

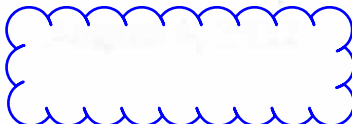


LSC TRANSPORTATION CONSULTANTS, INC.  
2504 East Pikes Peak Avenue, Suite 304  
Colorado Springs, CO 80909  
(719) 633-2868  
FAX (719) 633-5430  
E-mail: [lsc@lsctrans.com](mailto:lsc@lsctrans.com)  
Website: <http://www.lsctrans.com>

## DHIC Falcon Master Traffic Impact Study

(LSC #S224400)

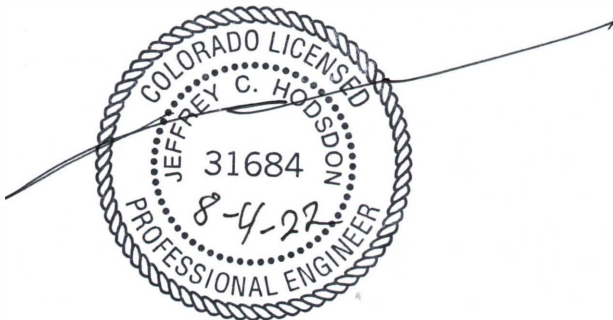
August 4, 2022



PCD File # P-22-18

### Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



### Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

A handwritten signature in blue ink, appearing to read 'B. J. [unclear]', written over a horizontal line.

08/08/22

Date

# **DHIC Falcon**

## **Master Traffic Impact Study**

Prepared for:  
Brandon Hoch  
DHI Communities, a D.R. Horton Company  
9555 Kingston Ct  
Englewood, CO 80112

AUGUST 4, 2022

---

LSC Transportation Consultants, Inc.  
Prepared by: Jeffrey C. Hodsdon, P.E.

LSC #S224200



## CONTENTS

REPORT CONTENTS .....	1
LIST OF OTHER TRAFFIC REPORTS USED IN THE PREPARATION OF THIS REPORT .....	2
LAND USE AND ACCESS .....	2
Proposed Land Uses .....	2
Proposed Site-Access Locations .....	2
SIGHT DISTANCE.....	3
Sight Distance Field Measurements .....	3
Intersection Sight Distance .....	4
North Access .....	4
South Access .....	4
Sight Distance Along a Roadway .....	4
North Access .....	4
South Access .....	4
ROAD AND TRAFFIC CONDITIONS AND MTCP CLASSIFICATION .....	5
Existing Traffic Volumes .....	6
PEDESTRIAN AND BICYCLE FACILITIES .....	6
TRIP GENERATION.....	6
TRIP DISTRIBUTION AND ASSIGNMENT.....	7
Trip Directional Distribution.....	7
Site-Generated Traffic.....	7
Short Term .....	7
Long Term .....	7
Existing + Site-Generated Traffic Volumes .....	8
2042 Background Traffic Volumes.....	8
2042 Total Traffic Volumes .....	8
LEVEL OF SERVICE ANALYSIS .....	8
Judge Orr Road/Eastonville Road/Meridian Ranch .....	9
Short Term .....	9
Long Term .....	9
Eastonville Road/Copenhagen Road (Proposed North Site Access) .....	10
Judge Orr Road/Proposed South Site Access .....	10

US Highway 24/Judge Orr Road .....	10
Short Term .....	10
Long-Term .....	10
VEHICLE QUEUING .....	11
Eastonville Road/Copenhagen Road/Proposed North Site Access .....	11
Judge Orr Road/Proposed South Site Access .....	12
US Highway 24/Judge Orr Road .....	12
ROADWAY IMPROVEMENTS .....	12
Auxiliary Turn Lanes .....	12
Judge Orr Road/Proposed South Site Access.....	13
Eastonville Road/Proposed North Site Access.....	13
US Highway 24/Judge Orr Road .....	14
Judge Orr Road/Meridian Ranch Boulevard/Eastonville Road .....	14
Intersection Configuration and Traffic Control.....	14
ROADWAY CLASSIFICATIONS .....	14
COUNTY ROAD IMPROVEMENT FEE PROGRAM .....	14
Transportation Impact Fees .....	14
Reimbursable Improvements.....	15
MULTI-MODAL TRANSPORTATION AND TDM OPPORTUNITIES .....	15
Pedestrian and Bicycle Accommodations.....	15
DEVIATIONS .....	16
FINDINGS AND CONCLUSIONS .....	16
Enclosures:.....	17
Table 5 and 6	
Figure 1 - Figure 11	
Traffic Count Reports	
Synchro LOS Reports	





LSC TRANSPORTATION CONSULTANTS, INC.  
2504 E. Pikes Peak Ave., Suite 304  
Colorado Springs, CO 80909  
(719) 633-2868  
FAX (719) 633-5430  
E-mail: [lsc@lsctrans.com](mailto:lsc@lsctrans.com)  
Website: <http://www.lsctrans.com>

August 4, 2022

Brandon Hoch  
DHI Communities, a D.R. Horton Company  
9555 Kingston Ct  
Englewood, CO 80112

RE: DHIC Falcon  
El Paso County, CO  
Master Traffic Impact Study  
LSC #S224400

Dear Mr. Hoch,

LSC Transportation Consultants, Inc. has prepared this Master Traffic Impact Study for the DHIC Falcon residential development with 214 single-family-attached dwelling units in El Paso County, CO. Located generally northeast of the intersection of Eastonville Road/Judge Orr Road (El Paso County parcel ID 4232302003), the 13.72-acre site is currently vacant. Access to the site is proposed to Judge Orr Road (south access) and Eastonville Road (west access). No direct access is proposed to US Highway 24 (US 24). This report has been prepared for submittal to El Paso County.

Note: LSC previously completed a traffic study for this site, dated February 5, 2021 (PCD File No. SKP203). The land use studied in that report was commercial.

## REPORT CONTENTS

The preparation of this report included the following:

- An inventory of existing roadway and traffic conditions on major thoroughfares adjacent to the site, including surface conditions, functional classification, widths, pavement markings, traffic-control signs, posted speed limits, intersection and access spacing, roadway and intersection alignments, roadway grades, and auxiliary turn lanes;
- Weekday peak-hour turning-movement traffic counts at the intersections of Judge Orr Road/Meridian Ranch Road/Eastonville Road and US 24/Judge Orr Road;
- Estimated average weekday traffic (AWT) volumes adjacent to the proposed development on Judge Orr Road, Eastonville Road, Meridian Ranch Road, and US 24;
- Projections of 20-year background traffic volumes on Judge Orr Road, Eastonville Road, Meridian Ranch Road, and US 24;

- The proposed site land use and access plan;
- Estimates of average weekday and weekday peak-hour trip generation for the proposed development and the estimated directional distribution of site-generated vehicle trips on roadways and intersections adjacent to and in the vicinity of the site;
- Projected site-generated and resulting total peak-hour intersection traffic volumes at the following study-area intersections: Judge Orr Road/Meridian Ranch Road/Eastonville Road and US 24/Judge Orr Road;
- Projected total daily and peak-hour traffic volumes at the study-area intersections;
- Intersection level of service (LOS) analysis at the study-area intersections;
- Evaluation of short- and long-term projected intersection volumes to determine potential requirements for any auxiliary right-/left-turn lanes at the proposed site access points, based on the criteria in El Paso County's *Engineering Criteria Manual (ECM)*. Also included are potential long-term lane requirements; and
- Findings and recommendations for submittal to El Paso County.

#### **LIST OF OTHER TRAFFIC REPORTS USED IN THE PREPARATION OF THIS REPORT**

The following previously-completed traffic reports are located adjacent to the proposed Judge Orr Eastonville Commercial Center and were used to provide reference and background information

- "Meadowlake Ranch" – dated May 29, 2019
- "Falcon Crossing" – dated February 5, 2007
- "Liberty Tree Academy" – dated September 19, 2020
- "Meridian Ranch" – several reports
- "Grandview Reserve" – dated December 15, 2020
- "Judge Orr/Eastonville Commercial Center" – dated February 5, 2021

#### **LAND USE AND ACCESS**

##### **Proposed Land Uses**

Figure 1 shows the site location relative to the adjacent and nearby roadways. Located generally northeast of the intersection of Eastonville Road/Judge Orr Road (El Paso County parcel ID 4232302003), the site is currently vacant. Anticipated land uses for the 13.72-acre site include 214 single-family-attached dwelling units.

##### Proposed Site-Access Locations

Figure 1 shows the area circulation and access points to the adjacent public roads, while Figure 2 contains the proposed site plan showing the proposed land uses, on-site circulation, and proposed access points. The access points may be private street/driveway connections or they may be developed as public streets. This will be determined later, but this report and the

deviations treat them as potential public street connections. Two full-movement access points/potential public street intersections are proposed:

- With Judge Orr Road – located approximately 1,040 feet east of Eastonville Road
- With Eastonville Road – future extension of Copenhagen Road

Per Standard 2.2.5.C of the ECM, ¼-mile (1,320 feet) is required on Urban Minor Arterials between public street intersections. The following proposed public street intersection spacings are currently shown on the conceptual site plan, as shown in Deviation Exhibit 1:

- 860 feet – on Eastonville Road between Judge Orr Road and the existing intersection of Eastonville/Copenhagen Road. The north site street connection is proposed to tie into this existing intersection.
- 360 feet – on Eastonville Road between the existing Eastonville/Tex Tan Road intersection and existing intersection of Eastonville/Copenhagen Road intersection. The north street connection for this site is proposed to tie into this latter existing intersection.
- 1,235 feet – along Judge Orr Road between Eastonville Road and the proposed south site street connection (which has been shifted, with this submittal, to align with the anticipated future street proposed for the property south of Judge Orr Road).
- 770 feet – along Judge Orr Road between the Meadowlake Ranch main entry street the proposed intersection of Judge Orr Road/the south site street connection/the anticipated future street proposed for the property south of Judge Orr Road

The proposed public street intersection spacings are less than one-quarter mile along both adjacent roads, which does **not** meet *ECM* criteria for intersection spacing. As such, deviation request(s) would be required for the proposed site public street intersection locations.

## **SIGHT DISTANCE**

### **Sight Distance Field Measurements**

Sight distance field measurements utilized a driver's eye height of 3.5 feet and a height of 3.5 feet for a vehicle traveling along Judge Orr Road and Eastonville Road. The following analysis corresponds to field-measured sight distances for the proposed site-access intersections. Field-measured sight distances for passenger vehicles are as follows:

- Proposed north site access on Eastonville Road
  - To the northeast: greater than 1,000 feet
  - To the southwest: unobstructed to Judge Orr/Eastonville/Meridian Hills
- Proposed south access on Judge Orr Road
  - To the east: greater than 1,000 feet
  - To the west: unobstructed to Judge Orr/Eastonville/Meridian Hills

Please refer to Figure 9 for detailed sight-distance analysis diagrams.

Mr. Brandon Hoch  
DHIC Falcon

State that intersection sight distance was measured from a point on the proposed site-access 13 ft back from the edge of major road pavement.

st 4, 2022  
act Study

Update Fig 9 to accordingly.

### Intersection Sight Distance

Intersection sight distance at the proposed site-access locations shown in the site plan assumes that lines of sight for both access points would be kept clear of any sight-distance obstructions. This includes landscaping, signage, etc. proposed for the residential development. Please refer to Figure 10 and Figure 11 for more detail.

Update reference. Fig 9 shows the intersection sight distances.

### North Access

With a 35-mph posted speed limit on Eastonville Road, the field-measured sight distances for the proposed north site access would exceed the *ECM*-prescribed requirement for intersection sight distance for passenger vehicles, as shown in the *ECM* Table 2-21.

### South Access

With a 45-mph posted speed limit on Judge Orr Road, the field-measured sight distances on both approaches for the proposed south site access to Judge Orr Road would exceed the *ECM*-prescribed requirement for entering sight distance for passenger vehicles, as shown in *ECM* Table 2-21. Therefore, intersection sight distance would be acceptable at the proposed south site access location.

### **Sight Distance Along a Roadway**

Site-access points/driveways must meet *ECM* standards for sight distance along the roadway contained in Table 2-33 of the *ECM*.

### North Access

Based on the field measurements, the sight distance along a roadway at the proposed north site-access intersection is greater than 1,000 feet approaching the access from the north along Eastonville Road and unobstructed to Judge Orr/Eastonville/Meridian Ranch from the south. The sight distance along a roadway would exceed the 470-foot County standard in both directions for stopping sight distance at a posted speed of 35 mph.

### South Access

Based on the field measurements, the sight distance along a roadway at the proposed south site-access intersection is greater than 1,000 feet approaching the access from the east along Judge Orr Road and unobstructed to Judge Orr/Eastonville/Meridian Ranch from the west. The sight distance along a roadway would exceed the 555-foot County/AASHTO standard in both directions for stopping sight distance at a posted speed of 45 mph.

## ROAD AND TRAFFIC CONDITIONS AND MTCP CLASSIFICATION

Figure 1 shows the roads adjacent to and in the vicinity of the site. Adjacent roads serving the site are identified below followed by a brief description of each:

**US Highway 24 (US 24)** is a state highway extending locally from the City of Colorado Springs to Peyton in a northeasterly direction and then continuing east. US 24 is planned to be widened to four lanes through the Falcon area and is classified as an E-X – Expressway by the Colorado Department of Transportation (CDOT) and a 4-lane Principal Arterial on the *El Paso County Major Transportation Corridors Plan (MTCP)*. The posted speed limit on US 24 adjacent to the site is 65 miles per hour (mph). Auxiliary left-turn lanes currently exist on the northbound and southbound approaches at the signalized intersection of US 24/Judge Orr.

**Judge Orr Road** is a two-lane roadway that extends east from Eastonville Road across most of El Paso County. It is shown on the *El Paso County 2040 Major Transportation Corridors Plan* and the *Preserved Corridor Network Plan* as a four-lane Minor Arterial adjacent to the site (and west of Curtis Road). Posted speed limits adjacent to the site range from 45 to 55 mph. West of Curtis Road, the speed limit is 45 mph, while it generally increases to 55 mph east of Curtis Road. The intersection of US 24/Judge Orr is currently signalized. Due to the oblique angle of this intersection, the eastbound and westbound approaches are split-phased. The *US 24 Access Control Plan/PEL Study* shows future plans for realignment of Judge Orr at US 24 to improve the intersection and provide an intersection angle closer to 90 degrees.

**Eastonville Road** is shown as a two-lane Minor Arterial on the *El Paso County 2040 Major Transportation Corridors Plan* and the *Preserved Corridor Network Plan*. A two-lane roadway extending northeast from Meridian Road past Hodgen Road, Eastonville Road has a posted speed limit of 35 mph. All approaches at the four-way stop-sign-controlled intersection of Judge Orr Road/Eastonville Road have an exclusive left-turn lane, while the northwest-bound approach also has an auxiliary right-turn lane. South of Stapleton Drive, Eastonville Road's cross-section is consistent with a two-lane Urban Collector cross-section with a painted two-way left-turn lane (TWLTL).

**Meridian Ranch Road** extends from Eastonville Road to Sunset Crater Drive and is shown as a two-lane Collector on the MTCP. Judge Orr Road transitions to Meridian Road northwest of Eastonville Road and has a posted speed limit of 35 mph. The southeast-bound approach has a painted TWLTL with a shared through/right-turn lane.

## Existing Traffic Volumes

Vehicular turning-movement counts were conducted for the following dates and times at the following intersections:

- Judge Orr Road/Eastonville Road
  - Tuesday, May 10, 2022 from 6:30 – 8:30 a.m.
  - Tuesday, May 10, 2022 from 4:00 – 6:00 p.m.
- US 24/Judge Orr Road
  - Thursday, July 7, 2022 from 6:30 – 8:30 a.m.
  - Wednesday, June 22, 2022 from 4:00 – 6:00 p.m.

Identify the adjustment factor used and explain how you determined the adjustment factor.

Count data has been adjusted to account for any differences due to area school traffic. The adjusted volumes are shown in Figure 3 shows these turning-movement volumes, as well as the average weekday traffic volumes (estimated based on factored peak-hour count data) on the study-area roadways. Raw count data is attached.

## PEDESTRIAN AND BICYCLE FACILITIES

Judge Orr Road and Eastonville Road do not currently have sidewalks or bicycle lanes to accommodate pedestrians or bicycles, but sidewalks would be required along both roadways following site buildout. The proposed subdivision roads are likely to be Urban roadways and, per ECM criteria, would require sidewalks.

## TRIP GENERATION

Estimates of the vehicle trips projected to be generated by the proposed Judge Orr Eastonville Commercial Center development have been made using the nationally published trip-generation rates from *Trip Generation, 11<sup>th</sup> Edition, 2021* by the Institute of Transportation Engineers (ITE). Corresponding trip-generation rates from ITE Land Use Category “215 – Single-Family (Attached) Housing” have been used to develop the trip-generation estimates for the proposed 214-dwelling unit residential site.

Table 1 below presents a summary of the estimated external site trip generation. A detailed trip-generation estimate for the site, including ITE rates for the proposed land uses, is presented in Table 5 (attached). Figure 2 shows the layout within the site.

The proposed residential site is projected to generate about 1,541 total vehicle trips on the average weekday during a 24-hour period, with approximately half entering and half exiting the site. During the morning peak hour, approximately 32 entering vehicles and 71 exiting vehicles are estimated to be generated. Approximately 70 entering and 52 exiting vehicles are estimated to be generated by the site during the afternoon peak hour.

**Table 1: Estimated Site Vehicle-Trip Generation**

Analysis Period	Weekday		
	In	Out	Total
Morning Peak Hour	32	71	103
Afternoon Peak Hour	70	52	122
Daily/24-hour	721	721	1,541

## **TRIP DISTRIBUTION AND ASSIGNMENT**

### **Trip Directional Distribution**

The directional-distribution estimate of site-generated vehicle trips to the study-area roads and intersections is a necessary component in determining the site's traffic impacts. Figure 4 shows the percentages of the site-generated vehicle trips projected to be oriented to and from the site's major approaches. Estimates have been based on the following factors: the proposed new land use, the area roadway system serving the site, and the site's geographic location relative to the overall greater El Paso County/Colorado Springs area. Figure 4 shows estimated distribution splits for the short and long term. The long-term splits consider the addition of the Stapleton Road connection to the west and new development to the northeast, east, and southeast.

### **Site-Generated Traffic**

Site-generated traffic volumes have been estimated at the following intersections:

- Judge Orr Road/Eastonville Road
- Judge Orr Road/proposed south full-movement site access
- Eastonville Road/Copenhagen Road/proposed north full-movement site access
- US 24/Judge Orr Road

### Short Term

Short-term site-generated volumes have been calculated by applying the short-term directional-distribution percentages estimated by LSC (from Figure 4) to the trip-generation estimates (from Table 5). Figure 5a shows the projected short-term site-generated traffic volumes for the weekday morning and afternoon peak hours.

### Long Term

Long-term site-generated volumes have been calculated by applying the long-term directional-distribution percentages estimated by LSC (from Figure 4) to the trip-generation estimates (from Table 5). Figure 5b shows the projected long-term site-generated traffic volumes for the weekday morning and afternoon peak hours.

## Existing + Site-Generated Traffic Volumes

Figure 6 shows the sum of the 2023 background traffic volumes (from Figure 3) and short-term site-generated peak-hour traffic volumes (shown in Figure 5a). These volumes represent the projected short-term total traffic following site buildout. Laneage and traffic control at the study-area intersections following site buildout are shown in Figure 6.

### 2042 Background Traffic Volumes

State the growth rate factor used.

Long-term background traffic volumes are estimates by LSC, based on projected 2042 volumes adjacent to the site shown in Map 9 of the MTCP. Additionally, traffic generated by planned adjacent and nearby developments, such as Meadowlake Ranch, Liberty Tree Academy, Meadowlake Industrial Park, and Falcon Crossing, has been included in 2042 background traffic volumes. Please refer to Figure 7 for estimated long-term background volumes and assumed laneage at the study-area intersections.

Projected long-term background traffic volume projections along Eastonville Road and Judge Orr Road in this vicinity have been based, in part, on the recent *Eastonville Road Project Traffic Impact Study* by Wilson & Company. Site-generated traffic from nearby planned developments has also been considered.

Future access to the currently-undeveloped parcel to the south would likely be required to align with this site's access on Judge Orr Road. LSC has assumed single-family residential development on approximately 49 acres, with the potential for additional future single-family residential dwelling units northeast of this area (east of the drainage channel). Approximately 60 percent of future residential traffic from this south parcel was assumed to orient to/from US 24, while the remainder would access the site via the Eastonville/Judge Orr/Meridian Ranch intersection to the west.

### 2042 Total Traffic Volumes

Figure 8 shows the sum of 2040 background traffic volumes (from Figure 7) plus long-term site-generated traffic volumes (from Figure 5b).

## LEVEL OF SERVICE ANALYSIS

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection and is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay. LOS F indicates a high level of congestion or delay. Table 2 shows the level of service delay ranges for signalized and unsignalized intersections.



**Table 2: Intersection Levels of Service Delay Ranges**

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) <sup>(1)</sup>
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more
(1) For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.		

LOS values have been included in each figure for each turning movement/approach during the weekday morning and afternoon peak hours for the proposed site-access intersections and off-site intersections in the study area:

- Figure 3: 2022 Existing Traffic, Lane Geometry, Traffic Control, and LOS
- Figure 6: 2022 Existing + Site Traffic, Lane Geometry, Traffic Control, and LOS
- Figure 7: 2042 Background Traffic, Lane Geometry, Traffic Control, and LOS
- Figure 8: 2042 Background + Site Traffic, Lane Geometry, Traffic Control, and LOS

LOS calculations for long-term scenarios were based upon the recommended lane geometries and traffic controls outlined in the figures above.

### **Judge Orr Road/Eastonville Road/Meridian Ranch**

#### Short Term

The intersection of Judge Orr/Meridian Ranch/Eastonville is currently all-way, stop-sign-controlled (AWSC). All movements at this intersection currently operate at and are projected to remain at LOS C or better during both peak hours with the addition of site-generated traffic. No modifications would be required to this intersection during the short term.

#### Long Term

If the intersection of Judge Orr/Eastonville/Meridian Ranch remains AWSC, several turning movements and single-lane approaches would operate at LOS F during the peak hours, based on the projected long-term background and total volumes. However, if this intersection were either reconstructed as a modern roundabout, the intersection is projected to operate at LOS A overall during both long-term peak hours.

Note: Section 5.2 of the *Eastonville Road Project Traffic Impact Study* indicates that the intersection of Judge Orr/Eastonville/Meridian Ranch would likely be improved to a roundabout once it operates at LOS C or worse as an all-way stop-sign-controlled intersection. It is likely that this intersection will be reconstructed as a modern roundabout with the next phase of the PPRTA project (south of Snaffle Bit). Most other intersections to the north along Eastonville (through the Phase 1 sections of the Eastonville PPRTA project) are currently planned to be roundabouts.

#### **Eastonville Road/Copenhagen Road (Proposed North Site Access)**

All individual turning movements and approaches are projected to operate at LOS D or better during both short-term and long-term peak hours as a two-way stop-sign-controlled intersection during both peak hours. Please refer to Figure 6 and Figure 8 for recommended lane configurations and LOS summaries at this intersection during the short-term and long-term scenarios, respectively.

#### **Judge Orr Road/Proposed South Site Access**

All individual turning movements and approaches are projected to operate at LOS C or better through the long term as a stop-sign-controlled intersection without the addition of any auxiliary turn lanes. Please refer to Figure 6 and Figure 8 for recommended lane configurations and LOS summaries at this intersection during the short-term and long-term scenarios, respectively.

#### **US Highway 24/Judge Orr Road**

##### Short Term

The intersection of US 24/Judge Orr is currently signalized. The *US 24 Access Control Plan* shows this intersection realigned to one of two alternate alignments that would provide an intersection angle closer to 90 degrees. All movements at this intersection except for the westbound-through movement are currently operating at LOS D or better during both peak hours.

Short-term analysis assumes the proposed realignment has not yet been constructed, but assumes future southbound right-turn deceleration, a southbound right-turn acceleration, and an eastbound right-turn lane. These turn lanes are shown at the intersection of US 24/Judge Orr in CDOT's *US 24 Planning & Environmental Linkages (PEL) Study*.

##### Long-Term

By 2040, it was assumed that this intersection would be realigned and both Judge Orr Road and US 24 would be widened to provide two through lanes in each direction. Based on the projected 2040 background and total traffic volumes and the lane geometry shown in Figure 7 and Figure 8, this intersection is projected to operate at an overall LOS D during the peak hours. Some minor movements are projected to operate at LOS E during the peak hours simply because of the

likelihood of arrival at the traffic signal at the beginning of the red phase at an intersection with many phases and a long cycle length. These movements would not be considered “failing” since the volume-to-capacity ratios would be less than 1.0. The justification is that to progress through traffic along an arterial corridor, the traffic signal offsets and left-turn and side street phase times have been adjusted to favor the through traffic band, which can often result in higher delay for the left-turn movements even though there is sufficient capacity for them.

## VEHICLE QUEUING

This section contains the projected 95<sup>th</sup>-percentile queues for the following turning movements:

- Judge Orr Road between Eastonville Road and the proposed south access
- Eastonville Road/Copenhagen Road/proposed north site access

### Eastonville Road/Copenhagen Road/Proposed North Site Access

Table 3 presents the projected short-term and long-term 95<sup>th</sup>-percentile queues for the southbound-left turning movement at the intersection of Eastonville Road/Copenhagen Road/proposed north site access. Synchro scenario queue reports indicated that the 95<sup>th</sup>-percentile eastbound-left turning-movement queues would **not** exceed the available stacking length during either short-term or long-term peak hour. Synchro queueing reports indicated a 95<sup>th</sup>-percentile queue length of 1-3 vehicles (25 - 75 feet) during all short-term and long-term peak hours.

**Table 3: 95<sup>th</sup>-Percentile Queues (2042 Background + Site)**  
**Eastonville Road/Proposed North Access – Southbound Left-Turn Lane**

Major Street	Eastonville Road	
Minor Street	Proposed North Site Access	
Turning Movement	Southbound Left	
Analysis Period	A.M. Peak	P.M. Peak
Existing + Site (Two-Way Stop Sign Control)		
Storage Length (ft)	160'	160'
Taper Length (ft)	155'	155'
95 <sup>th</sup> -Percentile Queue (ft)	75'	50'
2040 Background + Site (Roundabout)		
Storage Length (ft)	-	-
Taper Length (ft)	-	-
95 <sup>th</sup> -Percentile Queue (ft)	50'	25'
Note: Synchro assumes queue length per average vehicle is 25 ft		

### Judge Orr Road/Proposed South Site Access

The 95<sup>th</sup> percentile queue for the eastbound left-turn movement at the south site access is projected to be about one vehicle.

### US Highway 24/Judge Orr Road

Table 4 presents the projected short-term and long-term 95<sup>th</sup>-percentile queues for several turning movements at the intersection of US 24/Judge Orr Road. Synchro scenario queue reports indicated that the 95<sup>th</sup>-percentile queues would **not** exceed the available stacking length during either short-term or long-term peak hour for the following turning movements: eastbound through/left (short-term), westbound approach (short-term), eastbound left (long-term), westbound left (long-term), and northbound left (short-term and long-term).

**Table 4: 95<sup>th</sup>-Percentile Queues (US Highway 24/Judge Orr Road)**

Major Street	US Highway 24					
Minor Street	Judge Orr Road					
Turning Movement	Eastbound*		Westbound*		Northbound Left	
Analysis Period	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
<b>Existing + Site</b>						
Storage Length (ft)	-	-	-	-	860'	860'
Taper Length (ft)	-	-	-	-	300'	300'
Max Queue (ft)	90'	89'	197'	286'	67'	103'
<b>2040 Background + Site</b>						
Storage Length (ft)	290'	290'	290'	290'	860'	860'
Taper Length (ft)	240'	240'	240'	240'	300'	300'
Max Queue (ft)	68'	166'	146'	271'	125'	229'
Note: Synchro assumes queue length per average vehicle is 25 ft						
* Analysis is for EB through/left lane during short-term, but EB left-turn lane for 2042						

## ROADWAY IMPROVEMENTS

### Auxiliary Turn Lanes

The following design speeds were used to determine required turn lane lengths for each of the study-area roadways:

- US Highway 24 – 70 mph
- Judge Orr Road – 50 mph
- Eastonville Road – 40 mph
- Meridian Ranch Boulevard – 40 mph

Judge Orr Road/Proposed South Site Access

*Eastbound Approach*

According to the El Paso County *Engineering Criteria Manual (ECM)*, exclusive left-turn lanes shall be provided for any access on a Minor Arterial or Collector with a projected peak-hour ingress turning volume of 25 vehicles per hour (vph) or greater. The projected left-turn volume at the south site-access point is **not** expected to exceed the 25-vph minimum left-turn volume thresholds prescribing a turn lane outlined in the *ECM* upon site buildout. As such, an eastbound left-turn deceleration lane would **not** be required on Judge Orr Road approaching the south access. Note: In the future, with this and other development along Judge Orr Road along with increases in through background traffic, the roadway is likely to be upgraded to an Urban Minor Arterial cross section. That cross section includes a striped center median for left-turning movements.

*Westbound Approach*

State the turning volume determined for both EB and WB Judge Orr Rd approaches

According to *ECM*, exclusive right-turn lanes shall be provided for any access on a Minor Arterial or Collector with a projected peak-hour ingress turning volume of 50 vehicles per hour (vph) or greater. The projected right-turn volume at the south site access point is **not** expected to exceed the 50-vph minimum right-turn volume thresholds prescribing a turn lane outlined in the *ECM* upon site buildout. As such, a westbound right-turn deceleration lane would **not** be required on Judge Orr Road approaching the south access.

Eastonville Road/Proposed North Site Access

*Southwest Approach*

Eastonville Road is currently striped with a painted center two-way left-turn lane (TWLTL). Although, the projected southbound left-turn volume at the north site access point is not expected to exceed the minimum left-turn volume threshold prescribing a left-turn lane outlined in the *ECM*, the existing TWLTL currently provides a separate lane for this project's southbound left-turning movements.

Restriping will be required for the center southbound turn lane. Add to list of required applicant improvements

*Northeast Approach*

According to the *ECM*, exclusive right-turn lanes shall be provided for any access on a Minor Arterial or Collector with a projected peak-hour ingress turning volume of 50 vehicles per hour (vph) or greater. The projected northbound right-turn volume at the north site access point is **not** expected to exceed the 50-vph minimum right-turn volume thresholds prescribing an exclusive turn lane outlined in the *ECM* upon site buildout. As such, a northeast-bound right-turn deceleration lane would **not** be required on Eastonville Road approaching the north access.

State the NB right-turn volume determined at full build out.

Provide justification for full movement turn instead of 3/4 movement at both north and south access points

### US Highway 24/Judge Orr Road

Auxiliary turn lanes are planned to be added at this intersection as part of El Paso County intersection improvement project C14. This roadway improvement project has been identified as being needed by the year 2040 per Map 13 and Table 4 of El Paso County's 2016 MTCP:

- C14 – Judge Orr Road from Eastonville Road to Peyton Highway (\$38,248,000)
- Existing conditions – 2-lane Rural Minor Arterial
- Future conditions – 4-lane Rural Minor Arterial

As such, no modifications would be required by the applicant at the intersection of US 24/Judge Orr as a result of additional site-generated traffic from this development.

### Judge Orr Road/Meridian Ranch Boulevard/Eastonville Road

No modifications to existing auxiliary turn lanes would be required at the intersection of Eastonville/Judge Orr/Meridian Ranch following site buildout. However, Section 5.2 of the *Eastonville Road Project Traffic Impact Study* indicates that the intersection of Judge Orr/Eastonville/Meridian Ranch would likely be improved to a roundabout once it operates at LOS C or worse as an all-way stop-sign-controlled intersection.

It is likely that this intersection will be reconstructed as a modern roundabout with the next phase of the PPRTA project (south of Snaffle Bit). Most other intersections to the north along Eastonville (through the Phase 1 sections of the Eastonville PPRTA project) are currently planned to be roundabouts and are under design.

### **Intersection Configuration and Traffic Control**

Please refer to the Roadway Improvements Table (attached as Table 6).

### **ROADWAY CLASSIFICATIONS**

All internal roadways within the 214-dwelling-unit residential development are proposed to be private streets.

### **COUNTY ROAD IMPROVEMENT FEE PROGRAM**

#### **Transportation Impact Fees**

Per ECM Appendix B: *State what the current applicable Transportation Impact Fees are and what option the developer will be selecting for payment.*

The applicant will be required to participate in this program. The PID option will be identified with a future Preliminary Plan/Plat submittal.

### **Reimbursable Improvements**

The following roadway improvement projects have been identified as being needed by the year 2040 per Map 13 and Table 4 of El Paso County's 2016 MTCP:

- C14 – Judge Orr Road from Eastonville Road to Peyton Highway (\$38,248,000)
  - Existing conditions – 2-lane Rural Minor Arterial
  - Future conditions – 4-lane Rural Minor Arterial
  - Note: It would seem most logical and consistent with the existing section of Eastonville adjacent to the site, plans for other sections of Eastonville Road, and existing Meridian Ranch Drive, for the section of Judge Orr Road between Eastonville and US Highway 24 to be an Urban Minor Arterial rather than “Rural.”
- U19 – Eastonville Road from McLaughlin Road to Latigo Boulevard (\$18,420,000)
  - Existing conditions (note: some sections following PPRTA improvements) – 2-lane Rural Unimproved County Road
  - Future conditions – 2-lane Rural Minor Arterial
  - Note: This PPRTA project has been divided into several phases. The first phase will be from Snaffle Bit north to Rex and the second phase will be between McLaughlin and Snaffle Bit. The Phase 1 segment of Eastonville will be a modified Urban Minor Arterial cross section. Phase 1 is currently under design.

See the attached MTCP maps for reference.

### **MULTI-MODAL TRANSPORTATION AND TDM OPPORTUNITIES**

The following roadway improvement projects have been identified as being needed by the year 2040 per Map 15 and Table 5 of El Paso County's 2016 MTCP:

- M8 – Judge Orr Road from Eastonville Road to South Peyton Highway
  - Bicycle improvements (2.98 miles)

### **Pedestrian and Bicycle Accommodations**

There are two existing public schools located within two miles of the site, Falcon High School and Woodmen Hills Elementary School. Additionally, the Transcend Trail connects several local parks west of the site within a two-mile radius.

Figure 10 and Figure 11 show the school pedestrian/bike routes between the proposed residential site and Woodmen Hills Elementary School and Falcon High School, respectively. There are currently no sidewalks on Judge Orr Road or Eastonville Road.

The following is a list of known and planned multi-modal and pedestrian accommodations in the vicinity of the site:

- A park-and-ride facility is planned for a site near Meridian Road and US Highway 24.
- The Rock Island Regional Trail passes near the site to the east.

- Many of the area County roads have been or will be upgraded to provide paved shoulders for cyclists. Stapleton is shown as a future “bike route.”
- The *MTCP* shows a future primary regional trail along Eastonville Road. Another future primary regional trail is shown extending west from Eastonville Road though Meridian Ranch.
- The Highway 24 PEL study also includes multi-modal elements.

## DEVIATIONS

The following deviations to *ECM* design criteria are proposed at the proposed site access intersections on Judge Orr Road and Eastonville Road:

- Section 2.2.5.C – Roadway Access Criteria (Urban Minor Arterial Access Standards)
- Section 2.3.2 – Design Standards by Function Classification

Please refer to the deviation request forms included with the application submittal.

## FINDINGS AND CONCLUSIONS

- The site is projected to generate about 1,541 new driveway vehicle-trips on the average weekday.
- During the weekday morning peak hour of adjacent street traffic, 32 vehicles would enter the site while 71 vehicles would exit.
- During the weekday afternoon peak hour of adjacent street traffic, 70 vehicles would enter the site while 52 vehicles would exit.
- All individual approaches and turn lanes at both site-access intersections would operate at LOS D or better during both short-term and long-term peak hours as stop-sign-controlled intersections with single-lane exiting approaches. Please refer to the “Level of Service” section above for detailed LOS results and discussion regarding all study-area intersections.
- Auxiliary left-turn and right-turn deceleration lanes would **not** be required at either of the site-access points, based on projected buildout traffic volumes. Please refer to the “Auxiliary Turn-Lane Analysis” section for evaluation of potential turn-lane needs.
- All internal site access roadways are proposed to be private streets.
- Please refer to the “Queuing Analysis” section above for additional details. Synchro queue reports indicated that the 95<sup>th</sup> percentile left-turn queues at both site-access points are **not** projected to exceed the back-to-back left-turn stacking distances to adjacent upstream intersections during either peak hour.
- Please refer to the “List of Improvements” (attached) for a summary of roadway improvements, including timing and financial responsibility for each improvement.
- Deviations are included with this submittal.

\* \* \* \* \*



Please contact me if you have any questions regarding this report.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E.  
Principal

JCH/JAB:jas

Enclosures: Table 5 and 6  
Figure 1 - Figure 11  
Traffic Count Reports  
Synchro LOS Reports

# Tables

---

**Table 5: Detailed Trip Generation Estimate**

ITE		Value	Units <sup>1</sup>	Trip Generation Rates <sup>2</sup>				% Internal Capture	Driveway Trips Generated					
Code	Description			Average Weekday	A.M.		P.M.		Average Weekday	A.M.		P.M.		
					In	Out	In	Out			In	Out	In	Out
<b>Currently-Proposed Site Plan</b>														
215	Single-Family (Attached) Housing	214	DU	7.20	0.15	0.33	0.32	0.25	0%	1541	32	71	70	52
<b>Previously-Approved Site Plan</b>														
151	Mini-Warehouse	5.00	SU (100s)	18.04	0.62	0.60	0.98	0.98	0%	90	3	3	5	5
565	Day Care Center	90	Students	4.09	0.41	0.37	0.37	0.42	0%	368	37	33	33	38
820	Shopping Center	117.612	KSF	57.08	1.11	0.68	2.50	2.71	16%	5639	110	67	247	268
912	Drive-in Bank	7.000	KSF	99.60	5.51	3.99	10.23	10.23	0%	697	39	28	72	72
<b>Total</b>										<b>6798</b>	<b>191</b>	<b>132</b>	<b>359</b>	<b>383</b>
<b>Currently-Proposed Site Plan</b>										1541	32	71	70	52
<b>Previously-Approved Site Plan</b>										6798	191	132	359	383
<b>Total</b>										<b>-5257</b>	<b>-159</b>	<b>-61</b>	<b>-289</b>	<b>-331</b>

<sup>1</sup> DU = dwelling units, KSF = 1,000 square feet, SU (100s) = x100 storage units

<sup>2</sup> Source: *Trip Generation, 11th Edition (2021)* by the Institute of Transportation Engineers (ITE)

<sup>1</sup> DU = dwelling units, KSF = 1,000 square feet, SU (100s) = x100 storage units

<sup>2</sup> Source: *Trip Generation, 11th Edition (2021)* by the Institute of Transportation Engineers (ITE)

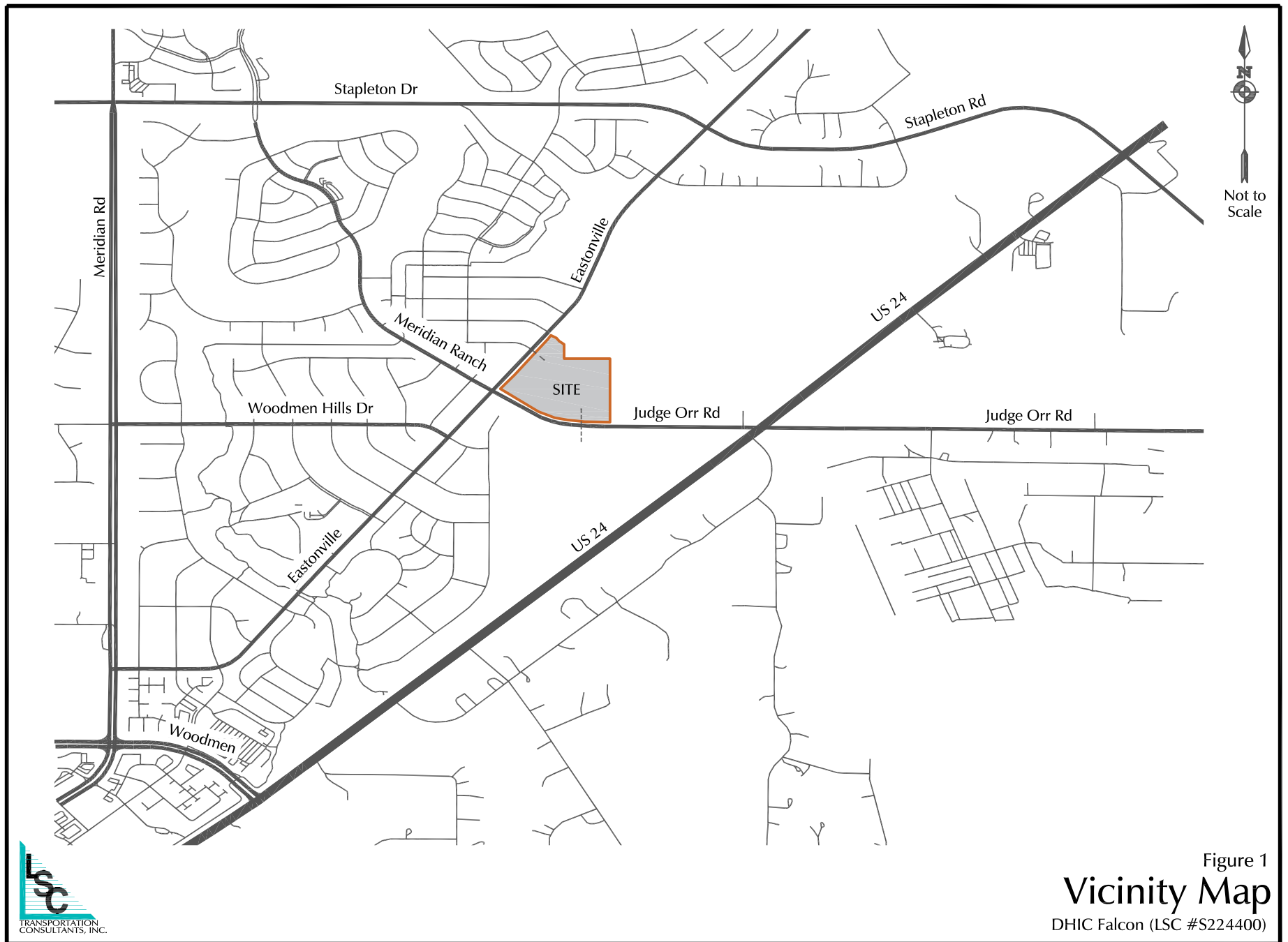
Remove. This appears to be from Judge Orr Eastonville Sketch Plan Amendment TIS (PCD File No. SKP203). The project was withdrawn by the applicant and the associated file was not accepted for file by the County.

Table 6: Roadway Improvements

Existing County Roadway Segment Improvements			
Item #	Improvement	Timing	Responsibility
1.1	Eastonville Road Widen to 2-Lane Rural Minor Arterial Shown in 2040 MTCP (Project U19)	The timing of this improvement may be identified with the Preliminary Plan/Plat, if not determined before that time by others.	<u>Details TBD</u> Any responsibility of this development for completing this improvement or a portion thereof will be identified with the Preliminary Plan/Plat.
1.2	Judge Orr Road Widen to 4-Lane Rural Minor Arterial Shown in 2040 MTCP (Project C14)	The timing of this improvement may be identified with the Preliminary Plan/Plat, if not determined before that time by others.	<u>Details TBD</u> Any responsibility of this development for completing this improvement or a portion thereof will be identified with the Preliminary Plan/Plat.
1.3	Judge Orr Road Add bicycle lanes from Eastonville Road to S. Peyton Highway Shown in 2040 MTCP (Project M8)	The timing of this improvement may be identified with the Preliminary Plan/Plat, if not determined before that time by others.	<u>Details TBD</u> Any responsibility of this development for completing this improvement or a portion thereof will be identified with the Preliminary Plan/Plat.
Proposed Internal Site Roadways			
Item #	Improvement	Timing	Responsibility
2.1	Construct internal streets to County Urban Local Standards; may also be developed with private streets.	With site development (may be phased). The timing of this improvement will be identified with the Preliminary Plan/Plat.	Applicant
Off-Site, CDOT Intersection			
US Highway 24/Judge Orr Road Intersection			
Item #	Improvement	Timing	Responsibility
3.1	<u>Long Term (or Prior to 2040)</u> Realign eastbound and westbound approaches to reduce the intersection skew angle.	TBD; Please refer to the US Highway 24 PEL Study and the CDOT US Highway 24 Corridor information.	This realignment is likely to be a CDOT project.
3.2	<u>Long Term (or Prior to 2040)</u> Southwest-bound right-turn deceleration lane	Timing be determined through the CDOT access permit process. That process will come at a later stage of development. The timing will likely be associated with prevailing turning movement volumes at that time and relative to Access Code thresholds for turn lanes. As indicated in the CDOT comment letter, site-generated southwest-to-westbound right turn movement at Hwy 24 and Judge Orr is projected to add 25 vehicles (short term) in the AM peak hour. The State Highway Access Code §3.7(4)(b) requires installation of right turn deceleration lane for any access with a projected right turn volume greater than 10 vehicles per hour. The timing/phasing of improvements or participation in future improvements will likely depend on the pace and intensity of development of this site and the rate of other area developments and associated background traffic growth.	The responsibility will be determined through the CDOT access permit process. That process will come at a later stage of development. This is a Master study. CDOT indicated "Land Use(s) will need to be determined prior to making application for the State Highway Access Permit. No determination of land use(s) we described in the Letter of Intent and was general in nature." The responsibility will be determined by CDOT and may involve this development contributing a fair share escrow amount toward identified future improvements and/or actually installing a turn lane(s) or other improvement.
3.3	<u>Long Term (or Prior to 2040)</u> Southwest-bound right-turn acceleration lane	Timing be determined through the CDOT access permit process. That process will come at a later stage of development. The timing will likely be associated with prevailing turning movement volumes at that time and relative to Access Code thresholds for turn lanes. As indicated in the CDOT comment letter, Site-generated east-to-southwest-bound right turn movement at Hwy 24 and Judge Orr is projected to add 73 vehicles (short term) in the PM peak hour. The State Highway Access Code §3.7(4)(c) requires installation of right turn acceleration lane for any access with a projected right turn volume greater than 10 vehicles per hour. The timing/phasing of improvements or participation in future improvements will likely depend on the pace and intensity of development of this site and the rate of other area developments and associated background traffic growth.	
3.4	<u>Long Term (or Prior to 2040)</u> Northeast-bound right-turn deceleration lane	Dependent on Background Traffic and/or timing of a CDOT or other project at this intersection.	Although this project may have some responsibility for improvement of this intersection. This project will not add to the right turn movement at this intersection.
Adjacent Intersections			
Eastonville Road/Woodmen Hills Drive/Judge Orr Road Intersection			
Item #	Improvement	Timing	Responsibility
4.1	<u>Long Term (or Prior to 2040)</u> Reconstruct intersection as a modern roundabout (or signalize the intersection)	Once LOS of AWSC drops below acceptable levels (roundabout); or once signal warrants are met (for conversion to a signal or roundabout). Depends on the pace and intensity of development of this site and the rate of other area development and associated background traffic growth.	<u>Details TBD</u> Any responsibility of this development for completing intersection improvements or a portion thereof will be identified with the Preliminary Plan/Plat.
Eastonville Road/Copenhagen/North Site Street Connection (Proposed)			
Item #	Improvement	Timing	Responsibility
6.1	<u>Short Term</u> Southwest-bound left-turn deceleration lane	With subdivision/plat filings, per ECM turning volume thresholds	Applicant
6.2	<u>Short Term</u> Northeast-bound right-turn deceleration lane	With subdivision/plat filings, per ECM turning volume thresholds	Applicant
Proposed New Public Street Intersection			
Judge Orr Road/South Site Street Connection/Future Street South of Judge Orr			
Item #	Improvement	Timing	Responsibility
5.1	<u>Short Term</u> Eastbound left-turn deceleration lane	With subdivision/plat filings, per ECM turning volume thresholds	Applicant
5.2	<u>Short Term</u> Westbound right-turn deceleration lane	With subdivision/plat filings, per ECM turning volume thresholds	Applicant
5.3	<u>Long Term</u> Reconstruct intersection as a modern roundabout	With subdivision/plat filings (if implemented)	Applicant and potentially the future development south of Judge Orr Road
Source: LSC Transportation Consultants, Inc. (Revised 2/26/2021)			
Note: Timing and responsibility is subject to change as future applications are submitted			

# Figures

---



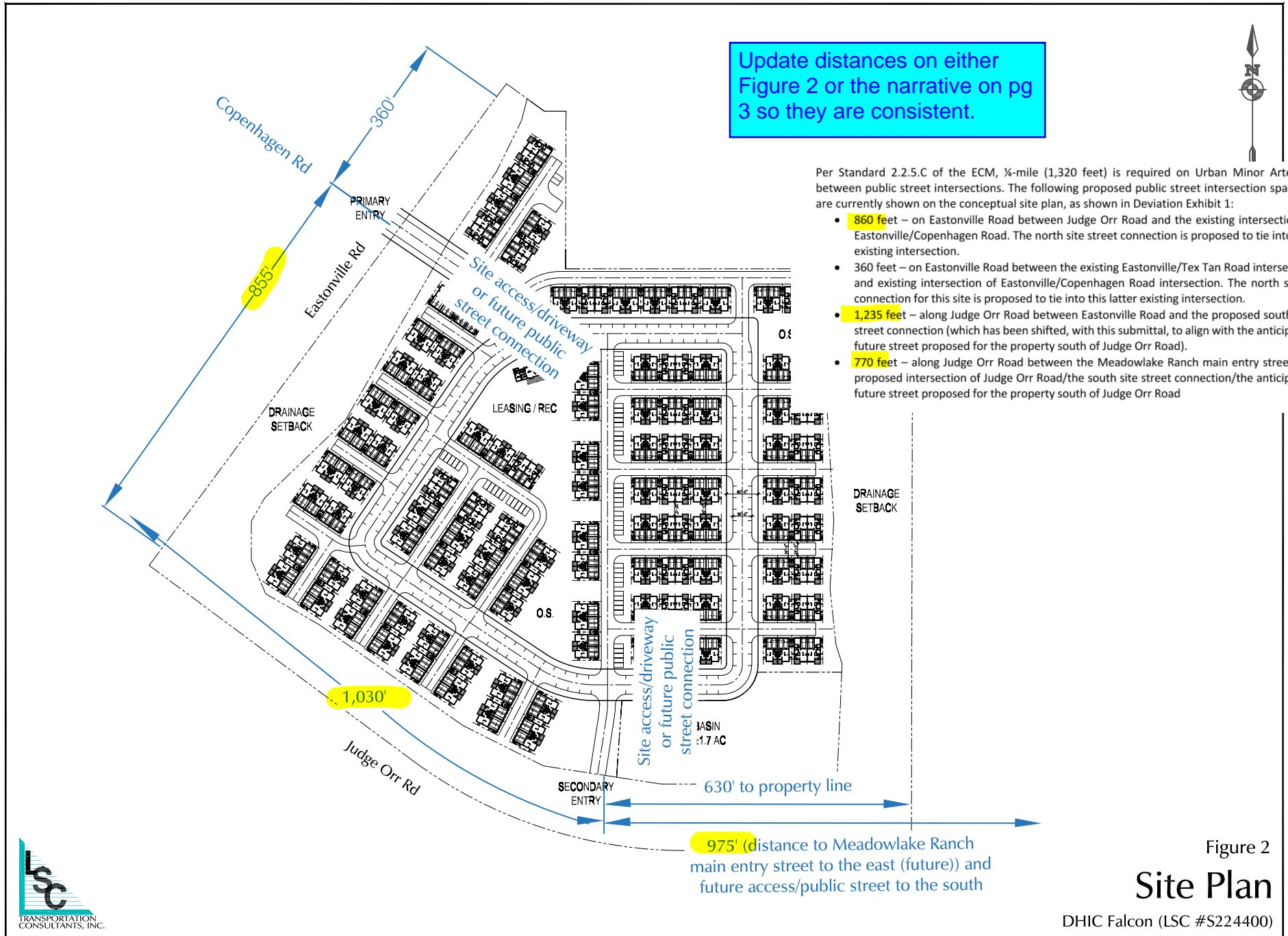
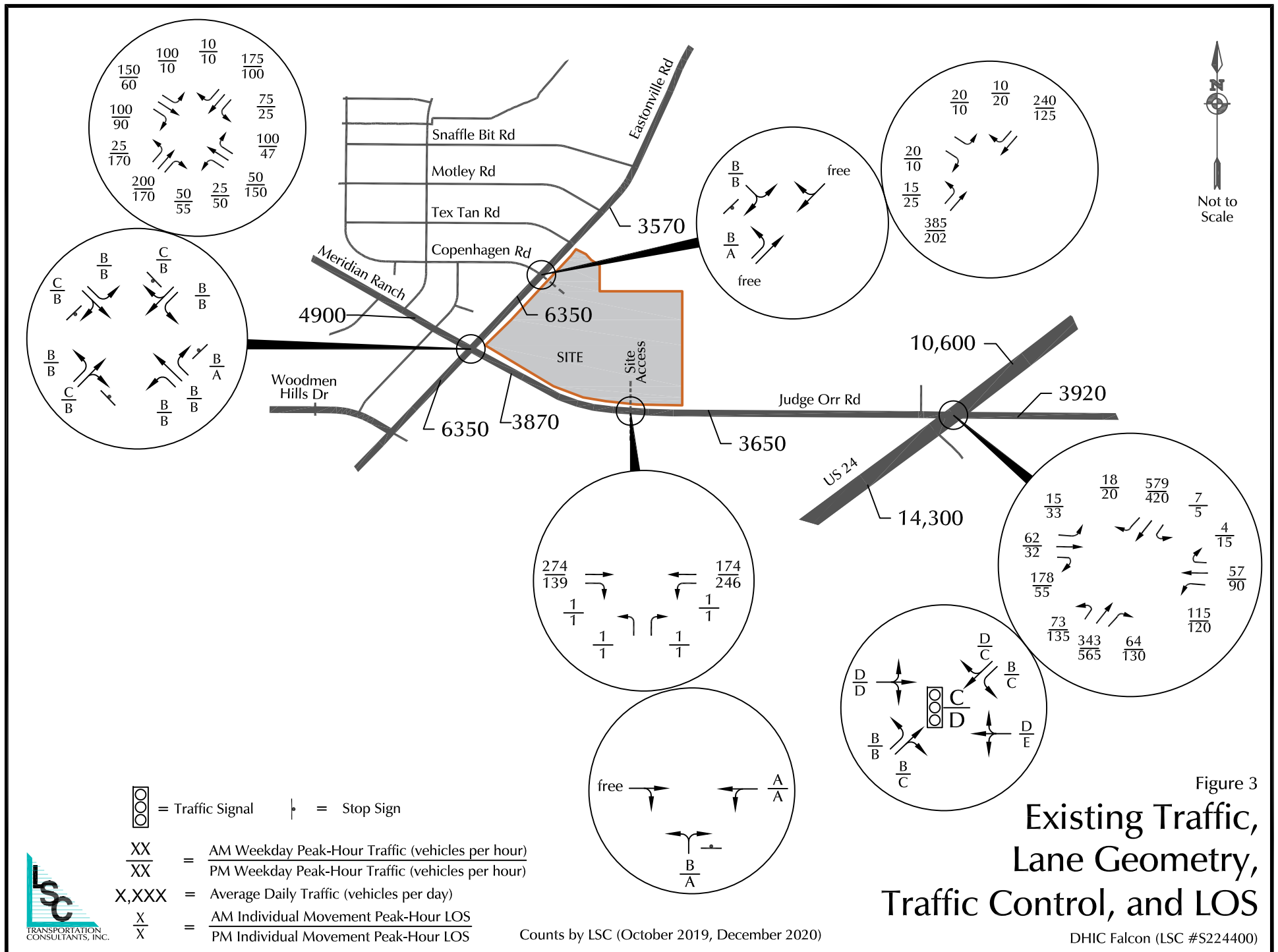
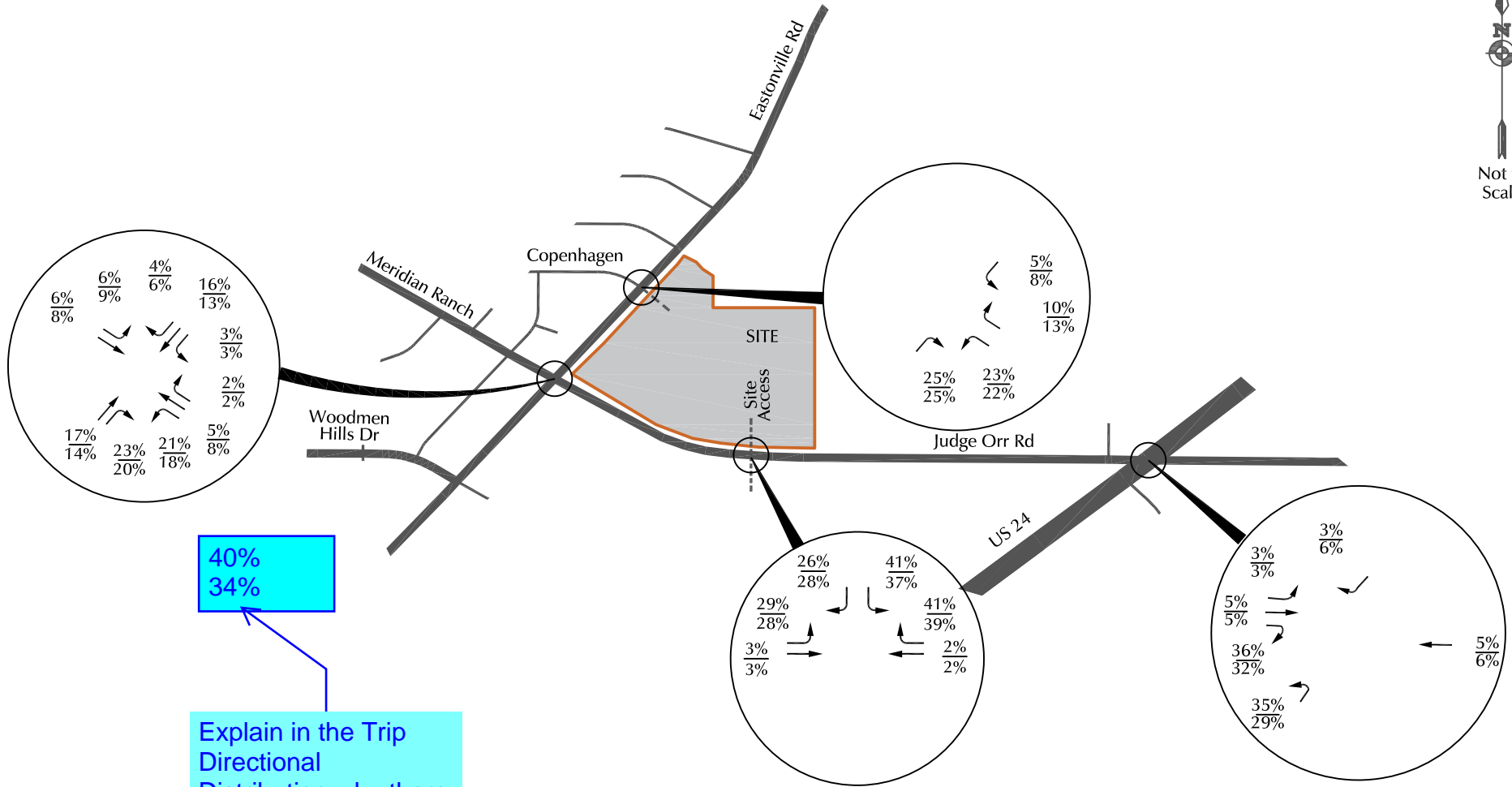


Figure 2  
**Site Plan**

DHIC Falcon (LSC #S224400)



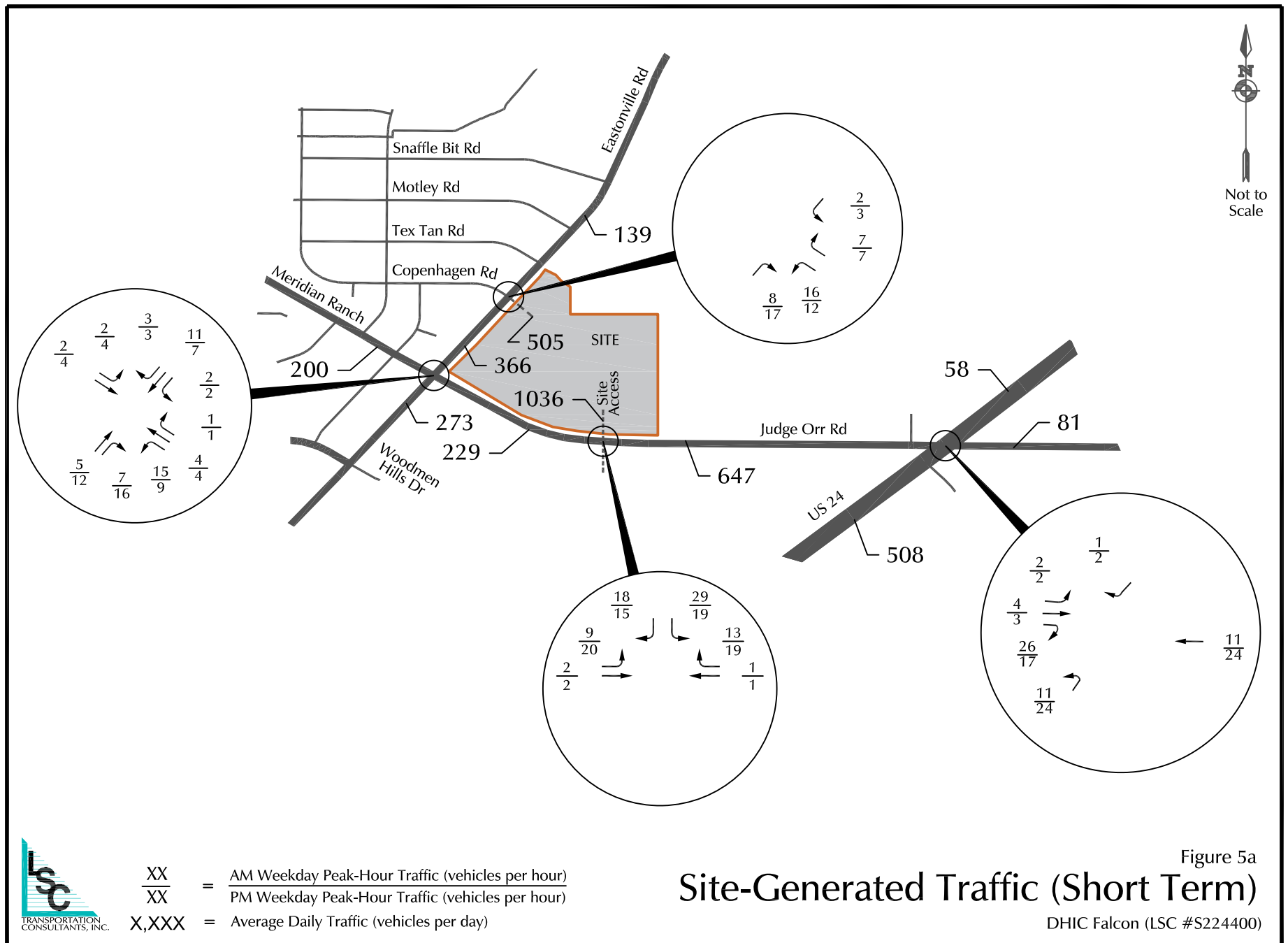




$$\frac{XX\%}{XX\%} = \frac{\text{Short-Term Percent Distribution}}{\text{Long-Term Percent Distribution}}$$

Figure 4  
**Directional Distribution**

DHIC Falcon (LSC #S224400)



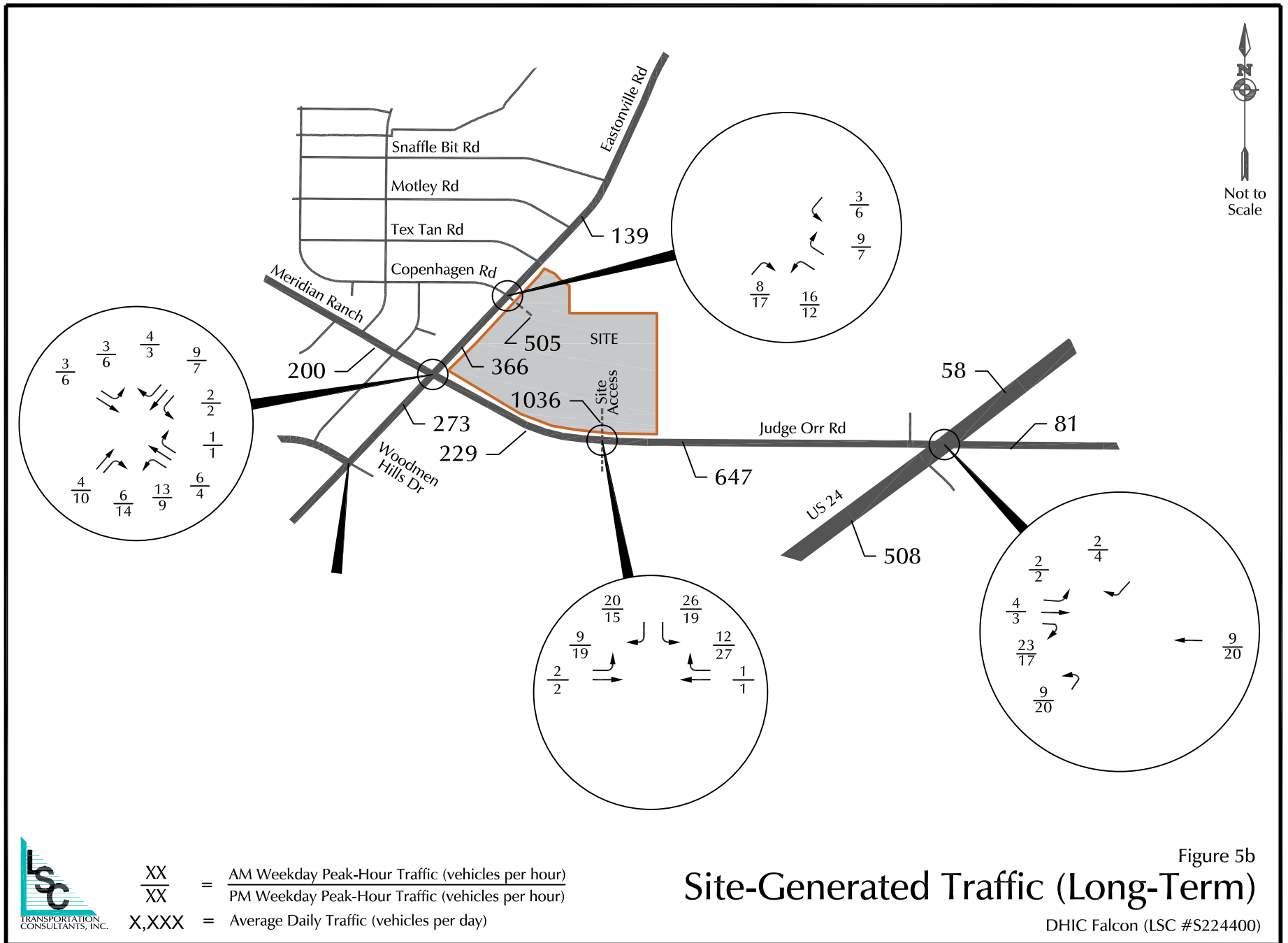
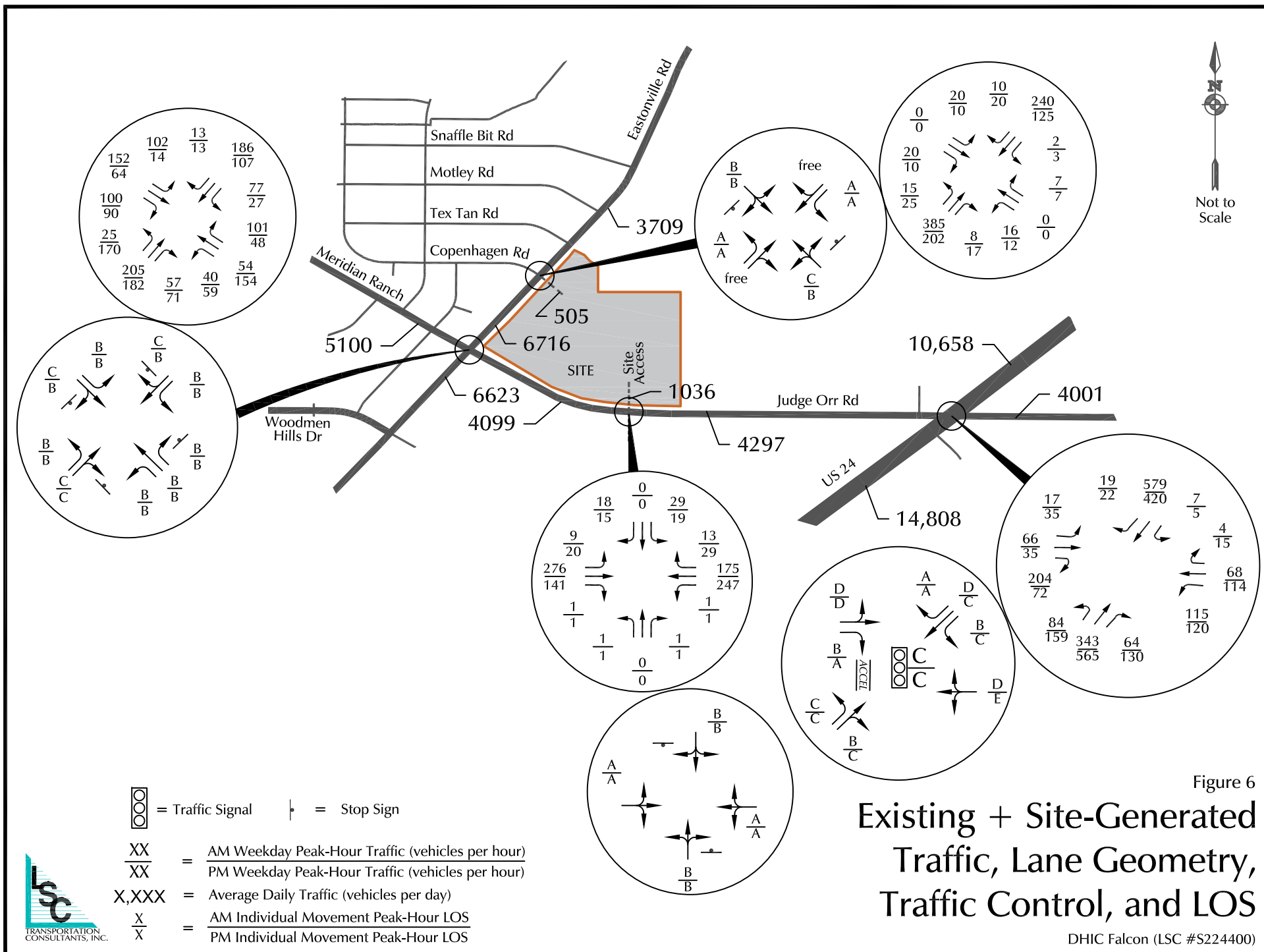


Figure 5b  
**Site-Generated Traffic (Long-Term)**

DHIC Falcon (LSC #S224400)



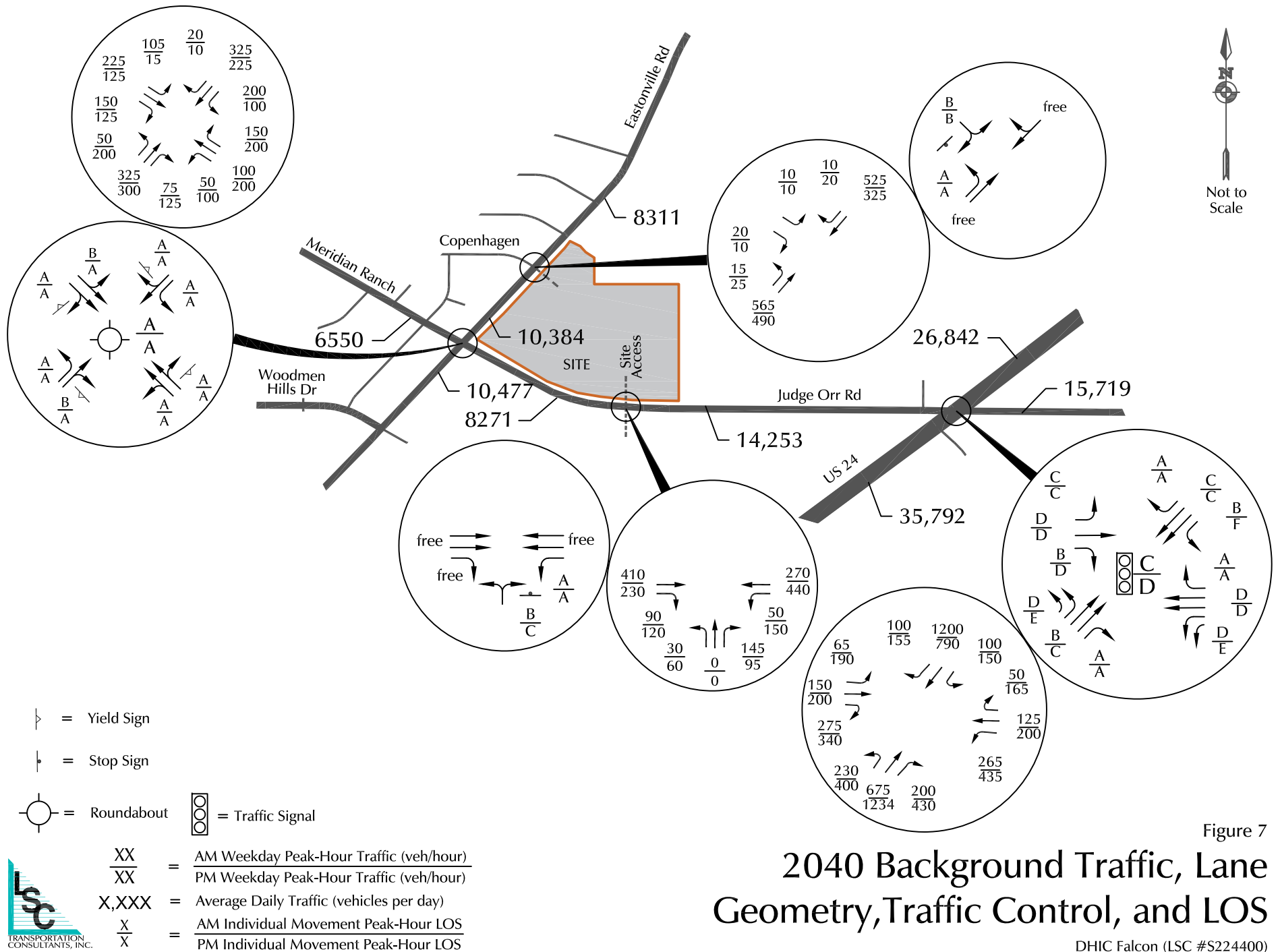
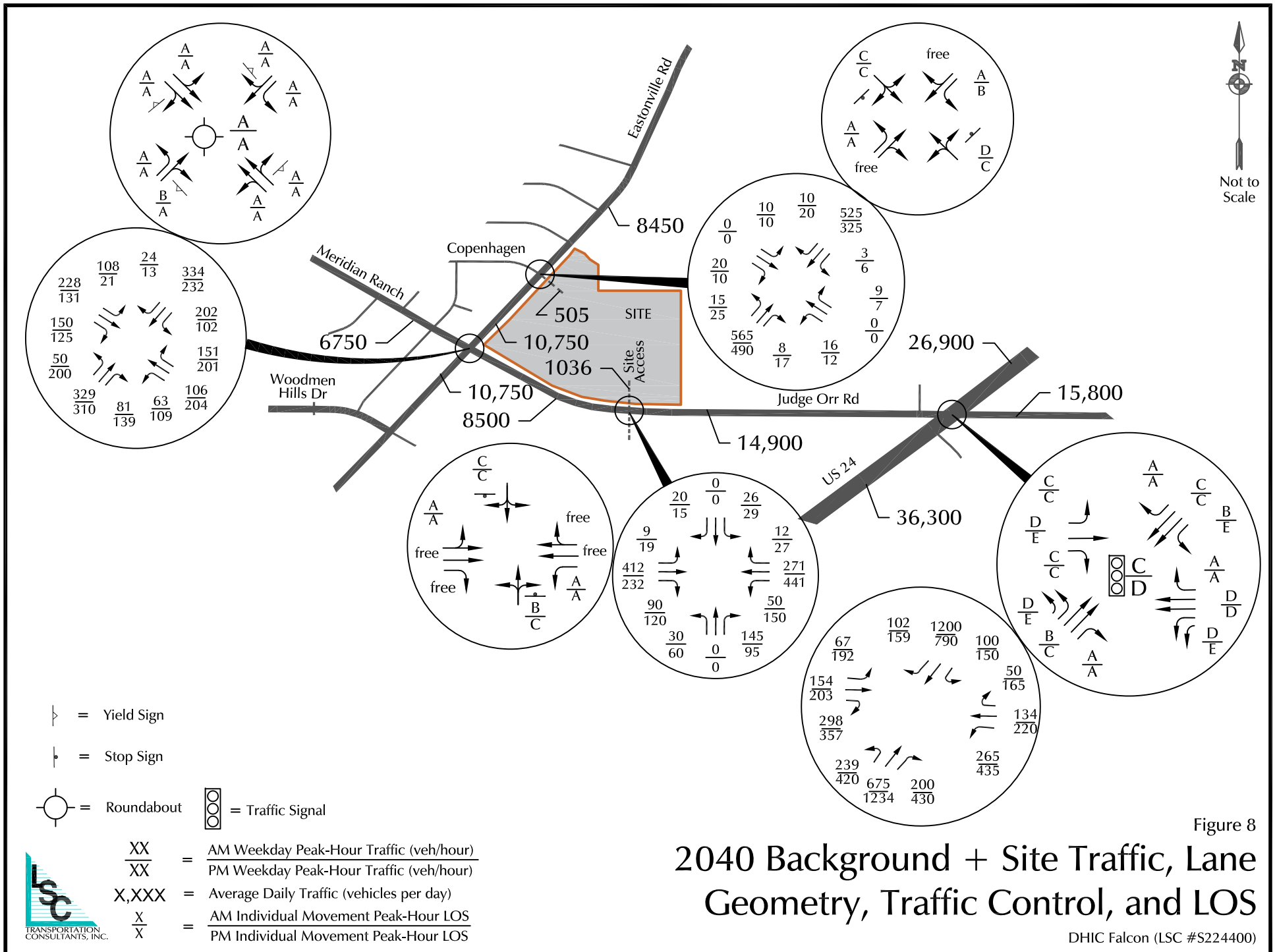


Figure 7

## 2040 Background Traffic, Lane Geometry, Traffic Control, and LOS

DHIC Falcon (LSC #S224400)







Approximate Scale  
1" = 300'

Along Eastonville Road  
(Posted: 35 mph, Design: 40 mph)

- ECM prescribed 305' sight distance along roadway (Table 2-33)
- ECM prescribed 470' intersection sight distance (Table 2-21 and AASHTO Green Book)
- >1,000' field-measured sight distance

Along Judge Orr Road  
(Posted: 45 mph, Design: 50 mph)

- ECM prescribed 305' sight distance along roadway (Table 2-33)
- ECM Prescribed 555' intersection sight distance (Table 2-21)
- >1,000' field-measured sight distance

Figure 9  
**Sight Distance Analysis**

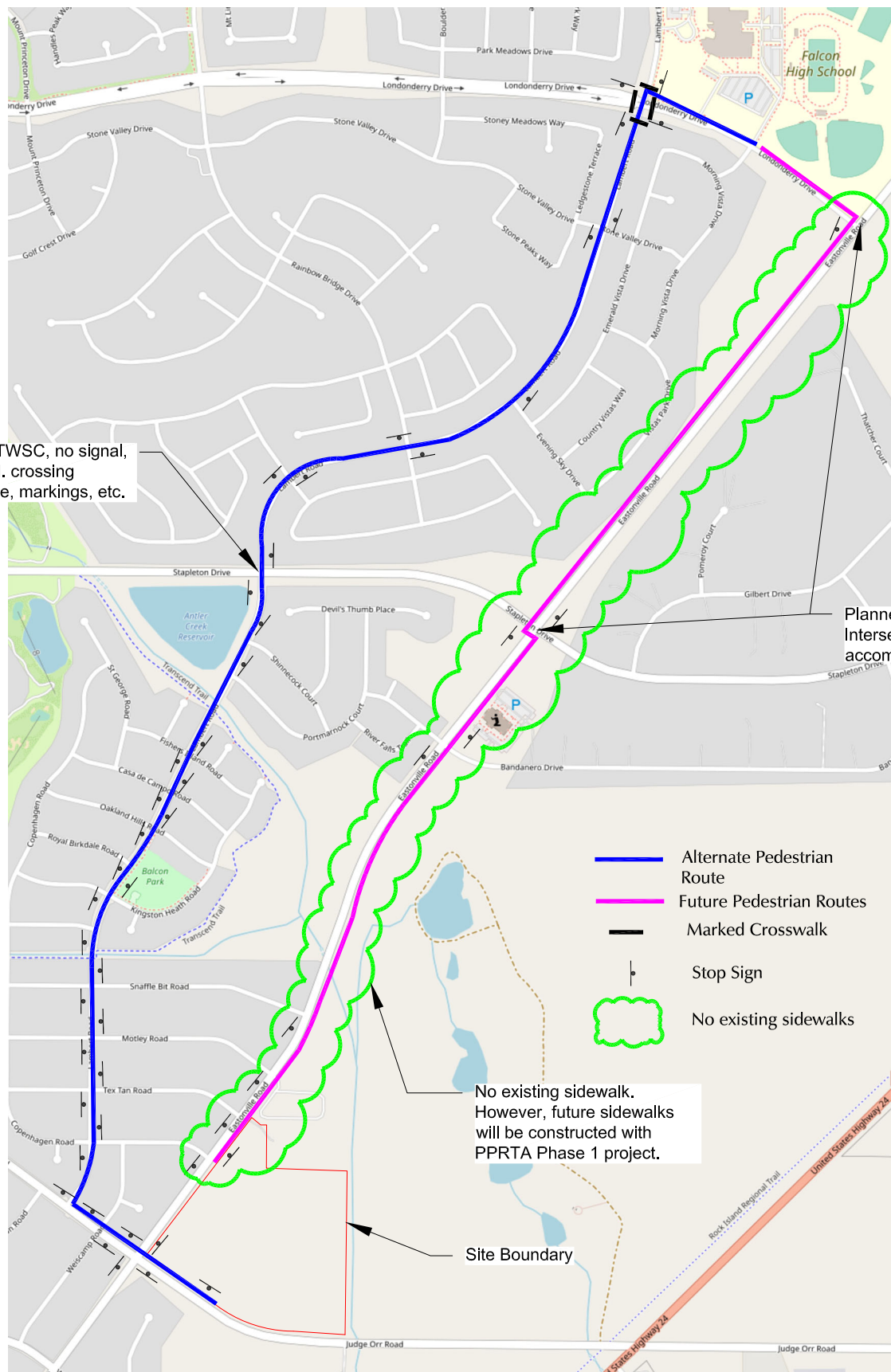
DHIC Falcon (LSC #S224400)



# Pedestrian Routes to Woodmen Hills Elementary School

DHIC Falcon (LSC #S224400)





Approximate Scale  
NTS

Figure 11  
Pedestrian Routes to Falcon High School

DHIC Falcon (LSC #S224400)

# Traffic Counts

---

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

File Name : hwy 24 - judge orr rd am

Site Code : S214950

Start Date : 5/10/2022

Page No : 1

## Groups Printed- Unshifted

	Hwy 24 Southbound					Judge Orr Rd Westbound					Hwy 24 Northbound					Judge Orr Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	1	130	0	0	131	1	7	36	0	44	4	66	8	0	78	43	14	2	0	59	312
06:45	4	173	3	0	180	0	10	20	0	30	18	92	8	0	118	34	10	4	0	48	376
Total	5	303	3	0	311	1	17	56	0	74	22	158	16	0	196	77	24	6	0	107	688
07:00	2	132	0	0	134	3	7	39	0	49	18	98	23	0	139	50	16	9	0	75	397
07:15	3	137	2	0	142	1	23	26	0	50	19	82	18	0	119	43	16	2	0	61	372
07:30	9	137	2	0	148	0	17	30	0	47	9	71	24	0	104	51	20	0	0	71	370
07:45	1	102	1	0	104	1	15	15	0	31	21	67	17	0	105	21	15	3	0	39	279
Total	15	508	5	0	528	5	62	110	0	177	67	318	82	0	467	165	67	14	0	246	1418
08:00	2	108	1	0	111	1	8	22	0	31	23	68	12	1	104	28	20	5	0	53	299
08:15	5	96	1	0	102	2	3	29	0	34	15	70	14	0	99	15	13	4	0	32	267
Grand Total	27	1015	10	0	1052	9	90	217	0	316	127	614	124	1	866	285	124	29	0	438	2672
Apprch %	2.6	96.5	1	0		2.8	28.5	68.7	0		14.7	70.9	14.3	0.1		65.1	28.3	6.6	0		
Total %	1	38	0.4	0	39.4	0.3	3.4	8.1	0	11.8	4.8	23	4.6	0	32.4	10.7	4.6	1.1	0	16.4	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

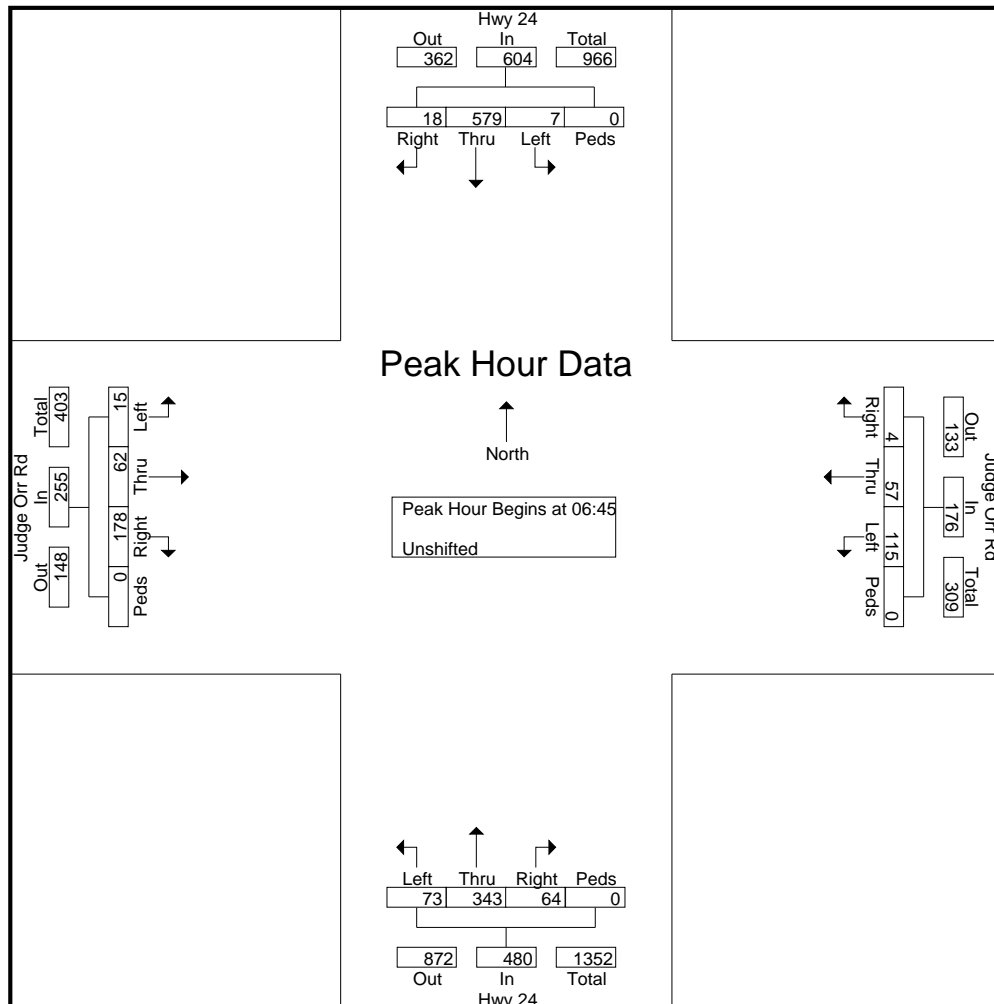
File Name : hwy 24 - judge orr rd am

Site Code : S214950

Start Date : 5/10/2022

Page No : 2

	Hwy 24 Southbound					Judge Orr Rd Westbound					Hwy 24 Northbound					Judge Orr Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 6:45:00 AM																					
6:45:00 AM	4	173	3	0	180	0	10	20	0	30	18	92	8	0	118	34	10	4	0	48	376
7:00:00 AM	2	132	0	0	134	3	7	39	0	49	18	98	23	0	139	50	16	9	0	75	397
7:15:00 AM	3	137	2	0	142	1	23	26	0	50	19	82	18	0	119	43	16	2	0	61	372
7:30:00 AM	9	137	2	0	148	0	17	30	0	47	9	71	24	0	104	51	20	0	0	71	370
Total Volume	18	579	7	0	604	4	57	115	0	176	64	343	73	0	480	178	62	15	0	255	1515
% App. Total	3	95.9	1.2	0		2.3	32.4	65.3	0		13.3	71.5	15.2	0		69.8	24.3	5.9	0		
PHF	.500	.837	.583	.000	.839	.333	.620	.737	.000	.880	.842	.875	.760	.000	.863	.873	.775	.417	.000	.850	.954



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

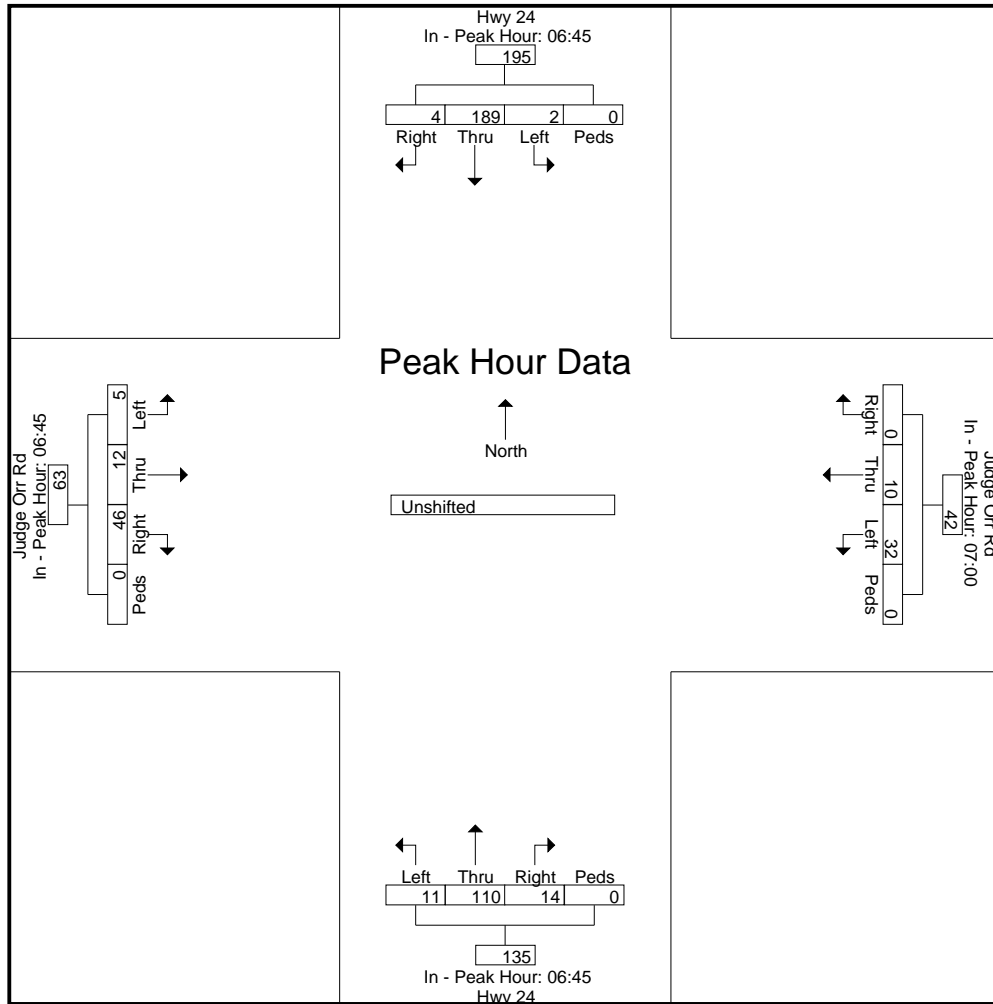
File Name : hwy 24 - judge orr rd am

Site Code : S214950

Start Date : 5/10/2022

Page No : 3

	Hwy 24 Southbound					Judge Orr Rd Westbound					Hwy 24 Northbound					Judge Orr Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	6:45:00 AM					7:00:00 AM					6:45:00 AM					6:45:00 AM					
+0 mins.	4	173	3	0	180	3	7	39	0	49	18	92	8	0	118	34	10	4	0	48	
+5 mins.	2	132	0	0	134	1	23	26	0	50	18	98	23	0	139	50	16	9	0	75	
+10 mins.	3	137	2	0	142	0	17	30	0	47	19	82	18	0	119	43	16	2	0	61	
+15 mins.	9	137	2	0	148	1	15	15	0	31	9	71	24	0	104	51	20	0	0	71	
Total Volume	18	579	7	0	604	5	62	110	0	177	64	343	73	0	480	178	62	15	0	255	
% App. Total	3	95.9	1.2	0		2.8	35	62.1	0		13.3	71.5	15.2	0		69.8	24.3	5.9	0		
PHF	.500	.837	.583	.000	.839	.417	.674	.705	.000	.885	.842	.875	.760	.000	.863	.873	.775	.417	.000	.850	



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

File Name : Hwy 24 - Judge Orr Rd PM

Site Code : S214950

Start Date : 5/10/2022

Page No : 1

## Groups Printed- Unshifted

	Hwy 24 Southbound					Judge Orr Rd Westbound					Hwy 24 Northbound					Judge Orr Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	5	77	2	0	84	1	7	22	0	30	33	143	24	0	200	10	7	5	0	22	336
16:15	3	105	1	0	109	5	17	25	0	47	27	152	30	0	209	21	11	11	0	43	408
16:30	7	105	1	0	113	1	14	29	0	44	34	144	34	1	213	18	11	11	0	40	410
16:45	1	101	0	0	102	2	9	24	0	35	31	135	41	0	207	15	13	12	0	40	384
Total	16	388	4	0	408	9	47	100	0	156	125	574	129	1	829	64	42	39	0	145	1538
17:00	2	99	0	0	101	4	13	38	0	55	29	147	40	0	216	16	16	10	0	42	414
17:15	7	127	0	0	134	2	16	26	0	44	34	133	24	1	192	13	11	7	0	31	401
17:30	6	91	1	0	98	2	6	16	0	24	39	149	32	0	220	10	15	10	0	35	377
17:45	6	98	0	0	104	0	5	22	0	27	29	158	30	0	217	11	17	8	0	36	384
Total	21	415	1	0	437	8	40	102	0	150	131	587	126	1	845	50	59	35	0	144	1576
Grand Total	37	803	5	0	845	17	87	202	0	306	256	1161	255	2	1674	114	101	74	0	289	3114
Apprch %	4.4	95	0.6	0		5.6	28.4	66	0		15.3	69.4	15.2	0.1		39.4	34.9	25.6	0		
Total %	1.2	25.8	0.2	0	27.1	0.5	2.8	6.5	0	9.8	8.2	37.3	8.2	0.1	53.8	3.7	3.2	2.4	0	9.3	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

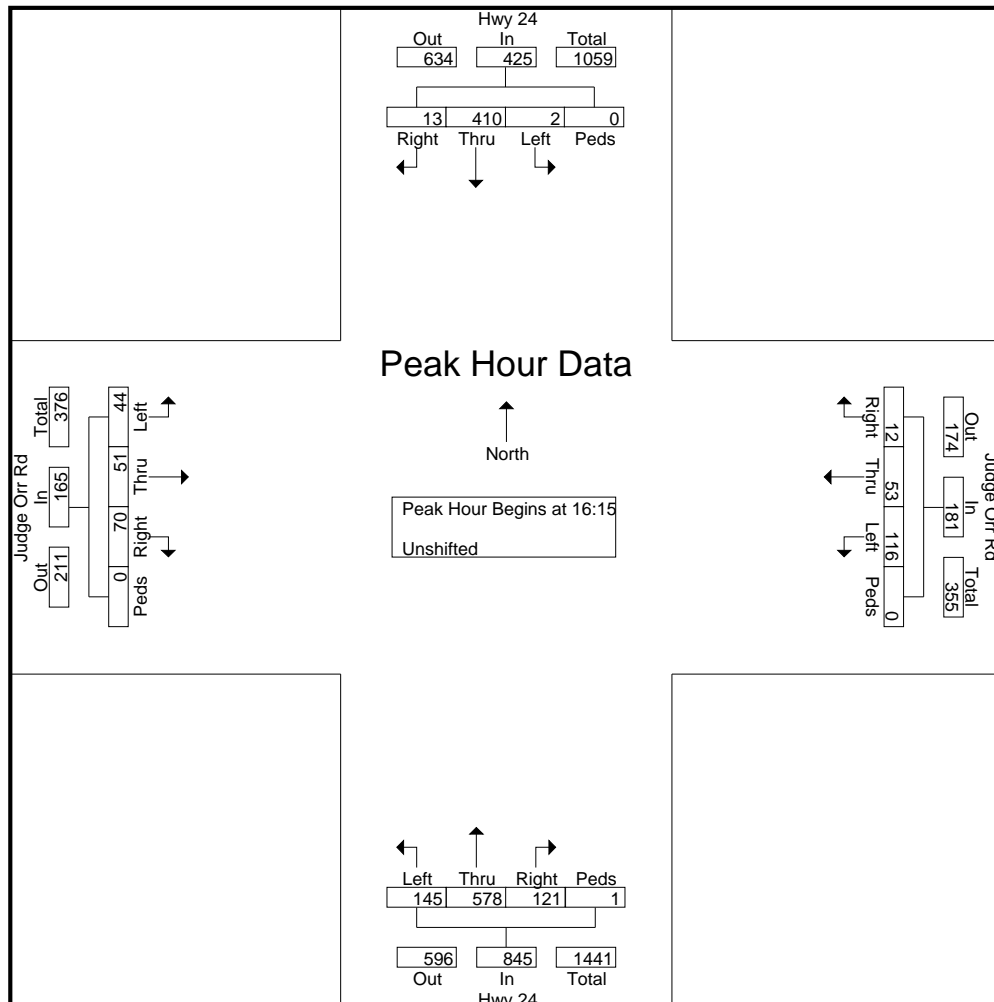
File Name : Hwy 24 - Judge Orr Rd PM

Site Code : S214950

Start Date : 5/10/2022

Page No : 2

	Hwy 24 Southbound					Judge Orr Rd Westbound					Hwy 24 Northbound					Judge Orr Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:15:00 PM																					
4:15:00 PM	3	105	1	0	109	5	17	25	0	47	27	152	30	0	209	21	11	11	0	43	408
4:30:00 PM	7	105	1	0	113	1	14	29	0	44	34	144	34	1	213	18	11	11	0	40	410
4:45:00 PM	1	101	0	0	102	2	9	24	0	35	31	135	41	0	207	15	13	12	0	40	384
5:00:00 PM	2	99	0	0	101	4	13	38	0	55	29	147	40	0	216	16	16	10	0	42	414
Total Volume	13	410	2	0	425	12	53	116	0	181	121	578	145	1	845	70	51	44	0	165	1616
% App. Total	3.1	96.5	0.5	0		6.6	29.3	64.1	0		14.3	68.4	17.2	0.1		42.4	30.9	26.7	0		
PHF	.464	.976	.500	.000	.940	.600	.779	.763	.000	.823	.890	.951	.884	.250	.978	.833	.797	.917	.000	.959	.976



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

File Name : Hwy 24 - Judge Orr Rd PM

Site Code : S214950

Start Date : 5/10/2022

Page No : 3

	Hwy 24 Southbound					Judge Orr Rd Westbound					Hwy 24 Northbound					Judge Orr Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	4:30:00 PM					4:15:00 PM					4:15:00 PM					4:15:00 PM				
+0 mins.	7	105	1	0	113	5	17	25	0	47	27	152	30	0	209	21	11	11	0	43
+5 mins.	1	101	0	0	102	1	14	29	0	44	34	144	34	1	213	18	11	11	0	40
+10 mins.	2	99	0	0	101	2	9	24	0	35	31	135	41	0	207	15	13	12	0	40
+15 mins.	7	127	0	0	134	4	13	38	0	55	29	147	40	0	216	16	16	10	0	42
Total Volume	17	432	1	0	450	12	53	116	0	181	121	578	145	1	845	70	51	44	0	165
% App. Total	3.8	96	0.2	0		6.6	29.3	64.1	0		14.3	68.4	17.2	0.1		42.4	30.9	26.7	0	
PHF	.607	.850	.250	.000	.840	.600	.779	.763	.000	.823	.890	.951	.884	.250	.978	.833	.797	.917	.000	.959



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

File Name : Eastonville Rd - Judge Orr Rd AM

Site Code : S220400

Start Date : 7/7/2022

Page No : 1

## Groups Printed- Unshifted

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Meridian Ranch Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30	1	9	11	0	21	6	7	4	0	17	6	3	2	0	11	12	33	0	0	45	94
06:45	1	12	7	0	20	9	4	2	0	15	7	3	2	0	12	12	29	0	0	41	88
Total	2	21	18	0	41	15	11	6	0	32	13	6	4	0	23	24	62	0	0	86	182
07:00	1	10	14	0	25	4	5	4	0	13	9	2	4	0	15	17	41	0	0	58	111
07:15	0	11	6	0	17	3	3	2	0	8	10	7	4	0	21	22	34	0	0	56	102
07:30	0	10	9	0	19	4	5	4	0	13	1	4	8	0	13	18	28	2	0	48	93
07:45	1	11	11	0	23	1	8	3	0	12	7	7	7	0	21	23	23	0	0	46	102
Total	2	42	40	0	84	12	21	13	0	46	27	20	23	0	70	80	126	2	0	208	408
08:00	0	11	7	0	18	4	8	5	0	17	5	9	8	0	22	14	24	2	0	40	97
08:15	0	10	11	0	21	0	8	3	0	11	4	6	10	0	20	9	27	0	0	36	88
Grand Total	4	84	76	0	164	31	48	27	0	106	49	41	45	0	135	127	239	4	0	370	775
Apprch %	2.4	51.2	46.3	0		29.2	45.3	25.5	0		36.3	30.4	33.3	0		34.3	64.6	1.1	0		
Total %	0.5	10.8	9.8	0	21.2	4	6.2	3.5	0	13.7	6.3	5.3	5.8	0	17.4	16.4	30.8	0.5	0	47.7	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

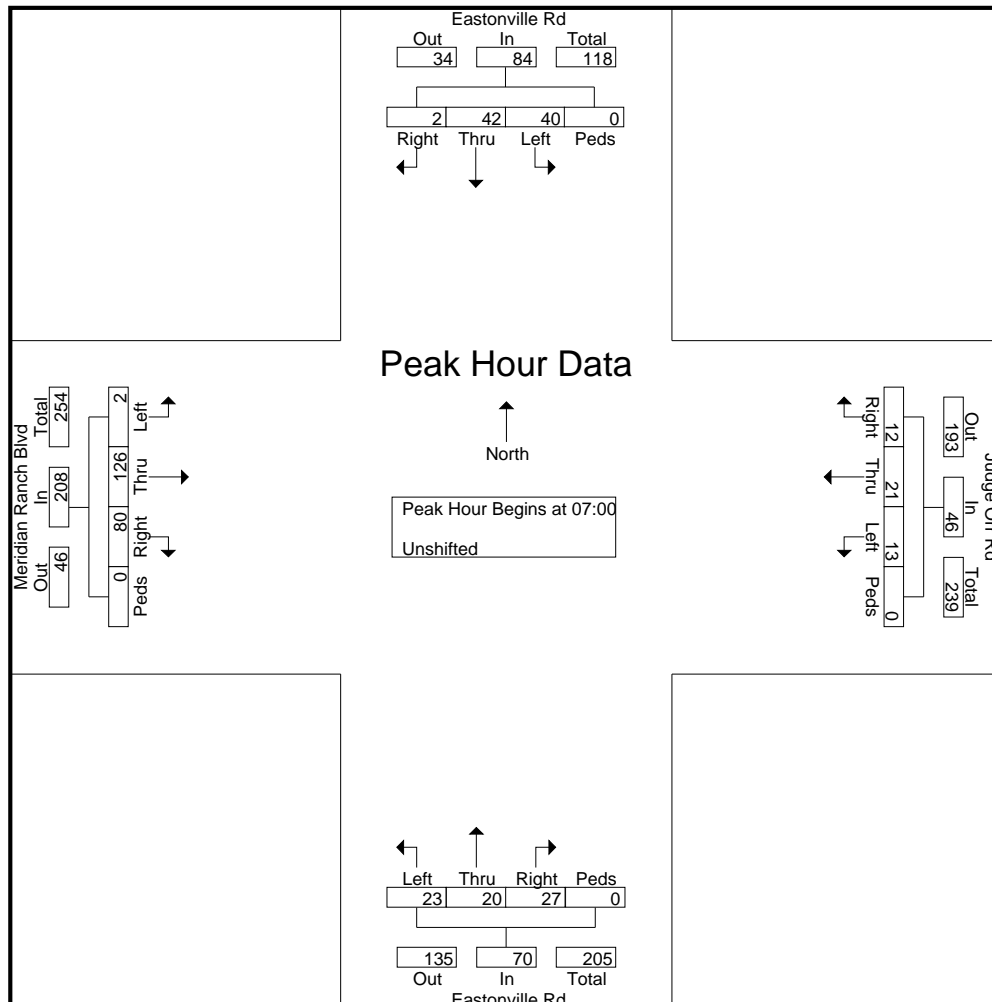
File Name : Eastonville Rd - Judge Orr Rd AM

Site Code : S220400

Start Date : 7/7/2022

Page No : 2

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Meridian Ranch Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:00:00 AM																					
7:00:00 AM	1	10	14	0	25	4	5	4	0	13	9	2	4	0	15	17	41	0	0	58	111
7:15:00 AM	0	11	6	0	17	3	3	2	0	8	10	7	4	0	21	22	34	0	0	56	102
7:30:00 AM	0	10	9	0	19	4	5	4	0	13	1	4	8	0	13	18	28	2	0	48	93
7:45:00 AM	1	11	11	0	23	1	8	3	0	12	7	7	7	0	21	23	23	0	0	46	102
Total Volume	2	42	40	0	84	12	21	13	0	46	27	20	23	0	70	80	126	2	0	208	408
% App. Total	2.4	50	47.6	0		26.1	45.7	28.3	0		38.6	28.6	32.9	0		38.5	60.6	1	0		
PHF	.500	.955	.714	.000	.840	.750	.656	.813	.000	.885	.675	.714	.719	.000	.833	.870	.768	.250	.000	.897	.919



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

File Name : Eastonville Rd - Judge Orr Rd AM

Site Code : S220400

Start Date : 7/7/2022

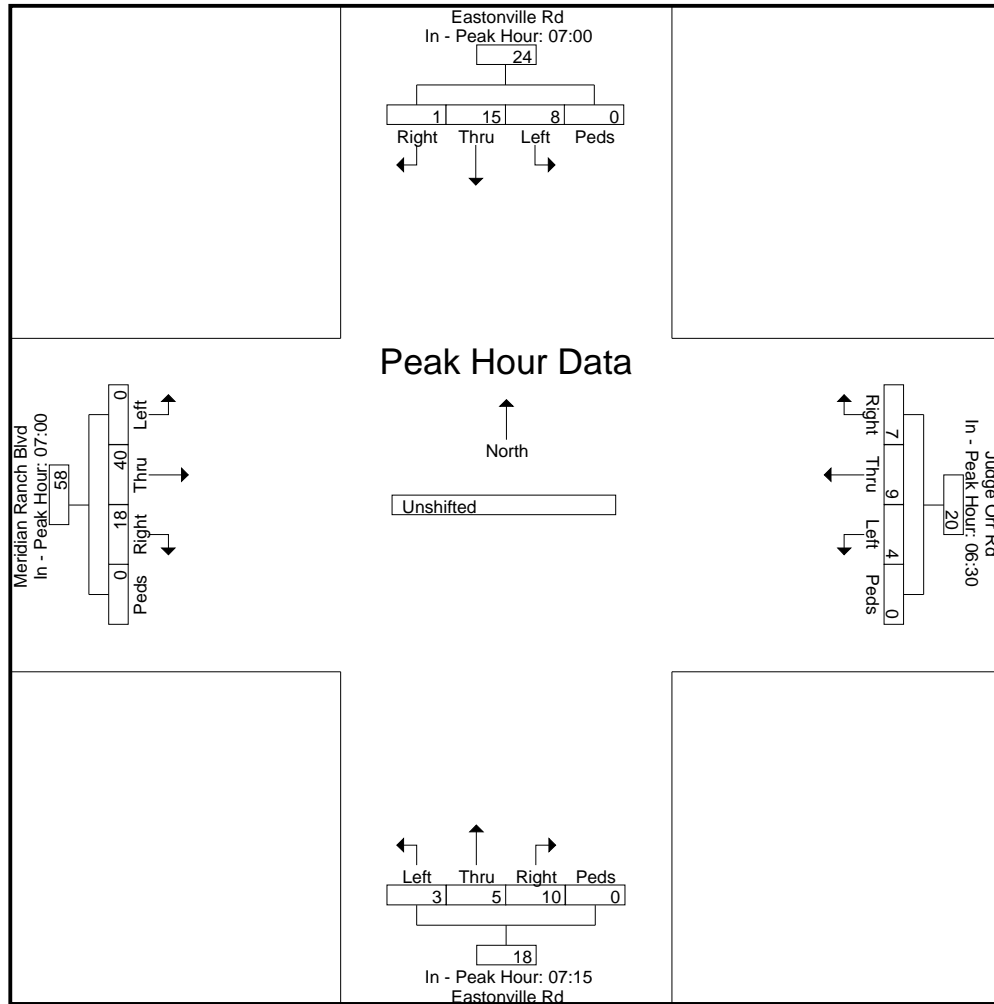
Page No : 3

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Meridian Ranch Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	7:00:00 AM					6:30:00 AM					7:15:00 AM					7:00:00 AM				
+0 mins.	1	10	14	0	25	6	7	4	0	17	10	7	4	0	21	17	41	0	0	58
+5 mins.	0	11	6	0	17	9	4	2	0	15	1	4	8	0	13	22	34	0	0	56
+10 mins.	0	10	9	0	19	4	5	4	0	13	7	7	7	0	21	18	28	2	0	48
+15 mins.	1	11	11	0	23	3	3	2	0	8	5	9	8	0	22	23	23	0	0	46
Total Volume	2	42	40	0	84	22	19	12	0	53	23	27	27	0	77	80	126	2	0	208
% App. Total	2.4	50	47.6	0		41.5	35.8	22.6	0		29.9	35.1	35.1	0		38.5	60.6	1	0	
PHF	.500	.955	.714	.000	.840	.611	.679	.750	.000	.779	.575	.750	.844	.000	.875	.870	.768	.250	.000	.897



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

File Name : Eastonville Rd - Judge Orr Rd PM

Site Code : S224400

Start Date : 6/22/2022

Page No : 1

## Groups Printed- Unshifted

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Meridian Ranch Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	0	16	4	0	20	10	31	8	0	49	11	28	31	0	70	21	12	1	0	34	173
16:15	1	13	6	0	20	8	32	8	0	48	13	33	21	0	67	16	14	0	0	30	165
16:30	1	15	2	0	18	15	24	7	0	46	10	46	49	0	105	17	16	0	0	33	202
16:45	0	15	7	0	22	11	31	10	0	52	15	32	43	0	90	30	13	0	0	43	207
Total	2	59	19	0	80	44	118	33	0	195	49	139	144	0	332	84	55	1	0	140	747
17:00	0	11	1	0	12	9	32	8	0	49	14	37	35	0	86	14	18	1	0	33	180
17:15	0	9	5	0	14	10	41	10	0	61	13	41	49	0	103	25	15	2	0	42	220
17:30	0	11	5	0	16	17	26	9	0	52	11	50	44	0	105	20	11	0	1	32	205
17:45	2	13	4	0	19	9	18	7	0	34	11	48	49	0	108	25	15	0	0	40	201
Total	2	44	15	0	61	45	117	34	0	196	49	176	177	0	402	84	59	3	1	147	806
Grand Total	4	103	34	0	141	89	235	67	0	391	98	315	321	0	734	168	114	4	1	287	1553
Apprch %	2.8	73	24.1	0		22.8	60.1	17.1	0		13.4	42.9	43.7	0		58.5	39.7	1.4	0.3		
Total %	0.3	6.6	2.2	0	9.1	5.7	15.1	4.3	0	25.2	6.3	20.3	20.7	0	47.3	10.8	7.3	0.3	0.1	18.5	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

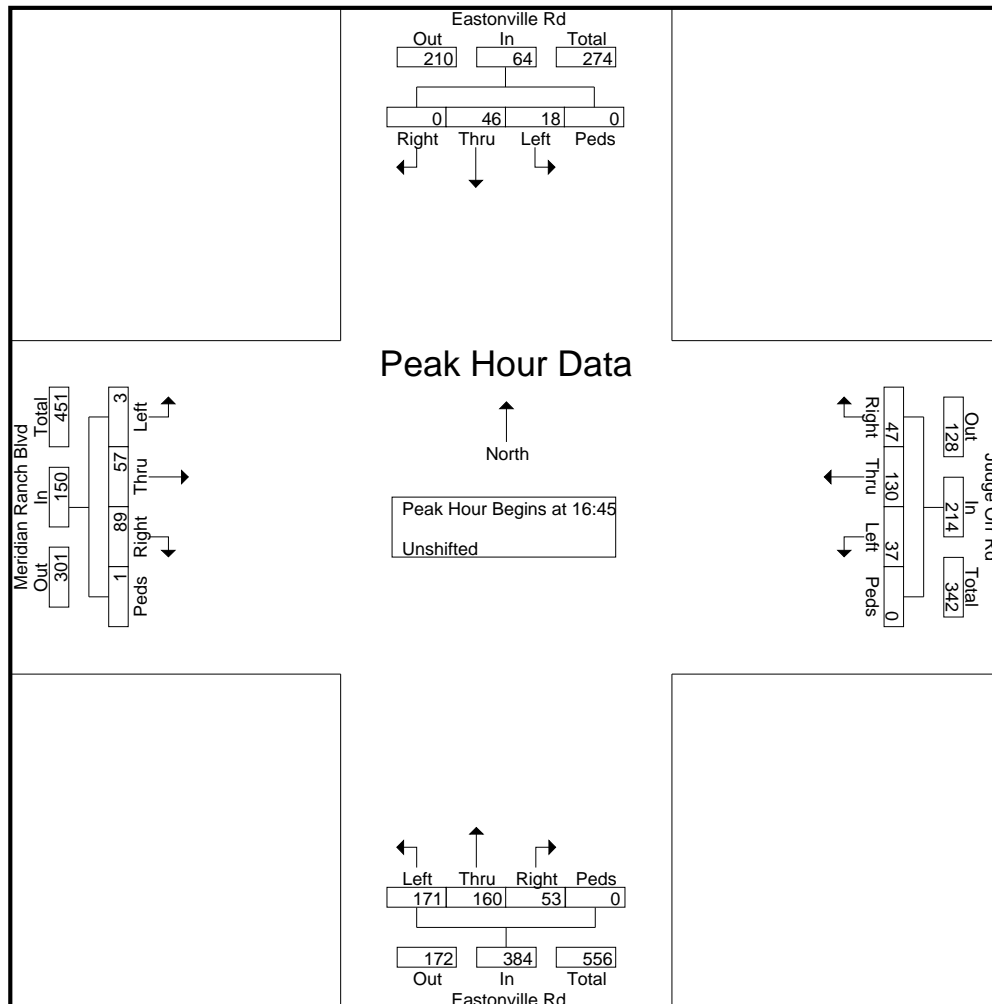
File Name : Eastonville Rd - Judge Orr Rd PM

Site Code : S224400

Start Date : 6/22/2022

Page No : 2

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Meridian Ranch Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:45:00 PM																					
4:45:00 PM	0	15	7	0	22	11	31	10	0	52	15	32	43	0	90	30	13	0	0	43	207
5:00:00 PM	0	11	1	0	12	9	32	8	0	49	14	37	35	0	86	14	18	1	0	33	180
5:15:00 PM	0	9	5	0	14	10	41	10	0	61	13	41	49	0	103	25	15	2	0	42	220
5:30:00 PM	0	11	5	0	16	17	26	9	0	52	11	50	44	0	105	20	11	0	1	32	205
Total Volume	0	46	18	0	64	47	130	37	0	214	53	160	171	0	384	89	57	3	1	150	812
% App. Total	0	71.9	28.1	0		22	60.7	17.3	0		13.8	41.7	44.5	0		59.3	38	2	0.7		
PHF	.000	.767	.643	.000	.727	.691	.793	.925	.000	.877	.883	.800	.872	.000	.914	.742	.792	.375	.250	.872	.923



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
Colorado Springs, CO 80909  
719-633-2868

File Name : Eastonville Rd - Judge Orr Rd PM

Site Code : S224400

Start Date : 6/22/2022

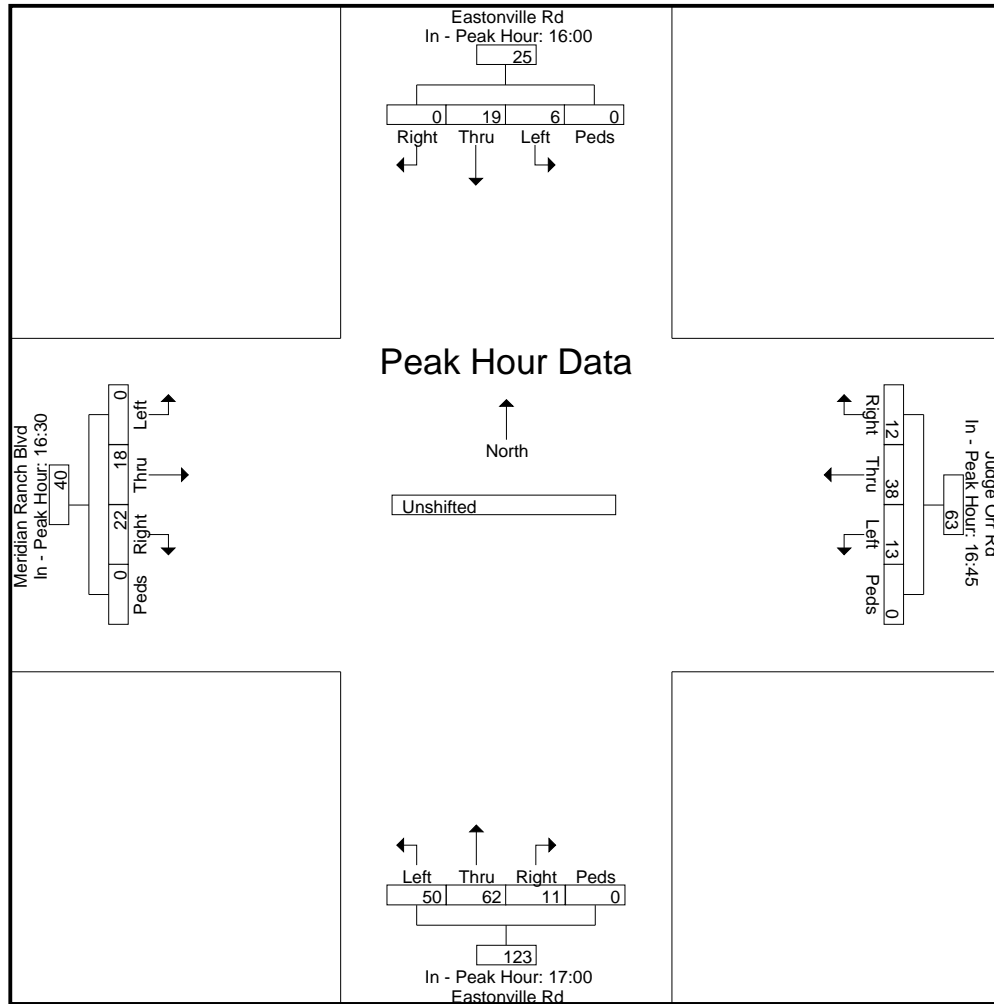
Page No : 3

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Meridian Ranch Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	4:00:00 PM					4:45:00 PM					5:00:00 PM					4:30:00 PM				
+0 mins.	0	16	4	0	20	11	31	10	0	52	14	37	35	0	86	17	16	0	0	33
+5 mins.	1	13	6	0	20	9	32	8	0	49	13	41	49	0	103	30	13	0	0	43
+10 mins.	1	15	2	0	18	10	41	10	0	61	11	50	44	0	105	14	18	1	0	33
+15 mins.	0	15	7	0	22	17	26	9	0	52	11	48	49	0	108	25	15	2	0	42
Total Volume	2	59	19	0	80	47	130	37	0	214	49	176	177	0	402	86	62	3	0	151
% App. Total	2.5	73.8	23.8	0		22	60.7	17.3	0		12.2	43.8	44	0		57	41.1	2	0	
PHF	.500	.922	.679	.000	.909	.691	.793	.925	.000	.877	.875	.880	.903	.000	.931	.717	.861	.375	.000	.878





















# Levels of Service

---

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

Existing  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	15	62	178	115	57	4	73	343	64	7	579	18
Future Volume (vph)	15	62	178	115	57	4	73	343	64	7	579	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	860		0	695		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			300			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.906			0.997			0.976			0.996	
Flt Protected		0.997			0.969		0.950			0.950		
Satd. Flow (prot)	0	1683	0	0	1800	0	1770	1818	0	1770	1855	0
Flt Permitted		0.997			0.969		0.120			0.506		
Satd. Flow (perm)	0	1683	0	0	1800	0	224	1818	0	943	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		112			1			14			2	
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	16	67	193	132	66	5	79	373	70	8	623	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	276	0	0	203	0	79	443	0	8	642	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA		pm+pt	NA		Perm	NA	
Protected Phases	4	4		8	8		5	2		6	6	
Permitted Phases							2			6		

Existing AM  
Lanes, Volumes, Timings

Synchro 11 Report  
JAB



Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

Existing  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	24.0		24.0	24.0	
Total Split (s)	21.0	21.0		21.0	21.0		10.0	48.0		38.0	38.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		11.1%	53.3%		42.2%	42.2%	
Maximum Green (s)	15.0	15.0		15.0	15.0		5.5	42.0		32.0	32.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)		12.7			13.3		43.7	42.2		34.4	34.4	
Actuated g/C Ratio		0.15			0.15		0.51	0.49		0.40	0.40	
v/c Ratio		0.81			0.73		0.37	0.49		0.02	0.87	
Control Delay		40.0			51.4		17.5	17.6		19.3	40.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		40.0			51.4		17.5	17.6		19.3	40.8	
LOS		D			D		B	B		B	D	
Approach Delay		40.0			51.4			17.6			40.5	
Approach LOS		D			D			B			D	
Queue Length 50th (ft)		88			109		23	165		3	353	
Queue Length 95th (ft)		#202			#179		47	252		12	#583	
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)							860			695		
Base Capacity (vph)		386			315		212	896		376	740	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.72			0.64		0.37	0.49		0.02	0.87	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 86.2

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 34.5

Intersection LOS: C

Intersection Capacity Utilization 79.1%

ICU Level of Service D

Analysis Period (min) 15

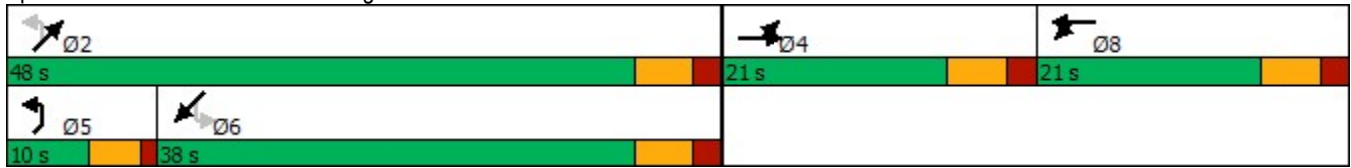
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

Existing  
AM










Splits and Phases: 2: US 24 & Judge Orr Rd



HCM 6th AWSC  
1: Eastonville Rd & Judge Orr Rd/Meridian Ranch Rd

Existing  
AM

Intersection												
Intersection Delay, s/veh	16											
Intersection LOS	C											






Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	100	150	100	25	50	100	25	200	50	75	175	10
Future Vol, veh/h	100	150	100	25	50	100	25	200	50	75	175	10
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	163	109	29	57	115	27	217	54	82	190	11
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	16.7	12.1	18.6	14.9
HCM LOS	C	B	C	B

Lane	NELn1	NELn2	NWLn1	NWLn2	NWLn3	SELn1	SELn2	SWLn1	SWLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	80%	0%	100%	0%	0%	60%	0%	95%
Vol Right, %	0%	20%	0%	0%	100%	0%	40%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	250	25	50	100	100	250	75	185
LT Vol	25	0	25	0	0	100	0	75	0
Through Vol	0	200	0	50	0	0	150	0	175
RT Vol	0	50	0	0	100	0	100	0	10
Lane Flow Rate	27	272	29	57	115	109	272	82	201
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.061	0.56	0.068	0.127	0.232	0.24	0.541	0.184	0.423
Departure Headway (Hd)	8.066	7.415	8.49	7.977	7.258	7.964	7.165	8.128	7.58
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	443	486	421	448	493	450	503	440	475
Service Time	5.829	5.178	6.262	5.749	5.029	5.727	4.928	5.895	5.347
HCM Lane V/C Ratio	0.061	0.56	0.069	0.127	0.233	0.242	0.541	0.186	0.423
HCM Control Delay	11.4	19.3	11.9	11.9	12.2	13.2	18.1	12.7	15.8
HCM Lane LOS	B	C	B	B	B	B	C	B	C
HCM 95th-tile Q	0.2	3.4	0.2	0.4	0.9	0.9	3.2	0.7	2.1




HCM 6th TWSC  
3: Eastonville Rd & Copenhagen Rd

Existing  
AM

Intersection						
Int Delay, s/veh	1					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	20	20	15	385	240	10
Future Vol, veh/h	20	20	15	385	240	10
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	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	26	16	418	261	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	717	267	272	0	-	0
Stage 1	267	-	-	-	-	-
Stage 2	450	-	-	-	-	-
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	396	772	1291	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	391	772	1291	-	-	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Approach	SE	NE		SW		
HCM Control Delay, s	11.5	0.3		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR	
Capacity (veh/h)	1291	-	603	-	-	
HCM Lane V/C Ratio	0.013	-	0.085	-	-	
HCM Control Delay (s)	7.8	-	11.5	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

HCM 6th TWSC  
12: Adjacent Driveway & Judge Orr Rd



















Existing  
AM

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	274	1	1	174	1	1
Future Vol, veh/h	274	1	1	174	1	1
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	87	87	87	87	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	315	1	1	200	1	1
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	316	0	518	316
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	202	-
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	-	-	1244	-	518	724
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1244	-	517	724
Mov Cap-2 Maneuver	-	-	-	-	517	-
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	831	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	603	-	-	1244	-	
HCM Lane V/C Ratio	0.004	-	-	0.001	-	
HCM Control Delay (s)	11	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

# Lanes, Volumes, Timings

## 2: US 24 & Judge Orr Rd

Existing  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	33	32	55	120	90	15	135	565	130	5	420	20
Future Volume (vph)	33	32	55	120	90	15	135	565	130	5	420	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	860		0	695		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			300			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.939			0.991			0.972			0.993	
Flt Protected		0.986			0.974		0.950			0.950		
Satd. Flow (prot)	0	1725	0	0	1798	0	1770	1811	0	1770	1850	0
Flt Permitted		0.986			0.756		0.235			0.194		
Satd. Flow (perm)	0	1725	0	0	1396	0	438	1811	0	361	1850	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			4			17			3	
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.83	0.83	0.83	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	40	39	66	138	103	17	145	608	140	5	457	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	145	0	0	258	0	145	748	0	5	479	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	4	4			8		5	2			6	
Permitted Phases				8			2			6		

Existing PM  
Lanes, Volumes, Timings

Synchro 11 Report  
JAB

# Lanes, Volumes, Timings

## 2: US 24 & Judge Orr Rd

Existing  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		9.5	24.0		24.0	24.0	
Total Split (s)	14.0	14.0		28.0	28.0		10.6	48.0		37.4	37.4	
Total Split (%)	15.6%	15.6%		31.1%	31.1%		11.8%	53.3%		41.6%	41.6%	
Maximum Green (s)	8.0	8.0		22.0	22.0		6.1	42.0		31.4	31.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effect Green (s)		7.8			19.3		43.6	42.1		31.5	31.5	
Actuated g/C Ratio		0.09			0.22		0.50	0.48		0.36	0.36	
v/c Ratio		0.78			0.83		0.46	0.85		0.04	0.72	
Control Delay		57.5			54.5		18.0	31.3		20.6	31.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		57.5			54.5		18.0	31.3		20.6	31.8	
LOS		E			D		B	C		C	C	
Approach Delay		57.5			54.5			29.1			31.7	
Approach LOS		E			D			C			C	
Queue Length 50th (ft)		61			134		44	362		2	234	
Queue Length 95th (ft)		#136			#235		79	#597		10	352	
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)							860			695		
Base Capacity (vph)		192			356		312	883		129	669	
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			0.72		0.46	0.85		0.04	0.72	

### Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 87.2

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 35.8

Intersection LOS: D

Intersection Capacity Utilization 75.8%

ICU Level of Service D

Analysis Period (min) 15






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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 2: US 24 & Judge Orr Rd

Existing  
 PM

Splits and Phases: 2: US 24 & Judge Orr Rd










 Ø2 48 s			 Ø4 14 s		 Ø8 28 s	
 Ø5 10.6 s		 Ø6 37.4 s				



HCM 6th AWSC  
1: Eastonville Rd & Judge Orr Rd/Meridian Ranch Rd

Existing  
PM

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B






Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	60	90	50	150	47	170	170	55	25	100	10
Future Vol, veh/h	10	60	90	50	150	47	170	170	55	25	100	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.92	0.92	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	69	103	57	172	54	185	185	60	30	120	12
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	13.2	12.5	14.4	12.5
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NWLn1	NWLn2	NWLn3	SELn1	SELn2	SWLn1	SWLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	76%	0%	100%	0%	0%	40%	0%	91%
Vol Right, %	0%	24%	0%	0%	100%	0%	60%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	225	50	150	47	10	150	25	110
LT Vol	170	0	50	0	0	10	0	25	0
Through Vol	0	170	0	150	0	0	60	0	100
RT Vol	0	55	0	0	47	0	90	0	10
Lane Flow Rate	185	245	57	172	54	11	172	30	133
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.374	0.448	0.123	0.344	0.097	0.025	0.336	0.066	0.27
Departure Headway (Hd)	7.28	6.601	7.688	7.179	6.465	7.961	7.019	7.906	7.333
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	497	548	467	502	554	450	512	453	490
Service Time	4.98	4.301	5.428	4.918	4.205	5.705	4.763	5.65	5.077
HCM Lane V/C Ratio	0.372	0.447	0.122	0.343	0.097	0.024	0.336	0.066	0.271
HCM Control Delay	14.3	14.5	11.5	13.7	9.9	10.9	13.3	11.2	12.8
HCM Lane LOS	B	B	B	B	A	B	B	B	B
HCM 95th-tile Q	1.7	2.3	0.4	1.5	0.3	0.1	1.5	0.2	1.1




HCM 6th TWSC  
3: Eastonville Rd & Copenhagen Rd

Existing  
PM

Intersection						
Int Delay, s/veh	1					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	10	10	25	202	125	20
Future Vol, veh/h	10	10	25	202	125	20
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	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	29	232	144	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	446	156	167	0	-	0
Stage 1	156	-	-	-	-	-
Stage 2	290	-	-	-	-	-
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	570	890	1411	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	558	890	1411	-	-	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Approach	SE	NE		SW		
HCM Control Delay, s	10.1	0.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR	
Capacity (veh/h)	1411	-	730	-	-	
HCM Lane V/C Ratio	0.02	-	0.035	-	-	
HCM Control Delay (s)	7.6	-	10.1	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	





















HCM 6th TWSC  
12: Adjacent Driveway & Judge Orr Rd

Existing  
PM

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	139	1	1	246	1	1
Future Vol, veh/h	139	1	1	246	1	1
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	83	83	87	87	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	1	1	283	1	1
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	168	0	453	168
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	285	-
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	-	-	1410	-	565	876
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1410	-	564	876
Mov Cap-2 Maneuver	-	-	-	-	564	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	762	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.3	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	686	-	-	1410	-	
HCM Lane V/C Ratio	0.004	-	-	0.001	-	
HCM Control Delay (s)	10.3	-	-	7.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

Existing + Site  
AM













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	17	66	204	115	68	4	84	343	64	7	579	19
Future Volume (vph)	17	66	204	115	68	4	84	343	64	7	579	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	860		0	695		0
Storage Lanes	0		1	0		0	1		0	1		1
Taper Length (ft)	25			25			300			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850		0.997			0.976				0.850
Flt Protected		0.990			0.970		0.950			0.950		
Satd. Flow (prot)	0	1844	1583	0	1801	0	1770	1818	0	1770	1770	1504
Flt Permitted		0.990			0.760		0.110			0.490		
Satd. Flow (perm)	0	1844	1583	0	1411	0	205	1818	0	913	1770	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			222		1			13				164
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	18	72	222	132	78	5	91	373	70	8	623	20
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	0	90	222	0	215	0	91	443	0	8	625	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	4	4			8		5	2			6	
Permitted Phases			4	8			2			6		6

Existing + Site AM  
Lanes, Volumes, Timings

Synchro 11 Report  
JAB

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

Existing + Site  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		9.5	24.0		24.0	24.0	24.0
Total Split (s)	21.0	21.0	21.0	25.0	25.0		8.0	44.0		36.0	36.0	36.0
Total Split (%)	23.3%	23.3%	23.3%	27.8%	27.8%		8.9%	48.9%		40.0%	40.0%	40.0%
Maximum Green (s)	15.0	15.0	15.0	19.0	19.0		3.5	38.0		30.0	30.0	30.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.5	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0		6.0		4.5	6.0		6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0			11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		9.3	9.3		16.2		39.7	38.2		31.9	31.9	31.9
Actuated g/C Ratio		0.11	0.11		0.20		0.49	0.47		0.39	0.39	0.39
v/c Ratio		0.43	0.59		0.77		0.55	0.52		0.02	0.90	0.03
Control Delay		41.0	12.1		50.4		27.9	18.7		19.3	45.5	0.1
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		41.0	12.1		50.4		27.9	18.7		19.3	45.5	0.1
LOS		D	B		D		C	B		B	D	A
Approach Delay		20.4			50.4			20.3			43.9	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)		45	0		104		25	156		3	337	0
Queue Length 95th (ft)		90	62		#197		#67	267		13	#613	0
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)							860			695		
Base Capacity (vph)		339	472		329		166	855		356	691	687
Starvation Cap Reductn		0	0		0		0	0		0	0	0
Spillback Cap Reductn		0	0		0		0	0		0	0	0
Storage Cap Reductn		0	0		0		0	0		0	0	0
Reduced v/c Ratio		0.27	0.47		0.65		0.55	0.52		0.02	0.90	0.03

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 81.8

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 33.1

Intersection LOS: C

Intersection Capacity Utilization 68.7%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 2: US 24 & Judge Orr Rd

Existing + Site  
 AM










Splits and Phases: 2: US 24 & Judge Orr Rd



HCM 6th AWSC  
1: Eastonville Rd & Judge Orr Rd/Meridian Ranch Rd

Existing + Site  
AM

Intersection	
Intersection Delay, s/veh	17.2
Intersection LOS	C







Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	102	152	100	40	54	101	25	205	57	77	186	13
Future Vol, veh/h	102	152	100	40	54	101	25	205	57	77	186	13
Peak Hour Factor	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	111	165	109	46	62	116	27	223	62	84	202	14
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	17.9	12.5	20.6	16.2
HCM LOS	C	B	C	C

Lane	NELn1	NELn2	NWLn1	NWLn2	NWLn3	SELn1	SELn2	SWLn1	SWLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	78%	0%	100%	0%	0%	60%	0%	93%
Vol Right, %	0%	22%	0%	0%	100%	0%	40%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	262	40	54	101	102	252	77	199
LT Vol	25	0	40	0	0	102	0	77	0
Through Vol	0	205	0	54	0	0	152	0	186
RT Vol	0	57	0	0	101	0	100	0	13
Lane Flow Rate	27	285	46	62	116	111	274	84	216
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.063	0.604	0.111	0.141	0.241	0.253	0.565	0.194	0.468
Departure Headway (Hd)	8.296	7.631	8.708	8.194	7.474	8.221	7.422	8.351	7.794
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	430	470	410	436	477	436	485	428	461
Service Time	6.075	5.409	6.5	5.985	5.264	5.999	5.2	6.135	5.578
HCM Lane V/C Ratio	0.063	0.606	0.112	0.142	0.243	0.255	0.565	0.196	0.469
HCM Control Delay	11.6	21.5	12.6	12.3	12.6	13.8	19.5	13.2	17.3
HCM Lane LOS	B	C	B	B	B	B	C	B	C
HCM 95th-tile Q	0.2	3.9	0.4	0.5	0.9	1	3.4	0.7	2.4

HCM 6th TWSC  
3: Eastonville Rd & Copenhagen Rd





Existing + Site  
AM

Intersection												
Int Delay, s/veh	1.6											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	20	0	20	16	0	7	15	385	8	2	240	10
Future Vol, veh/h	20	0	20	16	0	7	15	385	8	2	240	10
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	-	-	-	-	-	-	50	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	78	92	92	92	92	92	92	92	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	26	17	0	8	16	418	9	2	276	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	745	745	282	754	746	423	287	0	0	427	0	0
Stage 1	286	286	-	455	455	-	-	-	-	-	-	-
Stage 2	459	459	-	299	291	-	-	-	-	-	-	-
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	330	342	757	326	342	631	1275	-	-	1132	-	-
Stage 1	721	675	-	585	569	-	-	-	-	-	-	-
Stage 2	582	566	-	710	672	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	322	337	757	312	337	631	1275	-	-	1132	-	-
Mov Cap-2 Maneuver	322	337	-	312	337	-	-	-	-	-	-	-
Stage 1	712	674	-	577	562	-	-	-	-	-	-	-
Stage 2	568	559	-	685	671	-	-	-	-	-	-	-
Approach	SE		NW		NE		SW					
HCM Control Delay, s	14		15.5		0.3		0.1					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR					
Capacity (veh/h)	1275	-	-	369	452	1132	-	-				
HCM Lane V/C Ratio	0.013	-	-	0.068	0.113	0.002	-	-				
HCM Control Delay (s)	7.9	-	-	15.5	14	8.2	-	-				
HCM Lane LOS	A	-	-	C	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-	-				























HCM 6th TWSC  
12: Judge Orr Rd & S Access

Existing + Site  
AM

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	276	1	1	175	13	1	0	1	29	0	18
Future Vol, veh/h	9	276	1	1	175	13	1	0	1	29	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	87	87	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	300	1	1	201	15	1	0	1	37	0	23
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	216	0	0	301	0	0	543	539	301	532	532	209
Stage 1	-	-	-	-	-	-	321	321	-	211	211	-
Stage 2	-	-	-	-	-	-	222	218	-	321	321	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1354	-	-	1260	-	-	451	449	739	458	453	831
Stage 1	-	-	-	-	-	-	691	652	-	791	728	-
Stage 2	-	-	-	-	-	-	780	723	-	691	652	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1354	-	-	1260	-	-	435	445	739	454	448	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	435	445	-	454	448	-
Stage 1	-	-	-	-	-	-	685	646	-	784	727	-
Stage 2	-	-	-	-	-	-	758	722	-	684	646	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			11.6			12.4		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	548	1354	-	-	1260	-	-	549				
HCM Lane V/C Ratio	0.005	0.007	-	-	0.001	-	-	0.11				
HCM Control Delay (s)	11.6	7.7	0	-	7.9	0	-	12.4				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4				

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

Existing + Site  
PM













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	35	35	72	120	114	15	159	565	130	5	420	22
Future Volume (vph)	35	35	72	120	114	15	159	565	130	5	420	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	860		0	695		0
Storage Lanes	0		1	0		0	1		0	1		1
Taper Length (ft)	25			25			300			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.972				0.850
Flt Protected		0.976			0.976		0.950			0.950		
Satd. Flow (prot)	0	1818	1583	0	1803	0	1770	1811	0	1770	1863	1583
Flt Permitted		0.976			0.804		0.300			0.189		
Satd. Flow (perm)	0	1818	1583	0	1486	0	559	1811	0	352	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			147		3			15				147
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.83	0.83	0.83	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	42	42	87	138	131	17	171	608	140	5	457	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	87	0	286	0	171	748	0	5	457	24
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases	4	4			8		5	2			6	
Permitted Phases			4	8			2			6		6

Existing + Site PM  
Lanes, Volumes, Timings

Synchro 11 Report  
JAB

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

Existing + Site  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	4	4	4	8	8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		9.5	24.0		24.0	24.0	24.0
Total Split (s)	18.0	18.0	18.0	30.0	30.0		8.0	52.0		44.0	44.0	44.0
Total Split (%)	18.0%	18.0%	18.0%	30.0%	30.0%		8.0%	52.0%		44.0%	44.0%	44.0%
Maximum Green (s)	12.0	12.0	12.0	24.0	24.0		3.5	46.0		38.0	38.0	38.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.5	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		1.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0		6.0		4.5	6.0		6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	Max		Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0			11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0			0		0	0	0
Act Effect Green (s)		9.4	9.4		21.3		48.2	46.6		38.5	38.5	38.5
Actuated g/C Ratio		0.10	0.10		0.23		0.52	0.50		0.42	0.42	0.42
v/c Ratio		0.46	0.30		0.83		0.51	0.81		0.03	0.59	0.03
Control Delay		49.4	3.7		56.0		21.5	30.2		20.4	26.9	0.1
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		49.4	3.7		56.0		21.5	30.2		20.4	26.9	0.1
LOS		D	A		E		C	C		C	C	A
Approach Delay		26.2			56.0			28.6			25.5	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)		50	0		165		58	396		2	226	0
Queue Length 95th (ft)		89	1		#286		103	#657		10	345	0
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)							860			695		
Base Capacity (vph)		239	336		393		337	920		146	776	744
Starvation Cap Reductn		0	0		0		0	0		0	0	0
Spillback Cap Reductn		0	0		0		0	0		0	0	0
Storage Cap Reductn		0	0		0		0	0		0	0	0
Reduced v/c Ratio		0.35	0.26		0.73		0.51	0.81		0.03	0.59	0.03

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 92.5

Natural Cycle: 85

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 31.7

Intersection LOS: C

Intersection Capacity Utilization 77.0%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
 2: US 24 & Judge Orr Rd

Existing + Site  
 PM










Splits and Phases: 2: US 24 & Judge Orr Rd



HCM 6th AWSC  
1: Eastonville Rd & Judge Orr Rd/Meridian Ranch Rd

Existing + Site  
PM

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B







Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	14	64	90	59	154	48	170	182	71	27	107	13
Future Vol, veh/h	14	64	90	59	154	48	170	182	71	27	107	13
Peak Hour Factor	0.87	0.87	0.87	0.92	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	74	103	64	167	52	185	198	77	33	129	16
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	13.7	12.8	15.6	13.1
HCM LOS	B	B	C	B

Lane	NELn1	NELn2	NWLn1	NWLn2	NWLn3	SELn1	SELn2	SWLn1	SWLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	72%	0%	100%	0%	0%	42%	0%	89%
Vol Right, %	0%	28%	0%	0%	100%	0%	58%	0%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	253	59	154	48	14	154	27	120
LT Vol	170	0	59	0	0	14	0	27	0
Through Vol	0	182	0	154	0	0	64	0	107
RT Vol	0	71	0	0	48	0	90	0	13
Lane Flow Rate	185	275	64	167	52	16	177	33	145
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.379	0.51	0.141	0.344	0.097	0.036	0.355	0.073	0.301
Departure Headway (Hd)	7.377	6.672	7.898	7.388	6.674	8.152	7.22	8.07	7.484
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	488	542	454	487	536	439	497	444	480
Service Time	5.118	4.413	5.645	5.134	4.419	5.903	4.97	5.821	5.235
HCM Lane V/C Ratio	0.379	0.507	0.141	0.343	0.097	0.036	0.356	0.074	0.302
HCM Control Delay	14.6	16.2	11.9	14	10.1	11.2	13.9	11.5	13.4
HCM Lane LOS	B	C	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	2.9	0.5	1.5	0.3	0.1	1.6	0.2	1.3

HCM 6th TWSC  
3: Eastonville Rd & Copenhagen Rd

Existing + Site  
PM

Intersection												
Int Delay, s/veh	1.6											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	0	10	12	0	7	25	202	17	3	125	20
Future Vol, veh/h	10	0	10	12	0	7	25	202	17	3	125	20
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	-	-	-	-	-	-	50	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	78	78	78	78	87	87	87	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	15	0	9	29	232	20	4	151	24
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	476	481	163	478	483	242	175	0	0	252	0	0
Stage 1	171	171	-	300	300	-	-	-	-	-	-	-
Stage 2	305	310	-	178	183	-	-	-	-	-	-	-
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	499	485	882	498	483	797	1401	-	-	1313	-	-
Stage 1	831	757	-	709	666	-	-	-	-	-	-	-
Stage 2	705	659	-	824	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	485	473	882	482	471	797	1401	-	-	1313	-	-
Mov Cap-2 Maneuver	485	473	-	482	471	-	-	-	-	-	-	-
Stage 1	814	755	-	694	652	-	-	-	-	-	-	-
Stage 2	683	645	-	810	746	-	-	-	-	-	-	-
Approach	SE		NW		NE		SW					
HCM Control Delay, s	11		11.7		0.8		0.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR					
Capacity (veh/h)	1401	-	-	564	626	1313	-	-				
HCM Lane V/C Ratio	0.021	-	-	0.043	0.041	0.003	-	-				
HCM Control Delay (s)	7.6	-	-	11.7	11	7.7	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-				

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	141	1	1	247	29	1	0	1	19	0	15
Future Vol, veh/h	20	141	1	1	247	29	1	0	1	19	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	92	92	92	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	162	1	1	268	32	1	0	1	24	0	19

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	300	0	0	163	0	0	505	511	163	495	495	284
Stage 1	-	-	-	-	-	-	209	209	-	286	286	-
Stage 2	-	-	-	-	-	-	296	302	-	209	209	-
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	1261	-	-	1416	-	-	478	466	882	485	476	755
Stage 1	-	-	-	-	-	-	793	729	-	721	675	-
Stage 2	-	-	-	-	-	-	712	664	-	793	729	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1261	-	-	1416	-	-	458	456	882	477	466	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	458	456	-	477	466	-
Stage 1	-	-	-	-	-	-	777	714	-	707	674	-
Stage 2	-	-	-	-	-	-	693	663	-	776	714	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0			11			11.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	603	1261	-	-	1416	-	-	570
HCM Lane V/C Ratio	0.004	0.018	-	-	0.001	-	-	0.076
HCM Control Delay (s)	11	7.9	0	-	7.5	0	-	11.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.2

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd













2040 Background  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	65	150	275	265	125	50	230	675	200	100	1200	100
Future Volume (vph)	65	150	275	265	125	50	230	675	200	100	1200	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	235		0	290		0	860		0	695		0
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (ft)	200			200			300			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.666			0.950			0.950			0.355		
Satd. Flow (perm)	1241	1863	1583	3433	3539	1583	3433	3539	1583	661	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248			149			211			149
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	71	163	299	288	136	54	242	711	211	105	1263	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	163	299	288	136	54	242	711	211	105	1263	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8			2	6		6



Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2040 Background  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	17.0	24.0	24.0	19.0	26.0	26.0	23.0	56.0	56.0	11.0	44.0	44.0
Total Split (%)	15.5%	21.8%	21.8%	17.3%	23.6%	23.6%	20.9%	50.9%	50.9%	10.0%	40.0%	40.0%
Maximum Green (s)	12.5	19.5	19.5	14.5	21.5	21.5	18.5	51.5	51.5	6.5	39.5	39.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	22.8	14.3	14.3	12.9	21.1	21.1	12.6	51.7	51.7	51.9	45.5	45.5
Actuated g/C Ratio	0.22	0.14	0.14	0.12	0.20	0.20	0.12	0.50	0.50	0.50	0.44	0.44
v/c Ratio	0.22	0.63	0.69	0.67	0.19	0.12	0.58	0.40	0.24	0.26	0.81	0.13
Control Delay	27.3	53.6	18.1	52.1	36.1	0.6	49.1	17.8	3.0	12.3	32.0	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	53.6	18.1	52.1	36.1	0.6	49.1	17.8	3.0	12.3	32.0	1.7
LOS	C	D	B	D	D	A	D	B	A	B	C	A
Approach Delay		30.2			41.7			21.7			28.5	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	34	104	31	94	40	0	79	152	0	28	380	0
Queue Length 95th (ft)	67	173	120	146	70	0	121	220	40	58	#597	14
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)	235			290			860			695		
Base Capacity (vph)	386	352	500	482	765	459	616	1767	896	402	1557	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.46	0.60	0.60	0.18	0.12	0.39	0.40	0.24	0.26	0.81	0.13

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 103.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 28.3

Intersection LOS: C

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

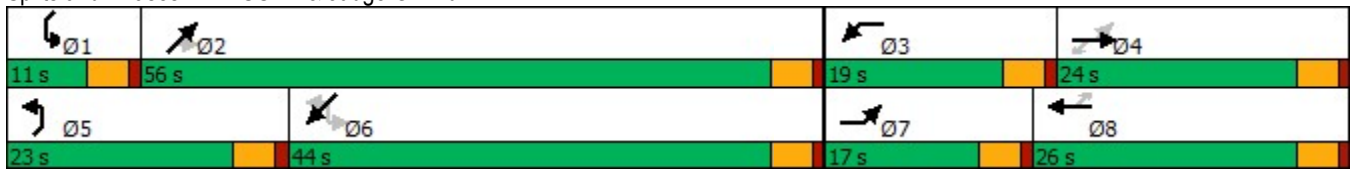
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2040 Background  
AM

Splits and Phases: 2: US 24 & Judge Orr Rd








HCM 6th Roundabout  
1: Eastonville Rd & Judge Orr Rd/Meridian Ranch Rd

2040 Background  
AM

Intersection									
Intersection Delay, s/veh	8.2								
Intersection LOS	A								
Approach	SE		NW		NE		SW		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	522		326		489		592		
Demand Flow Rate, veh/h	532		332		499		603		
Vehicles Circulating, veh/h	636		531		587		221		
Vehicles Exiting, veh/h	188		555		581		642		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	9.5		6.1		11.2		5.8		
Approach LOS	A		A		B		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	R	LT	R	L	TR	L	TR	
Assumed Moves	LT	R	LT	R	L	TR	L	TR	
RT Channelized									
Lane Util	0.688	0.312	0.500	0.500	0.110	0.890	0.367	0.633	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	366	166	166	166	55	444	221	382	
Cap Entry Lane, veh/h	796	796	876	876	832	832	1161	1161	
Entry HV Adj Factor	0.981	0.982	0.981	0.982	0.982	0.980	0.982	0.982	
Flow Entry, veh/h	359	163	163	163	54	435	217	375	
Cap Entry, veh/h	781	782	859	860	817	815	1140	1140	
V/C Ratio	0.460	0.209	0.190	0.190	0.066	0.533	0.190	0.329	
Control Delay, s/veh	10.8	6.9	6.1	6.1	5.0	12.0	4.8	6.3	
LOS	B	A	A	A	A	B	A	A	
95th %tile Queue, veh	2	1	1	1	0	3	1	1	

HCM 6th TWSC  
3: Eastonville Rd & Copenhagen Rd
































2040 Background  
AM

Intersection						
Int Delay, s/veh	0.5					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	10	20	15	565	525	10
Future Vol, veh/h	10	20	15	565	525	10
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	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	92	92	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	26	16	614	603	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1255	609	614	0	-	0
Stage 1	609	-	-	-	-	-
Stage 2	646	-	-	-	-	-
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	189	495	965	-	-	-
Stage 1	543	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	186	495	965	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Approach	SE	NE	SW			
HCM Control Delay, s	14.4	0.2	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NEL	NET SELn1	SWT	SWR		
Capacity (veh/h)	965	- 422	-	-		
HCM Lane V/C Ratio	0.017	- 0.091	-	-		
HCM Control Delay (s)	8.8	- 14.4	-	-		
HCM Lane LOS	A	- B	-	-		
HCM 95th %tile Q(veh)	0.1	- 0.3	-	-		

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	410	90	50	270	30	145
Future Vol, veh/h	410	90	50	270	30	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	235	385	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	446	98	54	293	34	167
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	544	0	701	223
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1021	-	453	780
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	1021	-	429	780
Mov Cap-2 Maneuver	-	-	-	-	429	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	864	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.4		12.4	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	684	-	-	1021	-	
HCM Lane V/C Ratio	0.294	-	-	0.053	-	
HCM Control Delay (s)	12.4	-	-	8.7	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-	













Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2042 Background  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 		 	 		 	 		 	 	
Traffic Volume (vph)	190	200	340	435	200	165	400	1234	430	150	790	155
Future Volume (vph)	190	200	340	435	200	165	400	1234	430	150	790	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	235		235	235		235	860		290	695		290
Storage Lanes	1		1	2		1	2		1	2		1
Taper Length (ft)	200			200			300			300		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.617			0.950			0.950			0.950		
Satd. Flow (perm)	1149	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			203			177			453			164
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	204	215	366	468	215	177	421	1299	453	158	832	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	215	366	468	215	177	421	1299	453	158	832	163
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8			2			6

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2042 Background  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	24.0
Total Split (s)	19.0	24.0	24.0	20.0	25.0	25.0	19.0	56.0	56.0	10.0	47.0	47.0
Total Split (%)	17.3%	21.8%	21.8%	18.2%	22.7%	22.7%	17.3%	50.9%	50.9%	9.1%	42.7%	42.7%
Maximum Green (s)	14.5	18.0	18.0	15.5	19.0	19.0	14.5	50.0	50.0	5.5	41.0	41.0
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	6.0	6.0	4.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	30.2	15.6	15.6	15.5	18.0	18.0	14.5	50.1	50.1	5.5	41.1	41.1
Actuated g/C Ratio	0.28	0.14	0.14	0.14	0.17	0.17	0.13	0.47	0.47	0.05	0.38	0.38
v/c Ratio	0.51	0.42	0.91	0.95	0.36	0.43	0.91	0.79	0.46	0.90	0.62	0.23
Control Delay	31.3	44.3	47.8	76.1	41.9	9.5	71.7	29.2	3.4	99.0	29.8	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	44.3	47.8	76.1	41.9	9.5	71.7	29.2	3.4	99.0	29.8	4.4
LOS	C	D	D	E	D	A	E	C	A	F	C	A
Approach Delay		42.5			53.8			32.0			35.7	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	103	72	116	171	71	0	153	405	0	58	250	0
Queue Length 95th (ft)	165	110	#279	#275	108	60	#247	498	55	#123	317	42
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)	235		235	235		235	860		290	695		290
Base Capacity (vph)	421	592	433	494	625	425	462	1644	978	175	1349	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.36	0.85	0.95	0.34	0.42	0.91	0.79	0.46	0.90	0.62	0.23

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 107.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 38.3

Intersection LOS: D

Intersection Capacity Utilization 73.8%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2042 Background  
PM

Splits and Phases: 2: US 24 & Judge Orr Rd






 Ø1	 Ø2	 Ø3	 Ø4
10 s	56 s	20 s	24 s
 Ø5	 Ø6	 Ø7	 Ø8
19 s	47 s	19 s	25 s



Intersection									
Intersection Delay, s/veh	7.1								
Intersection LOS	A								
Approach	SE		NW		NE		SW		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	288		543		672		365		
Demand Flow Rate, veh/h	294		553		685		372		
Vehicles Circulating, veh/h	472		564		266		551		
Vehicles Exiting, veh/h	451		387		500		566		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	5.5		8.3		6.9		7.0		
Approach LOS	A		A		A		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	R	LT	R	L	TR	L	TR	
Assumed Moves	LT	R	LT	R	L	TR	L	TR	
RT Channelized									
Lane Util	0.527	0.473	0.600	0.400	0.320	0.680	0.298	0.702	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	155	139	332	221	219	466	111	261	
Cap Entry Lane, veh/h	924	924	850	850	1115	1115	860	860	
Entry HV Adj Factor	0.982	0.978	0.981	0.982	0.982	0.980	0.982	0.981	
Flow Entry, veh/h	152	136	326	217	215	457	109	256	
Cap Entry, veh/h	908	904	834	835	1094	1092	845	844	
V/C Ratio	0.168	0.150	0.391	0.260	0.196	0.418	0.129	0.303	
Control Delay, s/veh	5.6	5.4	9.0	7.1	5.1	7.7	5.5	7.6	
LOS	A	A	A	A	A	A	A	A	
95th %tile Queue, veh	1	1	2	1	1	2	0	1	

HCM 6th TWSC  
3: Eastonville Rd & Copenhagen Rd

2042 Background  
PM

Intersection						
Int Delay, s/veh	0.6					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	10	10	25	490	325	20
Future Vol, veh/h	10	10	25	490	325	20
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	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	27	527	349	22

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	941	360	371	0	-	0
Stage 1	360	-	-	-	-	-
Stage 2	581	-	-	-	-	-
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	292	684	1188	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	285	684	1188	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	559	-	-	-	-	-

























Approach	SE	NE	SW
HCM Control Delay, s	12.4	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET SELn1	SWT	SWR
Capacity (veh/h)	1188	-	512	-
HCM Lane V/C Ratio	0.023	-	0.05	-
HCM Control Delay (s)	8.1	-	12.4	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	230	120	150	440	60	95
Future Vol, veh/h	230	120	150	440	60	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	235	385	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	93	93	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	250	130	161	473	69	109
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	380	0	809	125
Stage 1	-	-	-	-	250	-
Stage 2	-	-	-	-	559	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1175	-	318	902
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1175	-	274	902
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	463	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.2		16.9	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	478	-	-	1175	-	
HCM Lane V/C Ratio	0.373	-	-	0.137	-	
HCM Control Delay (s)	16.9	-	-	8.6	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.7	-	-	0.5	-	













Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2042 Background + Site  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	67	154	298	265	134	50	239	675	200	100	1200	102
Future Volume (vph)	67	154	298	265	134	50	239	675	200	100	1200	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	290		290	860		290	695		290
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (ft)	240			240			300			25		
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.659			0.950			0.950			0.354		
Satd. Flow (perm)	1228	1863	1583	3433	3539	1583	3433	3539	1583	659	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			246			149			211			149
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	167	324	288	146	54	252	711	211	105	1263	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	167	324	288	146	54	252	711	211	105	1263	107
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8			2	6		6

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2042 Background + Site  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	17.0	23.6	23.6	19.0	25.6	25.6	23.0	56.0	56.0	11.4	44.4	44.4
Total Split (%)	15.5%	21.5%	21.5%	17.3%	23.3%	23.3%	20.9%	50.9%	50.9%	10.4%	40.4%	40.4%
Maximum Green (s)	12.5	19.1	19.1	14.5	21.1	21.1	18.5	51.5	51.5	6.9	39.9	39.9
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	23.0	14.4	14.4	12.9	21.1	21.1	12.9	51.7	51.7	52.2	45.5	45.5
Actuated g/C Ratio	0.22	0.14	0.14	0.12	0.20	0.20	0.12	0.50	0.50	0.50	0.44	0.44
v/c Ratio	0.23	0.64	0.75	0.67	0.20	0.12	0.59	0.40	0.24	0.26	0.81	0.14
Control Delay	27.6	54.4	23.2	52.5	36.4	0.6	49.3	18.0	3.0	12.2	32.4	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	54.4	23.2	52.5	36.4	0.6	49.3	18.0	3.0	12.2	32.4	1.8
LOS	C	D	C	D	D	A	D	B	A	B	C	A
Approach Delay		33.0			41.9			22.0			28.8	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	35	108	48	95	44	0	83	154	0	28	384	0
Queue Length 95th (ft)	68	178	148	146	74	0	125	220	40	58	#597	16
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)	290			290		290	860		290	695		290
Base Capacity (vph)	384	343	492	480	756	455	613	1761	893	406	1550	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.49	0.66	0.60	0.19	0.12	0.41	0.40	0.24	0.26	0.81	0.14

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 103.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 29.0

Intersection LOS: C

Intersection Capacity Utilization 70.7%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: US 24 & Judge Orr Rd

 Ø1	 Ø2	 Ø3	 Ø4
11.4 s	56 s	19 s	23.6 s
 Ø5	 Ø6	 Ø7	 Ø8
23 s	44.4 s	17 s	25.6 s

HCM 6th Roundabout  
1: Eastonville Rd & Judge Orr Rd/Meridian Ranch Rd

2042 Background + Site  
AM

Intersection									
Intersection Delay, s/veh	8.1								
Intersection LOS	A								
Approach	SE		NW		NE		SW		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	2		2		2		2		
Adj Approach Flow, veh/h	528		347		500		602		
Demand Flow Rate, veh/h	538		353		510		614		
Vehicles Circulating, veh/h	656		539		593		241		
Vehicles Exiting, veh/h	199		564		601		651		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	8.9		6.4		11.0		6.1		
Approach LOS	A		A		B		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	TR	LT	TR	L	TR	L	TR	
Assumed Moves	LT	TR	LT	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.470	0.530	0.470	0.530	0.108	0.892	0.360	0.640	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328	
Entry Flow, veh/h	253	285	166	187	55	455	221	393	
Cap Entry Lane, veh/h	738	813	822	898	782	858	1081	1157	
Entry HV Adj Factor	0.981	0.982	0.982	0.983	0.982	0.980	0.982	0.979	
Flow Entry, veh/h	248	280	163	184	54	446	217	385	
Cap Entry, veh/h	724	798	807	883	768	841	1062	1133	
V/C Ratio	0.343	0.351	0.202	0.208	0.070	0.530	0.204	0.340	
Control Delay, s/veh	9.3	8.7	6.6	6.2	5.4	11.7	5.3	6.5	
LOS	A	A	A	A	A	B	A	A	
95th %tile Queue, veh	2	2	1	1	0	3	1	2	

HCM 6th TWSC  
3: Eastonville Rd & NW Access/Copenhagen Rd

2042 Background + Site  
AM

























Intersection												
Int Delay, s/veh	1.4											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↔			↔		↗	↖	↗	↗	↖	
Traffic Vol, veh/h	10	0	20	16	0	9	15	565	8	3	525	10
Future Vol, veh/h	10	0	20	16	0	9	15	565	8	3	525	10
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	-	-	-	-	-	-	50	-	155	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	93	93	93	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	26	21	0	12	16	608	9	3	571	11
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1234	1232	577	1236	1228	608	582	0	0	617	0	0
Stage 1	583	583	-	640	640	-	-	-	-	-	-	-
Stage 2	651	649	-	596	588	-	-	-	-	-	-	-
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	153	177	516	153	178	496	992	-	-	963	-	-
Stage 1	498	499	-	464	470	-	-	-	-	-	-	-
Stage 2	457	466	-	490	496	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	147	174	516	143	175	496	992	-	-	963	-	-
Mov Cap-2 Maneuver	147	174	-	143	175	-	-	-	-	-	-	-
Stage 1	490	498	-	457	462	-	-	-	-	-	-	-
Stage 2	439	459	-	464	495	-	-	-	-	-	-	-
Approach	SE		NW		NE			SW				
HCM Control Delay, s	19.8		27.5		0.2			0				
HCM LOS	C		D									
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR					
Capacity (veh/h)	992	-	-	192	281	963	-	-				
HCM Lane V/C Ratio	0.016	-	-	0.167	0.137	0.003	-	-				
HCM Control Delay (s)	8.7	-	-	27.5	19.8	8.8	-	-				
HCM Lane LOS	A	-	-	D	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.5	0	-	-				



Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↖	↕↕			↕			↕	
Traffic Vol, veh/h	9	412	90	50	271	12	30	0	145	26	0	20
Future Vol, veh/h	9	412	90	50	271	12	30	0	145	26	0	20
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	-	-	235	385	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	87	87	87	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	448	98	54	295	13	34	0	167	33	0	26
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	308	0	0	546	0	0	724	884	224	654	976	154
Stage 1	-	-	-	-	-	-	468	468	-	410	410	-
Stage 2	-	-	-	-	-	-	256	416	-	244	566	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1249	-	-	1019	-	-	313	283	779	352	250	864
Stage 1	-	-	-	-	-	-	545	560	-	589	594	-
Stage 2	-	-	-	-	-	-	726	590	-	738	506	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1249	-	-	1019	-	-	289	265	779	263	234	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	289	265	-	263	234	-
Stage 1	-	-	-	-	-	-	538	553	-	582	563	-
Stage 2	-	-	-	-	-	-	667	559	-	573	500	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.3			13.9			16.3		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	604	1249	-	-	1019	-	-	377				
HCM Lane V/C Ratio	0.333	0.008	-	-	0.053	-	-	0.156				
HCM Control Delay (s)	13.9	7.9	0	-	8.7	-	-	16.3				
HCM Lane LOS	B	A	A	-	A	-	-	C				
HCM 95th %tile Q(veh)	1.5	0	-	-	0.2	-	-	0.5				













Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2042 Background + Site  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	192	203	357	435	220	165	420	1234	430	150	790	159
Future Volume (vph)	192	203	357	435	220	165	420	1234	430	150	790	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	235		0	235		235	860		290	695		290
Storage Lanes	1		1	2		1	2		1	1		1
Taper Length (ft)	200			200			300			300		
Lane Util. Factor	1.00	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.604			0.950			0.950			0.104		
Satd. Flow (perm)	1125	1863	1583	3433	3539	1583	3433	3539	1583	194	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			250			177			453			167
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2032			1524			1735			2505	
Travel Time (s)		30.8			23.1			21.5			31.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	206	218	384	468	237	177	442	1299	453	158	832	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	218	384	468	237	177	442	1299	453	158	832	167
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8			2	6		6

Lanes, Volumes, Timings  
2: US 24 & Judge Orr Rd

2042 Background + Site  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	24.0	9.5	24.0	24.0
Total Split (s)	17.6	24.0	24.0	20.4	26.8	26.8	22.0	55.0	55.0	10.6	43.6	43.6
Total Split (%)	16.0%	21.8%	21.8%	18.5%	24.4%	24.4%	20.0%	50.0%	50.0%	9.6%	39.6%	39.6%
Maximum Green (s)	13.1	18.0	18.0	15.9	20.8	20.8	17.5	49.0	49.0	6.1	37.6	37.6
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	6.0	6.0	4.5	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	30.0	16.2	16.2	15.9	19.8	19.8	16.8	49.0	49.0	45.9	38.3	38.3
Actuated g/C Ratio	0.28	0.15	0.15	0.15	0.18	0.18	0.16	0.45	0.45	0.42	0.35	0.35
v/c Ratio	0.54	0.78	0.86	0.93	0.37	0.41	0.83	0.81	0.47	0.92	0.66	0.25
Control Delay	31.8	64.4	34.7	72.3	40.7	8.8	58.7	30.9	3.5	76.3	33.2	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	64.4	34.7	72.3	40.7	8.8	58.7	30.9	3.5	76.3	33.2	5.0
LOS	C	E	C	E	D	A	E	C	A	E	C	A
Approach Delay		41.9			51.0			30.9			35.0	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	104	147	92	171	77	0	157	412	0	59	264	0
Queue Length 95th (ft)	166	#248	#249	#271	115	58	#229	508	56	#192	335	46
Internal Link Dist (ft)		1952			1444			1655			2425	
Turn Bay Length (ft)	235			235		235	860		290	695		290
Base Capacity (vph)	398	309	472	504	680	447	555	1603	964	171	1252	668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.71	0.81	0.93	0.35	0.40	0.80	0.81	0.47	0.92	0.66	0.25

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 108.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.1

Intersection LOS: D

Intersection Capacity Utilization 83.0%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: US 24 & Judge Orr Rd



HCM 6th Roundabout  
1: Eastonville Rd & Judge Orr Rd/Meridian Ranch Rd

2042 Background + Site  
PM

Intersection									
Intersection Delay, s/veh	7.3								
Intersection LOS	A								
Approach	SE		NW		NE		SW		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	2		2		2		2		
Adj Approach Flow, veh/h	301		558		697		377		
Demand Flow Rate, veh/h	307		568		711		384		
Vehicles Circulating, veh/h	490		582		281		565		
Vehicles Exiting, veh/h	459		410		516		585		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	5.9		8.4		7.3		7.1		
Approach LOS	A		A		A		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	R	LT	TR	L	TR	L	TR	
Assumed Moves	LT	R	LT	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.547	0.453	0.470	0.530	0.308	0.692	0.294	0.706	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328	
Entry Flow, veh/h	168	139	267	301	219	492	113	271	
Cap Entry Lane, veh/h	860	936	790	866	1042	1118	803	878	
Entry HV Adj Factor	0.983	0.978	0.981	0.982	0.982	0.980	0.982	0.981	
Flow Entry, veh/h	165	136	262	296	215	482	111	266	
Cap Entry, veh/h	846	916	776	850	1023	1096	789	862	
V/C Ratio	0.195	0.148	0.338	0.348	0.210	0.440	0.141	0.308	
Control Delay, s/veh	6.3	5.4	8.7	8.2	5.5	8.0	6.0	7.6	
LOS	A	A	A	A	A	A	A	A	
95th %tile Queue, veh	1	1	1	2	1	2	0	1	

HCM 6th TWSC  
3: Eastonville Rd & NW Access/Copenhagen Rd

2042 Background + Site  
PM

Intersection												
Int Delay, s/veh	1.1											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕		↗	↖		↗	↖	
Traffic Vol, veh/h	10	0	10	12	0	7	25	490	17	6	325	50
Future Vol, veh/h	10	0	10	12	0	7	25	490	17	6	325	50
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	-	-	-	-	-	-	50	-	-	155	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	15	0	9	27	533	18	7	353	54
Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	995	999	380	997	1017	542	407	0	0	551	0	0
Stage 1	394	394	-	596	596	-	-	-	-	-	-	-
Stage 2	601	605	-	401	421	-	-	-	-	-	-	-
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	224	243	667	223	238	540	1152	-	-	1019	-	-
Stage 1	631	605	-	490	492	-	-	-	-	-	-	-
Stage 2	487	487	-	626	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	215	236	667	214	231	540	1152	-	-	1019	-	-
Mov Cap-2 Maneuver	215	236	-	214	231	-	-	-	-	-	-	-
Stage 1	616	601	-	479	481	-	-	-	-	-	-	-
Stage 2	468	476	-	610	585	-	-	-	-	-	-	-
Approach	SE		NW		NE		SW		SW		SW	
HCM Control Delay, s	17		19.4		0.4		0.1		0.1		0.1	
HCM LOS	C		C									
Minor Lane/Major Mvmt	NEL		NET		NERNWLn1		SELn1		SWL		SWT	
Capacity (veh/h)	1152		-		-		275		325		1019	
HCM Lane V/C Ratio	0.024		-		0.089		0.079		0.006		-	
HCM Control Delay (s)	8.2		-		19.4		17		8.6		-	
HCM Lane LOS	A		-		C		C		A		-	
HCM 95th %tile Q(veh)	0.1		-		0.3		0.3		0		-	

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↖	↕↕			↕			↕	
Traffic Vol, veh/h	19	232	120	150	441	27	60	0	95	19	0	15
Future Vol, veh/h	19	232	120	150	441	27	60	0	95	19	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	-	-	235	385	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	93	93	87	87	87	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	252	130	163	474	29	69	0	109	24	0	19
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	503	0	0	382	0	0	857	1123	126	983	1239	252
Stage 1	-	-	-	-	-	-	294	294	-	815	815	-
Stage 2	-	-	-	-	-	-	563	829	-	168	424	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1058	-	-	1173	-	-	251	204	901	203	174	748
Stage 1	-	-	-	-	-	-	690	668	-	338	389	-
Stage 2	-	-	-	-	-	-	478	383	-	817	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1058	-	-	1173	-	-	214	171	901	156	146	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	171	-	156	146	-
Stage 1	-	-	-	-	-	-	672	651	-	329	335	-
Stage 2	-	-	-	-	-	-	401	330	-	699	570	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			2.1			20.9			23.3		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	402	1058	-	-	1173	-	-	240				
HCM Lane V/C Ratio	0.443	0.02	-	-	0.139	-	-	0.182				
HCM Control Delay (s)	20.9	8.5	0.1	-	8.6	-	-	23.3				
HCM Lane LOS	C	A	A	-	A	-	-	C				
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0.5	-	-	0.6				