (vph)	363	594	3	3	554	121	5	0	5	23	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.973			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3444	0	1770	1583	0	1770	1583	0
Flt Permitted	0.208			0.405			0.708			0.754		
Satd. Flow (perm)	387	3536	0	754	3444	0	1319	1583	0	1405	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			45			325			329	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	395	646	3	3	602	132	5	0	5	25	0	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	395	649	0	3	734	0	5	5	0	25	75	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

SCENARIO 1_PHASE 2 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 2 - AM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	10.5	23.5		5.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	31.5	29.6		21.5	16.5		19.5	19.5		19.5	19.5	
Actuated g/C Ratio	0.52	0.49		0.36	0.28		0.32	0.32		0.32	0.32	
v/c Ratio	0.89	0.37		0.01	0.75		0.01	0.01		0.05	0.10	
Control Delay	36.1	10.6		7.0	23.8		15.0	0.0		15.4	0.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.1	10.6		7.0	23.8		15.0	0.0		15.4	0.3	
LOS	D	B		A	C		B	A		B	A	
Approach Delay		20.3			23.7			7.5				4.1
Approach LOS		C			C			A				A
Queue Length 50th (ft)	77	61		1	114		1	0		6	0	
Queue Length 95th (ft)	#220	130		3	168		8	0		21	0	
Internal Link Dist (ft)		182			494			445				345
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	445	1745		354	1064		428	733		456	736	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.89	0.37		0.01	0.69		0.01	0.01		0.05	0.10	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
Intersection Signal Delay: 20.7 **Intersection LOS: C**
 Intersection Capacity Utilization 58.5% ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD



FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 2 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	272	684	9	9	646	91	9	0	11	53	0	160
Future Volume (vph)	272	684	9	9	646	91	9	0	11	53	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.981			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3472	0	1770	1583	0	1770	1583	0
Flt Permitted	0.181			0.366			0.637			0.750		
Satd. Flow (perm)	337	3532	0	682	3472	0	1187	1583	0	1397	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			26			297			308	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	296	743	10	10	702	99	10	0	12	58	0	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	296	753	0	10	801	0	10	12	0	58	174	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

SCENARIO 1_PHASE 2 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD



FINAL DRAFT

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	43	574	25	25	667	42	0	0	48	0	0	16
Future Vol, veh/h	43	574	25	25	667	42	0	0	48	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	624	27	27	725	46	0	0	52	0	0	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	725	0	0	651	0	0	-	-	326	-	-	363
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	874	-	-	931	-	-	0	0	670	0	0	634
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	874	-	-	931	-	-	-	-	670	-	-	634
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.3			10.8			10.8		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	670	874	-	-	931	-	-	634				
HCM Lane V/C Ratio	0.078	0.053	-	-	0.029	-	-	0.027				
HCM Control Delay (s)	10.8	9.4	-	-	9	-	-	10.8				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0.1	-	-	0.1				

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	32	705	25	25	719	31	0	0	43	0	0	27
Future Vol, veh/h	32	705	25	25	719	31	0	0	43	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	766	27	27	782	34	0	0	47	0	0	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	782	0	0	793	0	0	-	-	397	-	-	391
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	832	-	-	824	-	-	0	0	602	0	0	608
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	832	-	-	824	-	-	-	-	602	-	-	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			11.5			11.2		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	602	832	-	-	824	-	-	608				
HCM Lane V/C Ratio	0.078	0.042	-	-	0.033	-	-	0.048				
HCM Control Delay (s)	11.5	9.5	-	-	9.5	-	-	11.2				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-	-	0.2				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	43	539	29	28	701	42	0	0	41	0	0	16
Future Vol, veh/h	43	539	29	28	701	42	0	0	41	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	586	32	30	762	46	0	0	45	0	0	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	762	0	0	617	0	0	-	-	309	-	-	381
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	846	-	-	959	-	-	0	0	687	0	0	617
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	846	-	-	959	-	-	-	-	687	-	-	617
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.3			10.6			11		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	687	846	-	-	959	-	-	617				
HCM Lane V/C Ratio	0.065	0.055	-	-	0.032	-	-	0.028				
HCM Control Delay (s)	10.6	9.5	-	-	8.9	-	-	11				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.1	-	-	0.1				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	32	692	24	25	732	31	0	0	64	0	0	27
Future Vol, veh/h	32	692	24	25	732	31	0	0	64	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	752	26	27	796	34	0	0	70	0	0	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	796	0	0	778	0	0	-	-	389	-	-	398
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	822	-	-	834	-	-	0	0	610	0	0	601
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	822	-	-	834	-	-	-	-	610	-	-	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			11.7			11.3		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	610	822	-	-	834	-	-	601				
HCM Lane V/C Ratio	0.114	0.042	-	-	0.033	-	-	0.049				
HCM Control Delay (s)	11.7	9.6	-	-	9.5	-	-	11.3				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2				

Intersection							
Int Delay, s/veh	0.3						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	37	0	709	511	194	
Future Vol, veh/h	0	37	0	709	511	194	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	40	0	771	555	211	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	383	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	615	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	615	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	11.3		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	615	-	-			
HCM Lane V/C Ratio	-	0.065	-	-			
HCM Control Delay (s)	-	11.3	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.2	-	-			

Intersection							
Int Delay, s/veh	0.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	85	0	647	587	145	
Future Vol, veh/h	0	85	0	647	587	145	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	92	0	703	638	158	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	398	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	601	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	601	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	12.1		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	601	-	-			
HCM Lane V/C Ratio	-	0.154	-	-			
HCM Control Delay (s)	-	12.1	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.5	-	-			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	48	21	109	600	684	253
Future Volume (vph)	48	21	109	600	684	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.959	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3394	0
Flt Permitted	0.950		0.211			
Satd. Flow (perm)	1770	1583	393	3539	3394	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		23			102	
Link Speed (mph)	35			35	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	6.5			10.5	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	23	118	652	743	275
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	23	118	652	1018	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			

Splits and Phases: 11: RODD FIELD RD & DW 5

 Ø2 (R)	 Ø6 (R)	 Ø4
37.4 s	27.4 s	22.6 s
 Ø5		
10 s		

FINAL DRAFT

Lanes, Volumes, Timings
DW5: RODD FIELD RD & DW 5

SCENARIO 1_PHASE 2 - PM
6/6/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	121	40	82	525	719	191
Future Volume (vph)	121	40	82	525	719	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.968	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3426	0
Flt Permitted	0.950		0.201			
Satd. Flow (perm)	1770	1583	374	3539	3426	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		43			64	
Link Speed (mph)	30			50	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	7.5			7.4	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	43	89	571	782	208
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	43	89	571	990	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	22.6	22.6	10.0	37.4	27.4	
Total Split (%)	37.7%	37.7%	16.7%	62.3%	45.7%	
Maximum Green (s)	18.1	18.1	5.5	32.9	22.9	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.8	9.8	43.3	44.2	35.2	
Actuated g/C Ratio	0.16	0.16	0.72	0.74	0.59	
v/c Ratio	0.46	0.15	0.21	0.22	0.49	
Control Delay	27.2	8.5	5.0	3.9	10.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.2	8.5	5.0	3.9	10.7	
LOS	C	A	A	A	B	
Approach Delay	22.6			4.0	10.7	
Approach LOS	C			A	B	
Queue Length 50th (ft)	44	0	8	32	111	
Queue Length 95th (ft)	82	21	24	61	196	
Internal Link Dist (ft)	252			460	251	
Turn Bay Length (ft)			300			
Base Capacity (vph)	533	507	423	2609	2034	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.25	0.08	0.21	0.22	0.49	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
Intersection Signal Delay: 9.5 **Intersection LOS: A**
 Intersection Capacity Utilization 48.5% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: RODD FIELD RD & DW 5

 Ø2 (R)	 Ø6 (R)	 Ø4
37.4 s	27.4 s	22.6 s
 Ø5		
10 s		

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 1_PHASE 3 - AM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	731	123	398	399	193	282	388	140	481	147	218
Future Volume (vph)	62	731	123	398	399	193	282	388	140	481	147	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.500			0.132			0.651			0.221		
Satd. Flow (perm)	931	3539	1583	246	3539	1583	1213	3539	1583	412	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193			210			193			237
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		953			1990			821			2667	
Travel Time (s)		18.6			30.2			16.0			52.0	
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
Adj. Flow (vph)	67	795	134	433	434	210	307	422	152	523	160	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	795	134	433	434	210	307	422	152	523	160	237
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 1_PHASE 3 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 1_PHASE 3 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.0	29.5	29.5	26.6	46.1	46.1	24.0	23.8	23.8	30.1	29.9	29.9
Total Split (%)	9.1%	26.8%	26.8%	24.2%	41.9%	41.9%	21.8%	21.6%	21.6%	27.4%	27.2%	27.2%
Maximum Green (s)	5.5	25.0	25.0	22.1	41.6	41.6	19.5	19.3	19.3	25.6	25.4	25.4
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	30.5	25.0	25.0	51.6	43.6	43.6	36.3	19.3	19.3	49.4	27.9	27.9
Actuated g/C Ratio	0.28	0.23	0.23	0.47	0.40	0.40	0.33	0.18	0.18	0.45	0.25	0.25
v/c Ratio	0.22	0.99	0.26	1.03	0.31	0.28	0.63	0.68	0.35	1.04	0.18	0.41
Control Delay	20.3	72.1	2.6	82.8	24.2	4.2	27.7	48.8	4.7	87.9	30.1	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	72.1	2.6	82.8	24.2	4.2	27.7	48.8	4.7	87.9	30.1	8.6
LOS	C	E	A	F	C	A	C	D	A	F	C	A
Approach Delay		59.3			43.9			33.8			57.4	
Approach LOS		E			D			C			E	
Queue Length 50th (ft)	25	296	0	~277	112	0	141	148	0	~346	41	19
Queue Length 95th (ft)	51	#427	15	#477	154	47	212	203	29	#563	67	54
Internal Link Dist (ft)		873			1910			741			2587	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	300	804	508	421	1402	754	526	620	436	501	897	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.99	0.26	1.03	0.31	0.28	0.58	0.68	0.35	1.04	0.18	0.41

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
Intersection Signal Delay: 48.8 **Intersection LOS: D**
 Intersection Capacity Utilization 94.6% ICU Level of Service F
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1 30.1 s	 Ø2 (R) 23.8 s	 Ø3 26.6 s	 Ø4 29.5 s
 Ø5 24 s	 Ø6 (R) 29.9 s	 Ø7 10 s	 Ø8 46.1 s

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 1_PHASE 3 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	742	114	336	573	477	176	237	124	411	418	345
Future Volume (vph)	183	742	114	336	573	477	176	237	124	411	418	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.385			0.149			0.490			0.450		
Satd. Flow (perm)	717	3539	1583	278	3539	1583	913	3539	1583	838	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			236			470			236			330
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2663
Travel Time (s)		14.4			30.2			16.0				51.9
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
Adj. Flow (vph)	199	807	124	365	623	518	191	258	135	447	454	375
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	807	124	365	623	518	191	258	135	447	454	375
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 1_PHASE 3 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

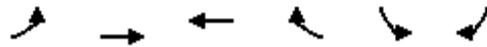
 Ø1	 Ø2 (R)	 Ø3	 Ø4
19 s	24 s	20 s	27 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
11.6 s	31.4 s	12.8 s	34.2 s

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 3 - AM

5/15/2017

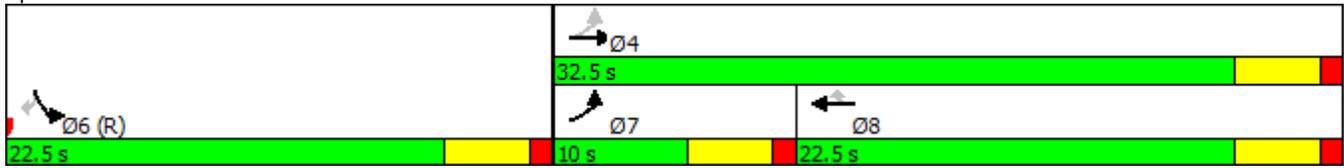


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔↔↔
Traffic Volume (vph)	434	364	535	472	255	476
Future Volume (vph)	434	364	535	472	255	476
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.52
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	4117
Flt Permitted	0.261				0.950	
Satd. Flow (perm)	943	3539	3539	1583	3433	4117
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				513		517
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	397		553	
Travel Time (s)		12.6	6.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	472	396	582	513	277	517
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	396	582	513	277	517
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 1_PHASE 3 OPENING DAY AM

Synchro 9 Report

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD

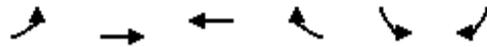


FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 3 - PM

5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	555	522	508	334	434	614
Future Volume (vph)	555	522	508	334	434	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.252				0.950	
Satd. Flow (perm)	911	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				363		667
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	397		553	
Travel Time (s)		12.6	6.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	603	567	552	363	472	667
Shared Lane Traffic (%)						
Lane Group Flow (vph)	603	567	552	363	472	667
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

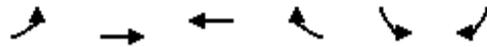
SCENARIO 1_PHASE 3 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 1_PHASE 3 - PM

5/15/2017

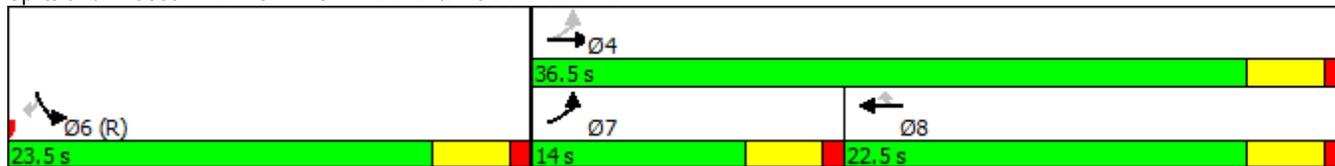


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	14.0	36.5	22.5	22.5	23.5	23.5
Total Split (%)	23.3%	60.8%	37.5%	37.5%	39.2%	39.2%
Maximum Green (s)	9.5	32.0	18.0	18.0	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	29.3	29.3	15.3	15.3	21.7	21.7
Actuated g/C Ratio	0.49	0.49	0.26	0.26	0.36	0.36
v/c Ratio	0.71	0.33	0.61	0.54	0.38	0.47
Control Delay	14.3	9.5	22.4	5.5	19.7	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	9.5	22.4	5.5	19.7	6.5
LOS	B	A	C	A	B	A
Approach Delay		12.0	15.7		12.0	
Approach LOS		B	B		B	
Queue Length 50th (ft)	62	58	90	0	62	22
Queue Length 95th (ft)	85	81	128	52	114	70
Internal Link Dist (ft)		754	317		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	844	1887	1061	729	1240	1433
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.30	0.52	0.50	0.38	0.47

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
Intersection Signal Delay: 13.1 **Intersection LOS: B**
 Intersection Capacity Utilization 53.5% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	13	0	825	1382	6
Future Vol, veh/h	0	13	0	825	1382	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	0	897	1502	7
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	754	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	352	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	352	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.7		0		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	352	-	-		
HCM Lane V/C Ratio	-	0.04	-	-		
HCM Control Delay (s)	-	15.7	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	8	0	905	1336	9
Future Vol, veh/h	0	8	0	905	1336	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	0	984	1452	10
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	731	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	364	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	364	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.1		0		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	364	-	-		
HCM Lane V/C Ratio	-	0.024	-	-		
HCM Control Delay (s)	-	15.1	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 1_PHASE 3 - AM
5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	185	485	169	159	215	130	530	86	63	748	19
Future Volume (vph)	105	185	485	169	159	215	130	530	86	63	748	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.914			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1703	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.262			0.535			0.183			0.377		
Satd. Flow (perm)	488	1863	1583	997	1703	0	661	3539	1583	702	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			273		104				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	114	201	527	184	173		234	141	576	93	68	813
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	201	527	184	407	0	141	576	93	68	813	21
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

Queue shown is maximum after two cycles.

Splits and Phases: 4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

 Ø1	 Ø2 (R)	 Ø3	 Ø4
9.5 s	23.4 s	9.6 s	22.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
9.5 s	23.4 s	9.5 s	22.6 s

FINAL DRAFT

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 1_PHASE 3 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	200	395	86	105	83	167	654	100	174	919	36
Future Volume (vph)	43	200	395	86	105	83	167	654	100	174	919	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.934				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1740	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.593			0.484			0.186			0.247		
Satd. Flow (perm)	1105	1863	1583	902	1740	0	672	3539	1583	460	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			303		60				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	47	217	429	93	114	90	182	711	109	189	999	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	217	429	93	204	0	182	711	109	189	999	39
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 1_PHASE 3 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

 Ø1	 Ø2 (R)	 Ø3	 Ø4
9.5 s	23.5 s	9.5 s	22.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
9.5 s	23.5 s	9.5 s	22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
5: AIRLINE RD & LIPES BLVD

SCENARIO 1_PHASE 3 - AM
6/6/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	163	179	79	331	623	54
Future Volume (vph)	163	179	79	331	623	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.394			
Satd. Flow (perm)	1770	1583	734	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		116				59
Link Speed (mph)	30			35	35	
Link Distance (ft)	516			383	289	
Travel Time (s)	11.7			7.5	5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	195	86	360	677	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	195	86	360	677	59
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6

Lanes, Volumes, Timings
5: AIRLINE RD & LIPES BLVD



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	9.8	9.8	29.2	29.2	29.2	29.2
Actuated g/C Ratio	0.22	0.22	0.65	0.65	0.65	0.65
v/c Ratio	0.46	0.45	0.18	0.16	0.29	0.06
Control Delay	19.2	10.7	6.8	5.0	5.6	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	10.7	6.8	5.0	5.6	2.2
LOS	B	B	A	A	A	A
Approach Delay	14.7			5.4	5.3	
Approach LOS	B			A	A	
Queue Length 50th (ft)	41	18	9	18	39	0
Queue Length 95th (ft)	77	54	32	41	78	12
Internal Link Dist (ft)	436			303	209	
Turn Bay Length (ft)			150			
Base Capacity (vph)	708	702	477	2299	2299	1049
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.28	0.18	0.16	0.29	0.06

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 7.6
 Intersection LOS: A
 Intersection Capacity Utilization 41.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: AIRLINE RD & LIPES BLVD

 Ø2 (R)	 Ø4
22.5 s	22.5 s
 Ø6 (R)	
22.5 s	

FINAL DRAFT

Lanes, Volumes, Timings
5: AIRLINE RD & LIPES BLVD

SCENARIO 1_PHASE 3 - PM

6/6/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	154	136	82	256	581	85
Future Volume (vph)	154	136	82	256	581	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.412			
Satd. Flow (perm)	1770	1583	767	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		136				92
Link Speed (mph)	30			35	35	
Link Distance (ft)	516			383	289	
Travel Time (s)	11.7			7.5	5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	148	89	278	632	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	148	89	278	632	92
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6

SCENARIO 1_PHASE 3 OPENING DAY PM

Synchro 9 Report

Splits and Phases: 5: AIRLINE RD & LIPES BLVD

 22.5 s	 22.5 s
 22.5 s	

FINAL DRAFT

Intersection						
Int Delay, s/veh	8.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	110	74	83	24	57	321
Future Vol, veh/h	110	74	83	24	57	321
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	80	90	26	62	349
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	0	-	0	423	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	320	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1473	-	-	-	588	952
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1473	-	-	-	538	952
Mov Cap-2 Maneuver	-	-	-	-	538	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	673	-
Approach	EB		WB		SB	
HCM Control Delay, s	4.6		0		13.1	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1473	-	-	-	853	
HCM Lane V/C Ratio	0.081	-	-	-	0.482	
HCM Control Delay (s)	7.7	0	-	-	13.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.3	-	-	-	2.7	

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↘	
Traffic Vol, veh/h	101	144	51	34	68	156
Future Vol, veh/h	101	144	51	34	68	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	157	55	37	74	170
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	92	0	-	0	450	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	376	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1503	-	-	-	567	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1503	-	-	-	522	988
Mov Cap-2 Maneuver	-	-	-	-	522	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	638	-
Approach	EB		WB		SB	
HCM Control Delay, s	3.1		0		11.7	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1503	-	-	-	777	
HCM Lane V/C Ratio	0.073	-	-	-	0.313	
HCM Control Delay (s)	7.6	0	-	-	11.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.3	

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 3 - AM
5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	124	149	150	151	114	245	793	195	55	737	130
Future Volume (vph)	264	124	149	150	151	114	245	793	195	55	737	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.935				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1742	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.501			0.671			0.302			0.275		
Satd. Flow (perm)	933	1863	1583	1250	1742	0	563	3539	1583	512	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137		74				212			141
Link Speed (mph)		30			30			35				35
Link Distance (ft)		741			2073			2667				943
Travel Time (s)		16.8			47.1			52.0				18.4
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
Adj. Flow (vph)	287	135	162	163	164	124	266	862	212	60	801	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	287	135	162	163	288	0	266	862	212	60	801	141
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 1_PHASE 3 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 3 - AM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		32.5	32.5	32.5	32.5	32.5	32.5
Total Split (%)	40.9%	40.9%	40.9%	40.9%	40.9%		59.1%	59.1%	59.1%	59.1%	59.1%	59.1%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		28.0	28.0	28.0	28.0	28.0	28.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	18.0	18.0	18.0	18.0	18.0		28.0	28.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33		0.51	0.51	0.51	0.51	0.51	0.51
v/c Ratio	0.94	0.22	0.27	0.40	0.47		0.93	0.48	0.23	0.23	0.44	0.16
Control Delay	62.8	14.7	5.4	18.0	13.7		57.6	8.2	1.0	10.4	9.5	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	14.7	5.4	18.0	13.7		57.6	8.2	1.0	10.4	9.5	2.1
LOS	E	B	A	B	B		E	A	A	B	A	A
Approach Delay		35.8			15.2			16.8			8.5	
Approach LOS		D			B			B			A	
Queue Length 50th (ft)	89	31	6	40	53		99	86	1	10	79	0
Queue Length 95th (ft)	#219	65	39	85	110		#294	91	m6	30	116	20
Internal Link Dist (ft)		661			1993			2587			863	
Turn Bay Length (ft)	150		150	100			200		200	200		200
Base Capacity (vph)	305	609	610	409	619		286	1804	910	260	1804	876
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.22	0.27	0.40	0.47		0.93	0.48	0.23	0.23	0.44	0.16

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 55

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 17.4 Intersection LOS: B

Intersection Capacity Utilization 78.5% ICU Level of Service D

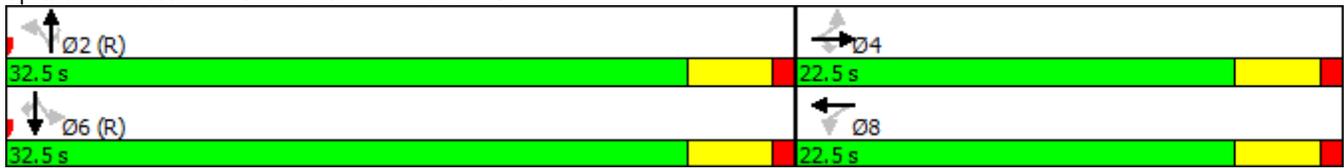
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD



FINAL DRAFT

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 3 - PM
5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	84	215	160	84	108	145	698	115	49	981	197
Future Volume (vph)	170	84	215	160	84	108	145	698	115	49	981	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.916				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1706	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.565			0.698			0.223			0.342		
Satd. Flow (perm)	1052	1863	1583	1300	1706	0	415	3539	1583	637	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83		110				125			214
Link Speed (mph)		30			30			35				35
Link Distance (ft)		556			2073			2663				776
Travel Time (s)		12.6			47.1			51.9				15.1
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
Adj. Flow (vph)	185	91	234	174	91	117	158	759	125	53	1066	214
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	91	234	174	208	0	158	759	125	53	1066	214
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 1_PHASE 3 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		37.5	37.5	37.5	37.5	37.5	37.5
Total Split (%)	37.5%	37.5%	37.5%	37.5%	37.5%		62.5%	62.5%	62.5%	62.5%	62.5%	62.5%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	14.5	14.5	14.5	14.5	14.5		36.5	36.5	36.5	36.5	36.5	36.5
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24		0.61	0.61	0.61	0.61	0.61	0.61
v/c Ratio	0.73	0.20	0.53	0.56	0.42		0.63	0.35	0.12	0.14	0.49	0.20
Control Delay	37.6	17.7	16.2	26.1	11.4		25.0	7.1	1.9	7.4	8.3	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	17.7	16.2	26.1	11.4		25.0	7.1	1.9	7.4	8.3	1.7
LOS	D	B	B	C	B		C	A	A	A	A	A
Approach Delay		24.2			18.1			9.2				7.2
Approach LOS		C			B			A				A
Queue Length 50th (ft)	59	25	44	53	28		34	66	0	8	105	0
Queue Length 95th (ft)	#120	54	96	101	71		#134	107	18	24	164	24
Internal Link Dist (ft)		476			1993			2583				696
Turn Bay Length (ft)	150		150	100			200		200	200		200
Base Capacity (vph)	315	558	533	390	588		252	2155	1012	387	2155	1047
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.16	0.44	0.45	0.35		0.63	0.35	0.12	0.14	0.49	0.20

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
Intersection Signal Delay: 11.8 **Intersection LOS: B**
 Intersection Capacity Utilization 70.6% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

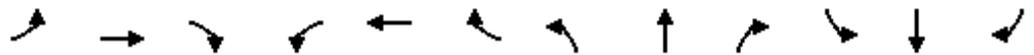
 Ø2 (R)	 Ø4
 37.5 s	 22.5 s
 Ø6 (R)	 Ø8
 37.5 s	 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 3 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	605	741	4	4	641	201	6	0	6	39	0	115
Future Volume (vph)	605	741	4	4	641	201	6	0	6	39	0	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.964			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3412	0	1770	1583	0	1770	1583	0
Flt Permitted	0.123			0.346			0.633			0.753		
Satd. Flow (perm)	229	3536	0	645	3412	0	1179	1583	0	1403	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			45			264			598	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	658	805	4	4	697	218	7	0	7	42	0	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	658	809	0	4	915	0	7	7	0	42	125	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

Queue shown is maximum after two cycles.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD

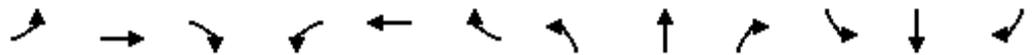


FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 1_PHASE 3 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	454	834	10	10	788	151	11	0	13	89	0	266
Future Volume (vph)	454	834	10	10	788	151	11	0	13	89	0	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.976			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3454	0	1770	1583	0	1770	1583	0
Flt Permitted	0.122			0.311			0.322			0.748		
Satd. Flow (perm)	227	3532	0	579	3454	0	600	1583	0	1393	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			29			225				461
Link Speed (mph)		45			45			30				30
Link Distance (ft)		262			574			525				425
Travel Time (s)		4.0			8.7			11.9				9.7
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
Adj. Flow (vph)	493	907	11	11	857	164	12	0	14	97	0	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	493	918	0	11	1021	0	12	14	0	97	289	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

SCENARIO 1_PHASE 3 OPENING DAY PM

Synchro 9 Report



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	26.0	45.4		9.6	29.0		25.0	25.0		25.0	25.0	
Total Split (%)	32.5%	56.8%		12.0%	36.3%		31.3%	31.3%		31.3%	31.3%	
Maximum Green (s)	21.5	40.9		5.1	24.5		20.5	20.5		20.5	20.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	50.5	48.6		29.7	24.6		20.5	20.5		20.5	20.5	
Actuated g/C Ratio	0.63	0.61		0.37	0.31		0.26	0.26		0.26	0.26	
v/c Ratio	0.89	0.43		0.04	0.94		0.08	0.02		0.27	0.39	
Control Delay	39.6	9.7		8.6	44.7		24.4	0.1		26.3	1.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	39.6	9.7		8.6	44.7		24.4	0.1		26.3	1.5	
LOS	D	A		A	D		C	A		C	A	
Approach Delay		20.1			44.3			11.3			7.7	
Approach LOS		C			D			B			A	
Queue Length 50th (ft)	186	106		2	254		5	0		39	0	
Queue Length 95th (ft)	#364	199		7	#384		18	0		79	0	
Internal Link Dist (ft)		182			494			445			345	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	557	2144		291	1081		153	572		356	748	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.89	0.43		0.04	0.94		0.08	0.02		0.27	0.39	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 27.1 Intersection LOS: C

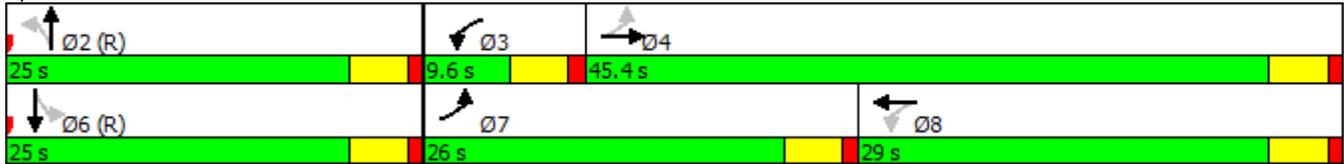
Intersection Capacity Utilization 79.5% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD



FINAL DRAFT

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕	↔			↔			↔
Traffic Vol, veh/h	71	715	28	28	829	70	0	0	52	0	0	27
Future Vol, veh/h	71	715	28	28	829	70	0	0	52	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	777	30	30	901	76	0	0	57	0	0	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	901	0	0	808	0	0	-	-	404	-	-	451
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	750	-	-	813	-	-	0	0	596	0	0	556
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	750	-	-	813	-	-	-	-	596	-	-	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.3			11.7			11.8		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	596	750	-	-	813	-	-	556				
HCM Lane V/C Ratio	0.095	0.103	-	-	0.037	-	-	0.053				
HCM Control Delay (s)	11.7	10.3	-	-	9.6	-	-	11.8				
HCM Lane LOS	B	B	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.1	-	-	0.2				

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	53	870	28	28	908	53	0	0	49	0	0	62
Future Vol, veh/h	53	870	28	28	908	53	0	0	49	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	946	30	30	987	58	0	0	53	0	0	67
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	987	0	0	976	0	0	-	-	488	-	-	493
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	696	-	-	703	-	-	0	0	526	0	0	522
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	696	-	-	703	-	-	-	-	526	-	-	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.3			12.6			12.9		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	526	696	-	-	703	-	-	522				
HCM Lane V/C Ratio	0.101	0.083	-	-	0.043	-	-	0.129				
HCM Control Delay (s)	12.6	10.6	-	-	10.4	-	-	12.9				
HCM Lane LOS	B	B	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.1	-	-	0.4				

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	71	658	33	31	886	70	0	0	47	0	0	27
Future Vol, veh/h	71	658	33	31	886	70	0	0	47	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	715	36	34	963	76	0	0	51	0	0	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	963			0			751			0		
Stage 1	-			-			-			-		
Stage 2	-			-			-			-		
Critical Hdwy	4.14			-			4.14			-		
Critical Hdwy Stg 1	-			-			-			-		
Critical Hdwy Stg 2	-			-			-			-		
Follow-up Hdwy	2.22			-			2.22			-		
Pot Cap-1 Maneuver	711			-			854			-		
Stage 1	-			-			-			-		
Stage 2	-			-			-			-		
Platoon blocked, %	-			-			-			-		
Mov Cap-1 Maneuver	711			-			854			-		
Mov Cap-2 Maneuver	-			-			-			-		
Stage 1	-			-			-			-		
Stage 2	-			-			-			-		
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.3			11.3			12.2		
HCM LOS	A			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	622	711	-	-	854	-	-	530				
HCM Lane V/C Ratio	0.082	0.109	-	-	0.039	-	-	0.055				
HCM Control Delay (s)	11.3	10.7	-	-	9.4	-	-	12.2				
HCM Lane LOS	B	B	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.1	-	-	0.2				

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕	↔			↕			↔
Traffic Vol, veh/h	53	848	26	28	930	53	0	0	72	0	0	62
Future Vol, veh/h	53	848	26	28	930	53	0	0	72	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	922	28	30	1011	58	0	0	78	0	0	67
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1011	0	0	950	0	0	-	-	475	-	-	505
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	681	-	-	719	-	-	0	0	536	0	0	512
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	681	-	-	719	-	-	-	-	536	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.3			12.9			13.1		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	536	681	-	-	719	-	-	512				
HCM Lane V/C Ratio	0.146	0.085	-	-	0.042	-	-	0.132				
HCM Control Delay (s)	12.9	10.8	-	-	10.2	-	-	13.1				
HCM Lane LOS	B	B	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0.1	-	-	0.5				

Intersection							
Int Delay, s/veh	0.4						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	61	0	834	620	323	
Future Vol, veh/h	0	61	0	834	620	323	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	66	0	907	674	351	
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	-	513	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	506	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	506	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB	NB		SB			
HCM Control Delay, s	13.2	0		0			
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	506	-	-			
HCM Lane V/C Ratio	-	0.131	-	-			
HCM Control Delay (s)	-	13.2	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.4	-	-			

Intersection							
Int Delay, s/veh	1.2						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	142	0	724	750	242	
Future Vol, veh/h	0	142	0	724	750	242	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	154	0	787	815	263	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	539	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	487	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	487	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	15.8		0		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	487	-	-			
HCM Lane V/C Ratio	-	0.317	-	-			
HCM Control Delay (s)	-	15.8	-	-			
HCM Lane LOS	-	C	-	-			
HCM 95th %tile Q(veh)	-	1.3	-	-			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	81	34	182	652	909	423
Future Volume (vph)	81	34	182	652	909	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.952	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3369	0
Flt Permitted	0.950		0.098			
Satd. Flow (perm)	1770	1583	183	3539	3369	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		37			137	
Link Speed (mph)	30			50	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	7.5			7.4	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	37	198	709	988	460
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	37	198	709	1448	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	22.6	22.6	13.0	52.4	39.4	
Total Split (%)	30.1%	30.1%	17.3%	69.9%	52.5%	
Maximum Green (s)	18.1	18.1	8.5	47.9	34.9	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.1	9.1	58.9	59.8	45.2	
Actuated g/C Ratio	0.12	0.12	0.79	0.80	0.60	
v/c Ratio	0.41	0.17	0.59	0.25	0.69	
Control Delay	35.4	11.9	15.9	3.0	13.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.4	11.9	15.9	3.0	13.8	
LOS	D	B	B	A	B	
Approach Delay	28.5			5.8	13.8	
Approach LOS	C			A	B	
Queue Length 50th (ft)	39	0	25	39	204	
Queue Length 95th (ft)	77	24	89	70	#434	
Internal Link Dist (ft)	252			460	251	
Turn Bay Length (ft)			300			
Base Capacity (vph)	427	410	356	2823	2086	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.09	0.56	0.25	0.69	

Intersection Summary

Area Type: Other
 Cycle Length: 75
 Actuated Cycle Length: 75
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
Intersection Signal Delay: 11.6 **Intersection LOS: B**
 Intersection Capacity Utilization 64.5% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: RODD FIELD RD & DW 5



FINAL DRAFT

Lanes, Volumes, Timings
DW5: RODD FIELD RD & DW 5

SCENARIO 1_PHASE 3 - PM
6/6/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	200	67	136	588	925	317
Future Volume (vph)	200	67	136	588	925	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.962	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3405	0
Flt Permitted	0.950		0.107			
Satd. Flow (perm)	1770	1583	199	3539	3405	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		73			92	
Link Speed (mph)	30			50	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	7.5			7.4	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	73	148	639	1005	345
Shared Lane Traffic (%)						
Lane Group Flow (vph)	217	73	148	639	1350	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	22.6	22.6	9.8	42.4	32.6	
Total Split (%)	34.8%	34.8%	15.1%	65.2%	50.2%	
Maximum Green (s)	18.1	18.1	5.3	37.9	28.1	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	13.1	13.1	42.9	42.9	33.7	
Actuated g/C Ratio	0.20	0.20	0.66	0.66	0.52	
v/c Ratio	0.61	0.19	0.51	0.27	0.75	
Control Delay	30.4	6.8	13.9	5.5	19.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.4	6.8	13.9	5.5	19.1	
LOS	C	A	B	A	B	
Approach Delay	24.5			7.1	19.1	
Approach LOS	C			A	B	
Queue Length 50th (ft)	79	0	18	45	186	
Queue Length 95th (ft)	127	26	#77	86	#299	
Internal Link Dist (ft)	252			460	251	
Turn Bay Length (ft)			300			
Base Capacity (vph)	492	493	293	2335	1811	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.44	0.15	0.51	0.27	0.75	

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
Intersection Signal Delay: 15.8 **Intersection LOS: B**
 Intersection Capacity Utilization 65.6% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: RODD FIELD RD & DW 5



FINAL DRAFT



Scenario 2

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 1 - AM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	385	98	316	299	115	225	336	105	191	157	179
Future Volume (vph)	49	385	98	316	299	115	225	336	105	191	157	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850				0.850			0.850		0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.555			0.318			0.630			0.501		
Satd. Flow (perm)	1034	3539	1583	592	3539	1583	1174	3539	1583	933	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			164			164			195
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2654
Travel Time (s)		14.4			30.2			16.0				51.7
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
Adj. Flow (vph)	53	418	107	343	325	125	245	365	114	208	171	195
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	418	107	343	325	125	245	365	114	208	171	195
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 2_PHASE 1 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 1 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.6	22.5	22.5	14.0	26.9	26.9	9.7	23.9	23.9	9.6	23.8	23.8
Total Split (%)	13.7%	32.1%	32.1%	20.0%	38.4%	38.4%	13.9%	34.1%	34.1%	13.7%	34.0%	34.0%
Maximum Green (s)	5.1	18.0	18.0	9.5	22.4	22.4	5.2	19.4	19.4	5.1	19.3	19.3
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max						
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.9	13.8	13.8	27.8	22.1	22.1	29.0	21.1	21.1	28.4	20.8	20.8
Actuated g/C Ratio	0.27	0.20	0.20	0.40	0.32	0.32	0.41	0.30	0.30	0.41	0.30	0.30
v/c Ratio	0.16	0.60	0.24	0.87	0.29	0.20	0.44	0.34	0.19	0.44	0.16	0.32
Control Delay	13.7	28.8	2.7	40.3	19.3	2.6	16.2	20.8	2.3	16.4	19.4	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	28.8	2.7	40.3	19.3	2.6	16.2	20.8	2.3	16.4	19.4	5.1
LOS	B	C	A	D	B	A	B	C	A	B	B	A
Approach Delay		22.6			25.8			16.3			13.5	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	14	87	0	108	60	0	60	66	0	50	29	0
Queue Length 95th (ft)	30	120	14	#174	85	20	121	102	17	102	52	44
Internal Link Dist (ft)		873			1910			741			2574	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	333	910	528	394	1183	638	553	1068	592	468	1052	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.46	0.20	0.87	0.27	0.20	0.44	0.34	0.19	0.44	0.16	0.32

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
Intersection Signal Delay: 19.9 **Intersection LOS: B**
 Intersection Capacity Utilization 63.0% ICU Level of Service B
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1	 Ø2 (R)	 Ø3	 Ø4
9.6 s	23.9 s	14 s	22.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
9.7 s	23.8 s	9.6 s	26.9 s

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 1 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	442	91	259	394	308	140	209	82	178	333	293
Future Volume (vph)	146	442	91	259	394	308	140	209	82	178	333	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.469			0.334			0.536			0.569		
Satd. Flow (perm)	874	3539	1583	622	3539	1583	998	3539	1583	1060	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			335			176			318
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		953			1990			821			2664	
Travel Time (s)		14.4			30.2			16.0			51.9	
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
Adj. Flow (vph)	159	480	99	282	428	335	152	227	89	193	362	318
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	480	99	282	428	335	152	227	89	193	362	318
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 2_PHASE 1 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

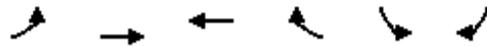
 Ø1	 Ø2 (R)	 Ø3	 Ø4
9.5 s	23 s	10 s	22.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
9.5 s	23 s	9.6 s	22.9 s

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 1 - AM

5/15/2017



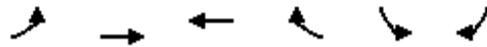
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	293	311	390	326	177	258
Future Volume (vph)	293	311	390	326	177	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.339				0.950	
Satd. Flow (perm)	1225	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				354		280
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	318	338	424	354	192	280
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	338	424	354	192	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 2_PHASE 1 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 1 - AM
5/15/2017

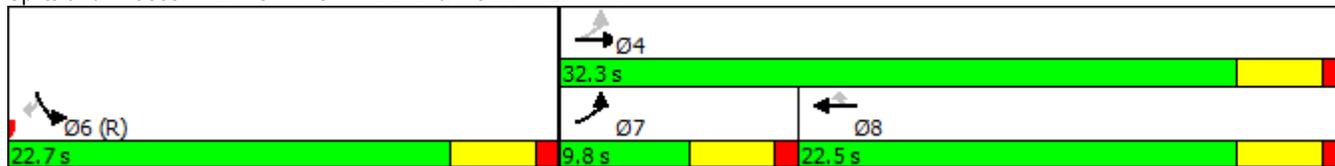


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	9.8	32.3	22.5	22.5	22.7	22.7
Total Split (%)	17.8%	58.7%	40.9%	40.9%	41.3%	41.3%
Maximum Green (s)	5.3	27.8	18.0	18.0	18.2	18.2
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	23.2	23.2	13.4	13.4	22.8	22.8
Actuated g/C Ratio	0.42	0.42	0.24	0.24	0.41	0.41
v/c Ratio	0.44	0.23	0.49	0.54	0.14	0.21
Control Delay	7.8	6.3	19.2	5.5	11.5	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	6.3	19.2	5.5	11.5	2.6
LOS	A	A	B	A	B	A
Approach Delay		7.0	13.0		6.2	
Approach LOS		A	B		A	
Queue Length 50th (ft)	38	41	62	0	19	0
Queue Length 95th (ft)	11	12	86	47	41	22
Internal Link Dist (ft)		754	715		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	729	1788	1158	756	1421	1318
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.19	0.37	0.47	0.14	0.21

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
Intersection Signal Delay: 9.2 **Intersection LOS: A**
 Intersection Capacity Utilization 36.0% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD

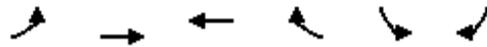


FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 1 - PM

5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	369	408	357	239	309	360
Future Volume (vph)	369	408	357	239	309	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.351				0.950	
Satd. Flow (perm)	1268	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				260		391
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	401	443	388	260	336	391
Shared Lane Traffic (%)						
Lane Group Flow (vph)	401	443	388	260	336	391
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

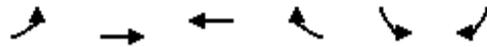
SCENARIO 2_PHASE 1 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 1 - PM

5/15/2017

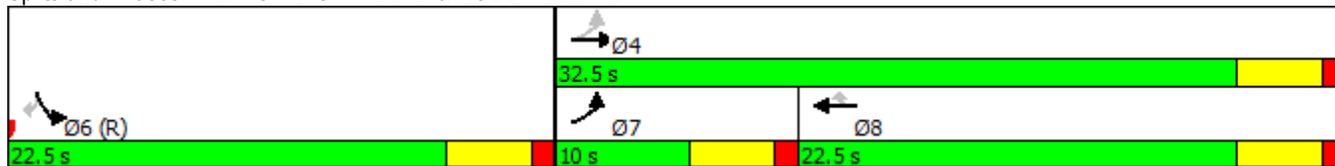


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	22.2	22.2	12.2	12.2	23.8	23.8
Actuated g/C Ratio	0.40	0.40	0.22	0.22	0.43	0.43
v/c Ratio	0.55	0.31	0.49	0.47	0.23	0.27
Control Delay	9.6	7.2	20.2	5.6	11.3	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	7.2	20.2	5.6	11.3	2.2
LOS	A	A	C	A	B	A
Approach Delay		8.4	14.4		6.4	
Approach LOS		A	B		A	
Queue Length 50th (ft)	48	55	58	0	33	0
Queue Length 95th (ft)	16	18	82	42	65	25
Internal Link Dist (ft)		754	715		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	729	1801	1158	692	1482	1426
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.25	0.34	0.38	0.23	0.27

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
Intersection Signal Delay: 9.5 **Intersection LOS: A**
 Intersection Capacity Utilization 40.5% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↖↖	↖↗	
Traffic Vol, veh/h	0	10	0	607	630	5
Future Vol, veh/h	0	10	0	607	630	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	660	685	5
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	345	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	651	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	651	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.6		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	651	-	-		
HCM Lane V/C Ratio	-	0.017	-	-		
HCM Control Delay (s)	-	10.6	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Intersection							
Int Delay, s/veh	0						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	6	0	588	723	7	
Future Vol, veh/h	0	6	0	588	723	7	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	7	0	639	786	8	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	397	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	602	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	602	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	11		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	602	-	-			
HCM Lane V/C Ratio	-	0.011	-	-			
HCM Control Delay (s)	-	11	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0	-	-			

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD /SLOUGH RD

SCENARIO 2_PHASE 1 - AM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗		↘↗	↑↑	↗	↘	↑↑	↗
Traffic Volume (vph)	86	157	162	102	147	171	94	385	62	50	381	53
Future Volume (vph)	86	157	162	102	147	171	94	385	62	50	381	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.919				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1712	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.276			0.613			0.462			0.507		
Satd. Flow (perm)	514	1863	1583	1142	1712	0	1670	3539	1583	944	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176		89				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	93	171	176	111	160	186	102	418	67	54	414	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	171	176	111	346	0	102	418	67	54	414	58
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD /SLOUGH RD

SCENARIO 2_PHASE 1 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.6	22.5	22.5	9.6	22.5		9.5	23.4	23.4	9.5	23.4	23.4
Total Split (%)	14.8%	34.6%	34.6%	14.8%	34.6%		14.6%	36.0%	36.0%	14.6%	36.0%	36.0%
Maximum Green (s)	5.1	18.0	18.0	5.1	18.0		5.0	18.9	18.9	5.0	18.9	18.9
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	18.6	14.5	14.5	18.6	14.5		31.1	27.8	27.8	30.2	25.7	25.7
Actuated g/C Ratio	0.29	0.22	0.22	0.29	0.22		0.48	0.43	0.43	0.46	0.40	0.40
v/c Ratio	0.38	0.41	0.36	0.30	0.77		0.11	0.28	0.09	0.11	0.30	0.08
Control Delay	17.0	23.7	5.8	15.0	28.8		10.4	15.9	0.2	10.9	17.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	23.7	5.8	15.0	28.8		10.4	15.9	0.2	10.9	17.0	0.2
LOS	B	C	A	B	C		B	B	A	B	B	A
Approach Delay		15.1			25.4			13.2			14.5	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	23	57	0	28	93		10	67	0	11	66	0
Queue Length 95th (ft)	46	101	40	54	169		23	106	0	30	105	0
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	245	515	565	375	538		951	1514	778	509	1400	732
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.33	0.31	0.30	0.64		0.11	0.28	0.09	0.11	0.30	0.08

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
Intersection Signal Delay: 16.7 **Intersection LOS: B**
 Intersection Capacity Utilization 52.8% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 4: RODD FIELD RD & AIRLINE RD /SLOUGH RD

 Ø1 9.5 s	 Ø2 (R) 23.4 s	 Ø3 9.6 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 23.4 s	 Ø7 9.6 s	 Ø8 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 2_PHASE 1 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑	↗	↙	↗		↙↗	↑↑	↗	↙	↑↑	↗
Traffic Volume (vph)	46	237	230	47	103	66	117	413	71	139	496	124
Future Volume (vph)	46	237	230	47	103	66	117	413	71	139	496	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1753	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.582			0.427			0.410			0.448		
Satd. Flow (perm)	1084	1863	1583	795	1753	0	1482	3539	1583	835	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			250		49				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	50	258	250	51	112	72	127	449	77	151	539	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	258	250	51	184	0	127	449	77	151	539	135
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 2_PHASE 1 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 2_PHASE 1 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	23.0	23.0	10.0	23.5	23.5
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%		14.6%	35.4%	35.4%	15.4%	36.2%	36.2%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0		5.0	18.5	18.5	5.5	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	17.0	14.0	14.0	17.0	14.0		32.0	27.2	27.2	33.4	27.9	27.9
Actuated g/C Ratio	0.26	0.22	0.22	0.26	0.22		0.49	0.42	0.42	0.51	0.43	0.43
v/c Ratio	0.15	0.64	0.47	0.18	0.44		0.14	0.30	0.10	0.29	0.35	0.17
Control Delay	14.0	30.3	6.1	14.5	18.6		9.6	16.5	0.3	11.3	16.4	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	30.3	6.1	14.5	18.6		9.6	16.5	0.3	11.3	16.4	2.4
LOS	B	C	A	B	B		A	B	A	B	B	A
Approach Delay		18.0			17.7			13.2			13.1	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	13	93	0	13	46		12	74	0	31	87	0
Queue Length 95th (ft)	29	150	47	29	90		28	115	0	68	136	21
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	336	515	619	283	520		904	1483	765	523	1521	780
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.50	0.40	0.18	0.35		0.14	0.30	0.10	0.29	0.35	0.17

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 14.8

Intersection LOS: B

Intersection Capacity Utilization 50.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

Ø1 10 s	Ø2 (R) 23 s	Ø3 9.5 s	Ø4 22.5 s
Ø5 9.5 s	Ø6 (R) 23.5 s	Ø7 9.5 s	Ø8 22.5 s

FINAL DRAFT

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘	↗	↗	↘
Traffic Vol, veh/h	154	116	64	257	302	46
Future Vol, veh/h	154	116	64	257	302	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	126	70	279	328	50
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	607	164	328	0	-	0
Stage 1	328	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	428	852	1228	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	404	852	1228	-	-	-
Mov Cap-2 Maneuver	404	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.8		1.6		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1228	-	404	852	-	-
HCM Lane V/C Ratio	0.057	-	0.414	0.148	-	-
HCM Control Delay (s)	8.1	-	20.1	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2	0.5	-	-

Intersection							
Int Delay, s/veh	5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↖	↗	↖	↗	↗	↖	
Traffic Vol, veh/h	143	104	68	189	377	71	
Future Vol, veh/h	143	104	68	189	377	71	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	150	-	-	0	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	155	113	74	205	410	77	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	661	205	410	0	-	0	
Stage 1	410	-	-	-	-	-	
Stage 2	251	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	395	802	1145	-	-	-	
Stage 1	638	-	-	-	-	-	
Stage 2	768	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	369	802	1145	-	-	-	
Mov Cap-2 Maneuver	369	-	-	-	-	-	
Stage 1	638	-	-	-	-	-	
Stage 2	718	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	16.9		2.2		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1145	-	369	802	-	-	
HCM Lane V/C Ratio	0.065	-	0.421	0.141	-	-	
HCM Control Delay (s)	8.4	-	21.7	10.2	-	-	
HCM Lane LOS	A	-	C	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	2	0.5	-	-	

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	97	45	20	10	73	10	30	4	6	10	50	282
Future Vol, veh/h	97	45	20	10	73	10	30	4	6	10	50	282
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	49	22	11	79	11	33	4	7	11	54	307
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	90	0	0	71	0	0	558	383	60	383	389	85
Stage 1	-	-	-	-	-	-	271	271	-	107	107	-
Stage 2	-	-	-	-	-	-	287	112	-	276	282	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1505	-	-	1529	-	-	440	550	1005	575	546	974
Stage 1	-	-	-	-	-	-	735	685	-	898	807	-
Stage 2	-	-	-	-	-	-	720	803	-	730	678	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1505	-	-	1529	-	-	260	506	1005	533	502	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	260	506	-	533	502	-
Stage 1	-	-	-	-	-	-	681	635	-	832	801	-
Stage 2	-	-	-	-	-	-	456	797	-	668	629	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	4.5			0.8			18.5			12.7		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	309	1505	-	-	1529	-	-	838				
HCM Lane V/C Ratio	0.141	0.07	-	-	0.007	-	-	0.444				
HCM Control Delay (s)	18.5	7.6	0	-	7.4	0	-	12.7				
HCM Lane LOS	C	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	2.3				

Intersection

Int Delay, s/veh 7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	89	87	40	20	45	10	18	24	15	13	60	137
Future Vol, veh/h	89	87	40	20	45	10	18	24	15	13	60	137
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	97	95	43	22	49	11	20	26	16	14	65	149

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	60	0	0	138
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1544	-	-	1446
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1544	-	-	1446
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	2	13.6	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	479	1544	-	-	1446	-	-	727
HCM Lane V/C Ratio	0.129	0.063	-	-	0.015	-	-	0.314
HCM Control Delay (s)	13.6	7.5	0	-	7.5	0	-	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0	-	-	1.3

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 1 - AM
5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	111	101	155	167	173	202	627	187	78	308	114
Future Volume (vph)	232	111	101	155	167	173	202	627	187	78	308	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		100	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.924				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1721	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.438			0.679			0.550			0.359		
Satd. Flow (perm)	816	1863	1583	1265	1721	0	1025	3539	1583	669	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			110		114				203			124
Link Speed (mph)		30			30			30				35
Link Distance (ft)		687			2096			2654				451
Travel Time (s)		15.6			47.6			60.3				8.8
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
Adj. Flow (vph)	252	121	110	168	182	188	220	682	203	85	335	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	121	110	168	370	0	220	682	203	85	335	124
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

Queue shown is maximum after two cycles.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

 Ø2 (R)	 Ø4
22.5 s	22.5 s
 Ø6 (R)	 Ø8
22.5 s	22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 1 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	77	157	129	86	125	106	433	101	100	619	173
Future Volume (vph)	149	77	157	129	86	125	106	433	101	100	619	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.911				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1697	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.587			0.702			0.391			0.482		
Satd. Flow (perm)	1093	1863	1583	1308	1697	0	728	3539	1583	898	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118		136				110			188
Link Speed (mph)		30			30			35				35
Link Distance (ft)		717			2064			2664				697
Travel Time (s)		16.3			46.9			51.9				13.6
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
Adj. Flow (vph)	162	84	171	140	93	136	115	471	110	109	673	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	84	171	140	229	0	115	471	110	109	673	188
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 1 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	11.9	11.9	11.9	11.8	11.8		27.1	27.1	27.1	27.1	27.1	27.1
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26		0.60	0.60	0.60	0.60	0.60	0.60
v/c Ratio	0.56	0.17	0.34	0.41	0.42		0.26	0.22	0.11	0.20	0.32	0.18
Control Delay	20.7	11.6	6.3	15.7	7.6		10.2	6.9	2.7	8.9	7.4	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	11.6	6.3	15.7	7.6		10.2	6.9	2.7	8.9	7.4	2.4
LOS	C	B	A	B	A		B	A	A	A	A	A
Approach Delay		13.0			10.7			6.8				6.6
Approach LOS		B			B			A				A
Queue Length 50th (ft)	36	17	10	30	19		14	28	0	13	44	0
Queue Length 95th (ft)	64	32	35	53	47		54	68	20	47	100	27
Internal Link Dist (ft)		637			1984			2584				617
Turn Bay Length (ft)	150		150	100			200		200	200		200
Base Capacity (vph)	437	745	704	523	760		438	2131	997	540	2131	1028
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.11	0.24	0.27	0.30		0.26	0.22	0.11	0.20	0.32	0.18

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 8.3
 Intersection LOS: A
 Intersection Capacity Utilization 58.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

 Ø2 (R)	 Ø4
22.5 s	22.5 s
 Ø6 (R)	 Ø8
22.5 s	22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 1 - AM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷		↶	↷		↶	↷	
Traffic Volume (vph)	192	485	3	3	480	90	5	0	5	52	0	64
Future Volume (vph)	192	485	3	3	480	90	5	0	5	52	0	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.976			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3454	0	1770	1583	0	1770	1583	0
Flt Permitted	0.267			0.455			0.711			0.754		
Satd. Flow (perm)	497	3536	0	848	3454	0	1324	1583	0	1405	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			42			345			341	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			247	
Travel Time (s)		4.0			8.7			11.9			5.6	
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
Adj. Flow (vph)	209	527	3	3	522	98	5	0	5	57	0	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	530	0	3	620	0	5	5	0	57	70	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 1 - AM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	10.0	23.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	18.2%	41.8%		17.3%	40.9%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.5	18.5		5.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	23.8	22.7		19.6	14.6		21.4	21.4		21.4	21.4	
Actuated g/C Ratio	0.43	0.41		0.36	0.27		0.39	0.39		0.39	0.39	
v/c Ratio	0.61	0.36		0.01	0.65		0.01	0.01		0.10	0.09	
Control Delay	18.2	12.2		4.0	15.3		12.2	0.0		12.9	0.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.2	12.2		4.0	15.3		12.2	0.0		12.9	0.2	
LOS	B	B		A	B		B	A		B	A	
Approach Delay		13.9			15.3			6.1			5.9	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	39	54		0	103		1	0		12	0	
Queue Length 95th (ft)	#73	106		m1	127		7	0		34	0	
Internal Link Dist (ft)		182			494			445			167	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	342	1462		386	1158		514	826		545	823	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.61	0.36		0.01	0.54		0.01	0.01		0.10	0.09	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
Intersection Signal Delay: 13.7 **Intersection LOS: B**
 Intersection Capacity Utilization 47.6% ICU Level of Service A
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD

 22.5 s	 9.5 s	 23 s
 22.5 s	 10 s	 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 1 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷		↶	↷		↶	↷	
Traffic Volume (vph)	137	574	8	8	547	45	9	0	10	57	5	149
Future Volume (vph)	137	574	8	8	547	45	9	0	10	57	5	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.989			0.850			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3500	0	1770	1583	0	1770	1591	0
Flt Permitted	0.264			0.412			0.651			0.750		
Satd. Flow (perm)	492	3532	0	767	3500	0	1213	1583	0	1397	1591	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			16			310			162	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	149	624	9	9	595	49	10	0	11	62	5	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	633	0	9	644	0	10	11	0	62	167	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 1 - PM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	10.0	23.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	18.2%	41.8%		17.3%	40.9%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.5	18.5		5.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	22.4	21.3		19.2	15.2		22.8	22.8		22.8	22.8	
Actuated g/C Ratio	0.41	0.39		0.35	0.28		0.41	0.41		0.41	0.41	
v/c Ratio	0.45	0.46		0.03	0.66		0.02	0.01		0.11	0.22	
Control Delay	13.0	13.5		4.4	16.3		12.7	0.0		13.3	4.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.0	13.5		4.4	16.3		12.7	0.0		13.3	4.0	
LOS	B	B		A	B		B	A		B	A	
Approach Delay		13.4			16.2			6.0			6.5	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	26	65		1	110		2	0		13	1	
Queue Length 95th (ft)	49	128		m2	133		11	0		36	34	
Internal Link Dist (ft)		182			494			445			345	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	328	1468		359	1156		501	836		578	753	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.45	0.43		0.03	0.56		0.02	0.01		0.11	0.22	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.5 **Intersection LOS: B**
 Intersection Capacity Utilization 45.2% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD

 22.5 s	 9.5 s	 23 s
 22.5 s	 10 s	 22.5 s

FINAL DRAFT

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↕		↖	↗	
Traffic Vol, veh/h	21	516	22	22	566	21	21	0	21	4	0	4
Future Vol, veh/h	21	516	22	22	566	21	21	0	21	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	561	24	24	615	23	23	0	23	4	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	585	0	0	973	1304	292	1000	1304	319
Stage 1	-	-	-	-	-	-	618	618	-	674	674	-
Stage 2	-	-	-	-	-	-	355	686	-	326	630	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	942	-	-	986	-	-	207	159	704	197	159	677
Stage 1	-	-	-	-	-	-	443	479	-	410	452	-
Stage 2	-	-	-	-	-	-	635	446	-	661	473	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	942	-	-	986	-	-	198	151	704	184	151	677
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	151	-	184	151	-
Stage 1	-	-	-	-	-	-	432	467	-	400	441	-
Stage 2	-	-	-	-	-	-	616	435	-	624	461	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.3			18.7			17.7		
HCM LOS	C			C			C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	309	942	-	-	986	-	-	184	677			
HCM Lane V/C Ratio	0.148	0.024	-	-	0.024	-	-	0.024	0.006			
HCM Control Delay (s)	18.7	8.9	-	-	8.7	-	-	25	10.4			
HCM Lane LOS	C	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.1	0			

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕		↖	↕	
Traffic Vol, veh/h	16	616	22	22	583	16	19	0	20	10	0	9
Future Vol, veh/h	16	616	22	22	583	16	19	0	20	10	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	670	24	24	634	17	21	0	22	11	0	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	651	0	0	693	0	0	1081	1415	347	1060	1418	326
Stage 1	-	-	-	-	-	-	716	716	-	690	690	-
Stage 2	-	-	-	-	-	-	365	699	-	370	728	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	931	-	-	898	-	-	172	136	649	178	136	670
Stage 1	-	-	-	-	-	-	387	432	-	401	444	-
Stage 2	-	-	-	-	-	-	627	440	-	622	427	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	931	-	-	898	-	-	164	130	649	166	130	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	130	-	166	130	-
Stage 1	-	-	-	-	-	-	380	424	-	394	432	-
Stage 2	-	-	-	-	-	-	601	428	-	590	419	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			21.1			19.8		
HCM LOS	C			C			C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	266	931	-	-	898	-	-	166	670			
HCM Lane V/C Ratio	0.159	0.019	-	-	0.027	-	-	0.065	0.015			
HCM Control Delay (s)	21.1	8.9	-	-	9.1	-	-	28.2	10.5			
HCM Lane LOS	C	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	0.2	0			

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↔			↖	↕	
Traffic Vol, veh/h	21	499	26	25	583	21	18	0	19	4	0	4
Future Vol, veh/h	21	499	26	25	583	21	18	0	19	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	542	28	27	634	23	20	0	21	4	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	657	0	0	571	0	0	973	1313	285	1016	1315	328
Stage 1	-	-	-	-	-	-	602	602	-	699	699	-
Stage 2	-	-	-	-	-	-	371	711	-	317	616	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	926	-	-	998	-	-	207	157	712	192	157	668
Stage 1	-	-	-	-	-	-	453	487	-	397	440	-
Stage 2	-	-	-	-	-	-	622	434	-	669	480	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	926	-	-	998	-	-	198	149	712	179	149	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	149	-	179	149	-
Stage 1	-	-	-	-	-	-	442	475	-	387	428	-
Stage 2	-	-	-	-	-	-	601	422	-	633	468	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.3			18.1			18		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	315	926	-	-	998	-	-	179	668			
HCM Lane V/C Ratio	0.128	0.025	-	-	0.027	-	-	0.024	0.007			
HCM Control Delay (s)	18.1	9	-	-	8.7	-	-	25.6	10.4			
HCM Lane LOS	C	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.1	0			

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕			↕		↔	↕	
Traffic Vol, veh/h	16	609	21	22	590	16	29	0	29	10	0	9
Future Vol, veh/h	16	609	21	22	590	16	29	0	29	10	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	662	23	24	641	17	32	0	32	11	0	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	659	0	0	685	0	0	1076	1415	342	1064	1418	329
Stage 1	-	-	-	-	-	-	708	708	-	698	698	-
Stage 2	-	-	-	-	-	-	368	707	-	366	720	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	925	-	-	904	-	-	174	136	654	177	136	667
Stage 1	-	-	-	-	-	-	392	436	-	397	440	-
Stage 2	-	-	-	-	-	-	624	436	-	626	430	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	925	-	-	904	-	-	166	130	654	163	130	667
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	130	-	163	130	-
Stage 1	-	-	-	-	-	-	385	428	-	390	428	-
Stage 2	-	-	-	-	-	-	599	424	-	585	422	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			10.8			20.1		
HCM LOS	A			A			B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	654	925	-	-	904	-	-	163	667			
HCM Lane V/C Ratio	0.048	0.019	-	-	0.026	-	-	0.067	0.015			
HCM Control Delay (s)	10.8	9	-	-	9.1	-	-	28.7	10.5			
HCM Lane LOS	B	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.2	0			

Intersection							
Int Delay, s/veh	0.2						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	18	0	585	392	97	
Future Vol, veh/h	0	18	0	585	392	97	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	20	0	636	426	105	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	266	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	732	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	732	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	10.1		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	732	-	-			
HCM Lane V/C Ratio	-	0.027	-	-			
HCM Control Delay (s)	-	10.1	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.1	-	-			

Intersection							
Int Delay, s/veh	0.4						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	43	0	495	521	73	
Future Vol, veh/h	0	43	0	495	521	73	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	47	0	538	566	79	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	323	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	673	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	673	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	10.7		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	673	-	-			
HCM Lane V/C Ratio	-	0.069	-	-			
HCM Control Delay (s)	-	10.7	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.2	-	-			

Intersection							
Int Delay, s/veh	1						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	
Traffic Vol, veh/h	25	10	55	530	479	127	
Future Vol, veh/h	25	10	55	530	479	127	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	300	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	27	11	60	576	521	138	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	998	329	659	0	-	0	
Stage 1	590	-	-	-	-	-	
Stage 2	408	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	240	667	925	-	-	-	
Stage 1	517	-	-	-	-	-	
Stage 2	640	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	224	667	925	-	-	-	
Mov Cap-2 Maneuver	224	-	-	-	-	-	
Stage 1	517	-	-	-	-	-	
Stage 2	598	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	19.6		0.9		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	925	-	224	667	-	-	
HCM Lane V/C Ratio	0.065	-	0.121	0.016	-	-	
HCM Control Delay (s)	9.2	-	23.3	10.5	-	-	
HCM Lane LOS	A	-	C	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.4	0.1	-	-	

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	20	41	454	574	94
Future Vol, veh/h	59	20	41	454	574	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	22	45	493	624	102
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1011	363	726	0	-	0
Stage 1	675	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	236	634	873	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	224	634	873	-	-	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	23.2		0.8		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	873	-	224	634	-	-
HCM Lane V/C Ratio	0.051	-	0.286	0.034	-	-
HCM Control Delay (s)	9.3	-	27.4	10.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	0.1	-	-

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 2 - AM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	537	110	357	355	151	252	373	153	318	171	200
Future Volume (vph)	55	537	110	357	355	151	252	373	153	318	171	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.523			0.200			0.635			0.361		
Satd. Flow (perm)	974	3539	1583	373	3539	1583	1183	3539	1583	672	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			205			164			205			217
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2636
Travel Time (s)		14.4			30.2			16.0				51.4
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
Adj. Flow (vph)	60	584	120	388	386	164	274	405	166	346	186	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	584	120	388	386	164	274	405	166	346	186	217
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 2_PHASE 2 OPENING DAY AM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1	 Ø2 (R)	 Ø3	 Ø4
14.2 s	24.2 s	19 s	22.6 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
12.2 s	26.2 s	9.6 s	32 s

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 2 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	571	102	300	484	389	157	232	100	275	373	326
Future Volume (vph)	164	571	102	300	484	389	157	232	100	275	373	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.425			0.199			0.477			0.572		
Satd. Flow (perm)	792	3539	1583	371	3539	1583	889	3539	1583	1065	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			423			164			354
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2659
Travel Time (s)		14.4			30.2			16.0				51.8
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
Adj. Flow (vph)	178	621	111	326	526	423	171	252	109	299	405	354
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	621	111	326	526	423	171	252	109	299	405	354
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 2_PHASE 2 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 2 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.6	22.5	22.5	14.0	25.9	25.9	9.6	23.5	23.5	10.0	23.9	23.9
Total Split (%)	15.1%	32.1%	32.1%	20.0%	37.0%	37.0%	13.7%	33.6%	33.6%	14.3%	34.1%	34.1%
Maximum Green (s)	6.1	18.0	18.0	9.5	21.4	21.4	5.1	19.0	19.0	5.5	19.4	19.4
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max						
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	22.8	16.7	16.7	29.6	20.1	20.1	25.1	19.4	19.4	26.6	20.1	20.1
Actuated g/C Ratio	0.33	0.24	0.24	0.42	0.29	0.29	0.36	0.28	0.28	0.38	0.29	0.29
v/c Ratio	0.52	0.74	0.22	0.94	0.52	0.56	0.44	0.26	0.20	0.64	0.40	0.50
Control Delay	18.9	30.3	2.6	54.1	22.7	5.4	17.9	20.8	2.2	23.7	21.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	30.3	2.6	54.1	22.7	5.4	17.9	20.8	2.2	23.7	21.8	5.4
LOS	B	C	A	D	C	A	B	C	A	C	C	A
Approach Delay		24.7			25.0			16.1			16.8	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)	44	126	0	89	96	0	46	44	0	88	74	0
Queue Length 95th (ft)	81	180	16	#231	140	59	85	73	15	#159	112	57
Internal Link Dist (ft)		873			1910			741			2579	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	342	910	528	346	1081	777	390	978	556	470	1016	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.68	0.21	0.94	0.49	0.54	0.44	0.26	0.20	0.64	0.40	0.50

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
Intersection Signal Delay: 21.4 **Intersection LOS: C**
 Intersection Capacity Utilization 69.1% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

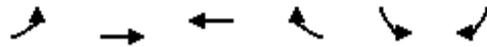
 Ø1	 Ø2 (R)	 Ø3	 Ø4
10 s	23.5 s	14 s	22.5 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
9.6 s	23.9 s	10.6 s	25.9 s

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 2 - AM

5/15/2017

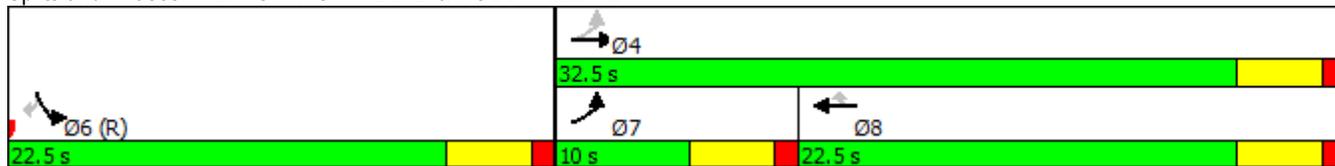


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	348	352	460	400	213	363
Future Volume (vph)	348	352	460	400	213	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.299				0.950	
Satd. Flow (perm)	1081	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				435		395
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	383	500	435	232	395
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	383	500	435	232	395
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 2_PHASE 2 OPENING DAY AM

Synchro 9 Report

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD

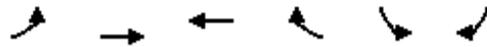


FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 2 - PM

5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	445	473	436	289	380	452
Future Volume (vph)	445	473	436	289	380	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.309				0.950	
Satd. Flow (perm)	1117	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				314		491
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	514	474	314	413	491
Shared Lane Traffic (%)						
Lane Group Flow (vph)	484	514	474	314	413	491
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

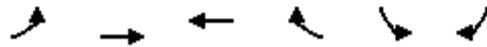
SCENARIO 2_PHASE 2 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 2 - PM

5/15/2017

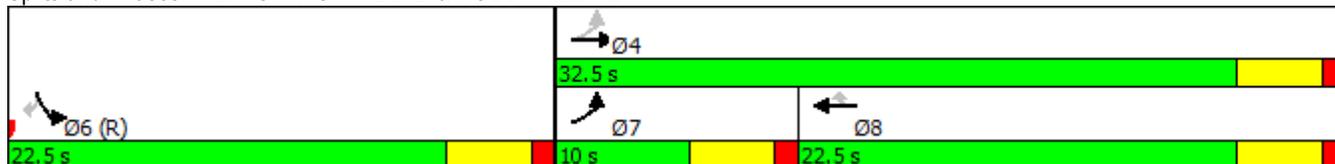


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	24.0	24.0	14.0	14.0	22.0	22.0
Actuated g/C Ratio	0.44	0.44	0.25	0.25	0.40	0.40
v/c Ratio	0.67	0.33	0.53	0.49	0.30	0.35
Control Delay	14.9	10.4	19.3	5.1	13.8	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	10.4	19.3	5.1	13.8	4.2
LOS	B	B	B	A	B	A
Approach Delay		12.5	13.6		8.6	
Approach LOS		B	B		A	
Queue Length 50th (ft)	50	54	70	0	32	0
Queue Length 95th (ft)	65	71	96	44	85	47
Internal Link Dist (ft)		754	715		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	718	1801	1158	729	1374	1410
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.29	0.41	0.43	0.30	0.35

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
Intersection Signal Delay: 11.5 **Intersection LOS: B**
 Intersection Capacity Utilization 46.8% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	11	0	708	965	5
Future Vol, veh/h	0	11	0	708	965	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	0	770	1049	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	527	-	0	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	
Pot Cap-1 Maneuver	0	496	0	-	-	
Stage 1	0	-	0	-	-	
Stage 2	0	-	0	-	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	496	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Approach	EB	NB		SB		
HCM Control Delay, s	12.4	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	496	-	-		
HCM Lane V/C Ratio	-	0.024	-	-		
HCM Control Delay (s)	-	12.4	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	6	0	732	986	8
Future Vol, veh/h	0	6	0	732	986	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	0	796	1072	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	540	-	0	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	
Pot Cap-1 Maneuver	0	486	0	-	-	
Stage 1	0	-	0	-	-	
Stage 2	0	-	0	-	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	486	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Approach	EB	NB		SB		
HCM Control Delay, s	12.5	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	486	-	-		
HCM Lane V/C Ratio	-	0.013	-	-		
HCM Control Delay (s)	-	12.5	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0	-	-		

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 2_PHASE 2 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	175	283	128	162	192	107	453	74	56	571	55
Future Volume (vph)	95	175	283	128	162	192	107	453	74	56	571	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.919				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1712	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.260			0.582			0.314			0.449		
Satd. Flow (perm)	484	1863	1583	1084	1712	0	1135	3539	1583	836	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			308		91				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	103	190	308	139	176		209	116	492	80	61	621
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	190	308	139	385	0	116	492	80	61	621	60
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 2_PHASE 2 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

SCENARIO 2_PHASE 2 - AM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.6	22.5	22.5	9.6	22.5		9.5	23.4	23.4	9.5	23.4	23.4
Total Split (%)	14.8%	34.6%	34.6%	14.8%	34.6%		14.6%	36.0%	36.0%	14.6%	36.0%	36.0%
Maximum Green (s)	5.1	18.0	18.0	5.1	18.0		5.0	18.9	18.9	5.0	18.9	18.9
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	19.5	15.4	15.4	19.5	15.4		30.2	27.0	27.0	29.2	24.9	24.9
Actuated g/C Ratio	0.30	0.24	0.24	0.30	0.24		0.46	0.42	0.42	0.45	0.38	0.38
v/c Ratio	0.42	0.43	0.50	0.37	0.81		0.16	0.33	0.11	0.13	0.46	0.08
Control Delay	17.7	23.5	5.9	16.1	31.9		10.9	16.7	0.3	11.4	19.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	23.5	5.9	16.1	31.9		10.9	16.7	0.3	11.4	19.1	0.2
LOS	B	C	A	B	C		B	B	A	B	B	A
Approach Delay		13.5			27.7			13.8			16.9	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)	25	62	0	34	106		12	83	0	13	110	0
Queue Length 95th (ft)	50	111	52	65	#219		26	125	0	33	159	0
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	246	515	661	379	539		722	1470	760	454	1353	714
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.37	0.47	0.37	0.71		0.16	0.33	0.11	0.13	0.46	0.08

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 17.5 Intersection LOS: B

Intersection Capacity Utilization 60.5% ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: RODD FIELD RD & AIRLINE RD/SLOUGH RD

 Ø1 9.5 s	 Ø2 (R) 23.4 s	 Ø3 9.6 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 23.4 s	 Ø7 9.6 s	 Ø8 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 2_PHASE 2 - PM
5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	256	301	70	113	74	138	526	82	156	673	127
Future Volume (vph)	42	256	301	70	113	74	138	526	82	156	673	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.941				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1753	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.604			0.393			0.280			0.318		
Satd. Flow (perm)	1125	1863	1583	732	1753	0	1012	3539	1583	592	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			327		50				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	46	278	327	76	123	80	150	572	89	170	732	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	278	327	76	203	0	150	572	89	170	732	138
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

Splits and Phases: 4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

Ø1 10 s	Ø2 (R) 23 s	Ø3 9.5 s	Ø4 22.5 s
Ø5 9.5 s	Ø6 (R) 23.5 s	Ø7 9.5 s	Ø8 22.5 s

FINAL DRAFT

Intersection							
Int Delay, s/veh	6.1						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	
Traffic Vol, veh/h	158	130	71	287	437	50	
Future Vol, veh/h	158	130	71	287	437	50	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	150	-	-	0	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	172	141	77	312	475	54	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	785	238	475	0	-	0	
Stage 1	475	-	-	-	-	-	
Stage 2	310	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	330	763	1083	-	-	-	
Stage 1	592	-	-	-	-	-	
Stage 2	717	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	307	763	1083	-	-	-	
Mov Cap-2 Maneuver	307	-	-	-	-	-	
Stage 1	592	-	-	-	-	-	
Stage 2	666	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	21.7		1.7		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1083	-	307	763	-	-	
HCM Lane V/C Ratio	0.071	-	0.559	0.185	-	-	
HCM Control Delay (s)	8.6	-	30.6	10.8	-	-	
HCM Lane LOS	A	-	D	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	3.2	0.7	-	-	

Intersection							
Int Delay, s/veh	5.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↘	↗	↘	↗	↗	↗	↗
Traffic Vol, veh/h	148	112	74	219	466	78	
Future Vol, veh/h	148	112	74	219	466	78	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	0	0	150	-	-	0	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	161	122	80	238	507	85	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	787	253	507	0	-	0	
Stage 1	507	-	-	-	-	-	
Stage 2	280	-	-	-	-	-	
Critical Hdwy	6.84	6.94	4.14	-	-	-	
Critical Hdwy Stg 1	5.84	-	-	-	-	-	
Critical Hdwy Stg 2	5.84	-	-	-	-	-	
Follow-up Hdwy	3.52	3.32	2.22	-	-	-	
Pot Cap-1 Maneuver	329	746	1054	-	-	-	
Stage 1	570	-	-	-	-	-	
Stage 2	742	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	304	746	1054	-	-	-	
Mov Cap-2 Maneuver	304	-	-	-	-	-	
Stage 1	570	-	-	-	-	-	
Stage 2	686	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	21.4		2.2		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	1054	-	304	746	-	-	
HCM Lane V/C Ratio	0.076	-	0.529	0.163	-	-	
HCM Control Delay (s)	8.7	-	29.4	10.8	-	-	
HCM Lane LOS	A	-	D	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	2.9	0.6	-	-	

Intersection												
Int Delay, s/veh	9.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	103	48	21	11	78	11	32	4	6	11	53	301
Future Vol, veh/h	103	48	21	11	78	11	32	4	6	11	53	301
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	52	23	12	85	12	35	4	7	12	58	327

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	75	0	0	595	409	64	408	414	91
Stage 1	-	-	-	-	-	-	288	288	-	115	115	-
Stage 2	-	-	-	-	-	-	307	121	-	293	299	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1496	-	-	1524	-	-	416	532	1000	554	529	967
Stage 1	-	-	-	-	-	-	720	674	-	890	800	-
Stage 2	-	-	-	-	-	-	703	796	-	715	666	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1496	-	-	1524	-	-	234	487	1000	511	484	967
Mov Cap-2 Maneuver	-	-	-	-	-	-	234	487	-	511	484	-
Stage 1	-	-	-	-	-	-	664	621	-	821	794	-
Stage 2	-	-	-	-	-	-	428	790	-	650	614	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0.8	20.5	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	278	1496	-	-	1524	-	-	825
HCM Lane V/C Ratio	0.164	0.075	-	-	0.008	-	-	0.481
HCM Control Delay (s)	20.5	7.6	0	-	7.4	0	-	13.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	2.6

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	95	93	43	21	48	11	19	26	16	14	64	146
Future Vol, veh/h	95	93	43	21	48	11	19	26	16	14	64	146
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	101	47	23	52	12	21	28	17	15	70	159
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	64	0	0	148	0	0	549	441	124	458	458	58
Stage 1	-	-	-	-	-	-	331	331	-	104	104	-
Stage 2	-	-	-	-	-	-	218	110	-	354	354	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1538	-	-	1434	-	-	446	510	927	513	499	1008
Stage 1	-	-	-	-	-	-	682	645	-	902	809	-
Stage 2	-	-	-	-	-	-	784	804	-	663	630	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1538	-	-	1434	-	-	310	465	927	448	455	1008
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	465	-	448	455	-
Stage 1	-	-	-	-	-	-	632	598	-	836	795	-
Stage 2	-	-	-	-	-	-	593	790	-	575	584	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.1			2			14.3			12.7		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	454	1538	-	-	1434	-	-	707				
HCM Lane V/C Ratio	0.146	0.067	-	-	0.016	-	-	0.344				
HCM Control Delay (s)	14.3	7.5	0	-	7.6	0	-	12.7				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.5	0.2	-	-	0	-	-	1.5				

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 2 - AM
5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	118	127	178	176	157	221	711	203	81	537	122
Future Volume (vph)	247	118	127	178	176	157	221	711	203	81	537	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.929				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1730	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.453			0.675			0.417			0.307		
Satd. Flow (perm)	844	1863	1583	1257	1730	0	777	3539	1583	572	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138		83				221			133
Link Speed (mph)		30			30			35				35
Link Distance (ft)		820			2077			2636				921
Travel Time (s)		18.6			47.2			51.4				17.9
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
Adj. Flow (vph)	268	128	138	193	191	171	240	773	221	88	584	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	128	138	193	362	0	240	773	221	88	584	133
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 2_PHASE 2 OPENING DAY AM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

 Ø2 (R)	 Ø4
22.5 s	22.5 s
 Ø6 (R)	 Ø8
22.5 s	22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 2 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	82	185	152	91	131	124	556	117	103	806	185
Future Volume (vph)	159	82	185	152	91	131	124	556	117	103	806	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		100	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor										0.79		0.57
Frt			0.850		0.912				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1699	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.524			0.699			0.291			0.419		
Satd. Flow (perm)	976	1863	1583	1302	1699	0	542	3539	1583	613	3539	900
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			30		140				127			201
Link Speed (mph)		30			30			35				35
Link Distance (ft)		523			2035			2659				749
Travel Time (s)		11.9			46.3			51.8				14.6
Confl. Peds. (#/hr)										373		275
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
Adj. Flow (vph)	173	89	201	165	99	142	135	604	127	112	876	201
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	89	201	165	241	0	135	604	127	112	876	201
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15		15		9	15		9	15	9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 2 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5		32.5	32.5	32.5	32.5	32.5	32.5
Total Split (%)	40.9%	40.9%	40.9%	40.9%	40.9%		59.1%	59.1%	59.1%	59.1%	59.1%	59.1%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		28.0	28.0	28.0	28.0	28.0	28.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	13.6	13.6	13.6	13.6	13.6		32.4	32.4	32.4	32.4	32.4	32.4
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25		0.59	0.59	0.59	0.59	0.59	0.59
v/c Ratio	0.71	0.19	0.48	0.51	0.46		0.42	0.29	0.13	0.31	0.42	0.33
Control Delay	34.8	15.6	17.9	22.5	10.0		13.4	6.9	2.1	10.5	7.8	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	15.6	17.9	22.5	10.0		13.4	6.9	2.1	10.5	7.8	3.1
LOS	C	B	B	C	A		B	A	A	B	A	A
Approach Delay		23.8			15.0			7.2				7.3
Approach LOS		C			B			A				A
Queue Length 50th (ft)	51	23	47	46	26		21	45	0	16	72	0
Queue Length 95th (ft)	99	47	87	85	67		74	84	19	53	129	26
Internal Link Dist (ft)		443			1955			2579				669
Turn Bay Length (ft)	150		150	100			200		200	200		200
Base Capacity (vph)	319	609	538	426	650		318	2082	983	360	2082	612
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.15	0.37	0.39	0.37		0.42	0.29	0.13	0.31	0.42	0.33

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.9 **Intersection LOS: B**
 Intersection Capacity Utilization 65.8% ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

 Ø2 (R)	 Ø4
32.5 s	22.5 s
 Ø6 (R)	 Ø8
32.5 s	22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 2 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	373	594	3	3	554	151	5	0	5	63	0	99
Future Volume (vph)	373	594	3	3	554	151	5	0	5	63	0	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.968			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3426	0	1770	1583	0	1770	1583	0
Flt Permitted	0.194			0.405			0.687			0.754		
Satd. Flow (perm)	361	3536	0	754	3426	0	1280	1583	0	1405	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			59			325			329	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	405	646	3	3	602	164	5	0	5	68	0	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	405	649	0	3	766	0	5	5	0	68	108	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

SCENARIO 2_PHASE 2 OPENING DAY AM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD



FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 2 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	272	684	9	9	646	91	9	0	11	83	6	230
Future Volume (vph)	272	684	9	9	646	91	9	0	11	83	6	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.981			0.850			0.854	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3472	0	1770	1583	0	1770	1591	0
Flt Permitted	0.181			0.366			0.489			0.750		
Satd. Flow (perm)	337	3532	0	682	3472	0	911	1583	0	1397	1591	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			26			297			250	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	296	743	10	10	702	99	10	0	12	90	7	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	296	753	0	10	801	0	10	12	0	90	257	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

SCENARIO 2_PHASE 2 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 2 - PM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	10.5	23.5		5.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	31.8	29.9		22.0	17.0		19.2	19.2		19.2	19.2	
Actuated g/C Ratio	0.53	0.50		0.37	0.28		0.32	0.32		0.32	0.32	
v/c Ratio	0.70	0.43		0.03	0.80		0.03	0.02		0.20	0.38	
Control Delay	19.6	10.9		7.2	26.1		15.4	0.0		17.2	4.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.6	10.9		7.2	26.1		15.4	0.0		17.2	4.7	
LOS	B	B		A	C		B	A		B	A	
Approach Delay		13.4			25.8			7.0			8.0	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)	52	73		2	131		3	0		24	2	
Queue Length 95th (ft)	#140	153		7	191		12	0		55	46	
Internal Link Dist (ft)		182			494			445			345	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	429	1763		341	1059		290	707		446	678	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.69	0.43		0.03	0.76		0.03	0.02		0.20	0.38	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 17.0 Intersection LOS: B

Intersection Capacity Utilization 61.6% ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD



FINAL DRAFT

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	43	614	25	25	697	42	0	0	48	0	0	16
Future Vol, veh/h	43	614	25	25	697	42	0	0	48	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	667	27	27	758	46	0	0	52	0	0	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	758	0	0	695	0	0	-	-	347	-	-	379
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	849	-	-	897	-	-	0	0	649	0	0	619
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	849	-	-	897	-	-	-	-	649	-	-	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.3			11			11		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	649	849	-	-	897	-	-	619				
HCM Lane V/C Ratio	0.08	0.055	-	-	0.03	-	-	0.028				
HCM Control Delay (s)	11	9.5	-	-	9.1	-	-	11				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0.1	-	-	0.1				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕	↔			↔			↔
Traffic Vol, veh/h	32	735	25	25	719	31	0	0	43	0	0	37
Future Vol, veh/h	32	735	25	25	719	31	0	0	43	0	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	799	27	27	782	34	0	0	47	0	0	40
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	782	0	0	826	0	0	-	-	413	-	-	391
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	832	-	-	800	-	-	0	0	588	0	0	608
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	832	-	-	800	-	-	-	-	588	-	-	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			11.7			11.3		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	588	832	-	-	800	-	-	608				
HCM Lane V/C Ratio	0.079	0.042	-	-	0.034	-	-	0.066				
HCM Control Delay (s)	11.7	9.5	-	-	9.7	-	-	11.3				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-	-	0.2				

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	43	579	29	28	731	42	0	0	41	0	0	16
Future Vol, veh/h	43	579	29	28	731	42	0	0	41	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	629	32	30	795	46	0	0	45	0	0	17

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	795	0	0	661
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	822	-	-	923
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	822	-	-	923
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	10.8	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	666	822	-	-	923	-	-	602
HCM Lane V/C Ratio	0.067	0.057	-	-	0.033	-	-	0.029
HCM Control Delay (s)	10.8	9.6	-	-	9	-	-	11.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.1	-	-	0.1

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕	↔			↔			↔
Traffic Vol, veh/h	32	722	24	25	732	31	0	0	64	0	0	37
Future Vol, veh/h	32	722	24	25	732	31	0	0	64	0	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	785	26	27	796	34	0	0	70	0	0	40
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	796	0	0	811	0	0	-	-	405	-	-	398
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	822	-	-	811	-	-	0	0	595	0	0	601
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	822	-	-	811	-	-	-	-	595	-	-	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			11.9			11.4		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	595	822	-	-	811	-	-	601				
HCM Lane V/C Ratio	0.117	0.042	-	-	0.034	-	-	0.067				
HCM Control Delay (s)	11.9	9.6	-	-	9.6	-	-	11.4				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2				

Intersection							
Int Delay, s/veh	0.3						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	37	0	709	511	194	
Future Vol, veh/h	0	37	0	709	511	194	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	40	0	771	555	211	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	383	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	615	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	615	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	11.3		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	615	-	-			
HCM Lane V/C Ratio	-	0.065	-	-			
HCM Control Delay (s)	-	11.3	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.2	-	-			

Intersection							
Int Delay, s/veh	0.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	85	0	647	602	145	
Future Vol, veh/h	0	85	0	647	602	145	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	92	0	703	654	158	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	406	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	594	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	594	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	12.2		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	594	-	-			
HCM Lane V/C Ratio	-	0.156	-	-			
HCM Control Delay (s)	-	12.2	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.5	-	-			

Lanes, Volumes, Timings
DW5: RODD FIELD RD & DW 5

SCENARIO 2_PHASE 2 - AM
6/6/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	48	21	109	600	684	253
Future Volume (vph)	48	21	109	600	684	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.959	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3394	0
Flt Permitted	0.950		0.202			
Satd. Flow (perm)	1770	1583	376	3539	3394	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		23			104	
Link Speed (mph)	35			35	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	6.5			10.5	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	23	118	652	743	275
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	23	118	652	1018	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			

Splits and Phases: 11: RODD FIELD RD & DW 5

<p>Ø2 (R) 32.5 s</p>	<p>Ø4 22.5 s</p>
<p>Ø5 9.6 s</p> <p>Ø6 (R) 22.9 s</p>	

FINAL DRAFT

Lanes, Volumes, Timings
DW5: RODD FIELD RD & DW 5

SCENARIO 2_PHASE 2 - PM
6/6/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	121	40	82	525	734	191
Future Volume (vph)	121	40	82	525	734	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.969	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3429	0
Flt Permitted	0.950		0.193			
Satd. Flow (perm)	1770	1583	360	3539	3429	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		43			64	
Link Speed (mph)	30			50	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	7.5			7.4	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	43	89	571	798	208
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	43	89	571	1006	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			

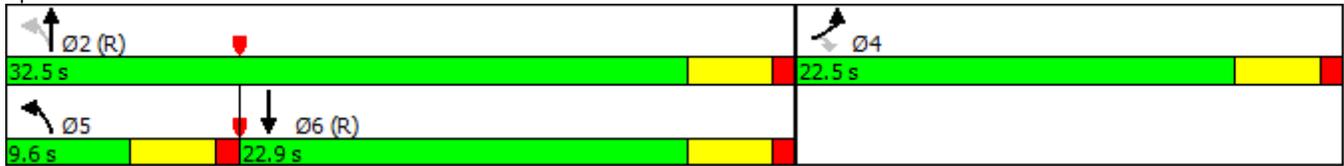


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	22.5	22.5	9.6	32.5	22.9	
Total Split (%)	40.9%	40.9%	17.5%	59.1%	41.6%	
Maximum Green (s)	18.0	18.0	5.1	28.0	18.4	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.4	9.4	38.7	39.6	32.6	
Actuated g/C Ratio	0.17	0.17	0.70	0.72	0.59	
v/c Ratio	0.44	0.14	0.21	0.22	0.49	
Control Delay	24.2	7.8	2.4	1.7	10.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.2	7.8	2.4	1.7	10.7	
LOS	C	A	A	A	B	
Approach Delay	20.2			1.8	10.7	
Approach LOS	C			A	B	
Queue Length 50th (ft)	39	0	3	11	111	
Queue Length 95th (ft)	75	19	m4	12	201	
Internal Link Dist (ft)	252			460	251	
Turn Bay Length (ft)			300			
Base Capacity (vph)	579	547	421	2545	2057	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.08	0.21	0.22	0.49	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
Intersection Signal Delay: 8.4 **Intersection LOS: A**
 Intersection Capacity Utilization 48.9% ICU Level of Service A
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: RODD FIELD RD & DW 5



FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 3 - AM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	731	123	408	419	193	282	415	150	486	187	223
Future Volume (vph)	62	731	123	408	419	193	282	415	150	486	187	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.490			0.134			0.624			0.191		
Satd. Flow (perm)	913	3539	1583	250	3539	1583	1162	3539	1583	356	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193			210			193			242
Link Speed (mph)		35			45			35			35	
Link Distance (ft)		953			1990			821			2667	
Travel Time (s)		18.6			30.2			16.0			52.0	
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
Adj. Flow (vph)	67	795	134	443	455	210	307	451	163	528	203	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	795	134	443	455	210	307	451	163	528	203	242
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right									
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex											
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm									
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 2_PHASE 3 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 3 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.0	29.0	29.0	26.9	45.9	45.9	24.4	23.7	23.7	30.4	29.7	29.7
Total Split (%)	9.1%	26.4%	26.4%	24.5%	41.7%	41.7%	22.2%	21.5%	21.5%	27.6%	27.0%	27.0%
Maximum Green (s)	5.5	24.5	24.5	22.4	41.4	41.4	19.9	19.2	19.2	25.9	25.2	25.2
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	30.0	24.5	24.5	51.4	43.4	43.4	36.3	19.2	19.2	49.6	28.0	28.0
Actuated g/C Ratio	0.27	0.22	0.22	0.47	0.39	0.39	0.33	0.17	0.17	0.45	0.25	0.25
v/c Ratio	0.23	1.01	0.27	1.04	0.33	0.28	0.64	0.73	0.37	1.07	0.23	0.42
Control Delay	20.6	77.3	2.6	85.7	24.6	4.2	28.0	50.8	5.9	97.1	30.5	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	77.3	2.6	85.7	24.6	4.2	28.0	50.8	5.9	97.1	30.5	8.6
LOS	C	E	A	F	C	A	C	D	A	F	C	A
Approach Delay		63.5			45.1			35.2			61.2	
Approach LOS		E			D			D			E	
Queue Length 50th (ft)	25	~301	0	~289	119	0	140	160	0	~370	53	21
Queue Length 95th (ft)	51	#434	15	#490	162	47	211	217	38	#586	82	53
Internal Link Dist (ft)		873			1910			741			2587	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	291	788	502	426	1395	751	523	617	435	493	899	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	1.01	0.27	1.04	0.33	0.28	0.59	0.73	0.37	1.07	0.23	0.42

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.07
Intersection Signal Delay: 51.3 **Intersection LOS: D**
 Intersection Capacity Utilization 96.2% ICU Level of Service F
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

 Ø1	 Ø2 (R)	 Ø3	 Ø4
30.4 s	23.7 s	26.9 s	29 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24.4 s	29.7 s	10 s	45.9 s

FINAL DRAFT

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 3 - PM

5/15/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	742	114	356	603	197	176	257	124	411	418	363
Future Volume (vph)	183	742	114	356	603	197	176	257	124	411	418	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	120			50			50			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.338			0.171			0.480			0.456		
Satd. Flow (perm)	630	3539	1583	319	3539	1583	894	3539	1583	849	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			205			214			205			357
Link Speed (mph)		45			45			35				35
Link Distance (ft)		953			1990			821				2663
Travel Time (s)		14.4			30.2			16.0				51.9
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
Adj. Flow (vph)	199	807	124	387	655	214	191	279	135	447	454	395
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	807	124	387	655	214	191	279	135	447	454	395
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex						
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

SCENARIO 2_PHASE 3 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
1: CIMARRON BLVD & YORKTOWN BLVD

SCENARIO 2_PHASE 3 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	12.8	23.4	23.4	18.2	28.8	28.8	11.3	23.2	23.2	15.2	27.1	27.1
Total Split (%)	16.0%	29.3%	29.3%	22.8%	36.0%	36.0%	14.1%	29.0%	29.0%	19.0%	33.9%	33.9%
Maximum Green (s)	8.3	18.9	18.9	13.7	24.3	24.3	6.8	18.7	18.7	10.7	22.6	22.6
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max						
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	27.0	18.9	18.9	37.1	24.5	24.5	25.5	18.7	18.7	33.3	22.6	22.6
Actuated g/C Ratio	0.34	0.24	0.24	0.46	0.31	0.31	0.32	0.23	0.23	0.42	0.28	0.28
v/c Ratio	0.61	0.97	0.23	0.98	0.61	0.34	0.53	0.34	0.26	0.94	0.45	0.56
Control Delay	22.9	55.7	1.6	48.9	26.8	11.1	22.4	26.9	2.2	50.9	25.4	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	55.7	1.6	48.9	26.8	11.1	22.4	26.9	2.2	50.9	25.4	7.5
LOS	C	E	A	D	C	B	C	C	A	D	C	A
Approach Delay		44.0			30.9			20.0			28.7	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)	58	210	0	189	178	55	60	61	0	167	97	14
Queue Length 95th (ft)	100	#327	7	m#223	m205	m71	105	95	13	#361	141	85
Internal Link Dist (ft)		873			1910			741			2583	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	332	836	530	396	1082	632	359	827	527	476	999	703
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.97	0.23	0.98	0.61	0.34	0.53	0.34	0.26	0.94	0.45	0.56

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 32.2 Intersection LOS: C
 Intersection Capacity Utilization 85.1% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: CIMARRON BLVD & YORKTOWN BLVD

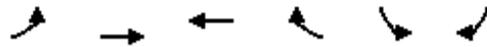
 Ø1 15.2 s	 Ø2 (R) 23.2 s	 Ø3 18.2 s	 Ø4 23.4 s
 Ø5 11.3 s	 Ø6 (R) 27.1 s	 Ø7 12.8 s	 Ø8 28.8 s

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 3 - AM

5/15/2017

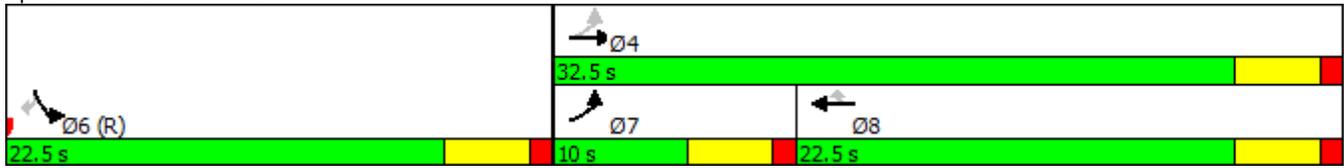


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶↶	↷↷	↷↷	↷	↶↶	↷↷↷↷
Traffic Volume (vph)	434	404	565	472	255	476
Future Volume (vph)	434	404	565	472	255	476
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.52
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	4117
Flt Permitted	0.247				0.950	
Satd. Flow (perm)	893	3539	3539	1583	3433	4117
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				513		517
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	397		553	
Travel Time (s)		12.6	6.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	472	439	614	513	277	517
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	439	614	513	277	517
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 2_PHASE 3 OPENING DAY AM

Synchro 9 Report

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD

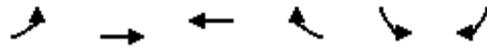


FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 3 - PM

5/15/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	555	522	508	334	449	614
Future Volume (vph)	555	522	508	334	449	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.252				0.950	
Satd. Flow (perm)	911	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				363		667
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	397		553	
Travel Time (s)		12.6	6.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	603	567	552	363	488	667
Shared Lane Traffic (%)						
Lane Group Flow (vph)	603	567	552	363	488	667
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

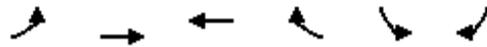
SCENARIO 2_PHASE 3 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 2_PHASE 3 - PM

5/15/2017

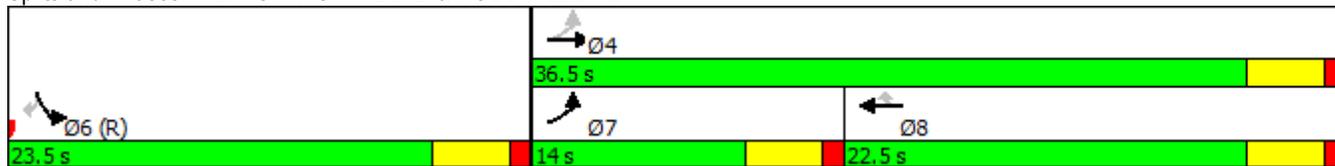


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	14.0	36.5	22.5	22.5	23.5	23.5
Total Split (%)	23.3%	60.8%	37.5%	37.5%	39.2%	39.2%
Maximum Green (s)	9.5	32.0	18.0	18.0	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	29.3	29.3	15.3	15.3	21.7	21.7
Actuated g/C Ratio	0.49	0.49	0.26	0.26	0.36	0.36
v/c Ratio	0.71	0.33	0.61	0.54	0.39	0.47
Control Delay	14.3	9.5	22.4	5.5	19.9	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	9.5	22.4	5.5	19.9	6.6
LOS	B	A	C	A	B	A
Approach Delay		12.0	15.7		12.2	
Approach LOS		B	B		B	
Queue Length 50th (ft)	62	58	90	0	65	23
Queue Length 95th (ft)	85	81	128	52	117	71
Internal Link Dist (ft)		754	317		473	
Turn Bay Length (ft)	350			300	300	300
Base Capacity (vph)	844	1887	1061	729	1240	1433
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.30	0.52	0.50	0.39	0.47

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
Intersection Signal Delay: 13.1 **Intersection LOS: B**
 Intersection Capacity Utilization 53.9% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	13	0	825	1382	6
Future Vol, veh/h	0	13	0	825	1382	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	0	897	1502	7
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	754	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	352	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	352	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.7		0		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	352	-	-		
HCM Lane V/C Ratio	-	0.04	-	-		
HCM Control Delay (s)	-	15.7	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑		↑↑	↑↑	
Traffic Vol, veh/h	0	8	0	905	1351	9
Future Vol, veh/h	0	8	0	905	1351	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	0	984	1468	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	739	-	0	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	
Pot Cap-1 Maneuver	0	360	0	-	-	
Stage 1	0	-	0	-	-	
Stage 2	0	-	0	-	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	360	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Approach	EB	NB		SB		
HCM Control Delay, s	15.2	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	360	-	-		
HCM Lane V/C Ratio	-	0.024	-	-		
HCM Control Delay (s)	-	15.2	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	0.1	-	-		

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 2_PHASE 3 - AM
5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	195	485	169	179	215	130	530	86	63	748	57
Future Volume (vph)	105	195	485	169	179	215	130	530	86	63	748	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.918				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1710	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.241			0.517			0.182			0.376		
Satd. Flow (perm)	449	1863	1583	963	1710	0	658	3539	1583	700	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			272		92				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	114	212	527	184	195	234	141	576	93	68	813	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	212	527	184	429	0	141	576	93	68	813	62
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 2_PHASE 3 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 2_PHASE 3 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.6	22.6		9.5	23.4	23.4	9.5	23.4	23.4
Total Split (%)	14.6%	34.6%	34.6%	14.8%	34.8%		14.6%	36.0%	36.0%	14.6%	36.0%	36.0%
Maximum Green (s)	5.0	18.0	18.0	5.1	18.1		5.0	18.9	18.9	5.0	18.9	18.9
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	20.7	15.7	15.7	21.8	17.7		28.0	25.0	25.0	27.0	22.8	22.8
Actuated g/C Ratio	0.32	0.24	0.24	0.34	0.27		0.43	0.38	0.38	0.42	0.35	0.35
v/c Ratio	0.47	0.47	0.89	0.48	0.80		0.27	0.42	0.13	0.18	0.66	0.09
Control Delay	18.7	24.0	31.2	18.0	31.2		12.1	18.0	0.7	12.1	22.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	24.0	31.2	18.0	31.2		12.1	18.0	0.7	12.1	22.9	0.3
LOS	B	C	C	B	C		B	B	A	B	C	A
Approach Delay		27.7			27.2			15.0			20.7	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	27	68	92	45	123		15	100	0	15	154	0
Queue Length 95th (ft)	55	123	#261	84	#264		30	147	4	35	#222	0
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	244	515	635	386	542		514	1360	716	378	1241	669
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.41	0.83	0.48	0.79		0.27	0.42	0.13	0.18	0.66	0.09

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 22.4

Intersection LOS: C

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

 Ø1 9.5 s	 Ø2 (R) 23.4 s	 Ø3 9.6 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 23.4 s	 Ø7 9.5 s	 Ø8 22.6 s

FINAL DRAFT

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 2_PHASE 3 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗		↘↗	↑↑	↗	↘	↑↑	↗
Traffic Volume (vph)	53	278	410	86	124	83	167	654	100	174	919	131
Future Volume (vph)	53	278	410	86	124	83	167	654	100	174	919	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		150	0		0	350		100	300		100
Storage Lanes	1		1	1		0	2		1	1		1
Taper Length (ft)	75			25			150			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1751	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.569			0.368			0.196			0.240		
Satd. Flow (perm)	1060	1863	1583	685	1751	0	708	3539	1583	447	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293		51				176			176
Link Speed (mph)		40			30			50				50
Link Distance (ft)		430			857			766				723
Travel Time (s)		7.3			19.5			10.4				9.9
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
Adj. Flow (vph)	58	302	446	93	135	90	182	711	109	189	999	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	302	446	93	225	0	182	711	109	189	999	142
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6

Lanes, Volumes, Timings
4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

SCENARIO 2_PHASE 3 - PM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5		9.5	23.5	23.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%		14.6%	36.2%	36.2%	14.6%	36.2%	36.2%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0		5.0	19.0	19.0	5.0	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0			11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0			0	0		0	0
Act Effct Green (s)	19.5	15.5	15.5	20.4	17.4		27.8	22.2	22.2	29.0	22.8	22.8
Actuated g/C Ratio	0.30	0.24	0.24	0.31	0.27		0.43	0.34	0.34	0.45	0.35	0.35
v/c Ratio	0.16	0.68	0.74	0.31	0.45		0.34	0.59	0.17	0.58	0.81	0.21
Control Delay	12.8	30.4	16.1	15.0	17.9		12.1	21.5	1.6	21.9	28.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	30.4	16.1	15.0	17.9		12.1	21.5	1.6	21.9	28.5	3.0
LOS	B	C	B	B	B		B	C	A	C	C	A
Approach Delay		21.2			17.1			17.6			24.9	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)	13	105	49	22	56		20	130	0	44	203	0
Queue Length 95th (ft)	32	176	142	47	112		37	185	11	#100	#325	24
Internal Link Dist (ft)		350			777			686			643	
Turn Bay Length (ft)			150				350		100	300		100
Base Capacity (vph)	372	515	650	298	551		539	1207	656	326	1240	669
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.59	0.69	0.31	0.41		0.34	0.59	0.17	0.58	0.81	0.21

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 21.2

Intersection LOS: C

Intersection Capacity Utilization 66.8%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: AIRLINE RD/SLOUGH RD & RODD FIELD RD

 Ø1 9.5 s	 Ø2 (R) 23.5 s	 Ø3 9.5 s	 Ø4 22.5 s
 Ø5 9.5 s	 Ø6 (R) 23.5 s	 Ø7 9.5 s	 Ø8 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
5: AIRLINE RD & LIPES BLVD

SCENARIO 2_PHASE 3 - AM

5/16/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	163	179	79	331	623	54
Future Volume (vph)	163	179	79	331	623	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.394			
Satd. Flow (perm)	1770	1583	734	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		116				59
Link Speed (mph)	30			35	35	
Link Distance (ft)	516			383	289	
Travel Time (s)	11.7			7.5	5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	195	86	360	677	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	195	86	360	677	59
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6

SCENARIO 2_PHASE 3 OPENING DAY AM

Synchro 9 Report

Splits and Phases: 5: AIRLINE RD & LIPES BLVD

<p>22.5 s</p>	<p>22.5 s</p>
<p>22.5 s</p>	

FINAL DRAFT

Lanes, Volumes, Timings
5: AIRLINE RD & LIPES BLVD

SCENARIO 2_PHASE 3 - PM

5/16/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	154	136	82	256	581	85
Future Volume (vph)	154	136	82	256	581	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	150			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		75			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.412			
Satd. Flow (perm)	1770	1583	767	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		136				92
Link Speed (mph)	30			35	35	
Link Distance (ft)	516			383	289	
Travel Time (s)	11.7			7.5	5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	148	89	278	632	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	148	89	278	632	92
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane				Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6

SCENARIO 2_PHASE 3 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
5: AIRLINE RD & LIPES BLVD

SCENARIO 2_PHASE 3 - PM

5/16/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	9.5	9.5	29.5	29.5	29.5	29.5
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.66	0.66
v/c Ratio	0.45	0.33	0.18	0.12	0.27	0.09
Control Delay	18.5	6.1	6.6	4.8	5.3	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	6.1	6.6	4.8	5.3	1.9
LOS	B	A	A	A	A	A
Approach Delay	12.7			5.2	4.9	
Approach LOS	B			A	A	
Queue Length 50th (ft)	38	3	9	13	35	0
Queue Length 95th (ft)	70	31	32	32	71	14
Internal Link Dist (ft)	436			303	209	
Turn Bay Length (ft)			150			
Base Capacity (vph)	708	714	502	2317	2317	1068
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.21	0.18	0.12	0.27	0.09

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
Intersection Signal Delay: 6.7 **Intersection LOS: A**
 Intersection Capacity Utilization 40.4% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: AIRLINE RD & LIPES BLVD

 22.5 s	 22.5 s
 22.5 s	

FINAL DRAFT

Intersection

Int Delay, s/veh 10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	111	51	22	12	83	12	34	4	6	12	57	321
Future Vol, veh/h	111	51	22	12	83	12	34	4	6	12	57	321
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	55	24	13	90	13	37	4	7	13	62	349

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	103	0	0	79	0	0	637	438	67	437	444	97
Stage 1	-	-	-	-	-	-	309	309	-	123	123	-
Stage 2	-	-	-	-	-	-	328	129	-	314	321	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1489	-	-	1519	-	-	390	512	997	530	508	959
Stage 1	-	-	-	-	-	-	701	660	-	881	794	-
Stage 2	-	-	-	-	-	-	685	789	-	697	652	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1489	-	-	1519	-	-	207	464	997	486	461	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	207	464	-	486	461	-
Stage 1	-	-	-	-	-	-	641	604	-	806	787	-
Stage 2	-	-	-	-	-	-	398	782	-	629	597	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0.8	23.1	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	246	1489	-	-	1519	-	-	807
HCM Lane V/C Ratio	0.194	0.081	-	-	0.009	-	-	0.525
HCM Control Delay (s)	23.1	7.6	0	-	7.4	0	-	14.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0	-	-	3.1

Intersection												
Int Delay, s/veh	8.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	101	99	46	22	51	12	20	28	17	15	68	156
Future Vol, veh/h	101	99	46	22	51	12	20	28	17	15	68	156
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	108	50	24	55	13	22	30	18	16	74	170

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	158	0	0	584	468	133	487	487	62
Stage 1	-	-	-	-	-	-	352	352	-	110	110	-
Stage 2	-	-	-	-	-	-	232	116	-	377	377	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1533	-	-	1422	-	-	423	493	916	491	481	1003
Stage 1	-	-	-	-	-	-	665	632	-	895	804	-
Stage 2	-	-	-	-	-	-	771	800	-	644	616	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1533	-	-	1422	-	-	284	446	916	423	435	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	446	-	423	435	-
Stage 1	-	-	-	-	-	-	612	582	-	824	790	-
Stage 2	-	-	-	-	-	-	570	786	-	551	567	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	2	15.1	13.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	428	1533	-	-	1422	-	-	688
HCM Lane V/C Ratio	0.165	0.072	-	-	0.017	-	-	0.378
HCM Control Delay (s)	15.1	7.5	0	-	7.6	0	-	13.4
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0.1	-	-	1.8

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 3 - AM
5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	264	126	149	200	185	187	245	793	222	85	737	130
Future Volume (vph)	264	126	149	200	185	187	245	793	222	85	737	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.925				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1723	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.384			0.669			0.287			0.259		
Satd. Flow (perm)	715	1863	1583	1246	1723	0	535	3539	1583	482	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			111		92				241			141
Link Speed (mph)		30			30			35				35
Link Distance (ft)		741			2060			2667				943
Travel Time (s)		16.8			46.8			52.0				18.4
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
Adj. Flow (vph)	287	137	162	217	201	203	266	862	241	92	801	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	287	137	162	217	404	0	266	862	241	92	801	141
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 3 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	45.5%	45.5%	45.5%	45.5%	45.5%		54.5%	54.5%	54.5%	54.5%	54.5%	54.5%
Maximum Green (s)	20.5	20.5	20.5	20.5	20.5		25.5	25.5	25.5	25.5	25.5	25.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	0
Act Effct Green (s)	20.5	20.5	20.5	20.5	20.5		25.5	25.5	25.5	25.5	25.5	25.5
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.37		0.46	0.46	0.46	0.46	0.46	0.46
v/c Ratio	1.08	0.20	0.25	0.47	0.58		1.07	0.53	0.28	0.41	0.49	0.17
Control Delay	101.8	12.7	5.9	17.2	14.4		100.5	9.4	1.1	16.9	11.5	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.8	12.7	5.9	17.2	14.4		100.5	9.4	1.1	16.9	11.5	2.6
LOS	F	B	A	B	B		F	A	A	B	B	A
Approach Delay		54.4			15.4			25.6				10.8
Approach LOS		D			B			C				B
Queue Length 50th (ft)	~109	29	10	52	76		~128	102	1	19	88	0
Queue Length 95th (ft)	#232	61	42	105	151		m#317	104	m0	55	130	23
Internal Link Dist (ft)		661			1980			2587				863
Turn Bay Length (ft)	150		150	100			200		200	200		200
Base Capacity (vph)	266	694	659	464	699		248	1640	863	223	1640	809
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.20	0.25	0.47	0.58		1.07	0.53	0.28	0.41	0.49	0.17

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 24.3 Intersection LOS: C
 Intersection Capacity Utilization 84.7% ICU Level of Service E
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

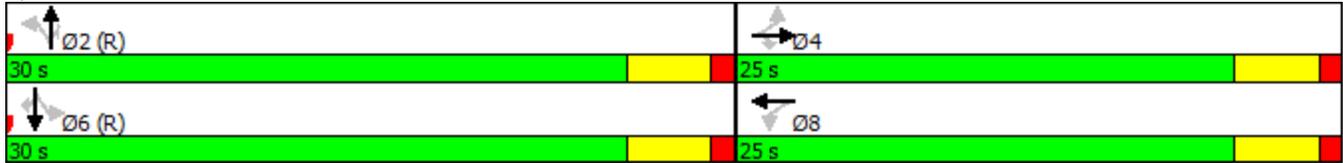
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD



FINAL DRAFT

Lanes, Volumes, Timings
7: CIMARRON BLVD & LIPES BLVD

SCENARIO 2_PHASE 3 - PM

5/15/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	87	215	178	96	106	145	698	135	106	981	197
Future Volume (vph)	170	87	215	178	96	106	145	698	135	106	981	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	100		0	200		200	200		200
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.921				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1716	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.545			0.695			0.223			0.341		
Satd. Flow (perm)	1015	1863	1583	1295	1716	0	415	3539	1583	635	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83		95				147			214
Link Speed (mph)		30			30			35				35
Link Distance (ft)		556			2073			2663				776
Travel Time (s)		12.6			47.1			51.9				15.1
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
Adj. Flow (vph)	185	95	234	193	104		115	158	759	147	115	1066
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	95	234	193	219	0	158	759	147	115	1066	214
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8			2		2	6		6

SCENARIO 2_PHASE 3 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

Splits and Phases: 7: CIMARRON BLVD & LIPES BLVD

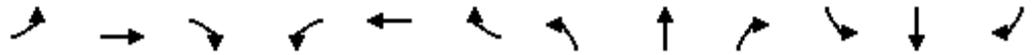
 Ø2 (R)	 Ø4
 37.5 s	 22.5 s
 Ø6 (R)	 Ø8
 37.5 s	 22.5 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 3 - AM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↗		↖	↗	
Traffic Volume (vph)	615	741	4	4	641	231	6	0	6	79	0	145
Future Volume (vph)	615	741	4	4	641	231	6	0	6	79	0	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.960			0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3536	0	1770	3398	0	1770	1583	0	1770	1583	0
Flt Permitted	0.121			0.346			0.554			0.753		
Satd. Flow (perm)	225	3536	0	645	3398	0	1032	1583	0	1403	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			56			261			585	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		262			574			525			425	
Travel Time (s)		4.0			8.7			11.9			9.7	
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
Adj. Flow (vph)	668	805	4	4	697	251	7	0	7	86	0	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	668	809	0	4	948	0	7	7	0	86	158	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

SCENARIO 2_PHASE 3 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 3 - AM
 5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	36.0	55.8		9.6	29.4		24.6	24.6		24.6	24.6	
Total Split (%)	40.0%	62.0%		10.7%	32.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	31.5	51.3		5.1	24.9		20.1	20.1		20.1	20.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)	60.9	59.0		30.0	24.9		20.1	20.1		20.1	20.1	
Actuated g/C Ratio	0.68	0.66		0.33	0.28		0.22	0.22		0.22	0.22	
v/c Ratio	0.96	0.35		0.01	0.97		0.03	0.01		0.27	0.20	
Control Delay	50.3	7.9		10.2	53.3		28.0	0.0		31.8	0.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.3	7.9		10.2	53.3		28.0	0.0		31.8	0.5	
LOS	D	A		B	D		C	A		C	A	
Approach Delay		27.1			53.1			14.0			11.6	
Approach LOS		C			D			B			B	
Queue Length 50th (ft)	318	88		1	265		3	0		41	0	
Queue Length 95th (ft)	#552	165		4	#398		15	0		82	0	
Internal Link Dist (ft)		182			494			445			345	
Turn Bay Length (ft)	150			150								
Base Capacity (vph)	693	2317		278	980		230	556		313	807	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.96	0.35		0.01	0.97		0.03	0.01		0.27	0.20	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
Intersection Signal Delay: 34.8 **Intersection LOS: C**
 Intersection Capacity Utilization 81.5% ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD

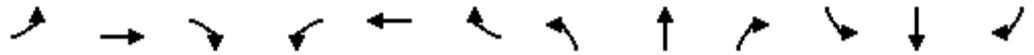
 24.6 s	 9.6 s	 55.8 s
 24.6 s	 36 s	 29.4 s

FINAL DRAFT

Lanes, Volumes, Timings
 DW1: BILL WITT ENT/DW 1 & YORKTOWN BLVD

SCENARIO 2_PHASE 3 - PM

5/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	454	834	10	10	788	151	11	0	13	119	5	336
Future Volume (vph)	454	834	10	10	788	151	11	0	13	119	5	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	75			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.976			0.850				0.852
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3454	0	1770	1583	0	1770	1587	0
Flt Permitted	0.122			0.311			0.237			0.748		
Satd. Flow (perm)	227	3532	0	579	3454	0	441	1583	0	1393	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			29			225				365
Link Speed (mph)		45			45			30				30
Link Distance (ft)		262			574			525				425
Travel Time (s)		4.0			8.7			11.9				9.7
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
Adj. Flow (vph)	493	907	11	11	857	164	12	0	14	129	5	365
Shared Lane Traffic (%)												
Lane Group Flow (vph)	493	918	0	11	1021	0	12	14	0	129	370	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		

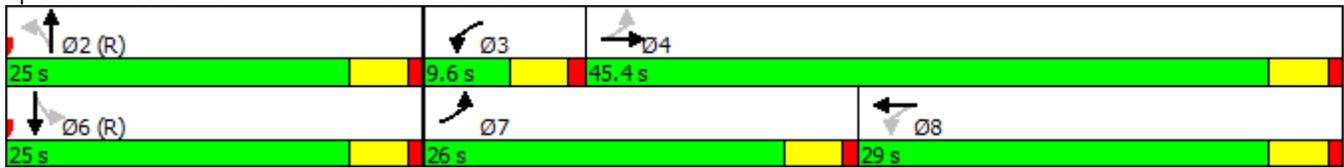
SCENARIO 2_PHASE 3 OPENING DAY PM

Synchro 9 Report

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: BILL WITT ENT/DW 1 & YORKTOWN BLVD



FINAL DRAFT

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕	↔			↔			↔
Traffic Vol, veh/h	71	755	28	28	859	70	0	0	52	0	0	27
Future Vol, veh/h	71	755	28	28	859	70	0	0	52	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	821	30	30	934	76	0	0	57	0	0	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	934	0	0	851	0	0	-	-	426	-	-	467
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	729	-	-	783	-	-	0	0	577	0	0	542
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	729	-	-	783	-	-	-	-	577	-	-	542
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.3			11.9			12		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	577	729	-	-	783	-	-	542				
HCM Lane V/C Ratio	0.098	0.106	-	-	0.039	-	-	0.054				
HCM Control Delay (s)	11.9	10.5	-	-	9.8	-	-	12				
HCM Lane LOS	B	B	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.1	-	-	0.2				

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	53	900	28	28	908	53	0	0	49	0	0	62
Future Vol, veh/h	53	900	28	28	908	53	0	0	49	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	978	30	30	987	58	0	0	53	0	0	67
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	987	0	0	1009	0	0	-	-	504	-	-	493
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	696	-	-	683	-	-	0	0	513	0	0	522
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	696	-	-	683	-	-	-	-	513	-	-	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.3			12.8			12.9		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	513	696	-	-	683	-	-	522				
HCM Lane V/C Ratio	0.104	0.083	-	-	0.045	-	-	0.129				
HCM Control Delay (s)	12.8	10.6	-	-	10.5	-	-	12.9				
HCM Lane LOS	B	B	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.1	-	-	0.4				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	71	698	33	31	916	70	0	0	47	0	0	27
Future Vol, veh/h	71	698	33	31	916	70	0	0	47	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	759	36	34	996	76	0	0	51	0	0	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	996	0	0	795	0	0	-	-	397	-	-	498
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	690	-	-	822	-	-	0	0	602	0	0	518
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	690	-	-	822	-	-	-	-	602	-	-	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.3			11.5			12.4		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	602	690	-	-	822	-	-	518				
HCM Lane V/C Ratio	0.085	0.112	-	-	0.041	-	-	0.057				
HCM Control Delay (s)	11.5	10.9	-	-	9.6	-	-	12.4				
HCM Lane LOS	B	B	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.1	-	-	0.2				

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗			↗			↗
Traffic Vol, veh/h	53	878	26	28	930	53	0	0	72	0	0	62
Future Vol, veh/h	53	878	26	28	930	53	0	0	72	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	954	28	30	1011	58	0	0	78	0	0	67
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1011	0	0	983	0	0	-	-	491	-	-	505
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	681	-	-	698	-	-	0	0	523	0	0	512
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	681	-	-	698	-	-	-	-	523	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.3			13.1			13.1		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	523	681	-	-	698	-	-	512				
HCM Lane V/C Ratio	0.15	0.085	-	-	0.044	-	-	0.132				
HCM Control Delay (s)	13.1	10.8	-	-	10.4	-	-	13.1				
HCM Lane LOS	B	B	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0.1	-	-	0.5				

Intersection							
Int Delay, s/veh	0.4						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	61	0	834	620	323	
Future Vol, veh/h	0	61	0	834	620	323	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	66	0	907	674	351	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	513	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	506	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	506	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	13.2		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	506	-	-			
HCM Lane V/C Ratio	-	0.131	-	-			
HCM Control Delay (s)	-	13.2	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.4	-	-			

Intersection							
Int Delay, s/veh	1.2						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	142	0	724	765	242	
Future Vol, veh/h	0	142	0	724	765	242	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	154	0	787	832	263	
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	-	547	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	481	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	481	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB	NB		SB			
HCM Control Delay, s	16	0		0			
HCM LOS	C						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	481	-	-			
HCM Lane V/C Ratio	-	0.321	-	-			
HCM Control Delay (s)	-	16	-	-			
HCM Lane LOS	-	C	-	-			
HCM 95th %tile Q(veh)	-	1.4	-	-			

Lanes, Volumes, Timings
DW5: RODD FIELD RD & DW 5

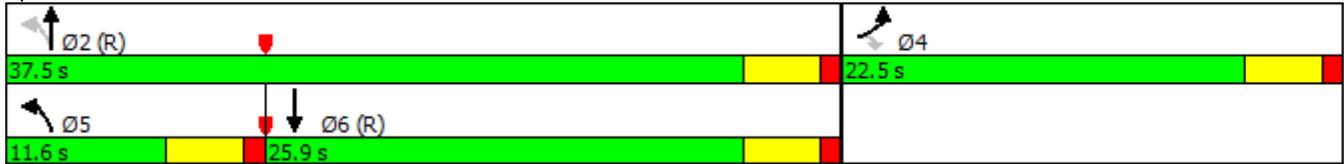
SCENARIO 2_PHASE 3 - AM
6/6/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	81	34	182	652	909	423
Future Volume (vph)	81	34	182	652	909	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.952	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3369	0
Flt Permitted	0.950		0.112			
Satd. Flow (perm)	1770	1583	209	3539	3369	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		37			142	
Link Speed (mph)	30			50	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	7.5			7.4	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	37	198	709	988	460
Shared Lane Traffic (%)						
Lane Group Flow (vph)	88	37	198	709	1448	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			

Queue shown is maximum after two cycles.

Splits and Phases: 11: RODD FIELD RD & DW 5



FINAL DRAFT



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	200	67	136	588	940	317
Future Volume (vph)	200	67	136	588	940	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.962	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	3405	0
Flt Permitted	0.950		0.122			
Satd. Flow (perm)	1770	1583	227	3539	3405	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		73			90	
Link Speed (mph)	30			50	50	
Link Distance (ft)	332			540	331	
Travel Time (s)	7.5			7.4	4.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	73	148	639	1022	345
Shared Lane Traffic (%)						
Lane Group Flow (vph)	217	73	148	639	1367	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	22.6	22.6	9.8	37.4	27.6	
Total Split (%)	37.7%	37.7%	16.3%	62.3%	46.0%	
Maximum Green (s)	18.1	18.1	5.3	32.9	23.1	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	12.5	12.5	38.5	38.5	29.2	
Actuated g/C Ratio	0.21	0.21	0.64	0.64	0.49	
v/c Ratio	0.59	0.19	0.46	0.28	0.80	
Control Delay	27.4	6.4	8.2	4.9	20.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.4	6.4	8.2	4.9	20.6	
LOS	C	A	A	A	C	
Approach Delay	22.1			5.5	20.6	
Approach LOS	C			A	C	
Queue Length 50th (ft)	71	0	10	54	210	
Queue Length 95th (ft)	118	25	m45	102	#390	
Internal Link Dist (ft)	252			460	251	
Turn Bay Length (ft)			300			
Base Capacity (vph)	533	528	322	2269	1700	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.41	0.14	0.46	0.28	0.80	

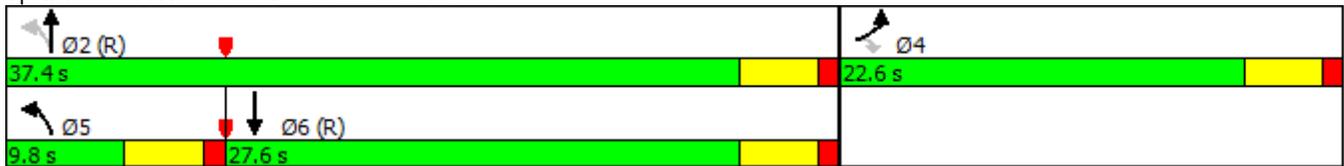
Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
Intersection Signal Delay: 15.9 **Intersection LOS: B**
 Intersection Capacity Utilization 66.0% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: RODD FIELD RD & DW 5



FINAL DRAFT



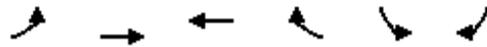
Scenario 3

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 3_PHASE 1 - AM

5/16/2017

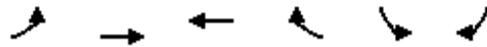


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	293	271	415	271	177	258
Future Volume (vph)	293	271	415	271	177	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.318				0.950	
Satd. Flow (perm)	1149	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				295		280
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	318	295	451	295	192	280
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	295	451	295	192	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 3_PHASE 1 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

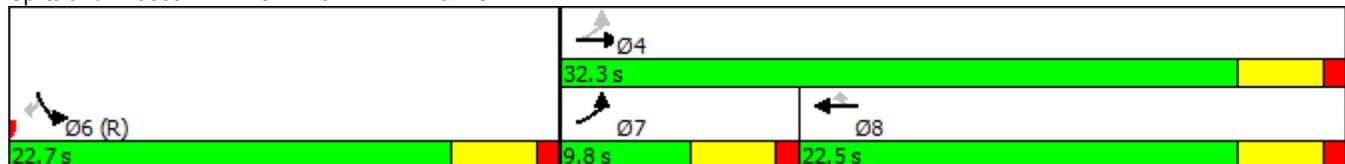


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	9.8	32.3	22.5	22.5	22.7	22.7
Total Split (%)	17.8%	58.7%	40.9%	40.9%	41.3%	41.3%
Maximum Green (s)	5.3	27.8	18.0	18.0	18.2	18.2
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	23.2	23.2	13.4	13.4	22.8	22.8
Actuated g/C Ratio	0.42	0.42	0.24	0.24	0.41	0.41
v/c Ratio	0.45	0.20	0.52	0.49	0.13	0.21
Control Delay	8.1	6.1	19.7	5.3	11.4	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	6.1	19.7	5.3	11.4	2.6
LOS	A	A	B	A	B	A
Approach Delay		7.1	14.0		6.2	
Approach LOS		A	B		A	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
Intersection Signal Delay: 9.7 **Intersection LOS: A**
 Intersection Capacity Utilization 36.1% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



Queues
2: YORKTOWN BLVD & RODD FIELD RD



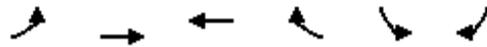
Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Traffic Volume (vph)	293	271	415	271	25	177	258
Future Volume (vph)	293	271	415	271	25	177	258
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	318	295	451	295	0	219	280
v/c Ratio	0.46	0.20	0.52	0.49		0.15	0.21
Control Delay	8.3	6.2	19.7	5.3		11.4	2.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	8.3	6.2	19.7	5.3		11.4	2.5
Queue Length 50th (ft)	38	35	67	0		21	0
Queue Length 95th (ft)	11	11	92	43		45	22
Internal Link Dist (ft)		754	715			473	
Turn Bay Length (ft)	350			300		300	300
Base Capacity (vph)	691	1775	1158	716		1436	1329
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.46	0.17	0.39	0.41		0.15	0.21
Intersection Summary							

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 3_PHASE 1 - PM

5/16/2017

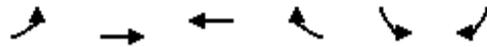


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	369	378	398	198	294	320
Future Volume (vph)	369	378	398	198	294	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.325				0.950	
Satd. Flow (perm)	1174	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				215		348
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	401	411	433	215	320	348
Shared Lane Traffic (%)						
Lane Group Flow (vph)	401	411	433	215	320	348
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 3_PHASE 1 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

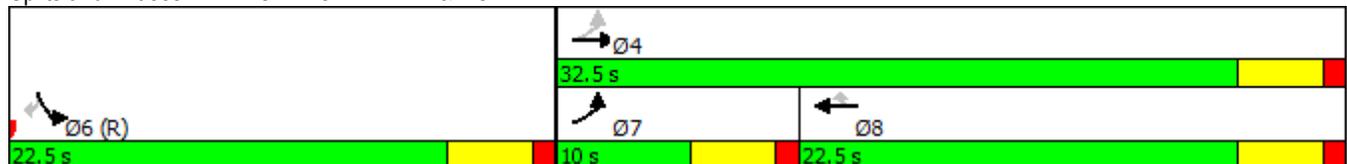


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	22.9	22.9	12.9	12.9	23.1	23.1
Actuated g/C Ratio	0.42	0.42	0.23	0.23	0.42	0.42
v/c Ratio	0.56	0.28	0.52	0.40	0.22	0.25
Control Delay	9.6	6.8	20.1	5.2	11.7	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	6.8	20.1	5.2	11.7	2.4
LOS	A	A	C	A	B	A
Approach Delay		8.2	15.1		6.9	
Approach LOS		A	B		A	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
Intersection Signal Delay: 9.9 **Intersection LOS: A**
 Intersection Capacity Utilization 41.2% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



Queues
2: YORKTOWN BLVD & RODD FIELD RD



Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Traffic Volume (vph)	369	378	398	198	59	294	320
Future Volume (vph)	369	378	398	198	59	294	320
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	401	411	433	215	0	384	348
v/c Ratio	0.56	0.28	0.52	0.40		0.27	0.25
Control Delay	9.6	6.8	20.1	5.2		12.0	2.4
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	9.6	6.8	20.1	5.2		12.0	2.4
Queue Length 50th (ft)	48	50	65	0		40	0
Queue Length 95th (ft)	15	16	90	37		76	24
Internal Link Dist (ft)		754	715			473	
Turn Bay Length (ft)	350			300		300	300
Base Capacity (vph)	714	1801	1158	662		1442	1372
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.56	0.23	0.37	0.32		0.27	0.25
Intersection Summary							

FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↗↗	↗↖	
Traffic Vol, veh/h	0	10	1	588	630	5
Future Vol, veh/h	0	10	1	588	630	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	1	639	685	5
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	345	690	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	651	900	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	651	900	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.6		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	900	-	651	-	-	
HCM Lane V/C Ratio	0.001	-	0.017	-	-	
HCM Control Delay (s)	9	-	10.6	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↗↗	↗↖	
Traffic Vol, veh/h	0	6	3	623	708	7
Future Vol, veh/h	0	6	3	623	708	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	3	677	770	8
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	389	777	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	610	835	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	610	835	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	11		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	835	-	610	-	-	
HCM Lane V/C Ratio	0.004	-	0.011	-	-	
HCM Control Delay (s)	9.3	-	11	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↕			↖	↕	
Traffic Vol, veh/h	21	459	26	25	553	76	18	0	19	4	0	4
Future Vol, veh/h	21	459	26	25	553	76	18	0	19	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	499	28	27	601	83	20	0	21	4	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	684	0	0	527	0	0	914	1297	264	992	1270	342
Stage 1	-	-	-	-	-	-	559	559	-	697	697	-
Stage 2	-	-	-	-	-	-	355	738	-	295	573	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	905	-	-	1036	-	-	228	161	734	200	167	654
Stage 1	-	-	-	-	-	-	481	509	-	398	441	-
Stage 2	-	-	-	-	-	-	635	422	-	689	502	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	905	-	-	1036	-	-	218	153	734	187	159	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	218	153	-	187	159	-
Stage 1	-	-	-	-	-	-	469	496	-	388	430	-
Stage 2	-	-	-	-	-	-	614	411	-	653	489	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			17			17.6		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	341	905	-	-	1036	-	-	187	654			
HCM Lane V/C Ratio	0.118	0.025	-	-	0.026	-	-	0.023	0.007			
HCM Control Delay (s)	17	9.1	-	-	8.6	-	-	24.7	10.5			
HCM Lane LOS	C	A	-	-	A	-	-	C	B			
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.1	0			

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕			↕		↔	↕	
Traffic Vol, veh/h	16	579	21	22	590	57	29	0	29	10	0	9
Future Vol, veh/h	16	579	21	22	590	57	29	0	29	10	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	629	23	24	641	62	32	0	32	11	0	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	703	0	0	652	0	0	1044	1427	326	1069	1407	352
Stage 1	-	-	-	-	-	-	676	676	-	720	720	-
Stage 2	-	-	-	-	-	-	368	751	-	349	687	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	890	-	-	930	-	-	183	134	670	176	138	644
Stage 1	-	-	-	-	-	-	409	451	-	385	430	-
Stage 2	-	-	-	-	-	-	624	416	-	640	446	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	890	-	-	930	-	-	174	128	670	162	132	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	128	-	162	132	-
Stage 1	-	-	-	-	-	-	401	442	-	378	419	-
Stage 2	-	-	-	-	-	-	599	405	-	598	437	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			10.6			20.2		
HCM LOS	B			B			B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	670	890	-	-	930	-	-	162	644			
HCM Lane V/C Ratio	0.047	0.02	-	-	0.026	-	-	0.067	0.015			
HCM Control Delay (s)	10.6	9.1	-	-	9	-	-	28.8	10.7			
HCM Lane LOS	B	A	-	-	A	-	-	D	B			
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.2	0			

Intersection							
Int Delay, s/veh	0.3						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	35	0	589	429	127	
Future Vol, veh/h	0	35	0	589	429	127	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	38	0	640	466	138	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	302	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	694	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	694	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	10.5		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	694	-	-			
HCM Lane V/C Ratio	-	0.055	-	-			
HCM Control Delay (s)	-	10.5	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.2	-	-			

Intersection							
Int Delay, s/veh	0.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	79	0	626	590	94	
Future Vol, veh/h	0	79	0	626	590	94	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	86	0	680	641	102	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	372	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	625	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	625	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	11.7		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	625	-	-			
HCM Lane V/C Ratio	-	0.137	-	-			
HCM Control Delay (s)	-	11.7	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.5	-	-			

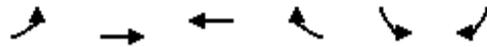
Intersection							
Int Delay, s/veh	0.2						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	18	0	589	538	97	
Future Vol, veh/h	0	18	0	589	538	97	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	20	0	640	585	105	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	345	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	651	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	651	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	10.7		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	651	-	-			
HCM Lane V/C Ratio	-	0.03	-	-			
HCM Control Delay (s)	-	10.7	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.1	-	-			

Intersection							
Int Delay, s/veh	0.4						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	43	0	626	641	73	
Future Vol, veh/h	0	43	0	626	641	73	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	47	0	680	697	79	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	388	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	611	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	611	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	11.4		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	611	-	-			
HCM Lane V/C Ratio	-	0.076	-	-			
HCM Control Delay (s)	-	11.4	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.2	-	-			

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 3_PHASE 2 - AM

5/16/2017

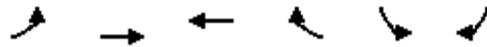


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	348	312	539	345	213	363
Future Volume (vph)	348	312	539	345	213	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.255				0.950	
Satd. Flow (perm)	921	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				375		395
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	339	586	375	232	395
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	339	586	375	232	395
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 3_PHASE 2 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

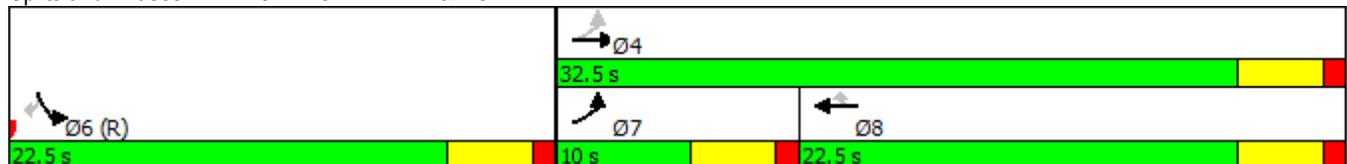


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	25.5	25.5	15.5	15.5	20.5	20.5
Actuated g/C Ratio	0.46	0.46	0.28	0.28	0.37	0.37
v/c Ratio	0.56	0.21	0.59	0.52	0.18	0.31
Control Delay	11.8	8.6	19.2	4.9	13.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	8.6	19.2	4.9	13.0	2.6
LOS	B	A	B	A	B	A
Approach Delay		10.3	13.6		6.5	
Approach LOS		B	B		A	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
Intersection Signal Delay: 10.6 **Intersection LOS: B**
 Intersection Capacity Utilization 42.2% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



Queues
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 3_PHASE 2 - AM
5/16/2017

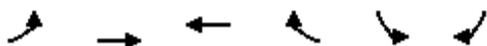


Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Traffic Volume (vph)	348	312	539	345	48	213	363
Future Volume (vph)	348	312	539	345	48	213	363
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	378	339	586	375	0	284	395
v/c Ratio	0.56	0.21	0.59	0.52		0.22	0.31
Control Delay	11.8	8.6	19.2	4.9		13.3	2.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	11.8	8.6	19.2	4.9		13.3	2.6
Queue Length 50th (ft)	34	30	83	0		32	0
Queue Length 95th (ft)	52	47	120	48		58	26
Internal Link Dist (ft)		754	715			473	
Turn Bay Length (ft)	350			300		300	300
Base Capacity (vph)	678	1801	1158	770		1279	1286
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.56	0.19	0.51	0.49		0.22	0.31
Intersection Summary							

FINAL DRAFT

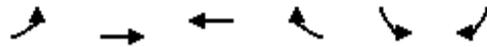
Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 3_PHASE 2 - PM
5/16/2017



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	445	443	518	248	365	402
Future Volume (vph)	445	443	518	248	365	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.261				0.950	
Satd. Flow (perm)	943	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				270		437
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	795		553	
Travel Time (s)		12.6	12.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	484	482	563	270	397	437
Shared Lane Traffic (%)						
Lane Group Flow (vph)	484	482	563	270	397	437
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

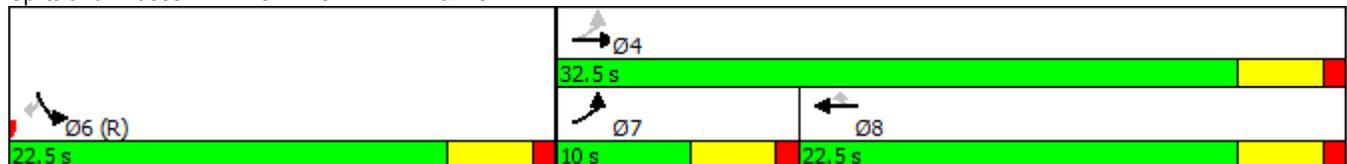


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	24.9	24.9	14.9	14.9	21.1	21.1
Actuated g/C Ratio	0.45	0.45	0.27	0.27	0.38	0.38
v/c Ratio	0.72	0.30	0.59	0.43	0.30	0.33
Control Delay	15.8	9.6	19.5	4.7	13.5	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	9.6	19.5	4.7	13.5	2.5
LOS	B	A	B	A	B	A
Approach Delay		12.7	14.7		7.7	
Approach LOS		B	B		A	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
Intersection Signal Delay: 11.8 **Intersection LOS: B**
 Intersection Capacity Utilization 48.7% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



Queues
2: YORKTOWN BLVD & RODD FIELD RD



Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Traffic Volume (vph)	445	443	518	248	121	365	402
Future Volume (vph)	445	443	518	248	121	365	402
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	484	482	563	270	0	529	437
v/c Ratio	0.72	0.30	0.59	0.43		0.40	0.33
Control Delay	15.8	9.6	19.5	4.7		14.4	2.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	15.8	9.6	19.5	4.7		14.4	2.5
Queue Length 50th (ft)	47	47	82	0		63	0
Queue Length 95th (ft)	65	66	115	41		106	27
Internal Link Dist (ft)		754	715			473	
Turn Bay Length (ft)	350			300		300	300
Base Capacity (vph)	676	1801	1158	699		1315	1337
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.72	0.27	0.49	0.39		0.40	0.33
Intersection Summary							

FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↕	↕	↕
Traffic Vol, veh/h	0	11	1	708	965	5
Future Vol, veh/h	0	11	1	708	965	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	1	770	1049	5
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	527	1054	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	496	656	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	496	656	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	656	-	496	-	-	
HCM Lane V/C Ratio	0.002	-	0.024	-	-	
HCM Control Delay (s)	10.5	-	12.4	-	-	
HCM Lane LOS	B	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↗↗	↗↖	
Traffic Vol, veh/h	0	6	6	726	975	8
Future Vol, veh/h	0	6	6	726	975	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	7	789	1060	9
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	534	1068	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	491	648	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	491	648	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0.1		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	648	-	491	-	-	
HCM Lane V/C Ratio	0.01	-	0.013	-	-	
HCM Control Delay (s)	10.6	-	12.4	-	-	
HCM Lane LOS	B	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	43	539	29	28	701	150	0	0	41	0	0	16
Future Vol, veh/h	43	539	29	28	701	150	0	0	41	0	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	586	32	30	762	163	0	0	45	0	0	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	762	0	0	617	0	0	-	-	309	-	-	381
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	846	-	-	959	-	-	0	0	687	0	0	617
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	846	-	-	959	-	-	-	-	687	-	-	617
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.3			10.6			11		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	687	846	-	-	959	-	-	617				
HCM Lane V/C Ratio	0.065	0.055	-	-	0.032	-	-	0.028				
HCM Control Delay (s)	10.6	9.5	-	-	8.9	-	-	11				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.1	-	-	0.1				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	32	692	24	25	732	113	0	0	64	0	0	37
Future Vol, veh/h	32	692	24	25	732	113	0	0	64	0	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	752	26	27	796	123	0	0	70	0	0	40
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	796	0	0	778	0	0	-	-	389	-	-	398
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	822	-	-	834	-	-	0	0	610	0	0	601
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	822	-	-	834	-	-	-	-	610	-	-	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			11.7			11.4		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	610	822	-	-	834	-	-	601				
HCM Lane V/C Ratio	0.114	0.042	-	-	0.033	-	-	0.067				
HCM Control Delay (s)	11.7	9.6	-	-	9.5	-	-	11.4				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2				

Intersection							
Int Delay, s/veh	0.5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	69	0	709	566	253	
Future Vol, veh/h	0	69	0	709	566	253	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	75	0	771	615	275	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	445	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	561	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	561	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	12.4		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	561	-	-			
HCM Lane V/C Ratio	-	0.134	-	-			
HCM Control Delay (s)	-	12.4	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.5	-	-			

Intersection							
Int Delay, s/veh	1.4						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↗		↗↗	↗↗		
Traffic Vol, veh/h	0	161	0	726	730	191	
Future Vol, veh/h	0	161	0	726	730	191	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	175	0	789	793	208	
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	-	501	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	515	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	515	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB	NB		SB			
HCM Control Delay, s	15.5	0		0			
HCM LOS	C						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	515	-	-			
HCM Lane V/C Ratio	-	0.34	-	-			
HCM Control Delay (s)	-	15.5	-	-			
HCM Lane LOS	-	C	-	-			
HCM 95th %tile Q(veh)	-	1.5	-	-			

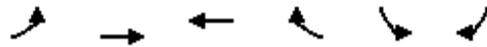
Intersection							
Int Delay, s/veh	0.3						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	37	0	709	782	194	
Future Vol, veh/h	0	37	0	709	782	194	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	40	0	771	850	211	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	530	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	493	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	493	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	13		0		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	493	-	-			
HCM Lane V/C Ratio	-	0.082	-	-			
HCM Control Delay (s)	-	13	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.3	-	-			

Intersection							
Int Delay, s/veh	0.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	85	0	726	836	145	
Future Vol, veh/h	0	85	0	726	836	145	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	92	0	789	909	158	
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	-	533	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	491	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	491	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB	NB		SB			
HCM Control Delay, s	14	0		0			
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	491	-	-			
HCM Lane V/C Ratio	-	0.188	-	-			
HCM Control Delay (s)	-	14	-	-			
HCM Lane LOS	-	B	-	-			
HCM 95th %tile Q(veh)	-	0.7	-	-			

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 3_PHASE 3 - AM

5/16/2017

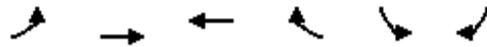


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	434	364	535	407	243	476
Future Volume (vph)	434	364	535	407	243	476
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	1	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.259				0.950	
Satd. Flow (perm)	936	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				442		517
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	397		553	
Travel Time (s)		12.6	6.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	472	396	582	442	264	517
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	396	582	442	264	517
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 3_PHASE 3 OPENING DAY AM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

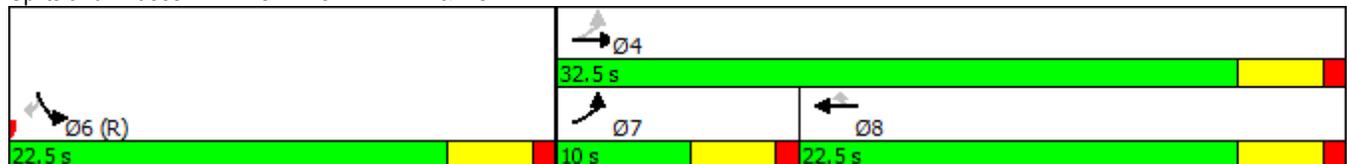


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	32.5	22.5	22.5	22.5	22.5
Total Split (%)	18.2%	59.1%	40.9%	40.9%	40.9%	40.9%
Maximum Green (s)	5.5	28.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	25.6	25.6	15.6	15.6	20.4	20.4
Actuated g/C Ratio	0.47	0.47	0.28	0.28	0.37	0.37
v/c Ratio	0.69	0.24	0.58	0.58	0.21	0.38
Control Delay	14.5	8.8	18.9	5.2	13.2	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	8.8	18.9	5.2	13.2	2.6
LOS	B	A	B	A	B	A
Approach Delay		11.9	13.0		6.2	
Approach LOS		B	B		A	

Intersection Summary

Area Type: Other
 Cycle Length: 55
 Actuated Cycle Length: 55
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
Intersection Signal Delay: 10.7 **Intersection LOS: B**
 Intersection Capacity Utilization 45.4% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



Queues
2: YORKTOWN BLVD & RODD FIELD RD



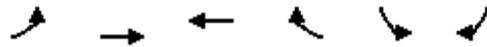
Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Traffic Volume (vph)	434	364	535	407	81	243	476
Future Volume (vph)	434	364	535	407	81	243	476
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	472	396	582	442	0	352	517
v/c Ratio	0.69	0.24	0.58	0.58		0.28	0.38
Control Delay	14.5	8.8	18.9	5.2		13.7	2.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	14.5	8.8	18.9	5.2		13.7	2.6
Queue Length 50th (ft)	43	36	82	0		41	0
Queue Length 95th (ft)	64	54	119	52		71	29
Internal Link Dist (ft)		754	317			473	
Turn Bay Length (ft)	350			300		300	300
Base Capacity (vph)	686	1801	1158	815		1270	1357
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.69	0.22	0.50	0.54		0.28	0.38
Intersection Summary							

FINAL DRAFT

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

SCENARIO 3_PHASE 3 - PM

5/16/2017

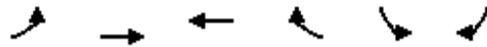


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↑	↔	↔↔	↔↔
Traffic Volume (vph)	555	522	508	322	426	614
Future Volume (vph)	555	522	508	322	426	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350			300	300	300
Storage Lanes	2			1	2	1
Taper Length (ft)	150				150	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3433	3539	3539	1583	3433	2787
Flt Permitted	0.252				0.950	
Satd. Flow (perm)	911	3539	3539	1583	3433	2787
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				350		667
Link Speed (mph)		45	45		50	
Link Distance (ft)		834	397		553	
Travel Time (s)		12.6	6.0		7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	603	567	552	350	463	667
Shared Lane Traffic (%)						
Lane Group Flow (vph)	603	567	552	350	463	667
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6

SCENARIO 3_PHASE 3 OPENING DAY PM

Synchro 9 Report

Lanes, Volumes, Timings
2: YORKTOWN BLVD & RODD FIELD RD

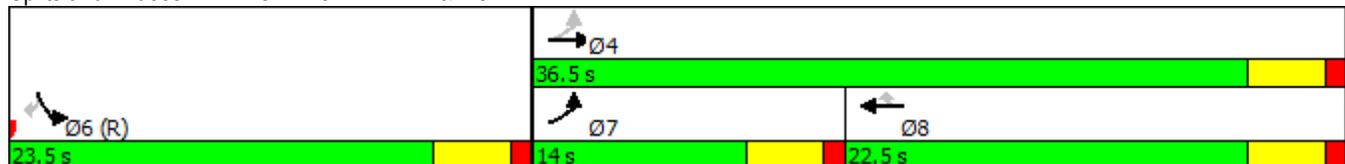


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	14.0	36.5	22.5	22.5	23.5	23.5
Total Split (%)	23.3%	60.8%	37.5%	37.5%	39.2%	39.2%
Maximum Green (s)	9.5	32.0	18.0	18.0	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	29.3	29.3	15.3	15.3	21.7	21.7
Actuated g/C Ratio	0.49	0.49	0.26	0.26	0.36	0.36
v/c Ratio	0.71	0.33	0.61	0.53	0.37	0.47
Control Delay	14.3	9.5	22.4	5.5	16.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	9.5	22.4	5.5	16.0	2.8
LOS	B	A	C	A	B	A
Approach Delay		12.0	15.9		8.2	
Approach LOS		B	B		A	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.7 **Intersection LOS: B**
 Intersection Capacity Utilization 53.3% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: YORKTOWN BLVD & RODD FIELD RD



Queues
2: YORKTOWN BLVD & RODD FIELD RD



Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Traffic Volume (vph)	555	522	508	322	200	426	614
Future Volume (vph)	555	522	508	322	200	426	614
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	603	567	552	350	0	680	667
v/c Ratio	0.71	0.33	0.61	0.55		0.55	0.47
Control Delay	14.3	9.5	22.4	6.9		18.1	2.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	14.3	9.5	22.4	6.9		18.1	2.8
Queue Length 50th (ft)	62	58	90	9		100	0
Queue Length 95th (ft)	85	81	128	61		155	34
Internal Link Dist (ft)		754	317			473	
Turn Bay Length (ft)	350			300		300	300
Base Capacity (vph)	844	1887	1061	696		1240	1433
Starvation Cap Reductn	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0
Reduced v/c Ratio	0.71	0.30	0.52	0.50		0.55	0.47
Intersection Summary							

FINAL DRAFT

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑	↑	↑↑	↑↑	
Traffic Vol, veh/h	0	13	2	820	1370	6
Future Vol, veh/h	0	13	2	820	1370	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	2	891	1489	7
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	748	1496	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	355	444	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	355	444	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.6		0		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	444	-	355	-	-	
HCM Lane V/C Ratio	0.005	-	0.04	-	-	
HCM Control Delay (s)	13.1	-	15.6	-	-	
HCM Lane LOS	B	-	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↗↗	↗↖	
Traffic Vol, veh/h	0	8	7	893	1328	9
Future Vol, veh/h	0	8	7	893	1328	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	8	971	1443	10
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	727	1453	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	366	462	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	366	462	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.1		0.1		0	
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	462	-	366	-	-	
HCM Lane V/C Ratio	0.016	-	0.024	-	-	
HCM Control Delay (s)	12.9	-	15.1	-	-	
HCM Lane LOS	B	-	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗			↗			↗
Traffic Vol, veh/h	71	658	33	31	886	252	0	0	47	0	0	27
Future Vol, veh/h	71	658	33	31	886	252	0	0	47	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	715	36	34	963	274	0	0	51	0	0	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	963			0			751			0		
Stage 1	-			-			-			-		
Stage 2	-			-			-			-		
Critical Hdwy	4.14			-			4.14			-		
Critical Hdwy Stg 1	-			-			-			-		
Critical Hdwy Stg 2	-			-			-			-		
Follow-up Hdwy	2.22			-			2.22			-		
Pot Cap-1 Maneuver	711			-			854			-		
Stage 1	-			-			-			-		
Stage 2	-			-			-			-		
Platoon blocked, %	-			-			-			-		
Mov Cap-1 Maneuver	711			-			854			-		
Mov Cap-2 Maneuver	-			-			-			-		
Stage 1	-			-			-			-		
Stage 2	-			-			-			-		
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.2			11.3			12.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	622	711	-	-	854	-	-	530				
HCM Lane V/C Ratio	0.082	0.109	-	-	0.039	-	-	0.055				
HCM Control Delay (s)	11.3	10.7	-	-	9.4	-	-	12.2				
HCM Lane LOS	B	B	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.1	-	-	0.2				

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↔		↔	↕↕	↔			↔			↔
Traffic Vol, veh/h	53	848	26	28	930	189	0	0	72	0	0	62
Future Vol, veh/h	53	848	26	28	930	189	0	0	72	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	922	28	30	1011	205	0	0	78	0	0	67
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1011	0	0	950	0	0	-	-	475	-	-	505
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	681	-	-	719	-	-	0	0	536	0	0	512
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	681	-	-	719	-	-	-	-	536	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.2			12.9			13.1		
HCM LOS	B			B			B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	536	681	-	-	719	-	-	512				
HCM Lane V/C Ratio	0.146	0.085	-	-	0.042	-	-	0.132				
HCM Control Delay (s)	12.9	10.8	-	-	10.2	-	-	13.1				
HCM Lane LOS	B	B	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0.1	-	-	0.5				

Intersection							
Int Delay, s/veh	0.9						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	115	0	822	685	423	
Future Vol, veh/h	0	115	0	822	685	423	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	125	0	893	745	460	
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	-	602	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	443	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	443	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB	NB		SB			
HCM Control Delay, s	16.3	0		0			
HCM LOS	C						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	443	-	-			
HCM Lane V/C Ratio	-	0.282	-	-			
HCM Control Delay (s)	-	16.3	-	-			
HCM Lane LOS	-	C	-	-			
HCM 95th %tile Q(veh)	-	1.1	-	-			

Intersection							
Int Delay, s/veh	3.9						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	267	0	899	919	317	
Future Vol, veh/h	0	267	0	899	919	317	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	290	0	977	999	345	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	672	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	398	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	398	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	34.8		0		0		
HCM LOS	D						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	398	-	-			
HCM Lane V/C Ratio	-	0.729	-	-			
HCM Control Delay (s)	-	34.8	-	-			
HCM Lane LOS	-	D	-	-			
HCM 95th %tile Q(veh)	-	5.7	-	-			

Intersection							
Int Delay, s/veh	0.5						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	61	0	822	1047	323	
Future Vol, veh/h	0	61	0	822	1047	323	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	66	0	893	1138	351	
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	745	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	357	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	357	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB		NB		SB		
HCM Control Delay, s	17.4		0		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	357	-	-			
HCM Lane V/C Ratio	-	0.186	-	-			
HCM Control Delay (s)	-	17.4	-	-			
HCM Lane LOS	-	C	-	-			
HCM 95th %tile Q(veh)	-	0.7	-	-			

Intersection							
Int Delay, s/veh	1.3						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations		↑		↑↑	↑↑		
Traffic Vol, veh/h	0	142	0	899	1094	242	
Future Vol, veh/h	0	142	0	899	1094	242	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	0	154	0	977	1189	263	
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	-	726	-	0	-	0	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Critical Hdwy	-	6.94	-	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	
Follow-up Hdwy	-	3.32	-	-	-	-	
Pot Cap-1 Maneuver	0	367	0	-	-	-	
Stage 1	0	-	0	-	-	-	
Stage 2	0	-	0	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	367	-	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	-	
Stage 1	-	-	-	-	-	-	
Stage 2	-	-	-	-	-	-	
Approach	EB	NB		SB			
HCM Control Delay, s	21.7	0		0			
HCM LOS	C						
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	-	367	-	-			
HCM Lane V/C Ratio	-	0.421	-	-			
HCM Control Delay (s)	-	21.7	-	-			
HCM Lane LOS	-	C	-	-			
HCM 95th %tile Q(veh)	-	2	-	-			



Scenario 1 and Scenario 3 Comparison

Scenario Information

Scenario #1

Filename: C:\Users\Larry Colclasure\Desktop\COMPARISON\Opening Day Phase 3 S1 AM Traffic Recommended.syn

Location:

Timing Plan ID: Default

Alternative: Baseline

Number of Signalized Intersections: 7

Most Popular Cycle Length: 45

Scenario #3

Filename: C:\Users\Larry Colclasure\Desktop\COMPARISON\Opening Day Phase 3 S3 AM Traffic Recommended.syn

Location:

Timing Plan ID: Default

Alternative: Baseline

Number of Signalized Intersections: 5

Most Popular Cycle Length: 110

FINAL DRAFT

Network Totals

Scenario #	1	3
Number of Intersections	12	12
Most Popular Cycle (s)	45	110
Alternative	Baseline	Baseline
Timing Plan ID	Default	Default
Data Time		
Control Delay / Veh (s/v)	17	17
Queue Delay / Veh (s/v)	0	0
Total Delay / Veh (s/v)	17	17
Total Delay (hr)	123	130
Stops / Veh	0.44	0.40
Stops (#)	11620	10934
Average Speed (mph)	21	21
Total Travel Time (hr)	266	283
Distance Traveled (mi)	5666	5997
Fuel Consumed (gal)	414	419
Fuel Economy (mpg)	13.7	14.3
CO Emissions (kg)	28.93	29.27
NOx Emissions (kg)	5.63	5.69
VOC Emissions (kg)	6.71	6.78
Unserved Vehicles (#)	46	101
Vehicles in dilemma zone (#)	718	503
Performance Index	155.1	160.9

FINAL DRAFT

Scenario Information

Scenario #1

Filename: C:\Users\Larry Colclasure\Desktop\COMPARISON\Opening Day Phase 3 S1 PM Traffic Recommended.syn

Location:

Timing Plan ID: Default

Alternative: Baseline

Number of Signalized Intersections: 7

Most Popular Cycle Length: 65

Scenario #3

Filename: C:\Users\Larry Colclasure\Desktop\COMPARISON\Opening Day Phase 3 S3 PM Traffic Recommended.syn

Location:

Timing Plan ID: Default

Alternative: Baseline

Number of Signalized Intersections: 5

Most Popular Cycle Length: 90

FINAL DRAFT

Network Totals

Scenario #	1	3
Number of Intersections	12	12
Most Popular Cycle (s)	65	90
Alternative	Baseline	Baseline
Timing Plan ID	Default	Default
Data Time		
Control Delay / Veh (s/v)	13	13
Queue Delay / Veh (s/v)	0	0
Total Delay / Veh (s/v)	13	13
Total Delay (hr)	103	102
Stops / Veh	0.42	0.39
Stops (#)	11804	11417
Average Speed (mph)	24	24
Total Travel Time (hr)	249	258
Distance Traveled (mi)	5936	6250
Fuel Consumed (gal)	416	418
Fuel Economy (mpg)	14.3	14.9
CO Emissions (kg)	29.09	29.25
NOx Emissions (kg)	5.66	5.69
VOC Emissions (kg)	6.74	6.78
Unserved Vehicles (#)	0	0
Vehicles in dilemma zone (#)	908	581
Performance Index	135.6	133.5

FINAL DRAFT



Traffic Counts

FINAL DRAFT

MALDONADO-BURKETT ITS, LLP

3833 South Staples St.
Corpus Christi, Texas, 78411
www.mbitsgroup.com

Location: Cimarron At Yorktown
City: Corpus Christi
County: Nueces

File Name : CIMMARON AT YORKTOWN MT
Site Code :
Start Date : 1/3/2017
Page No : 1

Start Time	CIMARRON From North						YORKTOWN From East						CIMARRON From South						YORKTOWN From West													
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
07:00 AM	17	12	12	0	41	4	60	6	0	70	26	61	72	0	159	16	69	10	0	95	16	69	10	0	95	16	69	10	0	365		
07:15 AM	12	27	17	0	56	15	62	11	0	88	25	76	81	0	182	22	93	21	0	136	22	93	21	0	136	22	93	21	462			
07:30 AM	23	28	20	1	72	15	68	16	1	100	27	77	82	0	186	39	68	28	0	135	39	68	28	0	135	39	68	28	493			
07:45 AM	20	36	13	0	69	23	67	9	2	101	22	102	81	0	205	32	80	60	1	173	32	80	60	1	173	32	80	60	548			
Total	72	103	62	1	238	57	257	42	3	359	100	316	316	0	732	109	310	119	1	539	109	310	119	1	539	109	310	119	1868			
08:00 AM	28	22	16	1	67	26	79	14	1	120	15	62	61	0	138	20	69	71	0	160	20	69	71	0	160	20	69	71	485			
08:15 AM	37	23	19	5	84	22	51	16	2	91	18	83	65	0	166	21	63	57	0	141	21	63	57	0	141	21	63	57	482			
08:30 AM	50	22	19	0	91	33	70	10	0	113	19	80	55	1	155	23	63	88	0	174	23	63	88	0	174	23	63	88	533			
08:45 AM	59	50	22	0	131	17	75	9	0	101	14	84	44	0	142	26	59	88	0	173	26	59	88	0	173	26	59	88	547			
Total	174	117	76	6	373	98	275	49	3	425	66	309	225	1	601	90	254	304	0	648	90	254	304	0	648	90	254	304	2047			
*** BREAK ***																																
04:00 PM	72	81	18	0	171	20	82	31	1	134	14	61	22	3	100	61	61	75	3	200	61	61	75	3	200	61	61	75	605			
04:15 PM	88	107	34	0	229	23	81	34	0	138	14	47	39	5	105	51	69	66	10	196	51	69	66	10	196	51	69	66	668			
04:30 PM	54	71	27	3	155	16	98	44	0	158	18	38	49	2	107	60	75	51	5	191	60	75	51	5	191	60	75	51	611			
04:45 PM	61	74	17	1	153	32	99	37	1	169	16	43	30	0	89	61	104	40	1	206	61	104	40	1	206	61	104	40	617			
Total	275	333	96	4	708	91	360	146	2	599	62	189	140	10	401	233	309	232	19	793	233	309	232	19	793	233	309	232	2501			
05:00 PM	44	74	14	0	132	22	77	40	0	139	12	51	39	1	103	64	86	51	0	201	64	86	51	0	201	64	86	51	575			
05:15 PM	54	56	30	0	140	18	103	40	0	161	11	42	60	2	115	68	94	58	0	220	68	94	58	0	220	68	94	58	636			
05:30 PM	37	54	19	0	110	8	70	32	0	110	22	49	41	2	114	101	87	51	2	241	101	87	51	2	241	101	87	51	575			
05:45 PM	30	68	21	0	119	16	65	44	0	125	16	47	47	1	111	79	106	60	1	246	79	106	60	1	246	79	106	60	601			
Total	165	252	84	0	501	64	315	156	0	535	61	189	187	6	443	312	373	220	3	908	312	373	220	3	908	312	373	220	2387			
Grand Total	686	805	318	11	1820	310	1207	393	8	1918	289	1003	868	17	2177	744	1246	875	23	2888	744	1246	875	23	2888	744	1246	875	8803			
Approach %	37.7	44.2	17.5	0.6	20.7	16.2	62.9	20.5	0.4	21.8	13.3	46.1	39.9	0.8	24.7	25.8	43.1	30.3	0.8	32.8	25.8	43.1	30.3	0.8	32.8	25.8	43.1	30.3	0.8			
Total %	7.8	9.1	3.6	0.1	20.7	3.5	13.7	4.5	0.1	21.8	3.3	11.4	9.9	0.2	24.7	8.5	14.2	9.9	0.3	32.8	8.5	14.2	9.9	0.3	32.8	8.5	14.2	9.9	0.3			

MALDONADO-BURKETT ITS, LLP

3833 South Staples St.
Corpus Christi, Texas, 78411
www.mbitsgroup.com

Location: Rodd Field At Yorktown
City: Corpus Christi
County: Nueces

File Name : RODD FIELD AT YORKTOWN
Site Code :
Start Date : 1/5/2017
Page No : 1

Start Time	RODDFIELD From North						YORKTOWN From East						RODDFIELD From South						YORKTOWN From West					
	Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total	
07:00 AM	37	0	0	0	37		2	62	0	0	64		0	0	0	0	0	0	0	52	56	0	108	
07:15 AM	47	0	0	0	47		0	60	0	0	60		0	0	0	0	0	0	0	81	54	0	135	
07:30 AM	44	0	1	0	45		0	69	0	0	69		0	0	0	0	0	0	0	80	62	0	142	
07:45 AM	51	0	0	0	51		0	67	0	0	67		0	0	0	0	0	0	0	70	55	0	125	
Total	179	0	1	0	180		2	258	0	0	260		0	0	0	0	0	0	0	283	227	0	510	
08:00 AM	63	0	1	0	64		0	79	0	0	79		0	0	0	0	0	0	0	64	59	0	123	
08:15 AM	58	0	1	0	59		0	75	0	0	75		0	0	0	0	0	0	0	47	82	0	129	
08:30 AM	38	0	1	0	39		0	50	0	0	50		0	0	0	0	0	0	0	60	62	0	122	
08:45 AM	45	0	0	0	45		1	76	0	0	77		0	0	0	1	1	1	0	53	71	1	125	
Total	204	0	3	0	207		1	280	0	0	281		0	0	0	1	1	1	0	224	274	1	499	
*** BREAK ***																								
04:00 PM	67	0	0	0	67		1	59	0	0	60		0	0	0	0	0	0	0	49	61	0	110	
04:15 PM	74	0	0	0	74		0	106	0	0	106		0	0	0	0	0	0	0	69	54	0	123	
04:30 PM	60	0	0	0	60		1	91	0	0	92		0	0	0	0	0	0	0	76	78	0	154	
04:45 PM	76	0	1	0	77		0	93	0	0	93		1	0	0	0	1	1	0	65	70	0	135	
Total	277	0	1	0	278		2	349	0	0	351		1	0	0	0	1	1	0	259	263	0	522	
05:00 PM	79	0	0	0	79		0	81	0	0	81		0	0	0	0	0	0	0	73	78	0	151	
05:15 PM	80	0	0	1	81		0	81	0	1	82		0	0	0	0	0	0	0	103	76	0	179	
05:30 PM	81	0	0	0	81		0	75	0	0	75		0	0	0	0	0	0	0	83	93	0	176	
05:45 PM	80	0	0	1	81		0	63	0	1	64		0	0	0	0	0	0	0	96	83	0	179	
Total	320	0	0	2	322		0	300	0	2	302		0	0	0	0	0	0	0	355	330	0	685	
Grand Total	980	0	5	2	987		5	1187	0	2	1194		1	0	0	1	2	2	0	1121	1094	1	2216	
Approach %	99.3	0	0.5	0.2		0.4	99.4	0	0.2		50	0	0	0	0	0	0	0	50.6	49.4	0			
Total %	22.3	0	0.1	0	22.4		0.1	27	0	0	27.1		0	0	0	0	0	0	0	25.5	24.9	0	50.4	
Unshifted	980	0	5	2	987		5	1187	0	2	1194		1	0	0	1	2	2	0	1121	1094	1	2216	
% Unshifted	100	0	100	100	100		100	100	0	100	100		100	0	0	100	100	100	0	100	100	100	100	
Bank 1	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	
% Bank 1	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	
Bank 2	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	
% Bank 2	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	

MALDONADO-BURKETT ITS, LLP

3833 South Staples St.
Corpus Christi, Texas, 78411
www.mbitsgroup.com

Location: Rodd Field At Presidents
City: Corpus Christi
County: Nueces

File Name : RODD FIELD AT PRESIDENTS
Site Code :
Start Date : 1/4/2017
Page No : 1

Start Time	RODDFIELD From North						PRESIDENTS From East						RODDFIELD From South						PRESIDENTS From West					
	Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total	
07:00 AM	0	71	0	0	71		0	0	0	0	0		0	105	0	0	105		2	0	0	0	2	
07:15 AM	0	75	0	0	75		0	0	0	0	0		160	1	0	0	161		2	0	1	0	3	
07:30 AM	2	89	0	0	91		0	0	0	0	0		162	0	0	0	162		0	0	2	0	2	
07:45 AM	1	108	0	0	109		0	0	0	0	0		122	0	0	0	122		2	0	1	0	3	
Total	3	343	0	0	346		0	0	0	0	0		549	1	0	0	550		6	0	4	0	10	
08:00 AM	1	90	0	0	91		0	0	0	0	0		116	0	0	0	116		0	0	2	0	2	
08:15 AM	1	78	0	0	79		0	0	0	0	0		118	0	0	0	118		1	0	0	0	1	
08:30 AM	1	73	0	0	74		0	0	0	0	0		123	0	0	0	123		0	0	3	0	3	
08:45 AM	0	62	0	0	62		0	0	0	0	0		109	1	0	0	110		0	0	1	0	1	
Total	3	303	0	0	306		0	0	0	0	0		466	1	0	0	467		1	0	6	0	7	
*** BREAK ***																								
04:00 PM	3	119	0	0	122		0	0	0	0	0		102	2	0	0	104		1	0	0	0	1	
04:15 PM	1	125	0	0	126		0	0	0	0	0		121	0	0	0	121		1	0	1	0	2	
04:30 PM	3	122	0	0	125		0	0	0	0	0		121	1	0	0	122		1	0	1	0	2	
04:45 PM	1	115	0	0	116		0	0	0	0	0		114	1	0	0	115		3	0	0	0	3	
Total	8	481	0	0	489		0	0	0	0	0		458	4	0	0	462		6	0	2	0	8	
05:00 PM	0	119	0	0	119		0	0	0	0	0		148	1	0	0	149		0	0	1	0	1	
05:15 PM	0	157	0	0	157		0	0	0	0	0		105	0	0	0	105		0	0	0	0	0	
05:30 PM	2	118	0	0	120		0	0	0	0	0		121	1	0	0	122		2	0	1	0	3	
05:45 PM	0	111	0	0	111		0	0	0	0	0		127	3	0	0	130		0	0	3	0	3	
Total	2	505	0	0	507		0	0	0	0	0		501	5	0	0	506		2	0	5	0	7	
Grand Total	16	1632	0	0	1648		0	0	0	0	0		1974	11	0	0	1985		15	0	17	0	32	
Approch %	1	99	0	0	100		0	0	0	0	0		99.4	0.6	0	0	46.9	0	53.1	0	0			
Total %	0.4	44.5	0	0	45		0	0	0	0	0		53.9	0.3	0	0	54.2	0.4	0.5	0	0.9			
Unshifted	16	1632	0	0	1648		0	0	0	0	0		1974	11	0	0	1985	15	17	0	32			
% Unshifted	100	100	0	0	100		0	0	0	0	0		100	100	0	0	100	100	100	0	100			
Bank 1	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0			
% Bank 1	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0			
Bank 2	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0			
% Bank 2	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0	0	0			

Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

Rodd Field Rd.
Between Presidents & Graceland
Date Start: 03-Jan-17
Date End: 04-Jan-17

Start Time	02-Jan-17		Tue		Wed		Thu		Fri		Sat		Sun	
	South Bound	North Bound												
12:00 AM	*	*	46	31	*	*	*	*	*	*	*	*	*	*
01:00	*	*	40	38	*	*	*	*	*	*	*	*	*	*
02:00	*	*	12	19	*	*	*	*	*	*	*	*	*	*
03:00	*	*	8	13	*	*	*	*	*	*	*	*	*	*
04:00	*	*	25	66	*	*	*	*	*	*	*	*	*	*
05:00	*	*	57	168	*	*	*	*	*	*	*	*	*	*
06:00	*	*	93	237	*	*	*	*	*	*	*	*	*	*
07:00	*	*	282	509	*	*	*	*	*	*	*	*	*	*
08:00	*	*	332	454	*	*	*	*	*	*	*	*	*	*
09:00	*	*	232	302	*	*	*	*	*	*	*	*	*	*
10:00	*	*	215	260	*	*	*	*	*	*	*	*	*	*
11:00	*	*	206	264	*	*	*	*	*	*	*	*	*	*
12:00 PM	*	*	239	257	*	*	*	*	*	*	*	*	*	*
01:00	*	*	286	274	*	*	*	*	*	*	*	*	*	*
02:00	*	*	251	272	*	*	*	*	*	*	*	*	*	*
03:00	*	*	335	337	*	*	*	*	*	*	*	*	*	*
04:00	*	*	413	389	*	*	*	*	*	*	*	*	*	*
05:00	*	*	456	416	*	*	*	*	*	*	*	*	*	*
06:00	*	*	366	331	*	*	*	*	*	*	*	*	*	*
07:00	*	*	264	237	*	*	*	*	*	*	*	*	*	*
08:00	*	*	206	137	*	*	*	*	*	*	*	*	*	*
09:00	*	*	167	131	*	*	*	*	*	*	*	*	*	*
10:00	*	*	110	92	*	*	*	*	*	*	*	*	*	*
11:00	*	*	81	48	*	*	*	*	*	*	*	*	*	*
Total	0	0	2063	1781	2659	3501	0	0	0	0	0	0	0	0
Day			3844	6160	6160	10004								
AM Peak	-	-	08:00	07:00	08:00	07:00	-	-	-	-	-	-	-	-
Vol.	-	-	332	509	332	509	-	-	-	-	-	-	-	-
PM Peak	-	-	17:00	15:00	15:00	17:00	-	-	-	-	-	-	-	-
Vol.	-	-	456	416	335	337	-	-	-	-	-	-	-	-
Comb. Total	0	0	3844	6160	6160	10004	0	0	0	0	0	0	0	0
ADT			ADT 9,893	ADT 9,893	ADT 9,893	ADT 9,893								

MALDONADO-BURKETT ITS, LLP

3833 South Staples St.
Corpus Christi, Texas, 78411
www.mbitsgroup.com

Location: Rodd Field At Airline/Slough
City: Corpus Christi
County: Nueces

File Name : RODD FIELD AT AIRLINE & SLOUGH
Site Code :
Start Date : 1/5/2017
Page No : 1

Start Time	RODDFIELD From North						SLOUGH From East						RODDFIELD From South						AIRLINE From West						
	Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		
07:00 AM	0	31	6	0	37		34	8	12	0	54		4	86	15	0	105		12	8	5	0	25		
07:15 AM	3	44	6	0	53		50	26	15	0	91		6	100	18	0	124		21	25	14	0	60		
07:30 AM	2	44	16	0	62		58	36	26	0	120		21	102	13	0	136		18	47	26	0	91		
07:45 AM	5	58	20	1	84		32	32	29	1	96		21	87	18	0	126		32	61	33	0	126		
Total	10	177	48	1	236		176	102	82	1	361		52	375	64	0	491		83	141	78	0	302		
08:00 AM	5	51	8	0	64		29	33	20	0	82		10	76	28	0	114		19	14	2	0	35		
08:15 AM	3	45	6	1	55		22	18	13	0	53		11	89	26	0	126		21	13	8	1	43		
08:30 AM	1	42	10	0	53		19	25	14	0	58		2	87	24	0	113		9	11	3	0	23		
08:45 AM	2	35	11	0	48		19	18	10	0	47		6	82	24	0	112		15	11	8	0	34		
Total	11	173	35	1	220		89	94	57	0	240		29	334	102	0	465		64	49	21	1	135		
*** BREAK ***																									
04:00 PM	14	81	20	0	115		18	19	7	2	46		10	64	20	0	94		30	28	7	0	65		
04:15 PM	2	85	30	1	118		19	13	7	1	40		18	68	25	0	111		32	31	2	2	67		
04:30 PM	5	71	29	0	105		18	14	9	2	43		14	84	22	0	120		33	28	7	0	68		
04:45 PM	6	91	31	0	128		20	14	9	1	44		16	72	21	0	109		38	31	11	0	80		
Total	27	328	110	1	466		75	60	32	6	173		58	288	88	0	434		133	118	27	2	280		
05:00 PM	4	91	29	0	124		8	19	11	0	38		12	94	23	0	129		42	42	11	1	96		
05:15 PM	6	95	45	0	146		21	19	12	0	52		15	89	20	0	124		32	34	5	0	71		
05:30 PM	10	106	36	0	152		17	18	6	0	41		24	87	16	0	127		33	53	7	0	93		
05:45 PM	9	94	29	0	132		20	28	7	1	56		13	92	18	0	123		34	30	6	2	72		
Total	29	386	139	0	554		66	84	36	1	187		64	362	77	0	503		141	159	29	3	332		
Grand Total	77	1064	332	3	1476		406	340	207	8	961		203	1359	331	0	1893		421	467	155	6	1049		
Approach %	5.2	72.1	22.5	0.2		42.2	35.4	21.5	0.8		10.7	71.8	17.5	0		40.1	44.5	14.8	0.6		40.1	44.5	14.8	0.6	
Total %	1.4	19.8	6.2	0.1	27.4	7.5	6.3	3.8	0.1	17.9	3.8	25.3	6.2	0	35.2	7.8	8.7	2.9	0.1	19.5	7.8	8.7	2.9	0.1	19.5
Unshifted	77	1064	332	3	1476	406	340	207	8	961	203	1359	331	0	1893	421	467	155	6	1049	421	467	155	6	1049
% Unshifted	100	100	100	100	100	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MALDONADO-BURKETT ITS, LLP

3833 South Staples St.
Corpus Christi, Texas, 78411
www.mbitsgroup.com

Location: Airline At Lipes
City: Corpus Christi
County: Nueces

File Name : AIRLINE AT LIPES
Site Code :
Start Date : 1/4/2017
Page No : 1

Start Time	AIRLINE From North						LIPES From East						AIRLINE From South						LIPES From West						
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total
	From North						From East						From South						From West						
07:00 AM	5	21	0	0	26	0	0	0	0	0	0	32	3	0	35	10	0	8	0	18	79				
07:15 AM	2	39	0	0	41	0	0	0	0	0	0	46	2	0	48	9	0	17	0	26	115				
07:30 AM	6	95	0	0	101	0	0	0	0	0	0	71	5	0	76	29	0	9	0	38	215				
07:45 AM	9	89	0	0	98	0	0	0	0	0	0	65	16	0	81	25	0	11	0	36	215				
Total	22	244	0	0	266	0	0	0	0	0	0	214	26	0	240	73	0	45	0	118	624				
08:00 AM	6	37	0	0	43	0	0	0	0	0	0	57	10	0	67	9	0	9	0	18	128				
08:15 AM	10	28	0	0	38	0	0	0	0	0	0	53	8	0	61	13	0	6	0	19	118				
08:30 AM	2	37	0	0	39	0	0	0	0	0	0	45	13	0	58	12	0	4	0	16	113				
08:45 AM	5	28	0	0	33	0	0	0	0	0	0	44	8	0	52	8	0	12	0	20	105				
Total	23	130	0	0	153	0	0	0	0	0	0	199	39	0	238	42	0	31	0	73	464				
*** BREAK ***																									
04:00 PM	4	67	0	0	71	0	0	0	0	0	0	45	12	0	57	4	0	7	0	11	139				
04:15 PM	6	73	0	0	79	0	0	0	0	0	0	44	12	0	56	21	0	10	0	31	166				
04:30 PM	8	57	0	0	65	0	0	0	0	0	0	52	12	0	64	10	0	6	0	16	145				
04:45 PM	9	57	0	0	66	0	0	0	0	0	0	39	14	0	53	10	0	4	2	16	140				
Total	27	254	0	0	281	0	0	0	0	0	0	180	50	0	230	45	0	27	2	74	590				
05:00 PM	10	77	0	0	87	0	0	0	0	0	0	56	8	0	64	8	0	16	0	24	175				
05:15 PM	13	90	0	0	103	0	0	0	0	0	0	34	8	0	42	15	0	10	0	25	170				
05:30 PM	17	77	0	0	94	0	0	0	0	0	0	32	11	0	43	10	0	12	0	22	159				
05:45 PM	16	71	0	0	87	0	0	0	0	0	0	46	6	0	52	9	0	4	0	13	152				
Total	56	315	0	0	371	0	0	0	0	0	0	168	33	0	201	42	0	42	0	84	656				
Grand Total	128	943	0	0	1071	0	0	0	5	5	0	761	148	0	909	202	0	145	2	349	2334				
Approch %	12	88	0	0	100	0	0	0	100	0	0	83.7	16.3	0	57.9	0	41.5	0.6							
Total %	5.5	40.4	0	0	45.9	0	0	0	0.2	0.2	0	32.6	6.3	0	38.9	8.7	0	6.2	0.1	15					
Unshifted	128	943	0	0	1071	0	0	0	5	5	0	761	148	0	909	202	0	145	2	349	2334				
% Unshifted	100	100	0	0	100	0	0	0	100	100	0	100	100	0	100	100	0	100	100	100	100				
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Maldonado-Burkett ITS, LLP
 3833 South Staples St. Suite N214
 Corpus Christi, TX 78414
www.mbitsgroup.com

Bronx Dr
 Near Lipos Blvd
 Date Start: 25-Apr-17
 Date End: 27-Apr-17

Start Time	24-Apr-17		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	North Bo	South Bo	North Bo	South Bo	North Bo	South Bo	North Bo	South Bo	North Bo	South Bo	North Bo	South Bo	North Bo	South Bo	North Bo	South Bo
12:00 AM	*	*	*	*	0	4	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	2	2	3	*	1	*	*	*	*	*	*	2	3
02:00	*	*	*	0	0	1	0	0	*	*	*	*	*	*	0	1
03:00	*	*	*	2	3	1	1	1	*	*	*	*	*	*	2	2
04:00	*	*	*	0	1	0	0	0	*	*	*	*	*	*	0	0
05:00	*	*	*	4	5	4	6	6	*	*	*	*	*	*	4	6
06:00	*	*	*	5	3	10	8	8	*	*	*	*	*	*	8	6
07:00	*	*	*	54	44	76	56	56	*	*	*	*	*	*	65	50
08:00	*	*	*	158	101	162	92	92	*	*	*	*	*	*	160	96
09:00	*	*	*	34	40	18	64	64	*	*	*	*	*	*	26	52
10:00	*	*	*	13	35	*	*	*	*	*	*	*	*	*	13	35
11:00	*	*	*	28	22	*	*	*	*	*	*	*	*	*	28	22
12:00 PM	*	*	*	19	37	*	*	*	*	*	*	*	*	*	19	37
01:00	*	*	*	25	26	*	*	*	*	*	*	*	*	*	25	26
02:00	*	*	*	30	19	*	*	*	*	*	*	*	*	*	30	19
03:00	*	*	*	44	33	*	*	*	*	*	*	*	*	*	44	33
04:00	*	*	*	109	158	130	130	130	*	*	*	*	*	*	114	144
05:00	*	*	*	63	85	61	94	94	*	*	*	*	*	*	62	90
06:00	*	*	*	48	64	56	63	63	*	*	*	*	*	*	52	64
07:00	*	*	*	54	51	51	68	68	*	*	*	*	*	*	52	60
08:00	*	*	*	34	28	43	42	42	*	*	*	*	*	*	38	35
09:00	*	*	*	18	22	19	19	19	*	*	*	*	*	*	20	20
10:00	*	*	*	10	8	19	7	7	*	*	*	*	*	*	14	8
11:00	*	*	*	5	10	6	11	11	*	*	*	*	*	*	6	10
Lane	0	0	341	426	797	807	277	235	0	0	0	0	0	0	788	821
Day	-	-	-	767	1604	1604	512	512	0	0	0	0	0	0	1609	1609
AM Peak Vol.	-	-	-	08:00	08:00	08:00	08:00	08:00	-	-	-	-	-	-	08:00	08:00
PM Peak Vol.	-	-	16:00	16:00	16:00	16:00	16:00	16:00	-	-	-	-	-	-	16:00	16:00
ADT	0	0	ADT 1,607	767	1604	1604	512	512	0	0	0	0	0	1609	1609	
Comb. Total	0	0	ADT 1,607	767	1604	1604	512	512	0	0	0	0	0	1609	1609	
ADT	0	0	ADT 1,607	767	1604	1604	512	512	0	0	0	0	0	1609	1609	

Start Time	24-Apr-17		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	East Bou	West Bo	East Bou	West Bo												
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	4	2	2	4	*	*	*	*	*	*	3	3
02:00	*	*	*	*	2	4	2	4	*	*	*	*	*	*	3	2
03:00	*	*	*	*	2	0	1	1	*	*	*	*	*	*	2	0
04:00	*	*	*	*	3	3	1	4	*	*	*	*	*	*	2	4
05:00	*	*	*	*	2	2	1	1	*	*	*	*	*	*	2	2
06:00	*	*	*	*	7	6	7	6	*	*	*	*	*	*	7	6
07:00	*	*	*	*	3	12	10	11	*	*	*	*	*	*	6	12
08:00	*	*	*	*	39	68	51	93	*	*	*	*	*	*	45	80
09:00	*	*	*	*	103	220	105	228	*	*	*	*	*	*	104	224
10:00	*	*	*	*	30	41	29	30	*	*	*	*	*	*	30	36
11:00	*	*	*	*	34	16	*	*	*	*	*	*	*	*	34	16
12:00 PM	*	*	*	*	20	32	*	*	*	*	*	*	*	*	20	32
01:00	*	*	*	*	39	20	*	*	*	*	*	*	*	*	39	20
02:00	*	*	*	*	30	25	*	*	*	*	*	*	*	*	30	25
03:00	*	*	54	63	26	30	*	*	*	*	*	*	*	*	26	30
04:00	*	*	139	122	46	49	*	*	*	*	*	*	*	*	50	56
05:00	*	*	94	77	136	140	*	*	*	*	*	*	*	*	138	131
06:00	*	*	73	62	101	69	*	*	*	*	*	*	*	*	98	73
07:00	*	*	52	58	71	70	*	*	*	*	*	*	*	*	72	66
08:00	*	*	34	38	66	49	*	*	*	*	*	*	*	*	59	54
09:00	*	*	30	26	44	42	*	*	*	*	*	*	*	*	39	40
10:00	*	*	9	7	21	23	*	*	*	*	*	*	*	*	26	24
11:00	*	*	11	4	10	18	*	*	*	*	*	*	*	*	10	12
Lane	0	0	496	457	853	948	211	379	0	0	0	0	0	0	857	955
Day	0	0	953	590	1801	590	590	590	0	0	0	0	0	0	1812	1812
AM Peak Vol.	-	-	-	-	08:00	08:00	08:00	08:00	-	-	-	-	-	-	08:00	08:00
PM Peak Vol.	-	-	16:00	16:00	16:00	16:00	16:00	16:00	-	-	-	-	-	-	16:00	16:00
Comb. Total	0	0	953	1801	1801	590	590	590	0	0	0	0	0	1812	1812	
ADT	ADT 1,808	ADT 1,808														

Groups Printed- Unshifted

Start Time	CIMARRON South Bound						LIPES East Bound						CIMARRON North Bound						LIPES West Bound					
	Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total	
07:00 AM	4	32	3	5	44		12	5	15	1	33		2	76	11	2	91		1	3	5	1	10	
07:15 AM	8	45	5	8	66		10	4	25	1	40		9	125	24	0	158		5	4	6	0	15	
07:30 AM	10	72	5	1	88		14	9	34	1	58		9	155	43	0	207		5	11	3	2	21	
07:45 AM	14	88	8	15	125		33	12	55	1	101		27	188	40	1	256		9	16	18	6	49	
Total	36	237	21	29	323		69	30	129	4	232		47	544	118	3	712		20	34	32	9	95	
08:00 AM	30	82	9	11	132		27	19	53	8	107		30	141	45	4	220		16	18	23	0	57	
08:15 AM	26	65	10	7	108		27	21	48	7	104		20	150	51	0	221		20	14	12	7	53	
08:30 AM	30	84	17	7	138		23	28	66	3	120		42	153	55	4	254		30	50	20	0	100	
08:45 AM	28	77	12	28	145		24	41	64	8	137		68	183	51	5	307		34	51	50	1	136	
Total	114	308	48	53	523		101	109	232	26	468		160	627	202	13	1002		100	133	105	8	346	
04:00 PM	45	125	17	2	189		31	21	32	1	85		30	74	48	1	153		16	21	38	105	180	
04:15 PM	47	191	11	23	272		74	29	40	1	144		30	100	25	1	156		40	29	50	38	157	
04:30 PM	32	161	6	8	207		32	18	39	0	89		11	119	14	0	144		22	12	12	5	51	
04:45 PM	49	142	9	8	208		20	6	38	0	64		10	140	19	2	171		17	12	11	3	43	
Total	173	619	43	41	876		157	74	149	2	382		81	433	106	4	624		95	74	111	151	431	
05:00 PM	41	191	10	4	246		26	15	40	2	83		6	110	12	1	129		10	8	9	10	37	
05:15 PM	50	144	4	3	201		26	10	31	1	68		10	132	15	0	157		9	11	9	5	34	
05:30 PM	36	177	4	4	221		21	17	33	3	74		9	114	11	1	135		11	3	3	0	17	
05:45 PM	29	146	5	2	182		21	8	31	0	60		7	124	18	0	149		10	13	7	3	33	
Total	156	658	23	13	850		94	50	135	6	285		32	480	56	2	570		40	35	28	18	121	
Grand Total	479	1822	135	136	2572		421	263	645	38	1367		320	2084	482	22	2908		255	276	276	186	993	
Approch %	18.6	70.8	5.2	5.3			30.8	19.2	47.2	2.8			11	71.7	16.6	0.8			25.7	27.8	27.8	18.7		
Total %	6.1	23.2	1.7	1.7	32.8		5.4	3.4	8.2	0.5	17.4		4.1	26.6	6.1	0.3	37.1		3.3	3.5	3.5	2.4	12.7	

Start Time	CIMARRON South Bound						LIPES East Bound						CIMARRON North Bound						LIPES West Bound					
	Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total	
	Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																							
Peak Hour for Entire Intersection Begins at 08:00 AM																								
08:00 AM	30						27						20	150	51	0	221		20	14	12	7	53	486
08:15 AM	26	65	10	7	108		27	21	49	7	104		20	150	51	0	221		20	14	12	7	53	486
08:30 AM	30	84	17	7	138		23	28	66	3	120		42	153	55	4	254		30	50	20	0	100	612
08:45 AM	28	77	12	28	145		24	41	64	8	137		68	183	51	5	307		34	51	50	1	136	725
Total Volume	114	308	48	53	523		101	109	232	26	468		160	627	202	13	1002		100	133	105	8	346	2339
% App. Total	21.8	58.9	9.2	10.1	902		21.6	23.3	49.6	5.6	854		16	62.6	20.2	1.3	816		28.9	38.4	30.3	2.3	636	807
PHF	.950	.917	.706	.473			.935	.665	.879	.813			.588	.857	.918	.650			.735	.652	.525	.286		

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM						08:00 AM						08:00 AM											
	Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total		Right	Thru	Left	Peds	App. Total							
+0 mins.	30	82	9	11	132		27	19	53	8	107		30	141	45	4	220		16	18	23	0	57	
+15 mins.	26	65	10	7	108		27	21	49	7	104		20	150	51	0	221		20	14	12	7	53	
+30 mins.	30	84	17	7	138		23	28	66	3	120		42	153	55	4	254		30	50	20	0	100	
+45 mins.	28	77	12	28	145		24	41	64	8	137		68	183	51	5	307		34	51	50	1	136	
Total Volume	114	308	48	53	523		101	109	232	26	468		160	627	202	13	1002		100	133	105	8	346	
% App. Total	21.8	58.9	9.2	10.1	902		21.6	23.3	49.6	5.6	854		16	62.6	20.2	1.3	816		28.9	38.4	30.3	2.3	636	
PHF	.950	.917	.706	.473			.935	.665	.879	.813			.588	.857	.918	.650			.735	.652	.525	.286		

Start Time	CIMARRON South Bound						LIPES East Bound						CIMARRON North Bound						LIPES West Bound					
	Right	Thru	Left	Peds	App. Total	PHF	Right	Thru	Left	Peds	App. Total	PHF	Right	Thru	Left	Peds	App. Total	PHF	Right	Thru	Left	Peds	App. Total	PHF
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 04:00 PM																							
04:00 PM	45	125	17	1	144	.30	74	29	40	1	144	.30	30	100	25	1	156	.48	40	29	50	105	180	.729
04:15 PM	47	191	11	23	272	.32	32	18	39	0	89	.11	11	119	14	0	144	.14	22	12	12	5	51	.491
04:30 PM	32	161	6	8	207	.20	6	38	0	0	64	.10	10	140	19	2	171	.19	17	12	11	3	43	.486
04:45 PM	49	142	9	8	208	.20	74	149	2	2	382	.81	81	433	106	4	624	.4	95	74	111	151	431	.2313
Total Volume	173	619	43	41	876	41.1	157	74	39	0.5	663	.675	13	69.4	17	0.6	912	.552	22	17.2	25.8	35	599	.793
% App. Total	19.7	70.7	4.9	4.7	.805	.530	.638	.931	.500	.500	.663	.675	.675	.773	.552	.500	.912	.552	.594	.638	.555	.360	.599	.793
PHF	.883	.810	.632	.446	.805	.530	.638	.931	.500	.500	.663	.675	.675	.773	.552	.500	.912	.552	.594	.638	.555	.360	.599	.793

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

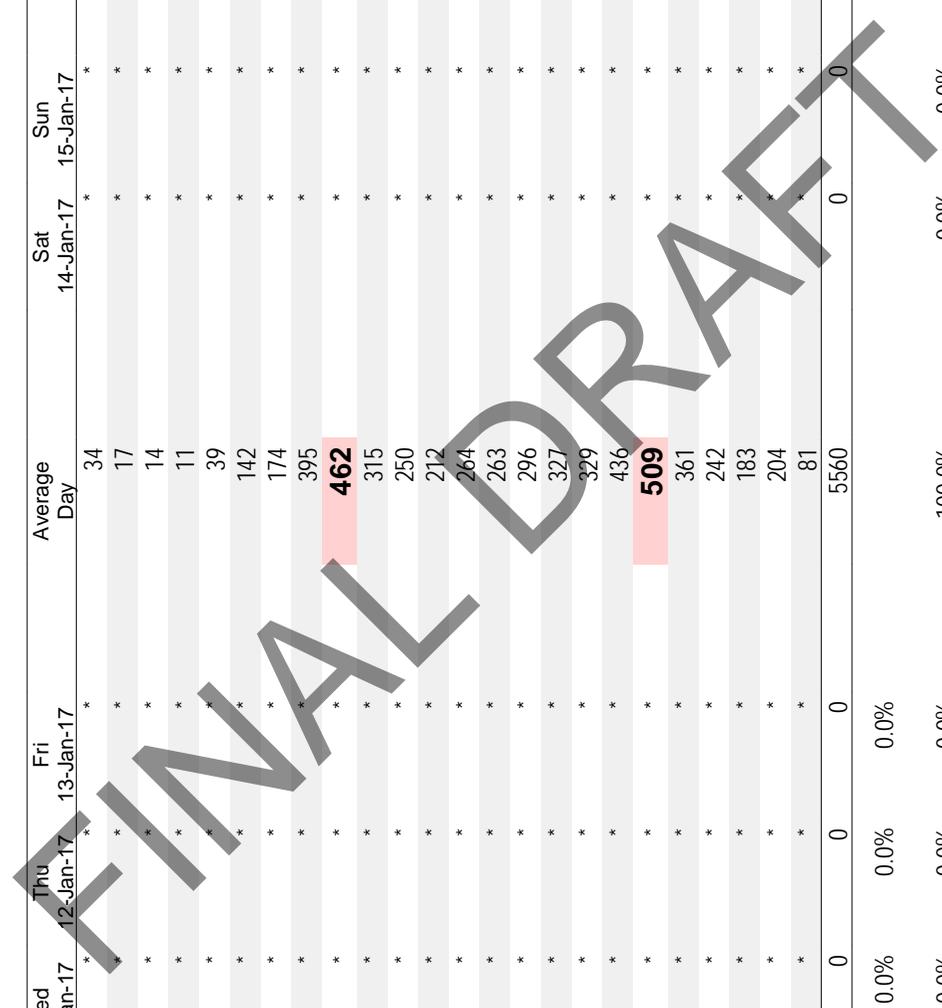
Start Time	CIMARRON South Bound						LIPES East Bound						CIMARRON North Bound						LIPES West Bound					
	Right	Thru	Left	Peds	App. Total	PHF	Right	Thru	Left	Peds	App. Total	PHF	Right	Thru	Left	Peds	App. Total	PHF	Right	Thru	Left	Peds	App. Total	PHF
04:15 PM	47	191	11	23	272	.32	31	21	32	1	85	.30	30	74	48	1	153	.48	16	21	38	105	180	.729
+0 mins.	32	161	6	8	207	.20	74	29	40	1	144	.30	11	100	25	1	156	.25	40	29	50	38	157	.729
+15 mins.	49	142	9	8	208	.20	18	39	0	0	89	.11	11	119	14	0	144	.14	22	12	12	5	51	.491
+30 mins.	41	191	10	4	246	.20	6	38	0	0	64	.10	10	140	19	2	171	.19	17	12	11	3	43	.486
+45 mins.	169	685	36	43	933	41.1	157	74	149	2	382	.81	81	433	106	4	624	.4	95	74	111	151	431	.2313
Total Volume	18.1	73.4	3.9	4.6	.858	41.1	19.4	39	0.5	0.5	663	.675	13	69.4	17	0.6	912	.552	22	17.2	25.8	35	599	.793
% App. Total	.862	.897	.818	.467	.858	.530	.638	.931	.500	.500	.663	.675	.675	.773	.552	.500	.912	.552	.594	.638	.555	.360	.599	.793
PHF																								

Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

Yorktown East Bound
Between Bay & Bichon
Date Start: 10-Jan-17
Date End: 10-Jan-17

Start Time	Mon 09-Jan-17	Tue 10-Jan-17	Wed 11-Jan-17	Thu 12-Jan-17	Fri 13-Jan-17	Average Day	Sat 14-Jan-17	Sun 15-Jan-17	Week Average
12:00 AM	*	34	*	*	*	34	*	*	34
01:00	*	17	*	*	*	17	*	*	17
02:00	*	14	*	*	*	14	*	*	14
03:00	*	11	*	*	*	11	*	*	11
04:00	*	39	*	*	*	39	*	*	39
05:00	*	142	*	*	*	142	*	*	142
06:00	*	174	*	*	*	174	*	*	174
07:00	*	395	*	*	*	395	*	*	395
08:00	*	462	*	*	*	462	*	*	462
09:00	*	315	*	*	*	315	*	*	315
10:00	*	250	*	*	*	250	*	*	250
11:00	*	212	*	*	*	212	*	*	212
12:00 PM	*	264	*	*	*	264	*	*	264
01:00	*	263	*	*	*	263	*	*	263
02:00	*	296	*	*	*	296	*	*	296
03:00	*	327	*	*	*	327	*	*	327
04:00	*	329	*	*	*	329	*	*	329
05:00	*	436	*	*	*	436	*	*	436
06:00	*	509	*	*	*	509	*	*	509
07:00	*	361	*	*	*	361	*	*	361
08:00	*	242	*	*	*	242	*	*	242
09:00	*	183	*	*	*	183	*	*	183
10:00	*	204	*	*	*	204	*	*	204
11:00	*	81	*	*	*	81	*	*	81
Day Total	0	5560	0	0	0	5560	0	0	5560
% Avg. WKDay	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
% Avg. Week	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
AM Peak Vol.	-	08:00 462	-	-	-	08:00 462	-	-	08:00 462
PM Peak Vol.	-	18:00 509	-	-	-	18:00 509	-	-	18:00 509
Grand Total	0	5560	0	0	0	5560	0	0	5560

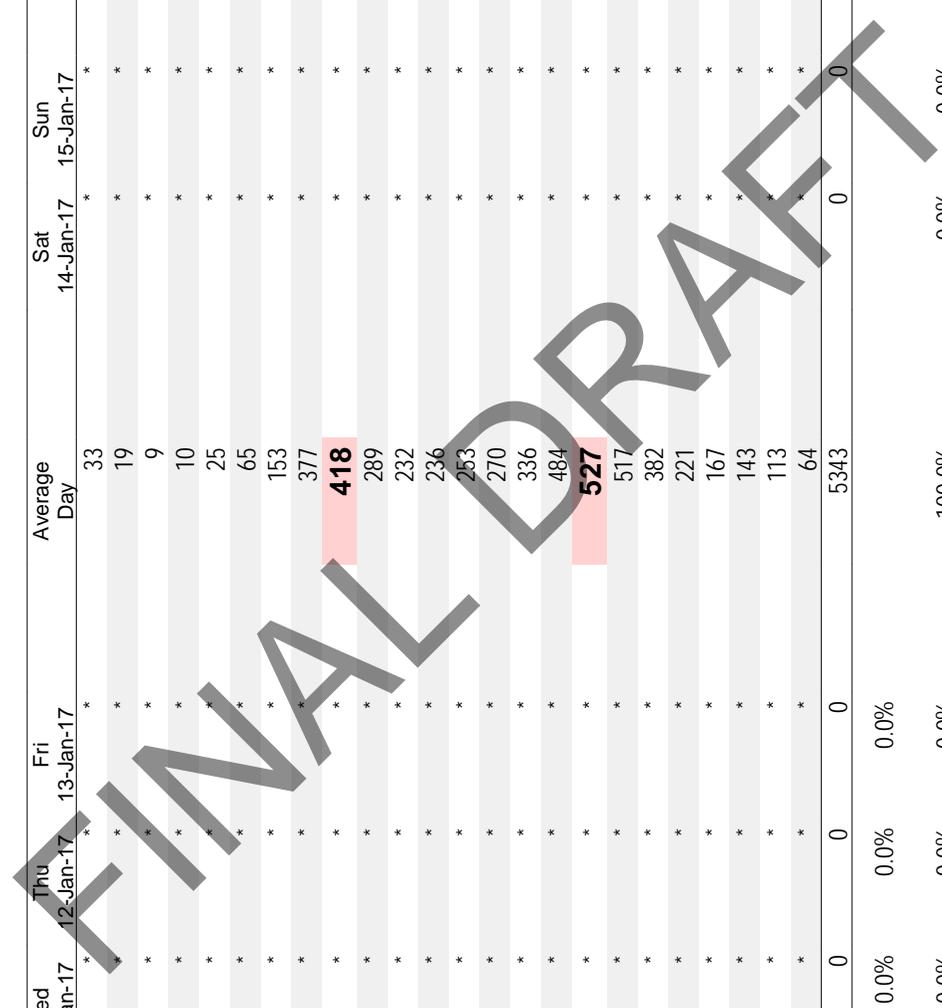


Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

Yorktown West Bound
Between Bay & Bichon
Date Start: 10-Jan-17
Date End: 10-Jan-17

Start Time	Mon 09-Jan-17	Tue 10-Jan-17	Wed 11-Jan-17	Thu 12-Jan-17	Fri 13-Jan-17	Average Day	Sat 14-Jan-17	Sun 15-Jan-17	Week Average
12:00 AM	*	33	*	*	*	33	*	*	33
01:00	*	19	*	*	*	19	*	*	19
02:00	*	9	*	*	*	9	*	*	9
03:00	*	10	*	*	*	10	*	*	10
04:00	*	25	*	*	*	25	*	*	25
05:00	*	65	*	*	*	65	*	*	65
06:00	*	153	*	*	*	153	*	*	153
07:00	*	377	*	*	*	377	*	*	377
08:00	*	418	*	*	*	418	*	*	418
09:00	*	289	*	*	*	289	*	*	289
10:00	*	232	*	*	*	232	*	*	232
11:00	*	236	*	*	*	236	*	*	236
12:00 PM	*	253	*	*	*	253	*	*	253
01:00	*	270	*	*	*	270	*	*	270
02:00	*	336	*	*	*	336	*	*	336
03:00	*	484	*	*	*	484	*	*	484
04:00	*	527	*	*	*	527	*	*	527
05:00	*	517	*	*	*	517	*	*	517
06:00	*	382	*	*	*	382	*	*	382
07:00	*	221	*	*	*	221	*	*	221
08:00	*	167	*	*	*	167	*	*	167
09:00	*	143	*	*	*	143	*	*	143
10:00	*	113	*	*	*	113	*	*	113
11:00	*	64	*	*	*	64	*	*	64
Day Total	0	5343	0	0	0	5343	0	0	5343
% Avg. WKDay	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
% Avg. Week	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
AM Peak Vol.	-	08:00	-	-	-	08:00	-	-	08:00
	-	418	-	-	-	418	-	-	418
PM Peak Vol.	-	16:00	-	-	-	16:00	-	-	16:00
	-	527	-	-	-	527	-	-	527
Grand Total	0	5343	0	0	0	5343	0	0	5343



Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

Yorktown east of Roddfield
Between Roddfield & (Old) Airline
Date Start: 04-Jan-17
Date End: 05-Jan-17

Start Time	02-Jan-17		Tue		Wed		Thu		Fri		Sat		Sun	
	West Bound	East Bound												
12:00 AM	*	*	*	*	*	*	17	18	*	*	*	*	*	*
01:00	*	*	*	*	*	*	13	11	*	*	*	*	*	*
02:00	*	*	*	*	*	*	3	8	*	*	*	*	*	*
03:00	*	*	*	*	*	*	6	6	*	*	*	*	*	*
04:00	*	*	*	*	*	*	16	14	*	*	*	*	*	*
05:00	*	*	*	*	*	*	41	42	*	*	*	*	*	*
06:00	*	*	*	*	*	*	82	85	*	*	*	*	*	*
07:00	*	*	*	*	*	*	249	280	*	*	*	*	*	*
08:00	*	*	*	*	*	*	265	230	*	*	*	*	*	*
09:00	*	*	*	*	*	*	163	142	*	*	*	*	*	*
10:00	*	*	*	*	*	*	122	117	*	*	*	*	*	*
11:00	*	*	*	*	*	*	131	145	*	*	*	*	*	*
12:00 PM	*	*	*	*	*	*	146	165	*	*	*	*	*	*
01:00	*	*	*	*	*	*	137	151	*	*	*	*	*	*
02:00	*	*	*	*	*	*	223	180	*	*	*	*	*	*
03:00	*	*	*	*	*	*	200	215	*	*	*	*	*	*
04:00	*	*	*	*	*	*	343	278	*	*	*	*	*	*
05:00	*	*	*	*	*	*	272	369	*	*	*	*	*	*
06:00	*	*	*	*	*	*	220	236	*	*	*	*	*	*
07:00	*	*	*	*	*	*	123	154	*	*	*	*	*	*
08:00	*	*	*	*	*	*	78	120	*	*	*	*	*	*
09:00	*	*	*	*	*	*	56	77	*	*	*	*	*	*
10:00	*	*	*	*	*	*	37	40	*	*	*	*	*	*
11:00	*	*	*	*	*	*	20	43	*	*	*	*	*	*
Total	0	0	0	0	806	1039	2157	2087	0	0	0	0	0	0
Day	0	0	0	0	1845	4244	4244	6089	0	0	0	0	0	0
AM Peak Vol.	-	-	-	-	-	-	08:00	07:00	-	-	-	-	-	-
	-	-	-	-	-	-	265	280	-	-	-	-	-	-
PM Peak Vol.	-	-	-	-	17:00	17:00	16:00	16:00	-	-	-	-	-	-
	-	-	-	-	272	369	343	278	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Comb. Total	0	0	0	0	1845	4244	6089	6089	0	0	0	0	0	0
ADT	ADT 5,836	ADT 5,836	AADT 5,836											

Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

Bill Witt Ent

Date Start: 03-Jan-17
Date End: 04-Jan-17

Start Time	02-Jan-17		Tue		Wed		Thu		Fri		Sat		Sun	
	South Bound	North Bound												
12:00 AM	*	*	0	0	0	0	0	0	0	0	0	0	0	0
01:00	*	*	0	1	0	1	0	0	0	0	0	0	0	0
02:00	*	*	2	2	2	2	2	2	2	2	2	2	2	2
03:00	*	*	0	0	0	0	0	0	0	0	0	0	0	0
04:00	*	*	0	0	0	0	0	0	0	0	0	0	0	0
05:00	*	*	0	0	0	0	0	0	0	0	0	0	0	0
06:00	*	*	1	1	1	1	1	1	1	1	1	1	1	1
07:00	*	*	4	4	4	4	4	4	4	4	4	4	4	4
08:00	*	*	4	5	4	5	4	5	4	5	4	5	4	5
09:00	*	*	5	3	5	3	5	3	5	3	5	3	5	3
10:00	*	*	6	7	6	7	6	7	6	7	6	7	6	7
11:00	*	*	5	10	5	10	5	10	5	10	5	10	5	10
12:00 PM	*	*	7	9	7	9	7	9	7	9	7	9	7	9
01:00	*	*	5	2	5	2	5	2	5	2	5	2	5	2
02:00	*	*	6	12	6	12	6	12	6	12	6	12	6	12
03:00	*	*	0	1	0	1	0	1	0	1	0	1	0	1
04:00	*	*	3	2	3	2	3	2	3	2	3	2	3	2
05:00	*	*	10	14	10	14	10	14	10	14	10	14	10	14
06:00	*	*	16	18	16	18	16	18	16	18	16	18	16	18
07:00	*	*	5	19	5	19	5	19	5	19	5	19	5	19
08:00	*	*	1	1	1	1	1	1	1	1	1	1	1	1
09:00	*	*	2	0	2	0	2	0	2	0	2	0	2	0
10:00	*	*	2	4	2	4	2	4	2	4	2	4	2	4
11:00	*	*	1	0	1	0	1	0	1	0	1	0	1	0
Total Day	0	0	37	56	48	59	0	0	0	0	85	115	0	0
AM Peak Vol.	-	-	-	-	10:00	11:00	-	-	-	-	10:00	11:00	-	-
PM Peak Vol.	-	-	18:00	19:00	12:00	14:00	-	-	-	-	18:00	19:00	-	-
Comb. Total	0	0	16	19	7	12	-	-	-	-	16	19	-	-
ADT	0	0	93	107	107	200	0	0	0	200	200	0	0	
AADT 200	ADT 200	ADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200	AADT 200

Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

Bichon Dr.
Between Yorktown & Nela
Date Start: 03-Jan-17
Date End: 04-Jan-17

Start Time	02-Jan-17		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	North Bound	South Bound	North Bound	South Bound	North Bound	South Bound	North Bound	South Bound								
12:00 AM	*	*	1	0	*	*	*	*	*	*	1	0	*	*	*	*
01:00	*	*	0	1	*	*	*	*	*	*	0	1	*	*	*	*
02:00	*	*	1	0	*	*	*	*	*	*	1	0	*	*	*	*
03:00	*	*	3	2	*	*	*	*	*	*	3	2	*	*	*	*
04:00	*	*	2	0	*	*	*	*	*	*	2	0	*	*	*	*
05:00	*	*	2	2	*	*	*	*	*	*	2	2	*	*	*	*
06:00	*	*	4	11	*	*	*	*	*	*	4	11	*	*	*	*
07:00	*	*	23	39	*	*	*	*	*	*	23	39	*	*	*	*
08:00	*	*	42	34	*	*	*	*	*	*	42	34	*	*	*	*
09:00	*	*	26	44	*	*	*	*	*	*	26	44	*	*	*	*
10:00	*	*	18	20	*	*	*	*	*	*	18	20	*	*	*	*
11:00	*	*	19	33	*	*	*	*	*	*	19	33	*	*	*	*
12:00 PM	*	*	20	23	*	*	*	*	*	*	20	23	*	*	*	*
01:00	*	*	24	42	*	*	*	*	*	*	24	42	*	*	*	*
02:00	*	*	15	24	*	*	*	*	*	*	15	24	*	*	*	*
03:00	*	*	26	30	*	*	*	*	*	*	26	30	*	*	*	*
04:00	*	*	10	29	*	*	*	*	*	*	10	29	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	39	29	*	*	*	*
06:00	*	*	25	44	*	*	*	*	*	*	25	44	*	*	*	*
07:00	*	*	19	13	*	*	*	*	*	*	19	13	*	*	*	*
08:00	*	*	18	11	*	*	*	*	*	*	18	11	*	*	*	*
09:00	*	*	9	4	*	*	*	*	*	*	9	4	*	*	*	*
10:00	*	*	6	2	*	*	*	*	*	*	6	2	*	*	*	*
11:00	*	*	3	0	*	*	*	*	*	*	3	0	*	*	*	*
Total Day	0	0	236	334	0	0	0	0	0	0	355	437	0	0	0	0
AM Peak Vol.	-	-	08:00	09:00	-	-	-	-	-	-	08:00	09:00	-	-	-	-
PM Peak Vol.	-	-	15:00	13:00	-	-	-	-	-	-	17:00	18:00	-	-	-	-
Comb. Total	0	0	570	570	0	0	0	0	0	0	792	437	0	0	0	0
ADT	ADT 792	ADT 792	AADT 792	AADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792	ADT 792

Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

Bay Dr
Between Yorktown & Nela
Date Start: 10-Jan-17
Date End: 10-Jan-17

Start Time	09-Jan-17		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	North Bound	South Bound	North Bound	South Bound	North Bound	South Bound	North Bound	South Bound								
12:00 AM	*	*	1	1	*	*	*	*	*	*	1	1	*	*	*	*
01:00	*	*	3	3	*	*	*	*	*	*	3	3	*	*	*	*
02:00	*	*	0	0	*	*	*	*	*	*	0	0	*	*	*	*
03:00	*	*	0	0	*	*	*	*	*	*	0	0	*	*	*	*
04:00	*	*	2	1	*	*	*	*	*	*	2	1	*	*	*	*
05:00	*	*	6	3	*	*	*	*	*	*	6	3	*	*	*	*
06:00	*	*	10	25	*	*	*	*	*	*	10	25	*	*	*	*
07:00	*	*	23	44	*	*	*	*	*	*	23	44	*	*	*	*
08:00	*	*	37	51	*	*	*	*	*	*	37	51	*	*	*	*
09:00	*	*	23	39	*	*	*	*	*	*	23	39	*	*	*	*
10:00	*	*	34	28	*	*	*	*	*	*	34	28	*	*	*	*
11:00	*	*	28	22	*	*	*	*	*	*	28	22	*	*	*	*
12:00 PM	*	*	33	26	*	*	*	*	*	*	33	26	*	*	*	*
01:00	*	*	20	28	*	*	*	*	*	*	20	28	*	*	*	*
02:00	*	*	33	28	*	*	*	*	*	*	33	28	*	*	*	*
03:00	*	*	36	43	*	*	*	*	*	*	36	43	*	*	*	*
04:00	*	*	38	43	*	*	*	*	*	*	38	43	*	*	*	*
05:00	*	*	58	43	*	*	*	*	*	*	58	43	*	*	*	*
06:00	*	*	30	37	*	*	*	*	*	*	30	37	*	*	*	*
07:00	*	*	17	15	*	*	*	*	*	*	17	15	*	*	*	*
08:00	*	*	10	11	*	*	*	*	*	*	10	11	*	*	*	*
09:00	*	*	5	3	*	*	*	*	*	*	5	3	*	*	*	*
10:00	*	*	5	3	*	*	*	*	*	*	5	3	*	*	*	*
11:00	*	*	1	2	*	*	*	*	*	*	1	2	*	*	*	*
Total	0	0	453	499	0	0	0	0	0	0	453	499	0	0	0	0
Day			952	952	0	0	0	0	0	0	952	952	0	0	0	0
AM Peak Vol.	-	-	08:00	08:00	-	-	-	-	-	-	08:00	08:00	-	-	-	-
	-	-	37	51	-	-	-	-	-	-	37	51	-	-	-	-
PM Peak Vol.	-	-	17:00	15:00	-	-	-	-	-	-	17:00	15:00	-	-	-	-
	-	-	58	43	-	-	-	-	-	-	58	43	-	-	-	-
Comb. Total	0	0	952	952	0	0	0	0	0	0	952	952	0	0	0	0
ADT			ADT 972	ADT 972							ADT 972	ADT 972				

Maldonado-Burkett ITS, LLP

3833 South Staples Street
Corpus Christi, TX 78411

(Old) Airline Rd.
Between Roddfield & Yorktown
Date Start: 04-Jan-17
Date End: 05-Jan-17

Start Time	02-Jan-17		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
	North Bound	South Bound	North Bound	South Bound	North Bound	South Bound	North Bound	South Bound								
12:00 AM	*	*	*	*	*	*	7	9	*	*	*	7	*	*	*	*
01:00	*	*	*	*	*	*	2	7	*	*	*	2	*	*	*	*
02:00	*	*	*	*	*	*	4	3	*	*	*	4	*	*	*	*
03:00	*	*	*	*	*	*	5	6	*	*	*	5	*	*	*	*
04:00	*	*	*	*	*	*	24	4	*	*	*	24	*	*	*	*
05:00	*	*	*	*	*	*	56	16	*	*	*	56	*	*	*	*
06:00	*	*	*	*	*	*	121	35	*	*	*	121	*	*	*	*
07:00	*	*	*	*	*	*	291	138	*	*	*	291	*	*	*	*
08:00	*	*	*	*	*	*	194	130	*	*	*	194	*	*	*	*
09:00	*	*	*	*	*	*	140	91	*	*	*	140	*	*	*	*
10:00	*	*	*	*	*	*	131	106	*	*	*	131	*	*	*	*
11:00	*	*	*	*	*	*	102	105	*	*	*	102	*	*	*	*
12:00 PM	*	*	*	*	*	*	142	122	*	*	*	142	*	*	*	*
01:00	*	*	*	*	*	*	136	106	*	*	*	136	*	*	*	*
02:00	*	*	*	*	*	*	160	135	*	*	*	160	*	*	*	*
03:00	*	*	*	*	*	*	151	170	*	*	*	151	*	*	*	*
04:00	*	*	*	*	*	*	183	200	*	*	*	183	*	*	*	*
05:00	*	*	*	*	*	*	201	241	*	*	*	201	*	*	*	*
06:00	*	*	*	*	*	*	144	196	*	*	*	144	*	*	*	*
07:00	*	*	*	*	*	*	78	134	*	*	*	78	*	*	*	*
08:00	*	*	*	*	*	*	57	113	*	*	*	57	*	*	*	*
09:00	*	*	*	*	*	*	38	82	*	*	*	38	*	*	*	*
10:00	*	*	*	*	*	*	24	33	*	*	*	24	*	*	*	*
11:00	*	*	*	*	*	*	11	31	*	*	*	11	*	*	*	*
Total	0	0	553	830	1383	1849	1383	3232	0	0	2402	2213	0	0	0	0
Day			1383			3232					4615					
AM Peak Vol.	-	-	-	-	-	07:00	07:00	07:00	-	-	07:00	07:00	-	-	-	-
						291	138	138			291	138				
PM Peak Vol.	-	-	17:00	17:00	16:00	16:00	16:00	16:00	-	-	17:00	17:00	-	-	-	-
			201	241	183	200	200	200			201	241				
Comb. Total	0	0	1383	3232	3232	3232	3232	3232	0	0	4615	4615	0	0	0	0
ADT			ADT 4,437			ADT 4,437	ADT 4,437									



Signal Warrants

FINAL DRAFT



Form Revised 2/27/2012

Traffic Survey — Count Analysis

2011 TMUTCD Warrants

County: Nueces District: Corpus Christi
 City: Corpus Christi Population: 320,434 Survey Date: 1/4/2017

	Name	Control	Section	85% Speed
Major	N/A Rodd Field Rd			50 MPH
Minor	Presidents Dr			

Eight Highest Hours: Include the same 8 hours for the Major and Minor St. volumes.

Time Ends	Major St. - Both App.		Minor St. - Hi. Vol. App.		Comments:
	Veh. Total	Ped. Total	Veh. Total	Ped. Total	
6:00 PM	2,230		8		Signal warrants were not met for Phase 3 of development.
8:00 AM	2,196		13		
9:00 AM					
10:00 AM					
12 NOON					
1:00 PM					
2:00 PM					
3:00 PM					

Warrant 1. Eight Hour Vehicular Volume

- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition A.
- or -
- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition B.
- or -
- Yes No Meets 80%^b of Conditions A and B.
- or -
- Yes No Meets 56%^d of Conditions A and B (and major-street speed exceeds 40 mph or population less than 10,000).

Condition A - Minimum Vehicle Volume

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	500	400	350	280		150	120	105	84	
2 or more	1	600	480	420	336		150	120	105	84	
2 or more	2 or more	600	480	420	336		200	160	140	112	
1	2 or more	500	400	350	280		200	160	140	112	

Condition B - Interruption of Continuous Traffic

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	750	600	525	420		75	60	53	42	
2 or more	1	900	720	630	504		75	60	53	42	
2 or more	2 or more	900	720	630	504		100	80	70	56	
1	2 or more	750	600	525	420		100	80	70	56	

^aBasic minimum hourly volume.

^bUsed for combination of Conditions A and B after adequate trial of other remedial measures.

^cMay be used when the major-street speed exceeds 40 mph or in a community with a population of less than 10,000.

^dMay be used for combination of Conditions A and B after adequate trial of other remedial measures when major street exceeds 40 mph or in an isolated community with a population of less than 10,000.

Warrant 2. Four Hour Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant 2 — see Figure 1).
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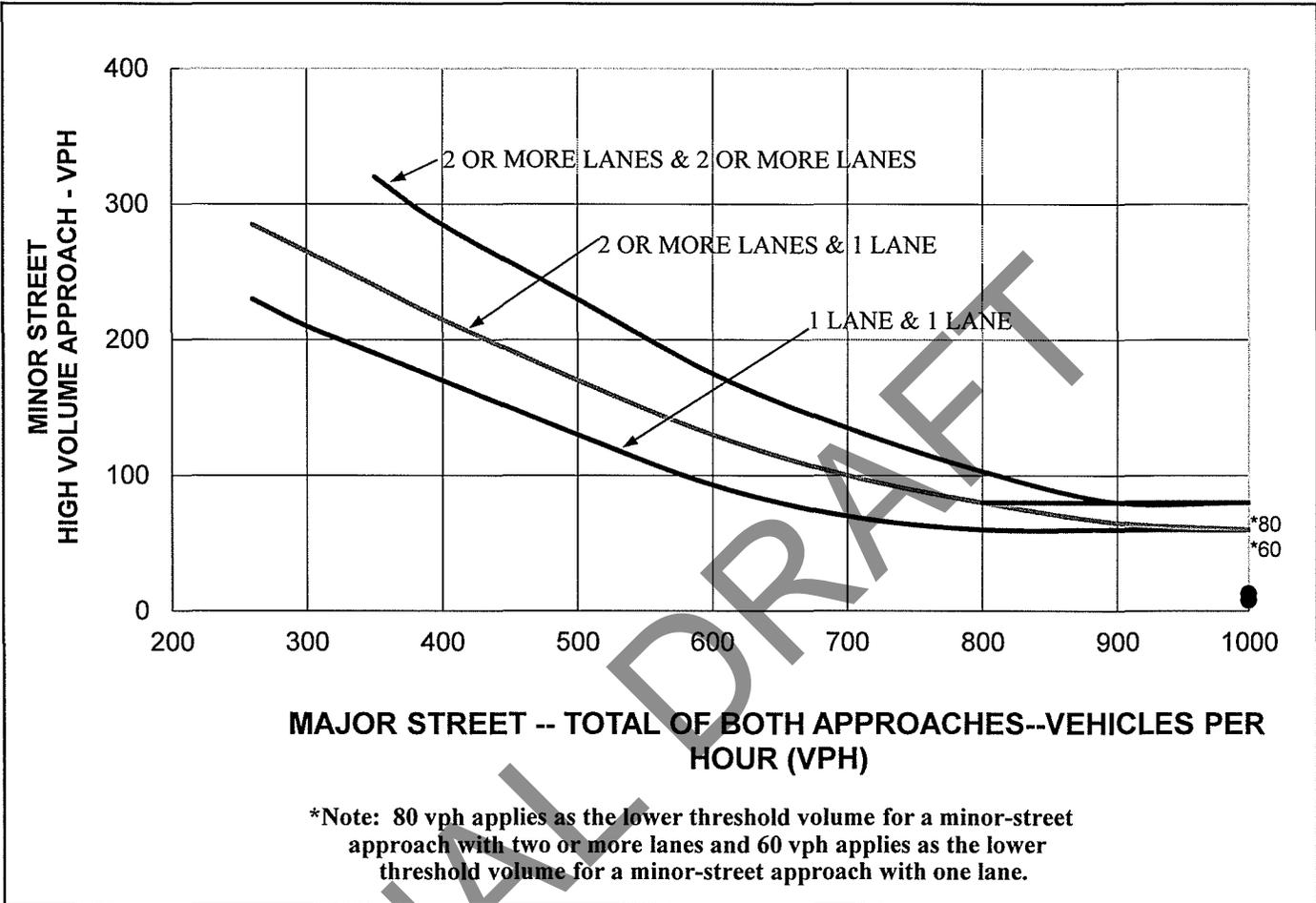


Figure 1. Four-hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 2.)

Warrant 3. Peak Hour (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Are all of the following conditions true for any four consecutive 15 minute periods? 1. The total stopped time delay experienced by the traffic on one minor street approach (one direction only) controlled by a stop sign equals or exceeds 4 vehicle-hours for a one-lane approach and 5 vehicle-hours for a two-lane approach, <i>and</i> 2. The volume of the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes, <i>and</i> 3. The total entering volume serviced during the hour equals or exceeds 650 vph for intersections with three approaches or 800 vph for intersections with four (or more) approaches.
		- or -
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets one High Hour (Warrant 3 — see Figure 2).

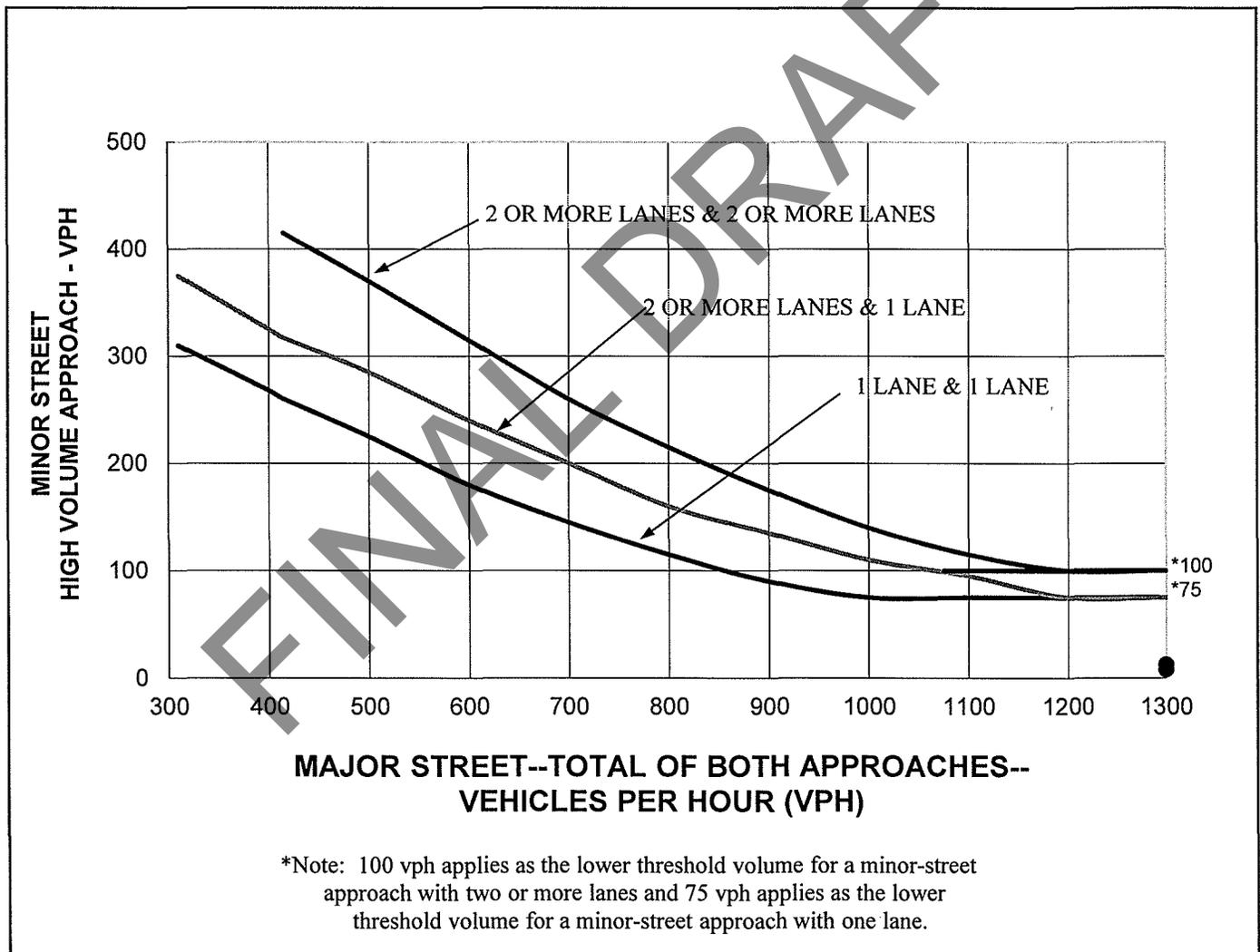


Figure 2. Peak hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 3.)

Warrant 4. Four Hour Pedestrian Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant4 — see Figure 3).
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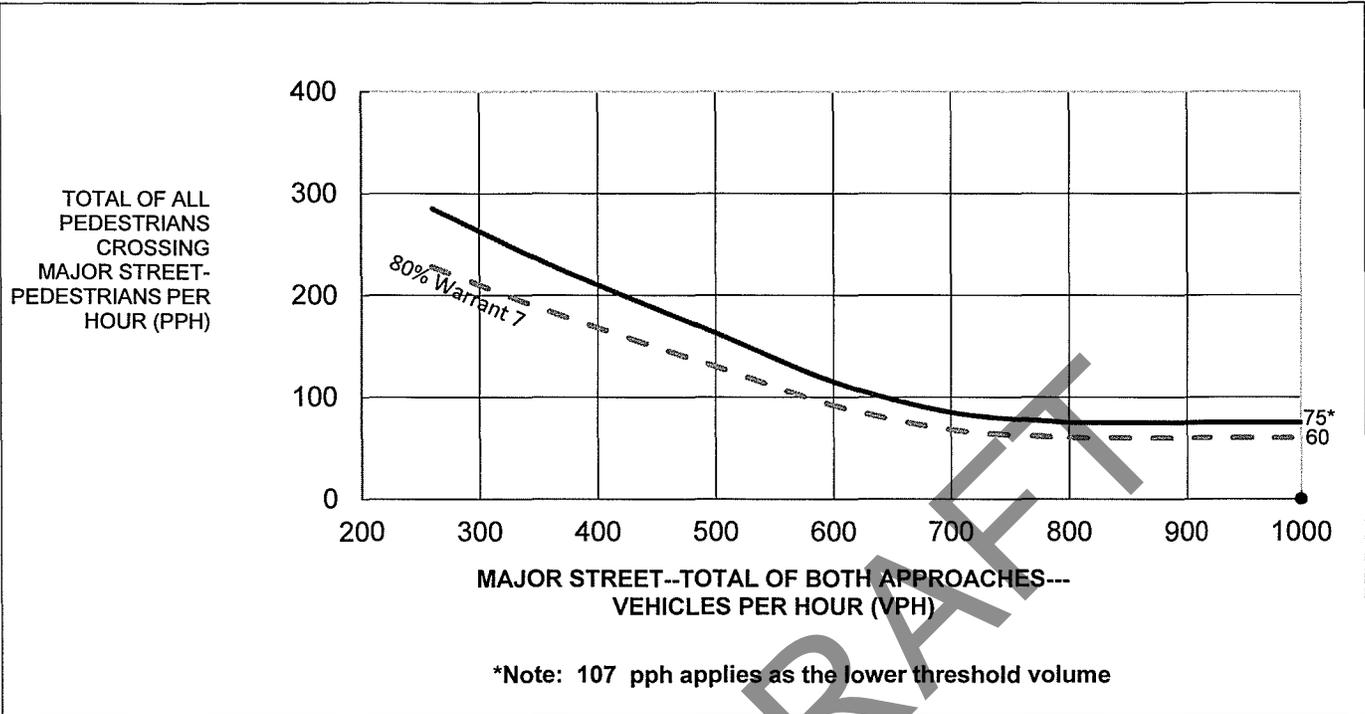


Figure 3. Four-hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 4. Peak Hour Pedestrian Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets Peak Hour Pedestrian (Warrant4 — see Figure 4).
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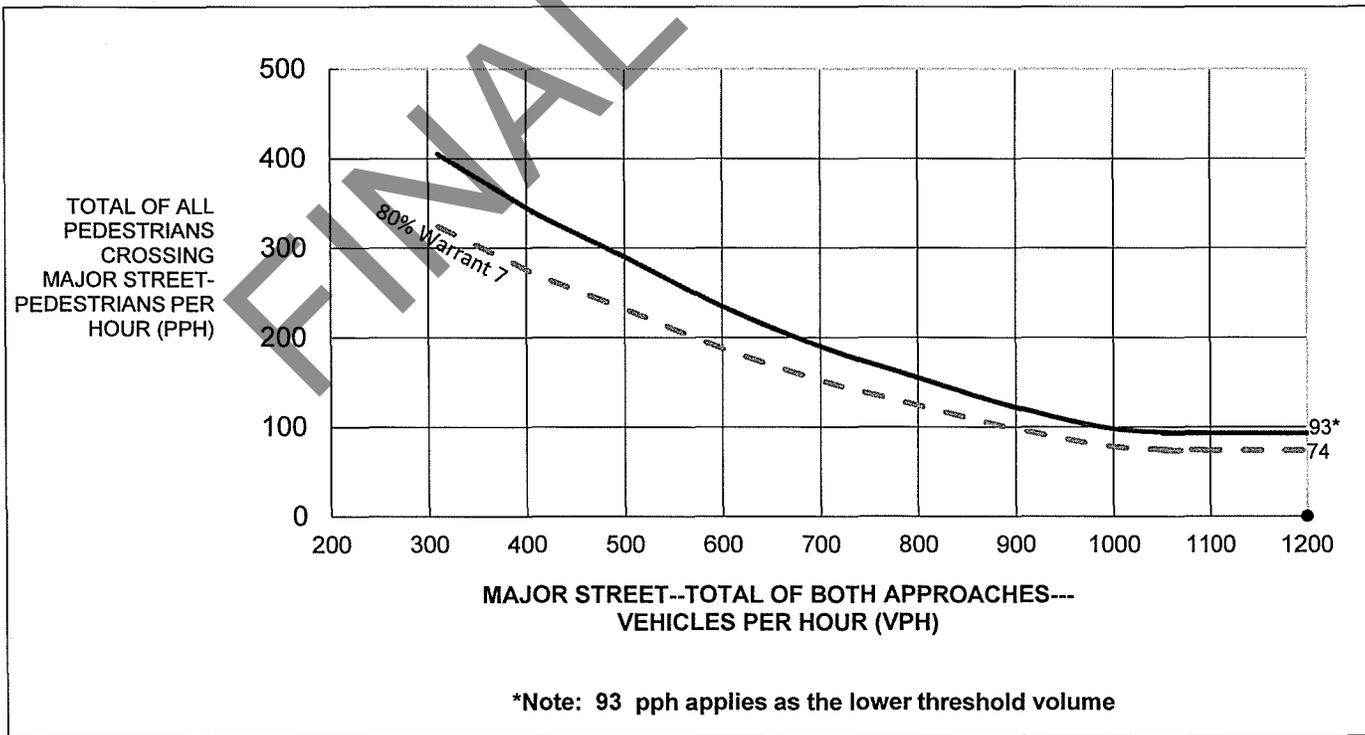


Figure 4. Peak hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 5. School Crossing

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the number of adequate gaps in traffic stream during the period when the children are using the crossing less than the number of minutes in the same period? — <i>and</i> —
N/A		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is there a minimum of 20 students during the highest crossing hour? — <i>and</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the nearest signal located more than 300 feet away? (This warrant may be applied, if the proposed signal is less than 300 feet and does not restrict the progressive movement of traffic.)

Warrant 6. Coordinated Signal System

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	On a one-way street or a street with traffic predominantly in one direction, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur? — <i>or</i> —
N/A		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	On a two-way street, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur and would the proposed and adjacent traffic control signal provide a progressive operation?

Warrant 7. Crash Experience

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is one of the following conditions met?: <ul style="list-style-type: none"> ◆ 80% of Condition A or Condition B in Warrant 1 ◆ 56% of Condition A or B in Warrant 1 (major-street speed exceeding 40 mph or population less than 10,000) ◆ 80 % or more of Warrant 4 met? — <i>and</i> —
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Have there been 5 or more reportable crashes susceptible to correction by a traffic signal within a 12 month period?

Warrant 8. Roadway Network

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume on all approaches greater than 1000 vehicles for each of any 5 hours of a Saturday and/or Sunday. — <i>or</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume greater than 1000 vehicles for the peak hour of a typical weekday, and do the 5 year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?

Check applicable characteristics of each route:

Major Street	Minor Street	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It is part of street or highway system that serves as the principal roadway network for through traffic flow.
<input type="checkbox"/>	<input type="checkbox"/>	It includes rural or suburban highways outside, entering, or traversing a city.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It appears as a major route on an official plan such as a major street plan in an urban area traffic and transportation study.

Remarks:

Warrant 9. Intersection Near a Grade Crossing (One Approach Lane at the Track Crossing)

Yes No Meets one High Hour (Warrant 9 — see Figure 5).

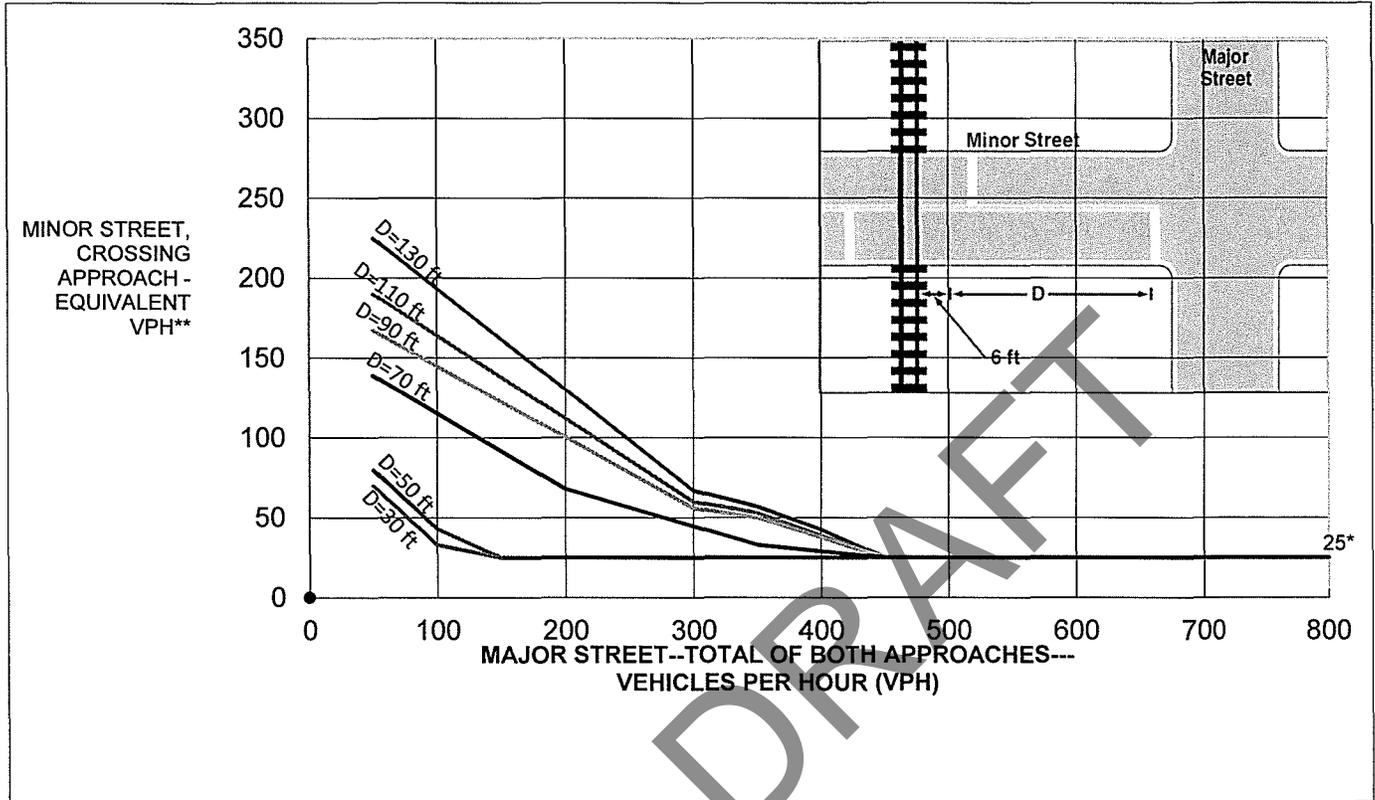


Figure 5. Railroad Grade Crossing (One Approach Lane at the Track Crossing).
 (Warrant 9.)

*25 vph applies as the lower threshold volume

** VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

FINAL DRAFT

Corpus Christi, Nueces Co.

	MAJOR APPROACH N/A, Rodd Field Rd 3 LANE(S) PER APPROACH				MINOR APPROACH Presidents Dr 1 LANE(S) PER APPROACH				DATE: 1/4/2017 85th & SPEED: 50 MPH POPULATION: 320,434				
	Northbound		Southbound		Eastbound		Westbound		SUM MAJOR	HIGH MINOR	MAJOR APPR & HIGH MINOR	PED TOTAL KING MAJOR	RANK
	VEH	PEDS	VEH	PEDS	VEH	PEDS	VEH	PEDS					
7:00 AM	820					13			2196	13	2209	2	
8:00 AM		1376										3	
9:00 AM												4	
10:00 AM												5	
11:00 AM												6	
12 NOON												7	
1:00 PM												8	
2:00 PM												9	
3:00 PM												10	
4:00 PM												11	
5:00 PM	893					8			2230	8	2238	12	
6:00 PM													
7:00 PM													
8:00 PM													
9:00 PM													
10:00 PM													
11:00 PM													
12 MID													
1:00 AM													
2:00 AM													
3:00 AM													
4:00 AM													
5:00 AM													
6:00 AM													
7:00 AM													



Traffic Survey — Count Analysis

Form Revised 2/27/2012

2011 TMUTCD Warrants

County: Nueces District: Corpus Christi
 City: Corpus Christi Population: 320,434 Survey Date: 1/4/2017

	Name	Control	Section	85% Speed
Major	N/A	Airline Rd		40 MPH
Minor		Lipes Blvd		

Eight Highest Hours: Include the same 8 hours for the Major and Minor St. volumes.

Time Ends	Major St. - Both App.		Minor St. - Hi. Vol. App.	
	Veh. Total	Ped. Total	Veh. Total	Ped. Total
8:00 AM	1,087		342	
6:00 PM	1,004	2	290	
9:00 AM				
10:00 AM				
12 NOON				
1:00 PM				
2:00 PM				
3:00 PM				

Comments:
 Signal warrants were met for Phase 3 of development, Senario 1 and Senario 2.

Warrant 1. Eight Hour Vehicular Volume

- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition A.
- or -
- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition B.
- or -
- Yes No Meets 80%^b of Conditions A and B.
- or -
- Yes No Meets 56%^d of Conditions A and B (and major-street speed exceeds 40 mph or population less than 10,000).

Condition A - Minimum Vehicle Volume

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	500	400	350	280		150	120	105	84	
2 or more	1	600	480	420	336		150	120	105	84	
2 or more	2 or more	600	480	420	336		200	160	140	112	
1	2 or more	500	400	350	280		200	160	140	112	

Condition B - Interruption of Continuous Traffic

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	750	600	525	420		75	60	53	42	
2 or more	1	900	720	630	504		75	60	53	42	
2 or more	2 or more	900	720	630	504		100	80	70	56	
1	2 or more	750	600	525	420		100	80	70	56	

^aBasic minimum hourly volume.

^bUsed for combination of Conditions A and B after adequate trial of other remedial measures.

^cMay be used when the major-street speed exceeds 40 mph or in a community with a population of less than 10,000.

^dMay be used for combination of Conditions A and B after adequate trial of other remedial measures when major street exceeds 40 mph or in an isolated community with a population of less than 10,000.

Warrant 2. Four Hour Volumes

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant 2 — see Figure 1).
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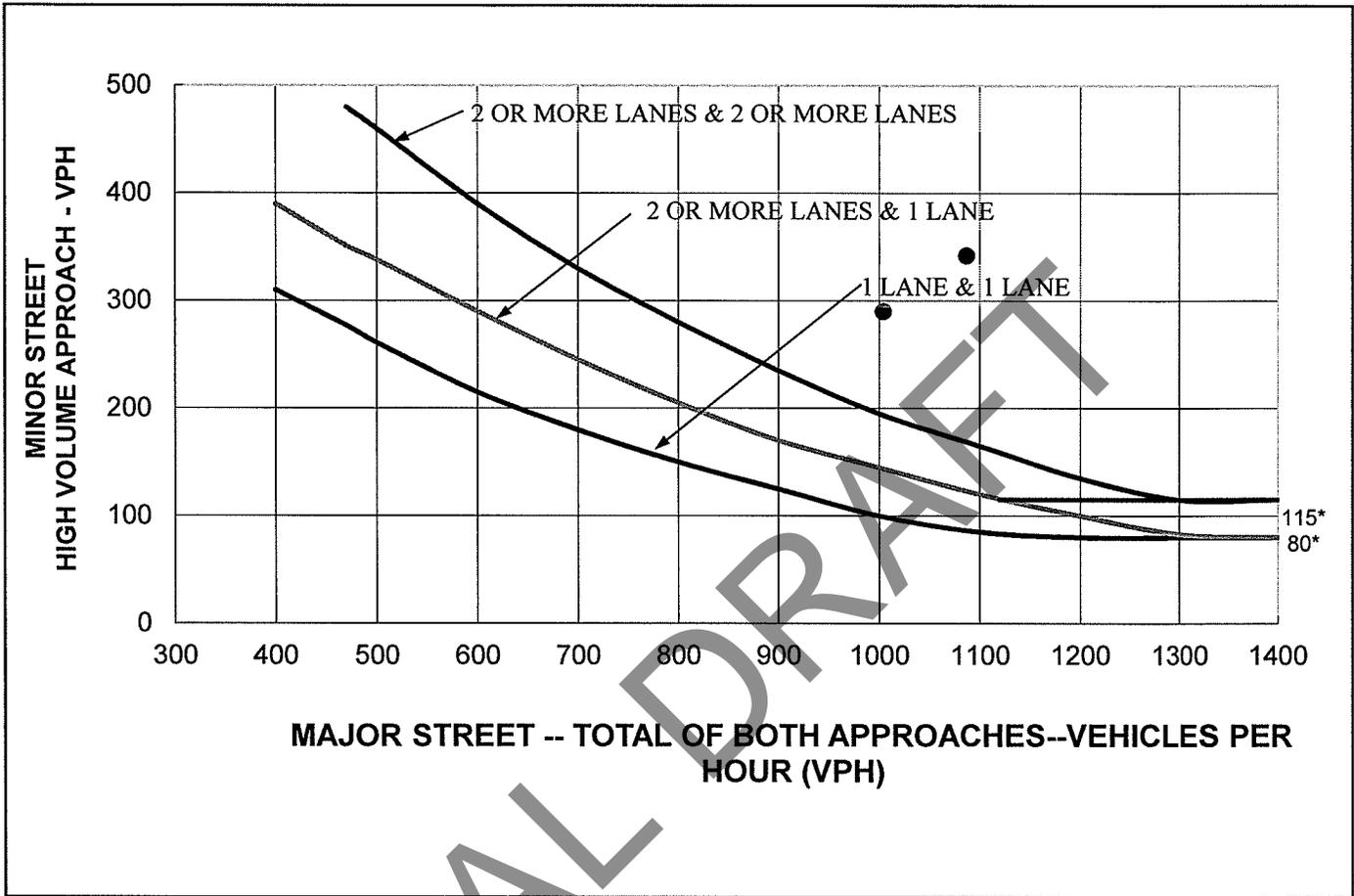


Figure 1. Four-hour volume warrant. (Warrant 2.)

FINAL DRAFT

Warrant 3. Peak Hour

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Are all of the following conditions true for any four consecutive 15 minute periods? 1. The total stopped time delay experienced by the traffic on one minor street approach (one direction only) controlled by a stop sign equals or exceeds 4 vehicle-hours for a one-lane approach and 5 vehicle-hours for a two-lane approach, <i>and</i> 2. The volume of the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes, <i>and</i> 3. The total entering volume serviced during the hour equals or exceeds 650 vph for intersections with three approaches or 800 vph for intersections with four (or more) approaches.
- or -	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Meets one High Hour (Warrant 3 — see Figure 2).

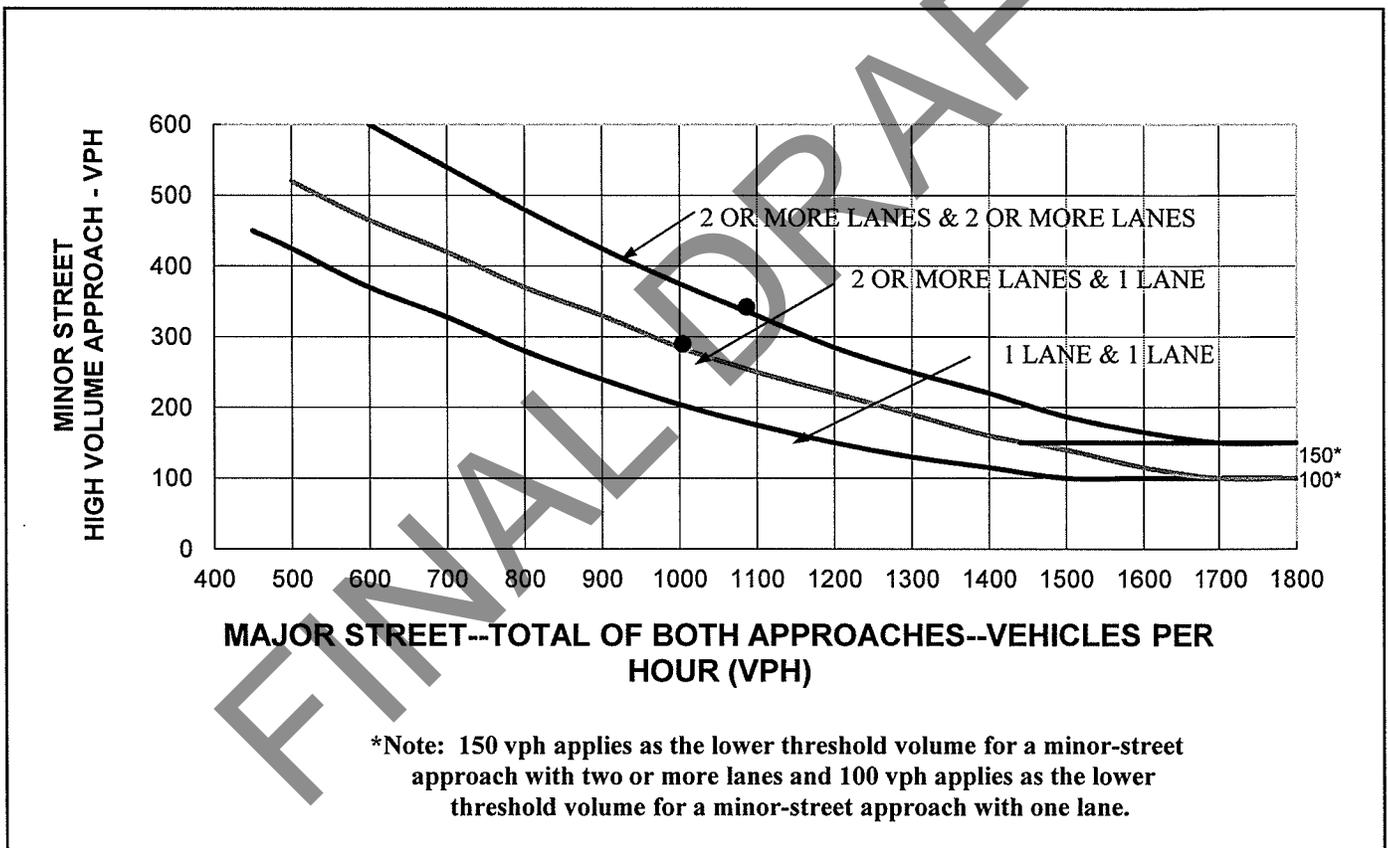


Figure 2. Peak hour volume warrant. (Warrant 3.)

Warrant 4. Four Hour Pedestrian Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant4 — see Figure 3).
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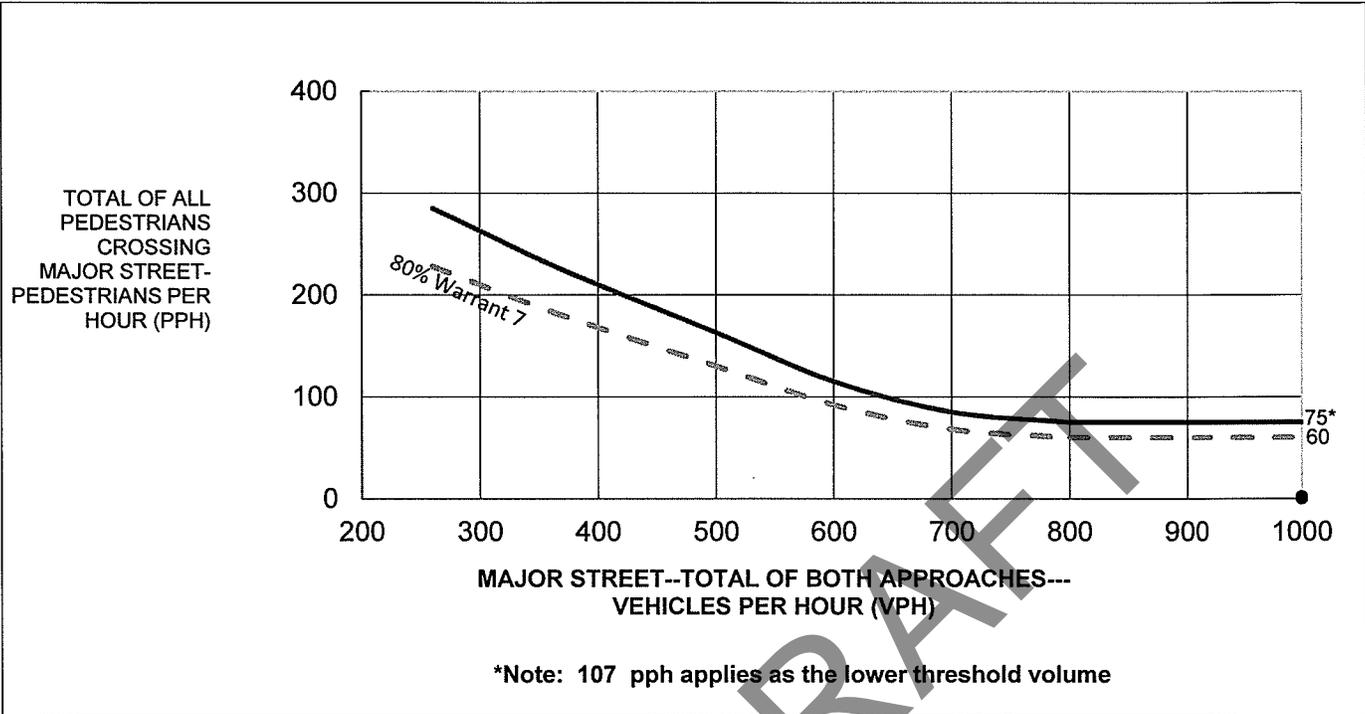


Figure 3. Four-hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 4. Peak Hour Pedestrian Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets Peak Hour Pedestrian (Warrant4 — see Figure 4).
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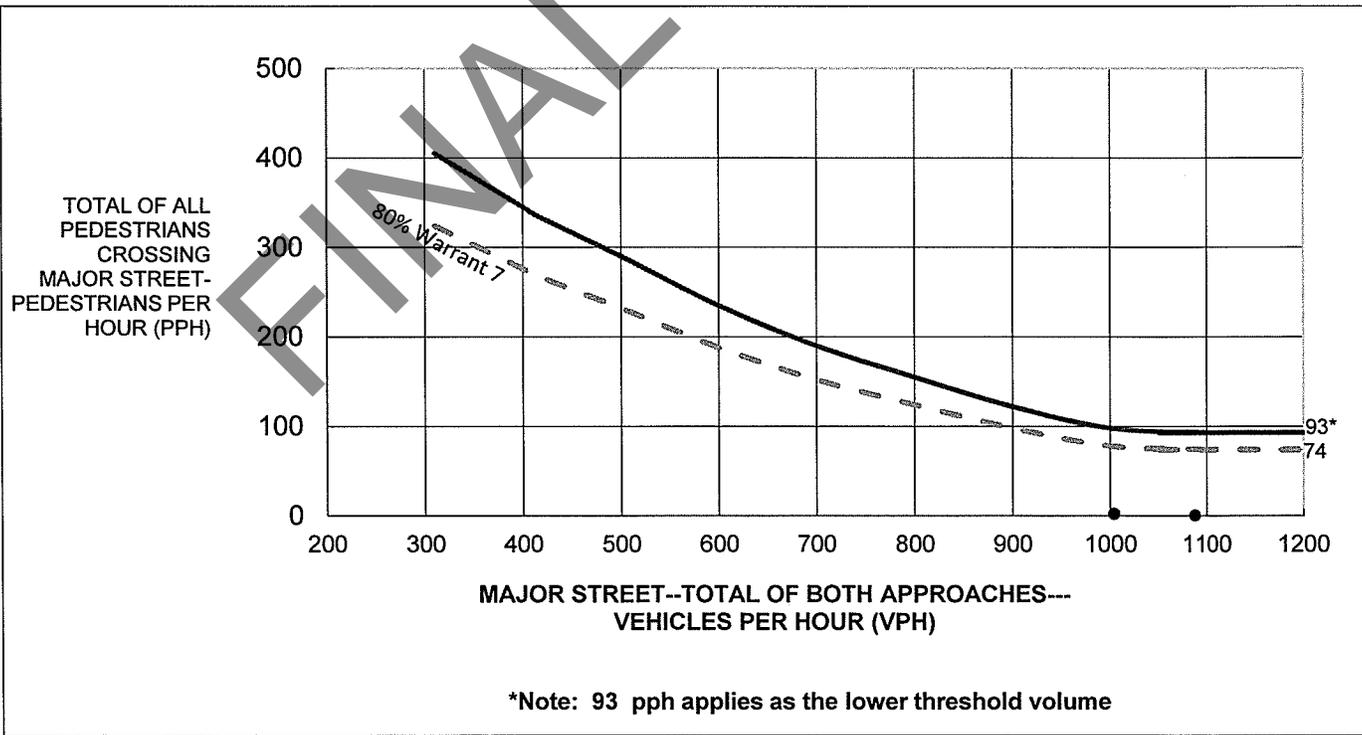


Figure 4. Peak hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 5. School Crossing

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	N/A	Is the number of adequate gaps in traffic stream during the period when the children are using the crossing less than the number of minutes in the same period? — <i>and</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Is there a minimum of 20 students during the highest crossing hour? — <i>and</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Is the nearest signal located more than 300 feet away? (This warrant may be applied, if the proposed signal is less than 300 feet and does not restrict the progressive movement of traffic.)

Warrant 6. Coordinated Signal System

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	N/A	On a one-way street or a street with traffic predominantly in one direction, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur? — <i>or</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		On a two-way street, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur and would the proposed and adjacent traffic control signal provide a progressive operation?

Warrant 7. Crash Experience

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is one of the following conditions met?: <ul style="list-style-type: none"> ◆ 80% of Condition A or Condition B in Warrant 1 ◆ 56% of Condition A or B in Warrant 1 (major-street speed exceeding 40 mph or population less than 10,000) ◆ 80 % or more of Warrant 4 met? — <i>and</i> —
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Have there been 5 or more reportable crashes susceptible to correction by a traffic signal within a 12 month period?

Warrant 8. Roadway Network

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume on all approaches greater than 1000 vehicles for each of any 5 hours of a Saturday and/or Sunday. — <i>or</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume greater than 1000 vehicles for the peak hour of a typical weekday, and do the 5 year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?

Check applicable characteristics of each route:

<u>Major Street</u>	<u>Minor Street</u>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It is part of street or highway system that serves as the principal roadway network for through traffic flow.
<input type="checkbox"/>	<input type="checkbox"/>	It includes rural or suburban highways outside, entering, or traversing a city.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It appears as a major route on an official plan such as a major street plan in an urban area traffic and transportation study.

Remarks:

Warrant 9. Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets one High Hour (Warrant 9 — see Figure 5).
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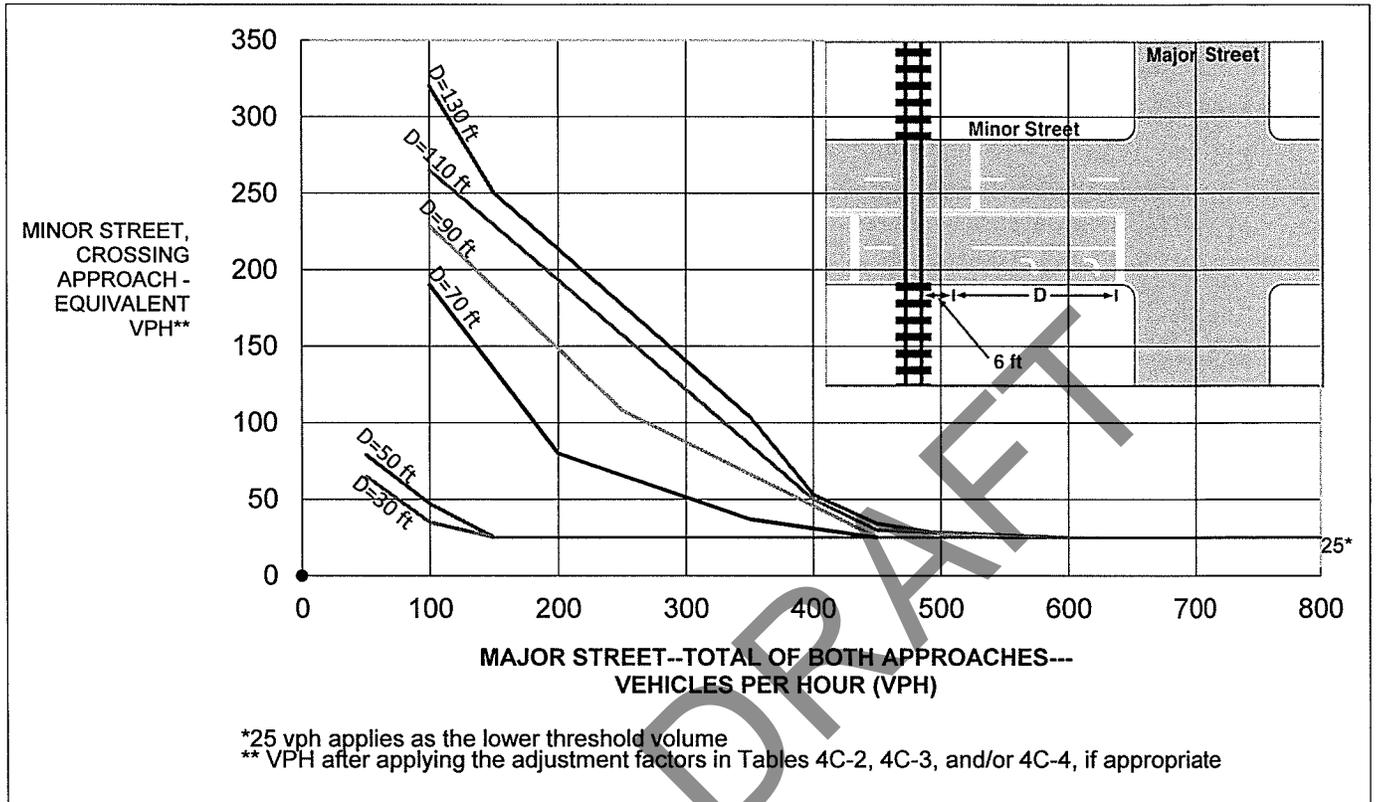


Figure 5. Railroad Grade Crossing (Two or More Approach Lanes at the Track Crossing).
 (Warrant 9.)

Corpus Christi, Nueces Co.

	MAJOR APPROACH				MINOR APPROACH				DATE: 1/4/2017				
	N/A, Airline Rd				Lipes Blvd				85th & SPEED: 40 MPH				
	3 LANE (S) PER APPROACH				2 LANE (S) PER APPROACH				POPULATION: 320,434				
	Northbound		Southbound		Eastbound		Westbound		SUM MAJOR	HIGH MINOR	MAJOR APPR & HIGH MINOR	PED TOTAL KING MAJOR	RANK
	VEH	PEDS	VEH	PEDS	VEH	PEDS	VEH	PEDS					
7:00 AM	410		677		342				1087	342	1429		1
8:00 AM													3
9:00 AM													4
10:00 AM													5
11:00 AM													6
12 NOON													7
1:00 PM													8
2:00 PM													9
3:00 PM													10
4:00 PM													11
5:00 PM	338		666		290		2		1004	290	1294		12
6:00 PM													
7:00 PM													
8:00 PM													
9:00 PM													
10:00 PM													
11:00 PM													
12 MID													
1:00 AM													
2:00 AM													
3:00 AM													
4:00 AM													
5:00 AM													
6:00 AM													
7:00 AM													

Traffic Survey — Count Analysis

2011 TMUTCD Warrants

County: Nueces District: Corpus Christi
 City: Corpus Christi Population: 320,434 Survey Date: 1/4/2017

	Name	Control	Section	85% Speed
Major	Yorktown Blvd			45 MPH
Minor	Bill Witt/Bronx/DWI			

Eight Highest Hours: Include the same 8 hours for the Major and Minor St. volumes.

Time Ends	Major St. - Both App.		Minor St. - Hi. Vol. App.		Comments:
	Veh. Total	Ped. Total	Veh. Total	Ped. Total	
6:00 PM	1,319		106		Traffic Signal warrants WERE MET for Phase 1 of development.
8:00 AM	1,213		46		
9:00 AM					
10:00 AM					
12 NOON					
1:00 PM					
2:00 PM					
3:00 PM					

Warrant 1. Eight Hour Vehicular Volume

- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition A.
— or —
- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition B.
— or —
- Yes No Meets 80%^b of Conditions A and B.
— or —
- Yes No Meets 56%^d of Conditions A and B (and major-street speed exceeds 40 mph or population less than 10,000).

Condition A - Minimum Vehicle Volume

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	500	400	350	280		150	120	105	84	
2 or more	1	600	480	420	336		150	120	105	84	
2 or more	2 or more	600	480	420	336		200	160	140	112	
1	2 or more	500	400	350	280		200	160	140	112	

Condition B - Interruption of Continuous Traffic

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	750	600	525	420		75	60	53	42	
2 or more	1	900	720	630	504		75	60	53	42	
2 or more	2 or more	900	720	630	504		100	80	70	56	
1	2 or more	750	600	525	420		100	80	70	56	

^aBasic minimum hourly volume.

^bUsed for combination of Conditions A and B after adequate trial of other remedial measures.

^cMay be used when the major-street speed exceeds 40 mph or in a community with a population of less than 10,000.

^dMay be used for combination of Conditions A and B after adequate trial of other remedial measures when major street exceeds 40 mph or in an isolated community with a population of less than 10,000.

Warrant 2. Four Hour Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant 2 — see Figure 1).
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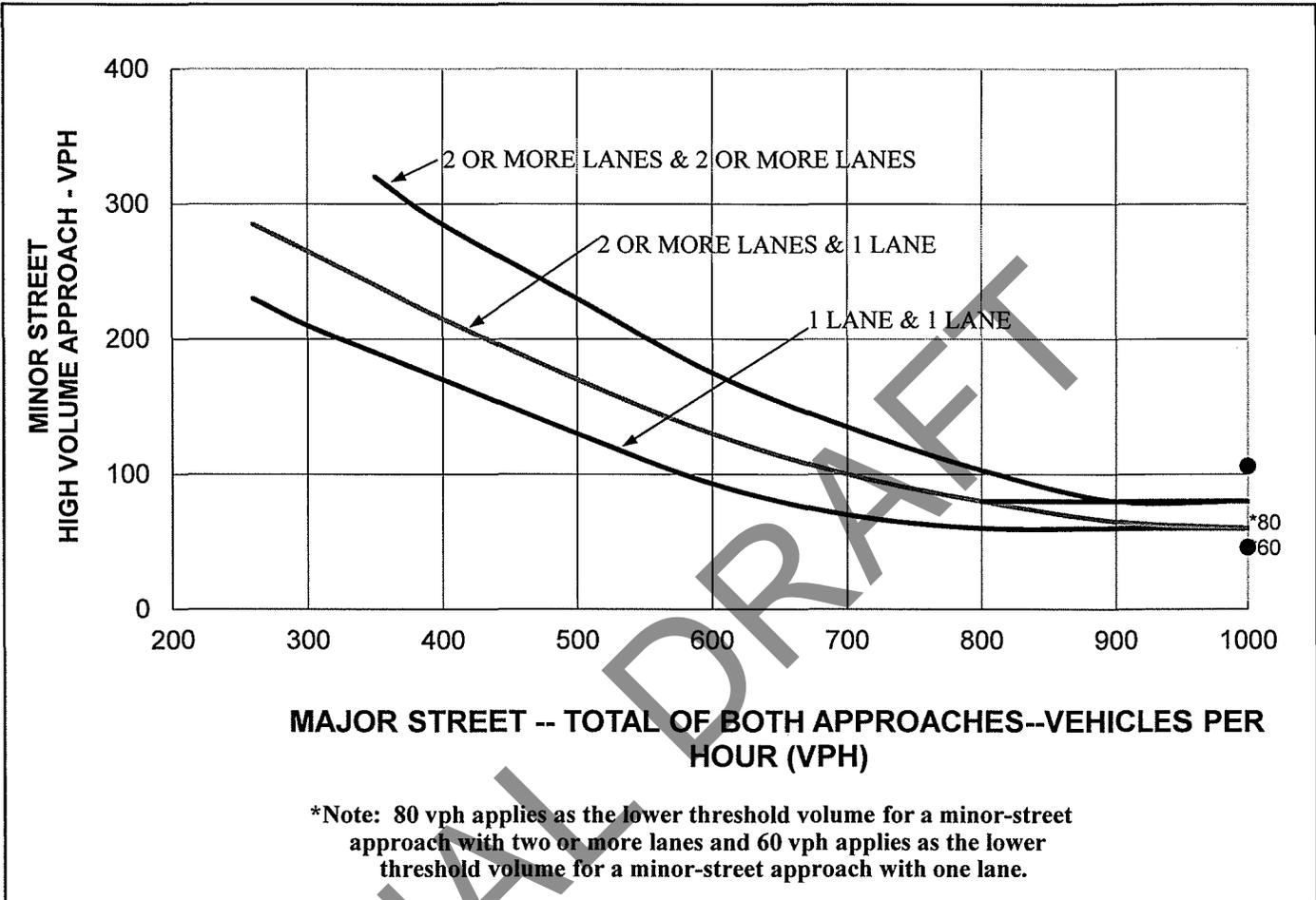


Figure 1. Four-hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 2.)

Warrant 3. Peak Hour (70% Factor)

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Are all of the following conditions true for any four consecutive 15 minute periods? 1. The total stopped time delay experienced by the traffic on one minor street approach (one direction only) controlled by a stop sign equals or exceeds 4 vehicle-hours for a one-lane approach and 5 vehicle-hours for a two-lane approach, <i>and</i> 2. The volume of the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes, <i>and</i> 3. The total entering volume serviced during the hour equals or exceeds 650 vph for intersections with three approaches or 800 vph for intersections with four (or more) approaches.
		— or —
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Meets one High Hour (Warrant 3 — see Figure 2).

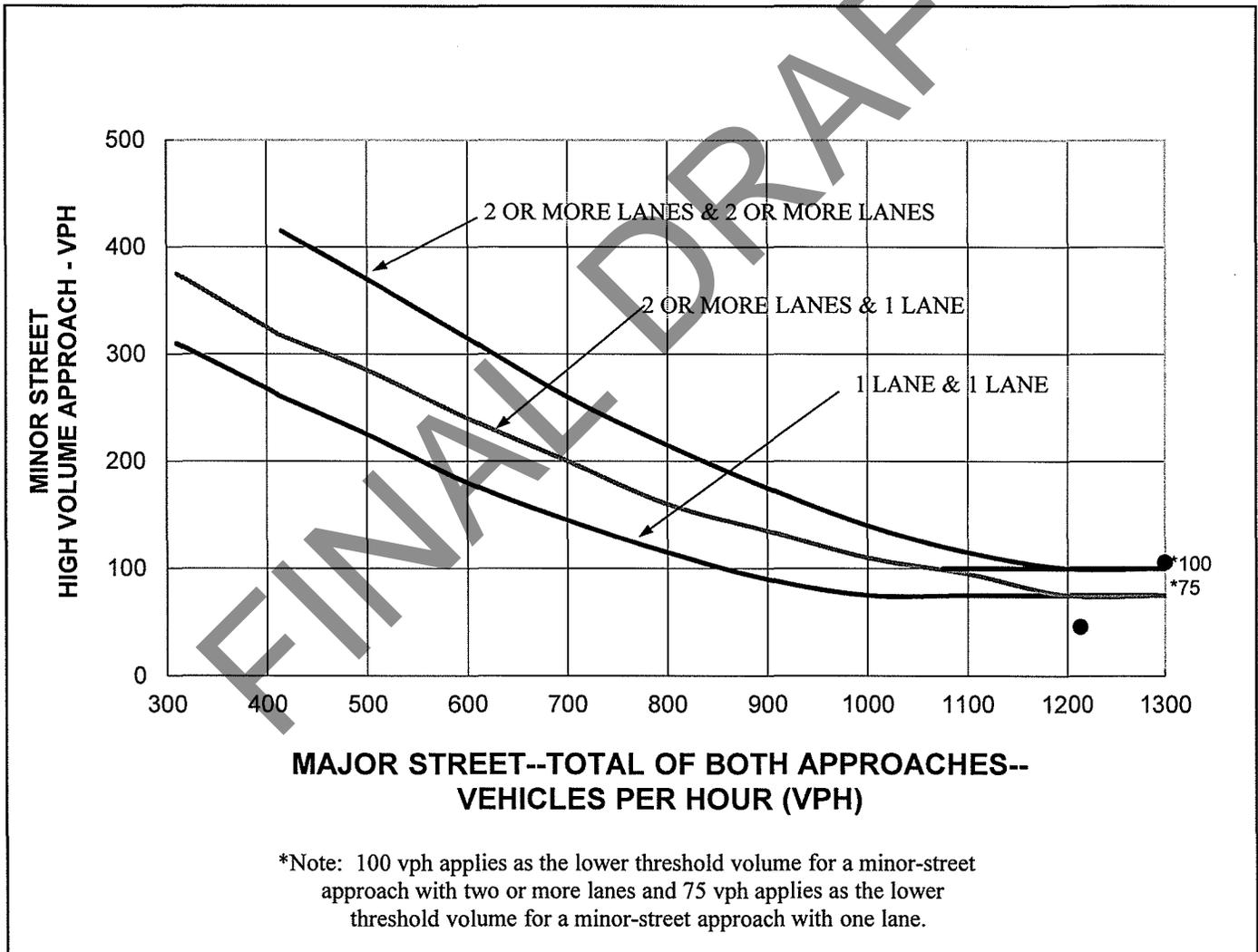


Figure 2. Peak hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 3.)

Warrant 4. Four Hour Pedestrian Volumes (70% Factor)

Yes No Meets each of 4 Highest Hours (Warrant4 — see Figure 3).

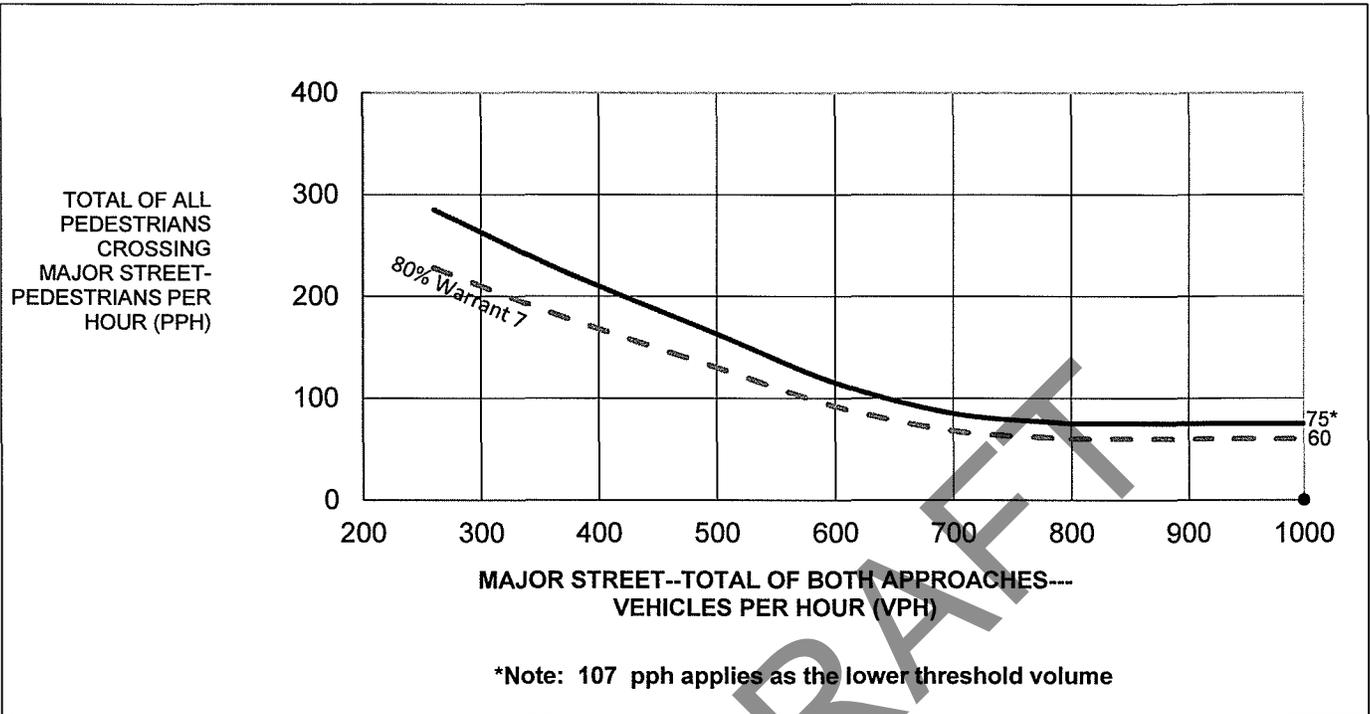


Figure 3. Four-hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 4. Peak Hour Pedestrian Volumes (70% Factor)

Yes No Meets Peak Hour Pedestrian (Warrant4 — see Figure 4).

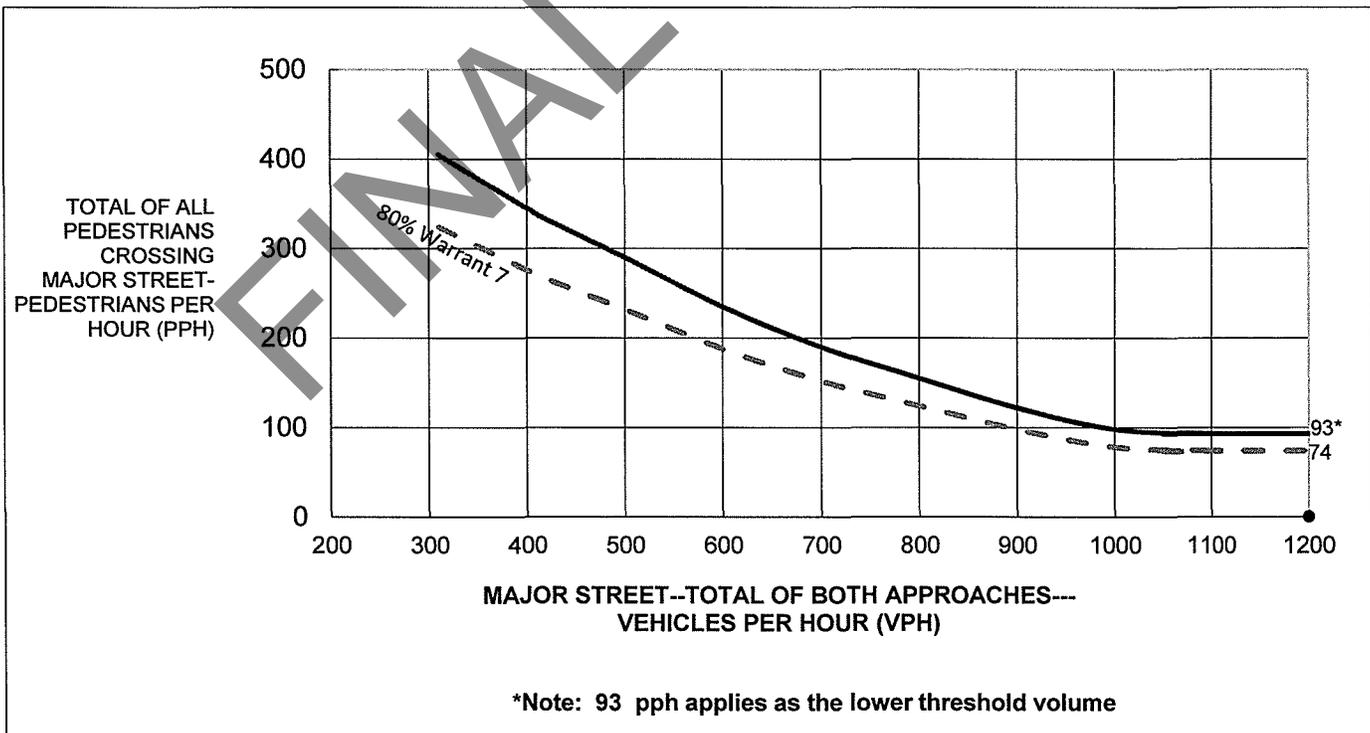


Figure 4. Peak hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 5. School Crossing

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	N/A	Is the number of adequate gaps in traffic stream during the period when the children are using the crossing less than the number of minutes in the same period?
			- and -
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Is there a minimum of 20 students during the highest crossing hour?
			- and -
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Is the nearest signal located more than 300 feet away? (This warrant may be applied, if the proposed signal is less than 300 feet and does not restrict the progressive movement of traffic.)

Warrant 6. Coordinated Signal System

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	N/A	On a one-way street or a street with traffic predominantly in one direction, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur?
			- or -
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		On a two-way street, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur and would the proposed and adjacent traffic control signal provide a progressive operation?

Warrant 7. Crash Experience

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is one of the following conditions met?:
		<ul style="list-style-type: none"> ◆ 80% of Condition A or Condition B in Warrant 1 ◆ 56% of Condition A or B in Warrant 1 (major-street speed exceeding 40 mph or population less than 10,000) ◆ 80 % or more of Warrant 4 met?
		- and -
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Have there been 5 or more reportable crashes susceptible to correction by a traffic signal within a 12 month period?

Warrant 8. Roadway Network

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume on all approaches greater than 1000 vehicles for each of any 5 hours of a Saturday and/or Sunday.
		- or -
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume greater than 1000 vehicles for the peak hour of a typical weekday, and do the 5 year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?

Check applicable characteristics of each route:

Major Street	Minor Street	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It is part of street or highway system that serves as the principal roadway network for through traffic flow.
<input type="checkbox"/>	<input type="checkbox"/>	It includes rural or suburban highways outside, entering, or traversing a city.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It appears as a major route on an official plan such as a major street plan in an urban area traffic and transportation study.

Remarks:

Warrant 9. Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets one High Hour (Warrant 9 — see Figure 5).
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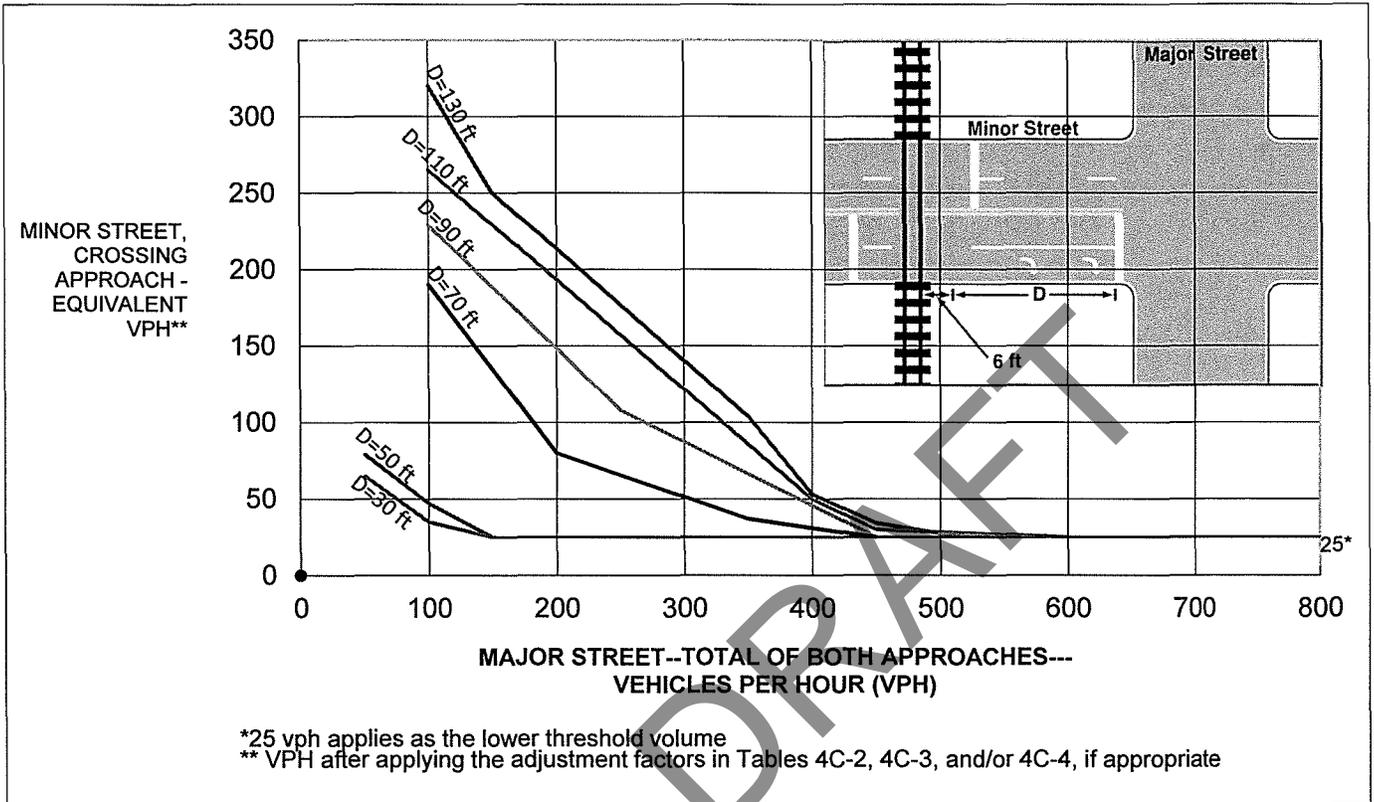


Figure 5. Railroad Grade Crossing (Two or More Approach Lanes at the Track Crossing).
 (Warrant 9.)

Corpus Christi, Nueces Co.

	MAJOR APPROACH , Yorktown Blvd 3 LANE(S) PER APPROACH				MINOR APPROACH Bill Witt/Bronx/DWI 2 LANE(S) PER APPROACH				DATE: 1/4/2017 85th & SPEED: 45 MPH POPULATION: 320,434				
	Eastbound		Westbound		Northbound		Southbound		SUM MAJOR	HIGH MINOR	MAJOR APPR & HIGH MINOR	PED TOTAL XING MAJOR	RANK
	VEH	PEDS	VEH	PEDS	VEH	PEDS	VEH	PEDS					
7:00 AM	670		543		10		46		1213	46	1259		2
8:00 AM													3
9:00 AM													4
10:00 AM													5
11:00 AM													6
12 NOON													7
1:00 PM													8
2:00 PM													9
3:00 PM													10
4:00 PM													11
5:00 PM	719		600		19		106		1319	106	1425		12
6:00 PM													
7:00 PM													
8:00 PM													
9:00 PM													
10:00 PM													
11:00 PM													
12 MID													
1:00 AM													
2:00 AM													
3:00 AM													
4:00 AM													
5:00 AM													
6:00 AM													
7:00 AM													



Traffic Survey — Count Analysis

Form Revised 2/27/2012

2011 TMUTCD Warrants

County: Nueces District: Corpus Christi
 City: Corpus Christi Population: 320,434 Survey Date: 1/4/2017

	Name	Control	Section	85% Speed
Major	N/A	Rodd Field Rd		50 MPH
Minor	DW5			

Eight Highest Hours: Include the same 8 hours for the Major and Minor St. volumes.

Time Ends	Major St. - Both App.		Minor St. - Hi. Vol. App.		Comments:
	Veh. Total	Ped. Total	Veh. Total	Ped. Total	
6:00 PM	1,148		79		Traffic Signal warrants were not met for Phase 1 of development.
8:00 AM	1,191		35		
9:00 AM					
10:00 AM					
12 NOON					
1:00 PM					
2:00 PM					
3:00 PM					

Warrant 1. Eight Hour Vehicular Volume

- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition A.
- or -
- Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition B.
- or -
- Yes No Meets 80%^b of Conditions A and B.
- or -
- Yes No Meets 56%^d of Conditions A and B (and major-street speed exceeds 40 mph or population less than 10,000).

Condition A - Minimum Vehicle Volume

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	500	400	350	280		150	120	105	84	
2 or more	1	600	480	420	336		150	120	105	84	
2 or more	2 or more	600	480	420	336		200	160	140	112	
1	2 or more	500	400	350	280		200	160	140	112	

Condition B - Interruption of Continuous Traffic

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	750	600	525	420		75	60	53	42	
2 or more	1	900	720	630	504		75	60	53	42	
2 or more	2 or more	900	720	630	504		100	80	70	56	
1	2 or more	750	600	525	420		100	80	70	56	

^aBasic minimum hourly volume.

^bUsed for combination of Conditions A and B after adequate trial of other remedial measures.

^cMay be used when the major-street speed exceeds 40 mph or in a community with a population of less than 10,000.

^dMay be used for combination of Conditions A and B after adequate trial of other remedial measures when major street exceeds 40 mph or in an isolated community with a population of less than 10,000.

Warrant 2. Four Hour Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant 2 — see Figure 1).
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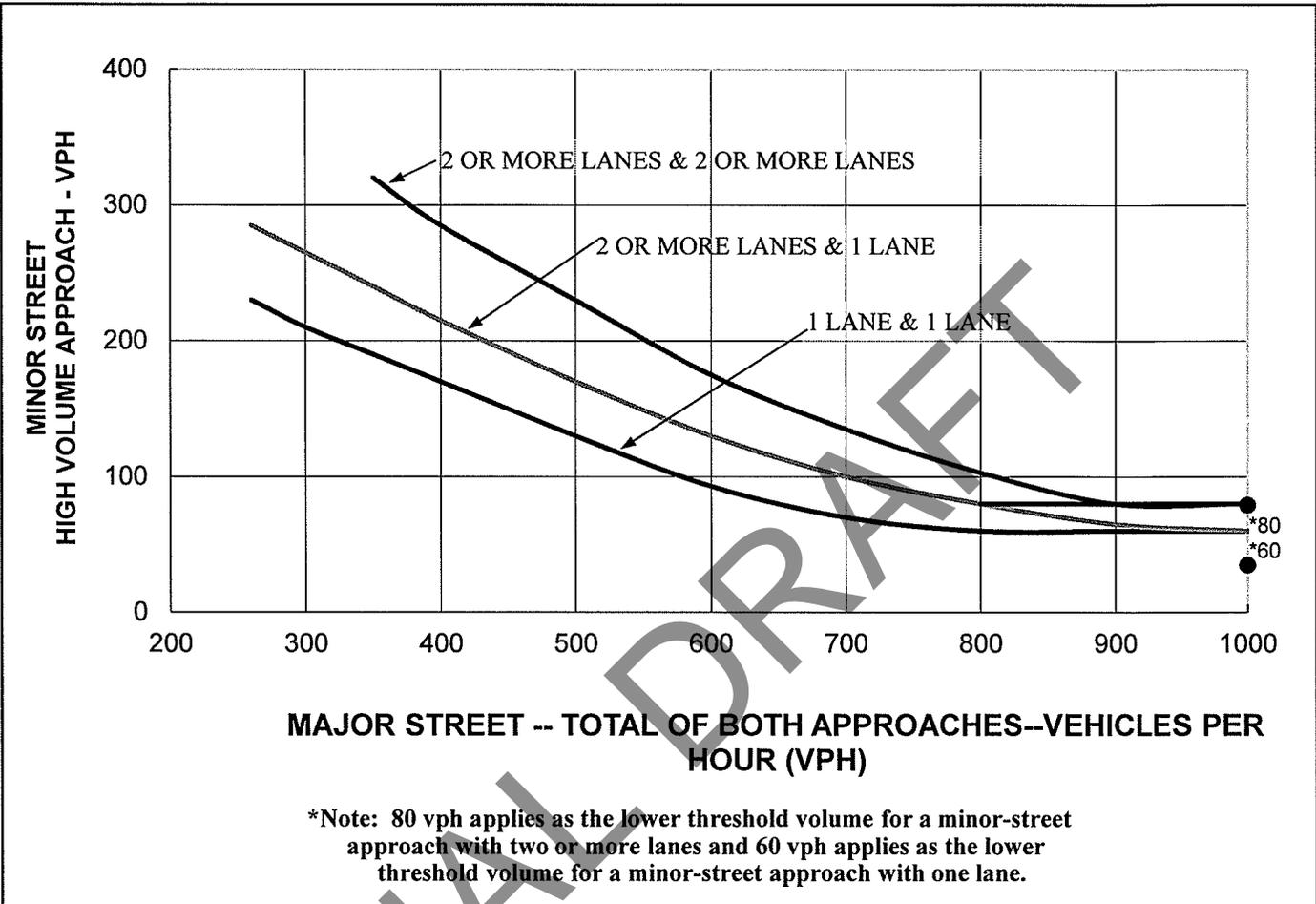


Figure 1. Four-hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 2.)

Warrant 3. Peak Hour (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<p>Are all of the following conditions true for any four consecutive 15 minute periods?</p> <p>1. The total stopped time delay experienced by the traffic on one minor street approach (one direction only) controlled by a stop sign equals or exceeds 4 vehicle-hours for a one-lane approach and 5 vehicle-hours for a two-lane approach, <i>and</i></p> <p>2. The volume of the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes, <i>and</i></p> <p>3. The total entering volume serviced during the hour equals or exceeds 650 vph for intersections with three approaches or 800 vph for intersections with four (or more) approaches.</p>
		-- <i>or</i> --
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets one High Hour (Warrant 3 — see Figure 2).

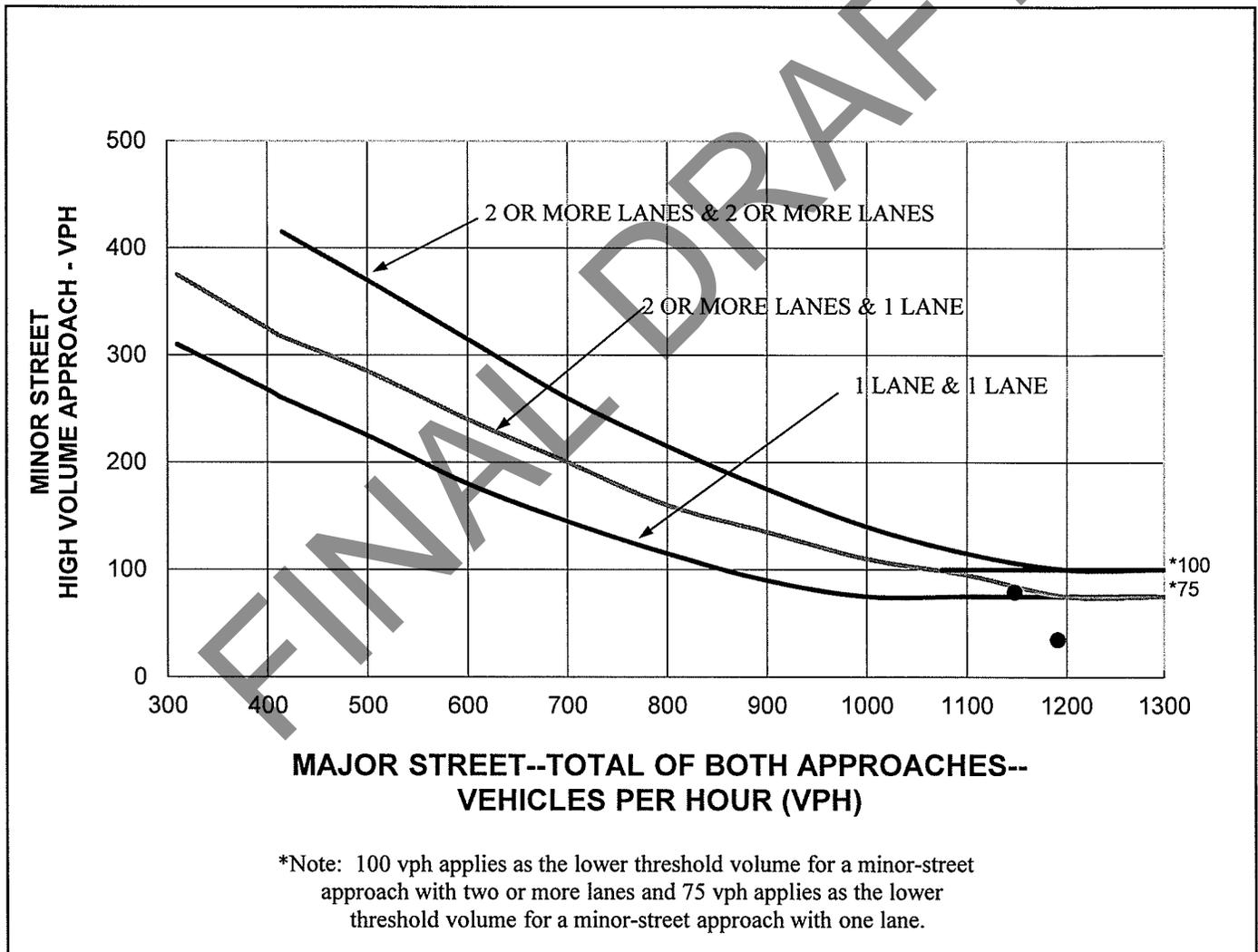


Figure 2. Peak hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 3.)

Warrant 4. Four Hour Pedestrian Volumes (70% Factor)

Yes No Meets each of 4 Highest Hours (Warrant4 — see Figure 3).

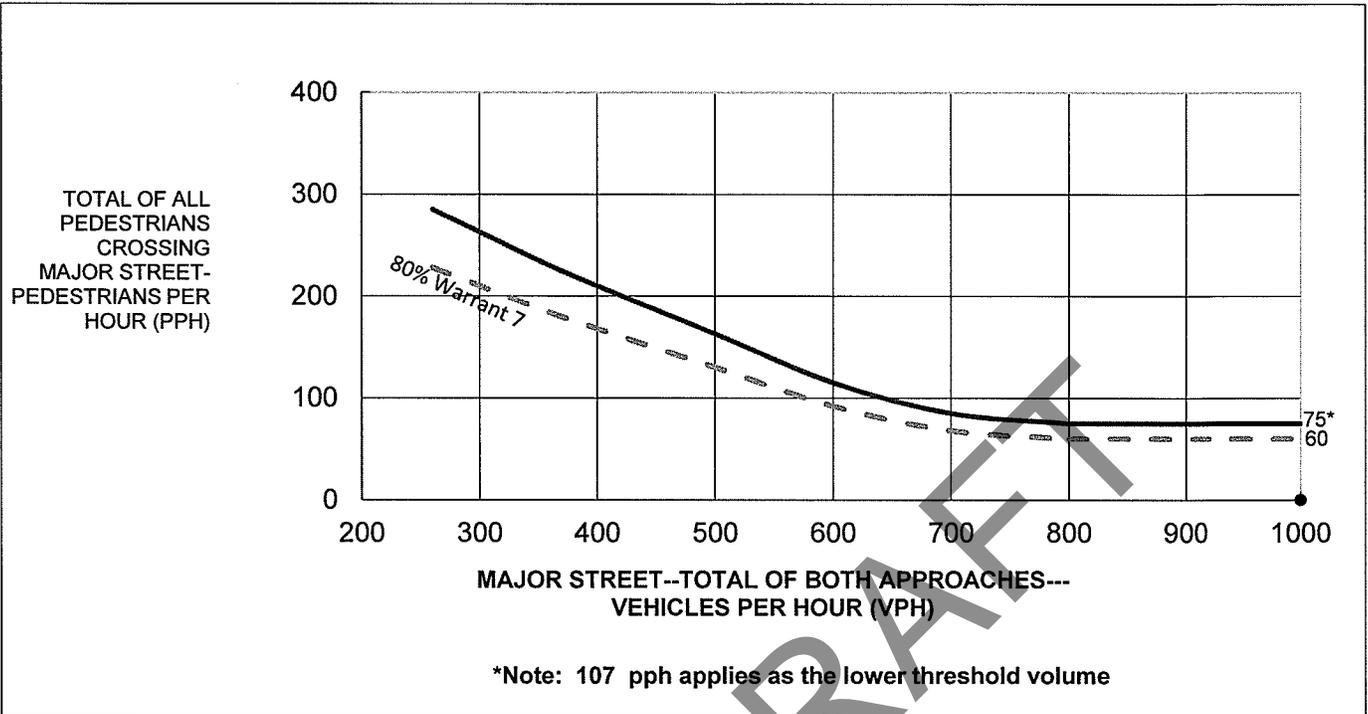


Figure 3. Four-hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 4. Peak Hour Pedestrian Volumes (70% Factor)

Yes No Meets Peak Hour Pedestrian (Warrant4 — see Figure 4).

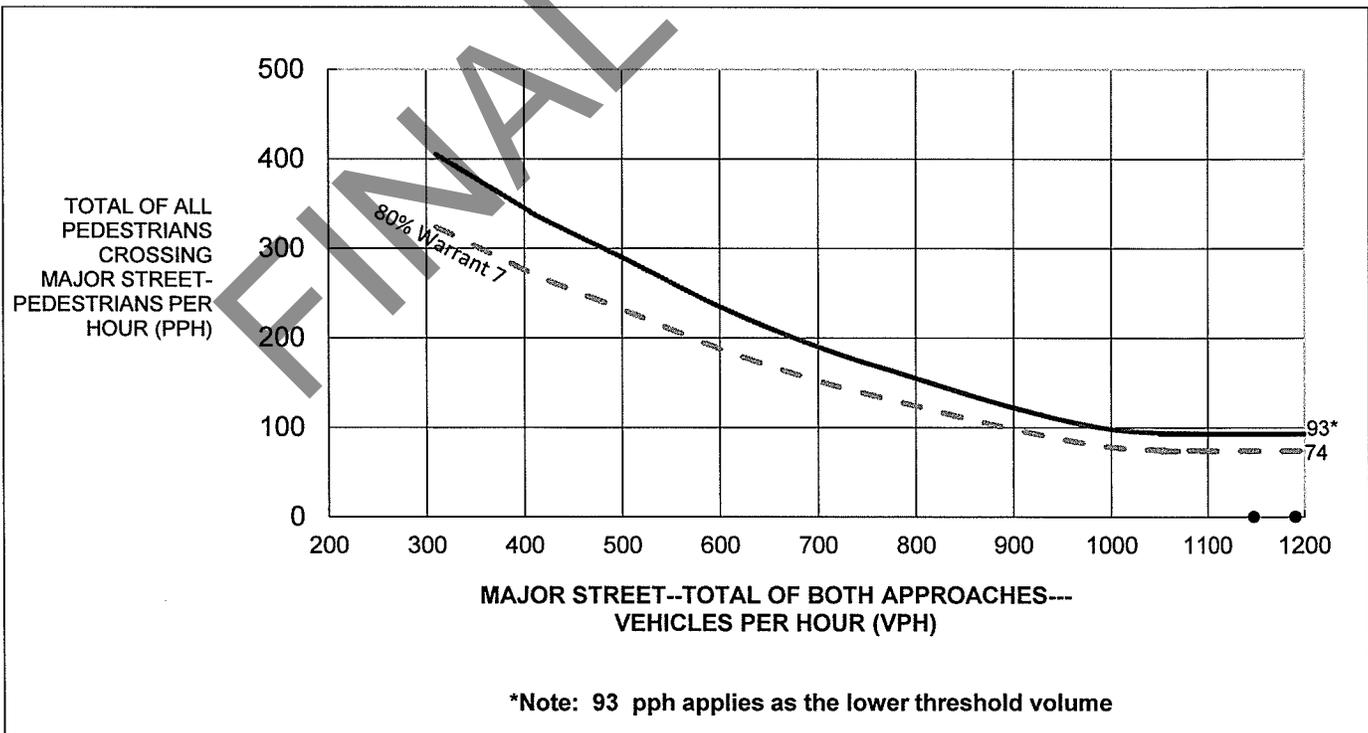


Figure 4. Peak hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 5. School Crossing

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	N/A	Is the number of adequate gaps in traffic stream during the period when the children are using the crossing less than the number of minutes in the same period? — <i>and</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Is there a minimum of 20 students during the highest crossing hour? — <i>and</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Is the nearest signal located more than 300 feet away? (This warrant may be applied, if the proposed signal is less than 300 feet and does not restrict the progressive movement of traffic.)

Warrant 6. Coordinated Signal System

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	N/A	On a one-way street or a street with traffic predominantly in one direction, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur? — <i>or</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		On a two-way street, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur and would the proposed and adjacent traffic control signal provide a progressive operation?

Warrant 7. Crash Experience

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is one of the following conditions met?: <ul style="list-style-type: none"> ◆ 80% of Condition A or Condition B in Warrant 1 ◆ 56% of Condition A or B in Warrant 1 (major-street speed exceeding 40 mph or population less than 10,000) ◆ 80 % or more of Warrant 4 met? — <i>and</i> —
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Have there been 5 or more reportable crashes susceptible to correction by a traffic signal within a 12 month period?

Warrant 8. Roadway Network

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume on all approaches greater than 1000 vehicles for each of any 5 hours of a Saturday and/or Sunday. — <i>or</i> —
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume greater than 1000 vehicles for the peak hour of a typical weekday, and do the 5 year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?

Check applicable characteristics of each route:

Major Street	Minor Street	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It is part of street or highway system that serves as the principal roadway network for through traffic flow.
<input type="checkbox"/>	<input type="checkbox"/>	It includes rural or suburban highways outside, entering, or traversing a city.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It appears as a major route on an official plan such as a major street plan in an urban area traffic and transportation study.

Remarks:

Warrant 9. Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets one High Hour (Warrant 9 — see Figure 5).
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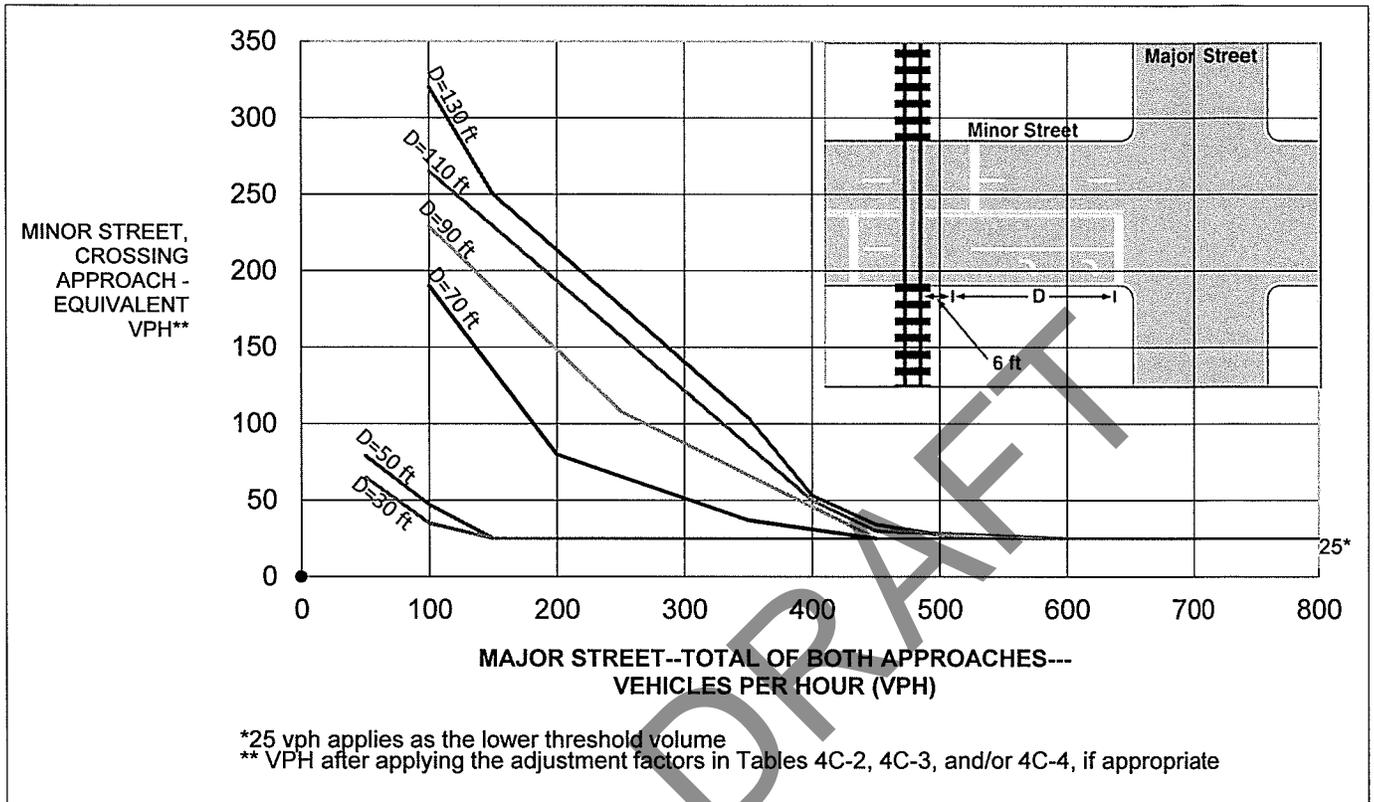


Figure 5. Railroad Grade Crossing (Two or More Approach Lanes at the Track Crossing).
 (Warrant 9.)

Corpus Christi, Nueces Co.

	MAJOR APPROACH N/A, Rodd Field Rd 3 LANE (S) PER APPROACH				MINOR APPROACH DWS 2 LANE (S) PER APPROACH				DATE: 1/4/2017 85th % SPEED: 50 MPH POPULATION: 320,434				
	Northbound		Southbound		Eastbound		Westbound		SUM MAJOR	HGH MINOR	MAJOR APPR & HIGH MINOR	PED TOTAL XING MAJOR	RANK
	VEH	PEDS	VEH	PEDS	VEH	PEDS	VEH	PEDS					
7:00 AM	585								1191	35	1226		2
8:00 AM													3
9:00 AM													4
10:00 AM													5
11:00 AM													6
12 NOON													7
1:00 PM													8
2:00 PM													9
3:00 PM													10
4:00 PM													11
5:00 PM													12
6:00 PM	495			606				35	1148	79	1227		1
7:00 PM													
8:00 PM													
9:00 PM													
10:00 PM													
11:00 PM													
12 MID													
1:00 AM													
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4:00 AM													
5:00 AM													
6:00 AM													
7:00 AM													



Traffic Survey — Count Analysis

Form Revised 2/27/2012

2011 TMUTCD Warrants

County: Nueces District: Corpus Christi
 City: Corpus Christi Population: 320,434 Survey Date: 1/4/2017

	Name	Control	Section	85% Speed
Major	N/A			50 MPH
Minor				

Eight Highest Hours: Include the same 8 hours for the Major and Minor St. volumes.

Time Ends	Major St. - Both App.		Minor St. - Hi. Vol. App.	
	Veh. Total	Ped. Total	Veh. Total	Ped. Total
8:00 AM	1,646		69	
6:00 PM	1,520		161	
9:00 AM				
10:00 AM				
12 NOON				
1:00 PM				
2:00 PM				
3:00 PM				

Comments:
 Traffic Signal warrants were met for Phase 2 of development.

Warrant 1. Eight Hour Vehicular Volume

Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition A.
 – or –
 Yes No Meets 70%^c (and major-street speed exceeds 40 mph or population less than 10,000) or 100%^a (regardless of speed) of Condition B.
 – or –
 Yes No Meets 80%^b of Conditions A and B.
 – or –
 Yes No Meets 56%^d of Conditions A and B (and major-street speed exceeds 40 mph or population less than 10,000).

Condition A - Minimum Vehicle Volume

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	500	400	350	280		150	120	105	84	
2 or more	1	600	480	420	336		150	120	105	84	
2 or more	2 or more	600	480	420	336		200	160	140	112	
1	2 or more	500	400	350	280		200	160	140	112	

Condition B - Interruption of Continuous Traffic

Number of Lanes		Vehicles per hour on Major St (Total of Both Approaches)				Vehicles per hour on higher-volume Minor St approach (One Direction Only)					
Major Street	Minor Street	Required				Existing	Required				Existing
		100% ^a	80% ^b	70% ^c	56% ^d		100% ^a	80% ^b	70% ^c	56% ^d	
1	1	750	600	525	420		75	60	53	42	
2 or more	1	900	720	630	504		75	60	53	42	
2 or more	2 or more	900	720	630	504		100	80	70	56	
1	2 or more	750	600	525	420		100	80	70	56	

^aBasic minimum hourly volume.

^bUsed for combination of Conditions A and B after adequate trial of other remedial measures.

^cMay be used when the major-street speed exceeds 40 mph or in a community with a population of less than 10,000.

^dMay be used for combination of Conditions A and B after adequate trial of other remedial measures when major street exceeds 40 mph or in an isolated community with a population of less than 10,000.

Warrant 2. Four Hour Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant 2 — see Figure 1).
------------------------------	--	---

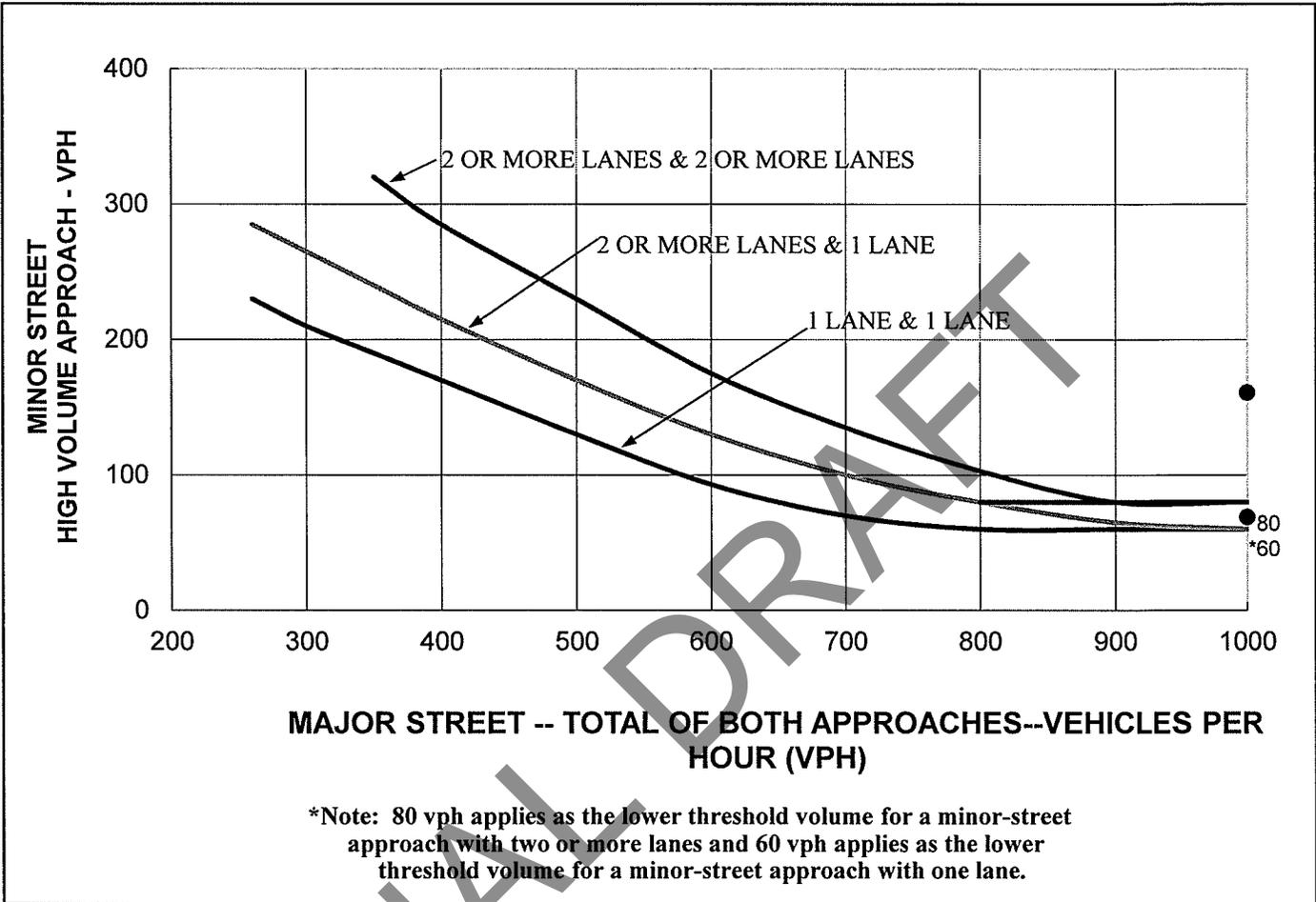


Figure 1. Four-hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 2.)

Warrant 3. Peak Hour (70% Factor)

<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Are all of the following conditions true for any four consecutive 15 minute periods? 1. The total stopped time delay experienced by the traffic on one minor street approach (one direction only) controlled by a stop sign equals or exceeds 4 vehicle-hours for a one-lane approach and 5 vehicle-hours for a two-lane approach, <i>and</i> 2. The volume of the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes, <i>and</i> 3. The total entering volume serviced during the hour equals or exceeds 650 vph for intersections with three approaches or 800 vph for intersections with four (or more) approaches.
- or -	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Meets one High Hour (Warrant 3 — see Figure 2).

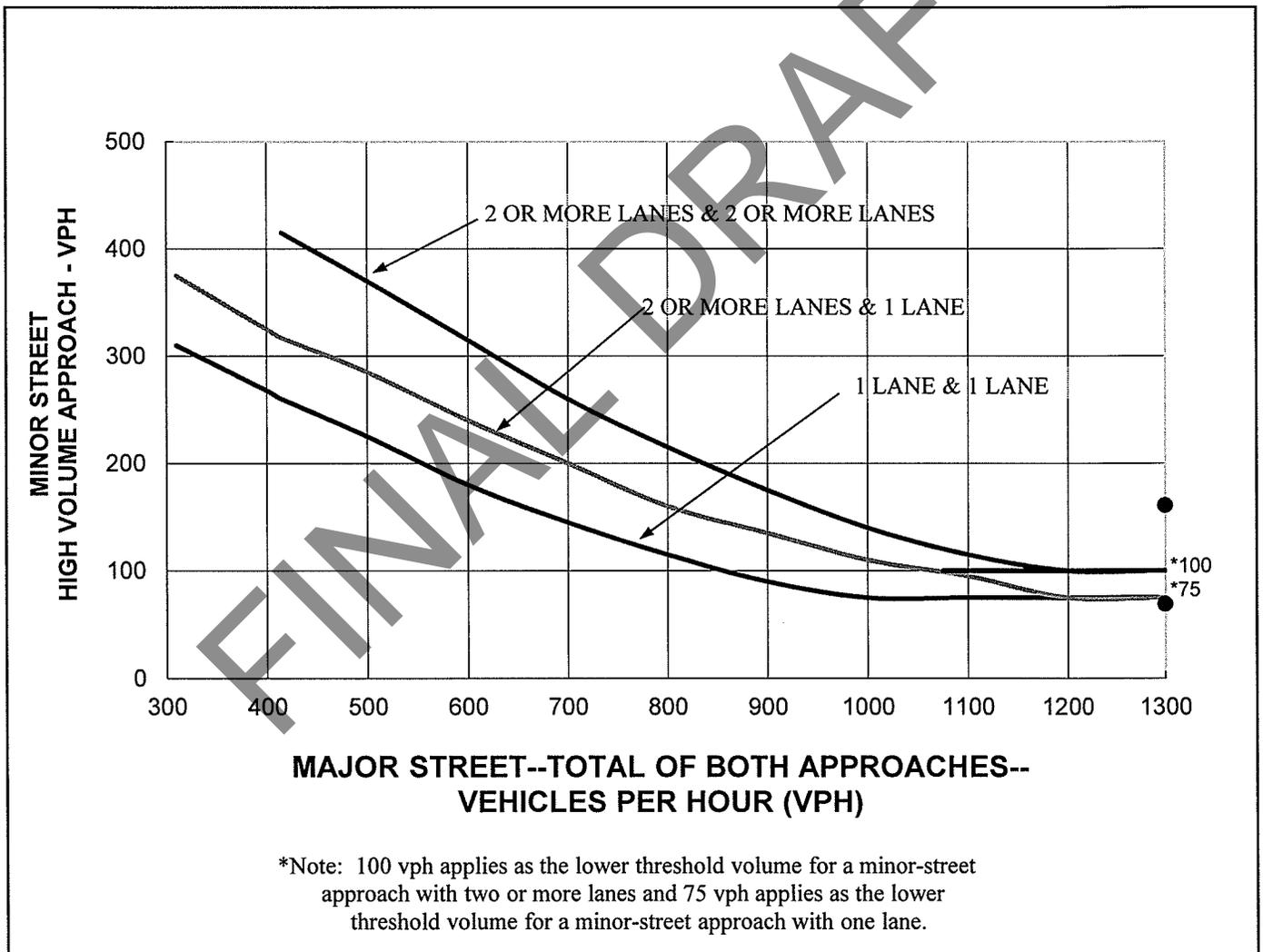


Figure 2. Peak hour volume warrant (community less than 10,000 population or above 40 MPH on major street). (Warrant 3.)

Warrant 4. Four Hour Pedestrian Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets each of 4 Highest Hours (Warrant4 — see Figure 3).
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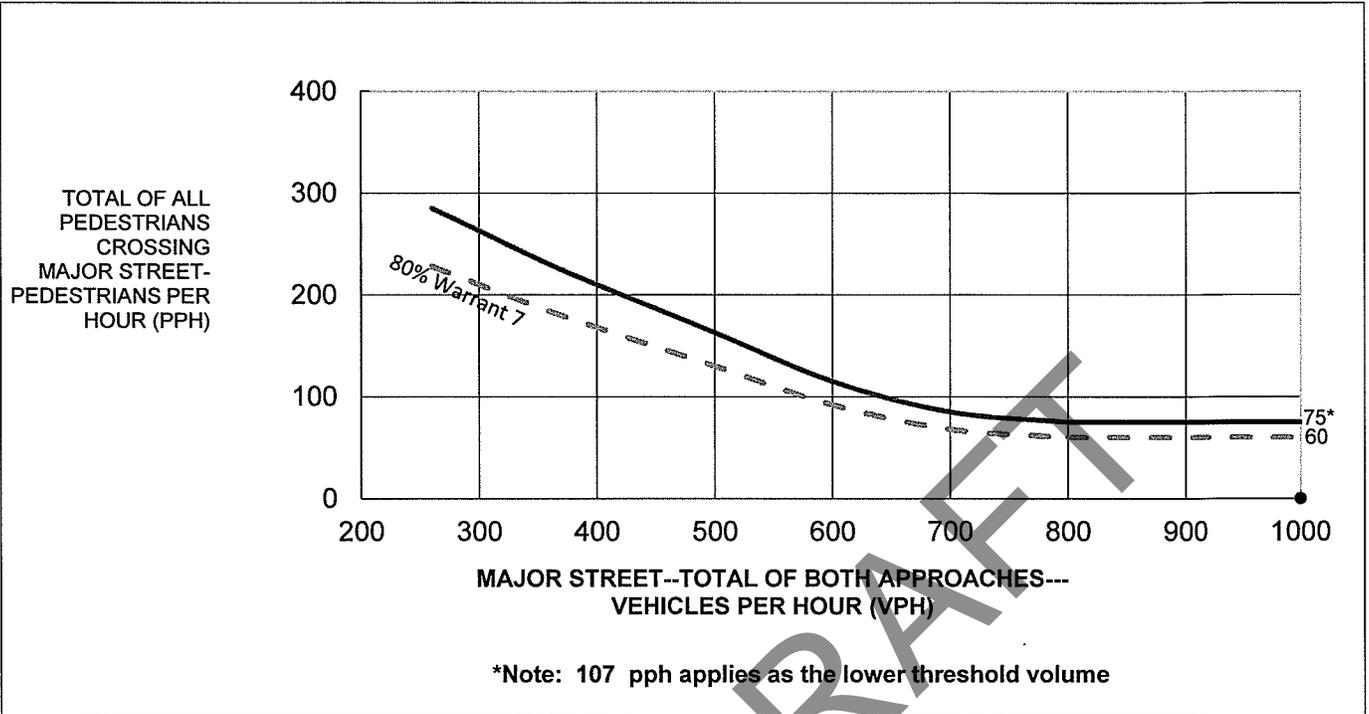


Figure 3. Four-hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 4. Peak Hour Pedestrian Volumes (70% Factor)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Meets Peak Hour Pedestrian (Warrant4 — see Figure 4).
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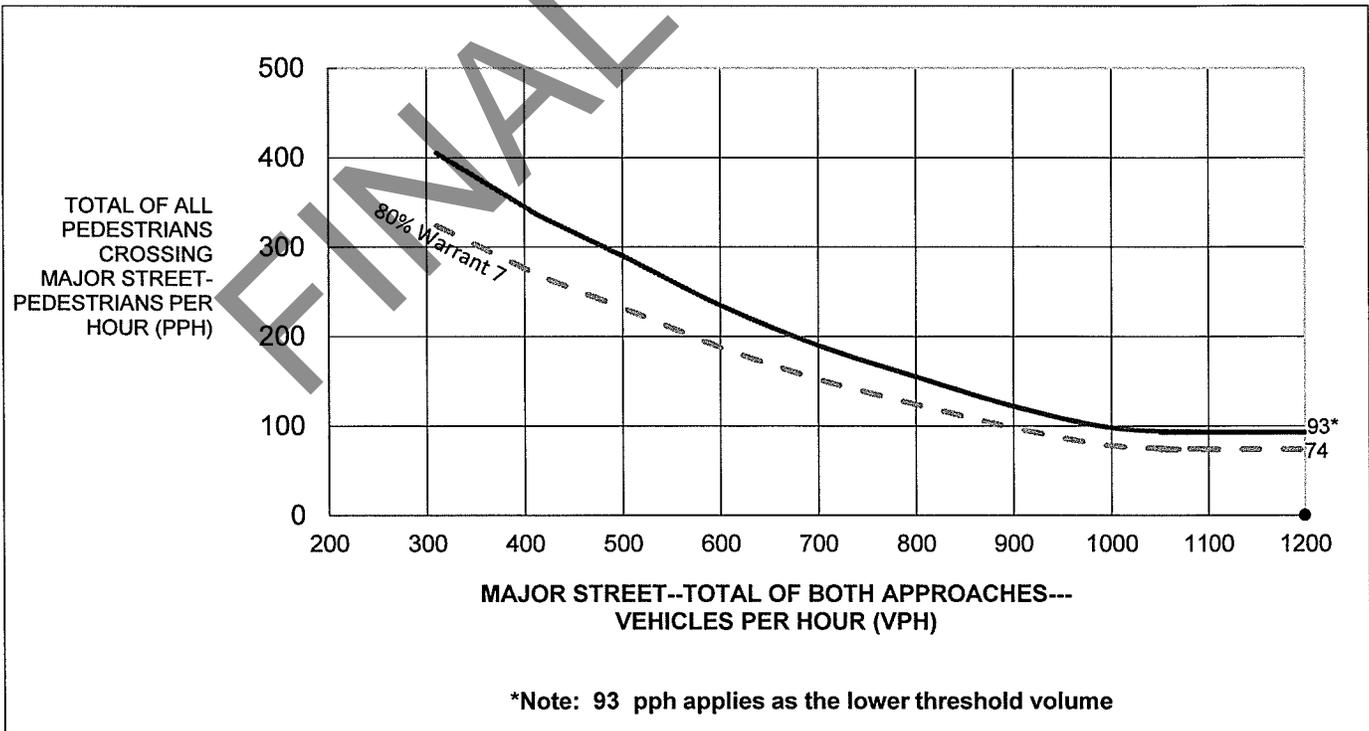


Figure 4. Peak hour pedestrian warrant (community less than 10,000 population or above 35 MPH on major street). (Warrant 4.)

Warrant 5. School Crossing

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the number of adequate gaps in traffic stream during the period when the children are using the crossing less than the number of minutes in the same period? – <i>and</i> –
N/A		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is there a minimum of 20 students during the highest crossing hour? – <i>and</i> –
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the nearest signal located more than 300 feet away? (This warrant may be applied, if the proposed signal is less than 300 feet and does not restrict the progressive movement of traffic.)

Warrant 6. Coordinated Signal System

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	On a one-way street or a street with traffic predominantly in one direction, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur? – <i>or</i> –
N/A		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	On a two-way street, are the adjacent signals far enough apart that the necessary degree of vehicle platooning does not occur and would the proposed and adjacent traffic control signal provide a progressive operation?

Warrant 7. Crash Experience

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is one of the following conditions met?: <ul style="list-style-type: none"> ◆ 80% of Condition A or Condition B in Warrant 1 ◆ 56% of Condition A or B in Warrant 1 (major-street speed exceeding 40 mph or population less than 10,000) ◆ 80 % or more of Warrant 4 met? – <i>and</i> –
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Have there been 5 or more reportable crashes susceptible to correction by a traffic signal within a 12 month period?

Warrant 8. Roadway Network

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume on all approaches greater than 1000 vehicles for each of any 5 hours of a Saturday and/or Sunday. – <i>or</i> –
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is the total existing, or immediately projected, entering volume greater than 1000 vehicles for the peak hour of a typical weekday, and do the 5 year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?

Check applicable characteristics of each route:

Major Street	Minor Street	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It is part of street or highway system that serves as the principal roadway network for through traffic flow.
<input type="checkbox"/>	<input type="checkbox"/>	It includes rural or suburban highways outside, entering, or traversing a city.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	It appears as a major route on an official plan such as a major street plan in an urban area traffic and transportation study.

Remarks:

Warrant 9. Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)

Yes No Meets one High Hour (Warrant 9 — see Figure 5).

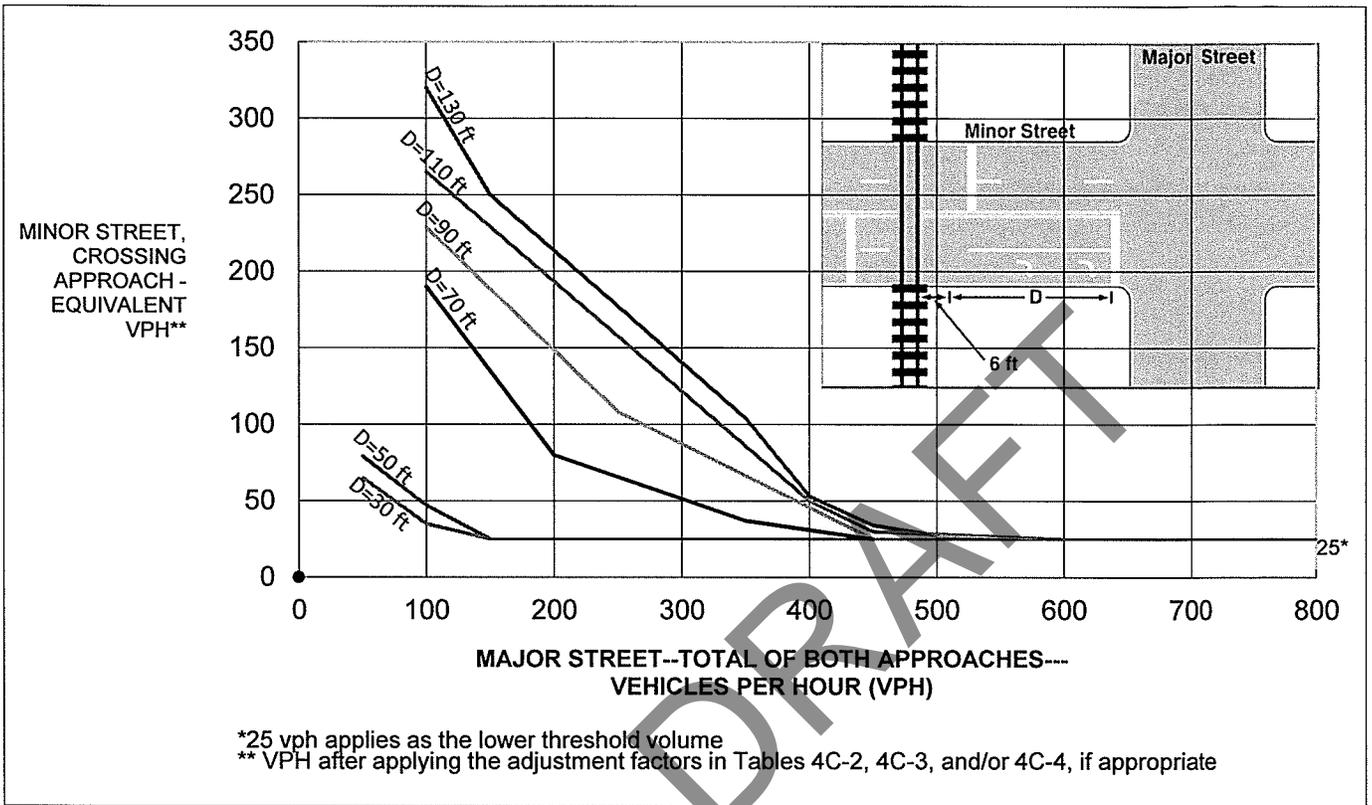


Figure 5. Railroad Grade Crossing (Two or More Approach Lanes at the Track Crossing).
 (Warrant 9.)

Corpus Christi, Nueces Co.

	MAJOR APPROACH N/A, Rodd Field Rd 3 LANE (S) PER APPROACH				MINOR APPROACH DWS 2 LANE (S) PER APPROACH				DATE: 1/4/2017 85th & SPEED: 50 MPH POPULATION: 320,434				
	Northbound		Southbound		Eastbound		Westbound		SUM MAJOR	HIGH MINOR	MAJOR APPR & HIGH MINOR	PED TOTAL XING MAJOR	RANK
	VEH	PEDS	VEH	PEDS	VEH	PEDS	VEH	PEDS					
7:00 AM	709												1
8:00 AM													3
9:00 AM													4
10:00 AM													5
11:00 AM													6
12 NOON													7
1:00 PM													8
2:00 PM													9
3:00 PM													10
4:00 PM													11
5:00 PM													12
6:00 PM	610			910		69			1520	161	1681		2
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