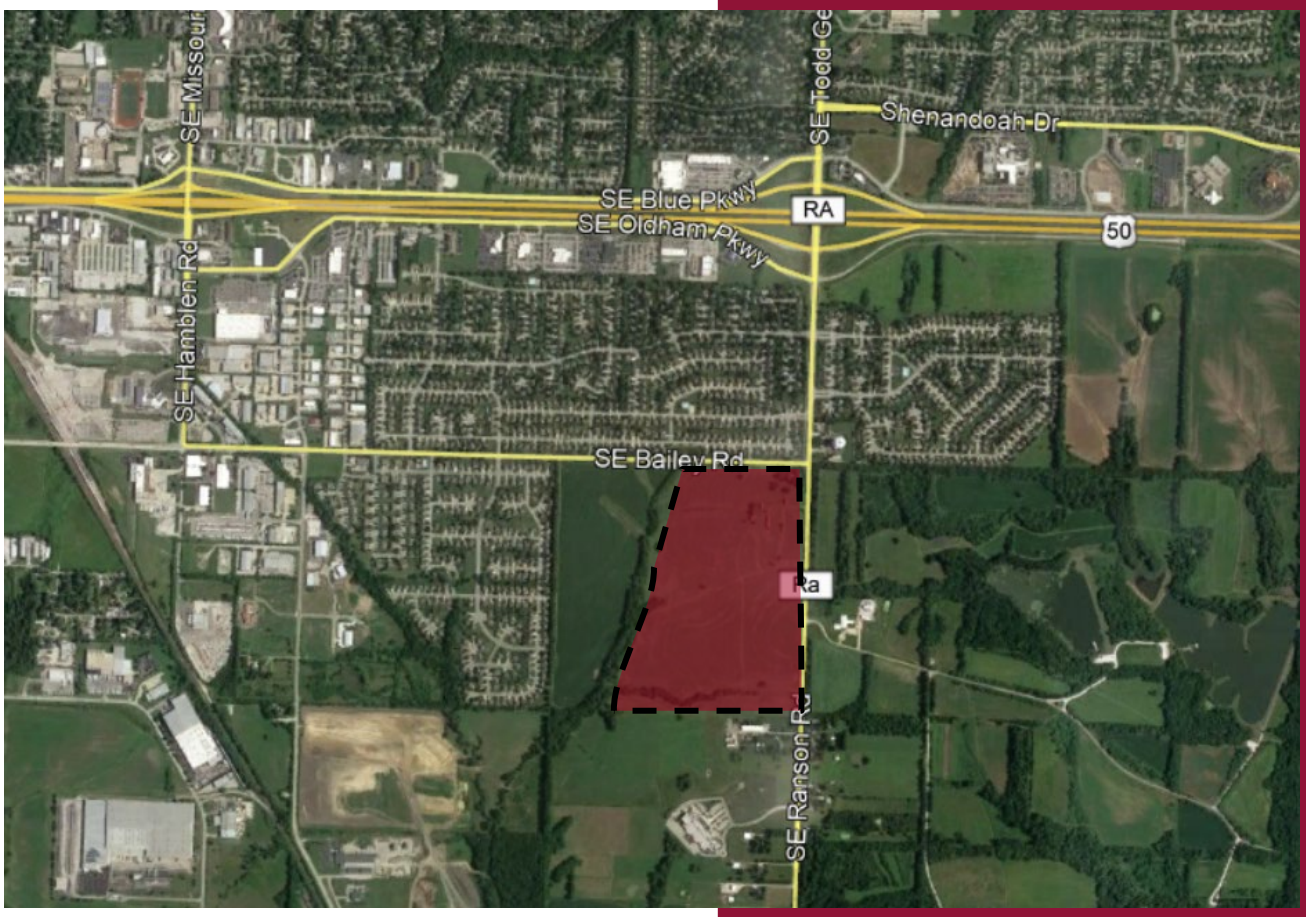
Bailey Farms Traffic Impact Study

Ranson Road and Bailey Road
Lee's Summit, Missouri



TranSystems
EXPERIENCE | Transportation

Prepared for:
Clayton Properties Group, Inc.

Prepared by TranSystems
February 2021

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February 15, 2021

Mr. Bradley Kempf
Clayton Properties Group, Inc.
DBA Summit Homes
120 SE 30th St
Lee's Summit, MO 64082

Re: Bailey Farms Traffic Impact Study
Ranson Road and Bailey Road
Lee's Summit, Missouri

Dear Mr. Kempf:

In response to your request and authorization, TranSystems has completed a traffic impact study for the proposed residential development generally located in the southwest corner of Ranson Road and Bailey Road in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system.

Included in this study is a discussion of the anticipated impact of the proposed development on the adjacent street network and identified improvements to mitigate deficiencies for the following scenarios:

- Existing plus Approved Development Conditions
- Existing plus Approved plus Proposed Development Conditions

We trust that the enclosed information proves beneficial to you, the Missouri Department of Transportation, and the City of Lee's Summit in this phase of the development process. We appreciate the opportunity to be of service to you and will be available to review this study at your convenience.

Sincerely,
TRANSYSTEMS

By: _____ By: _____

Jeffrey J. Wilke, PE, PTOE Emma Martin, EIT

EHM:JJW/ehm/P101200378
Enclosure

Introduction

TranSystems has completed a traffic impact study for the proposed residential development generally located in the southwest corner of Ranson Road and Bailey Road in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system.

The location of the development site relative to the major streets in the area is shown on ***Figure A-1*** in ***Appendix A***. This study also contains a description of the proposed development and the surrounding transportation infrastructure along with trip generation estimates, trip distribution estimates, capacity analyses, and a summary of the findings.

Study Area

To assess the impacts of the proposed development, the intersections listed below were identified for study during the A.M. and P.M. peak periods.

- Ranson Road/Todd George Parkway and US-50 westbound ramps
- Ranson Road/Todd George Parkway and US-50 eastbound ramps
- Ranson Road and Oldham Parkway
- Ranson Road and Bailey Road
- Bailey Road and Hamblen Road/Century Drive (east intersection)
- Bailey Road and Hamblen Road (west intersection)
- Site Driveways

Surrounding Street Network and Land Uses

The development site is located on undeveloped land that is currently used for agricultural purposes. The land immediately to the west of the site is currently being developed as a new middle school and athletic fields for the Lee's Summit School District. To the west of the school site is a subdivision of single-family homes. The north side of the site is bounded by Bailey Road. There is a subdivision of single-family homes on the north side of Bailey Road across from the site. The east side of the site is bounded by Ranson Road, and the James A. Reed Memorial Wildlife Area is located on the east side of Ranson Road. The south side of the site is bounded by Bailey Park and one large lot residence. South of the park is Sunset Valley Elementary School.

Ranson Road is a part of the state highway system as Route RA. According to the Missouri Department of Transportation (MoDOT) Functional Classification Map, Ranson Road is classified as a minor arterial roadway north of Bailey Road. South of Bailey Road, it is classified as a major collector roadway. Adjacent to the development site, Ranson Road is a two-lane roadway with aggregate and turf shoulders. There are no sidewalks along the roadway adjacent to the site. North of Bailey Road there is a sidewalk along the west side of Ranson Road and a shared use path along the east side. The posted speed limit is 45 mph adjacent to the site.

Ranson Road provides access to the regional highway system from a diamond interchange with US-50 Highway. At the interchange, the roadway widens to four-lanes with left-turn lanes and a raised median. There are curbs and gutters and sidewalk along each side of the roadway. North of US-50 Highway, Ranson Road becomes Todd George Parkway.

Bailey Road is classified as a minor arterial roadway, according to the Lee's Summit Thoroughfare Master Plan. There are curbs and gutters along both sides of the road. The roadway is marked for two through lanes and shoulders along each side of the road. The posted speed limit is 35 mph. Adjacent to the development site there is sidewalk along the north side of Bailey Road, but not along the south side. Farther to the west adjacent to the existing residential subdivisions there is sidewalk on the south side of Bailey Road.

Traffic Counts

The turning-movement traffic volume counts at the study intersections were obtained from the traffic impact study for the middle school development, dated May 2020. Due to the on-going COVID-19 pandemic, no new counts were collected for this study. The study for the middle school considered the impacts of the pandemic on traffic volumes and the traffic counts were adjusted accordingly. Turning movements were not collected at the existing intersections that align with proposed access points to the site. Turning movements at Bailey Road at Brownfield Drive and at Ranson Road and the James A. Reed driveway were estimated.

Approved Developments

Several development projects have been approved by the City in recent years in the vicinity of the site. Traffic impact studies were prepared for each of these developments, which include development trips and improvement recommendations. Additional information about these developments is provided in the following paragraphs. The locations of these developments are included on ***Figure A-1*** in ***Appendix A***.

The Princeton Senior Living facility is being constructed on Oldham Parkway, east of Ranson Road. It is projected to generate a very low volume of traffic. As such, no improvements are associated with this development.

Culver's fast-food restaurant was recently opened on Oldham Parkway west of Ranson Road. In conjunction with the Culver's development a traffic signal was installed at the Ranson Road and Oldham Parkway intersection. An eastbound left-turn lane was also constructed at the intersection.

The Lee's Summit R7 School District is constructing a new middle school and athletic fields south of Bailey Road, to the west of the proposed development site. Access to the middle school will primarily be provided from Bailey Road. A secondary access to the school will be provided by extending Cape Drive east through the southern portion of the middle school site. That will provide a connection to the residential subdivision to the west. The traffic impact study for the middle school did not consider the

impacts of traffic using Cape Drive to access the site. All development traffic was distributed through the Bailey Road access points.

The traffic impact study for the middle school identified several improvements in the surrounding area. As part of the development Bailey Road will be widened for left-turn lanes adjacent to the middle school driveways. A traffic signal will be constructed at the Ranson Road and Bailey Road intersection as well as turn lanes. Southbound and eastbound right-turn lanes are be constructed, as well as a northbound left-turn lane. A northbound right-turn lane was also recommended on Ranson Road at the US-50 Highway eastbound ramps intersection. Traffic signal installation and turn lane improvements were recommended at the Bailey Road and Hamblen Road/Century Drive intersection.

Proposed Development Plan

The proposed development consists of 219 single family homes and 64 attached villa units. The site is split into northern and southern sections by a stream corridor that runs through the site. The northern section will have 116 single-family homes with varying lot sizes and the attached villas. There will be 103 single-family homes with larger lot sizes in the south section of the site. The proposed development plan is included on ***Figure A-2*** in ***Appendix A*** for reference.

Access will be provided from two new street connections. The first new connection will be a north/south collector street that will run through the development site. This collector street will intersect Bailey Road as the south leg of the existing intersection with Brownfield Drive, approximately 625 feet west of Ranson Road. The second new street connection will be the extension of Cape Drive in the southern portion of the site. Cape Drive will be extended east to intersect Ranson Road at the existing driveway to the James A. Reed Memorial Wildlife Area, which is roughly 1,650 feet south of Bailey Road.

The Lee's Summit Thoroughfare Master Plan indicates that several residential collector streets are to be constructed through the development site. The extension of Cape Drive through the southern portion of the site is in accordance with the Thoroughfare Master Plan. The plan also shows a north/south collector street extending south of Bailey Road, then turning east to intersect Ranson Road. The extension of Brownfield Drive south through the site generally follows the alignment in the plan, except it does not continue south of the site. Since the land south of the site includes Bailey Park, it seems unlikely that a collector street would need to be extended south through park property to connect to Ranson Road. Cape Drive will serve as the connection to Ranson Road.

Analysis

The scope of analysis for the assessment of the proposed development's impact on the surrounding transportation system is based in large part on the recommended practices of the Institute of Transportation Engineers (ITE), as outlined in their Traffic Engineering Handbook. ITE is a nationally-recognized organization of transportation professionals with members from both private and public sectors. The analysis of the proposed development's impact included development of trip generation and trip distribution estimates as well as a traffic operations assessment for each study scenario. Each of the analysis methodologies and findings are described in the subsequent sections.

Trip Generation

Trip generation estimates were prepared using the Institute of Transportation Engineer's Trip Generation, 10th Edition. ***Table 1*** shows the expected trips to be generated by the proposed development. The single-family detached homes land use was used for the trip generation for the entire site even though there are 64 attached villa units. The 10th Edition does not include a separate land use for duplexes, so the single-family detached homes land use was used to provide a conservative trip generation estimate.
Additional information related to trip generation is included in ***Appendix B***.

Table 1
Trip Generation

Land Use	Intensity	ITE Code	Average Weekday	A.M. Peak Hour			P.M. Peak Hour		
				Total	In	Out	Total	In	Out
Single-Family Detached Homes	283 units	210	2,708	206	52	154	276	174	102

Trip Distribution

The estimated trips generated by the proposed development were distributed onto the surrounding street network based on the trip distributions summarized in ***Table 2***. These distributions are based on existing travel patterns, previous studies within the surrounding area, and engineering judgment. Detailed distributions through the study intersections are included in ***Appendix B***.

Table 2
Trip Distribution

Direction To/From	Percentage
North on Hamblen Road	10%
North on Todd George Parkway	15%
South on Ranson Road	10%
West on Bailey Road	15%
East on US-50 Highway	10%
West on US-50 Highway	40%
Total	**100%**

Traffic Operation Assessment

An assessment of traffic operations was made for the scenarios listed below.

- Existing plus Approved Development Conditions
- Existing plus Approved plus Proposed Development Conditions

The study intersections were evaluated using the Synchro traffic analysis software package. Calculations were performed based on the methodologies outlined in the Highway Capacity Manual (HCM), 6th

Edition, which is published by the Transportation Research Board. The operating conditions at an intersection are graded by the "level of service" experienced by drivers. Level of service (LOS) describes the quality of traffic operating conditions and is rated from "A" to "F". LOS A represents the least congested condition with free-flow movement of traffic and minimal delays. LOS F generally indicates severely congested conditions with excessive delays to motorists. Intermediate grades of B, C, D, and E reflect incremental increases in the average delay per stopped vehicle.

Delay is measured in seconds per vehicle. ***Table 3*** shows the upper limit of delay associated with each level of service for signalized and unsignalized intersections.

Table 3
Intersection Level of Service Delay Thresholds

Level of Service (LOS)	Signalized	Unsignalized
A	≤ 10 Seconds	≤ 10 Seconds
B	≤ 20 Seconds	≤ 15 Seconds
C	≤ 35 Seconds	≤ 25 Seconds
D	≤ 55 Seconds	≤ 35 Seconds
E	≤ 80 Seconds	≤ 50 Seconds
F	> 80 Seconds	> 50 Seconds

While LOS measurements apply to both signalized and unsignalized intersections, there are significant differences between how these intersections operate and how they are evaluated. LOS for signalized intersections reflects the operation of the intersection as a whole.

Unsignalized intersections, in contrast, are evaluated based on the movement groupings which are required to yield to other traffic. Typically, these are the left turns off of the major street and the side-street approaches for two-way stop-controlled intersections. At unsignalized intersections lower LOS ratings (D, E and F) do not, in themselves, indicate the need for additional improvements. Many times there are convenient alternative routes to avoid the longer delays. Other times the volumes on the unsignalized approaches are relatively minor when compared to the major street traffic, and improvements such as a traffic signal installation may increase the average delay to all users of the intersection.

The decision to install a traffic signal, which is often considered when lower LOS ratings are projected, should be based on engineering studies and the warrants for traffic signal installation as outlined in the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD). Signals are typically not recommended in locations where there are convenient alternative paths, or if the installation of a traffic signal would have negative impacts on the surrounding transportation system.

The LOS rating deemed acceptable varies by community, facility type and traffic control device. Lee's Summit has identified LOS C as the minimum desirable goal for signalized intersections. However, at unsignalized intersections LOS D, E, or even F may be considered acceptable for low to moderate traffic

volumes where the installation of a traffic signal is not warranted by the conditions at the intersection, or the location has been deemed undesirable for signalization.

Traffic queues were also evaluated as part of the analyses. Long traffic queues which extend beyond the amount of storage available, either between intersections or within turn lanes, can have significant impacts on operations. The projected vehicular queues were analyzed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn lanes.

Existing plus Approved Development Conditions

The results of the Existing plus Approved Development Conditions intersection analyses are summarized in ***Table 5***. The study intersections were evaluated with the lane configurations, traffic volumes, and traffic control devices shown on ***Figures A-3*** through ***A-5***. These traffic volumes include development trips from other approved developments in the area, including the proposed middle school. The improvements recommended for those developments are also included in the analyses. The queue analysis results are provided in ***Figures A-6*** and ***A-7***. The Synchro output files are included in ***Appendix C***.

Table 5
Intersection Operational Analysis
Existing plus Approved Development Conditions

Intersection	A.M. Peak Hour		P.M. Peak Hour	
Movement	LOS[1]	Delay[2]	LOS[1]	Delay[2]
Ranson Road and US-50 Westbound Ramps				
Traffic Signal	***D***	***38.6***	*B*	*19.9*
Ranson Road and US-50 Eastbound Ramps				
Traffic Signal	*C*	*20.1*	*C*	*23.9*
Ranson Road and Oldham Parkway				
Traffic Signal	*A*	*8.4*	*B*	*18.2*
Ranson Road and Bailey Road				
Traffic Signal	*B*	*13.8*	*B*	*16.7*
Ranson Road and James A. Reed driveway				
Westbound	*B*	*10.8*	*B*	*12.0*
Southbound Left-Turn	*A*	*8.0*	*A*	*8.1*
Bailey Road and Brownfield Drive				
Southbound	*C*	*16.3*	*B*	*12.2*
Eastbound Left-Turn	*A*	*8.7*	*A*	*7.9*
Bailey Road and Hamblen Road/Century Dr.				
Traffic Signal	*A*	*7.9*	*B*	*13.6*
Bailey Road and Hamblen				
Traffic Signal	*B*	*14.0*	*C*	*20.4*

1 – Level of Service
2 – Delay in seconds per vehicle

The results in the table indicate that all but one of the study intersections are projected to operate at acceptable levels of service during both peak hours in this scenario. The intersection of Ranson Road and US-50 westbound ramps is projected to operate at a LOS D during the A.M. peak hour, with a lengthy

queue of nearly 500' for the westbound left-turn movement. Similar results were documented in the traffic impact study for the middle school. Although this queue is projected to be long, it is contained within the length of the ramp.

Some longer queues are also projected on Ranson Road at the US-50 interchange that will extend back through the adjacent frontage Road intersections of Oldham Parkway and Blue Parkway. These two signalized frontage road intersections are closely spaced, within 300 feet of the signalized ramp intersections. This provides minimal queue storage between intersections.

Access Management

Lee's Summit Access Management Code (AMC) provides guidance on turn lane requirements, throat lengths, and spacing of intersections and driveways for city streets. The MoDOT Engineering Policy Guide (EPG) provides similar requirements for the state highway system. These requirements are described in the following paragraphs.

The proposed access points to the developments on Bailey Road and along Ranson Road align with existing streets, therefore no new intersections will be created for the proposed development. The location of the access point on Bailey Road at Brownfield Drive exceeds the 400-foot minimum separation requirements per the AMC. The access point on Ranson Road at Cape Drive exceeds the 660- to 1,320-foot guidance per the EPG. A cursory review of sight lines indicated that sight distances are adequate from each of the proposed access points.

The throat lengths at both site driveways are roughly 150 feet. These throat lengths exceed the driveway throat depth required by the AMC. The throat lengths also exceed the 95th percentile queue lengths projected at the intersections.

According to the AMC, a westbound left-turn lane is warranted on Bailey Road at Brownfield Drive, but an eastbound right-turn is not warranted. The westbound left-turn lane should have a minimum storage length of 200 feet plus appropriate taper. It should be noted that Bailey Road is being widened to the east and west of the Brownfield Drive intersection in conjunction with the middle school development. The construction of the turn lanes has not started as of the date of this study. Given the need for widening in multiple locations along Bailey Road, it is recommended to coordinate with the middle school development to widen Bailey Road for a center two-way left-turn lane from Ranson Road to the middle school driveways.

A northbound left-turn lane would be beneficial on Brownfield Drive at the Bailey Road intersection. The left-turn lane would allow northbound right-turn traffic to bypass northbound left-turn traffic, which will experience longer delays, especially during the time period before school is in session at the middle school. The northbound left-turn lane should have a minimum storage length of 100 feet plus appropriate taper.

The EPG has minimum volume thresholds for when turn lanes are warranted. Turn lane warrant analysis for the Ranson Road and Cape Drive intersection is provided in ***Appendix D***. The warrant analysis

indicates that a southbound right-turn lane is warranted, but a northbound left-turn lane is not warranted at the intersection. The southbound right-turn lane should have a minimum storage length of 200 feet plus appropriate taper.

Existing plus Approved plus Proposed Development Conditions

The results of the Existing plus Approved plus Proposed Development Conditions intersection analyses are summarized in ***Table 6***. The study intersections were evaluated with the lane configurations, traffic volumes, and traffic control devices shown on ***Figures A-8*** through ***A-10***. This includes the aforementioned turn lane improvements. The signal timings and cycle lengths from the previous scenario were maintained. The queue analysis results are provided in ***Figures A-11*** and ***A-12***. The Synchro output files are included in ***Appendix C***.

Table 6
Intersection Operational Analysis
Existing plus Approved plus Proposed Development Conditions

Intersection	A.M. Peak Hour		P.M. Peak Hour	
Movement	LOS[1]	Delay[2]	LOS[1]	Delay[2]
Ranson Road and US-50 Westbound Ramps				
Traffic Signal	***D***	***41.1***	*C*	*21.7*
Ranson Road and US-50 Eastbound Ramps				
Traffic Signal	*C*	*21.0*	*C*	*24.0*
Ranson Road and Oldham Parkway				
Traffic Signal	*A*	*8.5*	*B*	*17.8*
Ranson Road and Bailey Road				
Traffic Signal	*B*	*14.9*	*B*	*17.3*
Ranson Road and James A. Reed driveway/ Cape Drive				
Eastbound	*B*	*14.2*	*C*	*21.4*
Westbound	*B*	*11.1*	*B*	*13.0*
Northbound Left-Turn	*A*	*7.7*	*A*	*8.6*
Southbound Left-Turn	*A*	*8.0*	*A*	*8.1*
Bailey Road and Brownfield Drive				
Northbound Left-Turn	***D***	***32.3***	***D***	**26.8**
Northbound Shared Right-Turn/Through	*B*	*11.8*	*B*	*12.4*
Southbound	*C*	*21.0*	*C*	*15.9*
Eastbound Left-Turn	*A*	*8.8*	*A*	*7.9*
Westbound Left-Turn	*A*	*8.4*	*A*	*8.9*
Bailey Road and Hamblen Road/Century Dr.				
Traffic Signal	*A*	*7.8*	*B*	*16.1*
Bailey Road and Hamblen Road				
Traffic Signal	*B*	*13.9*	*C*	*21.1*

1 – Level of Service
2 – Delay in seconds per vehicle

The results of the analysis indicate that most intersections are projected to operate acceptably with the addition of the development traffic. As in the previous scenario, LOS D conditions and lengthy queues are projected during the A.M. peak hour on the US-50 westbound ramp at Ranson Road. The proposed

development is projected to add a nominal amount of traffic to the westbound left-turn movement which will have a minimal impact on the queue length. Several of the queue lengths on Ranson Road near the US-50 interchange are projected to increase. These queues may extend through the adjacent closely spaced frontage road intersections, which is also projected to occur in the previous scenario.

The northbound left-turn movement at the Bailey Road and Brownfield Drive intersection is projected to operate at LOS D during both peak hours. By providing a separate turn lane for this movement, northbound right-turn traffic will be able to bypass any queued left-turn traffic.

Extending Cape Drive to Ranson Road will provide another route to access the middle school. The traffic impact study for the middle school did not consider any traffic using Cape Drive to access the school. During times before and after school is in session, a significant volume of traffic and congestion is anticipated when drivers drop-off or pick-up students. This operation usually generates long queues on school sites.

Providing another access to the middle school could impact the routes drivers use to enter and exit the site. There is potential that school traffic may use Cape Drive to avoid congestion and long queues on the school site. Traffic on the school site should be planned to circulate in a manner that does not allow drivers to enter or exit the queue for student pick-up and drop-off from Cape Drive. This may require gates or other devices on the school site to reinforce the intended routing of traffic.

Summary

TranSystems has completed a traffic impact study for the proposed residential development generally located in the southwest corner of Ranson Road and Bailey Road in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system.

The proposed Bailey Farms development will include 283 residences. Access to the development will be provided from the south side of the Bailey Road and Brownfield Drive intersection. Access will also be provided from an extension of Cape Drive east of the middle school site to Ranson Road.

Several developments have been approved in recent years in the vicinity of the site. This includes the Princeton Senior Living facility, Culver's, and the Lee's Summit Middle School. The recommended improvements and development trips from these projects were included in the analysis scenarios for this study.

Several improvements were identified to mitigate the impact of development traffic and to comply with Lee's Summit and MoDOT access management guidelines. These improvements include the following:

- Construct a westbound left-turn lane on Bailey Road at Brownfield Drive with a minimum storage length of 200 feet plus appropriate taper. Alternatively, Bailey Road could be widened for a two-

way left-turn lane from Ranson Road to the middle school site. This would require coordination with the improvements required for the middle school project.

- Construct a northbound left-turn lane on Brownfield Drive at Bailey Road with a minimum storage length of 100 feet plus appropriate taper.
- Construct a southbound right-turn lane on Ranson Road at Cape Drive with a minimum storage length of 200 feet plus appropriate taper.

With the identified improvements, the study intersections are projected to operate at acceptable levels of service during both peak hours with the addition of development traffic. The only exception is the Ranson Road and US-50 Highway westbound ramps. During the A.M. peak hour, long queues and delays are projected on the ramp. This same situation was identified in the traffic impact study for the middle school. The proposed development will have a minimal impact on the westbound ramp.

Some longer queues are also projected on Ranson Road at the US-50 interchange that will extend back through the adjacent frontage Road intersections of Oldham Parkway and Blue Parkway. These two signalized frontage road intersections are closely spaced to the ramps, which provides minimal queue storage between intersections.

Extending Cape Drive to Ranson Road will provide another route to access the middle school. There is potential that school traffic may use Cape Drive to avoid congestion and long queues on the school site. Traffic on the school site should be planned to circulate in a manner that does not allow drivers to enter or exit the queue for student pick-up and drop-off from Cape Drive. This may require gates or other devices on the school site to reinforce the intended routing of traffic.

Appendix A - Figures

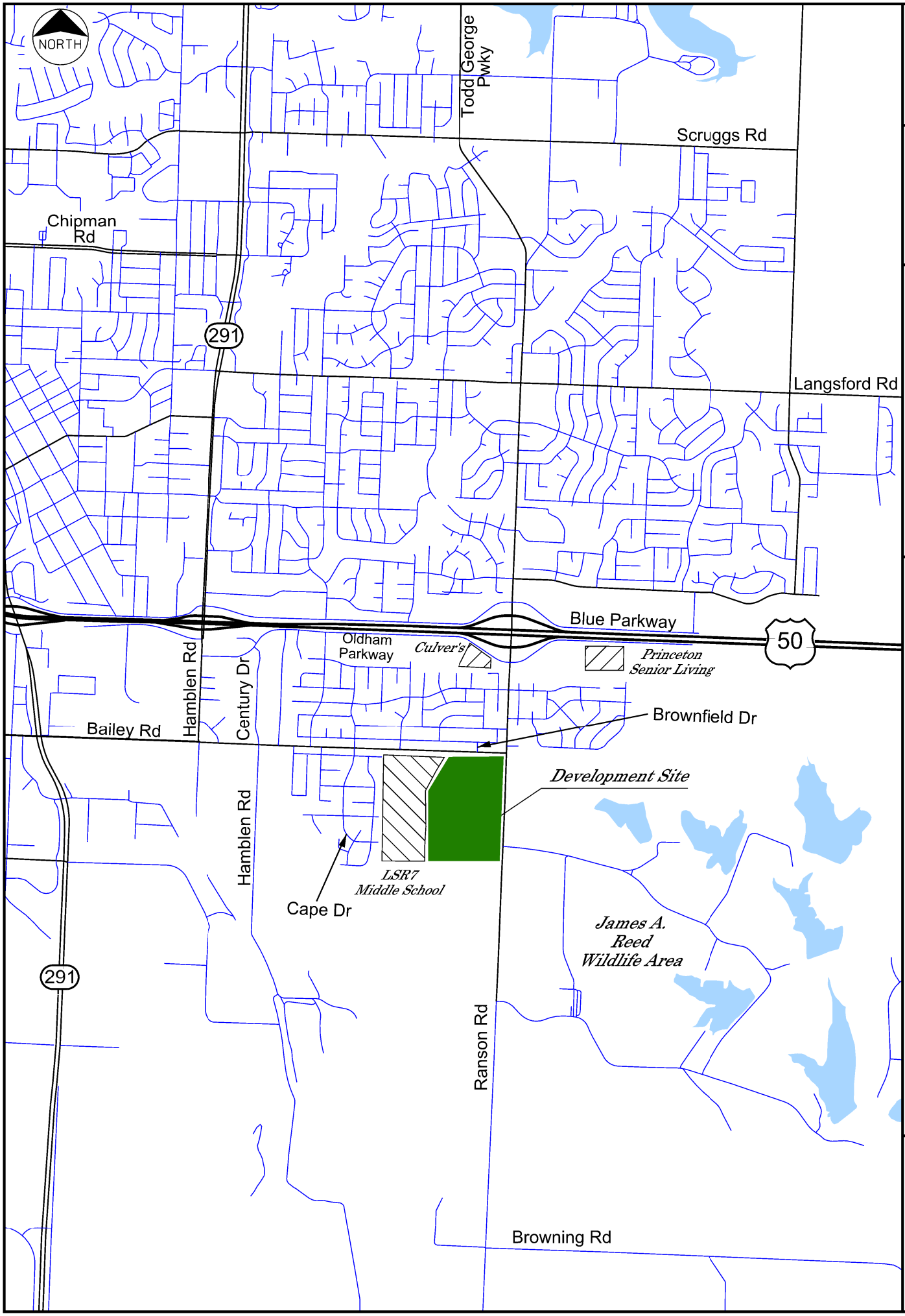


Figure A-1

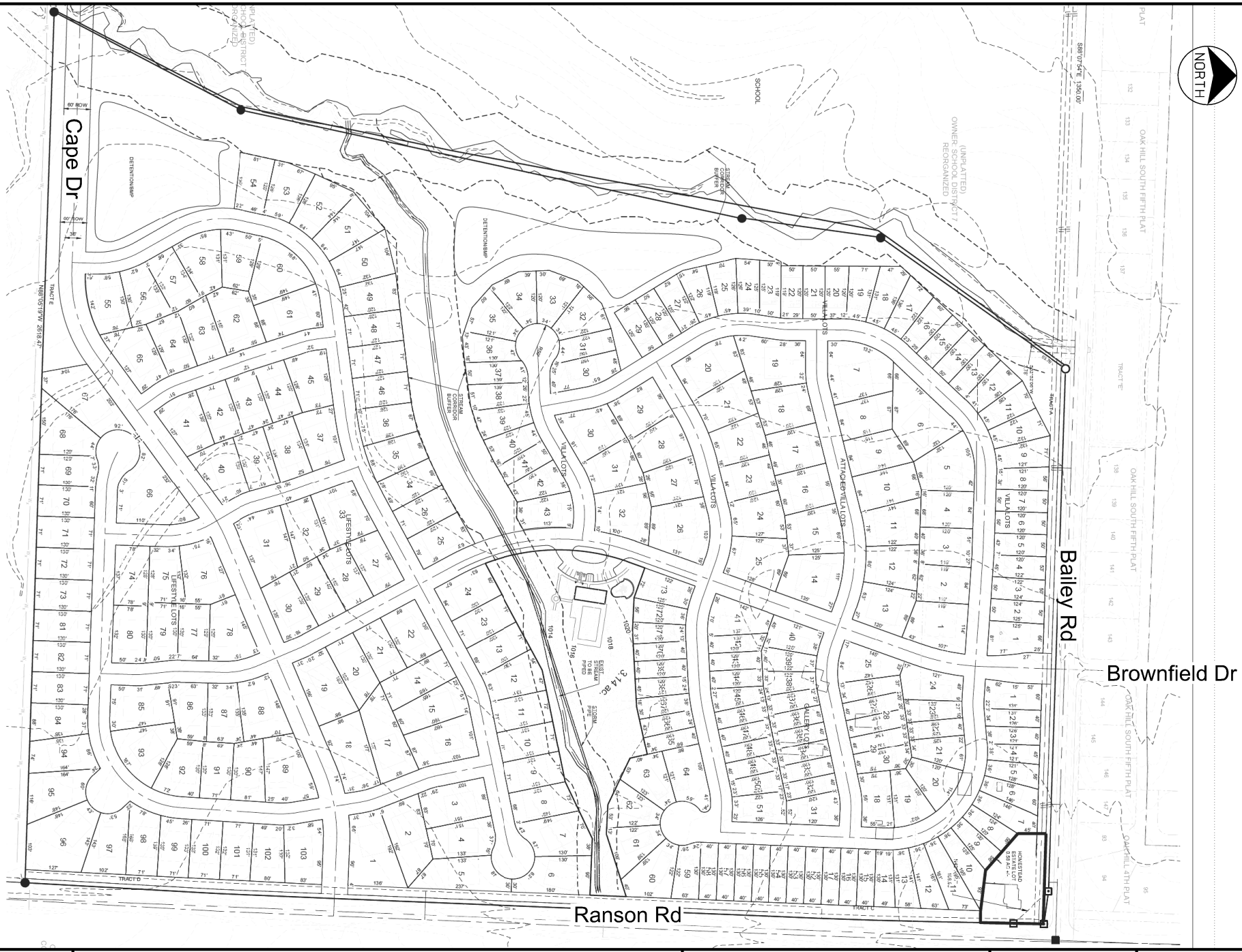
February 2021

No Scale

Bailey Farms
Traffic Impact Study
Lee's Summit, Missouri

LOCATION MAP

TranSystems



TranSystems	SITE PLAN	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-2

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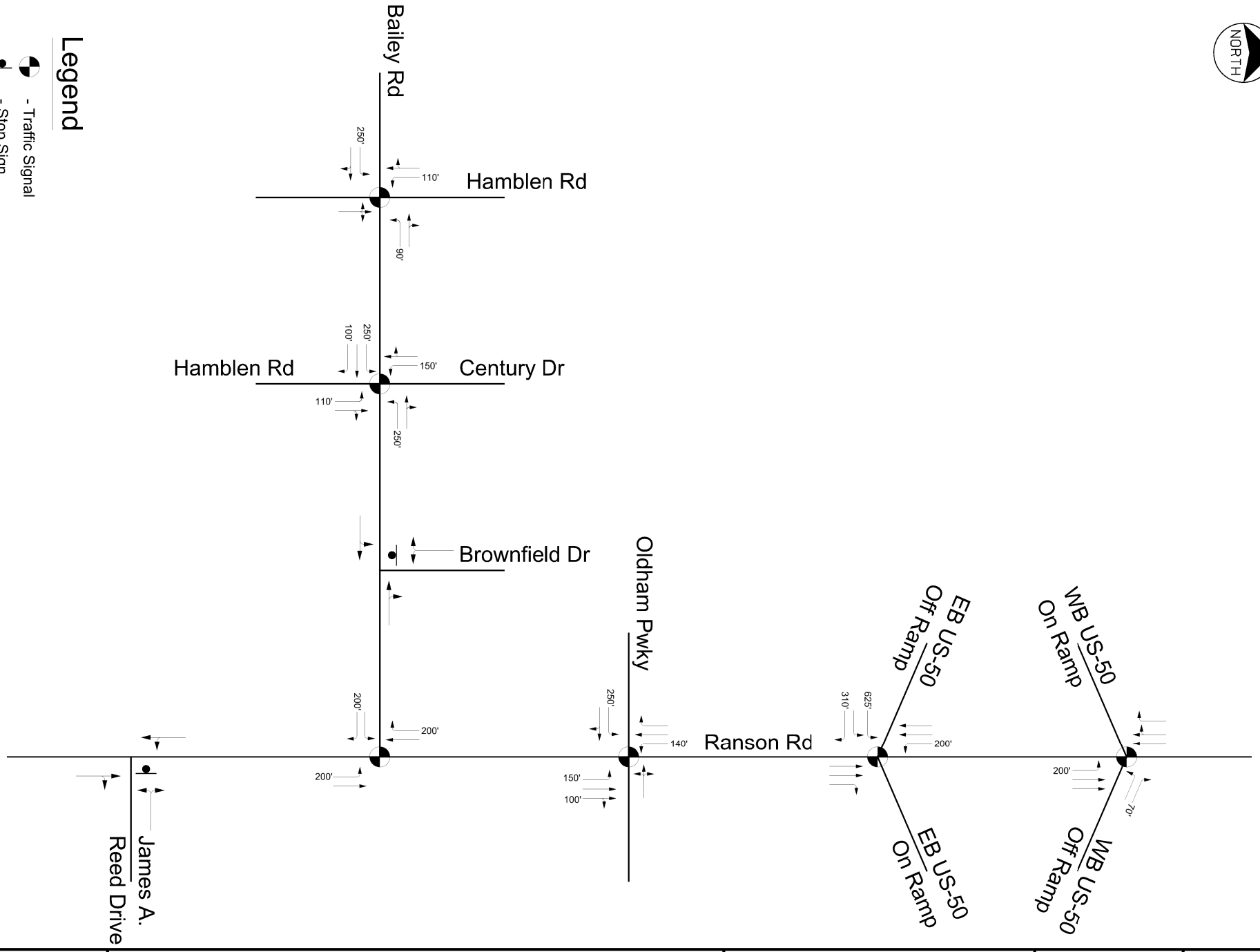
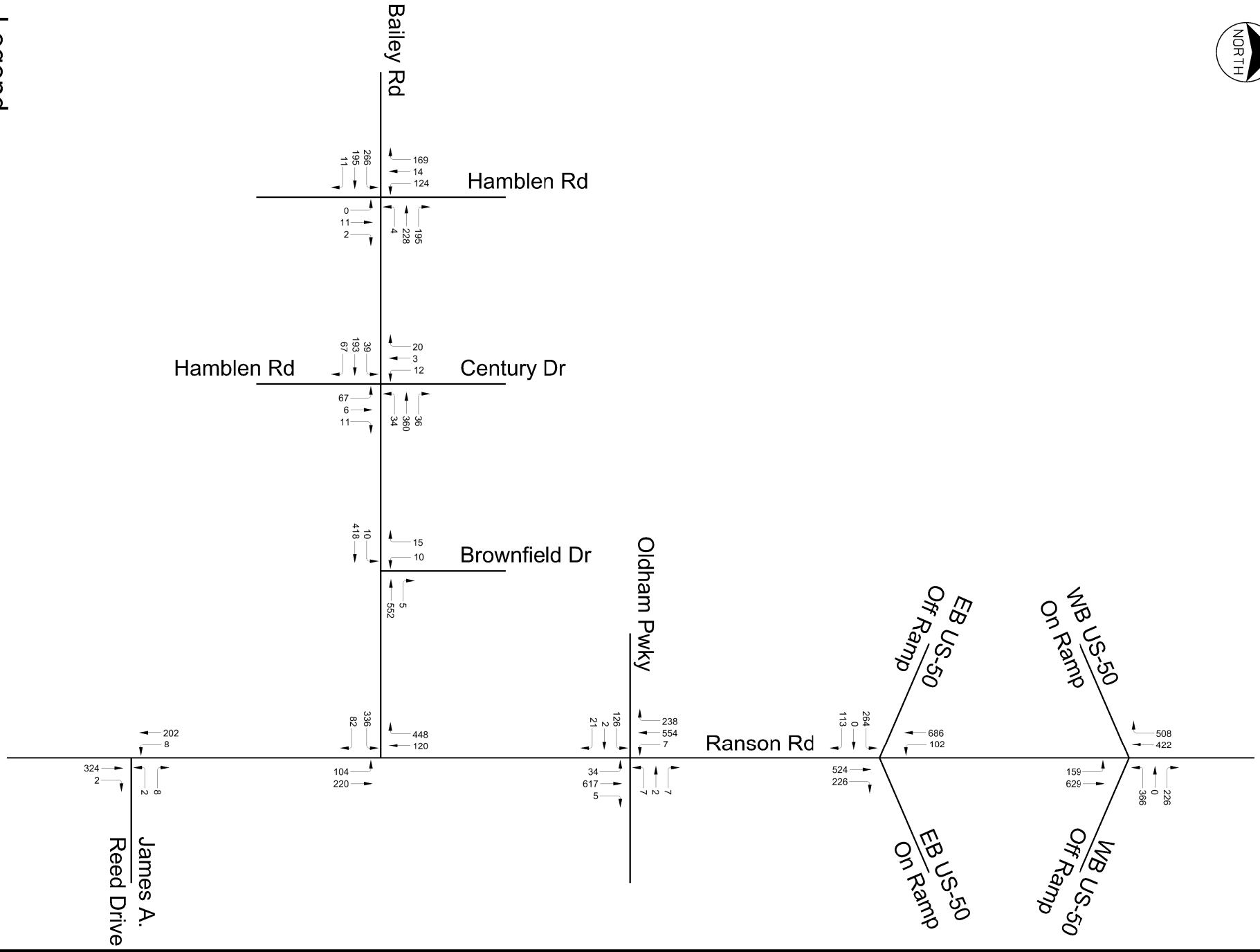


TranSystems	EXISTING PLUS APPROVED CONDITIONS LANE CONFIGURATIONS	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-3



TranSystems	EXISTING PLUS APPROVED CONDITIONS A.M. PEAK HOUR TRAFFIC VOLUMES	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-4

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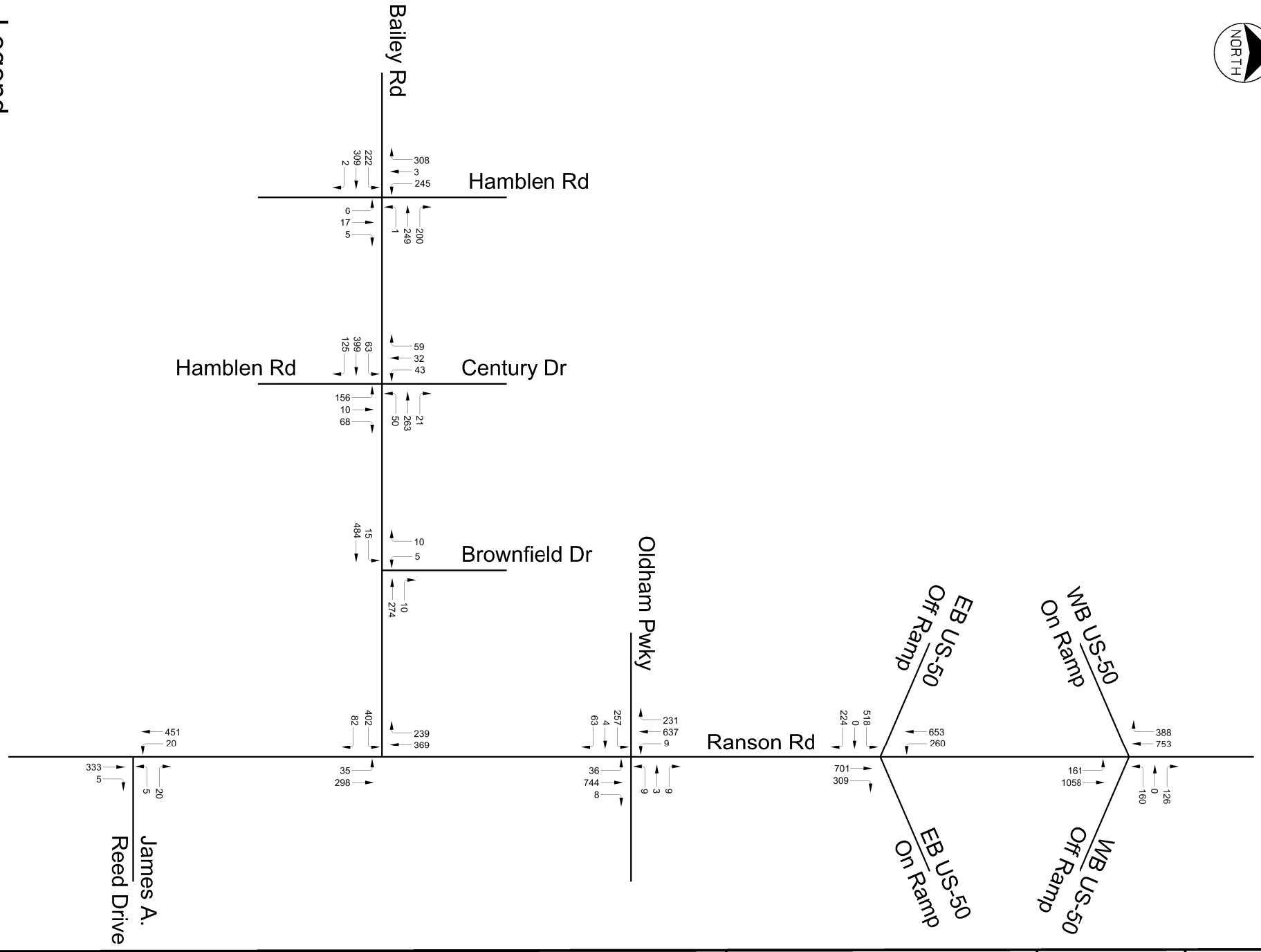

TranSystems	EXISTING PLUS APPROVED CONDITIONS P.M. PEAK HOUR TRAFFIC VOLUMES	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-5

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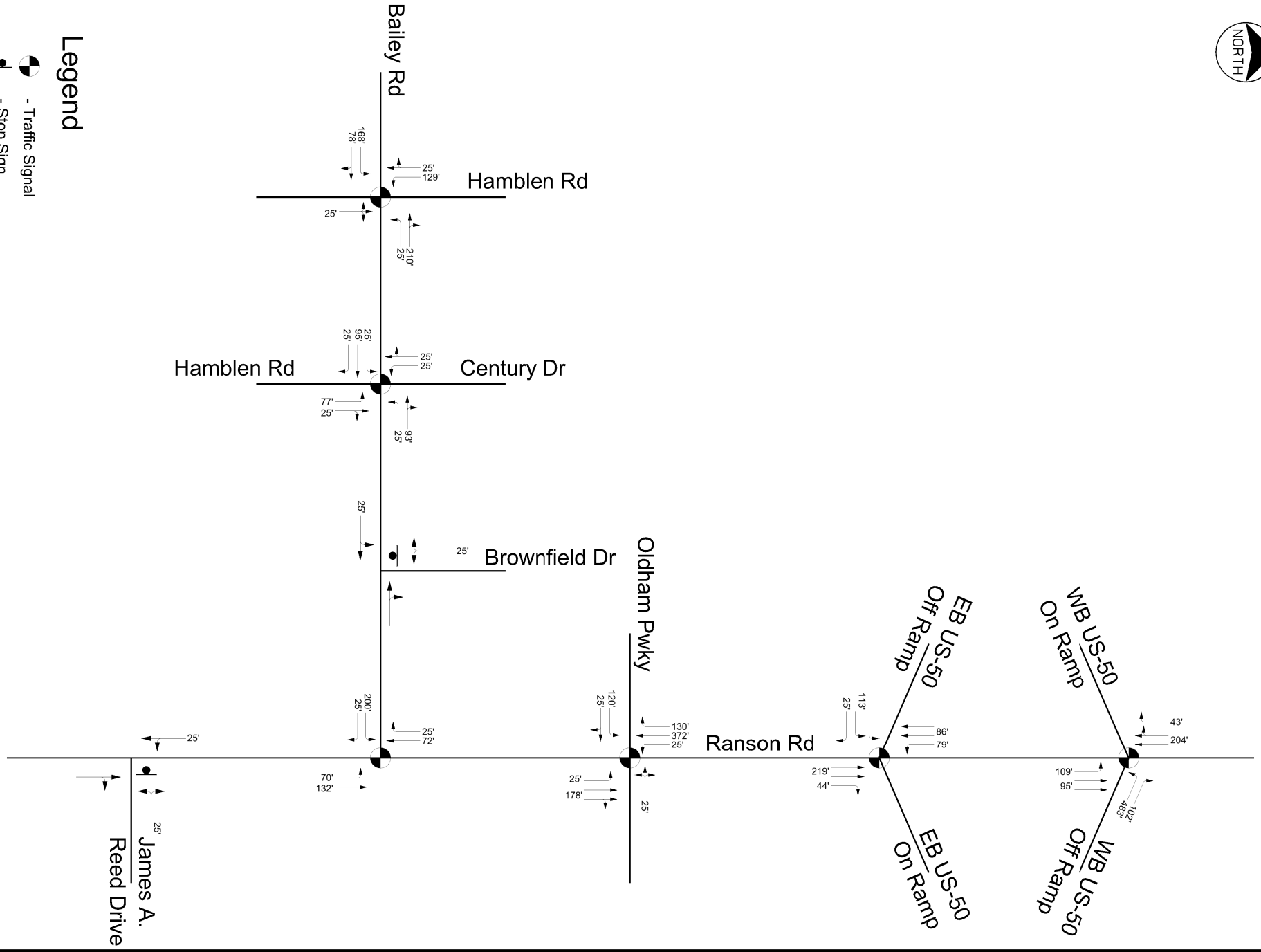

TranSystems	EXISTING PLUS APPROVED CONDITIONS A.M. PEAK HOUR QUEUE LENGTHS	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-6

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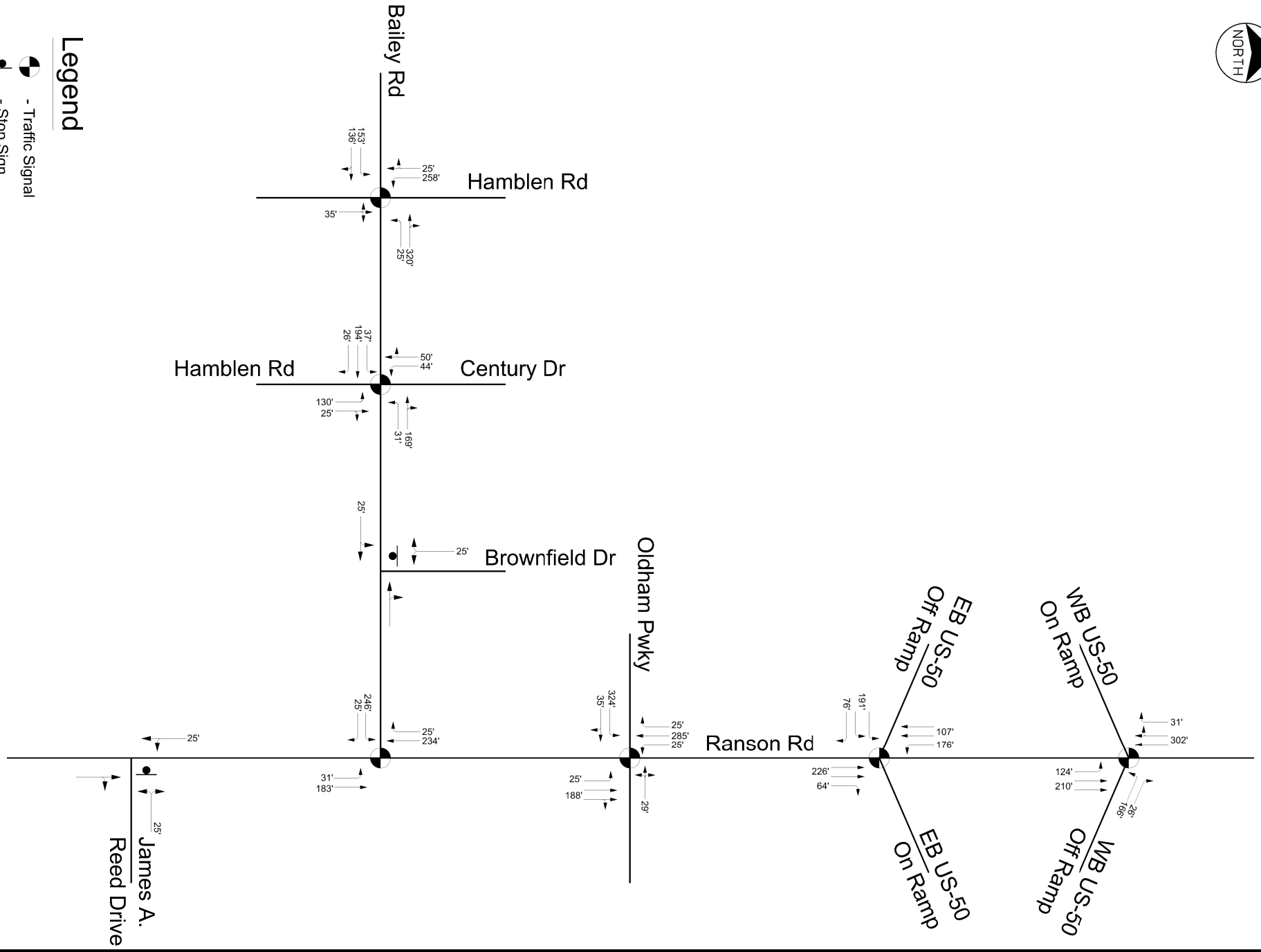
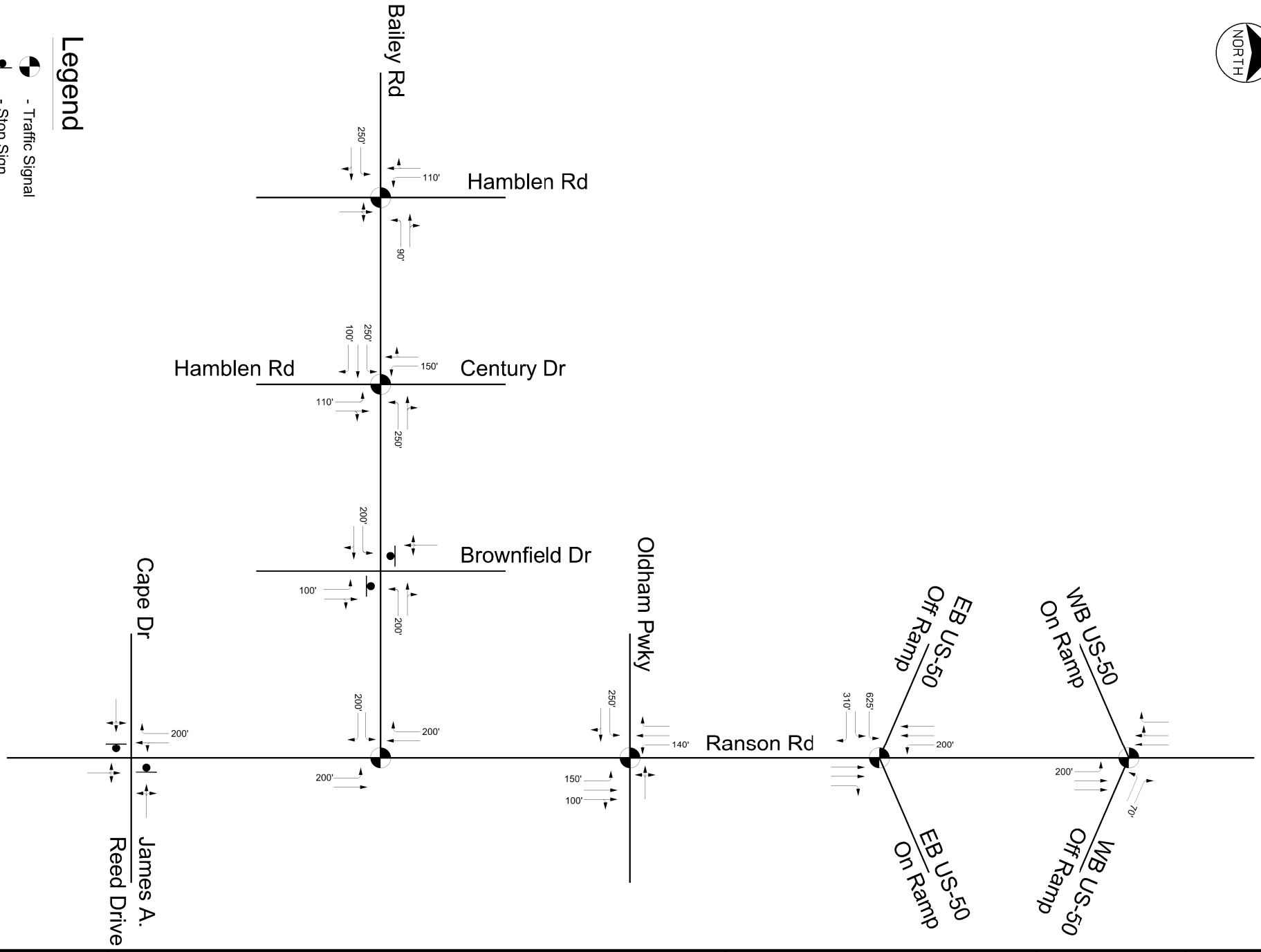
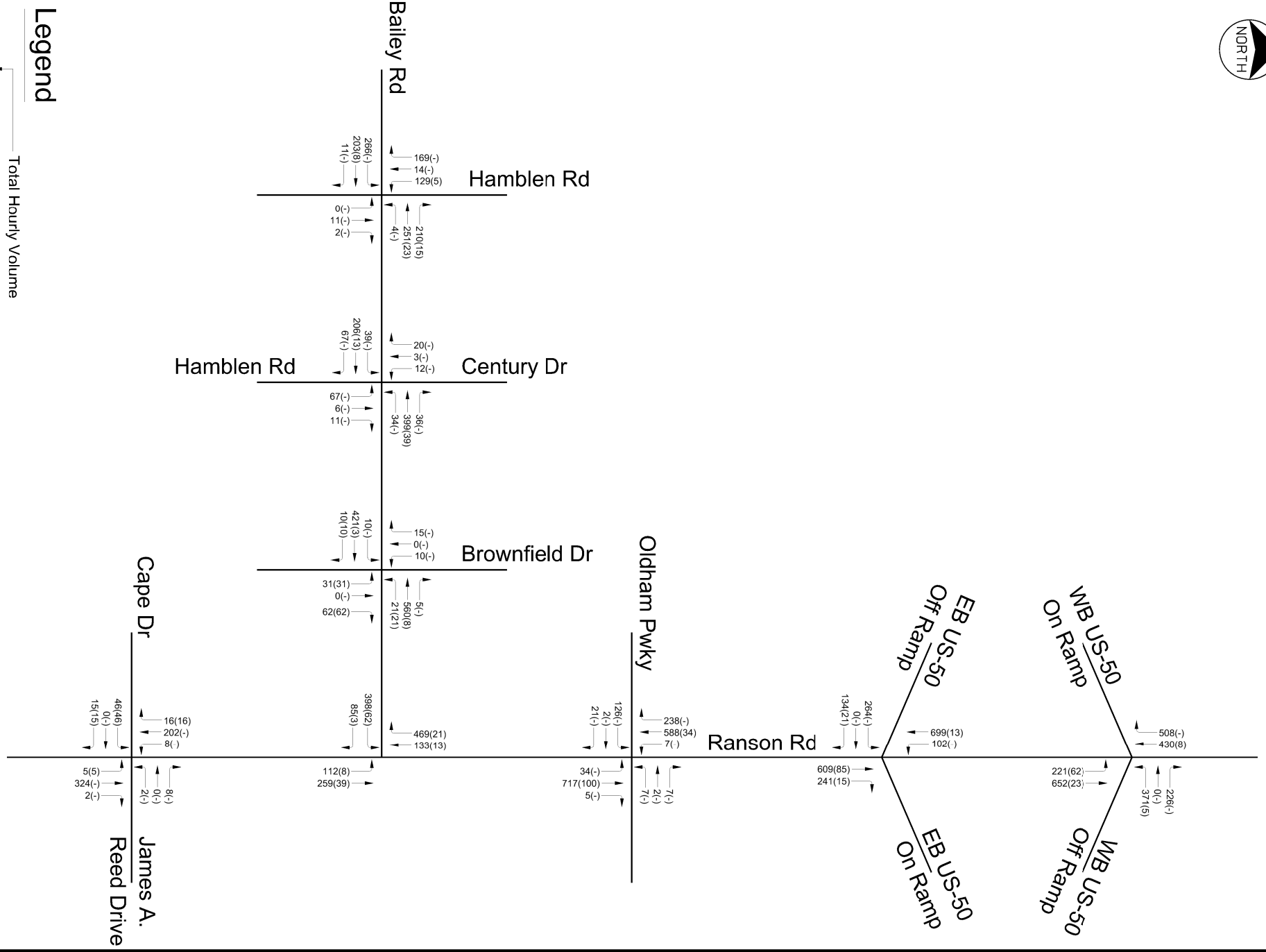


TranSystems	EXISTING PLUS APPROVED CONDITIONS P.M. PEAK HOUR QUEUE LENGHTS	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-7



TranSystems	EXISTING + APPROVED + PROPOSED CONDITIONS LANE CONFIGURATIONS	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-8



TranSystems	EXISTING + APPROVED + PROPOSED CONDITIONS A.M. PEAK HOUR TRAFFIC VOLUMES	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale Figure A-9

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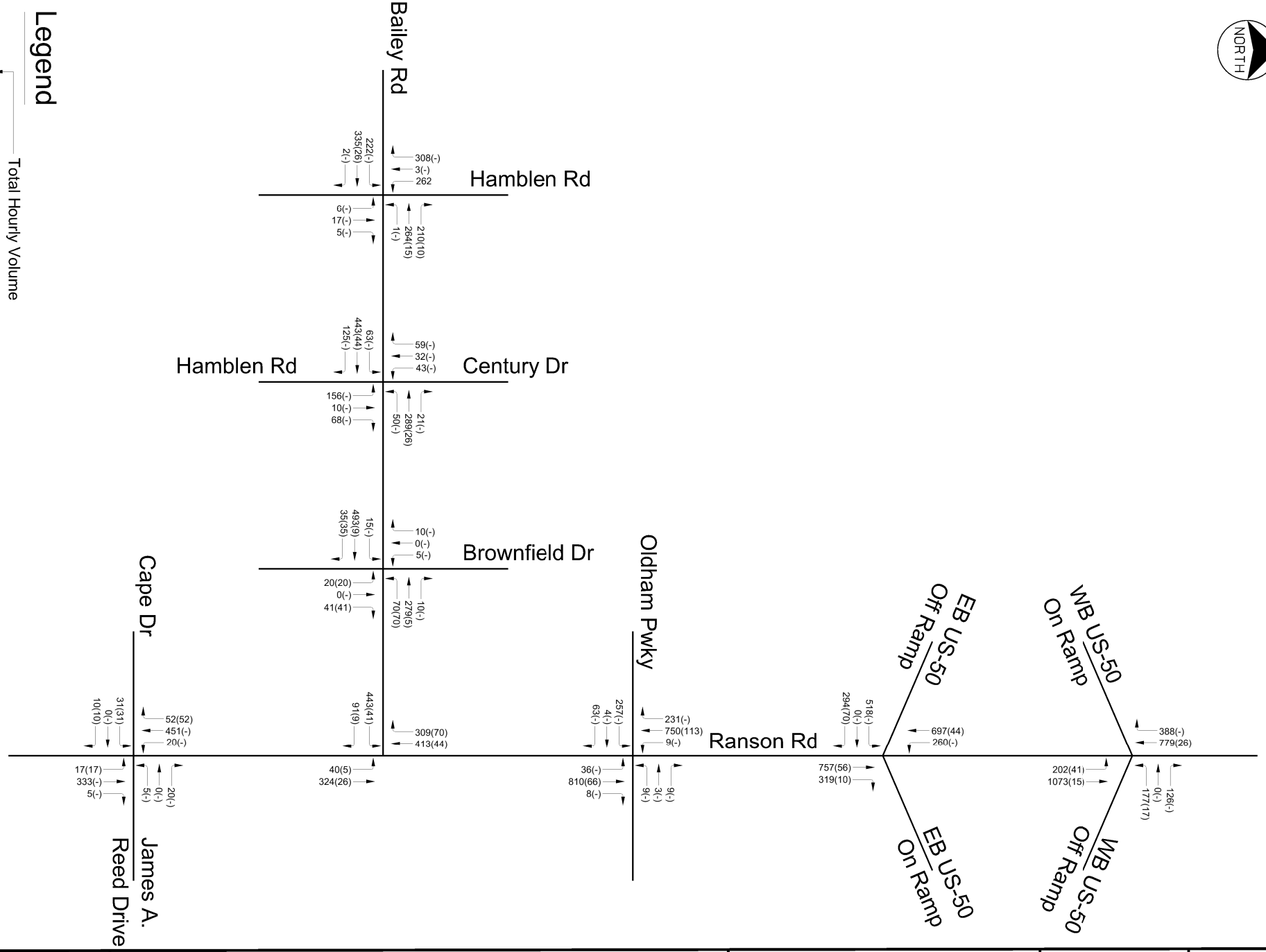

TranSystems	EXISTING + APPROVED + PROPOSED CONDITIONS P.M. PEAK HOUR TRAFFIC VOLUMES	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale
			Figure A-10

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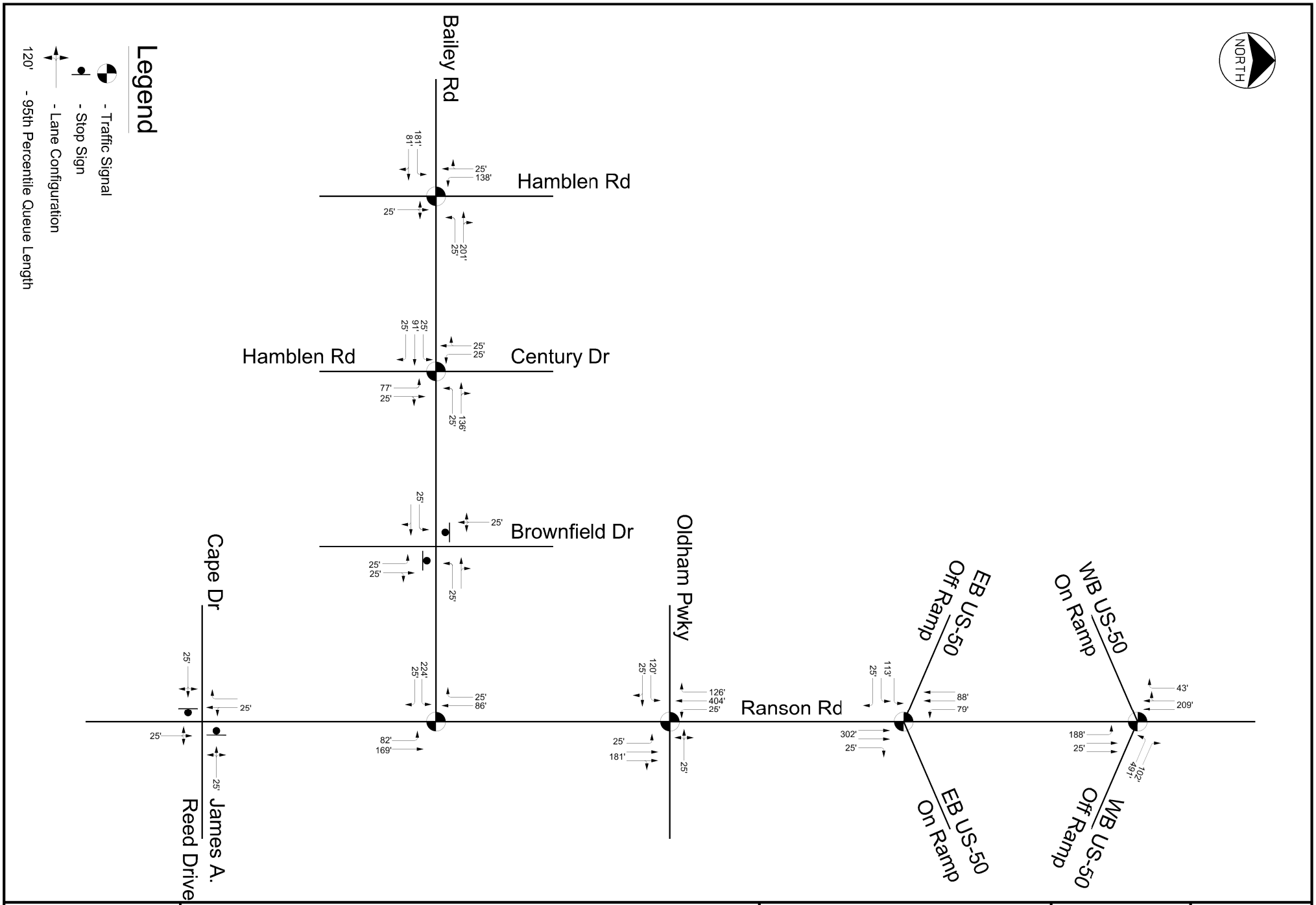

TranSystems	EXISTING + APPROVED + PROPOSED CONDITIONS A.M. PEAK HOUR QUEUE LENGTHS	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-11

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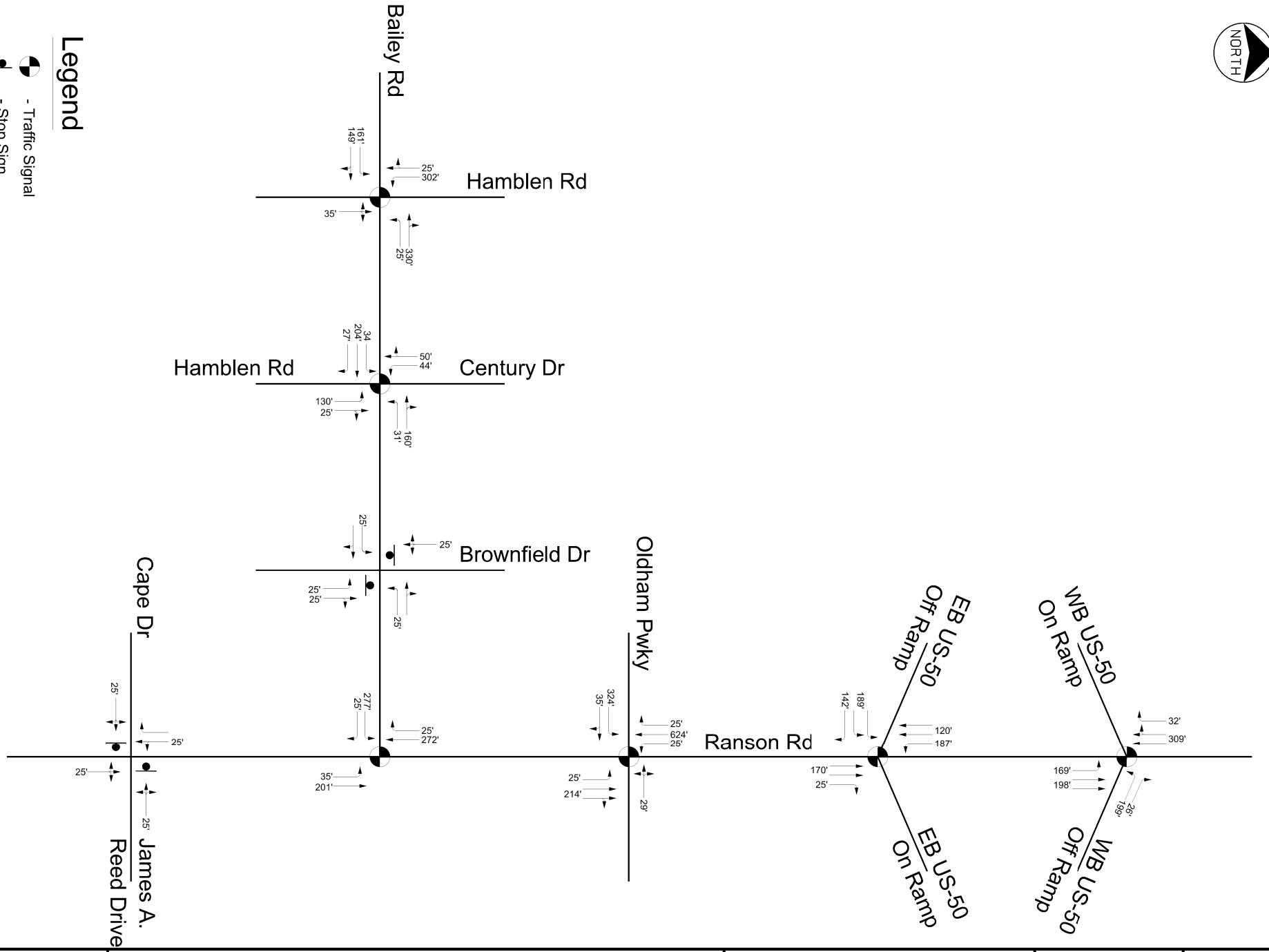


TranSystems	EXISTING +APPROVED + PROPOSED CONDITIONS P.M. PEAK HOUR QUEUE LENGTHS	Bailey Farms Traffic Impact Study Lee's Summit, Missouri	February 2021 No Scale	Figure A-12

Appendix B – Trip Generation and Distribution

See attached worksheets.

Bailey Farms TIS

Lee's Summit, Missouri

Trip Generation

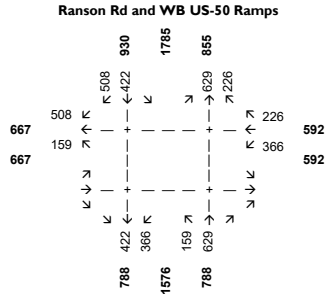
	Intensity	ITE Code	Daily Weekday	A.M. Peak Hour					P.M. Peak Hour				
				Total	% In	% Out	In	Out	Total	% In	% Out	In	Out
Single-Family Detached Housing	283 units	210	2,708	206	25%	75%	52	154	276	63%	37%	174	102
Total Development Trips			***2,708***	***206***			***52***	***154***	***276***			***174***	***102***

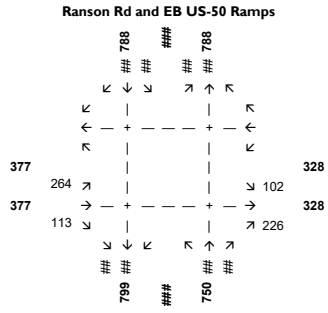
Notes:

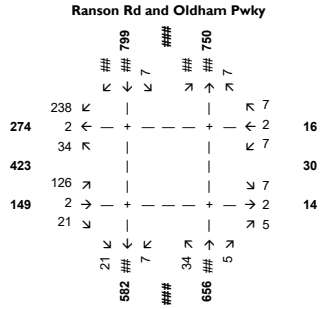
Trip generation estimates based on 10th Edition

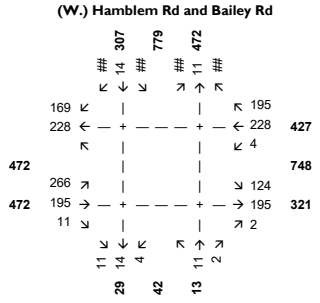
Bailey Farms TIS
Lee's Summit, Missouri

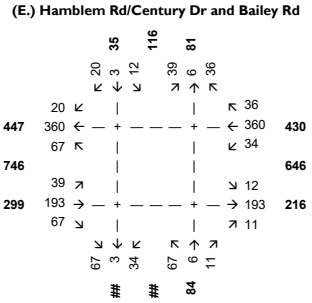
Existing plus Approved Traffic Volumes
A.M. Peak Hour

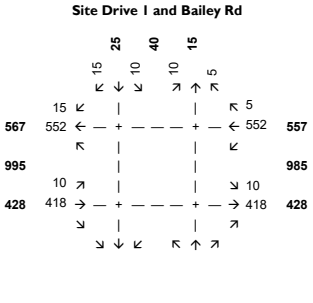


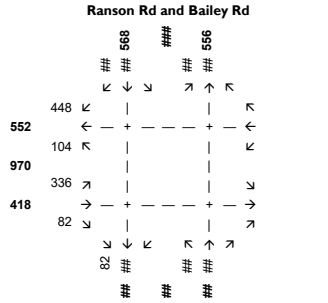


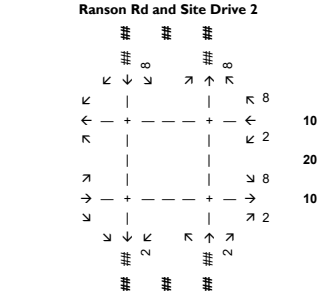






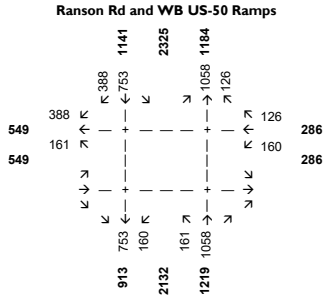


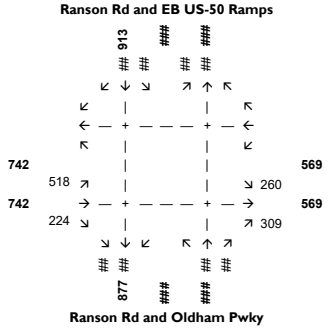


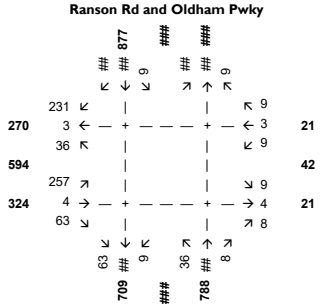


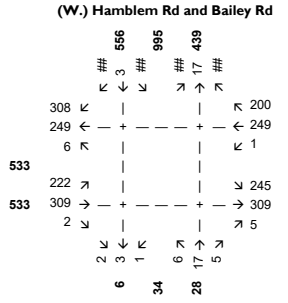
Bailey Farms TIS
Lee's Summit, Missouri

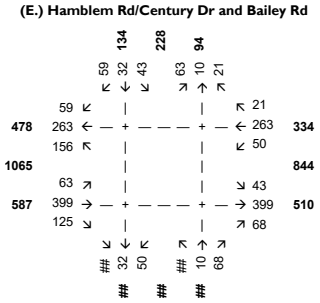
Existing plus Approved Traffic Volumes
P.M. Peak Hour

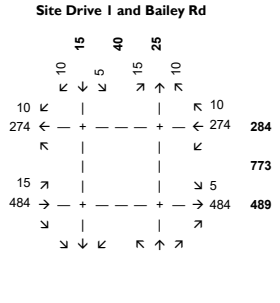


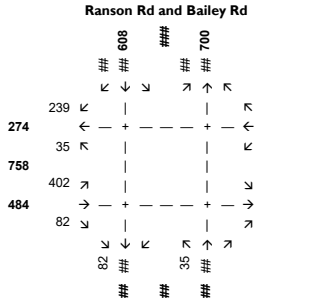


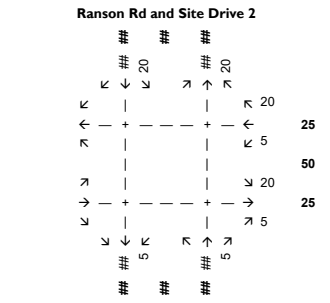








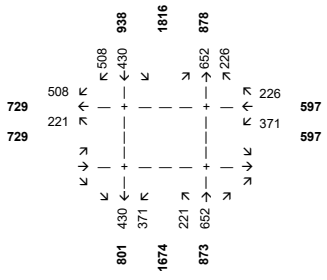




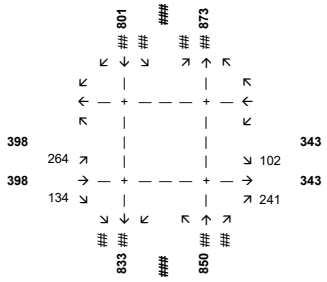
Bailey Farms TIS
Lee's Summit, Missouri

Existing plus Approved plus Development Traffic Volumes
A.M. Peak Hour

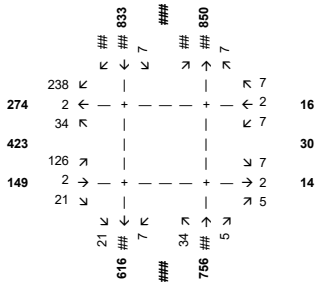
Ranson Rd and WB US-50 Ramps



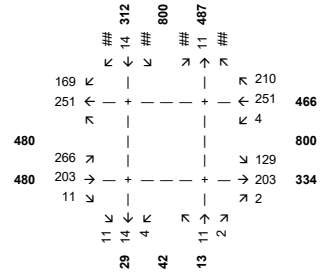
Ranson Rd and EB US-50 Ramps



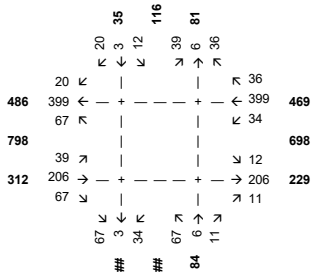
Ranson Rd and Oldham Pwky



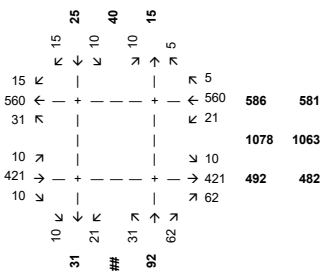
(W.) Hamblem Rd and Bailey Rd



(E.) Hamblem Rd/Century Dr and Bailey Rd



Site Drive 1 and Bailey Rd



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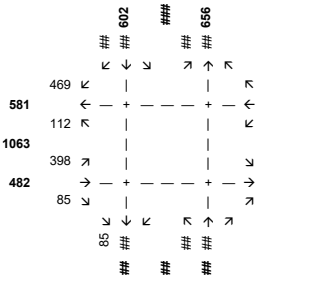

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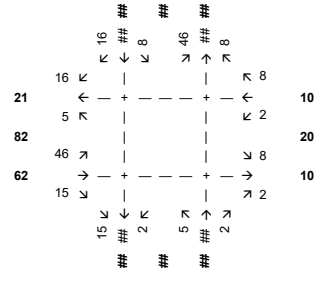
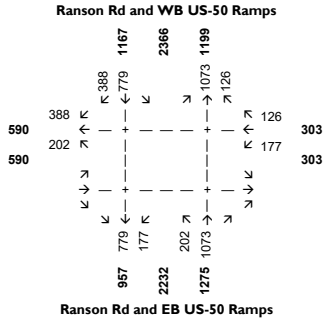
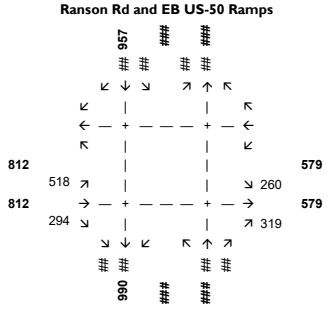
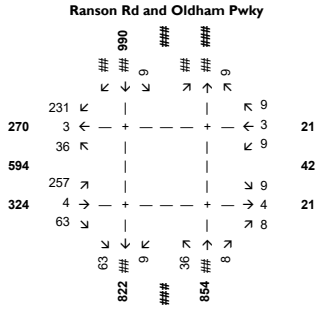


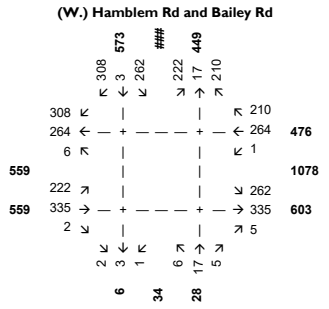
Bailey Farms TIS
Lee's Summit, Missouri

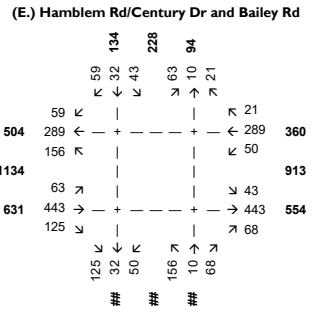
Existing plus Approved plus Development Traffic Volumes
P.M. Peak Hour

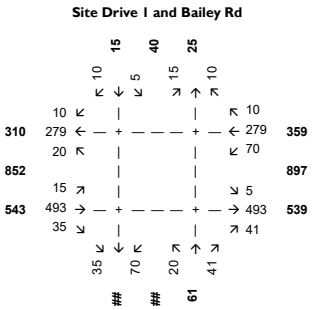


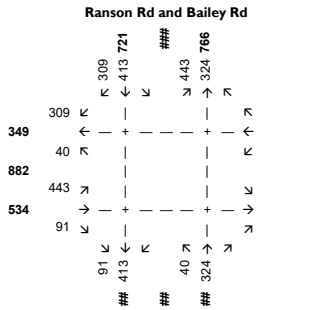


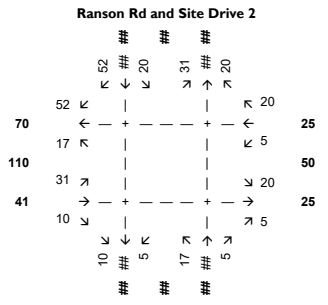








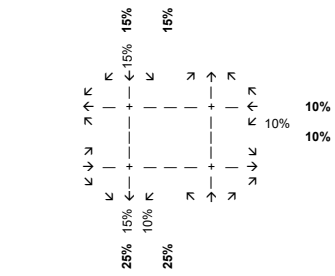




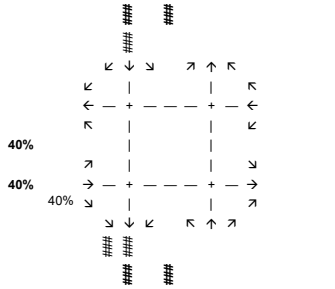
Bailey Farms TIS
Lee's Summit, Missouri

Trip Distrubution
Inbound

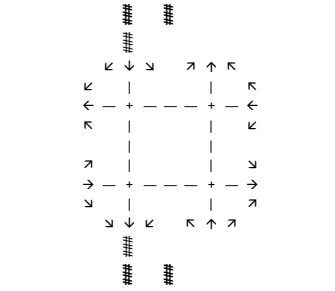
Ranson Rd and WB US-50 Ramps



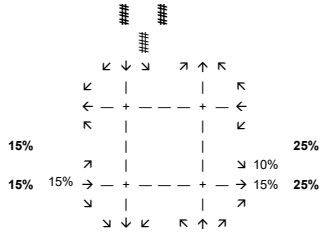
Ranson Rd and EB US-50 Ramps



Ranson Rd and Oldham Pwky



(W.) Hamblem Rd and Bailey Rd



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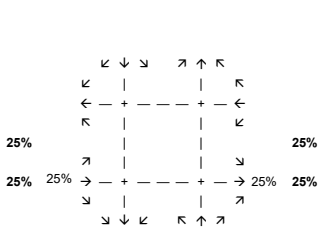
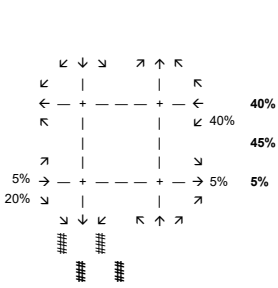
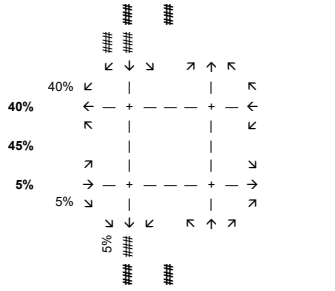


Site Drive 1 and Bailey Rd



Ranson Rd and Bailey Rd



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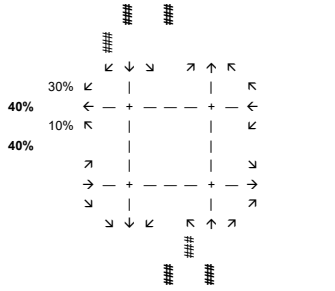
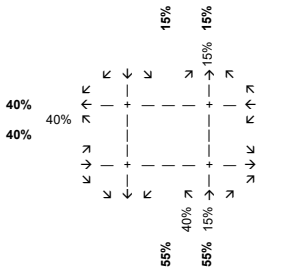


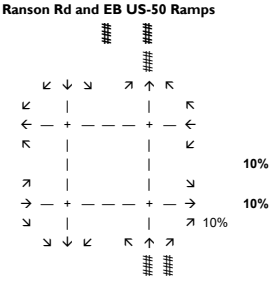
Bailey Farms TIS
Lee's Summit, Missouri

Trip Distrubution
Outbound

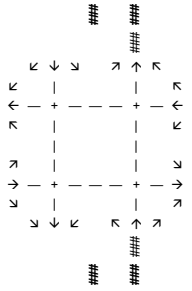
Ranson Rd and WB US-50 Ramps



Ranson Rd and EB US-50 Ramps



Ranson Rd and Oldham Pwky



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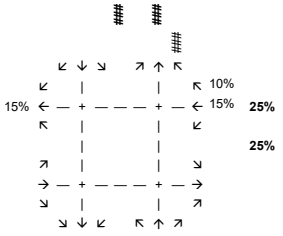

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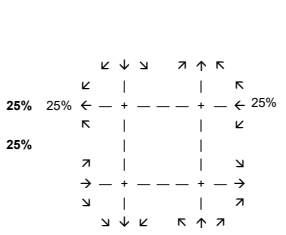
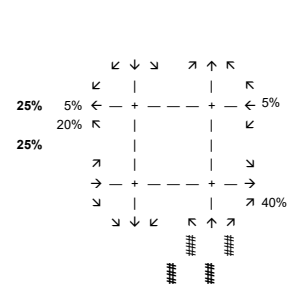
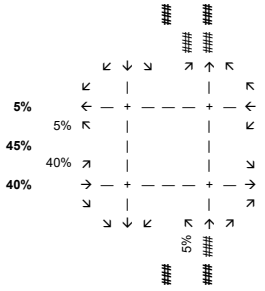


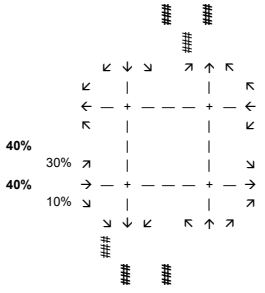
Site Drive 1 and Bailey Rd



Ranson Rd and Bailey Rd



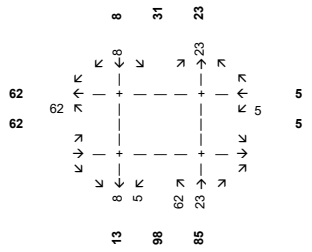
Ranson Rd and Site Drive 2



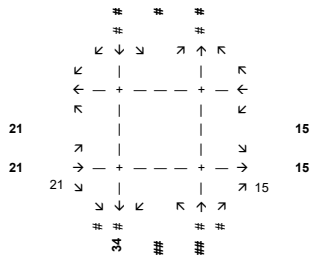
Bailey Farms TIS
Lee's Summit, Missouri

Development Traffic Volumes
A.M. Peak Hour

Ranson Rd and WB US-50 Ramps



Ranson Rd and EB US-50 Ramps



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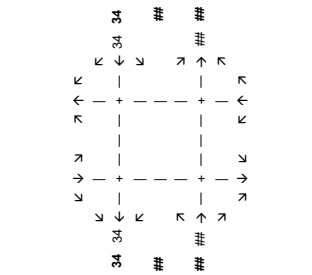

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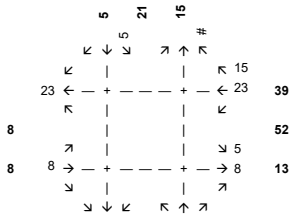

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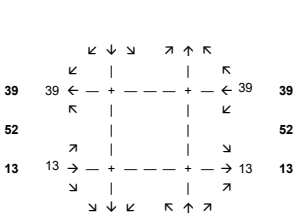

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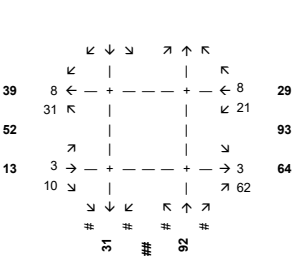

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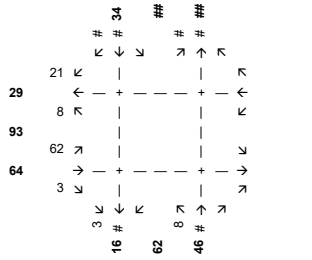

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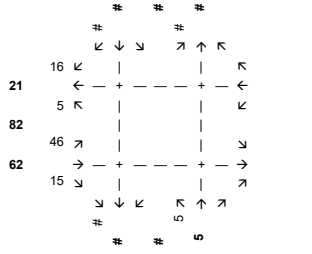
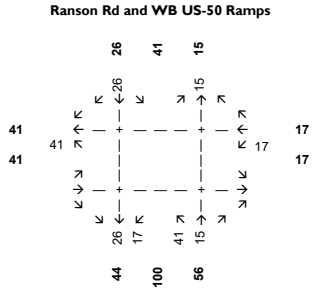


Bailey Farms TIS
Lee's Summit, Missouri

Development Traffic Volumes
P.M. Peak Hour

Ranson Rd and WB US-50 Ramps



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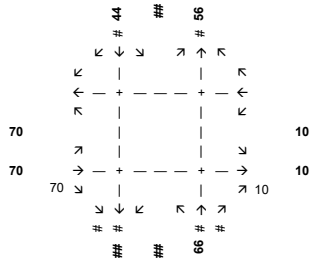

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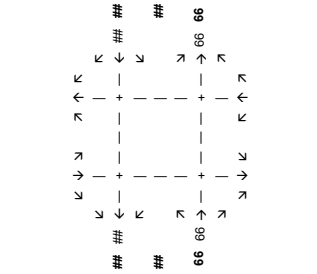

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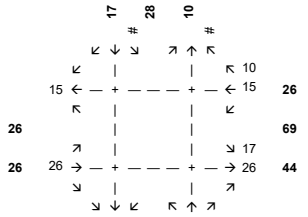

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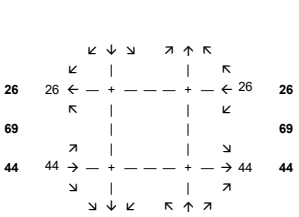

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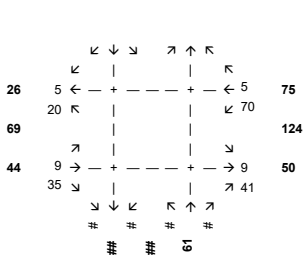

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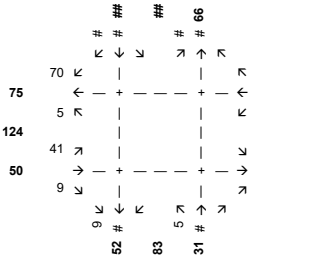

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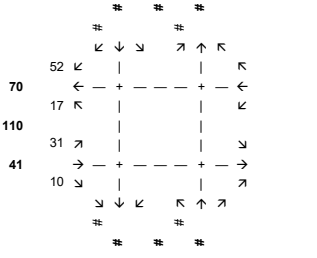
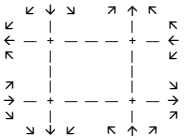


Bailey Farms TIS
Lee's Summit, Missouri

James A Reed Park Traffic
A.M. Peak Hour

Ranson Rd and WB US-50 Ramps



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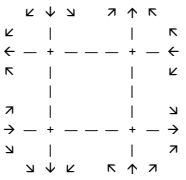

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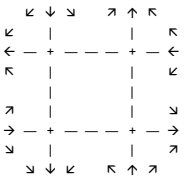

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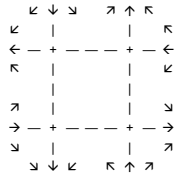

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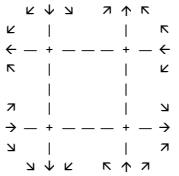

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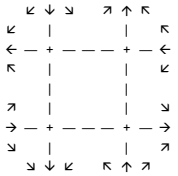

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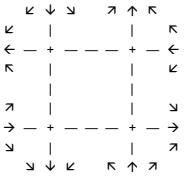

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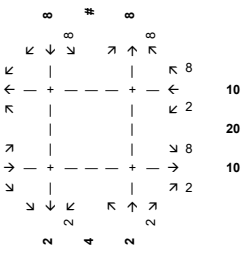
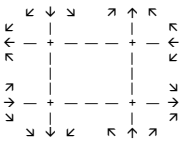


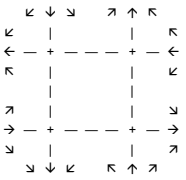
Bailey Farms TIS
Lee's Summit, Missouri

James A Reed Park Traffic
P.M. Peak Hour

Ranson Rd and WB US-50 Ramps



Ranson Rd and EB US-50 Ramps



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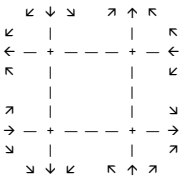

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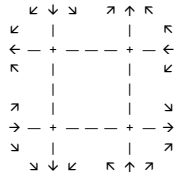

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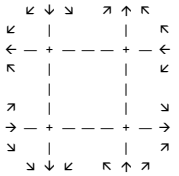

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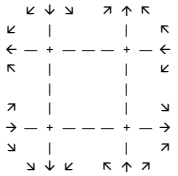

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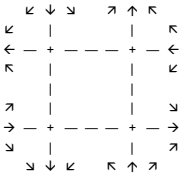

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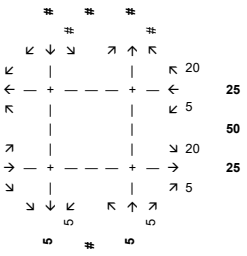
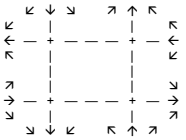


Bailey Farms TIS
Lee's Summit, Missouri

Brownfield Drive Estimate
A.M. Peak Hour

Ranson Rd and WB US-50 Ramps



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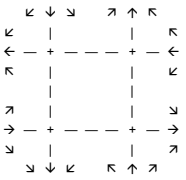

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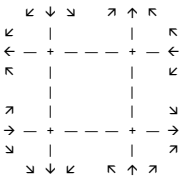

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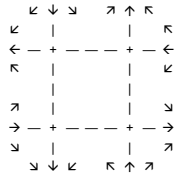

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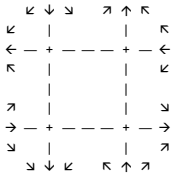

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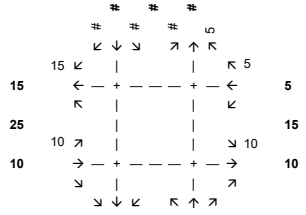

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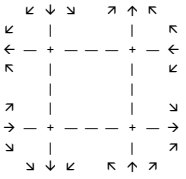

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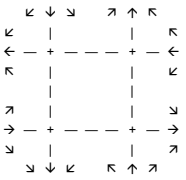
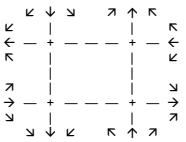


Bailey Farms TIS
Lee's Summit, Missouri

Brownfield Drive Estimate
P.M. Peak Hour

Ranson Rd and WB US-50 Ramps



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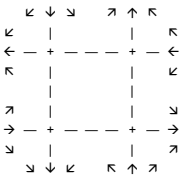

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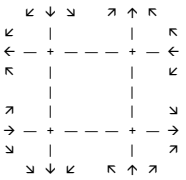

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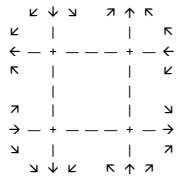

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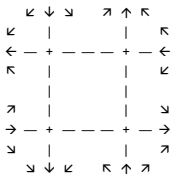
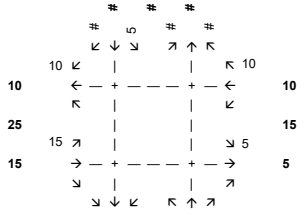


Site Drive 1 and Bailey Rd



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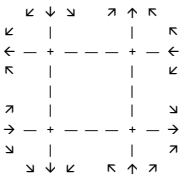

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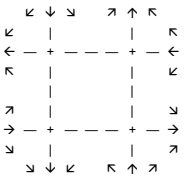


Appendix C – Capacity Analysis Reports

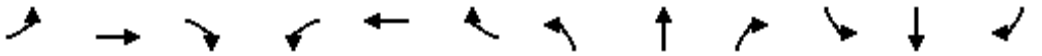
See attached worksheets.

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	421	297	177	731	751	339
v/c Ratio	1.15	0.63	0.57	0.31	0.65	0.48
Control Delay	130.2	20.8	28.9	8.9	23.4	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.2	20.8	28.9	8.9	23.4	4.7
Queue Length 50th (ft)	~323	59	37	80	156	0
Queue Length 95th (ft)	#483	102	109	95	204	43
Internal Link Dist (ft)				565	1226	
Turn Bay Length (ft)		70	200			
Base Capacity (vph)	367	472	314	2430	1285	755
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	1.15	0.63	0.56	0.30	0.58	0.45

Intersection Summary

~ 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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	366	0	226	159	629	0	0	422	508
Future Volume (vph)	0	0	0	366	0	226	159	629	0	0	422	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0		6.0	6.0	6.0			6.0	6.0
Lane Util. Factor				1.00		1.00	1.00	0.95			0.91	0.91
Frt				1.00		0.85	1.00	1.00			0.95	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1583	1770	3539			3210	1441
Flt Permitted				0.95		1.00	0.22	1.00			1.00	1.00
Satd. Flow (perm)				1770		1583	406	3539			3210	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.92	0.76	0.90	0.86	0.87	0.25	0.87	0.84
Adj. Flow (vph)	0	0	0	421	0	297	177	731	0	0	485	605
RTOR Reduction (vph)	0	0	0	0	0	144	0	0	0	0	77	224
Lane Group Flow (vph)	0	0	0	421	0	153	177	731	0	0	674	115
Turn Type				Prot		Prot	D.P+P	NA			NA	Perm
Protected Phases				7		7	5	5 6 8			6	
Permitted Phases							6					6
Actuated Green, G (s)				18.7		18.7	39.3	59.3			30.4	30.4
Effective Green, g (s)				18.7		18.7	39.3	59.3			30.4	30.4
Actuated g/C Ratio				0.21		0.21	0.44	0.66			0.34	0.34
Clearance Time (s)				6.0		6.0	6.0				6.0	6.0
Vehicle Extension (s)				3.0		3.0	3.0				3.0	3.0
Lane Grp Cap (vph)				367		328	312	2331			1084	486
v/s Ratio Prot				c0.24		0.10	c0.06	c0.21			c0.21	
v/s Ratio Perm							0.19					0.08
v/c Ratio				1.15		0.47	0.57	0.31			0.62	0.24
Uniform Delay, d1				35.6		31.3	16.9	6.6			25.0	21.4
Progression Factor				1.00		1.00	1.88	1.35			1.00	1.00
Incremental Delay, d2				93.3		1.0	2.1	0.1			2.7	1.1
Delay (s)				129.0		32.3	33.8	9.0			27.7	22.6
Level of Service				F		C	C	A			C	C
Approach Delay (s)		0.0			89.0			13.8			26.1	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

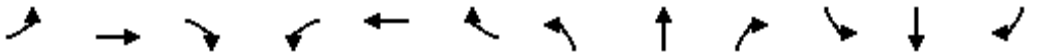
c Critical Lane Group

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	303	164	602	260	128	789
v/c Ratio	0.60	0.42	0.56	0.39	0.34	0.31
Control Delay	40.4	7.5	26.6	6.0	20.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	7.6	26.6	6.0	20.9	6.5
Queue Length 50th (ft)	84	0	166	44	55	64
Queue Length 95th (ft)	113	11	#219	10	m79	m86
Internal Link Dist (ft)			296			565
Turn Bay Length (ft)	625	310			200	
Base Capacity (vph)	686	462	1082	664	379	2515
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	11	0	0	0	197
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.36	0.56	0.39	0.34	0.34

Intersection Summary

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

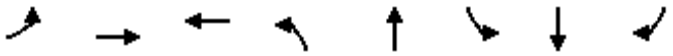
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	0	113	0	0	0	0	524	226	102	686	0
Future Volume (vph)	264	0	113	0	0	0	0	524	226	102	686	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1583					3539	1583	1770	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.31	1.00	
Satd. Flow (perm)	3433		1583					3539	1583	579	3539	
Peak-hour factor, PHF	0.87	0.25	0.69	1.00	1.00	1.00	0.25	0.87	0.87	0.80	0.87	0.92
Adj. Flow (vph)	303	0	164	0	0	0	0	602	260	128	789	0
RTOR Reduction (vph)	0	0	140	0	0	0	0	0	181	0	0	0
Lane Group Flow (vph)	303	0	24	0	0	0	0	602	79	128	789	0
Turn Type	Prot		Prot					NA	Perm	D.P+P	NA	
Protected Phases	3		3					2		1	1 2 4	
Permitted Phases									2	2		
Actuated Green, G (s)	13.4		13.4					27.5	27.5	37.8	64.6	
Effective Green, g (s)	13.4		13.4					27.5	27.5	37.8	64.6	
Actuated g/C Ratio	0.15		0.15					0.31	0.31	0.42	0.72	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0		
Lane Grp Cap (vph)	511		235					1081	483	379	2540	
v/s Ratio Prot	c0.09		0.02					c0.17		0.04	c0.22	
v/s Ratio Perm									0.05	0.10		
v/c Ratio	0.59		0.10					0.56	0.16	0.34	0.31	
Uniform Delay, d1	35.8		33.1					26.2	22.8	16.7	4.6	
Progression Factor	1.00		1.00					0.86	1.02	1.28	1.28	
Incremental Delay, d2	1.8		0.2					2.0	0.7	0.3	0.0	
Delay (s)	37.6		33.3					24.4	24.0	21.6	5.9	
Level of Service	D		C					C	C	C	A	
Approach Delay (s)		36.1			0.0			24.3			8.1	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

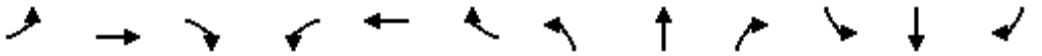
c Critical Lane Group



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	152	27	21	37	676	8	602	259
v/c Ratio	0.62	0.10	0.17	0.08	0.28	0.01	0.52	0.24
Control Delay	44.8	12.9	30.9	5.6	7.5	4.7	17.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	44.8	12.9	30.9	5.6	7.5	4.7	17.6	7.6
Queue Length 50th (ft)	82	1	7	5	58	1	267	14
Queue Length 95th (ft)	120	19	24	17	152	m5	372	130
Internal Link Dist (ft)		529	268		1831		296	
Turn Bay Length (ft)	150			150		140		
Base Capacity (vph)	247	533	341	468	2398	546	1157	1081
Starvation Cap Reductn	0	0	0	0	0	0	173	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	0.62	0.05	0.06	0.08	0.28	0.01	0.61	0.24

Intersection Summary

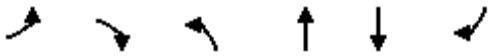
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	2	21	7	2	7	34	617	5	7	554	238
Future Volume (veh/h)	126	2	21	7	2	7	34	617	5	7	554	238
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	2	25	9	3	9	37	671	5	8	602	259
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	19	239	79	13	26	528	2274	17	513	1132	960
Arrive On Green	0.06	0.16	0.16	0.04	0.04	0.04	0.03	0.63	0.63	0.02	1.00	1.00
Sat Flow, veh/h	1781	119	1484	560	327	666	1781	3615	27	1781	1870	1585
Grp Volume(v), veh/h	152	0	27	21	0	0	37	330	346	8	602	259
Grp Sat Flow(s),veh/h/ln	1781	0	1603	1553	0	0	1781	1777	1866	1781	1870	1585
Q Serve(g_s), s	5.0	0.0	1.3	0.6	0.0	0.0	0.7	7.6	7.6	0.2	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	1.3	1.1	0.0	0.0	0.7	7.6	7.6	0.2	0.0	0.0
Prop In Lane	1.00		0.93	0.43		0.43	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	278	0	258	117	0	0	528	1117	1173	513	1132	960
V/C Ratio(X)	0.55	0.00	0.10	0.18	0.00	0.00	0.07	0.30	0.30	0.02	0.53	0.27
Avail Cap(c_a), veh/h	278	0	517	363	0	0	568	1117	1173	594	1132	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.83	0.83	0.83	0.95	0.95	0.95
Uniform Delay (d), s/veh	38.4	0.0	32.2	42.1	0.0	0.0	6.0	7.6	7.6	6.8	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	0.2	0.7	0.0	0.0	0.0	0.6	0.5	0.0	1.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.5	0.5	0.0	0.0	0.2	2.5	2.6	0.0	0.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	32.4	42.8	0.0	0.0	6.0	8.2	8.1	6.8	1.7	0.7
LnGrp LOS	D	A	C	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		179			21			713			869	
Approach Delay, s/veh		39.4			42.8			8.0			1.4	
Approach LOS		D			D			A			A	

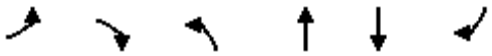
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	62.6		20.5	9.0	60.5	11.0	9.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	38.0		29.0	5.0	38.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	2.2	9.6		3.3	2.7	2.0	7.0	3.1				
Green Ext Time (p_c), s	0.0	3.9		0.1	0.0	5.0	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			8.4									
HCM 6th LOS			A									



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	405	99	125	256	164	515
v/c Ratio	0.71	0.17	0.19	0.26	0.17	0.33
Control Delay	30.5	4.2	13.1	12.9	12.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	4.2	13.1	12.9	12.2	0.5
Queue Length 50th (ft)	175	0	31	66	40	0
Queue Length 95th (ft)	200	21	70	132	72	0
Internal Link Dist (ft)	525			1560	1831	
Turn Bay Length (ft)		200	200			200
Base Capacity (vph)	885	841	644	986	986	1579
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	0.12	0.19	0.26	0.17	0.33

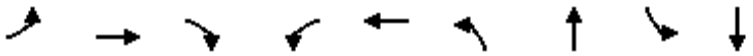
Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	336	82	104	220	120	448
Future Volume (veh/h)	336	82	104	220	120	448
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	405	99	125	256	164	515
Peak Hour Factor	0.83	0.83	0.83	0.86	0.73	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	466	415	507	1100	1100	1347
Arrive On Green	0.26	0.26	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1781	1585	761	1870	1870	1585
Grp Volume(v), veh/h	405	99	125	256	164	515
Grp Sat Flow(s),veh/h/ln	1781	1585	761	1870	1870	1585
Q Serve(g_s), s	17.4	3.9	7.1	5.2	3.2	5.8
Cycle Q Clear(g_c), s	17.4	3.9	10.3	5.2	3.2	5.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	466	415	507	1100	1100	1347
V/C Ratio(X)	0.87	0.24	0.25	0.23	0.15	0.38
Avail Cap(c_a), veh/h	891	793	507	1100	1100	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.84	0.84
Uniform Delay (d), s/veh	28.2	23.2	9.8	7.9	7.4	1.3
Incr Delay (d2), s/veh	5.1	0.3	1.2	0.5	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	1.5	1.1	1.8	1.1	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.3	23.5	10.9	8.4	7.7	2.0
LnGrp LOS	C	C	B	A	A	A
Approach Vol, veh/h	504			381	679	
Approach Delay, s/veh	31.4			9.2	3.4	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		53.1		26.9		53.1
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		28.0		40.0		28.0
Max Q Clear Time (g_c+I1), s		12.3		19.4		7.8
Green Ext Time (p_c), s		1.9		1.6		2.7

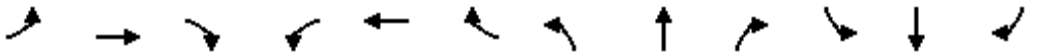
Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	244	88	56	524	80	28	20	36
v/c Ratio	0.09	0.17	0.07	0.06	0.36	0.50	0.13	0.12	0.17
Control Delay	6.0	5.5	2.7	3.9	4.9	46.8	21.9	35.2	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	5.5	2.7	3.9	4.9	46.8	21.9	35.2	17.5
Queue Length 50th (ft)	4	14	0	7	82	43	6	10	4
Queue Length 95th (ft)	m23	95	m9	13	120	77	13	20	4
Internal Link Dist (ft)		1235			4613		1001		513
Turn Bay Length (ft)	250		100	250		110		150	
Base Capacity (vph)	662	1469	1267	891	1452	364	465	367	459
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.17	0.07	0.06	0.36	0.22	0.06	0.05	0.08

Intersection Summary

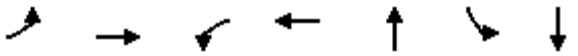
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	193	67	34	360	36	67	6	11	12	3	20
Future Volume (veh/h)	39	193	67	34	360	36	67	6	11	12	3	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	244	88	56	480	44	80	12	16	20	8	28
Peak Hour Factor	0.65	0.79	0.76	0.61	0.75	0.82	0.84	0.50	0.69	0.60	0.38	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	671	1433	1214	883	1293	119	190	73	97	198	37	128
Arrive On Green	1.00	1.00	1.00	0.77	0.77	0.77	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	878	1870	1585	1048	1688	155	1372	727	969	1382	365	1276
Grp Volume(v), veh/h	60	244	88	56	0	524	80	0	28	20	0	36
Grp Sat Flow(s),veh/h/ln	878	1870	1585	1048	0	1843	1372	0	1696	1382	0	1641
Q Serve(g_s), s	0.8	0.0	0.0	1.2	0.0	8.4	5.1	0.0	1.4	1.2	0.0	1.8
Cycle Q Clear(g_c), s	9.2	0.0	0.0	1.2	0.0	8.4	6.9	0.0	1.4	2.6	0.0	1.8
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.57	1.00		0.78
Lane Grp Cap(c), veh/h	671	1433	1214	883	0	1412	190	0	170	198	0	165
V/C Ratio(X)	0.09	0.17	0.07	0.06	0.00	0.37	0.42	0.00	0.16	0.10	0.00	0.22
Avail Cap(c_a), veh/h	671	1433	1214	883	0	1412	418	0	452	428	0	438
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.6	0.0	0.0	2.6	0.0	3.4	40.4	0.0	37.0	38.2	0.0	37.2
Incr Delay (d2), s/veh	0.2	0.2	0.1	0.1	0.0	0.8	1.5	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.2	0.0	2.5	1.8	0.0	0.6	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.8	0.2	0.1	2.7	0.0	4.2	41.9	0.0	37.5	38.4	0.0	37.9
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		392			580			108			56	
Approach Delay, s/veh		0.3			4.0			40.7			38.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.0		75.0		15.0		75.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		54.0		24.0		54.0				
Max Q Clear Time (g_c+I1), s		8.9		11.2		4.6		10.4				
Green Ext Time (p_c), s		0.3		2.2		0.2		4.2				

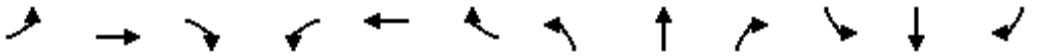
Intersection Summary												
HCM 6th Ctrl Delay			7.9									
HCM 6th LOS			A									



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	320	260	8	537	32	148	216
v/c Ratio	0.61	0.21	0.01	0.44	0.22	0.68	0.49
Control Delay	15.3	6.2	7.8	10.4	34.9	49.4	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	6.2	7.8	10.4	34.9	49.4	11.5
Queue Length 50th (ft)	117	61	2	176	13	67	15
Queue Length 95th (ft)	168	78	5	179	18	#129	0
Internal Link Dist (ft)		1534		1235	1066		1040
Turn Bay Length (ft)	250		90			110	
Base Capacity (vph)	525	1264	767	1219	366	219	647
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.21	0.01	0.44	0.09	0.68	0.33

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	195	11	4	228	195	0	11	2	124	14	169
Future Volume (veh/h)	266	195	11	4	228	195	0	11	2	124	14	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	320	232	28	8	308	229	0	24	8	148	36	180
Peak Hour Factor	0.83	0.84	0.39	0.50	0.74	0.85	0.25	0.46	0.25	0.84	0.39	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	678	1128	136	794	686	510	0	74	25	232	48	241
Arrive On Green	0.69	0.69	0.69	1.00	1.00	1.00	0.00	0.06	0.06	0.06	0.18	0.18
Sat Flow, veh/h	868	1637	198	1119	996	741	0	1342	447	1781	271	1355
Grp Volume(v), veh/h	320	0	260	8	0	537	0	0	32	148	0	216
Grp Sat Flow(s),veh/h/ln	868	0	1835	1119	0	1737	0	0	1790	1781	0	1626
Q Serve(g_s), s	16.3	0.0	4.6	0.0	0.0	0.0	0.0	0.0	1.5	5.0	0.0	11.3
Cycle Q Clear(g_c), s	16.3	0.0	4.6	4.7	0.0	0.0	0.0	0.0	1.5	5.0	0.0	11.3
Prop In Lane	1.00		0.11	1.00		0.43	0.00		0.25	1.00		0.83
Lane Grp Cap(c), veh/h	678	0	1264	794	0	1197	0	0	99	232	0	289
V/C Ratio(X)	0.47	0.00	0.21	0.01	0.00	0.45	0.00	0.00	0.32	0.64	0.00	0.75
Avail Cap(c_a), veh/h	678	0	1264	794	0	1197	0	0	358	232	0	524
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.00	0.93	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	0.0	5.1	0.2	0.0	0.0	0.0	0.0	40.9	38.0	0.0	35.1
Incr Delay (d2), s/veh	2.3	0.0	0.4	0.0	0.0	1.1	0.0	0.0	1.9	5.8	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	1.6	0.0	0.0	0.4	0.0	0.0	0.7	1.1	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	5.4	0.2	0.0	1.1	0.0	0.0	42.7	43.8	0.0	38.9
LnGrp LOS	A	A	A	A	A	A	A	A	D	D	A	D
Approach Vol, veh/h		580			545			32			364	
Approach Delay, s/veh		7.5			1.1			42.7			40.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	11.0		68.0		22.0		68.0				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	5.0	18.0		49.0		29.0		49.0				
Max Q Clear Time (g_c+I1), s	7.0	3.5		18.3		13.3		6.7				
Green Ext Time (p_c), s	0.0	0.1		3.9		1.1		4.3				

Intersection Summary												
HCM 6th Ctrl Delay			14.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	418	552	5	10	15
Future Vol, veh/h	10	418	552	5	10	15
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	11	454	600	5	11	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	605	0	-	0	1079	603
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	476	-
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	973	-	-	-	242	499
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	973	-	-	-	238	499
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	625	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	973	-	-	-	347
HCM Lane V/C Ratio	0.011	-	-	-	0.078
HCM Control Delay (s)	8.7	0	-	-	16.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	8	324	2	8	202
Future Vol, veh/h	2	8	324	2	8	202
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	2	9	352	2	9	220

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	591	353	0	0	354	0
Stage 1	353	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	470	691	-	-	1205	-
Stage 1	711	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	466	691	-	-	1205	-
Mov Cap-2 Maneuver	466	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	795	-	-	-	-	-

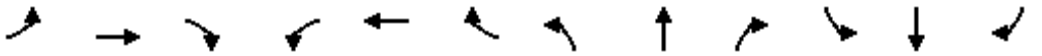
Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	630	1205	-
HCM Lane V/C Ratio	-	-	0.017	0.007	-
HCM Control Delay (s)	-	-	10.8	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	188	150	192	1163	896	388
v/c Ratio	0.74	0.39	0.65	0.45	0.72	0.50
Control Delay	55.4	6.4	30.0	6.3	27.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	6.4	30.0	6.3	27.4	4.6
Queue Length 50th (ft)	102	0	68	167	228	0
Queue Length 95th (ft)	#166	26	124	210	302	31
Internal Link Dist (ft)				565	1226	
Turn Bay Length (ft)		70	200			
Base Capacity (vph)	275	399	295	2578	1269	785
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	0.68	0.38	0.65	0.45	0.71	0.49

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	160	0	126	161	1058	0	0	753	388
Future Volume (vph)	0	0	0	160	0	126	161	1058	0	0	753	388
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0		6.0	6.0	6.0			6.0	6.0
Lane Util. Factor				1.00		1.00	1.00	0.95			0.91	0.91
Frt				1.00		0.85	1.00	1.00			0.98	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1583	1770	3539			3332	1441
Flt Permitted				0.95		1.00	0.17	1.00			1.00	1.00
Satd. Flow (perm)				1770		1583	310	3539			3332	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.92	0.84	0.84	0.91	0.87	0.25	0.95	0.79
Adj. Flow (vph)	0	0	0	188	0	150	192	1163	0	0	793	491
RTOR Reduction (vph)	0	0	0	0	0	129	0	0	0	0	11	244
Lane Group Flow (vph)	0	0	0	188	0	22	192	1163	0	0	885	144
Turn Type				Prot		Prot	D.P+P	NA			NA	Perm
Protected Phases				7		7	5	5 6 8			6	
Permitted Phases							6					6
Actuated Green, G (s)				12.9		12.9	42.7	65.1			33.5	33.5
Effective Green, g (s)				12.9		12.9	42.7	65.1			33.5	33.5
Actuated g/C Ratio				0.14		0.14	0.47	0.72			0.37	0.37
Clearance Time (s)				6.0		6.0	6.0				6.0	6.0
Vehicle Extension (s)				3.0		3.0	3.0				3.0	3.0
Lane Grp Cap (vph)				253		226	296	2559			1240	536
v/s Ratio Prot				c0.11		0.01	0.07	c0.33			c0.27	
v/s Ratio Perm							0.24					0.10
v/c Ratio				0.74		0.10	0.65	0.45			0.71	0.27
Uniform Delay, d1				37.0		33.5	15.9	5.1			24.2	19.7
Progression Factor				1.00		1.00	1.64	1.08			1.00	1.00
Incremental Delay, d2				11.2		0.2	4.2	0.1			3.5	1.2
Delay (s)				48.1		33.7	30.2	5.6			27.7	20.9
Level of Service				D		C	C	A			C	C
Approach Delay (s)		0.0			41.7			9.1			25.6	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

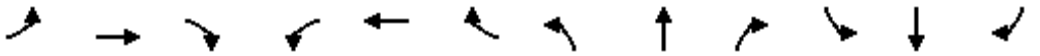
c Critical Lane Group

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	595	241	762	336	313	718
v/c Ratio	0.73	0.46	0.52	0.40	0.66	0.32
Control Delay	36.7	9.7	23.0	6.2	28.6	8.0
Queue Delay	0.0	0.0	0.3	0.3	0.0	0.0
Total Delay	36.7	9.7	23.3	6.5	28.6	8.1
Queue Length 50th (ft)	160	21	226	64	106	68
Queue Length 95th (ft)	191	76	m216	m25	#176	107
Internal Link Dist (ft)			296			565
Turn Bay Length (ft)	625	310			200	
Base Capacity (vph)	1106	641	1452	848	476	2223
Starvation Cap Reductn	0	0	232	138	0	0
Spillback Cap Reductn	0	6	0	0	0	117
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.38	0.62	0.47	0.66	0.34

Intersection Summary

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

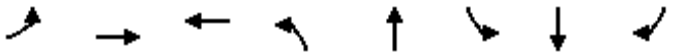
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	518	0	224	0	0	0	0	701	309	260	653	0
Future Volume (vph)	518	0	224	0	0	0	0	701	309	260	653	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1583					3539	1583	1770	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.27	1.00	
Satd. Flow (perm)	3433		1583					3539	1583	508	3539	
Peak-hour factor, PHF	0.87	0.25	0.93	1.00	1.00	1.00	0.25	0.92	0.92	0.83	0.91	0.92
Adj. Flow (vph)	595	0	241	0	0	0	0	762	336	313	718	0
RTOR Reduction (vph)	0	0	148	0	0	0	0	0	198	0	0	0
Lane Group Flow (vph)	595	0	93	0	0	0	0	762	138	313	718	0
Turn Type	Prot		Prot					NA	Perm	D.P+P	NA	
Protected Phases	3		3					2		1	1 2	
Permitted Phases									2	2		
Actuated Green, G (s)	21.4		21.4					37.0	37.0	50.6	56.6	
Effective Green, g (s)	21.4		21.4					37.0	37.0	50.6	56.6	
Actuated g/C Ratio	0.24		0.24					0.41	0.41	0.56	0.63	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0		
Lane Grp Cap (vph)	816		376					1454	650	476	2225	
v/s Ratio Prot	c0.17		0.06					0.22		c0.10	0.20	
v/s Ratio Perm									0.09	c0.27		
v/c Ratio	0.73		0.25					0.52	0.21	0.66	0.32	
Uniform Delay, d1	31.6		27.8					19.9	17.1	11.4	7.8	
Progression Factor	1.00		1.00					1.04	2.09	2.39	0.91	
Incremental Delay, d2	3.3		0.3					1.2	0.6	2.4	0.1	
Delay (s)	34.9		28.1					21.9	36.3	29.6	7.2	
Level of Service	C		C					C	D	C	A	
Approach Delay (s)		33.0			0.0			26.3			14.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



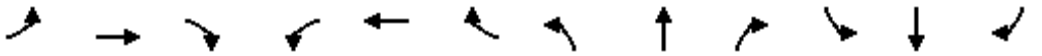
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	295	77	28	68	818	10	692	251
v/c Ratio	1.06	0.22	0.22	0.19	0.35	0.02	0.65	0.25
Control Delay	109.2	10.2	31.0	6.4	8.4	4.3	14.1	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	109.2	10.2	31.0	6.4	8.4	4.3	14.1	1.6
Queue Length 50th (ft)	~206	3	9	9	72	2	228	0
Queue Length 95th (ft)	#324	35	29	27	194	m3	285	4
Internal Link Dist (ft)		477	268		1831		296	
Turn Bay Length (ft)	150			150		140		
Base Capacity (vph)	278	565	323	356	2329	456	1064	1011
Starvation Cap Reductn	0	0	0	0	0	0	18	0
Spillback Cap Reductn	0	0	0	0	14	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.14	0.09	0.19	0.35	0.02	0.66	0.25

Intersection Summary

~ 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.

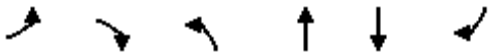
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	4	63	9	3	9	63	744	8	9	637	231
Future Volume (veh/h)	257	4	63	9	3	9	63	744	8	9	637	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	295	5	72	12	4	12	68	809	9	10	692	251
Peak Hour Factor	0.87	0.87	0.87	0.78	0.78	0.78	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	297	18	260	82	20	34	506	2210	25	437	1086	921
Arrive On Green	0.06	0.17	0.17	0.05	0.05	0.05	0.05	0.61	0.61	0.02	1.00	1.00
Sat Flow, veh/h	1781	104	1497	487	398	664	1781	3600	40	1781	1870	1585
Grp Volume(v), veh/h	295	0	77	28	0	0	68	399	419	10	692	251
Grp Sat Flow(s),veh/h/ln	1781	0	1601	1549	0	0	1781	1777	1863	1781	1870	1585
Q Serve(g_s), s	5.0	0.0	3.8	0.4	0.0	0.0	1.3	10.1	10.1	0.2	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	3.8	1.4	0.0	0.0	1.3	10.1	10.1	0.2	0.0	0.0
Prop In Lane	1.00		0.94	0.43		0.43	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	297	0	278	137	0	0	506	1091	1144	437	1086	921
V/C Ratio(X)	0.99	0.00	0.28	0.20	0.00	0.00	0.13	0.37	0.37	0.02	0.64	0.27
Avail Cap(c_a), veh/h	297	0	516	358	0	0	524	1091	1144	514	1086	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.78	0.78	0.78	0.94	0.94	0.94
Uniform Delay (d), s/veh	40.5	0.0	32.3	41.2	0.0	0.0	6.5	8.7	8.7	7.7	0.0	0.0
Incr Delay (d2), s/veh	50.6	0.0	0.5	0.7	0.0	0.0	0.1	0.7	0.7	0.0	2.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	1.5	0.6	0.0	0.0	0.4	3.4	3.5	0.1	0.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.1	0.0	32.8	41.9	0.0	0.0	6.6	9.4	9.4	7.7	2.7	0.7
LnGrp LOS	F	A	C	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		372			28			886			953	
Approach Delay, s/veh		79.0			41.9			9.2			2.2	
Approach LOS		E			D			A			A	

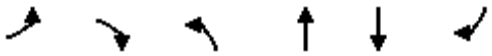
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	61.3		21.6	10.1	58.3	11.0	10.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	38.0		29.0	5.0	38.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	2.2	12.1		5.8	3.3	2.0	7.0	3.4				
Green Ext Time (p_c), s	0.0	4.9		0.4	0.0	5.9	0.0	0.1				

Intersection Summary												
HCM 6th Ctrl Delay			18.2									
HCM 6th LOS			B									



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	462	94	42	324	405	275
v/c Ratio	0.77	0.16	0.10	0.34	0.43	0.17
Control Delay	31.9	4.0	13.7	14.6	15.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	4.0	13.7	14.6	15.8	0.2
Queue Length 50th (ft)	202	0	10	92	121	0
Queue Length 95th (ft)	246	23	31	183	234	0
Internal Link Dist (ft)	515			1550	1831	
Turn Bay Length (ft)		200	200			200
Base Capacity (vph)	796	764	432	950	950	1555
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	0.58	0.12	0.10	0.34	0.43	0.18

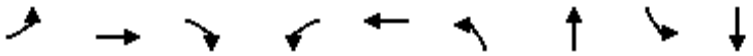
Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	402	82	35	298	369	239
Future Volume (veh/h)	402	82	35	298	369	239
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	462	94	42	324	405	275
Peak Hour Factor	0.87	0.87	0.83	0.92	0.91	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	522	464	420	1042	1042	1347
Arrive On Green	0.29	0.29	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1781	1585	760	1870	1870	1585
Grp Volume(v), veh/h	462	94	42	324	405	275
Grp Sat Flow(s),veh/h/ln	1781	1585	760	1870	1870	1585
Q Serve(g_s), s	19.8	3.6	2.6	7.4	9.8	2.5
Cycle Q Clear(g_c), s	19.8	3.6	12.4	7.4	9.8	2.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	522	464	420	1042	1042	1347
V/C Ratio(X)	0.89	0.20	0.10	0.31	0.39	0.20
Avail Cap(c_a), veh/h	802	713	420	1042	1042	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.71	0.71
Uniform Delay (d), s/veh	27.0	21.3	13.5	9.5	10.0	1.1
Incr Delay (d2), s/veh	7.8	0.2	0.5	0.8	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	1.3	0.5	2.7	3.5	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.8	21.5	14.0	10.3	10.8	1.3
LnGrp LOS	C	C	B	B	B	A
Approach Vol, veh/h	556			366	680	
Approach Delay, s/veh	32.6			10.7	7.0	
Approach LOS	C			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		50.6		29.4		50.6
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		32.0		36.0		32.0
Max Q Clear Time (g_c+I1), s		14.4		21.8		11.8
Green Ext Time (p_c), s		1.8		1.6		3.1

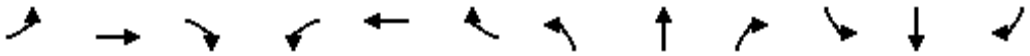
Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	505	164	79	326	211	96	52	112
v/c Ratio	0.15	0.42	0.15	0.16	0.28	0.74	0.22	0.18	0.26
Control Delay	8.4	9.5	3.2	9.2	8.6	46.7	9.1	26.9	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	9.5	3.2	9.2	8.6	46.7	9.1	26.9	11.4
Queue Length 50th (ft)	23	138	9	16	69	112	7	24	16
Queue Length 95th (ft)	m37	194	m26	30	145	130	18	44	50
Internal Link Dist (ft)		1235			4623		1001		513
Turn Bay Length (ft)	250		100	250		110		150	
Base Capacity (vph)	659	1194	1065	505	1177	425	596	431	608
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.42	0.15	0.16	0.28	0.50	0.16	0.12	0.18

Intersection Summary

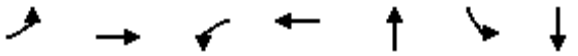
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	399	125	50	263	21	156	10	68	43	32	59
Future Volume (veh/h)	63	399	125	50	263	21	156	10	68	43	32	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	505	164	79	286	40	211	16	80	52	36	76
Peak Hour Factor	0.65	0.79	0.76	0.63	0.92	0.53	0.74	0.63	0.85	0.83	0.89	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	1162	985	501	998	140	325	66	332	337	131	277
Arrive On Green	0.83	0.83	0.83	0.62	0.62	0.62	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1054	1870	1585	768	1605	225	1281	271	1355	1300	536	1131
Grp Volume(v), veh/h	97	505	164	79	0	326	211	0	96	52	0	112
Grp Sat Flow(s),veh/h/ln	1054	1870	1585	768	0	1830	1281	0	1626	1300	0	1667
Q Serve(g_s), s	2.7	6.6	1.9	4.7	0.0	7.4	14.4	0.0	4.3	3.0	0.0	4.9
Cycle Q Clear(g_c), s	10.1	6.6	1.9	11.2	0.0	7.4	19.3	0.0	4.3	7.3	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.12	1.00		0.83	1.00		0.68
Lane Grp Cap(c), veh/h	648	1162	985	501	0	1137	325	0	399	337	0	409
V/C Ratio(X)	0.15	0.43	0.17	0.16	0.00	0.29	0.65	0.00	0.24	0.15	0.00	0.27
Avail Cap(c_a), veh/h	648	1162	985	501	0	1137	437	0	542	452	0	556
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	3.5	3.1	10.2	0.0	7.9	35.3	0.0	27.2	30.2	0.0	27.5
Incr Delay (d2), s/veh	0.4	1.0	0.3	0.7	0.0	0.6	2.2	0.0	0.3	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.1	0.6	0.8	0.0	2.8	4.6	0.0	1.7	0.9	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	4.5	3.4	10.9	0.0	8.5	37.5	0.0	27.5	30.4	0.0	27.8
LnGrp LOS	A	A	A	B	A	A	D	A	C	C	A	C
Approach Vol, veh/h		766			405			307			164	
Approach Delay, s/veh		4.4			9.0			34.4			28.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.1		61.9		28.1		61.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		30.0		48.0		30.0		48.0				
Max Q Clear Time (g_c+I1), s		21.3		12.1		9.3		13.2				
Green Ext Time (p_c), s		0.8		4.8		0.7		2.8				

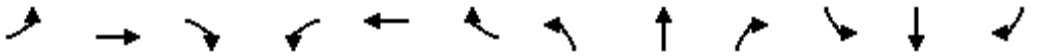
Intersection Summary												
HCM 6th Ctrl Delay			13.6									
HCM 6th LOS			B									



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	247	351	4	512	48	278	362
v/c Ratio	0.54	0.31	0.01	0.47	0.36	0.75	0.55
Control Delay	17.1	10.1	14.0	18.3	40.4	44.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	10.1	14.0	18.3	40.4	44.3	6.7
Queue Length 50th (ft)	94	109	2	235	22	123	3
Queue Length 95th (ft)	153	136	2	313	35	#258	0
Internal Link Dist (ft)		1534		1235	1066		1040
Turn Bay Length (ft)	250		90			110	
Base Capacity (vph)	457	1148	599	1097	297	369	779
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.31	0.01	0.47	0.16	0.75	0.46

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	309	2	1	249	200	6	17	5	245	3	308
Future Volume (veh/h)	222	309	2	1	249	200	6	17	5	245	3	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	347	4	4	274	238	12	28	8	278	8	354
Peak Hour Factor	0.90	0.89	0.50	0.25	0.91	0.84	0.50	0.61	0.63	0.88	0.38	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	620	1122	13	613	562	488	65	113	26	363	9	402
Arrive On Green	0.61	0.61	0.61	1.00	1.00	1.00	0.11	0.11	0.11	0.08	0.26	0.26
Sat Flow, veh/h	888	1845	21	1030	924	802	133	992	225	1781	35	1555
Grp Volume(v), veh/h	247	0	351	4	0	512	48	0	0	278	0	362
Grp Sat Flow(s),veh/h/ln	888	0	1867	1030	0	1726	1350	0	0	1781	0	1590
Q Serve(g_s), s	13.6	0.0	8.2	0.1	0.0	0.0	0.1	0.0	0.0	7.0	0.0	19.7
Cycle Q Clear(g_c), s	13.6	0.0	8.2	8.2	0.0	0.0	6.7	0.0	0.0	7.0	0.0	19.7
Prop In Lane	1.00		0.01	1.00		0.46	0.25		0.17	1.00		0.98
Lane Grp Cap(c), veh/h	620	0	1135	613	0	1049	204	0	0	363	0	411
V/C Ratio(X)	0.40	0.00	0.31	0.01	0.00	0.49	0.23	0.00	0.00	0.77	0.00	0.88
Avail Cap(c_a), veh/h	620	0	1135	613	0	1049	334	0	0	363	0	548
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.89	0.00	0.89	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	0.0	8.5	0.6	0.0	0.0	36.3	0.0	0.0	34.2	0.0	32.0
Incr Delay (d2), s/veh	1.9	0.0	0.7	0.0	0.0	1.4	0.6	0.0	0.0	9.4	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	3.2	0.0	0.0	0.4	1.0	0.0	0.0	3.4	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	0.0	9.2	0.6	0.0	1.4	36.9	0.0	0.0	43.6	0.0	44.2
LnGrp LOS	B	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h		598			516			48			640	
Approach Delay, s/veh		10.2			1.4			36.9			44.0	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	13.0	16.3		60.7		29.3		60.7				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	7.0	18.0		47.0		31.0		47.0				
Max Q Clear Time (g_c+I1), s	9.0	8.7		15.6		21.7		10.2				
Green Ext Time (p_c), s	0.0	0.1		4.0		1.6		4.0				

Intersection Summary												
HCM 6th Ctrl Delay			20.4									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	484	274	10	5	10
Future Vol, veh/h	15	484	274	10	5	10
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	16	526	298	11	5	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	309	0	-	0	862	304
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	558	-
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	1252	-	-	-	325	736
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1252	-	-	-	319	736
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	573	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1252	-	-	-	513
HCM Lane V/C Ratio	0.013	-	-	-	0.032
HCM Control Delay (s)	7.9	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	20	333	5	20	451
Future Vol, veh/h	5	20	333	5	20	451
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	5	22	362	5	22	490

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	899	365	0	0	367	0
Stage 1	365	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	309	680	-	-	1192	-
Stage 1	702	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	301	680	-	-	1192	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	573	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.3
HCM LOS	B		

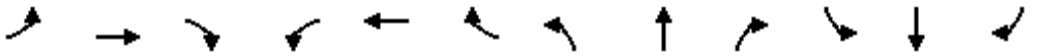
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	543	1192	-
HCM Lane V/C Ratio	-	-	0.05	0.018	-
HCM Control Delay (s)	-	-	12	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	426	297	246	758	760	339
v/c Ratio	1.17	0.63	0.79	0.32	0.65	0.48
Control Delay	139.0	21.0	44.7	8.1	23.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.0	21.0	44.7	8.1	23.7	4.7
Queue Length 50th (ft)	~332	59	68	0	159	0
Queue Length 95th (ft)	#491	102	#188	0	209	43
Internal Link Dist (ft)				565	1226	
Turn Bay Length (ft)		70	200			
Base Capacity (vph)	363	469	312	2477	1282	755
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	1.17	0.63	0.79	0.31	0.59	0.45

Intersection Summary

~ 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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	371	0	226	221	652	0	0	430	508
Future Volume (vph)	0	0	0	371	0	226	221	652	0	0	430	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0		6.0	6.0	6.0			6.0	6.0
Lane Util. Factor				1.00		1.00	1.00	0.95			0.91	0.91
Frt				1.00		0.85	1.00	1.00			0.95	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1583	1770	3539			3212	1441
Flt Permitted				0.95		1.00	0.21	1.00			1.00	1.00
Satd. Flow (perm)				1770		1583	398	3539			3212	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.92	0.76	0.90	0.86	0.87	0.25	0.87	0.84
Adj. Flow (vph)	0	0	0	426	0	297	246	758	0	0	494	605
RTOR Reduction (vph)	0	0	0	0	0	145	0	0	0	0	74	224
Lane Group Flow (vph)	0	0	0	426	0	152	246	758	0	0	686	115
Turn Type				Prot		Prot	D.P+P	NA			NA	Perm
Protected Phases				7		7	5	5 6 8			6	
Permitted Phases							6					6
Actuated Green, G (s)				18.5		18.5	39.5	59.5			30.5	30.5
Effective Green, g (s)				18.5		18.5	39.5	59.5			30.5	30.5
Actuated g/C Ratio				0.21		0.21	0.44	0.66			0.34	0.34
Clearance Time (s)				6.0		6.0	6.0				6.0	6.0
Vehicle Extension (s)				3.0		3.0	3.0				3.0	3.0
Lane Grp Cap (vph)				363		325	311	2339			1088	488
v/s Ratio Prot				c0.24		0.10	c0.08	c0.21			0.21	
v/s Ratio Perm							c0.27					0.08
v/c Ratio				1.17		0.47	0.79	0.32			0.63	0.24
Uniform Delay, d1				35.8		31.4	17.7	6.6			25.0	21.4
Progression Factor				1.00		1.00	2.19	1.22			1.00	1.00
Incremental Delay, d2				103.4		1.1	10.6	0.1			2.8	1.1
Delay (s)				139.2		32.5	49.5	8.1			27.8	22.5
Level of Service				F		C	D	A			C	C
Approach Delay (s)		0.0			95.4			18.3			26.2	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

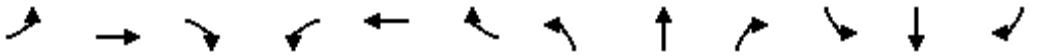
c Critical Lane Group

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	303	194	700	277	128	803
v/c Ratio	0.60	0.48	0.66	0.41	0.38	0.32
Control Delay	40.4	9.4	30.7	5.1	21.5	6.6
Queue Delay	0.0	0.1	0.0	0.1	0.0	0.1
Total Delay	40.4	9.5	30.7	5.2	21.5	6.6
Queue Length 50th (ft)	84	0	194	12	56	66
Queue Length 95th (ft)	113	19	#302	7	m79	m88
Internal Link Dist (ft)			296			565
Turn Bay Length (ft)	625	310			200	
Base Capacity (vph)	686	471	1068	670	341	2512
Starvation Cap Reductn	0	0	0	51	0	0
Spillback Cap Reductn	0	21	0	0	0	376
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.43	0.66	0.45	0.38	0.38

Intersection Summary

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	0	134	0	0	0	0	609	241	102	699	0
Future Volume (vph)	264	0	134	0	0	0	0	609	241	102	699	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1583					3539	1583	1770	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.24	1.00	
Satd. Flow (perm)	3433		1583					3539	1583	448	3539	
Peak-hour factor, PHF	0.87	0.25	0.69	1.00	1.00	1.00	0.25	0.87	0.87	0.80	0.87	0.92
Adj. Flow (vph)	303	0	194	0	0	0	0	700	277	128	803	0
RTOR Reduction (vph)	0	0	165	0	0	0	0	0	194	0	0	0
Lane Group Flow (vph)	303	0	29	0	0	0	0	700	83	128	803	0
Turn Type	Prot		Prot					NA	Perm	D.P+P	NA	
Protected Phases	3		3					2		1	1 2 4	
Permitted Phases									2	2		
Actuated Green, G (s)	13.4		13.4					27.1	27.1	37.6	64.6	
Effective Green, g (s)	13.4		13.4					27.1	27.1	37.6	64.6	
Actuated g/C Ratio	0.15		0.15					0.30	0.30	0.42	0.72	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0		
Lane Grp Cap (vph)	511		235					1065	476	341	2540	
v/s Ratio Prot	c0.09		0.02					c0.20		0.04	c0.23	
v/s Ratio Perm									0.05	0.11		
v/c Ratio	0.59		0.12					0.66	0.18	0.38	0.32	
Uniform Delay, d1	35.8		33.2					27.4	23.2	17.1	4.6	
Progression Factor	1.00		1.00					0.91	0.80	1.28	1.28	
Incremental Delay, d2	1.8		0.2					3.0	0.8	0.3	0.0	
Delay (s)	37.6		33.4					28.0	19.3	22.3	6.0	
Level of Service	D		C					C	B	C	A	
Approach Delay (s)		36.0			0.0			25.5			8.2	
Approach LOS		D			A			C			A	

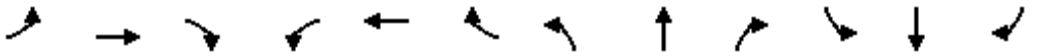
Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	152	27	21	37	784	8	639	259
v/c Ratio	0.65	0.10	0.17	0.08	0.32	0.02	0.55	0.24
Control Delay	47.6	13.3	30.9	5.4	7.5	4.6	17.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	47.6	13.3	30.9	5.4	7.5	4.6	17.8	7.3
Queue Length 50th (ft)	81	1	7	5	72	1	285	23
Queue Length 95th (ft)	120	19	24	17	181	m5	404	126
Internal Link Dist (ft)		529	268		1831		296	
Turn Bay Length (ft)	150			150		140		
Base Capacity (vph)	235	533	341	446	2422	492	1170	1090
Starvation Cap Reductn	0	0	0	0	0	0	158	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	0.65	0.05	0.06	0.08	0.32	0.02	0.63	0.24

Intersection Summary

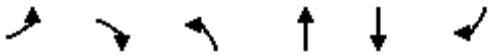
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	2	21	7	2	7	34	717	5	7	588	238
Future Volume (veh/h)	126	2	21	7	2	7	34	717	5	7	588	238
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	2	25	9	3	9	37	779	5	8	639	259
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	19	239	79	13	26	515	2276	15	462	1132	960
Arrive On Green	0.06	0.16	0.16	0.04	0.04	0.04	0.03	0.63	0.63	0.02	1.00	1.00
Sat Flow, veh/h	1781	119	1484	560	327	666	1781	3620	23	1781	1870	1585
Grp Volume(v), veh/h	152	0	27	21	0	0	37	382	402	8	639	259
Grp Sat Flow(s),veh/h/ln	1781	0	1603	1553	0	0	1781	1777	1866	1781	1870	1585
Q Serve(g_s), s	5.0	0.0	1.3	0.6	0.0	0.0	0.7	9.2	9.2	0.2	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	1.3	1.1	0.0	0.0	0.7	9.2	9.2	0.2	0.0	0.0
Prop In Lane	1.00		0.93	0.43		0.43	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	278	0	258	117	0	0	515	1117	1174	462	1132	960
V/C Ratio(X)	0.55	0.00	0.10	0.18	0.00	0.00	0.07	0.34	0.34	0.02	0.56	0.27
Avail Cap(c_a), veh/h	278	0	517	363	0	0	554	1117	1174	543	1132	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.78	0.78	0.78	0.95	0.95	0.95
Uniform Delay (d), s/veh	38.4	0.0	32.2	42.1	0.0	0.0	6.0	7.9	7.9	6.9	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	0.2	0.7	0.0	0.0	0.0	0.7	0.6	0.0	1.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.5	0.5	0.0	0.0	0.2	3.0	3.1	0.0	0.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	32.4	42.8	0.0	0.0	6.0	8.5	8.5	6.9	1.9	0.7
LnGrp LOS	D	A	C	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		179			21			821			906	
Approach Delay, s/veh		39.4			42.8			8.4			1.6	
Approach LOS		D			D			A			A	

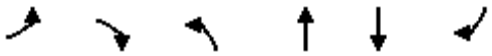
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	62.6		20.5	9.0	60.5	11.0	9.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	38.0		29.0	5.0	38.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	2.2	11.2		3.3	2.7	2.0	7.0	3.1				
Green Ext Time (p_c), s	0.0	4.6		0.1	0.0	5.3	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	480	102	135	301	182	539
v/c Ratio	0.75	0.16	0.23	0.33	0.20	0.34
Control Delay	28.9	3.5	15.8	15.9	14.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	3.5	15.8	15.9	14.6	0.6
Queue Length 50th (ft)	204	0	38	89	50	0
Queue Length 95th (ft)	224	19	82	169	86	0
Internal Link Dist (ft)	540			1522	1831	
Turn Bay Length (ft)		200	200			200
Base Capacity (vph)	885	842	581	904	904	1565
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	0.54	0.12	0.23	0.33	0.20	0.34

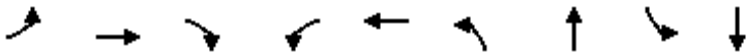
Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	398	85	112	259	133	469
Future Volume (veh/h)	398	85	112	259	133	469
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	480	102	135	301	182	539
Peak Hour Factor	0.83	0.83	0.83	0.86	0.73	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	542	482	453	1021	1021	1347
Arrive On Green	0.30	0.30	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1781	1585	732	1870	1870	1585
Grp Volume(v), veh/h	480	102	135	301	182	539
Grp Sat Flow(s),veh/h/ln	1781	1585	732	1870	1870	1585
Q Serve(g_s), s	20.5	3.8	9.1	7.0	3.9	6.2
Cycle Q Clear(g_c), s	20.5	3.8	13.0	7.0	3.9	6.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	542	482	453	1021	1021	1347
V/C Ratio(X)	0.89	0.21	0.30	0.29	0.18	0.40
Avail Cap(c_a), veh/h	891	793	453	1021	1021	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.82	0.82
Uniform Delay (d), s/veh	26.5	20.7	12.4	9.8	9.1	1.4
Incr Delay (d2), s/veh	6.3	0.2	1.7	0.7	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	1.4	1.5	2.6	1.4	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.8	20.9	14.1	10.6	9.5	2.1
LnGrp LOS	C	C	B	B	A	A
Approach Vol, veh/h	582			436	721	
Approach Delay, s/veh	30.8			11.7	4.0	
Approach LOS	C			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		49.7		30.3		49.7
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		28.0		40.0		28.0
Max Q Clear Time (g_c+I1), s		15.0		22.5		8.2
Green Ext Time (p_c), s		2.1		1.8		2.9

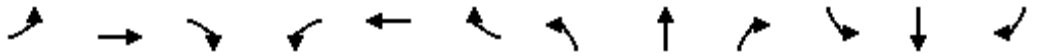
Intersection Summary		
HCM 6th Ctrl Delay		14.9
HCM 6th LOS		B



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	261	88	56	576	80	28	20	36
v/c Ratio	0.10	0.18	0.07	0.06	0.40	0.50	0.13	0.12	0.17
Control Delay	7.2	7.1	3.6	3.9	5.2	46.8	21.9	35.2	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	7.1	3.6	3.9	5.2	46.8	21.9	35.2	17.5
Queue Length 50th (ft)	15	66	11	7	95	43	6	10	4
Queue Length 95th (ft)	m22	m91	m7	13	136	77	13	20	4
Internal Link Dist (ft)		1235			4598		1001		513
Turn Bay Length (ft)	250		100	250		110		150	
Base Capacity (vph)	618	1469	1267	878	1454	364	465	367	459
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.18	0.07	0.06	0.40	0.22	0.06	0.05	0.08

Intersection Summary

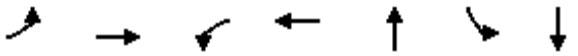
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	206	67	34	399	36	67	6	11	12	3	20
Future Volume (veh/h)	39	206	67	34	399	36	67	6	11	12	3	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	261	88	56	532	44	80	12	16	20	8	28
Peak Hour Factor	0.65	0.79	0.76	0.61	0.75	0.82	0.84	0.50	0.69	0.60	0.38	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	633	1433	1214	871	1306	108	190	73	97	198	37	128
Arrive On Green	1.00	1.00	1.00	0.77	0.77	0.77	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	837	1870	1585	1032	1704	141	1372	727	969	1382	365	1276
Grp Volume(v), veh/h	60	261	88	56	0	576	80	0	28	20	0	36
Grp Sat Flow(s),veh/h/ln	837	1870	1585	1032	0	1845	1372	0	1696	1382	0	1641
Q Serve(g_s), s	1.0	0.0	0.0	1.2	0.0	9.6	5.1	0.0	1.4	1.2	0.0	1.8
Cycle Q Clear(g_c), s	10.5	0.0	0.0	1.2	0.0	9.6	6.9	0.0	1.4	2.6	0.0	1.8
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.57	1.00		0.78
Lane Grp Cap(c), veh/h	633	1433	1214	871	0	1414	190	0	170	198	0	165
V/C Ratio(X)	0.09	0.18	0.07	0.06	0.00	0.41	0.42	0.00	0.16	0.10	0.00	0.22
Avail Cap(c_a), veh/h	633	1433	1214	871	0	1414	418	0	452	428	0	438
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.7	0.0	0.0	2.6	0.0	3.6	40.4	0.0	37.0	38.2	0.0	37.2
Incr Delay (d2), s/veh	0.3	0.2	0.1	0.1	0.0	0.9	1.5	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.2	0.0	2.8	1.8	0.0	0.6	0.4	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.0	0.2	0.1	2.7	0.0	4.5	41.9	0.0	37.5	38.4	0.0	37.9
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		409			632			108			56	
Approach Delay, s/veh		0.3			4.3			40.7			38.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.0		75.0		15.0		75.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		24.0		54.0		24.0		54.0				
Max Q Clear Time (g_c+I1), s		8.9		12.5		4.6		11.6				
Green Ext Time (p_c), s		0.3		2.4		0.2		4.8				

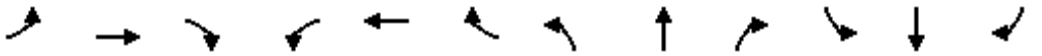
Intersection Summary												
HCM 6th Ctrl Delay			7.8									
HCM 6th LOS			A									



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	320	270	8	586	32	154	216
v/c Ratio	0.62	0.21	0.01	0.46	0.22	0.88	0.54
Control Delay	15.2	5.5	6.8	9.6	34.9	78.3	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	5.5	6.8	9.6	34.9	78.3	12.8
Queue Length 50th (ft)	94	50	2	172	13	78	17
Queue Length 95th (ft)	181	81	4	201	18	#138	0
Internal Link Dist (ft)		1534		1235	1066		1040
Turn Bay Length (ft)	250		90			110	
Base Capacity (vph)	515	1308	787	1261	366	175	647
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.21	0.01	0.46	0.09	0.88	0.33

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	203	11	4	251	210	0	11	2	129	14	169
Future Volume (veh/h)	266	203	11	4	251	210	0	11	2	129	14	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	320	242	28	8	339	247	0	24	8	154	36	180
Peak Hour Factor	0.83	0.84	0.39	0.50	0.74	0.85	0.25	0.46	0.25	0.84	0.39	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	651	1134	131	785	693	505	0	74	25	232	48	241
Arrive On Green	0.69	0.69	0.69	1.00	1.00	1.00	0.00	0.06	0.06	0.06	0.18	0.18
Sat Flow, veh/h	829	1646	190	1109	1006	733	0	1342	447	1781	271	1355
Grp Volume(v), veh/h	320	0	270	8	0	586	0	0	32	154	0	216
Grp Sat Flow(s),veh/h/ln	829	0	1836	1109	0	1738	0	0	1790	1781	0	1626
Q Serve(g_s), s	17.6	0.0	4.8	0.1	0.0	0.0	0.0	0.0	1.5	5.0	0.0	11.3
Cycle Q Clear(g_c), s	17.6	0.0	4.8	4.9	0.0	0.0	0.0	0.0	1.5	5.0	0.0	11.3
Prop In Lane	1.00		0.10	1.00		0.42	0.00		0.25	1.00		0.83
Lane Grp Cap(c), veh/h	651	0	1265	785	0	1198	0	0	99	232	0	289
V/C Ratio(X)	0.49	0.00	0.21	0.01	0.00	0.49	0.00	0.00	0.32	0.66	0.00	0.75
Avail Cap(c_a), veh/h	651	0	1265	785	0	1198	0	0	358	232	0	524
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.00	0.92	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.1	0.0	5.1	0.2	0.0	0.0	0.0	0.0	40.9	38.3	0.0	35.1
Incr Delay (d2), s/veh	2.6	0.0	0.4	0.0	0.0	1.3	0.0	0.0	1.9	7.0	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	1.7	0.0	0.0	0.4	0.0	0.0	0.7	1.3	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	0.0	5.5	0.2	0.0	1.3	0.0	0.0	42.7	45.3	0.0	38.9
LnGrp LOS	A	A	A	A	A	A	A	A	D	D	A	D
Approach Vol, veh/h		590			594			32			370	
Approach Delay, s/veh		7.8			1.3			42.7			41.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	11.0		68.0		22.0		68.0				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	5.0	18.0		49.0		29.0		49.0				
Max Q Clear Time (g_c+I1), s	7.0	3.5		19.6		13.3		6.9				
Green Ext Time (p_c), s	0.0	0.1		4.2		1.1		4.9				

Intersection Summary												
HCM 6th Ctrl Delay			13.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	421	10	21	560	5	31	0	62	10	0	15
Future Vol, veh/h	10	421	10	21	560	5	31	0	62	10	0	15
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	200	-	-	200	-	-	100	-	-	-	-	-
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	11	458	11	23	609	5	34	0	67	11	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	614	0	0	469	0	0	1152	1146	464	1177	1149	612
Stage 1	-	-	-	-	-	-	486	486	-	658	658	-
Stage 2	-	-	-	-	-	-	666	660	-	519	491	-
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	965	-	-	1093	-	-	175	199	598	168	198	493
Stage 1	-	-	-	-	-	-	563	551	-	453	461	-
Stage 2	-	-	-	-	-	-	449	460	-	540	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	965	-	-	1093	-	-	165	193	598	145	192	493
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	193	-	145	192	-
Stage 1	-	-	-	-	-	-	557	545	-	448	451	-
Stage 2	-	-	-	-	-	-	425	450	-	474	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	18.6	21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	165	598	965	-	-	1093	-	-	252
HCM Lane V/C Ratio	0.204	0.113	0.011	-	-	0.021	-	-	0.108
HCM Control Delay (s)	32.3	11.8	8.8	-	-	8.4	-	-	21
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.4	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↰	↱
Traffic Vol, veh/h	46	0	15	2	0	8	5	324	2	8	202	16
Future Vol, veh/h	46	0	15	2	0	8	5	324	2	8	202	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
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	50	0	16	2	0	9	5	352	2	9	220	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	606	602	220	618	618	353	237	0	0	354	0	0
Stage 1	238	238	-	363	363	-	-	-	-	-	-	-
Stage 2	368	364	-	255	255	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	409	414	820	402	405	691	1330	-	-	1205	-	-
Stage 1	765	708	-	656	625	-	-	-	-	-	-	-
Stage 2	652	624	-	749	696	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	400	408	820	390	399	691	1330	-	-	1205	-	-
Mov Cap-2 Maneuver	400	408	-	390	399	-	-	-	-	-	-	-
Stage 1	761	702	-	653	622	-	-	-	-	-	-	-
Stage 2	641	621	-	728	690	-	-	-	-	-	-	-

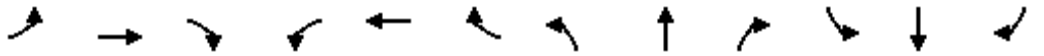
Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	11.1	0.1	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1330	-	-	458	599	1205	-	-
HCM Lane V/C Ratio	0.004	-	-	0.145	0.018	0.007	-	-
HCM Control Delay (s)	7.7	0	-	14.2	11.1	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	208	150	240	1179	913	398
v/c Ratio	0.79	0.39	0.83	0.46	0.73	0.51
Control Delay	59.7	6.3	46.3	6.2	27.8	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	6.3	46.3	6.2	27.8	4.6
Queue Length 50th (ft)	115	0	100	173	235	0
Queue Length 95th (ft)	#199	26	#169	198	309	32
Internal Link Dist (ft)				565	1226	
Turn Bay Length (ft)		70	200			
Base Capacity (vph)	275	399	288	2556	1270	792
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	0.76	0.38	0.83	0.46	0.72	0.50

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	177	0	126	202	1073	0	0	779	388
Future Volume (vph)	0	0	0	177	0	126	202	1073	0	0	779	388
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0		6.0	6.0	6.0			6.0	6.0
Lane Util. Factor				1.00		1.00	1.00	0.95			0.91	0.91
Frt				1.00		0.85	1.00	1.00			0.98	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770		1583	1770	3539			3338	1441
Flt Permitted				0.95		1.00	0.16	1.00			1.00	1.00
Satd. Flow (perm)				1770		1583	298	3539			3338	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.92	0.84	0.84	0.91	0.87	0.25	0.95	0.79
Adj. Flow (vph)	0	0	0	208	0	150	240	1179	0	0	820	491
RTOR Reduction (vph)	0	0	0	0	0	128	0	0	0	0	9	249
Lane Group Flow (vph)	0	0	0	208	0	22	240	1179	0	0	904	149
Turn Type				Prot		Prot	D.P+P	NA			NA	Perm
Protected Phases				7		7	5	5 6 8			6	
Permitted Phases							6					6
Actuated Green, G (s)				13.3		13.3	42.7	64.7			33.7	33.7
Effective Green, g (s)				13.3		13.3	42.7	64.7			33.7	33.7
Actuated g/C Ratio				0.15		0.15	0.47	0.72			0.37	0.37
Clearance Time (s)				6.0		6.0	6.0				6.0	6.0
Vehicle Extension (s)				3.0		3.0	3.0				3.0	3.0
Lane Grp Cap (vph)				261		233	288	2544			1249	539
v/s Ratio Prot				c0.12		0.01	c0.08	c0.33			0.27	
v/s Ratio Perm							c0.31					0.10
v/c Ratio				0.80		0.10	0.83	0.46			0.72	0.28
Uniform Delay, d1				37.0		33.1	16.8	5.3			24.2	19.6
Progression Factor				1.00		1.00	1.70	1.04			1.00	1.00
Incremental Delay, d2				15.4		0.2	15.7	0.1			3.7	1.3
Delay (s)				52.5		33.3	44.2	5.6			27.8	20.9
Level of Service				D		C	D	A			C	C
Approach Delay (s)		0.0			44.4			12.2			25.7	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

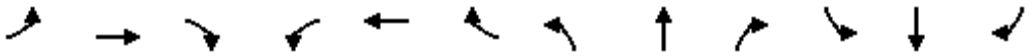
c Critical Lane Group

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	595	316	823	347	313	766
v/c Ratio	0.71	0.61	0.58	0.41	0.69	0.35
Control Delay	35.8	18.1	23.3	5.5	31.9	8.0
Queue Delay	0.0	0.0	0.5	0.3	0.0	0.0
Total Delay	35.8	18.1	23.7	5.8	31.9	8.1
Queue Length 50th (ft)	160	69	219	47	118	74
Queue Length 95th (ft)	189	142	m170	m18	#187	120
Internal Link Dist (ft)			296			565
Turn Bay Length (ft)	625	310			200	
Base Capacity (vph)	1106	626	1409	839	455	2205
Starvation Cap Reductn	0	0	222	140	0	0
Spillback Cap Reductn	0	6	0	0	0	126
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.51	0.69	0.50	0.69	0.37

Intersection Summary

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

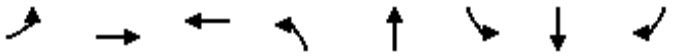
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	518	0	294	0	0	0	0	757	319	260	697	0
Future Volume (vph)	518	0	294	0	0	0	0	757	319	260	697	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		1.00					0.95	1.00	1.00	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		1583					3539	1583	1770	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.24	1.00	
Satd. Flow (perm)	3433		1583					3539	1583	439	3539	
Peak-hour factor, PHF	0.87	0.25	0.93	1.00	1.00	1.00	0.25	0.92	0.92	0.83	0.91	0.92
Adj. Flow (vph)	595	0	316	0	0	0	0	823	347	313	766	0
RTOR Reduction (vph)	0	0	130	0	0	0	0	0	209	0	0	0
Lane Group Flow (vph)	595	0	186	0	0	0	0	823	138	313	766	0
Turn Type	Prot		Prot					NA	Perm	D.P+P	NA	
Protected Phases	3		3					2		1	1 2	
Permitted Phases									2	2		
Actuated Green, G (s)	21.9		21.9					35.9	35.9	50.1	56.1	
Effective Green, g (s)	21.9		21.9					35.9	35.9	50.1	56.1	
Actuated g/C Ratio	0.24		0.24					0.40	0.40	0.56	0.62	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0					3.0	3.0	3.0		
Lane Grp Cap (vph)	835		385					1411	631	454	2205	
v/s Ratio Prot	c0.17		0.12					0.23		c0.11	0.22	
v/s Ratio Perm									0.09	c0.27		
v/c Ratio	0.71		0.48					0.58	0.22	0.69	0.35	
Uniform Delay, d1	31.2		29.2					21.2	17.8	12.1	8.1	
Progression Factor	1.00		1.00					0.99	1.86	2.53	0.87	
Incremental Delay, d2	2.9		1.0					1.3	0.6	3.1	0.1	
Delay (s)	34.1		30.1					22.4	33.7	33.7	7.2	
Level of Service	C		C					C	C	C	A	
Approach Delay (s)		32.7			0.0			25.7			14.9	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



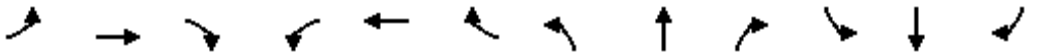
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	295	77	28	39	889	10	815	251
v/c Ratio	1.64	0.29	0.22	0.11	0.35	0.02	0.66	0.22
Control Delay	341.0	11.6	31.0	5.3	7.2	4.1	12.3	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	341.0	11.6	31.0	5.3	7.2	4.1	12.3	1.3
Queue Length 50th (ft)	~286	3	9	3	51	1	101	2
Queue Length 95th (ft)	#324	35	29	18	214	m4	#624	11
Internal Link Dist (ft)		477	268		1831		296	
Turn Bay Length (ft)	150			150		140		
Base Capacity (vph)	180	565	323	349	2526	466	1226	1122
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	47	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.64	0.14	0.09	0.11	0.36	0.02	0.66	0.22

Intersection Summary

~ 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.

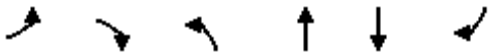
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	4	63	9	3	9	36	810	8	9	750	231
Future Volume (veh/h)	257	4	63	9	3	9	36	810	8	9	750	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	295	5	72	12	4	12	39	880	9	10	815	251
Peak Hour Factor	0.87	0.87	0.87	0.78	0.78	0.78	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	297	18	260	82	20	34	455	2213	23	408	1107	938
Arrive On Green	0.06	0.17	0.17	0.05	0.05	0.05	0.03	0.61	0.61	0.02	1.00	1.00
Sat Flow, veh/h	1781	104	1497	487	398	664	1781	3604	37	1781	1870	1585
Grp Volume(v), veh/h	295	0	77	28	0	0	39	434	455	10	815	251
Grp Sat Flow(s),veh/h/ln	1781	0	1601	1549	0	0	1781	1777	1864	1781	1870	1585
Q Serve(g_s), s	5.0	0.0	3.8	0.4	0.0	0.0	0.8	11.2	11.2	0.2	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	3.8	1.4	0.0	0.0	0.8	11.2	11.2	0.2	0.0	0.0
Prop In Lane	1.00		0.94	0.43		0.43	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	297	0	278	137	0	0	455	1091	1144	408	1107	938
V/C Ratio(X)	0.99	0.00	0.28	0.20	0.00	0.00	0.09	0.40	0.40	0.02	0.74	0.27
Avail Cap(c_a), veh/h	297	0	516	358	0	0	492	1091	1144	485	1107	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.74	0.74	0.74	0.91	0.91	0.91
Uniform Delay (d), s/veh	40.5	0.0	32.3	41.2	0.0	0.0	6.4	8.9	8.9	7.5	0.0	0.0
Incr Delay (d2), s/veh	50.6	0.0	0.5	0.7	0.0	0.0	0.1	0.8	0.8	0.0	4.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	1.5	0.6	0.0	0.0	0.2	3.8	3.9	0.1	1.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.1	0.0	32.8	41.9	0.0	0.0	6.5	9.7	9.6	7.5	4.0	0.6
LnGrp LOS	F	A	C	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		372			28			928			1076	
Approach Delay, s/veh		79.0			41.9			9.5			3.2	
Approach LOS		E			D			A			A	

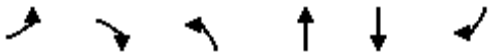
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	61.3		21.6	9.1	59.2	11.0	10.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	38.0		29.0	5.0	38.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	2.2	13.2		5.8	2.8	2.0	7.0	3.4				
Green Ext Time (p_c), s	0.0	5.4		0.4	0.0	7.4	0.0	0.1				

Intersection Summary												
HCM 6th Ctrl Delay			17.8									
HCM 6th LOS			B									



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	509	105	48	352	454	355
v/c Ratio	0.79	0.16	0.13	0.39	0.50	0.22
Control Delay	31.9	3.7	15.1	16.1	17.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	3.7	15.1	16.1	17.9	0.3
Queue Length 50th (ft)	220	0	13	107	149	0
Queue Length 95th (ft)	277	24	35	201	272	0
Internal Link Dist (ft)	533			1532	1831	
Turn Bay Length (ft)		200	200			200
Base Capacity (vph)	796	770	363	908	908	1570
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	0.64	0.14	0.13	0.39	0.50	0.23

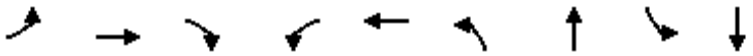
Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	443	91	40	324	413	309
Future Volume (veh/h)	443	91	40	324	413	309
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	509	105	48	352	454	355
Peak Hour Factor	0.87	0.87	0.83	0.92	0.91	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	568	506	347	993	993	1347
Arrive On Green	0.32	0.32	0.53	0.53	0.53	0.53
Sat Flow, veh/h	1781	1585	674	1870	1870	1585
Grp Volume(v), veh/h	509	105	48	352	454	355
Grp Sat Flow(s),veh/h/ln	1781	1585	674	1870	1870	1585
Q Serve(g_s), s	21.8	3.9	3.8	8.7	12.0	3.5
Cycle Q Clear(g_c), s	21.8	3.9	15.8	8.7	12.0	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	568	506	347	993	993	1347
V/C Ratio(X)	0.90	0.21	0.14	0.35	0.46	0.26
Avail Cap(c_a), veh/h	802	713	347	993	993	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.70	0.70
Uniform Delay (d), s/veh	26.0	19.9	16.5	10.8	11.6	1.2
Incr Delay (d2), s/veh	9.6	0.2	0.8	1.0	1.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	1.4	0.6	3.2	4.4	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.6	20.1	17.4	11.8	12.7	1.5
LnGrp LOS	D	C	B	B	B	A
Approach Vol, veh/h	614			400	809	
Approach Delay, s/veh	33.0			12.5	7.8	
Approach LOS	C			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		48.5		31.5		48.5
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		32.0		36.0		32.0
Max Q Clear Time (g_c+I1), s		17.8		23.8		14.0
Green Ext Time (p_c), s		1.9		1.7		3.6

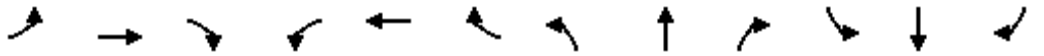
Intersection Summary		
HCM 6th Ctrl Delay		17.3
HCM 6th LOS		B



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	561	164	79	354	211	96	52	112
v/c Ratio	0.15	0.47	0.15	0.17	0.30	0.74	0.22	0.18	0.26
Control Delay	8.6	10.1	3.6	9.5	8.9	46.7	9.1	26.9	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	10.1	3.6	9.5	8.9	46.7	9.1	26.9	11.4
Queue Length 50th (ft)	19	155	11	16	77	112	7	24	16
Queue Length 95th (ft)	m34	204	m27	31	160	130	18	44	50
Internal Link Dist (ft)		1235			4605		1001		513
Turn Bay Length (ft)	250		100	250		110		150	
Base Capacity (vph)	634	1194	1060	461	1178	425	596	431	608
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.47	0.15	0.17	0.30	0.50	0.16	0.12	0.18

Intersection Summary

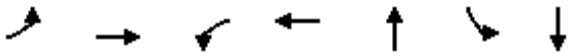
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	443	125	50	289	21	156	10	68	43	32	59
Future Volume (veh/h)	63	443	125	50	289	21	156	10	68	43	32	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	561	164	79	314	40	211	16	80	52	36	76
Peak Hour Factor	0.65	0.79	0.76	0.63	0.92	0.53	0.74	0.63	0.85	0.83	0.89	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	625	1162	985	415	1010	129	325	66	332	337	131	277
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1027	1870	1585	729	1626	207	1281	271	1355	1300	536	1131
Grp Volume(v), veh/h	97	561	164	79	0	354	211	0	96	52	0	112
Grp Sat Flow(s),veh/h/ln	1027	1870	1585	729	0	1833	1281	0	1626	1300	0	1667
Q Serve(g_s), s	4.4	14.6	3.9	5.9	0.0	8.2	14.4	0.0	4.3	3.0	0.0	4.9
Cycle Q Clear(g_c), s	12.6	14.6	3.9	20.5	0.0	8.2	19.3	0.0	4.3	7.3	0.0	4.9
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.83	1.00		0.68
Lane Grp Cap(c), veh/h	625	1162	985	415	0	1139	325	0	399	337	0	409
V/C Ratio(X)	0.16	0.48	0.17	0.19	0.00	0.31	0.65	0.00	0.24	0.15	0.00	0.27
Avail Cap(c_a), veh/h	625	1162	985	415	0	1139	437	0	542	452	0	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.9	9.2	7.2	14.8	0.0	8.0	35.3	0.0	27.2	30.2	0.0	27.5
Incr Delay (d2), s/veh	0.4	1.2	0.3	1.0	0.0	0.7	2.2	0.0	0.3	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.6	1.3	1.1	0.0	3.1	4.6	0.0	1.7	0.9	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	10.4	7.5	15.8	0.0	8.7	37.5	0.0	27.5	30.4	0.0	27.8
LnGrp LOS	B	B	A	B	A	A	D	A	C	C	A	C
Approach Vol, veh/h		822			433			307			164	
Approach Delay, s/veh		9.9			10.0			34.4			28.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.1		61.9		28.1		61.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		30.0		48.0		30.0		48.0				
Max Q Clear Time (g_c+I1), s		21.3		16.6		9.3		22.5				
Green Ext Time (p_c), s		0.8		5.3		0.7		2.9				

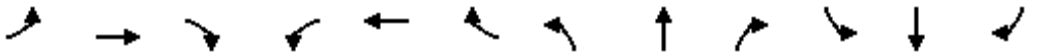
Intersection Summary												
HCM 6th Ctrl Delay			16.1									
HCM 6th LOS			B									



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	247	380	4	540	48	298	362
v/c Ratio	0.56	0.33	0.01	0.49	0.36	0.82	0.55
Control Delay	17.6	10.0	11.0	15.8	40.4	51.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	10.0	11.0	15.8	40.4	51.0	6.9
Queue Length 50th (ft)	97	122	2	224	22	132	3
Queue Length 95th (ft)	161	149	0	330	35	#302	0
Internal Link Dist (ft)		1534		1235	1066		1040
Turn Bay Length (ft)	250		90			110	
Base Capacity (vph)	440	1156	578	1105	297	362	779
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.33	0.01	0.49	0.16	0.82	0.46

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	335	2	1	264	210	6	17	5	262	3	308
Future Volume (veh/h)	222	335	2	1	264	210	6	17	5	262	3	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	376	4	4	290	250	12	28	8	298	8	354
Peak Hour Factor	0.90	0.89	0.50	0.25	0.91	0.84	0.50	0.61	0.63	0.88	0.38	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	606	1123	12	589	564	486	65	113	26	363	9	402
Arrive On Green	0.61	0.61	0.61	1.00	1.00	1.00	0.11	0.11	0.11	0.08	0.26	0.26
Sat Flow, veh/h	866	1847	20	1003	927	799	133	992	225	1781	35	1555
Grp Volume(v), veh/h	247	0	380	4	0	540	48	0	0	298	0	362
Grp Sat Flow(s),veh/h/ln	866	0	1867	1003	0	1726	1350	0	0	1781	0	1590
Q Serve(g_s), s	14.1	0.0	9.0	0.1	0.0	0.0	0.1	0.0	0.0	7.0	0.0	19.7
Cycle Q Clear(g_c), s	14.1	0.0	9.0	9.1	0.0	0.0	6.7	0.0	0.0	7.0	0.0	19.7
Prop In Lane	1.00		0.01	1.00		0.46	0.25		0.17	1.00		0.98
Lane Grp Cap(c), veh/h	606	0	1135	589	0	1050	204	0	0	363	0	411
V/C Ratio(X)	0.41	0.00	0.33	0.01	0.00	0.51	0.23	0.00	0.00	0.82	0.00	0.88
Avail Cap(c_a), veh/h	606	0	1135	589	0	1050	334	0	0	363	0	548
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.88	0.00	0.88	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	8.7	0.7	0.0	0.0	36.3	0.0	0.0	34.9	0.0	32.0
Incr Delay (d2), s/veh	2.0	0.0	0.8	0.0	0.0	1.6	0.6	0.0	0.0	13.9	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	3.5	0.0	0.0	0.5	1.0	0.0	0.0	4.4	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	0.0	9.5	0.8	0.0	1.6	36.9	0.0	0.0	48.9	0.0	44.2
LnGrp LOS	B	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h		627			544			48			660	
Approach Delay, s/veh		10.4			1.6			36.9			46.3	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	13.0	16.3		60.7		29.3		60.7				
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	7.0	18.0		47.0		31.0		47.0				
Max Q Clear Time (g_c+I1), s	9.0	8.7		16.1		21.7		11.1				
Green Ext Time (p_c), s	0.0	0.1		4.3		1.6		4.3				

Intersection Summary												
HCM 6th Ctrl Delay			21.1									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	493	35	70	279	10	20	0	41	5	0	10
Future Vol, veh/h	15	493	35	70	279	10	20	0	41	5	0	10
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	200	-	-	200	-	-	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	16	536	38	76	303	11	22	0	45	5	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	314	0	0	574	0	0	1053	1053	555	1071	1067	309
Stage 1	-	-	-	-	-	-	587	587	-	461	461	-
Stage 2	-	-	-	-	-	-	466	466	-	610	606	-
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	1246	-	-	999	-	-	204	226	531	198	222	731
Stage 1	-	-	-	-	-	-	496	497	-	581	565	-
Stage 2	-	-	-	-	-	-	577	562	-	482	487	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	999	-	-	187	206	531	169	202	731
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	206	-	169	202	-
Stage 1	-	-	-	-	-	-	490	491	-	573	522	-
Stage 2	-	-	-	-	-	-	525	519	-	436	481	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	17.1	15.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	187	531	1246	-	-	999	-	-	347
HCM Lane V/C Ratio	0.116	0.084	0.013	-	-	0.076	-	-	0.047
HCM Control Delay (s)	26.8	12.4	7.9	-	-	8.9	-	-	15.9
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.3	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↰	↱
Traffic Vol, veh/h	31	0	10	5	0	20	17	333	5	20	451	52
Future Vol, veh/h	31	0	10	5	0	20	17	333	5	20	451	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
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	34	0	11	5	0	22	18	362	5	22	490	57

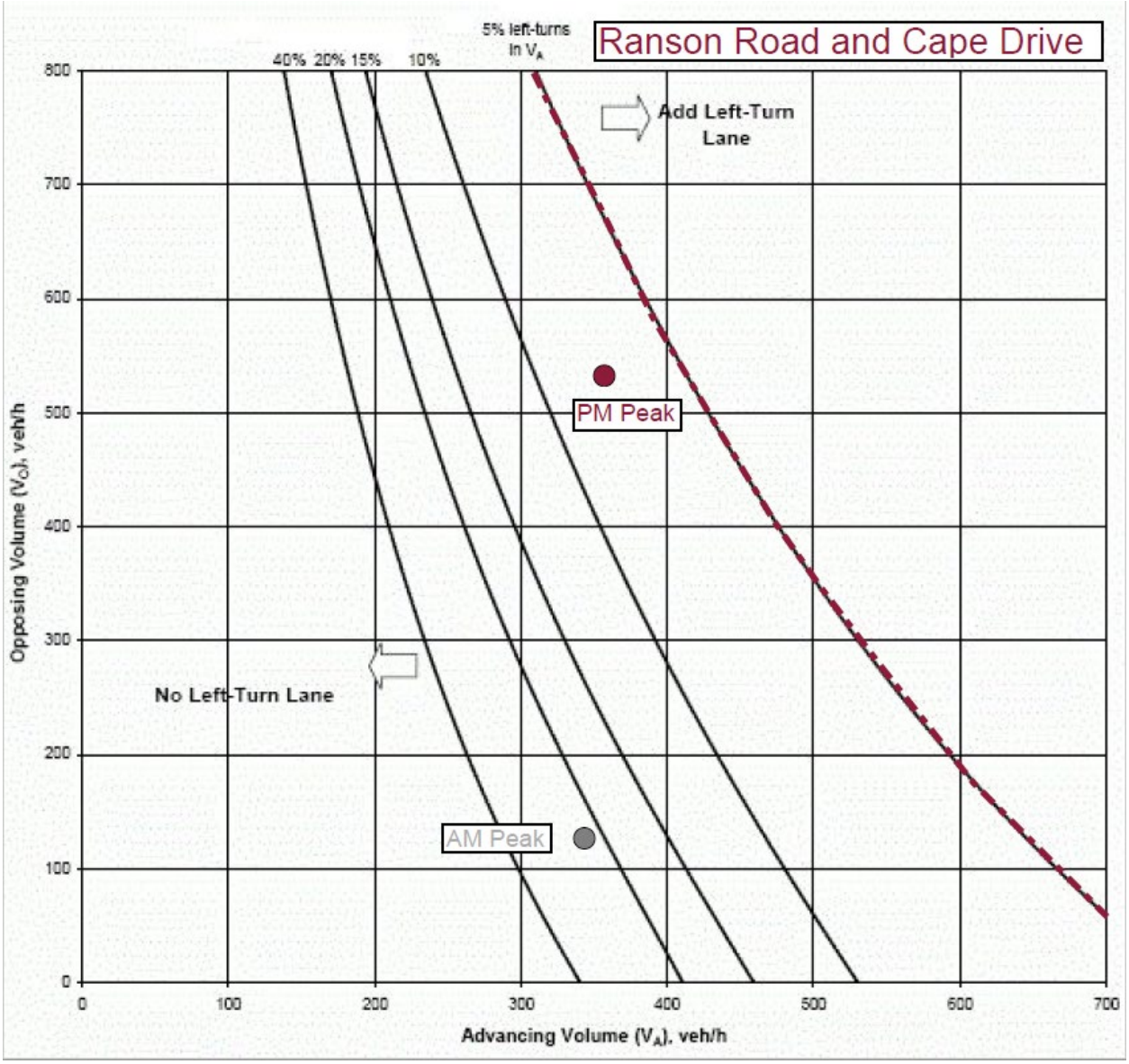
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	946	937	490	969	992	365	547	0	0	367	0	0
Stage 1	534	534	-	401	401	-	-	-	-	-	-	-
Stage 2	412	403	-	568	591	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	241	265	578	233	246	680	1022	-	-	1192	-	-
Stage 1	530	524	-	626	601	-	-	-	-	-	-	-
Stage 2	617	600	-	508	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	252	578	220	234	680	1022	-	-	1192	-	-
Mov Cap-2 Maneuver	225	252	-	220	234	-	-	-	-	-	-	-
Stage 1	518	510	-	612	588	-	-	-	-	-	-	-
Stage 2	584	587	-	485	481	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.4	13	0.4	0.3
HCM LOS	C	B		

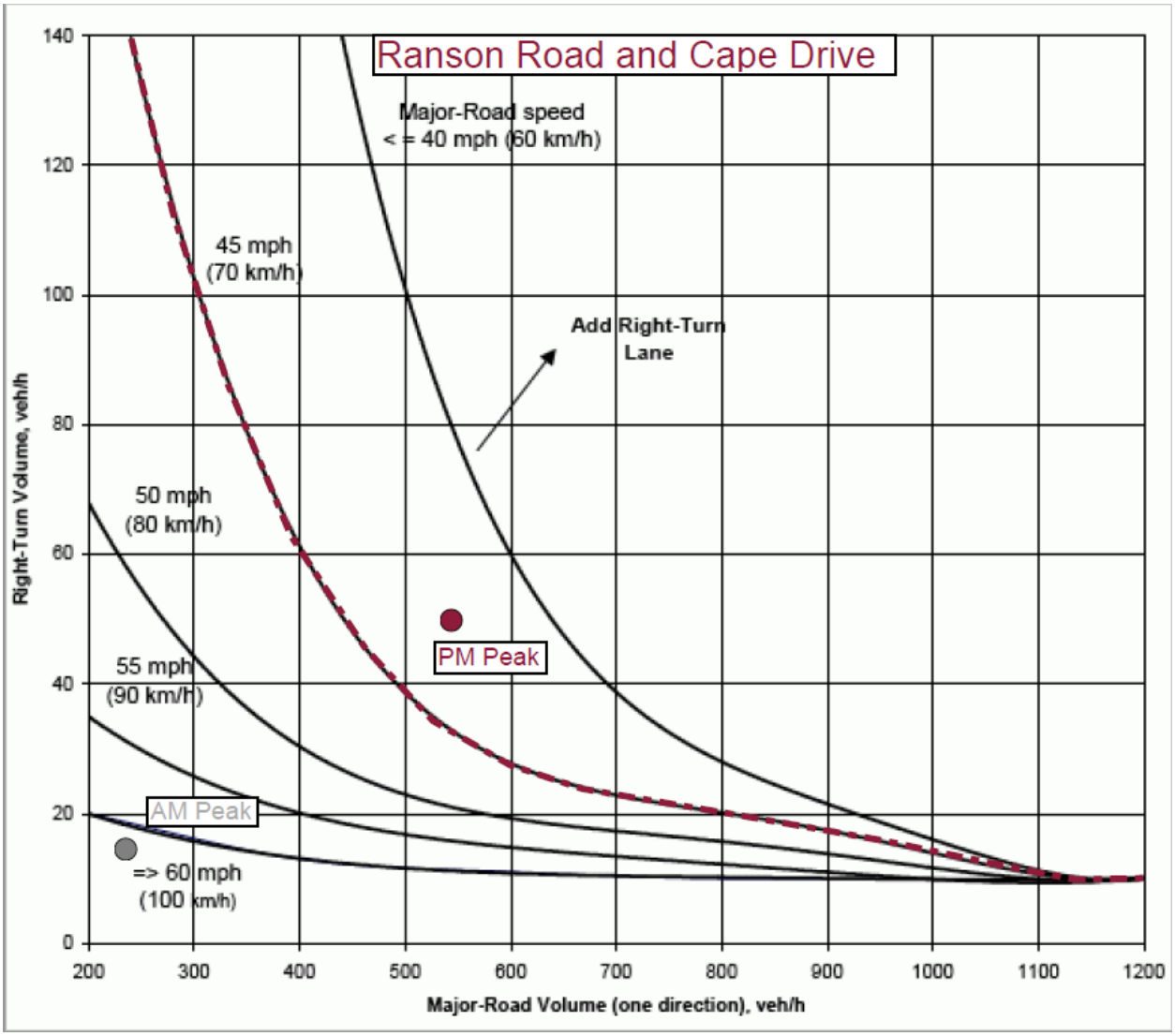
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1022	-	-	264	479	1192	-	-
HCM Lane V/C Ratio	0.018	-	-	0.169	0.057	0.018	-	-
HCM Control Delay (s)	8.6	0	-	21.4	13	8.1	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.2	0.1	-	-

Appendix D – MoDOT Turn Lane Analysis

See attached worksheets.



Left-Turn Lane Guidelines for Two-Lane Roads, 45 mph



Right-Turn Lane Guidelines for Two-Lane Roadways