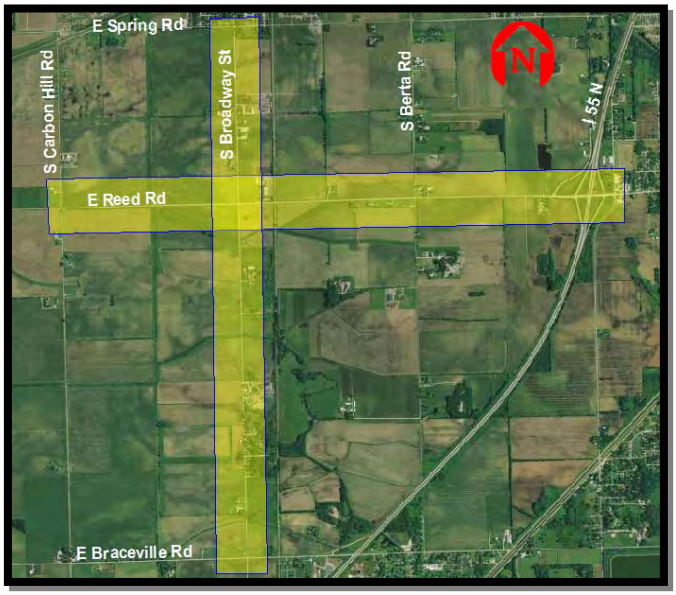
Broadway Road and Reed Road Corridor Access Study

Grundy County, Illinois



Prepared for

Grundy County Highway Department

Prepared by

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1.
Introduction

The Grundy County Highway Department retained the services of Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) to develop a corridor access plan for Broadway Road and Reed Road in unincorporated Grundy County, Illinois.

The study limits for Broadway Road extend over a 3-mile section from I-55 on the east to Carbon Hill Road on the west. The study limits for Reed Road extend over a 3-mile section from Spring Road on the north to Braceville Road on the south. These sections of Broadway Road and Reed Road are both under the jurisdiction of the Grundy County Highway Department, except for the one-mile section of Reed Road between Broadway Road and Carbon Hill Road, which is under the jurisdiction of the Village of Coal City.

Broadway Road is the only continuous north-south roadway through the Village of Coal City, which is located to the north of Spring Road. Reed Road is an important east-west County highway that extends from IL Route 47 to its interchange with I-55 and continuing east through the City of Braidwood. The Coal City Comprehensive Plan classifies Broadway Road as a major collector road and Reed Road as an arterial road. Within the study area, both Broadway Road and Reed Road are presently two-lane roadways with rural cross-sections (i.e., shoulders and drainage ditch).

The Coal City Comprehensive Plan depicts the Village's intention to annex land south of the Village limits to Grand Ridge Road, from just west of Jugtown Road to just east of Berta Road where the Village has a boundary agreement with Braidwood. As such, the northern two-thirds of the Broadway Road study area and the western five-sixths of the Reed Road study area would be fully-contained within Coal City's future village limits. The Village's planned land uses along Broadway Road and Reed Road are primarily commercial and light industrial with some medium- and high-density residential development.

The Braidwood Comprehensive Plan depicts the City's intention to annex land to the west of I-55 to the boundary agreement line, putting the eastern one-sixth of the Reed Road study area within Braidwood's future city limits. The City plans to develop commercial land uses along this section of Reed Road, which would abut other commercial uses planned by Coal City.

Prior to these two corridors becoming more developed, access and design guidelines are needed for Broadway Road and Reed Road. As such, the purpose of this Corridor Access Study is to develop a roadway improvement plan that (1) accommodates the projected traffic levels generated by development growth along the corridors, (2) establishes future access points along the roadways, (3) defines the ultimate roadway cross-section, right-of-way requirements, intersection geometrics and traffic controls, (4) achieves the County's functional and aesthetic vision of the roadway, and (5) attains consensus with the participating communities on an acceptable roadway design.

Access management elements have been incorporated into the plan to balance mobility and access, so as to maintain an efficient movement of traffic while enhancing safe and efficient access to and from abutting properties. Since the current roadway grid along Broadway Road and Reed Road is spaced along the section lines at one-mile intervals, the plan includes the locations of future connector roadways that will improve local traffic circulation, provide alternate means of property access, and can be constructed, in part or in total, by private developers as a condition of approval at the time that a site plan is submitted to the governing agency for review.

2.
What Is Access Management?

"Access management is the systematic control of the location, spacing, design, and operations of driveways, median openings, interchanges, and street connections to a roadway."[1] Along busy commercial corridors, as Broadway Road and Reed Road will eventually be, a well conceived access management plan serves to improve the efficient movement of traffic while enhancing the safe and efficient access to and from abutting properties. Some specific benefits of access management include:

- Safer and more efficient access to properties
- Fewer and less severe vehicle crashes
- Fewer vehicle/pedestrian conflicts
- Less traffic congestion
- Reduced travel delays
- Reduced fuel consumption
- Increased and preserved traffic capacity
- Enhanced corridor aesthetics

Access Management Elements

There are many access management techniques that can be used to improve traffic flow and enhance safety along a corridor. The primary elements of this corridor access study include: well-spaced and coordinated traffic signals and full access intersections, location of future connector roadways, landscaped medians, and auxiliary lanes. The objective is to accommodate most, if not all, left-turn movements at the signalized intersections along the corridors.

[1] *Access Management Manual*, Transportation Research Board, Washington, D.C. 2003

Traffic Signal Spacing/Coordination and Connector Roads

The spacing of full access unsignalized intersection and signalized intersections can have a dramatic influence on the safe and efficient movement of traffic along a corridor. Management of signal spacing includes planning for the frequency of signals, as well as the uniformity of their spacing.

The Grundy County Highway Access Regulation Ordinance (GCHARO) presently classifies Broadway Road and Reed Road as Access 3 roadways when defining access control standards. The minimum spacing of full access unsignalized intersections on Access 3 roadways is ¼-mile (1,320 feet) and the minimum spacing of signal-controlled intersections is 1/3-mile (1,760 feet).

The Grundy County access standards are consistent with the standards of the adjoining counties of Kendall and LaSalle. However, these standards are more conservative than those of Will County and Kane County, where minimum spacing standards for signal-controlled intersections along suburban arterials and collectors are ¼-mile.

The future infill of connector roadways within the existing one-mile roadway grid along Broadway Road and Reed Road is likely to occur at the ½-mile point to maintain a proportional roadway grid. The most efficient location of additional connector roads and property access drives would be mid-point between this future ½-mile roadway grid, or at the ¼-mile points. A minimum signalized intersection spacing standard of 1/3-mile is more appropriate in a rural, residential or other relatively low-density environment. Restricting signalized access to 1/3-mile spacing in areas of denser traffic generators can lead to less efficient signal operation, poorer signal coordination, dual turn lanes and/or longer turn lane stacking requirements at intersections, higher vehicle delays, lower levels of service, and unsafe travel conditions on arterial or major collector roadways.

For these reasons, the minimum spacing standards for signal-controlled intersections along Broadway Road and Reed Road is recommended to be ¼-mile, consistent with Grundy County's minimum spacing standards for full access unsignalized intersections along these roadways.

To maintain efficient traffic signal operations and traffic flow progression at this spacing standard, all future signals within these corridors should be interconnected into a coordinated signal system.

Landscaped Center Median

A landscaped center median can be a very effective access management tool because it separates directional traffic flow, limits the locations of left-turn movements, provides a refuge area for pedestrians crossing the roadway, and enhances community appearance. Left-turn movements adversely impact traffic flow and are far more likely to be involved in vehicular crashes than right-turn movements. The installation of a landscaped median has the effect of restricting driveway and minor cross-street turning movements to right-turn movements only. In addition, vehicular-pedestrian crash rates are typically less than one-half that on roadways with a tow-way left-turn lane.

Auxiliary Lanes

Deceleration lanes for left- and right-turns provide an effective way to limit the speed differential between turning vehicles and through vehicles. Left-turn lanes and right-turn lanes are needed to maintain traffic progression on major signalized collector or arterial roadways. The GCHARO indicates that left-turn lanes "are mandatory for all major and minor use generators", which would include intersections with significant collector and arterial roadways. The GCHARO further specifies that right-turn lanes "should be installed at an access on a County highway if the average daily two-way volume at the access is at least 1,000 vehicles and the average peak hour entering right-turn volume is at least 40 vehicles. Other factors such as the highway design speed, the number of highway approach lanes, composition of access traffic, and adjacent highway alignment should influence the need for a deceleration lane regardless of whether the volumes mentioned above are or are not met."

3.
Existing Traffic Conditions

Transportation conditions in the Broadway Road and Reed Road corridors were inventoried to create a database for analyzing existing and projected future conditions. Three general components of existing conditions were considered, including:

1. Characteristics of the roadways, including lane configuration, intersection traffic controls, and speed limits
2. Existing weekday traffic volumes
3. Intersection operations

Corridor Study Limits

The study limits for the Broadway Road corridor extend over a 3-mile section from I-55 on the east to Carbon Hill Road on the west. The study limits for the Reed Road corridor extend over a 3-mile section from Spring Road on the north to Braceville Road on the south. Nine (9) intersections were evaluated and analyzed within the study limits, as follows:

1. Broadway Road / Spring Road
2. Broadway Road / Reed Road
3. Broadway Road / Braceville Road
4. Reed Road / Carbon Hill Road
5. Reed Road / Berta Road
6. Reed Road / Will Road
7. Reed Road / I-55 southbound entrance/exit ramps
8. Reed Road / I-55 northbound entrance/exit ramps
9. Reed Road / Hickory Street / Kankakee Street

Figure 1 shows the Broadway Road and Reed Road corridor study area with respect to the surrounding roadway system. Figure 2 shows an aerial view of the corridor study area with the study intersections highlighted.

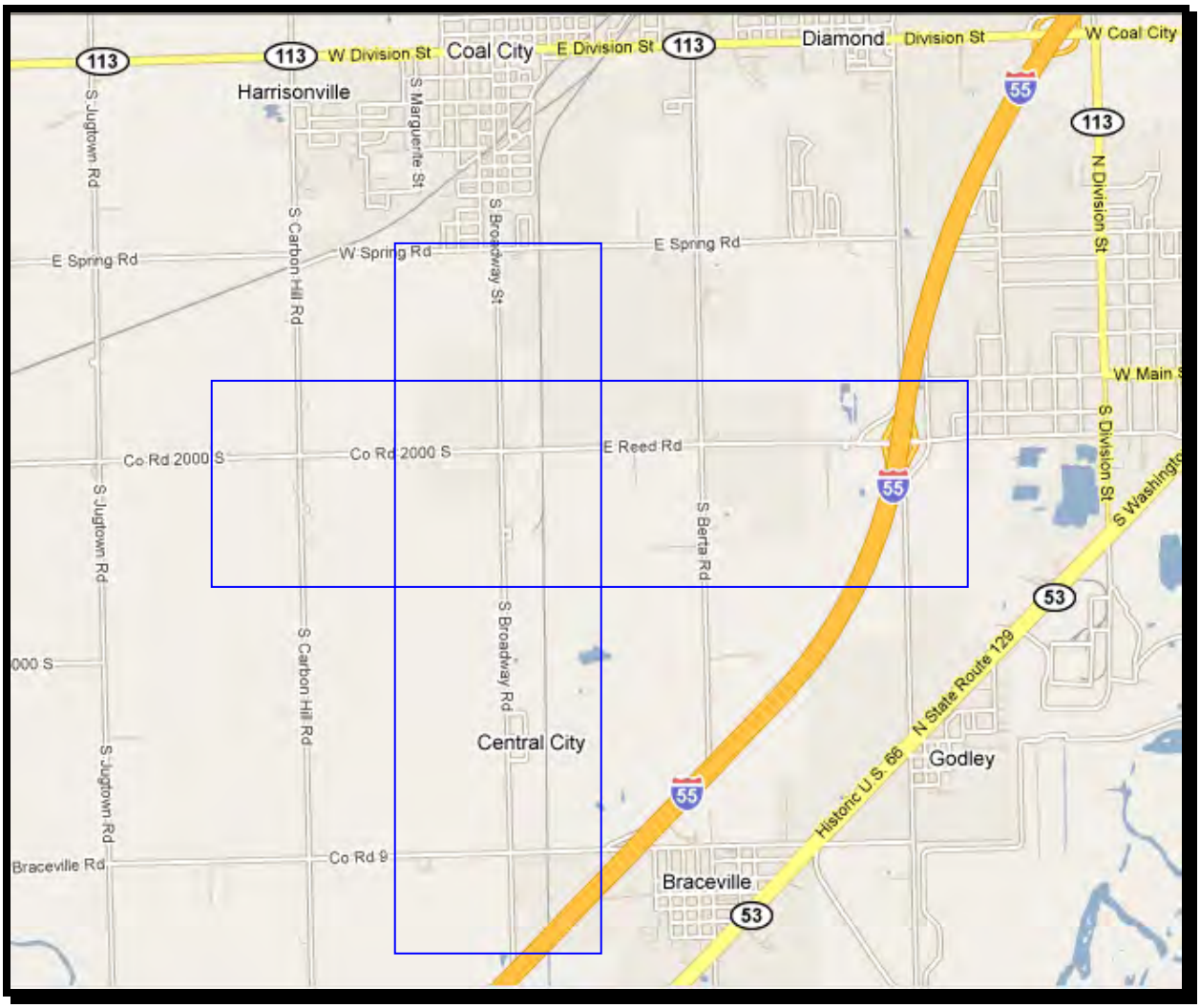


Figure 1
CORRIDOR STUDY LIMITS

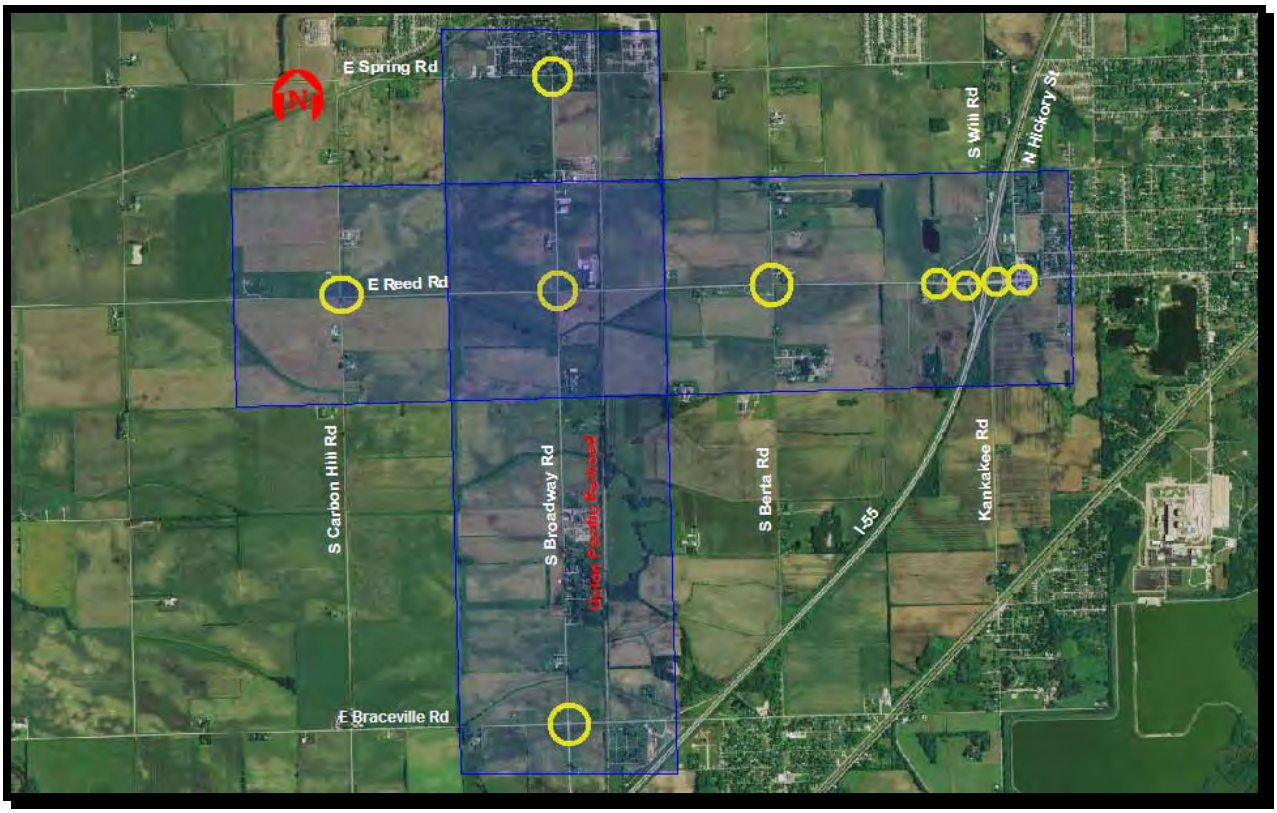


Figure 2
AERIAL VIEW OF CORRIDOR STUDY AREA

Existing Traffic Volumes

Traffic volume, speed and vehicle classification data was collected by KLOA, Inc. in September and October 2009 as part of the corridor access study. The data was summarized on a 24-hour basis and for the weekday peak hours.

24-Hour Traffic Volumes

Automated traffic volume, speed and vehicle classification data was collected over a 72-hour period from Tuesday, September 29th to Friday, October 2nd, 2009 at the following locations:

- Broadway Road between Spring Road and Reed Road
- Broadway Road between Reed Road and Braceville Road
- Reed Road between Berta Road and Will Road
- Reed Road between Broadway Road and Carbon Hill Road

The results of the traffic counts indicated that Broadway Road presently carries approximately 1,865-2,880 vehicles per day (vpd) and Reed Road presently carries approximately 820-2,540 vpd through the study area, as shown in Table 1. Approximately 1.1 to 1.4 percent of the daily traffic on Broadway Road and 1.2 to 2.6 percent of the daily traffic on Reed Road is generated by single unit and multi-unit trucks. The 85th-percentile travel speed on Broadway Road is 58 mph north of Reed Road and 67 mph south of Reed Rd. The 85th-percentile travel speed on Reed Road is 62 mph east of Broadway Road and 54 mph west of Broadway Road. The 85th-percentile speed is the speed at which 85 percent of the vehicles are traveling at or below.

Table 1
EXISTING DAILY (24-HOUR) TRAFFIC VOLUMES

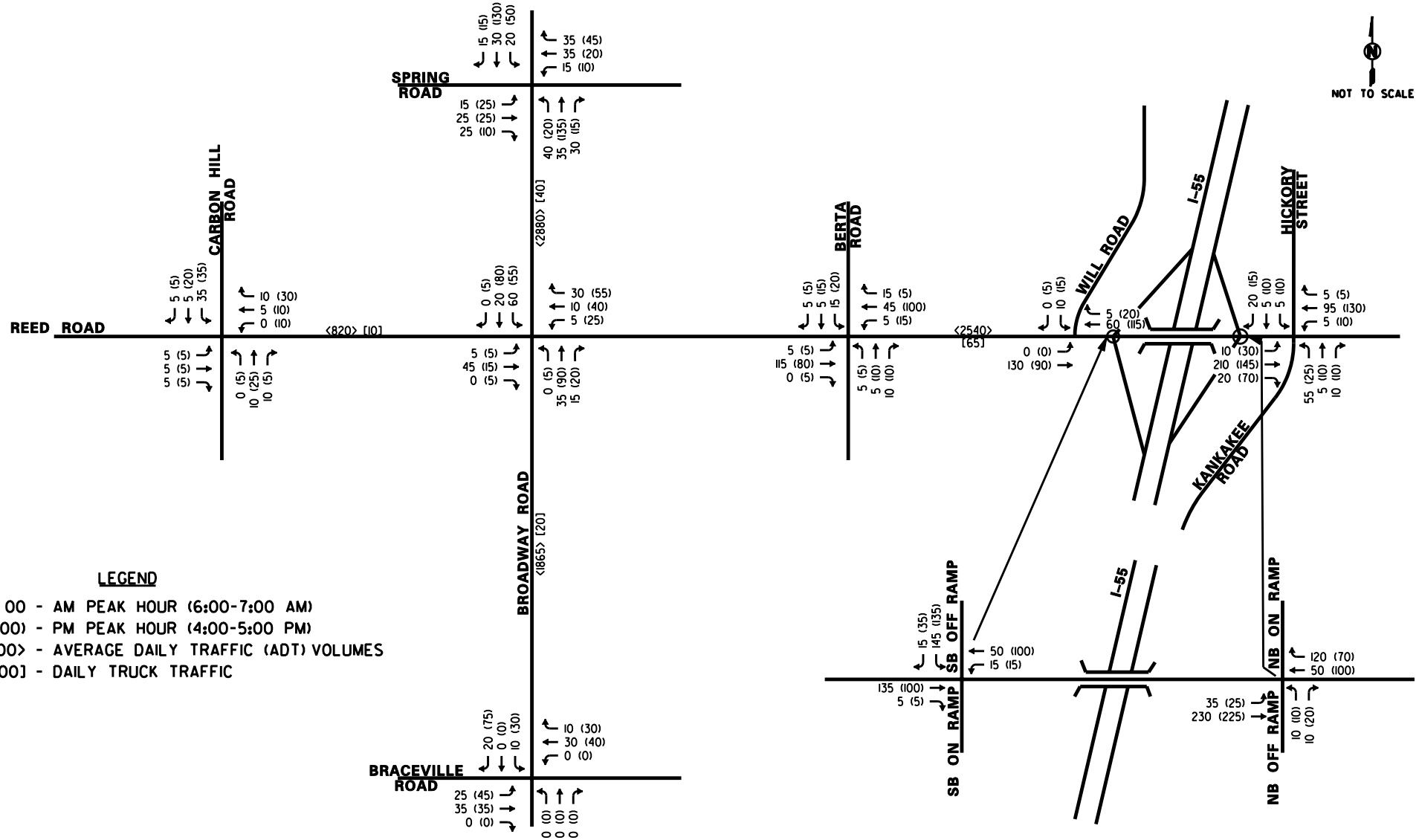
Section	Two-Way Traffic Volume			Percent Trucks (%)
	Passenger Vehicles	Trucks[1]	Total Vehicles	
Broadway Rd (North of Reed Rd)	2,840	40	2,880	1.4
Broadway Rd (South of Reed Rd)	1,845	20	1,865	1.1
Reed Rd (East of Berta Rd)	2,475	65	2,540	2.6
Reed Rd (West of Broadway Rd)	810	10	820	1.2

[1] Consists of single unit and multi-unit trucks (i.e., vehicles over 28 feet)

Peak Hour Intersection Traffic Volumes

Manual intersection turning-movement traffic counts were conducted at the nine study area intersections on Thursday, September 24, 2009 during the weekday morning and afternoon commuter peak periods. From the traffic count data, the peak hours of traffic activity were determined to be 6:00-7:00 A.M. in the morning and 4:00-5:00 P.M. in the evening.

The existing peak hour traffic volumes and 24-hour volumes are shown in Figure 3. The traffic volume, speed and classification summary sheets are contained in the Appendix.



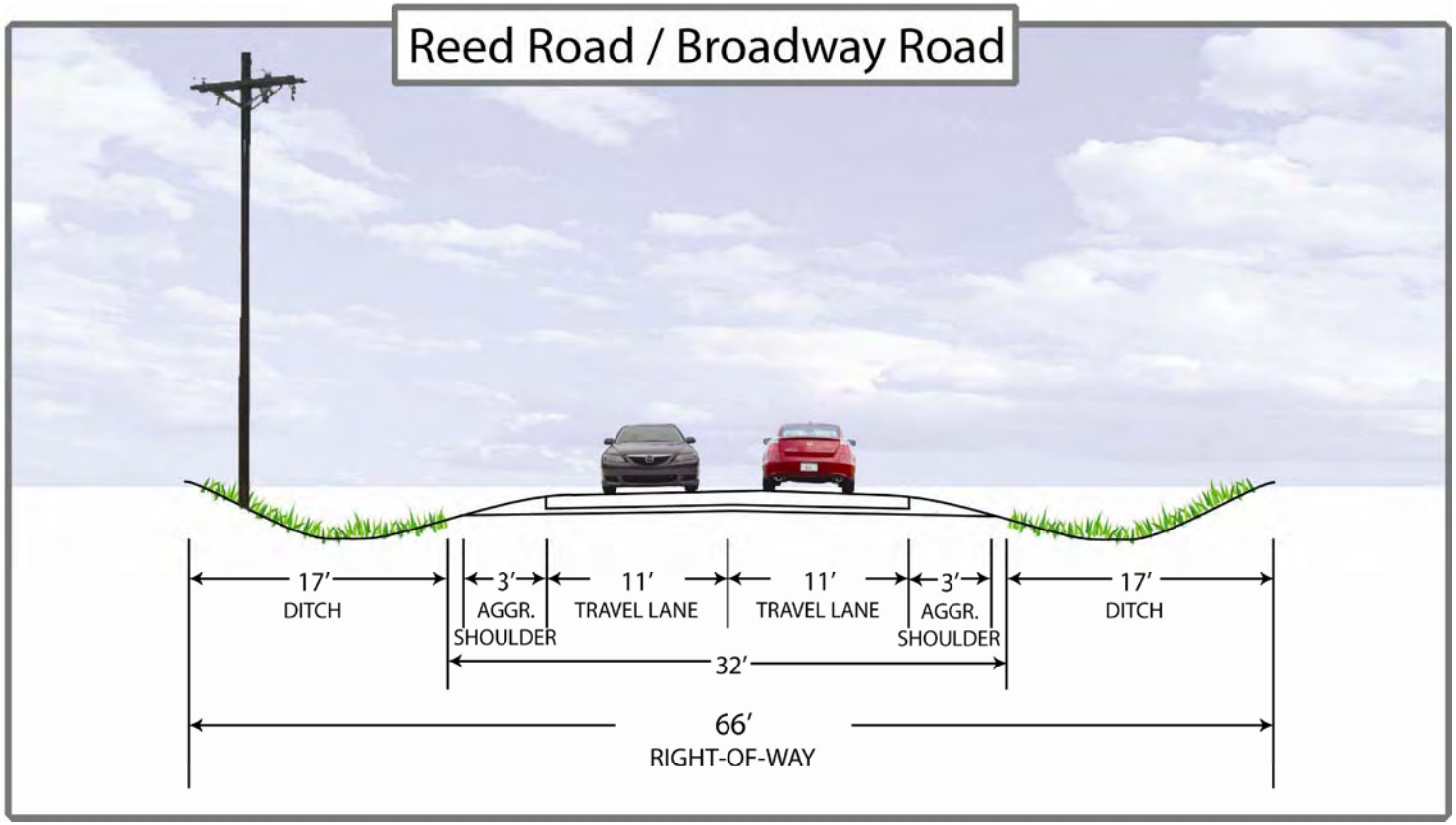
PROJECT:	TITLE:	PROJECT NO: 09-126
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	EXISTING TRAFFIC VOLUMES	KLOA FIGURE NO: 3

Existing Roadway Conditions

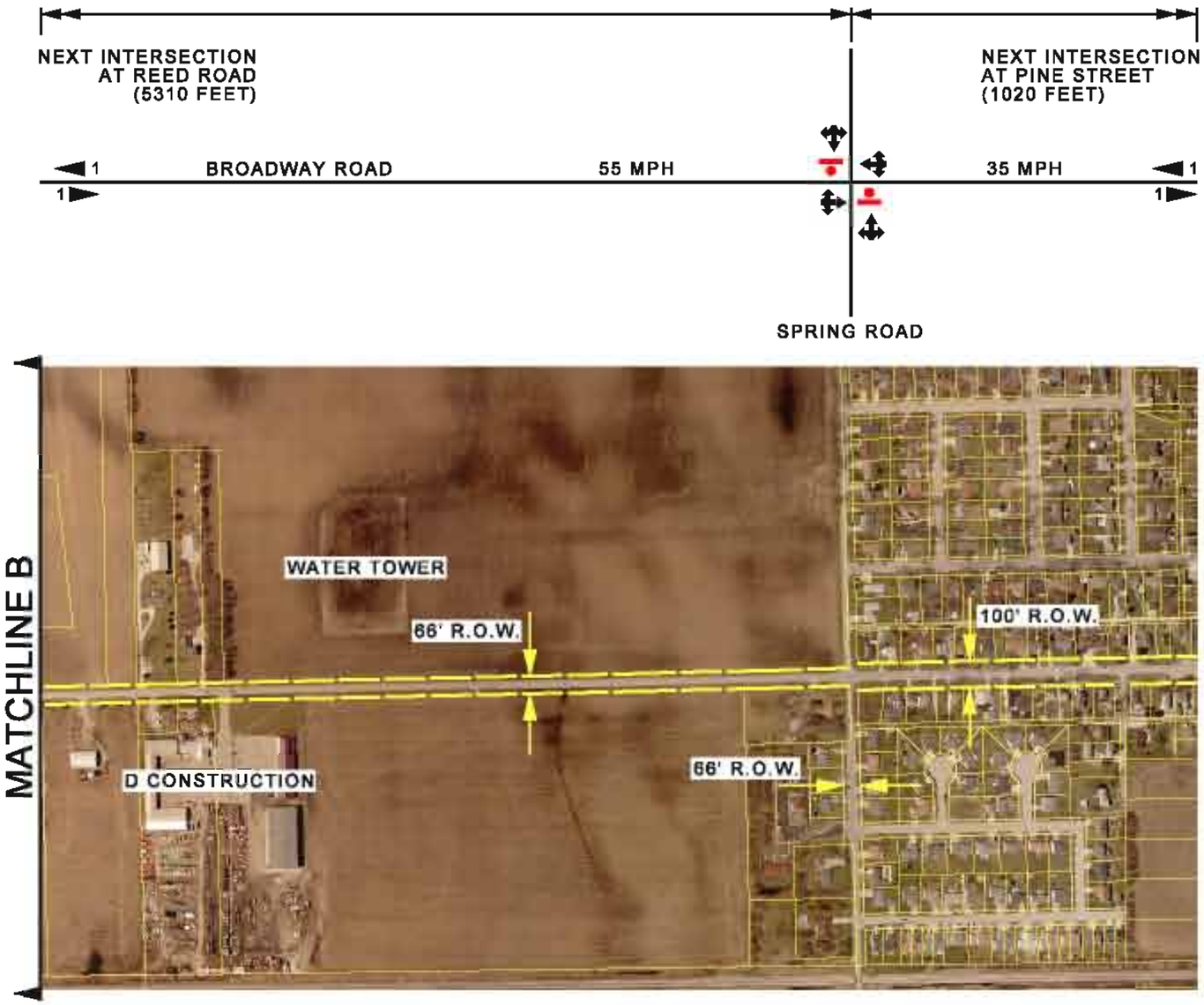
KLOA, Inc. obtained as-built roadway plans of Broadway Road and Reed Road from the Grundy County Highway Department. KLOA then conducted an extensive field review of the corridor and the intersections in the study area to identify the physical and operational aspects of the roadway system. Figure 4 illustrates the existing typical cross sections of Broadway Road and Reed Road. As shown, the public right-of-way is presently 66 feet wide for Broadway Road and Reed Road. The roadways are designed to rural standards with aggregate shoulders and open drainage swales. Figures 5 through 7 illustrate the existing right-of-way, lane geometrics, traffic controls, intersection spacing, and posted speed limits along Broadway Road. Figures 8 through 10 illustrate the same information for Reed Road. The following paragraphs describe Broadway Road and Reed Road, and the key intersections in the corridor.

Broadway Road (County Highway V36) is a two-lane, undivided, north-south roadway that extends from Whitetie Road on the north to Braceville Road on the south, where it continues south as a Village of Braceville street. The roadway is labeled Broadway Street within the Village of Coal City. The section of Broadway Road under study (Spring Street to Braceville Road) is under the jurisdiction of the Grundy County Highway Department (GCHD) and has a rural cross section. Broadway Road is functionally classified as a major collector road by the GCHD and Village of Coal City. Broadway Road is also classified in the Grundy County Highway Access Regulation Ordinance (GCHARO) as an Access 3 roadway when defining intersection spacing and traffic control standards. Broadway Road is designated as a Class III truck route by the Village of Coal City between IL Route 113 and Spring Road and by the GCHD between Spring Road and Braceville Road. The only posted speed limit on Broadway within the study area is a 35 mph posted speed on northbound Broadway Road, just south of Spring Street. The remaining sections of Broadway Road were observed to operate at the Illinois statutory maximum speed limit of 55 mph. Parking is prohibited on Broadway Road within the study area.

Reed Road (County Highway C37) is a two-lane, undivided, east-west roadway that extends from IL Route 47 on the west to I-55 on the east, where it continues east as Kennedy Road to Washington Street (IL Route 129). The section of Reed Road under study (I-55 to Carbon Hill Road) is under the jurisdiction of the Grundy County Highway Department (GCHD) from I-55 to Broadway Road and the Village of Coal City from Broadway Road to Carbon Hill Road. Reed Road has a rural cross section and is functionally classified as a major collector road by the GCHD and an arterial roadway by the Village of Coal City. Reed Road is also classified in the GCHARO as an Access 3 roadway. Reed Road is designated by the GCHD as a Class III truck route from I-55 to Broadway Road. Reed Road has a full diamond interchange with I-55. The intersection of Reed Road with Broadway Road is under stop control on Broadway Road. The only posted speed limit on Reed Road within the study area is a 30 mph posted speed on eastbound Reed Road approaching the I-55 interchange. The remaining sections of Reed Road were observed to operate at the statutory maximum speed limit of 55 mph. Parking is prohibited on Reed Road within the study area.



PROJECT:	TITLE:	PROJECT NO:
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	EXISTING TYPICAL CROSS SECTION	09-126 KLOA FIGURE NO: 4



LEGEND

INTERSECTION GEOMETRICS

RIGHT-OF-WAY LINE

PROPERTY LINE

NUMBER OF LANES

STOP SIGN

N

KLOA
9575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-0990 F: (847) 518-0987
PROJECT # 09-128

DESIGNED	-	GJG
DRAWN	-	GJG
CHECKED	-	ER
DATE	-	1/19/2011

SCALE: 1" = 500'

0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

EXISTING CONDITIONS

BROADWAY ROAD: REED ROAD TO SPRING ROAD

FIGURE NO.

5

LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- N

KLOA
8575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987
PROJECT # 09-126

DESIGNED	GJC
DRAWN	GJC
CHECKED	ER
DATE	1/19/2011

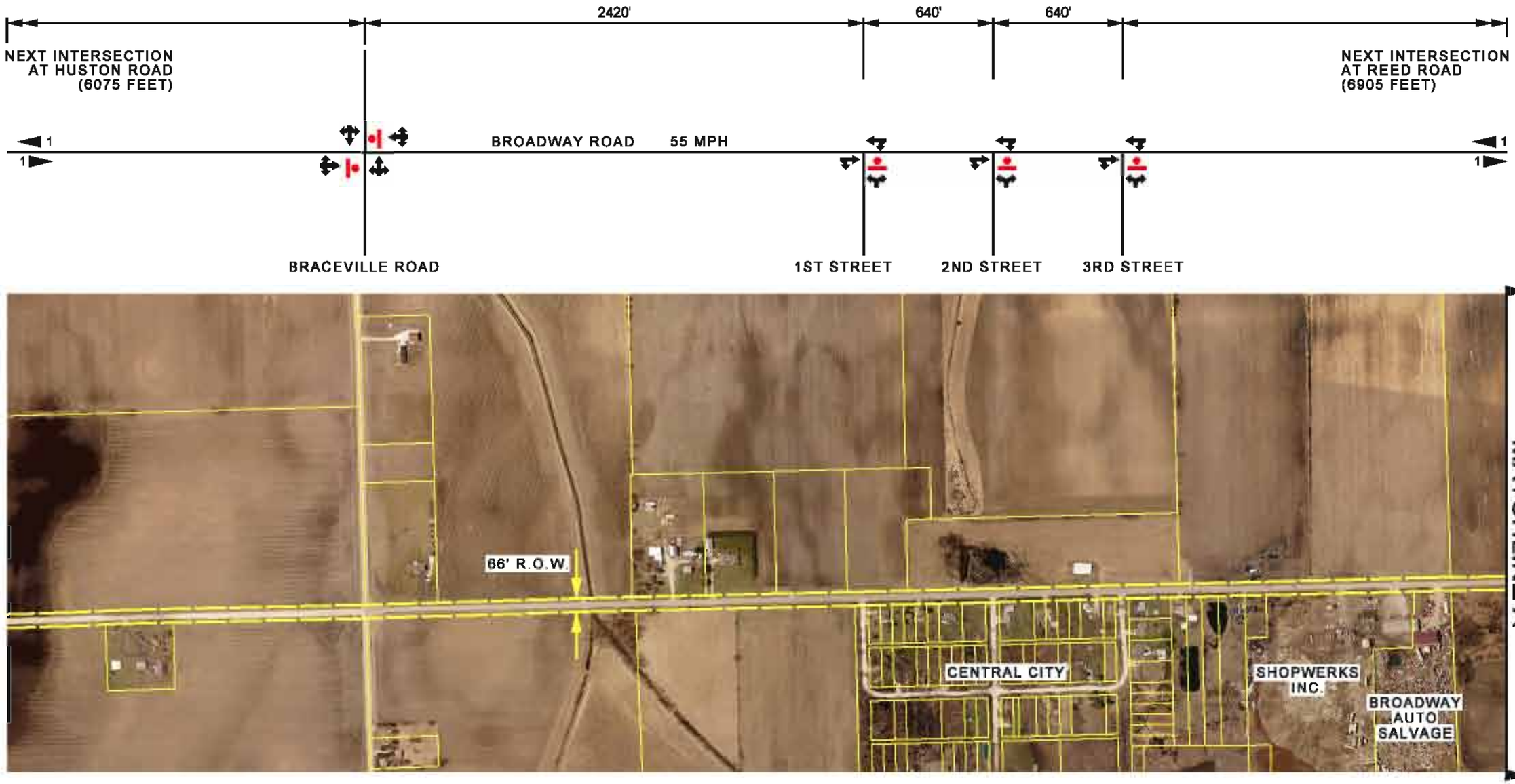
SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

EXISTING CONDITIONS

BROADWAY ROAD: 3RD STREET TO REED ROAD

FIGURE NO. 6



LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- N

KLOA
8575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987
PROJECT # 09-126

DESIGNED	-	GJC
DRAWN	-	GJC
CHECKED	-	ER
DATE	-	1/19/2011

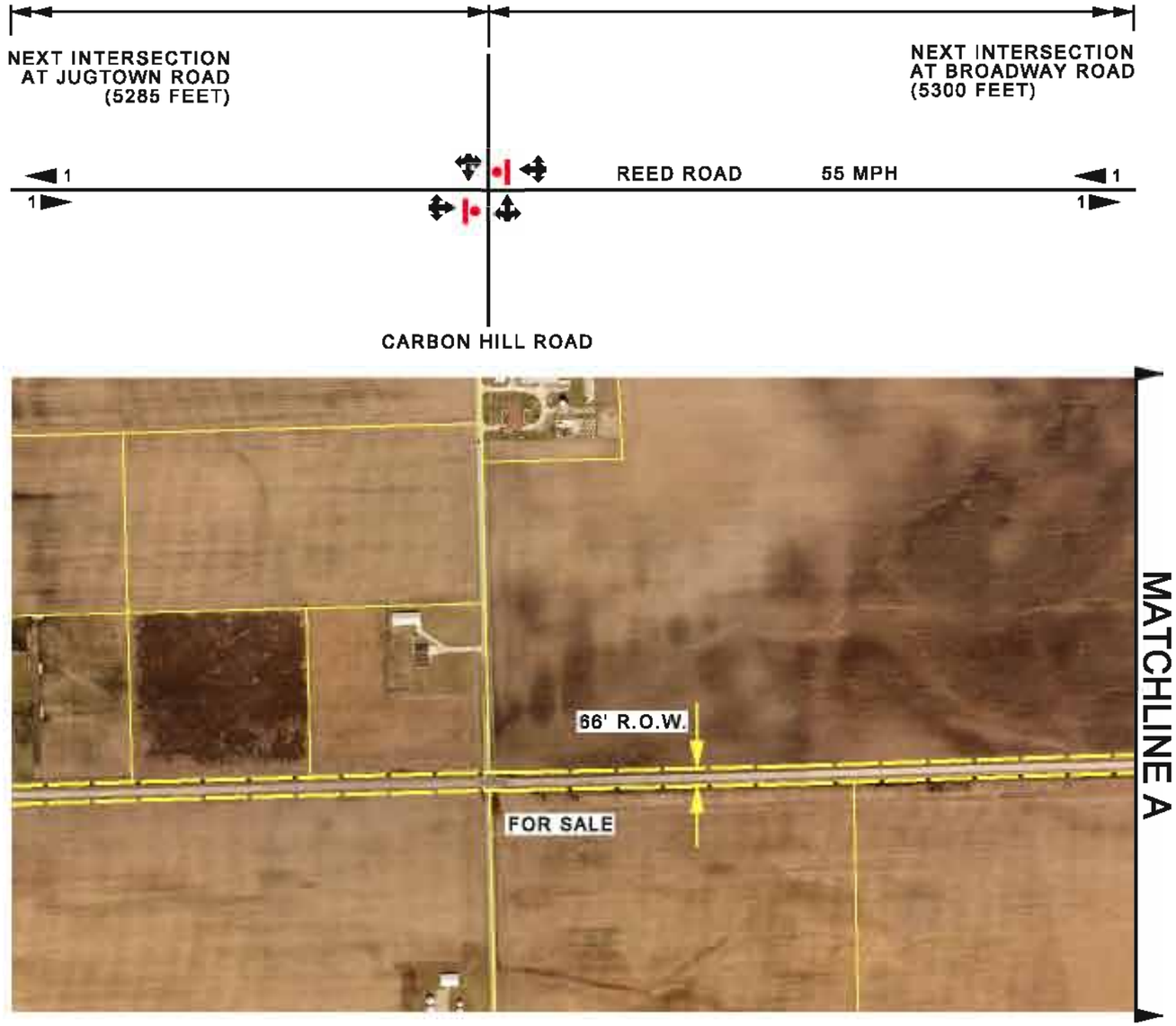
SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

EXISTING CONDITIONS

BROADWAY ROAD: BRACEVILLE ROAD TO 3RD STREET

FIGURE NO. 7



LEGEND

INTERSECTION GEOMETRICS

NUMBER OF LANES

STOP SIGN

RIGHT-OF-WAY LINE

PROPERTY LINE

N

KLOA
9575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-0990 F: (847) 518-0987
PROJECT # 09-128

DESIGNED	-	GJC
DRAWN	-	GJC
CHECKED	-	ER
DATE	-	1/19/2011

SCALE: 1" = 500'

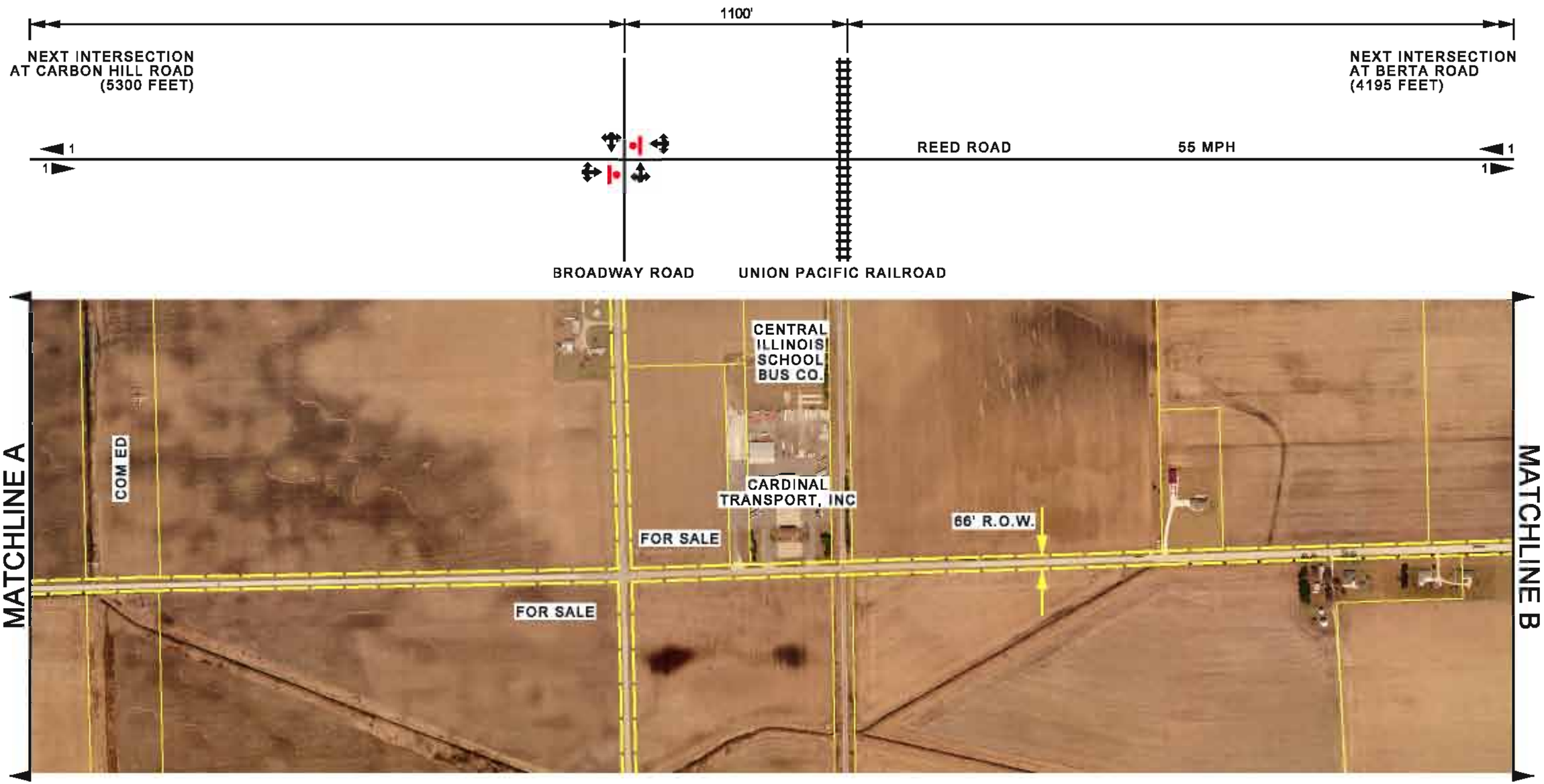
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

EXISTING CONDITIONS

REED ROAD: CARBON HILL ROAD TO BROADWAY ROAD

FIGURE NO. 8



LEGEND

INTERSECTION GEOMETRICS

NUMBER OF LANES

STOP SIGN

RIGHT-OF-WAY LINE

PROPERTY LINE

N

KLOA
8575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987
PROJECT # 08-126

DESIGNED	-	GJC
DRAWN	-	GJC
CHECKED	-	ER
DATE	-	1/19/2011

SCALE: 1" = 500'

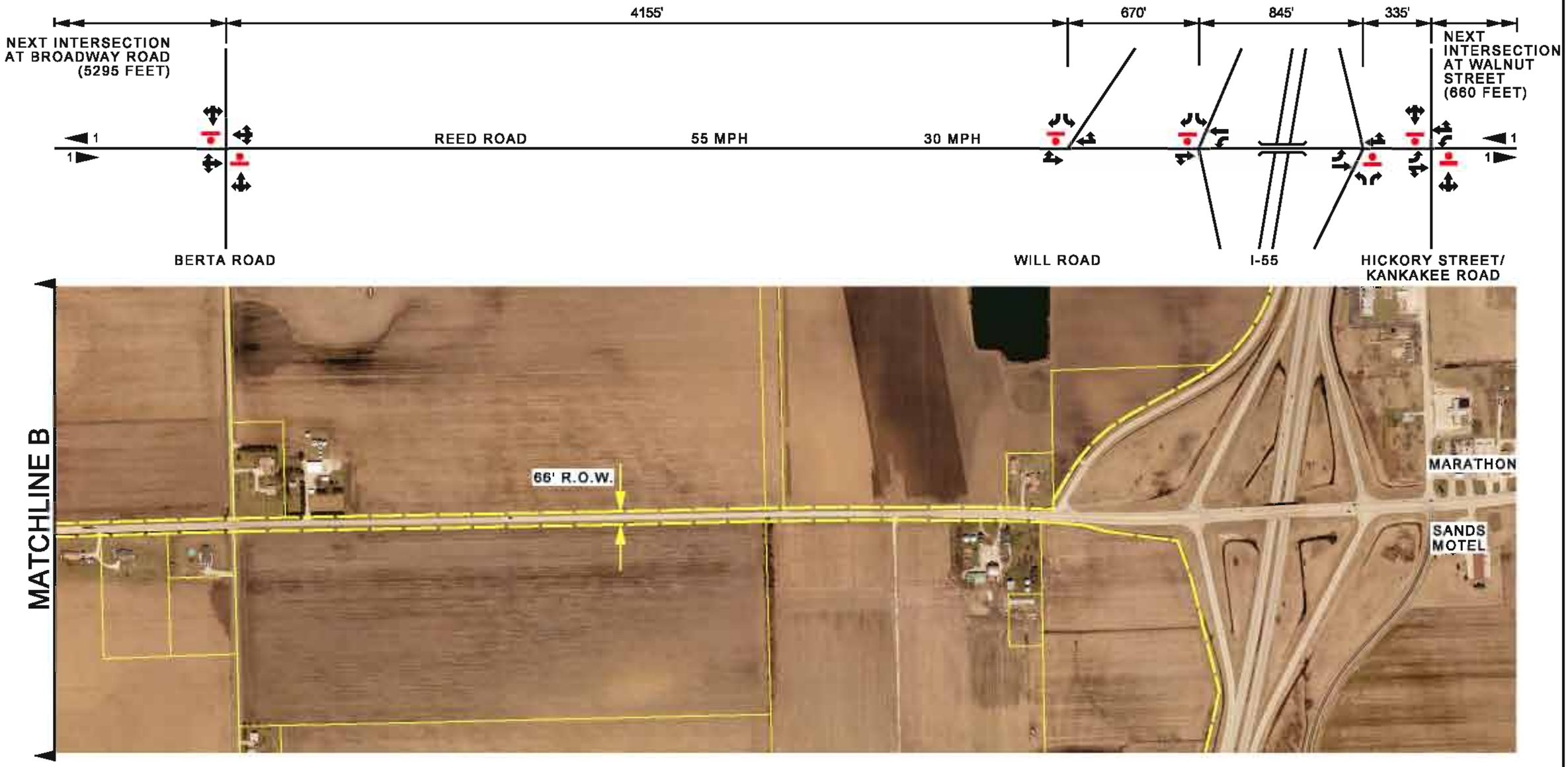
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

EXISTING CONDITIONS

REED ROAD: BROADWAY ROAD TO BERTA ROAD

FIGURE NO. 9



LEGEND

INTERSECTION GEOMETRICS

RIGHT-OF-WAY LINE

PROPERTY LINE

NUMBER OF LANES

STOP SIGN

N

KLOA
8575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987
PROJECT # 08-126

DESIGNED	-	GJC
DRAWN	-	GJC
CHECKED	-	ER
DATE	-	1/19/2011

SCALE: 1" = 500'

0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

EXISTING CONDITIONS

REED ROAD: BERTA ROAD TO HICKORY STREET

FIGURE NO. 10

Spring Road is a two-lane, undivided, east-west roadway that extends from Will Road on the east to Hadden Road on the west. Spring Road is under the jurisdiction of the Village of Coal City to the west of the Union Pacific Railroad and Braceville Township to the east of the railroad. Spring Road has an urban cross section (i.e., curb and gutter) to the east of Broadway Road, a rural cross section at Broadway Road, and a hybrid cross section west of Broadway Road with curb and gutter on the north side of the roadway and shoulder and ditch on the south side. The Village of Coal City classifies Spring Road as a minor collector road and the posted speed limit on Spring Road is 25 mph. The intersection of Spring Road with Broadway Road is under stop control on Spring Road. Parking is permitted on both sides of the roadway.

Braceville Road (County Highway C41) is a two-lane, undivided, east-west roadway that extends from Old Mazon Road on the west to Broadway Road on the east where it continues east as Division Street to Illinois Route 129. At the south limits of the study area, Braceville Road has a rural cross section and is under the jurisdiction of the Grundy County Highway Department (GCHD) from Broadway Road east to IL Route 129 and west of Broadway Road. The County Highway section of Braceville Road is functionally classified by the GCHD as a major collector road and an Access 3 roadway. The Village of Coal City classifies Braceville Road as an arterial roadway. The Braceville Comprehensive Plan indicates a potential future interchange on I-55 at Braceville Road. The intersection of Braceville Road with Broadway Road is under stop control on Broadway Road. The only posted speed limit on Braceville Road within the study area is a 35 mph posted speed near the I-55 overpass. Parking is not permitted on Braceville Road.

Carbon Hill Road (County Highway V34) is a two-lane, undivided, north-south roadway that extends from McArdle Road in Carbon Hill on the north to IL Route 53 in Gardner on the south. Carbon Hill Road has a rural cross section and is under the jurisdiction of Braceville Township north of Reed Road and the Village of Coal City south of Reed Road. Carbon Hill Road is a County Highway south of Braceville Road. The Village of Coal City classifies Carbon Hill Road as a minor collector road. The intersection of Carbon Hill Road with Reed Road is under stop control on Reed Road. The posted speed limit on Carbon Hill Road is 30 mph and parking is not permitted on the roadway.

Berta Road is a two-lane, undivided, north-south roadway that extends from IL Route 113 in Diamond on the north to Division Street in Braceville on the south. Berta Road has a rural cross section and is under the jurisdiction of Braceville Township south of the Diamond village limits. The Village of Coal City classifies Berta Road as a minor collector road. The only posted speed limits on Berta Road are north of Reed Road where the speed limit varies from 30 to 35 mph. The intersection of Berta Road with Reed Road is under stop control on Berta Road. Parking is not permitted on Berta Road near Reed Road.

Will Road is a two-lane, undivided, north-south roadway that extends along the Will County-Grundy County line from Valerio Road in Diamond on the north to Reed Road on the south. Will Road has a rural cross section and is under the jurisdiction of Braceville Township south of the Diamond village limits. The Village of Coal City classifies Will Road as a minor collector road and the posted speed limit on Will Road is 35 mph. The intersection of Will Road with Reed Road is under stop control on Will Road. Parking is not permitted on Will Road.

Interstate 55 (I-55) is a limited access regional expressway that extends from U.S. Route 41 (Lake Shore Drive) in Chicago on the north to I-10 in New Orleans on the south. Within Illinois, I-55 is under the jurisdiction of the Illinois Department of Transportation (IDOT). In the vicinity of the study area there are full interchanges on I-55 at IL Route 113 (Division Street) and Reed Road. The exit ramps at Reed Road are under stop control on the ramps. The posted speed limit on this section of I-55 is 65 mph.

Hickory Street is a two-lane, undivided, north-south local roadway that extends from Cermak Road on the north to Kennedy Road (Reed Road) on the south. Hickory Street has a rural cross section and is under the jurisdiction of the City of Braidwood. The posted speed limit on Hickory Street is 35 mph. The intersection of Hickory Street with Kennedy Road is under stop control on Hickory Street.

Kankakee Road is a two-lane, undivided, north-south local roadway that extends along the Will County-Grundy County line from Kennedy Road (opposite Hickory Street) on the north to IL Route 17 on the south. Kankakee Road has a rural cross section and is under the jurisdiction of Reed Township, Will County in the vicinity of Kennedy Road. Parking is not permitted on Kankakee Road. The intersection of Kankakee Road with Reed Road is under stop control on Kankakee Road.

Reed Road Railroad Grade Crossing

The Union Pacific Railroad (UPRR) extends through the Village of Coal City, carrying freight between Chicago and St. Louis and destinations further south. South of Spring Road the UPRR owns a single track spur line that runs in a north-south direction parallel to Broadway Road and crosses Reed Road at-grade approximately 1,080 feet east of Broadway Road. The Reed Road grade crossing has a timber crossing surface with advance railroad warning signs, stop lines railroad crossing pavement markings, two mast mounted flashing light poles with bells. There are no gates at this crossing.

The Coal City Comprehensive Plan identifies the Reed Road grade crossing as a candidate location for a grade-separated crossing, in consideration of the arterial classification of the roadway and the significance of this roadway as a major link between IL Route 47 and I-55. However, it appears that this spur line is no longer in active use and has been disconnected from the rail main line to the north of IL Route 113.

Public Transportation

There are presently no fixed-route transit services operating in the vicinity of Coal City, Diamond, Braidwood and Braceville. The only public transportation currently available in the area is dial-a-ride transit service provided by the Grundy County Extended Area Transit (GREAT) system on weekdays between 7:30 A.M. and 4:00 P.M.

Existing Intersection Operations

To evaluate existing traffic operations in the two corridors during the peak weekday time periods, capacity analyses were conducted at all study intersections utilizing Synchro 6.0 computer software, which generally follows the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 2000*. This software allows for the analysis of multiple interconnected traffic signal systems as well as independent signalized or unsignalized intersections.

The ability of an intersection to accommodate traffic flow is expressed in terms of Level of Service, which is assigned a letter grade from A to F based on the average control delay experienced by vehicles passing through the intersection. Control delay is that portion of the total delay attributed to the traffic signal or stop sign control operation, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Level of Service A is the highest grade (best traffic flow and least delay), Level of Service E represents saturated or at-capacity conditions, and Level of Service F is the lowest grade (oversaturated conditions, extensive delays). As indicated in the GCHARO, Level of Service C is the desired peak-hour service level for projected 20-year future traffic conditions.

For signal-controlled intersections, levels of service are calculated for lane groups, intersection approaches, and the intersection as a whole. For all-way stop controlled (AWSC) intersections, levels of service are calculated based on the weighted average of the delay on each of the approaches (the approach delay consists of the weighted average of the delay on each lane of the approach). For two-way stop controlled (TWSC) intersections, levels of service are only calculated for the approaches controlled by a stop sign (not for the intersection as a whole). Level of Service F at TWSC intersections occurs when there are not enough suitable gaps in the flow of traffic on the major (uncontrolled) street to allow minor-street traffic to safely enter the major street flow or cross the major street in a reasonable amount of time.

The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized and unsignalized intersections are shown in Table 2. Table 3 summarizes the results of the capacity analyses for the existing weekday morning and afternoon peak-hour conditions, indicating the level service and delay for the critical minor street movement at all TWSC intersections. The capacity analysis worksheets are contained in the Appendix.

The results indicate that all study area intersections along the Broadway Road and Reed Road corridors presently operate at very good levels of service under existing traffic controls.

Table 2
LEVEL OF SERVICE CRITERIA

Signalized Intersections

Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Very short delay, with extremely favorable progression. Most vehicles arrive during the green phase and do not stop at all.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A, causing higher levels of average delay.	>10-20
C	Light congestion, with individual cycle failures beginning to appear. Number of vehicles stopping is significant at this level.	>20-35
D	Congestion is more noticeable, with longer delays resulting from combinations of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines.	>35-55
E	Limit of acceptable delay. High delays result from poor progression, high cycle lengths, and high V/C ratios.	>55-80
F	Unacceptable delays occurring, with oversaturation.	>80.0

Unsignalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Source: Highway Capacity Manual, 2000.

Table 3
CAPACITY ANALYSIS RESULTS – EXISTING TRAFFIC CONDITIONS

	Weekday AM Peak Hour		Weekday PM Peak Hour	
Intersection	LOS	Delay	LOS	Delay
Broadway Road with				
Spring Road[1]	B	11.9	B	13.4
Reed Road[1]	B	10.9	B	11.3
Braceville Road[1]	A	9.3	A	9.9
Reed Road with				
Hickory Street/Kankakee Road[1]	B	12.2	B	12.1
I-55 Northbound Ramps[1]	B	12.0	B	10.4
I-55 Southbound Ramps[1]	B	11.3	B	10.9
Will Road[1]	A	9.5	A	9.5
Berta Road[1]	A	9.9	B	10.5
Carbon Hill Road[1]	A	9.2	A	9.5

Note: LOS = level of service Delay = seconds/vehicle
[1] Unsignalized TWSC Intersection. LOS and delay representative of average of stop controlled approaches.

4.
Future Land Use and Traffic Conditions

An assessment of future traffic conditions in the Broadway Road and Reed Road corridors is an essential step in determining the ultimate roadway design requirements for the two roadways. The assessment was based on two key components: (1) the type and density of land uses anticipated to develop in the corridors, and (2) the generation, distribution and assignment of the resulting traffic volumes.

Based on a comparison of daily traffic volumes between that collected by KLOA in September/October 2009 and that published by IDOT in 1996, Broadway Road has experience relatively little change in volume over the past 13 years. On the other hand, Reed Road has experienced a steady increase in volume of approximately 3.5 percent per year (45% total) during this time period. This trend may be reflective of the arterial classification of Reed Road, its interchange with I-55, and development growth occurring to the east (i.e., Braidwood) and west (i.e., Morris) of the study area.

As land is developed along Broadway Road and Reed Road over the next 20 years or more, the traffic volumes on these roadways will increase. The aggregation of the traffic generated by these future developments with the existing traffic volumes comprise the projected traffic volumes utilized in this analysis. For the purpose of this study, a planning horizon of 20 years (i.e., Year 2030) was selected to coincide with the anticipated development of the developable land area in the two corridors and for comparison to 2030 regional traffic projections developed by the Chicago Metropolitan Agency for Planning (CMAP). In actuality, full buildout of the developable land in the Broadway Road and Reed Road corridors may not occur for many years beyond 2030.

Future Development and Traffic Generation

Estimates of future development to the 2030 planning horizon were prepared by the Village of Coal City and KLOA, Inc. based on the future land use recommendations contained in comprehensive plans of the Village of Coal City and City of Braidwood. First the number of developable acres by land-use type was estimated for the study area based on an analysis of aerial mapping of the study area, existing land uses, existing rights-of-way, and natural

(undevelopable) features. Then development ratios were determined based on development trends in the Coal City/Braidwood area. The development ratios are in units per acre for residential developments and floor-area-ratios (FAR) for retail, industrial, and office/service developments. Development ratios range from 3-6 units per acres for residential uses and 0.2-0.3 FAR for retail, office/service and industrial uses. Next, development densities were estimated by multiplying the developable acreage by the development ratios.

The future development densities were then utilized to calculate weekday peak-hour traffic volumes that would be generated by these developments using trip generation equations published by the Institute of Transportation Engineers (ITE) in *Trip Generation*, 8th Edition, 2008. Average daily (24-hour) traffic volumes were also calculated by dividing the peak-hour volumes by a 12 percent peak-hour factor.

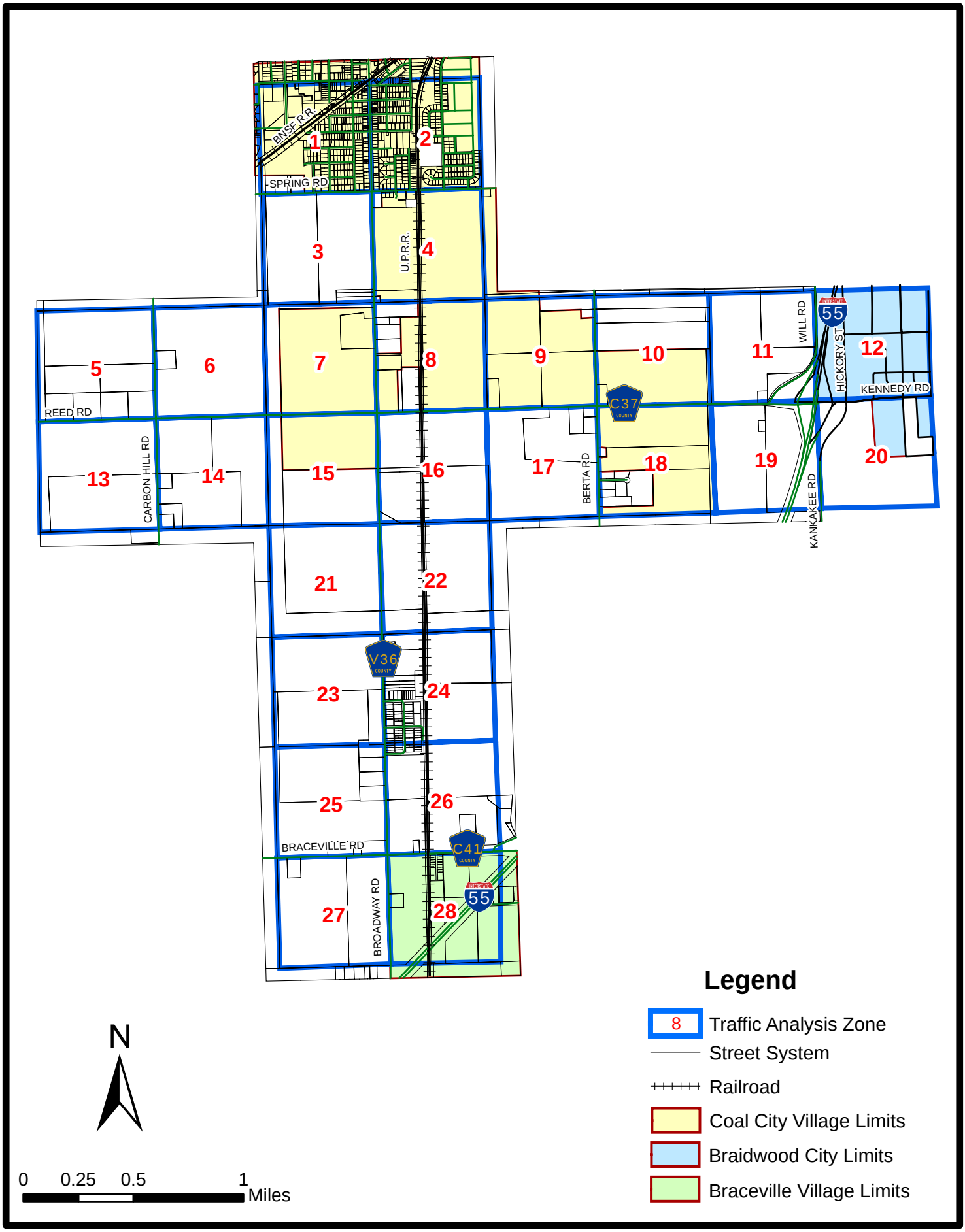
Due to the length of the Broadway Road and Reed Road corridors (3 miles each), the corridors were subdivided into 28 zones for traffic analysis purposes. Each zone has frontage on either Broadway Road or Reed Road, is equivalent in size (½-mile by ½-mile square), and is generally projected to contain parcels of similar land use. Figure 11 illustrates the boundaries of the traffic analysis zones (TAZs). A summary table of the future land-uses, developable acreage and ratios, projected development densities, and traffic generation for each of the TAZ's is in the Appendix.

Figure 12 illustrates where residential growth is anticipated to occur. Some infill development is expected within developed areas on the south side of Coal City, but the vast majority of new residential development will occur to along the west side of Broadway Road (north of Reed Road) and along the north and south sides of Reed Road. Approximately 4,300 dwelling units are projected to be built within the study area in the future.

Figure 13 illustrates where retail growth is anticipated to occur. Retail growth will occur in the form of neighborhood level centers, community level centers, and regional level centers. Regional retail growth will occur along Reed Road on the west side of the I-55 interchange. Neighborhood and community level retail space will tend to follow the residential development patterns and will cluster in the vicinity of the Broadway Road/Reed Road intersection. Approximately 5.8 million square feet of retail space is projected to develop in the future.

Figure 14 illustrates the anticipated industrial growth areas. There are three primary locations in which significant industrial development is expected. The first is along the east side of Broadway Road from Spring Road south to the Central City area. The second is along the south side of Reed Road from the Union Pacific railroad to just west of Carbon Hill Road. The third is at the southeast quadrant of the I-55/Reed Road interchange. In total, approximately 12.3 million square feet of industrial space is projected to develop in the future.

Any significant growth in office/service uses is projected to be concentrated along the east side of Broadway Road just south of Spring Road, as shown in Figure 15. Approximately 220,000 square feet of space devoted to office/service functions is projected to develop in the future.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Braidwood City Limits
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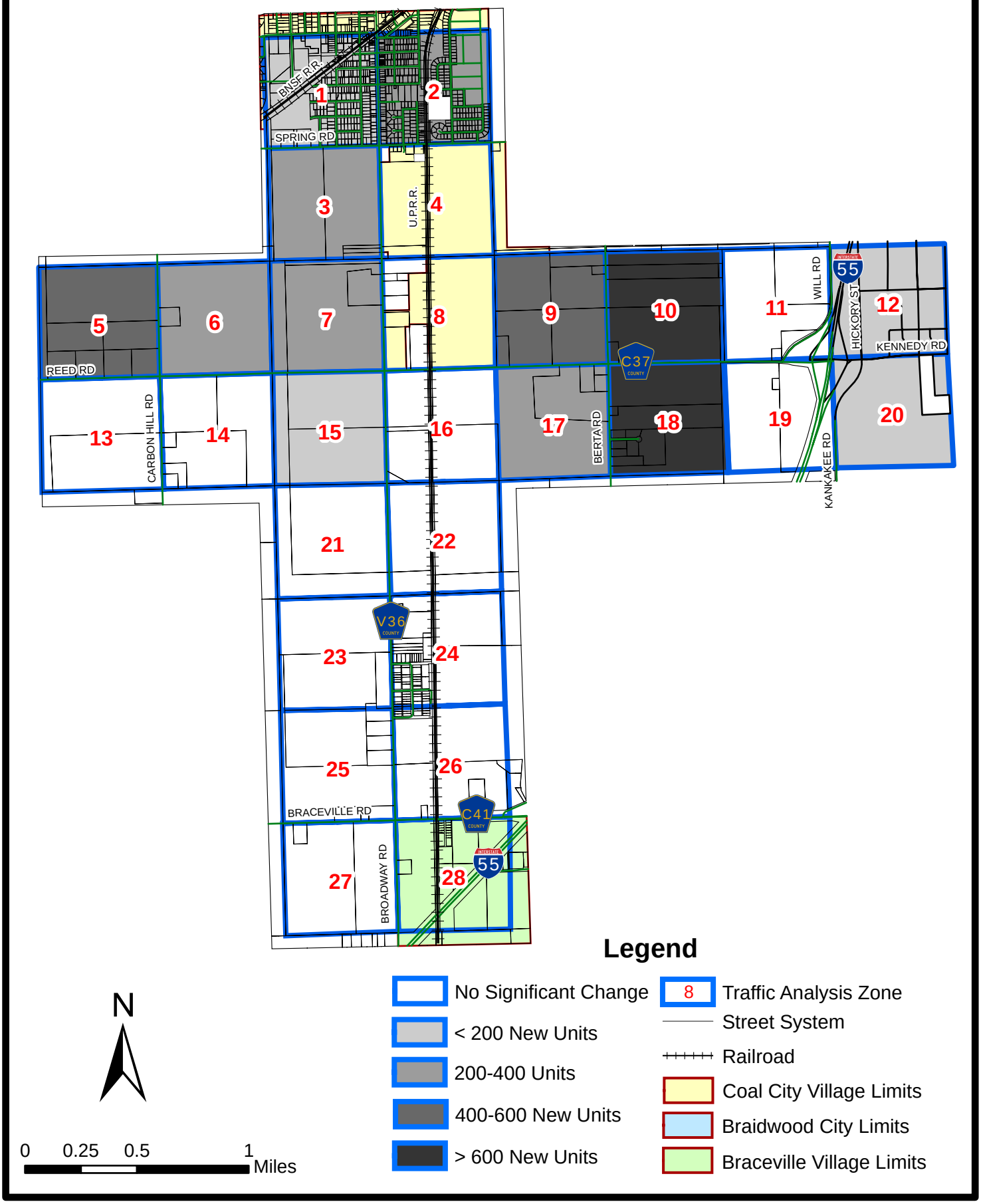
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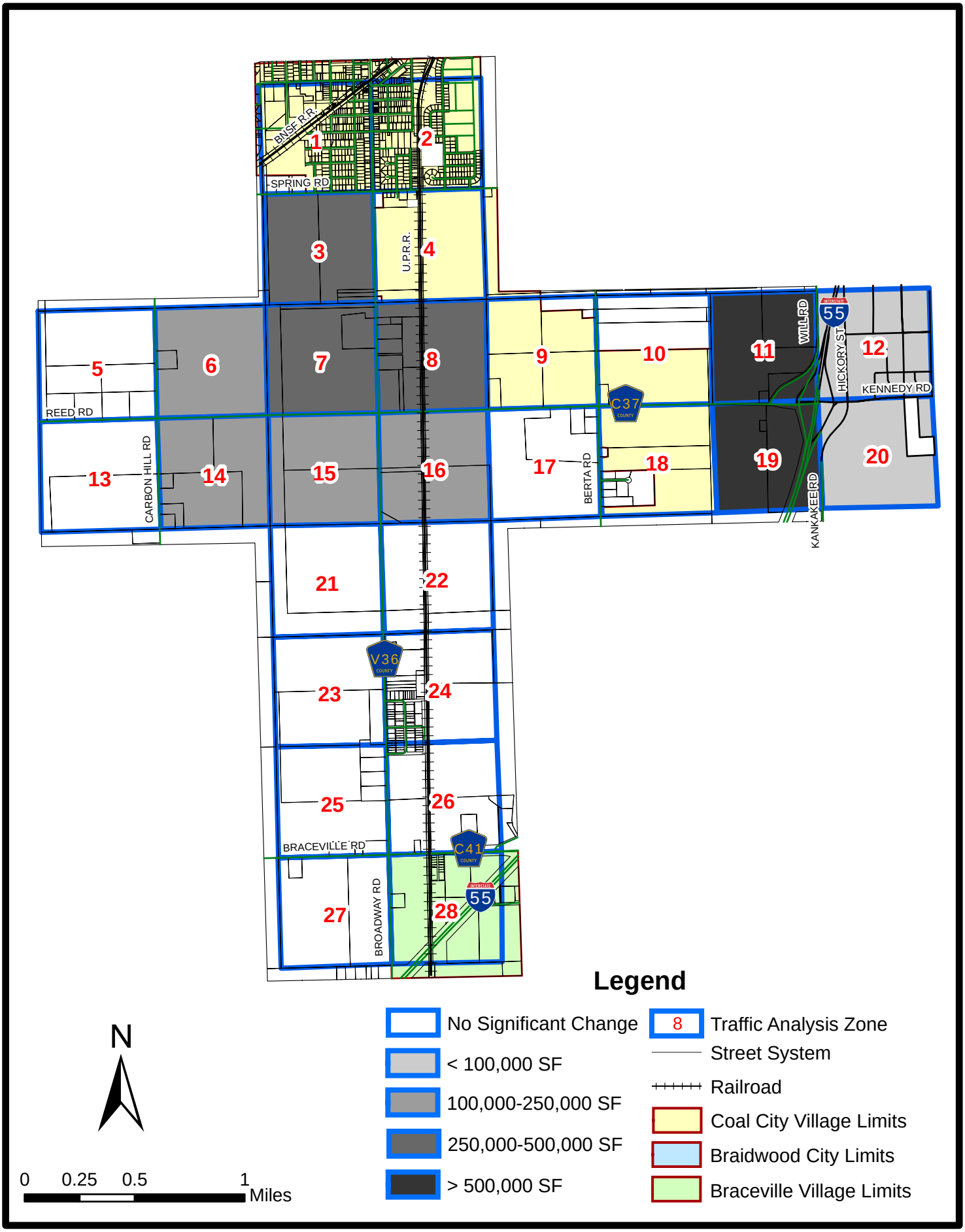
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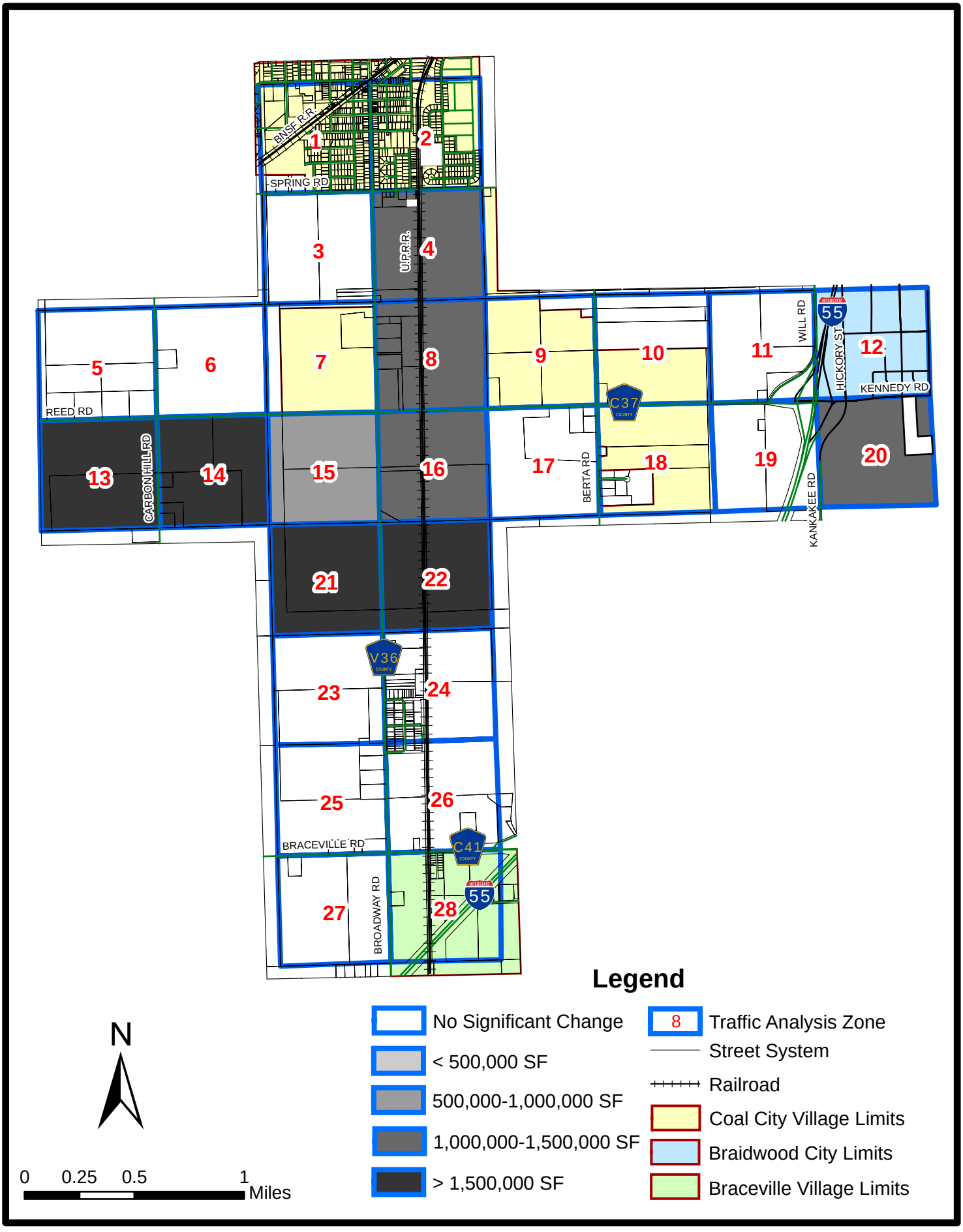
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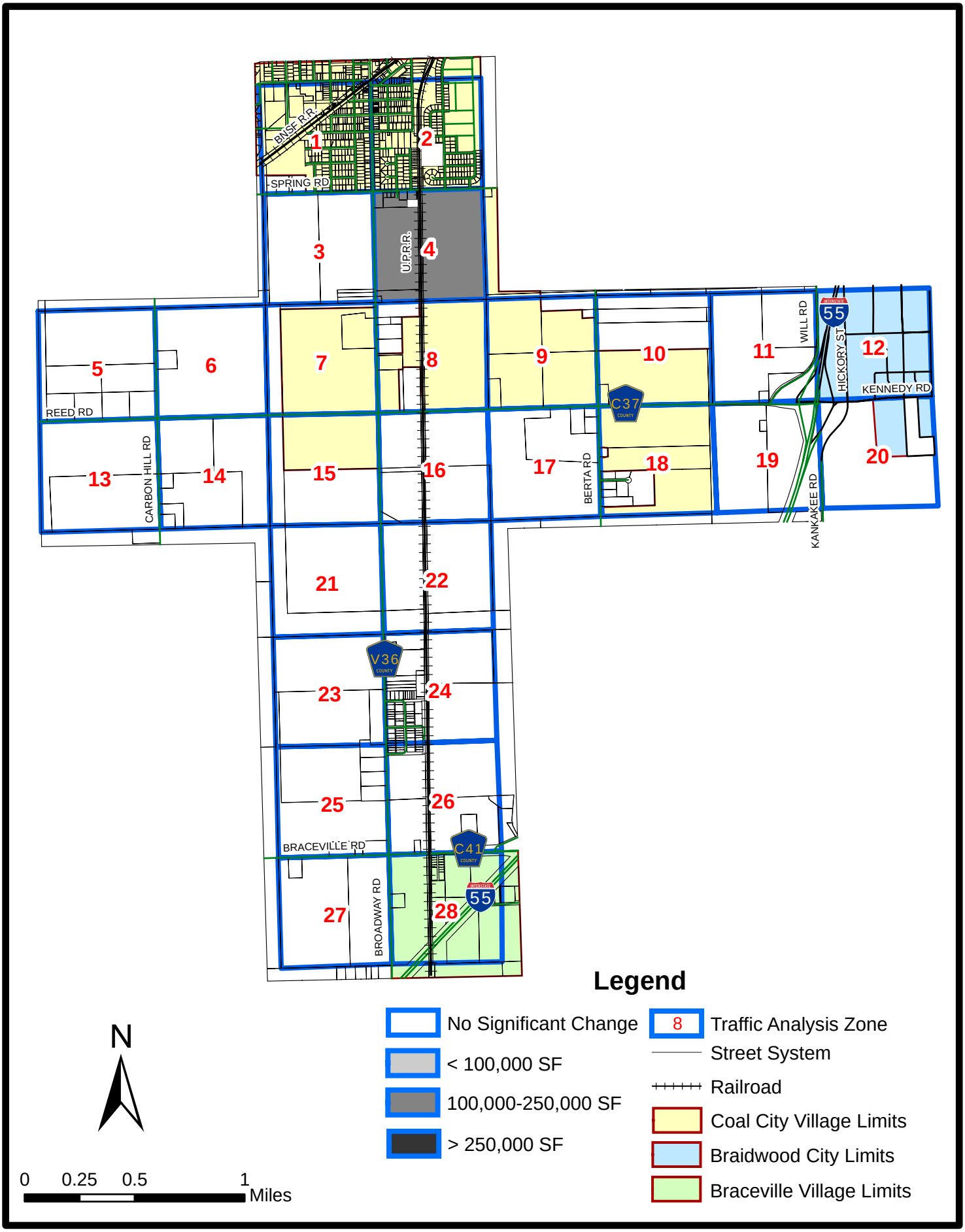
Braidwood City Limits
Braceville Village Limits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Distribution of Future Development Traffic

The distribution of traffic generated by future development within the traffic analysis zones was based on several factors. The first was existing traffic patterns on the roadways in the planning area. The second was home-to-work trip flow data from the 2000 U.S. Census, as tabulated by CMAP for the Census tracts that comprise the planning area (Tracts 8, 8840.01). The third was from an analysis of the distribution of existing and planned households in the study area based on the 2000 Census data and the development projections discussed above.

Based on these factors, the directions from which future development traffic will approach and depart the study area were estimated. The directional distribution will vary by land use. Traffic generated by residential, industrial and office/service developments are more associated with the major travel corridors and regional roadway system. Traffic generated by retail developments will originate from the residential neighborhoods within the developments market area. The market areas for neighborhood and community scale retail centers will be smaller and draw more local traffic whereas the market area for regional scale retail centers will be larger and draw more traffic from I-55. To distinguish between the orientation of traffic from the various land uses, four (4) different directional distributions were developed to forecast future traffic volumes in the Broadway Road and Reed Road corridors, as shown in Table 4.

Assignment of Future Development Traffic

The peak hour traffic generated by future development within the TAZ's was assigned to the roadway system based on the directional distributions shown in Table 4. The traffic assignment process was performed manually based on a modified gravity model methodology that considered all network roadway options and functional classifications.

For future developments with Broadway Road and/or Reed Road frontage, access was assumed from these roadways as well as from the adjacent existing roadways and/or future east-west and north-south connector roads that may be developed in the future to support these developments. Consequently, only a portion of the traffic generated by these developments will travel on Broadway Road and Reed Road. Traffic assignments were made for trips both originating in and destined to the study area and reflect the fact that a portion of the retail development traffic will be generated internal to the study area from existing and future residential subdivisions.

Table 4
DIRECTIONAL DISTRIBUTION OF FUTURE STUDY AREA TRAFFIC

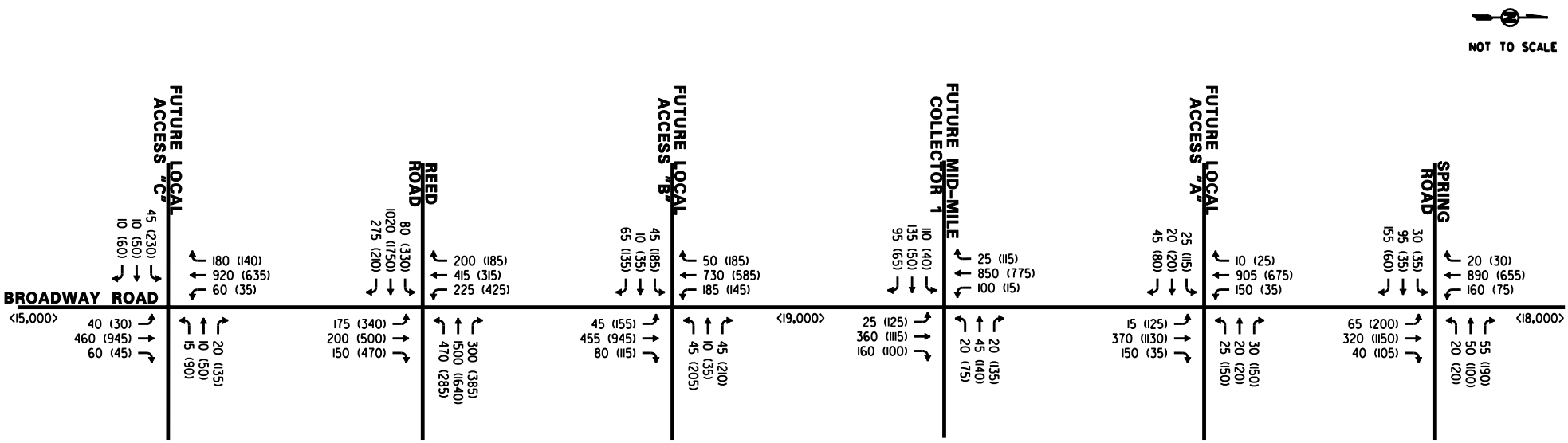
	Percentage of Traffic			
Direction To/From	Residential	Industrial/ Office	Neighborhood/ Community Retail	Regional Retail
North on I-55	50%	20%	*	40%
South on I-55	5%	10%	*	20%
North via Broadway Rd, Berta Rd, Carbon Hill Rd, Will Rd	10%	10%	30%	10%
South via Broadway Rd, Berta Rd, Carbon Hill Rd, Kankakee Rd	5%	15%	15%	5%
East via Kennedy Rd/Reed Rd, Division St, Bracevile Rd	10%	15%	45%	10%
West via Reed Rd, Braceville Rd, Spring Rd, Grand Ridge Rd, IL 113	20%	30%	10%	15%
Total	100%	100%	100%	100%

* - Minimal

Year 2030 Projected Traffic Volumes

The assignment of future development peak hour traffic was combined with the existing peak hour traffic volumes (Figure 3) to obtain the projected 2030 peak hour traffic volumes, which are shown in Figures 16-20 for the various sections of Broadway Road and Reed Road. Projected 2030 daily (24-hour) traffic volumes were also calculated utilizing the peak hour factor and are also shown in Figures 16-20. To plan for the ultimate design of Broadway Road and Reed Road, it was assumed that all planned development would be completed by 2030. The KLOA projections for Broadway Road range from 13,000-19,000 vpd and the projections for Reed Road range from 22,000-61,000 vpd.

To validate the 2030 traffic projections, KLOA requested 2030 average daily traffic (ADT) projections from CMAP, which are based on existing ADT data available from IDOT and from the Spring 2009 CMAP Regional Transportation Plan/Transportation Improvement Program Travel Demand Analysis. The regional travel model utilized in the transportation plan uses CMAP 2030 socioeconomic projections (provided by the local communities) and assumes the implementation of the 2030 Regional Transportation Plan for the Northeastern Illinois area.



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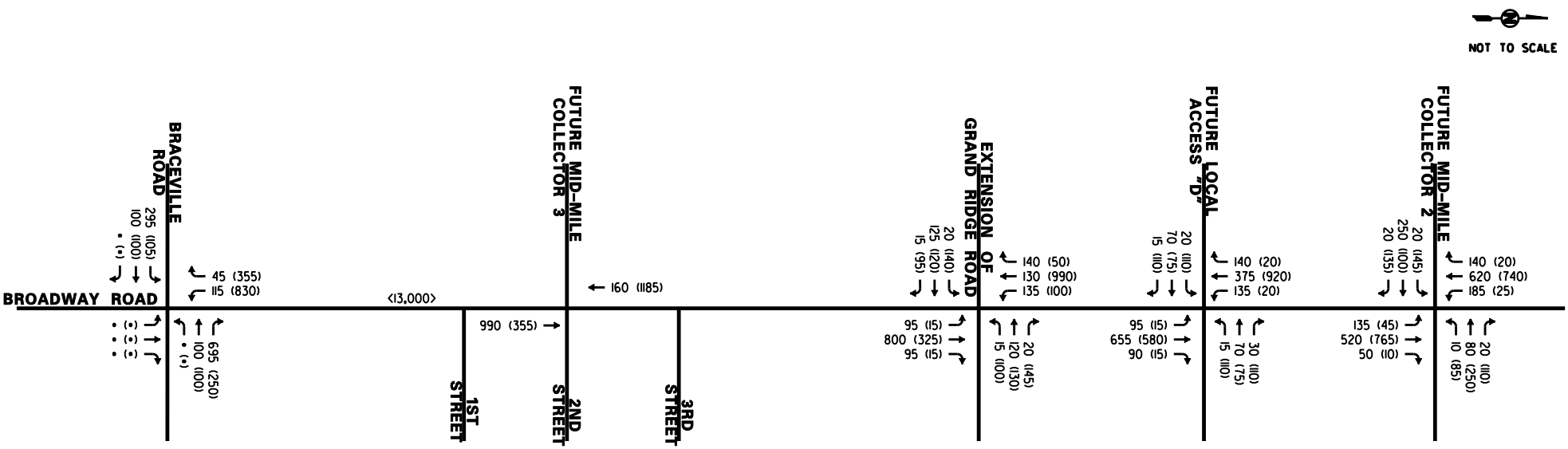
(00) - PM PEAK HOUR (4:00-5:00 PM)
<00> - AVERAGE DAILY TRAFFIC (ADT) VOLUMES

PROJECT:	TITLE:	
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	PROJECTED 2030 TRAFFIC VOLUMES BROADWAY ROAD: SPRING ROAD TO REED ROAD	PROJECT NO: 09-126 KLOA FIGURE NO: 16



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PROJECT:	TITLE:	
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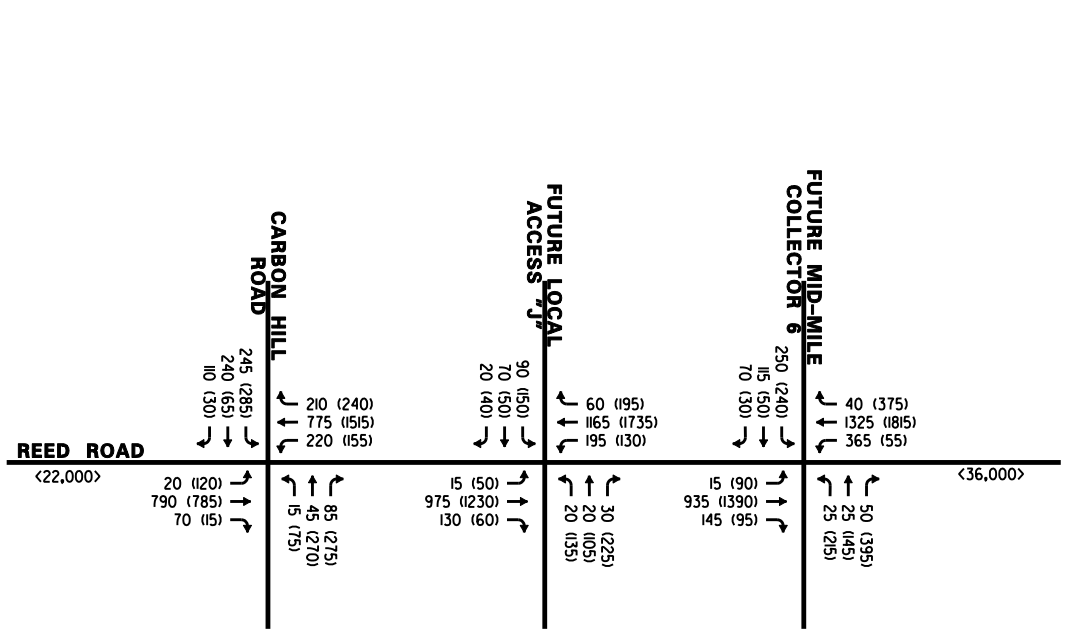

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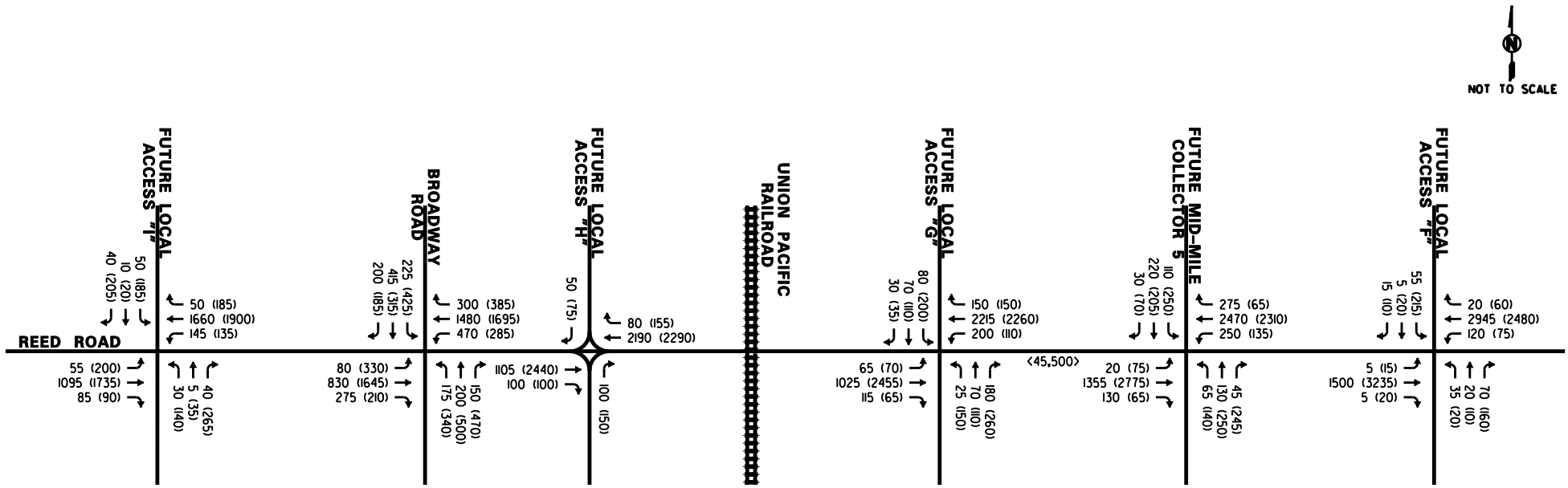
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	PROJECTED 2030 TRAFFIC VOLUMES REED ROAD: CARBON HILL ROAD TO BROADWAY ROAD	PROJECT NO: 09-126 KLOA FIGURE NO: 18



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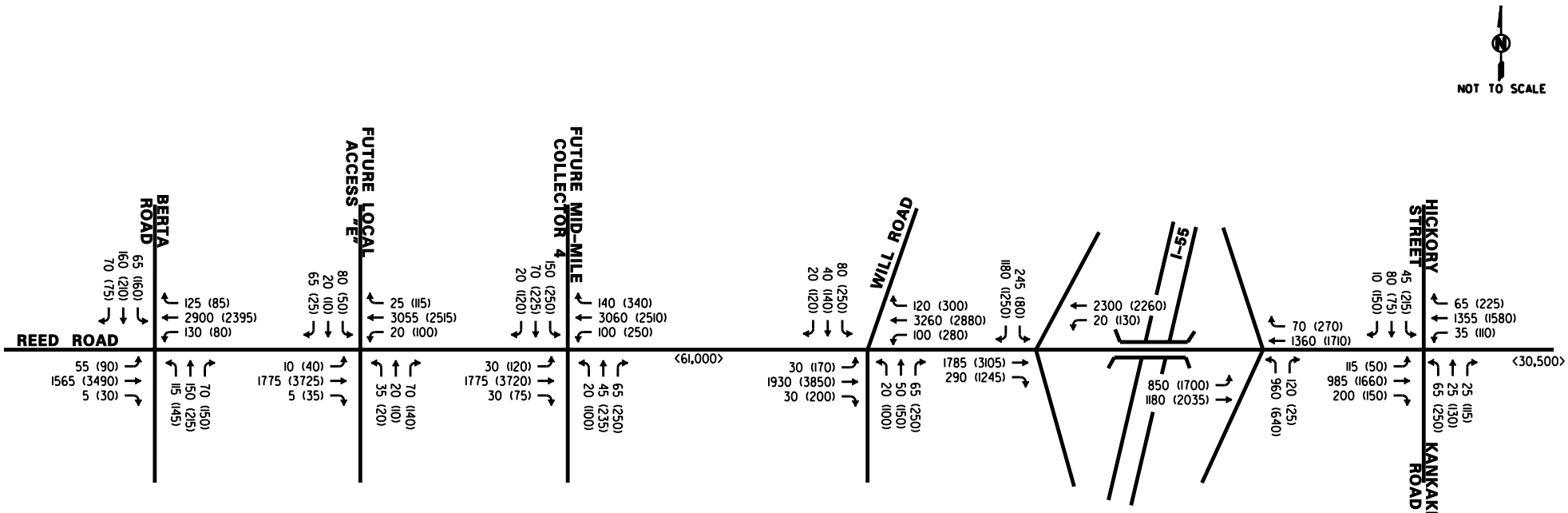
PROJECT:	TITLE:	
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	PROJECTED 2030 TRAFFIC VOLUMES REED ROAD: BROADWAY ROAD TO BERTA ROAD	PROJECT NO: 09-126 KLOA FIGURE NO: 19



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PROJECT:	TITLE:	
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	PROJECTED 2030 TRAFFIC VOLUMES REED ROAD: BERTA ROAD TO HICKORY STREET	PROJECT NO: 09-126 KLOA FIGURE NO: 20

The CMAP traffic projections, which are included in the Appendix, indicate that traffic volumes on Broadway Road will increase from the current volume of 1,865-2,880 vpd (see Table 1) to 3,000-5,000 vpd in 2030, reflecting a 20-year traffic growth of 61-74 percent or a 3.0-3.7 percent annual growth rate. On Reed Road, the CMAP projections indicate that traffic will increase from a current volume of 820-2,540 vpd to 500-6,000 vpd in 2030, reflecting a 20-year traffic growth of 0-136 percent or a 0-6.8 percent annual growth rate.

A comparison between the KLOA traffic projections and CMAP traffic projections indicates that the KLOA projections are substantially higher. This difference is attributed to the KLOA analysis assumption that full buildout of the Broadway Road and Reed Road corridors will occur by 2030. It actuality, full buildout may not occur for several years beyond 2030.

5.
Recommended Roadway Design

This chapter summarizes the recommended design of Broadway Road and Reed Road within the corridor study area. The first step in this process is to understand the function that the roadways provide within the hierarchy of the Grundy County, Village of Coal City and City of Braidwood roadway system. The next step then is to develop a roadway design that sustains that function and operates at the desired levels of service given the volume of traffic it may ultimately carry. Recommendations and/or policies developed in this chapter address the roadway cross section, geometric characteristics (right-of-way requirements, number of lanes, etc.), access control and traffic signal spacing, intersection geometrics and traffic controls, and intersection operations.

Roadway Classification and Function

Broadway Road is currently classified as a major collector road by the GCHD and the Village of Coal City. Reed Road is currently classified as a major collector road by the GCHD and as an arterial roadway by the Village of Coal City. Arterial roadways and major collector roads serve a similar function to promote a high degree of mobility with limited direct land access. They serve as the primary routes through urbanized areas connecting residential, shopping, employment, and recreation activities at the community level via the minor collector and local roadway system.

As such, the recommended Broadway Road and Reed Road cross sections and geometric characteristics were developed to meet the following criteria:

1. To control access to the facility while maintaining sufficient spacing between traffic signals and full-access intersections.

2. To provide sufficient capacity to accommodate the projected 2030 traffic volumes safely and efficiently, particularly regarding turning movements at major intersections.

3. To provide adequate right-of-way to accommodate potential future capacity improvements (additional through lanes or turn lanes) beyond the 20-year planning period.

4. To achieve an urban design standard (i.e., curb and gutter, sidewalks) or a hybrid urban/rural design that can ultimately be converted to a full urban design in the future.

5. To develop an aesthetically-pleasing design that allows for streetscaping/landscaping opportunities within the median and parkways.

6. To minimize "side friction" by prohibiting parking on Broadway Road and Reed Road.

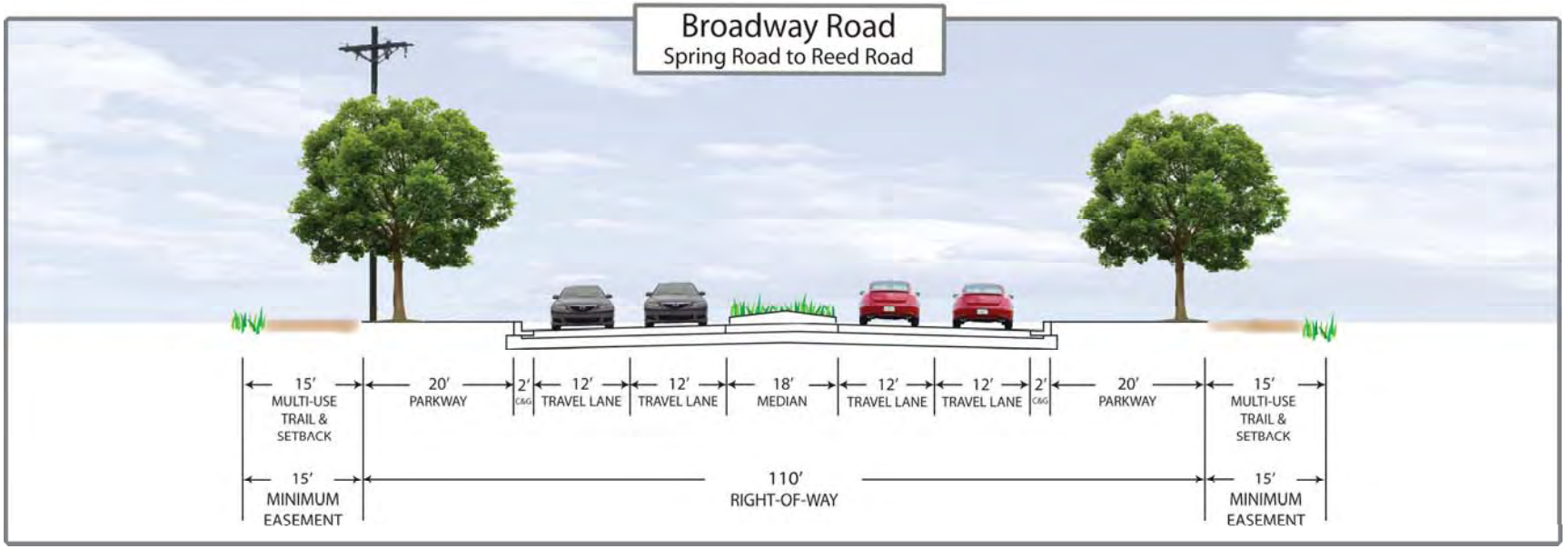
7. To encourage multimodal travel on separated off-street sidewalks and/or multiuse trails, consistent with the Coal City Comprehensive Plan, which indicates an intention for a trail system to be constructed in the future development areas and for the trails to be located off-street along one side of the roadway in lieu of a standard sidewalk.

Cross Section and Geometric Characteristics

Broadway Road: Spring Road to Reed Road

This section of Broadway Road is presently adjoined by agricultural land on both sides of the roadway and a few commercial businesses on the east side. It is anticipated that this land will eventually develop with residential subdivisions and retail space on the west side of the road, and industrial, retail and office/service uses on the west side of the road. An urban cross section is desired for this section of Broadway Road, consistent with the current design of Broadway Street to the north of Spring Road. The road capacity necessary to accommodate the projected traffic volumes will require a right-of-way of 110 feet. Assuming the centerline of the roadway will not change, the expansion of the existing 66-foot right-of-way will require the acquisition or dedication of 22 feet of right-of-way from both sides of the roadway. The right-of-way would expand to 120 feet on the north approach to Reed Road to accommodate dual left-turn lanes. The recommended mid-block design for Broadway Road between Spring Road and Reed Road is shown in Figure 21 and is described below:

- Two 12-foot wide through lanes in both the northbound and southbound directions.
- Curb and gutter on both sides of the roadway
- A raised 18-foot wide barrier median, which can be turf or landscaped with shade trees and/or low-lying shrubs/flowers. The median would accommodate a 12-foot wide left-turn lane at key intersections. The median would not be opened at right-in/right-out driveways.
- A 20-foot wide landscaped parkway on both sides of the road. The parkway would accommodate a 12-foot wide right-turn lane at key intersections.
- Sidewalk or multi-use trail within a 15-foot wide easement on both sides of the roadway.



PROJECT:	TITLE:	
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	RECOMMENDED TYPICAL CROSS SECTION	PROJECT NO: 09-126 KLOA FIGURE NO: 21

Broadway Road: Reed Road to Braceville Road

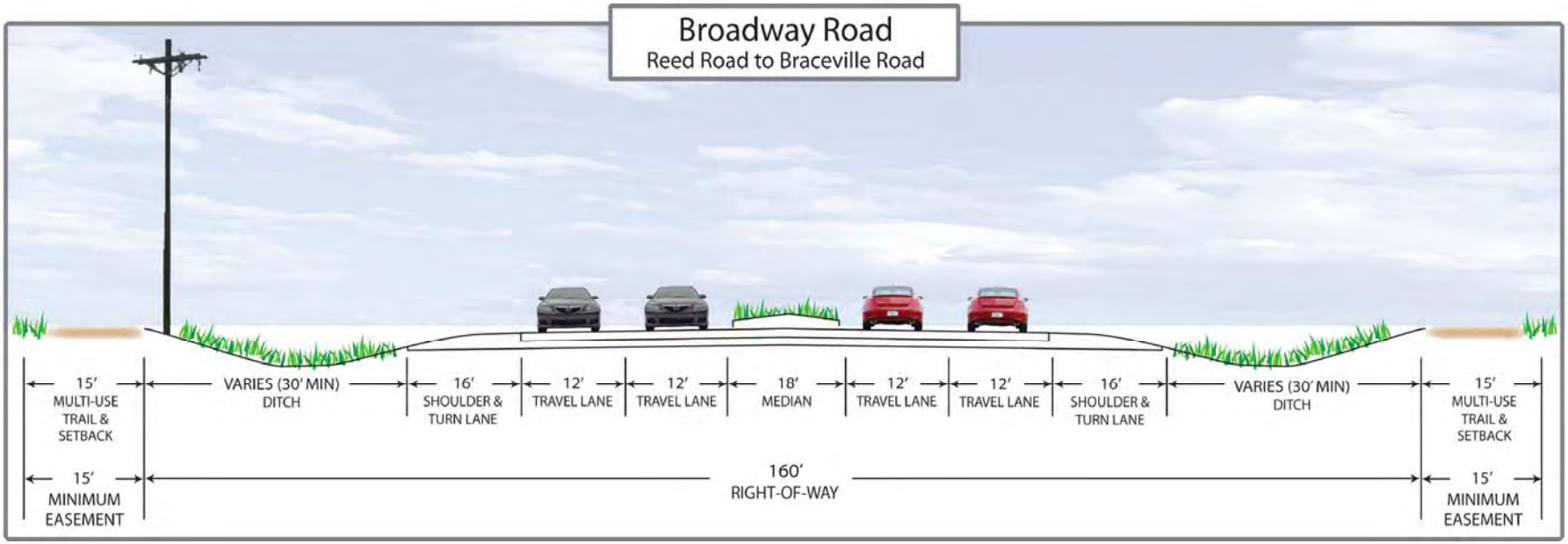
This section of Broadway Road is presently adjoined by agricultural land on both sides of the roadway and residential uses on the east side. North of Third Street, it is anticipated that this land will eventually develop with residential, retail and industrial uses on the west side of the road, and industrial and retail uses on the east side of the road. Development projections have not been made for the land south of Third Street. An urban-rural hybrid cross section is desired for this section of Broadway Road, consisting of an urban barrier median and a rural outside shoulder and ditch. The road capacity necessary to accommodate the projected traffic volumes will require a right-of-way of 160 feet. Assuming the centerline of the roadway will not change, the expansion of the existing 66-foot right-of-way will require the acquisition or dedication of 47 feet of right-of-way from both sides of the roadway. The right-of-way would expand to 170 feet on the south approach to Reed Road to accommodate dual left-turn lanes.

The recommended mid-block design for Broadway Road between Reed Road and Braceville Road is shown in Figure 22 and is described below:

- Two 12-foot wide through lanes in both the northbound and southbound directions.
- A raised 18-foot wide barrier median, which can be turf or landscaped with shade trees and/or low-lying shrubs/flowers. The median would accommodate a 12-foot wide left-turn lane at key intersections. The median would not be opened at right-in/right-out driveways.
- A 16-foot shoulder (8-foot paved, 2-foot aggregate, 6-foot earth) accommodating a 12-foot wide right-turn lane at key intersections.
- A 30-foot wide (min.) drainage ditch
- Sidewalk or multi-use trail within a 15-foot wide easement on both sides of the roadway.

Reed Road: I-55/Hickory Street to Future Mid-Mile Collector west of Broadway Road

This section of Reed Road is presently adjoined by agricultural land on both sides of the roadway with one commercial use on the north side. It is anticipated that this land will eventually develop with residential, retail and industrial uses on both sides of the road. The road capacity necessary to accommodate the projected traffic volumes will ultimately require a six-lane roadway with multiple auxiliary lanes, and the desired design for the six-lane facility is an urban cross section with a raised barrier median and curb and gutter. However, traffic conditions on Reed Road may not reach levels requiring a six-lane facility for many years, depending on the pace of development. Therefore an interim design is recommended for Reed Road that would preserve sufficient right-of-way for the ultimate six-lane urban cross section (170 feet) but only provide the capacity of a four-lane roadway with auxiliary lanes. This interim design would have an urban-rural hybrid cross section with an urban barrier median and a rural outside shoulder and ditch. Assuming the centerline of the roadway will not change, the expansion of the existing 66-foot right-of-way to 170 feet will require the acquisition or dedication of 52 feet of right-of-way from both sides of the roadway.



PROJECT:	TITLE:	PROJECT NO: 09-126
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	RECOMMENDED TYPICAL CROSS SECTION	KLOA FIGURE NO: 22

The recommended interim and ultimate mid-block designs for Reed Road between Hickory Street/Kankakee Road and the future mid-mile collector road west of Broadway Road are shown in Figures 23 and 24, respectively, and are described below:

Interim Design

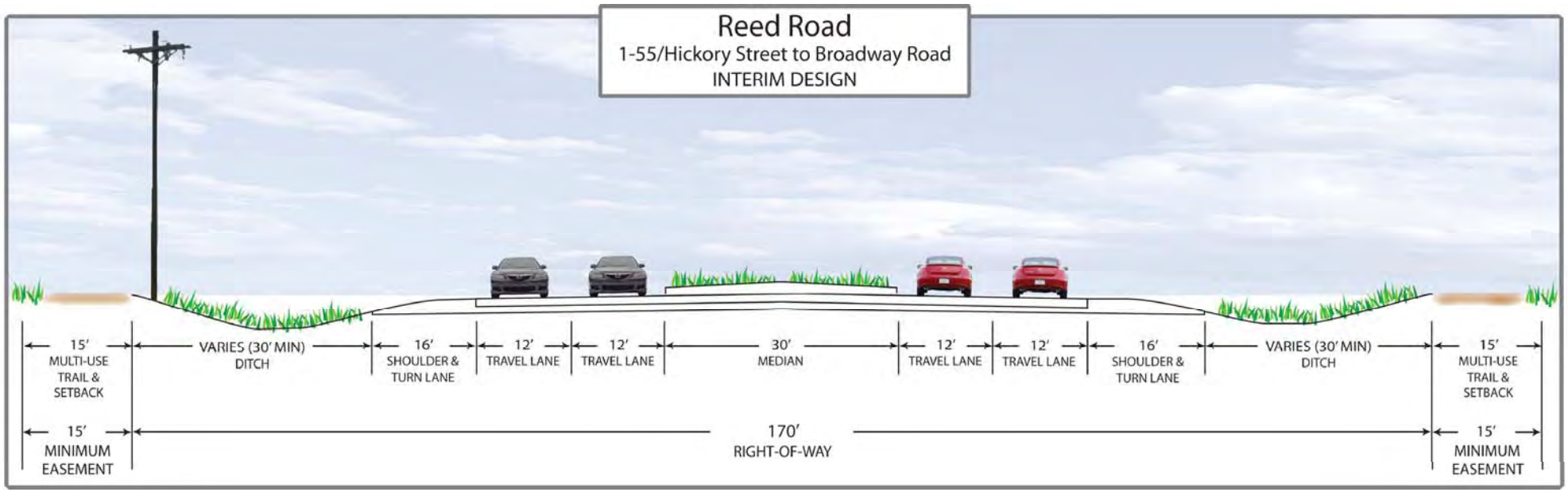
- Two 12-foot wide through lanes in both the eastbound and westbound directions.
- A raised 30-foot wide barrier median, which can be turf or landscaped with shade trees and/or low-lying shrubs/flowers. The median would accommodate two 12-foot wide left-turn lane at key intersections. The median would not be opened at right-in/right-out driveways.
- A 16-foot shoulder (8-foot paved, 2-foot aggregate, 6-foot earth) accommodating a 12-foot wide right-turn lane at key intersections.
- A 30-foot wide (min.) drainage ditch
- Sidewalk or multi-use trail within a 15-foot wide easement on both sides of the roadway.

Ultimate Design

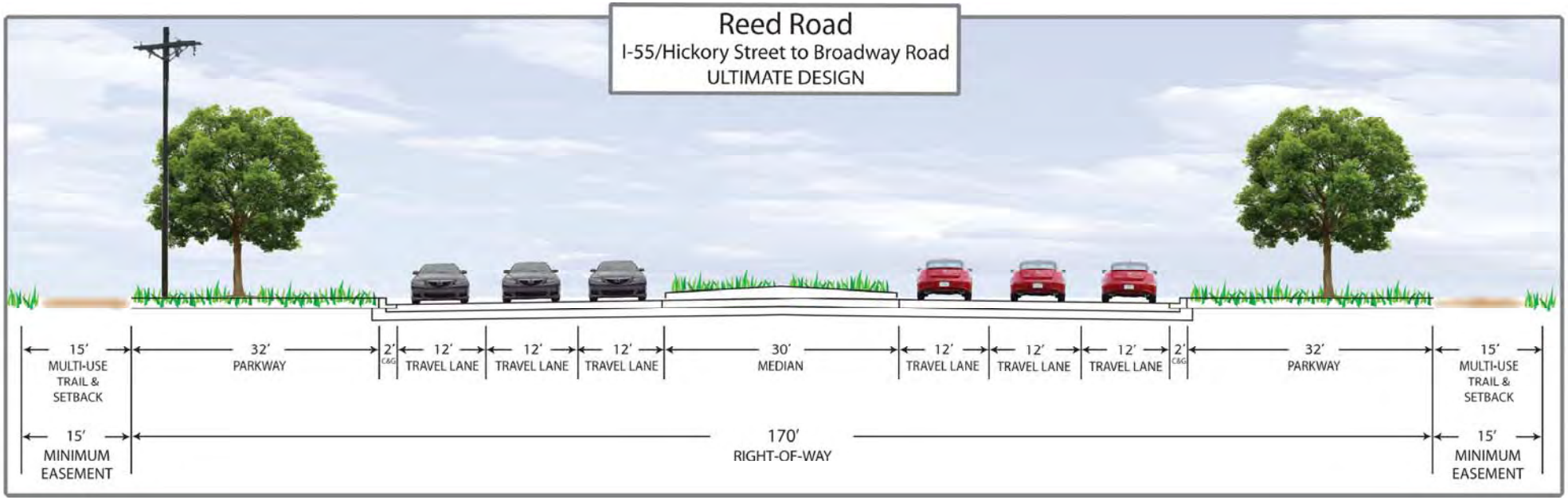
- Three 12-foot wide through lanes in both the eastbound and westbound directions.
- Curb and gutter on both sides of the roadway
- A raised 30-foot wide barrier median, which can be turf or landscaped with shade trees and/or low-lying shrubs/flowers. The median would accommodate two 12-foot wide left-turn lane at key intersections. The median would not be opened at right-in/right-out driveways.
- A 32-foot wide landscaped parkway on both sides of the road. The parkway would accommodate a 12-foot wide right-turn lane at key intersections.
- Sidewalk or multi-use trail within a 15-foot wide easement on both sides of the roadway.

Reed Road: Future Mid-Mile Collector west of Broadway Road to Carbon Hill Road

This section of Reed Road is presently adjoined by agricultural land on both sides of the roadway with one commercial use on the north side. It is anticipated that this land will eventually develop with residential, retail and industrial uses. The road capacity necessary to accommodate the projected traffic volumes along this section of Reed Road only require a four-lane roadway with auxiliary lanes. As such, the ultimate six-lane urban design to the east can be tapered down to a four-lane urban design, and the 170-foot right-of-way required to the east can be narrowed to 150-feet along this section of Reed Road. Assuming the centerline of the roadway will not change, the expansion of the existing 66-foot right-of-way to 150 feet will require the acquisition or dedication of 42 feet of right-of-way from both sides of the roadway. The interim design for this section of Reed Road may only require one through lane in each direction with a center left-turn lane. This could be accomplished within an urban-rural hybrid cross section with an urban barrier median and a rural outside shoulder and ditch. As volumes increase and additional road capacity is needed, the ultimate four-lane urban cross section could be developed. The 150-foot right-of-way, however, does maintain the ability to expand the cross-section to six lanes should traffic volumes ever reach levels that the additional road capacity is needed.



PROJECT:	TITLE:	PROJECT NO: 09-126
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	RECOMMENDED TYPICAL CROSS SECTION	KLOA FIGURE NO: 23



PROJECT:	TITLE:	
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	RECOMMENDED TYPICAL CROSS SECTION	PROJECT NO: 09-126 KLOA FIGURE NO: 24

The recommended interim and ultimate mid-block designs for the section of Reed Road between the future mid-mile collector road west of Broadway Road and Carbon Hill Road are shown in Figures 25 and 26, respectively, and are described below:

Interim Design

- One 12-foot wide through lanes in both the eastbound and westbound directions.
- A raised 18-foot wide barrier median, which can be turf or landscaped with shade trees and/or low-lying shrubs/flowers. The median would accommodate one 12-foot wide left-turn lane at key intersections. The median would not be opened at right-in/right-out driveways.
- A 16-foot shoulder (8-foot paved, 2-foot aggregate, 6-foot earth) accommodating a 12-foot wide right-turn lane at key intersections.
- A 30-foot wide (min.) drainage ditch
- Sidewalk or multi-use trail within the right-of-way or within a 15-foot wide easement on both sides of the roadway.

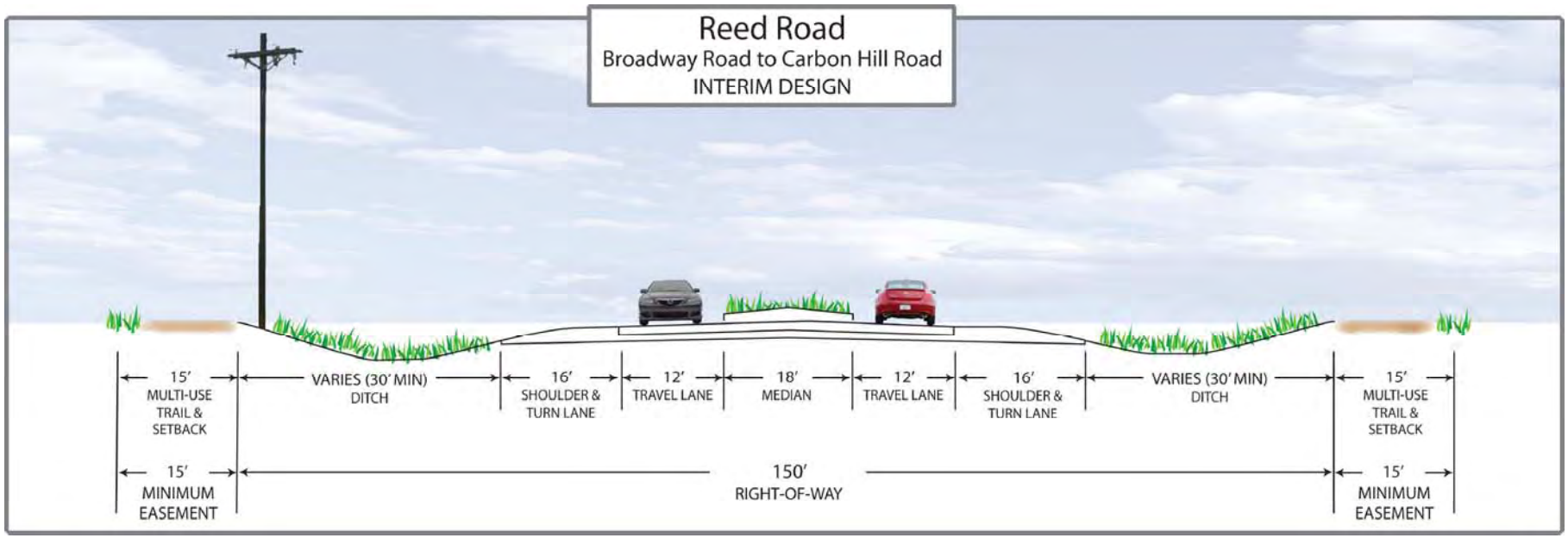
Ultimate Design

- Two 12-foot wide through lanes in both the eastbound and westbound directions.
- Curb and gutter on both sides of the roadway
- A raised 18-foot wide barrier median, which can be turf or landscaped with shade trees and/or low-lying shrubs/flowers. The median would accommodate one 12-foot wide left-turn lane at key intersections. The median would not be opened at right-in/right-out driveways.
- A 40-foot wide landscaped parkway on both sides of the road. The parkway would accommodate a 12-foot wide right-turn lane at key intersections.
- Sidewalk or multi-use trail within the right-of-way or within a 15-foot wide easement on both sides of the roadway.

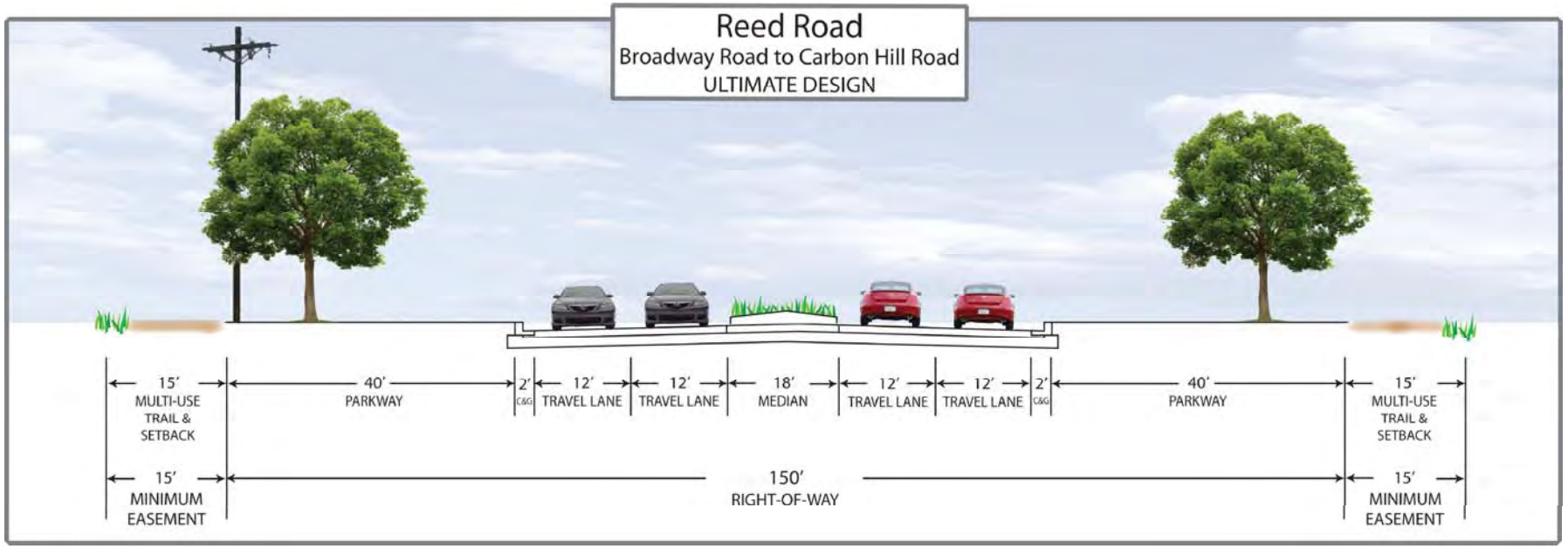
Access Control and Traffic Signals

As noted above and discussed in Chapter 2, access control standards should be established and adhered to in order to maximize roadway capacity, maintain traffic flow efficiency and enhance safety. Broadway Road and Reed Road are both identified in the GCHARO as Access 3 roadways, which are defined as locally significant facilities where direct access to abutting land is controlled to maximize the through movement of traffic. The following access control standards are recommended for Broadway Road and Reed Road:

- Access should be limited along Broadway Road and Reed Road as defined by their Access 3 roadway status. Currently, the minimum spacing of full access unsignalized intersections on Access 3 roadways is ¼-mile (1,320 feet) and the minimum spacing of signal-controlled intersections is 1/3-mile (1,760 feet). For reasons discussed in Chapter 2, the minimum spacing standards for signal-controlled intersections along Broadway Road and Reed Road



PROJECT:	TITLE:	PROJECT NO: 09-126
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	RECOMMENDED TYPICAL CROSS SECTION	KLOA FIGURE NO: 25



PROJECT:	TITLE:	PROJECT NO: 09-126
CORRIDOR ACCESS STUDY BROADWAY RD/REED RD GRUNDY COUNTY, ILLINOIS	RECOMMENDED TYPICAL CROSS SECTION	KLOA FIGURE NO: 26

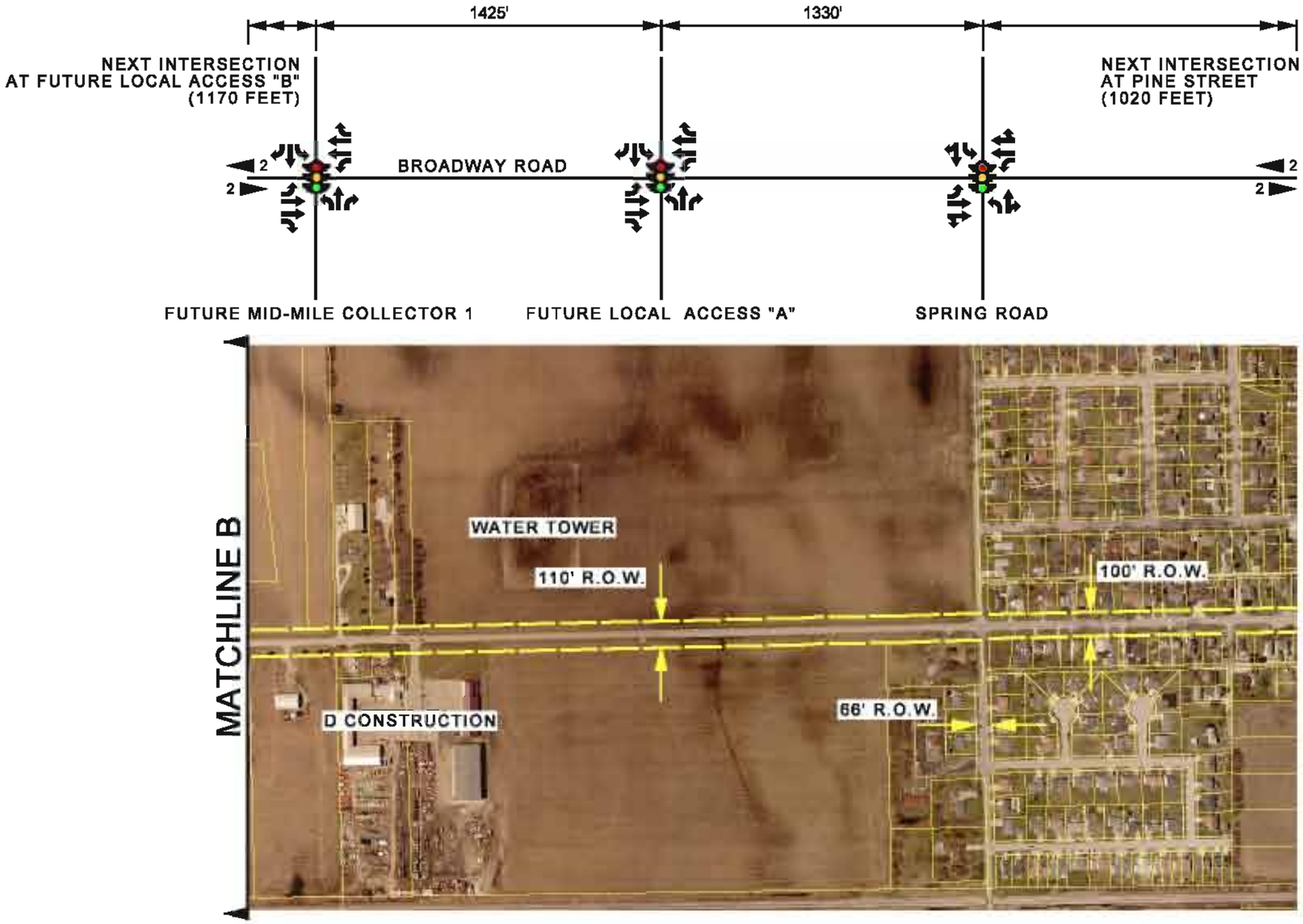
should be adjusted to ¼-mile, consistent with the spacing standard for suburban arterials and collectors in the urbanizing counties of Will and Kane.

- Restricted right-in/right-out (RIRO) access driveways should be spaced at a minimum of 500 feet with a desirable spacing of 1/8-mile (660 feet).
- As parcels are developed, consideration should be given to closing, relocating or consolidating existing driveways and/or limiting access at existing driveways to adhere to the minimum spacing guidelines.
- Access to adjoining parcels should be consolidated whenever possible.
- The raised barrier median should be extended across all RIRO driveways to reinforce the access restrictions by physically preventing left-turn entering and exiting movements.
- New full access driveways should be aligned opposite an existing full access driveway if it is reasonably close to meeting the minimum spacing requirements.
- The creation of offset intersections should be avoided.
- To promote development access flexibility, encourage a more uniform distribution of development traffic, and reduce traffic volumes on Broadway Road and Reed Road, development access should also be provided from the adjoining cross streets.
- To maintain efficient traffic signal operations and traffic flow progression, all future signals within these corridors that are located within ½-mile of each other should be interconnected into a coordinated signal system.

Figures 27-32 illustrate the existing and recommended future access locations along Broadway Road and Reed Road.

Intersection Geometrics and Traffic Control

Figures 27-32 also illustrate the recommended geometrics for each intersection within the Broadway Road and Reed Road corridors for the ultimate design condition. In addition to the four-lane to six-lane cross sections, the key intersections will also require exclusive left- and right-turn lanes. It should be noted that the purpose of the corridor access study is to identify general geometric requirements for Broadway Road and Reed Road to accommodate the projected 2030 traffic demands. The actual design of the intersections (i.e., length of turn lanes and tapers, intersection radii, signal equipment locations, etc.) will be determined when Phase I Intersection Design Studies (IDS) are prepared for the future signalized intersections or when Phase II engineering plans are developed. The following describes the recommended roadway improvements that will be required at each of the intersections in the corridor.



LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- TRAFFIC SIGNAL
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- N

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PROJECT # 09-128

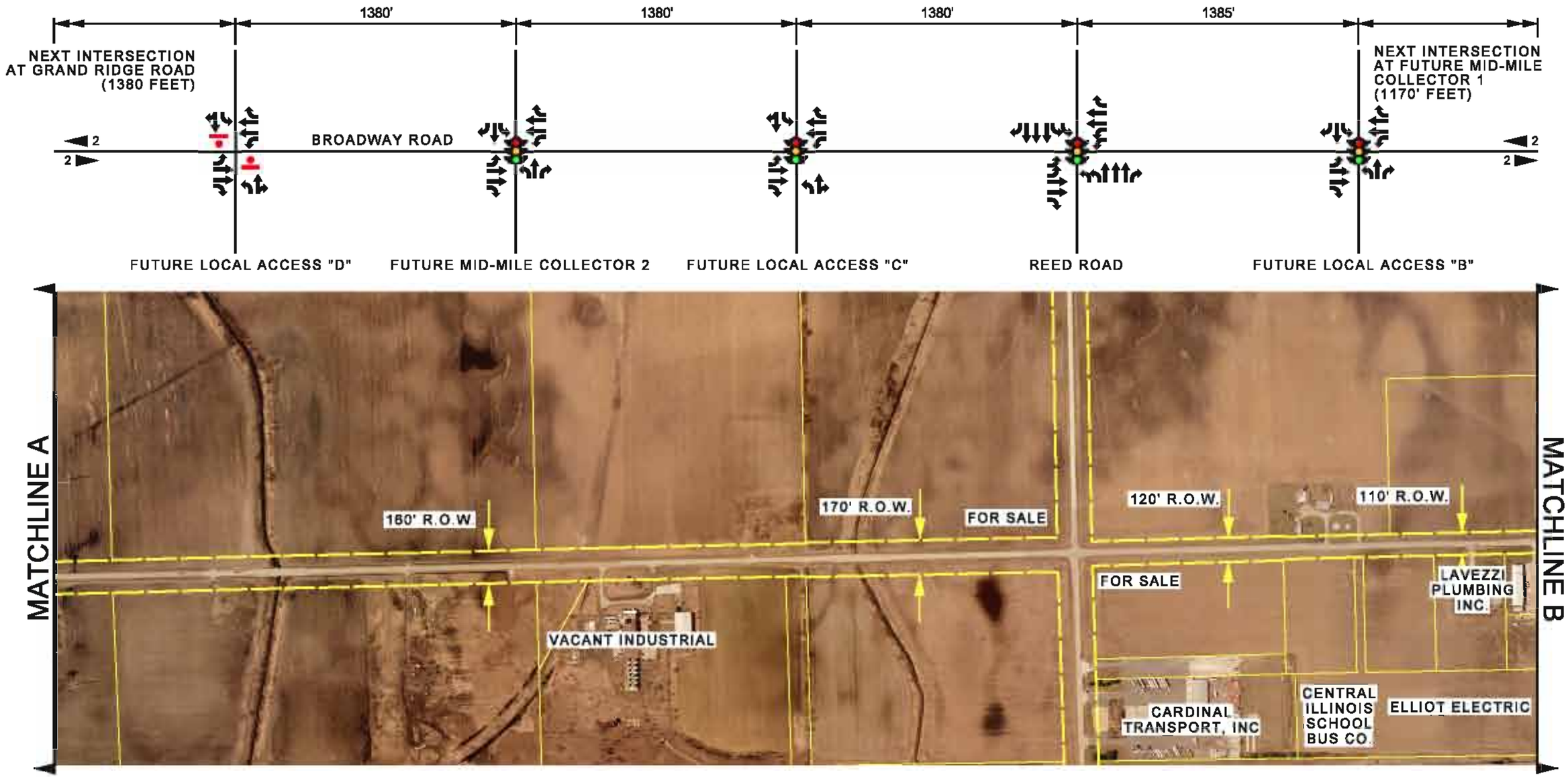
DESIGNED	-	GJG
DRAWN	-	GJG
CHECKED	-	ER
DATE	-	1/20/2011

SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

RECOMMENDED ACCESS LOCATIONS/INTERSECTION GEOMETRICS
BROADWAY ROAD: REED ROAD TO SPRING ROAD

FIGURE NO.
27



LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- TRAFFIC SIGNAL
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- N

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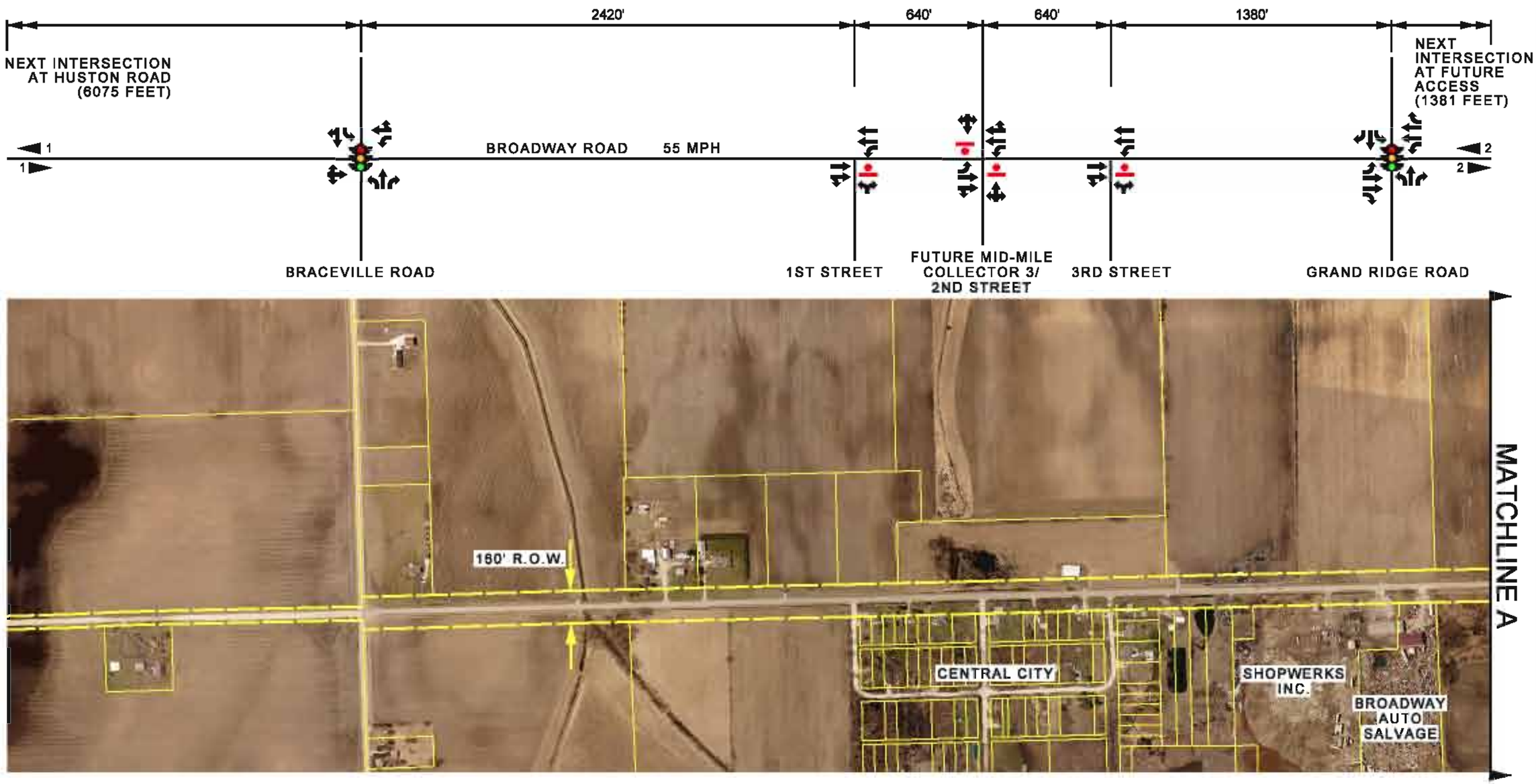
CHECKED	-	ER
DATE	-	1/20/2011

SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD CORRIDOR ACCESS STUDY GRUNDY COUNTY, ILLINOIS

RECOMMENDED ACCESS LOCATIONS/INTERSECTION GEOMETRICS
BROADWAY ROAD: 3RD STREET TO REED ROAD

FIGURE NO. 28



LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- TRAFFIC SIGNAL
- RIGHT-OF-WAY LINE
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- N

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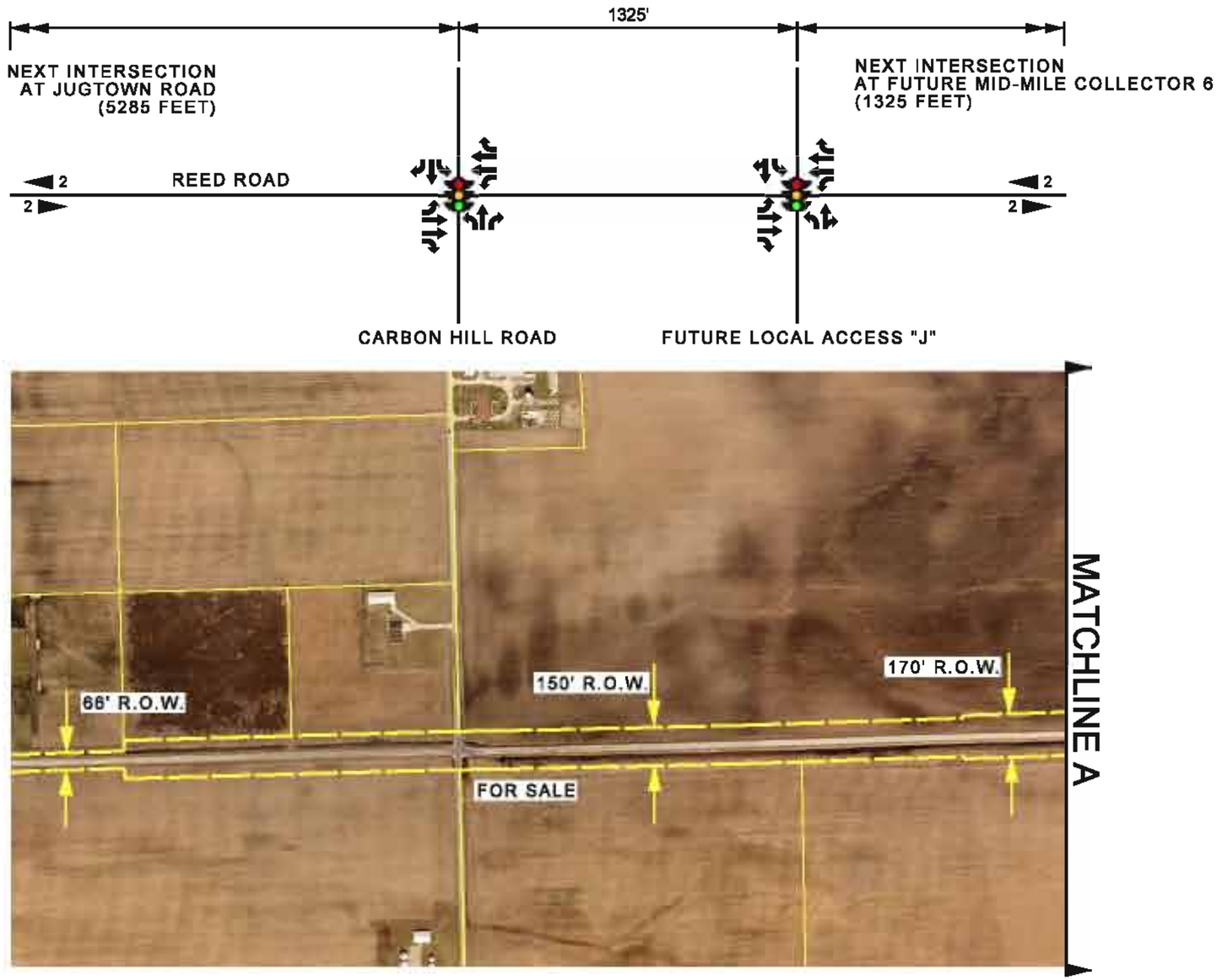
DATE	-	1/20/2011

SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

RECOMMENDED ACCESS LOCATIONS/INTERSECTION GEOMETRICS
BROADWAY ROAD: BRACEVILLE ROAD TO 3RD STREET

FIGURE NO. 29



LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- TRAFFIC SIGNAL
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- N

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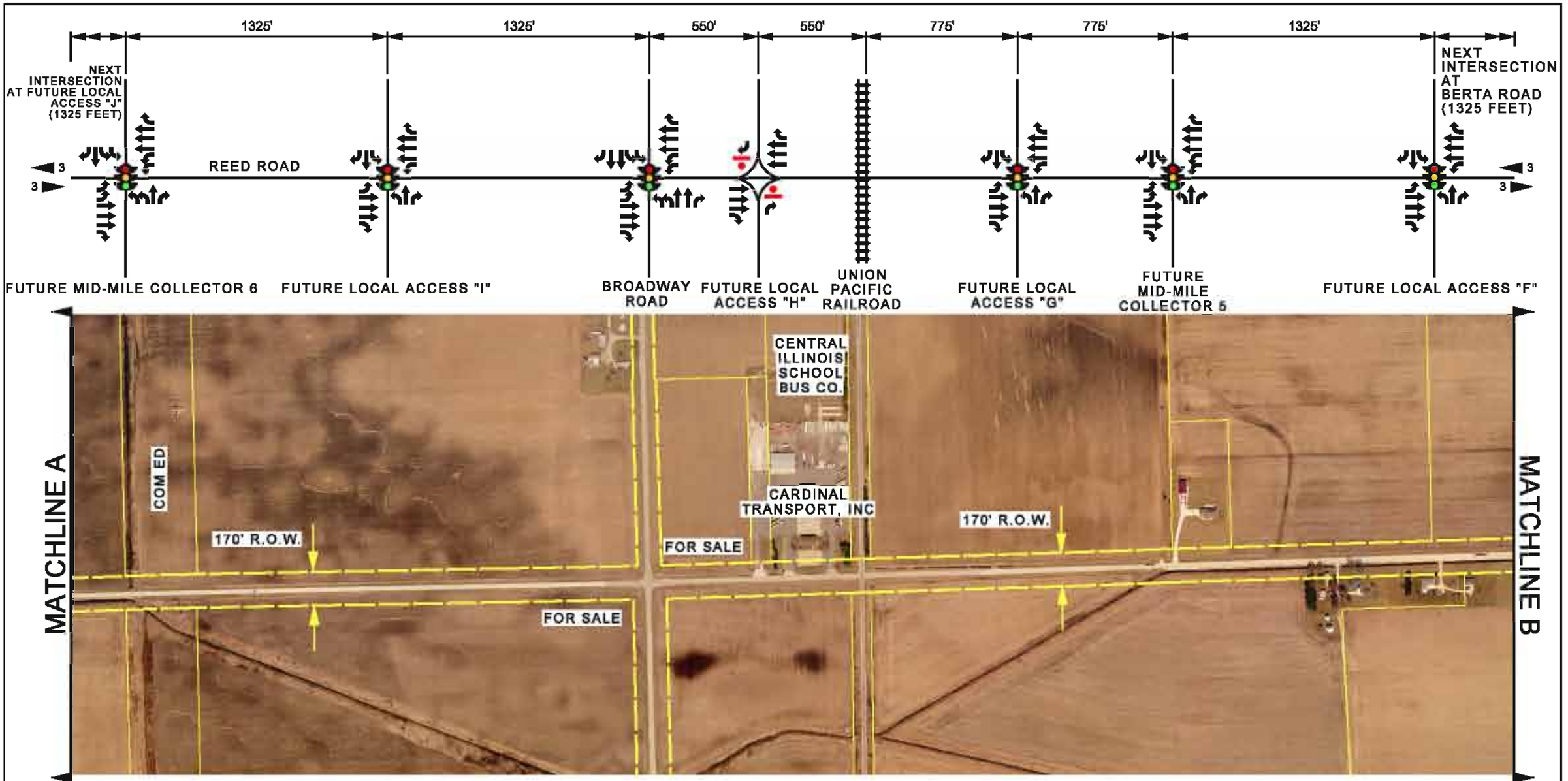
CHECKED	-	ER
DATE	-	1/20/2011

SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

RECOMMENDED ACCESS LOCATIONS/INTERSECTION GEOMETRICS
REED ROAD: CARBON HILL ROAD TO BROADWAY ROAD

FIGURE NO.
30



LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- TRAFFIC SIGNAL
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- N

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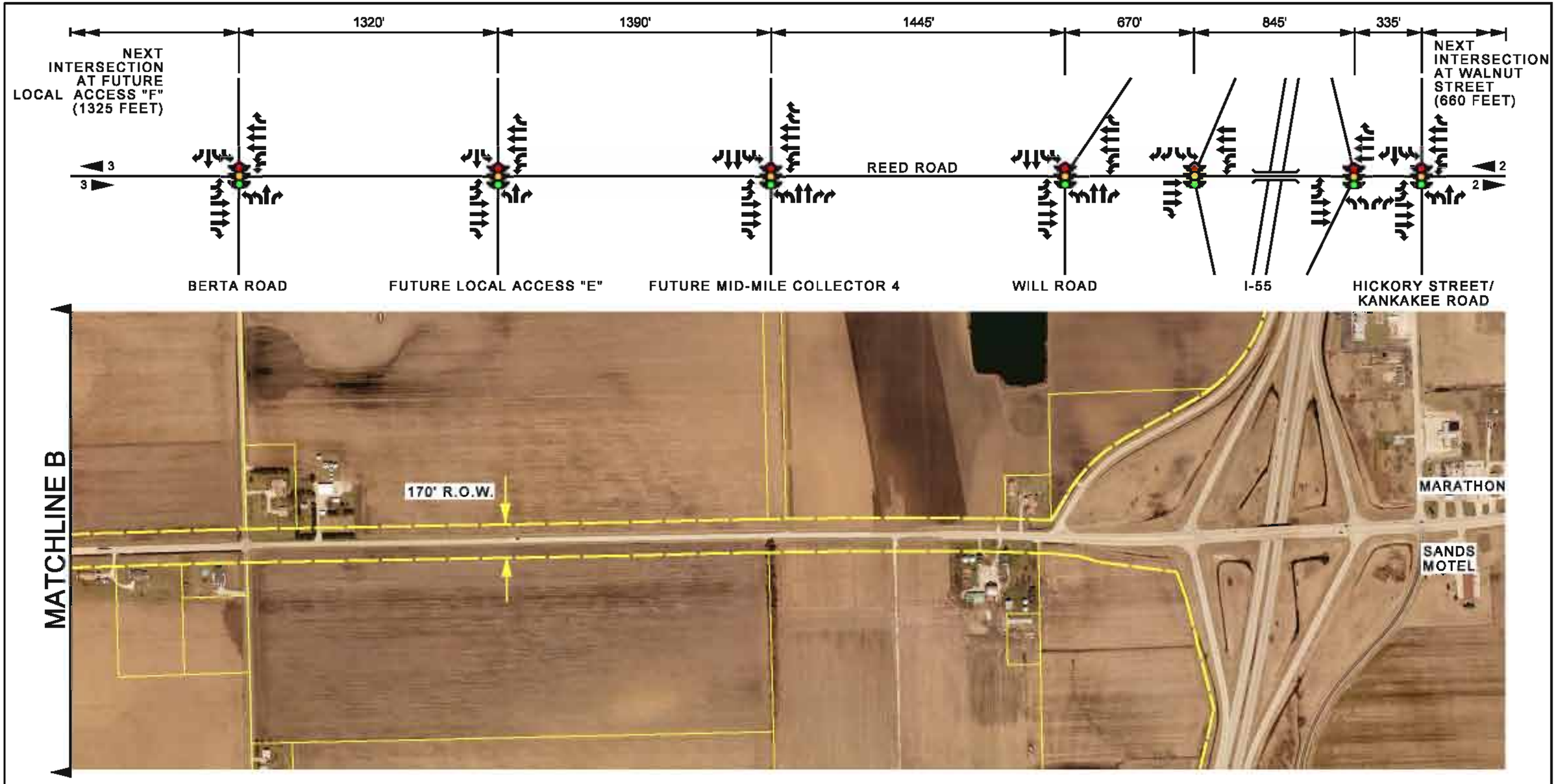
SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

RECOMMENDED ACCESS LOCATIONS/INTERSECTION GEOMETRICS
REED ROAD: BROADWAY ROAD TO BERTA ROAD

FIGURE NO.
31



LEGEND

- INTERSECTION GEOMETRICS
- # NUMBER OF LANES
- STOP SIGN
- TRAFFIC SIGNAL
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- N

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DESIGNED	-	GJC
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DATE	-	1/20/2011

SCALE: 1" = 500'
0' 500' 1000'

BROADWAY ROAD AND REED ROAD
CORRIDOR ACCESS STUDY
GRUNDY COUNTY, ILLINOIS

RECOMMENDED ACCESS LOCATIONS/INTERSECTION GEOMETRICS
REED ROAD: BERTA ROAD TO HICKORY STREET

FIGURE NO.
32

Broadway Road with Spring Road

This intersection will need to be under traffic signal control to accommodate the projected 2030 traffic volumes. The signal should be installed when traffic volumes reach threshold levels warranting the signal. At this intersection, the recommended four-lane urban design of Broadway Road will accommodate a dedicated left-turn lane, a dedicated through lane, and a combined through/right-turn lane in each direction. The widening can be accomplished within the existing 100-foot right-of-way to the north of Spring Road and the proposed 110-foot right-of-way to the south of Spring Road. Spring Road is recommended to be widened at this intersection to provide a dedicated left-turn lane, which can be accomplished within the existing 66-foot right-of-way to the east and west of Broadway Road.

Broadway Road with Future Intersections between Spring Road and Reed Road

Between Spring Road and Reed Road, new collector roads or local access drives may develop at approximately ¼-mile spacing. At these future intersections, the recommended 110-foot right-of-way and four-lane urban design of Broadway Road will accommodate a dedicated left-turn lane, two through lanes, and a dedicated right-turn lane in each direction. The mid-mile collector road and local access drives should provide separate left-turn, through and right-turn lanes. These intersections will ultimately require traffic signal control, which should be installed when traffic volumes reach threshold levels warranting the signal.

Broadway Road with Reed Road

This intersection will require signalization to accommodate the projected 2030 traffic volumes. The signal should be installed when traffic volumes reach the level that signal warrants are satisfied. The cross section of Broadway Road at this intersection will ultimately require dual left-turn lanes, two through lanes and a dedicated right-turn lane in each direction. To accommodate these lanes within an urban cross section, as planned to the north of Reed Road, the right-of-way on Broadway Road will need to be expanded to 120 feet on the north approach to the intersection. To accommodate these lanes within an urban-rural hybrid cross section, as planned to the south of Reed Road, the right-of-way on Broadway Road will need to be expanded to 170 feet on the south approach to the intersection. The cross section of Reed Road at this intersection will ultimately require dual left-turn lanes, three through lanes and a dedicated right-turn lane in each direction. The recommended 170-foot right-of-way on Reed Road will accommodate the ultimate lane requirements within an urban cross section.

Broadway Road with Future Intersections between Reed Road and Third Street

Between Reed Road and Third Street, new collector roads or local access drives may develop at approximately ¼-mile spacing, including the future easterly extension of Grand Ridge Road as shown in the Coal City Transportation Plan. At these future intersections, the recommended 160-foot right-of-way and four-lane urban-rural hybrid design of Broadway Road will accommodate a dedicated left-turn lane, two through lanes, and a dedicated right-turn lane in each direction. The mid-mile collector road and Grand Ridge Road should provide separate left-turn, through and right-turn lanes in each direction. The local access roads may only require a dedicated left-

turn lane and a combined through/right-turn lane on their approach to Broadway Road. These intersections with Broadway Road will ultimately require traffic signal control, which should be installed when traffic volumes reach threshold levels warranting the signal.

Broadway Road with First Street, Second Street and Third Street

The stop sign controls at these existing intersections will not need to change under the projected 2030 traffic conditions. The Broadway Road right-of-way will need to be expanded from 66 feet to 160 feet to accommodate the projected volumes within a four-lane urban-rural hybrid cross section, which at these intersections will consist of a dedicated left-turn lane, an exclusive through lane, and a combined through/right-turn lane. A future roadway may develop to the west of Broadway Road, aligned with Second Street.

Broadway Road with Braceville Road

This intersection will remain under stop sign control on Broadway Road under projected 2030 traffic volumes. To better accommodate traffic movements to and from Broadway Road, the Braceville Road approaches should be widened to provide a dedicated left-turn lane and a combined through/right-turn lane on the west approach and a separate left-turn lane, through lane and right-turn lane on the east approach. The north approach of Broadway Road should taper down from the four-lane urban-rural hybrid cross section at First Street to a three-lane undivided cross section with one lane in each direction and a dedicated southbound left-turn lane at Braceville Road.

Reed Road with Hickory Street/Kankakee Road

This intersection will need to be under traffic signal control to accommodate the projected 2030 traffic volumes. The signal should be installed when traffic volumes reach threshold levels warranting the signal. At this intersection, the recommended ultimate six-lane urban design of Reed Road will accommodate dual left-turn lanes, three dedicated through lanes, and a dedicated right-turn lane in each direction. The widening would be accommodated within the proposed 170-foot right-of-way. Hickory Street and Kankakee Road are recommended to be widened at this intersection to provide dual left-turn lanes, a single through lane and a dedicated right-turn lane, which may require the acquisition of additional right-of-way at the intersection. To the east of Hickory Street/Kankakee Road, Reed Road (known as Kennedy Road through Braidwood) should taper down to its current two- to three-lane cross section.

Reed Road with I-55 Ramps

The intersections of the I-55 ramps with Reed Road will need to be under traffic signal control to accommodate the projected 2030 traffic volumes. The signals should be installed when traffic volumes reach threshold levels warranting the signals. On Reed Road, the recommended ultimate six-lane urban design will accommodate three dedicated through lanes and dual left-turn lanes or a dedicated right-turn lane in each direction. The entrance ramps would be widened to accept the dual turn lanes before tapering down to the single merge lane. The exit ramps would be widened on the approach to Reed Road to provide dual left-turn lanes and dual right-turn lanes. The ramp

widening may require the acquisition of additional right-of-way at the interchange. It is also important to note that the existing diamond interchange configuration only has a finite capacity. If additional ramp capacity is needed beyond that provided by widening in its current configuration, the interchange may need to be reconstructed in a cloverleaf or hybrid configuration.

Reed Road with Will Road

This intersection will require signalization to accommodate the projected 2030 traffic volumes. The signal should be installed when traffic volumes reach the level that signal warrants are satisfied. The cross section of Reed Road at this intersection will ultimately require dual left-turn lanes, three through lanes and a dedicated right-turn lane in each direction, which can be accommodated within the planned 170-foot right-of-way. The cross section of Will Road at the intersection may require dual left-turn lanes, two through lanes and a dedicated right-turn lane in both directions.

Reed Road with Future Intersections between Will Road and Berta Road

The intersections of the new mid-mile collector road or local roads that may develop at approximately ¼-mile spacing between Will Road and Berta Road are projected to eventually require traffic signal control, when volumes warrant, to accommodate the projected 2030 traffic volumes. The cross section of Reed Road at these intersections will ultimately require dual left-turn lanes, three through lanes and a dedicated right-turn lane in each direction, which can be accommodated within the planned 170-foot right-of-way. The cross sections of the mid-mile collector and the local road will likely require single or dual left-turn lanes, one or two through lanes, and a dedicated right-turn lane in each direction.

Reed Road with Berta Road

The intersections of Reed Road with Berta Road will require signalization to accommodate the projected 2030 traffic volumes. The signal should be installed when traffic volumes reach the level that signal warrants are satisfied. The cross section of Reed Road at this intersection will ultimately require dual left-turn lanes, three through lanes and a dedicated right-turn lane in each direction, which can be accommodated within the planned 170-foot right-of-way. The cross section of Berta Road at the intersection may require dual left-turn lanes, a single through lane and a dedicated right-turn lane in each direction.

Reed Road with Future Intersections between Berta Road and Railroad

The intersections of the new mid-mile collector road or local roads that may develop between Berta Road and the railroad are projected to eventually require traffic signal control, when volumes warrant, to accommodate the projected 2030 traffic volumes. The cross section of Reed Road at these intersections will ultimately require single or dual left-turn lanes, three through lanes and a dedicated right-turn lane in each direction, which can be accommodated within the planned 170-foot right-of-way. The cross sections of the mid-mile collector and the local road will likely require a single left-turn lane, a through lane, and a right-turn lane in each direction.

Reed Road with Future Intersections between Broadway Road and Carbon Hill Road

The intersections of the new mid-mile collector road and local roads that may develop between Broadway Road and Carbon Hill Road may eventually warrant traffic signal control to accommodate the projected 2030 traffic volumes. The cross section of Reed Road at the mid-mile collector will ultimately require dual left-turn lanes, three through lanes and a dedicated right-turn lane in each direction, which can be accommodated within the planned 170-foot right-of-way. The cross section of the mid-mile collector may require dual left-turn lanes, a through lane and a right-turn lane in each direction. At the local access road between the mid-mile collector and Broadway Road, Reed Road may only require a single left-turn lane along with three through lanes and a right-turn lane in each direction. The local access road may need to provide a single left-turn lane, through lane and right-turn lane in each direction. At the local access road between the mid-mile collector and Carbon Hill Road, Reed Road may ultimately only require a single left-turn lane, two through lanes and a right-turn lane in each direction, which can be accommodated within a 160-foot right-of-way. The local access road may need to provide a single left-turn lane and a combined through/right-turn lane in each direction.

Reed Road with Carbon Hill Road

The intersection of Reed Road with Carbon Hill Road will require signalization to accommodate the projected 2030 traffic volumes. The signal should be installed when traffic volumes reach the level that signal warrants are satisfied. The cross section of Reed Road at this intersection will ultimately require a single left-turn lane, two through lanes and a dedicated right-turn lane in each direction, which can be accommodated within the planned 160-foot right-of-way. The cross section of Carbon Hill Road at the intersection may require a single left-turn lane, a through lane and a dedicated right-turn lane in each direction.

Projected Intersection Operations

Intersection capacity analyses were performed for the projected 2030 weekday peak hour traffic conditions. Generally, the recommended intersection geometrics for the traffic signal controlled intersections were developed with the desire to maintain a Level of Service C or better for the overall intersection, per the GCHARO. However, this Level of Service criterion proved impractical for some intersections during the evening peak hour, especially in the vicinity of the I-55 interchange where traffic volumes on Reed Road are projected to be highest and adjacent intersections are impacted by significant turning movements to and from the interstate ramps. As previously mentioned, it is important to note that as future projected traffic volumes are realized, the current diamond interchange configuration may not provide adequate capacity and a higher-capacity cloverleaf or hybrid configuration may need to be explored.

Table 5 summarizes the results of the capacity analyses for the projected 2030 weekday peak hour traffic conditions. The results shown in the table illustrate the average level of service and delay for all vehicles combined at each particular intersection. The capacity analysis worksheets are contained in the Appendix.

Table 5
CAPACITY ANALYSIS RESULTS – PROJECTED 2030 TRAFFIC CONDITIONS

Intersection	Weekday AM Peak Hour LOS	Weekday AM Peak Hour Delay	Weekday PM Peak Hour LOS	Weekday PM Peak Hour Delay
Broadway Road with				
Spring Road	B	13.9	B	12.4
Future Local Access "A"	A	5.5	B	11.9
Future Mid-Mile Collector 1	B	12.7	B	13.5
Future Local Access "B"	A	6.1	B	19.0
Reed Road	B	14.2	D	42.8
Future Local Access "C"	A	4.8	B	12.6
Future Mid-Mile Collector 2	B	16.0	B	19.3
Future Local Access "D" [1]	F	50.7	D	32.4
Grand Ridge Road Extension	B	15.5	B	11.7
Braceville Road	A	8.1	C	20.5
Reed Road with				
Hickory Street/Kankakee Road	C	31.4	D	43.8
I-55 Northbound Ramps	C	32.4	D	54.2
I-55 Southbound Ramps	C	33.7	C	27.3
Will Road	C	24.2	E	70.3
Future Mid-Mile Collector 4	B	13.0	D	54.6
Future Local Access "E"	B	12.4	B	18.5
Berta Road	B	15.9	C	32.5
Future Local Access "F"	A	9.6	B	17.7
Future Mid-Mile Collector 5	B	13.5	C	34.5
Future Local Access "G"	B	16.3	C	30.8
Future Local Access "H" (RIRO)[1]	B	10.9	B	10.9
Future Local Access "I"	B	12.1	C	24.8
Future Mid-Mile Collector 6	B	11.9	C	31.7
Future Local Access "J"	B	15.3	C	34.2
Carbon Hill Road	B	17.9	C	30.0

Note: LOS = level of service Delay = seconds/vehicle

[1] Unsignalized TWSC Intersection. LOS and delay representative of average of stop controlled approaches.

As the traffic analyses indicate, all intersection geometric design recommendations will be able to accommodate 2030 traffic levels at a Level of Service D or better with the exception of the Reed Road / Will Road intersection, which may operate at a Level of Service E in the PM peak hour under the 2030 traffic volumes. The recommended intersection geometrics for the unsignalized intersections were developed to minimize delays entering and exiting the adjoining subdivisions.

Queuing and the overall progression of traffic through the network can be managed efficiently through a system of signal interconnects that coordinates the signals along the corridors to create a platooning effect. It should be noted that the recommendations produced in this report are contingent upon the development of a continuous parallel collector road system with grid access via future and existing mid-mile collectors and local access roads in order to divert traffic off of Reed and Broadway.

6.
Project Funding Options

This chapter describes potential funding mechanisms that would allow the corridor roadway improvements to be completed in a coordinated effort for efficiencies of scale and to minimize disruptions to the travelling public. The mechanisms, which are discussed below, include establishment of a Road Improvement Fund specific to the Broadway Road and Reed Road corridors or the institution of a countywide Road Impact Fee.

The funds generated by either of these mechanisms could be used by Grundy County for engineering and construction of the Broadway Road and Reed Road improvements. The funds would be used to supplement local County sources of revenue such as Motor Fuel Taxes and property taxes and possibly grant funding from federal and state programs such as Surface Transportation Program (STP) funds, Congestion Mitigation & Air Quality Program (CMAQ) funds, and Illinois Transportation Enhancement Program (ITEP) funds, among others.

Road Improvement Fund

With the establishment of a road improvement fund, which the County Board could issue by Ordinance, the costs associated with the Broadway Road and Reed Road improvements would be borne, in part or in its entirety, by the land owners developing property along the corridors. This would insure that the developers pay a fair share of the cost of the improvements needed to serve the additional traffic generated by their developments. Cost contributions would be assessed based on the "marginal cost" method, which is calculated through a formula that considers: (1) the cost to design and construct the roadway improvements, (2) the number of vehicle trips generated by the development, (3) the capacity of the improved roadway operating at Level of Service D, (4) the length of property frontage along Broadway Road and Reed Road as a percentage of the total project length, and (5) tax credits or improvement credits. The formula would produce fees that vary by type of land use as various land uses have different traffic generation "profiles". The County would establish a set of land use categories to be used in the formula, consistent with the categories included in the Institute of Transportation Engineers' publication *Trip Generation*. The fees would be translated on a "per dwelling unit" basis for residential developments and on a "per square feet" basis for commercial developments.

The cost contributions for the future developments would be written into the pre-annexation agreements or as a condition of plat of subdivision approval, and paid to Grundy County prior to issuance of building permits. The Fee Payer would enter into a Fee Payment Agreement with the County. The fees collected would be invested in interest bearing accounts designated solely for the Broadway Road and Reed Road improvements. All interest derived from these investments would be retained in the fund. Separate funds could be established for each corridor or a single fund could be utilized. All road improvement funds encumbered would be used within a specific period of time (e.g., 5 years) or would be returned to the fee payer.

Inevitably, there will be sections of the corridors for which development plans will have yet to be identified at the time the County is ready to move forward with road construction. The proportional costs to improve these sections of the roadway would initially need to be borne by the County but would be reimbursed to the County when development plans are approved and cost contributions made by the developers of the property adjoining these road sections.

Road Impact Fees

Impact fees are a method of shifting a portion of the burden of the cost of new or expanded infrastructure, needed to accommodate new development, away from the community at large and onto the development itself. The Illinois Road Improvement Impact Fee Law allows counties to collect impact fees from developers of new developments for the impacts that those new developments create on state, county, township and municipal highways, roads and streets, provided that the county enters into an intergovernmental agreement with the appropriate agency covering the collection and expenditure of the impact fees. If the county elects to impose impact fees strictly for the development impact on the county highway system only, no such intergovernmental agreements are necessary.

All new developments generate vehicular traffic and will, directly or indirectly, require access to county highways regardless of the location of the new development. If a county anticipates that it will not have sufficient revenues to ensure that adequate facilities will be in place when needed by new development, the County Board can issue a Road Impact Fee Ordinance. The purpose of the ordinance is to ensure that new development that is approved in the county pays a fair share of the road improvements needed to serve the new development. Presently DuPage County, Kane County and Lake County collect road impact fees to help fund roadway projects.

Road impact fees are used for add capacity projects, including lane additions, turning lanes at intersections, acquisition of land or real property for the expansion of the roadway, and relocation of existing utilities or drainage in advance of new road capacity. They are also used for the design of new roadways, traffic signal interconnection, and bridge widening to accommodate new roadway capacity. Impact fee revenues must be encumbered for use within 5 years of payment.

Counties can be separated into impact fee service areas with an impact fee schedule assigned to each area. Based on this schedule, the impact fee is assessed for various land use categories, including residential, retail, industrial, office, service, restaurant, etc. The fees would be translated on a "per dwelling unit" basis for residential developments and on a "per square feet" basis for commercial developments. The fees in each service area can differ based on traffic generation characteristics of the land use, average trip lengths associated with the land use, and the percentage of county highways within the service area. The impact fees can be mitigated or offset through various methods, the most common of which is by entering into an impact fee credit agreement with the county. This is typically done when the developer enhances the county highway system through right-of-way dedication and/or roadway system improvements.

7.
Conclusions

This Corridor Access Study serves many functions in the evaluation of Broadway Road and Reed Road, the primary travel corridors through the southern planning area of the Village of Coal City and the western planning area of the City of Braidwood. Firstly, it serves to identify the ultimate right-of-way, roadway cross section and intersection geometrics that will be required to accommodate projected traffic volumes over the next 20 years or more when more than 2,500 acres of land will potentially be developed with more than 4,300 dwelling units and 18.3 million square feet of commercial and industrial space. Secondly, this study establishes guidelines pertaining to access control and traffic signal spacing with consideration given to the location of future land uses that may develop in the corridors. Lastly, this study identifies potential funding mechanisms that Grundy County can utilize to enact an equitable public-private cost-sharing arrangement with private developers so that the Broadway Road and Reed Road improvements can be constructed in a coordinated manner for efficiencies of scale and to minimize disruptions to the travelling public.

The Corridor Access Study is intended to serve as a guide for future decisions affecting Broadway Road and Reed Road. Key findings from the study follow below:

- All study area intersections along Broadway Road and Reed Road presently operate at very good levels of service under existing traffic controls.

- The traffic volumes on Broadway Road presently range from 1,865-2,880 vehicles per day (vpd) and are projected to increase to 13,000-19,000 vpd upon buildout of the developable land in the corridor. The traffic volumes on Reed Road presently range from 820-2,540 vpd and are projected to increase to 22,000-61,000 vpd upon buildout of the corridor.

- To accommodate the projected 2030 traffic volumes at satisfactory levels of service, road capacity improvements will be required along Broadway Road and Reed Road, which will require additional right-of-way beyond the existing 66 feet.

- The ultimate design of Broadway Road from Spring Road south to Reed Road is an urban four-lane cross section with two travel lanes in each direction, a raised barrier median accommodating a single left-turn lane at intersections, curb and gutter on both sides of the roadway, and a 20-foot wide parkway that would accommodate right-turn lanes at key intersections. This design would be built within a 110-foot right-of-way, which will require the acquisition or dedication of 22 feet of right-of-way from each side of the roadway. The right-of-way would expand to 120 feet on the north approach to Reed Road to accommodate the future need for dual left-turn lanes.

- The ultimate design of Broadway Road from Reed Road south to Braceville Road is an urban-rural hybrid four-lane cross section with two travel lanes in each direction, a raised barrier median accommodating a single left-turn lane at intersections, a paved shoulder accommodating right-turn lanes at key intersections, and a drainage ditch on both sides of the roadway. This design would be built within a 160-foot a right-of-way, which will require the acquisition or dedication of 47 feet of right-of-way from each side of the roadway. The right-of-way would expand to 170 feet on the south approach to Reed Road to accommodate the future need for dual left-turn lanes.

- The ultimate design of Reed Road from I-55/Hickory Street west to Broadway Road is an urban six-lane cross section with three travel lanes in each direction, a raised barrier median accommodating dual left-turn lanes at intersections, curb and gutter on both sides of the roadway, and a landscaped parkway accommodating right-turn lanes at key intersections.

- Considering that traffic levels on Reed Road may not require a six-lane facility for many years, an interim design is recommended that would preserve sufficient right-of-way for the ultimate six-lane urban cross section but only provide the capacity of a four-lane roadway. The interim design would be built within a 170-foot a right-of-way, which will require the acquisition or dedication of 52 feet of right-of-way from each side of the roadway. The interim design would have an urban-rural hybrid cross section with two travel lanes in each direction, a raised barrier median that could ultimately accommodate dual left-turn lanes, a shoulder accommodating right-turn lanes at key intersections, and a drainage ditch on both sides of the roadway.

- From Broadway Road west to Carbon Hill Road, the ultimate design of Reed Road may only require a four-lane roadway with auxiliary lanes, depending upon the intensity of development. As such, the ultimate six-lane urban design to the east can be tapered down to a four-lane urban design, and the 170-foot right-of-way required to the east can be narrowed to 150-feet along this section of Reed Road. Assuming the centerline of the roadway will not change, the expansion of the existing 66-foot right-of-way to 150 feet will require the acquisition or dedication of 42 feet of right-of-way from both sides of the roadway. The interim design for this section of Reed Road may only require one through lane in each direction with a center left-turn lane. This could be accomplished within an urban-rural hybrid cross section with an urban barrier median and a rural outside shoulder and ditch. As volumes increase and additional road capacity is needed, the ultimate four-lane urban cross section could be developed. The 150-foot right-of-way, however, does maintain the ability to

expand the urban cross-section to six lanes should traffic volumes ever reach levels that the additional road capacity is needed.

- The additional right-of-way needed along Broadway Road and Reed Road should be dedicated as a contingency of development or acquired through other means to preserve the needed land area for the ultimate expansion of the roadways.

- Access control standards should be established for Broadway Road and Reed Road to maximize roadway capacity, maintain traffic flow efficiency and enhance safety. The following standards are recommended:

  - The minimum spacing between full access intersections, traffic-signal controlled or unsignalized, should be ¼-mile (1,320 feet).
  - Restricted right-in/right-out (RIRO) access driveways should be spaced at a minimum of 500 feet with a desirable spacing of 1/8-mile (660 feet).
  - As parcels are developed, existing driveways should be closed, relocated, consolidated or converted to RIRO to adhere to the minimum spacing standards.
  - Access to adjoining parcels should be consolidated whenever possible.
  - The raised barrier median should be extended across all RIRO driveways.
  - New full access driveways should be aligned opposite an existing full access driveway if it is reasonably close to meeting the minimum spacing requirements.
  - The creation of offset intersections should be avoided.
  - Development access should also be provided from the adjoining cross streets.
  - A parallel collector and local road system should be developed to distribute local traffic, serve new land uses, and divert some of the traffic burden away from Broadway Road and Reed Road.
  - Future traffic signals located within ½-mile of each other should be interconnected into a coordinated signal system.
  - Left-turn lanes and right-turn lanes should be provided at all full access intersections.
  - Parking should be prohibited at all times on the roadway.
  - Off-street bicycle trails should be provided within the corridors.

- The actual design of the intersections (i.e., length of turn lanes and tapers, intersection radii, signal equipment locations, etc.) will be determined when Phase I Intersection Design Studies (IDS) are prepared for the future signalized intersections or when Phase II engineering plans are developed for the roadways.

- Funding for the future capacity improvements to Broadway Road and Reed Road should be borne, in part, by the developers of land with frontage along the roadways. The funds would be used to supplement local County sources of revenue and possible grant funding from federal and state programs.

- The County should establish a funding mechanism that would allow the corridor roadway improvements to be completed in a coordinated effort for efficiencies of scale and to minimize disruptions to the travelling public.

- Various funding mechanisms are possible, including a Road Improvement Fund specific to the Broadway Road and Reed Road corridors or a countywide Road Impact Fee.

- Cost contributions or fees would be assessed based on a variety of possible development characteristics, including land use type, traffic generation and trip lengths, length of property frontage along the roadways, roadway construction cost, roadway capacity, etc.

- In addition, land developers along Broadway Road and Reed Road should be required to dedicate the necessary right-of-way for the County to construct the ultimately roadway improvements described in this report.

Appendix

Traffic Counts

Coal City, IL 09/28/09
Broadway Rd and Spring Rd 09:45:18
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 8 broad/spring

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	4	10	5	7	6	4	7	10	5	5	6	4	73
615	8	8	8	15	10	3	13	12	8	8	7	5	105
630	2	6	4	8	5	5	3	7	6	5	6	2	59
645	1	5	3	4	13	3	4	5	7	7	2	4	58
700	3	15	6	2	1	1	2	7	3	3	4	4	51
715	4	10	3	13	4	6	3	7	3	3	4	2	62
730	2	8	4	16	2	3	2	9	9	9	5	1	70
745	2	13	3	18	6	8	3	11	6	6	2	3	81
1600	3	44	12	13	5	4	3	51	3	2	14	9	163
1615	3	36	8	7	5	1	4	35	7	2	2	4	114
1630	5	21	16	11	4	1	2	24	4	1	5	4	98
1645	1	25	11	12	4	0	2	23	4	2	2	6	92
1700	4	25	4	13	4	1	1	18	0	0	0	4	74
1715	3	21	13	15	10	0	2	30	2	0	5	4	105
1730	1	26	6	9	14	1	2	20	4	1	8	4	96
1745	1	28	16	18	3	1	1	25	3	0	10	10	116
Total	47	301	122	181	96	42	54	294	74	54	82	70	1417

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 8 broad/spring

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	19	17	22	15	21	18	19	15	73
615	24	28	33	20	32	28	19	26	105
630	12	18	16	13	17	13	16	13	59
645	9	20	16	13	13	9	15	21	58
700	24	4	12	11	13	12	19	7	51
715	17	23	13	9	22	10	19	11	62
730	14	21	20	15	26	11	20	13	70
745	18	32	20	11	32	8	27	14	81
1600	59	22	57	25	73	29	50	11	163
1615	47	13	46	8	46	14	39	15	114
1630	42	16	30	10	39	23	23	13	98
1645	37	16	29	10	41	15	27	9	92
1700	33	18	19	4	35	5	26	8	74
1715	37	25	34	9	49	20	21	15	105
1730	33	24	26	13	33	16	28	19	96
1745	45	22	29	20	53	27	29	7	116
Total	470	319	422	206	545	258	397	217	1417

Coal City, IL 09/28/09
Broadway Rd and Spring Rd 09:45:18
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 8 broad/spring

Begin Time	N-Approach RT	N-Approach TH	N-Approach LT	E-Approach RT	E-Approach TH	E-Approach LT	S-Approach RT	S-Approach TH	S-Approach LT	W-Approach RT	W-Approach TH	W-Approach LT	Int Total
600	16	40	20	28	24	16	28	40	20	20	24	16	292
615	32	32	32	60	40	12	52	48	32	32	28	20	420
630	8	24	16	32	20	20	12	28	24	20	24	8	236
645	4	20	12	16	52	12	16	20	28	28	8	16	232
700	12	60	24	8	4	4	8	28	12	12	16	16	204
715	16	40	12	52	16	24	12	28	12	12	16	8	248
730	8	32	16	64	8	12	8	36	36	36	20	4	280
745	8	52	12	72	24	32	12	44	24	24	8	12	324
1600	12	176	48	52	20	16	12	204	12	8	56	36	652
1615	12	144	32	28	20	4	16	140	28	8	8	16	456
1630	20	84	64	44	16	4	8	96	16	4	20	16	392
1645	4	100	44	48	16	0	8	92	16	8	8	24	368
1700	16	100	16	52	16	4	4	72	0	0	0	16	296
1715	12	84	52	60	40	0	8	120	8	0	20	16	420
1730	4	104	24	36	56	4	8	80	16	4	32	16	384
1745	4	112	64	72	12	4	4	100	12	0	40	40	464

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 8 broad/spring

Begin Time	Approach Totals N	Approach Totals E	Approach Totals S	Approach Totals W	Exit Totals N	Exit Totals E	Exit Totals S	Exit Totals W	Int Total
600	76	68	88	60	84	72	76	60	292
615	96	112	132	80	128	112	76	104	420
630	48	72	64	52	68	52	64	52	236
645	36	80	64	52	52	36	60	84	232
700	96	16	48	44	52	48	76	28	204
715	68	92	52	36	88	40	76	44	248
730	56	84	80	60	104	44	80	52	280
745	72	128	80	44	128	32	108	56	324
1600	236	88	228	100	292	116	200	44	652
1615	188	52	184	32	184	56	156	60	456
1630	168	64	120	40	156	92	92	52	392
1645	148	64	116	40	164	60	108	36	368
1700	132	72	76	16	140	20	104	32	296
1715	148	100	136	36	196	80	84	60	420
1730	132	96	104	52	132	64	112	76	384
1745	180	88	116	80	212	108	116	28	464

Coal City, IL 09/28/09
Broadway Rd and Spring Rd 09:45:18
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 8 broad/spring

Begin Time	N-Approach RT	N-Approach TH	N-Approach LT	E-Approach RT	E-Approach TH	E-Approach LT	S-Approach RT	S-Approach TH	S-Approach LT	W-Approach RT	W-Approach TH	W-Approach LT	Int Total
600	15	29	20	34	34	15	27	34	26	25	21	15	295
615	14	34	21	29	29	12	22	31	24	23	19	15	273
630	10	36	16	27	23	15	12	26	19	18	16	12	230
645	10	38	16	35	20	13	11	28	22	22	15	11	241
700	11	46	16	49	13	18	10	34	21	21	15	10	264
715	8	31	10	47	12	17	8	27	18	18	11	6	213*
730	4	21	7	34	8	11	5	20	15	15	7	4	151*
745	2	13	3	18	6	8	3	11	6	6	2	3	81*
1600	12	126	47	43	18	6	11	133	18	7	23	23	467
1615	13	107	39	43	17	3	9	100	15	5	9	18	378
1630	13	92	44	51	22	2	7	95	10	3	12	18	369
1645	9	97	34	49	32	2	7	91	10	3	15	18	367
1700	9	100	39	55	31	3	6	93	9	1	23	22	391
1715	5	75	35	42	27	2	5	75	9	1	23	18	317*
1730	2	54	22	27	17	2	3	45	7	1	18	14	212*
1745	1	28	16	18	3	1	1	25	3	0	10	10	116*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 8 broad/spring

Begin Time	Approach Totals N	Approach Totals E	Approach Totals S	Approach Totals W	Exit Totals N	Exit Totals E	Exit Totals S	Exit Totals W	Int Total
600	64	83	87	61	83	68	69	75	295
615	69	70	77	57	75	62	69	67	273
630	62	65	57	46	65	44	69	52	230
645	64	68	61	48	74	42	73	52	241
700	73	80	65	46	93	41	85	45	264
715	49	76	53	35	80	29	66	38	213*
730	32	53	40	26	58	19	47	27	151*
745	18	32	20	11	32	8	27	14	81*
1600	185	67	162	53	199	81	139	48	467
1615	159	63	124	32	161	57	115	45	378
1630	149	75	112	33	164	63	97	45	369
1645	140	83	108	36	158	56	102	51	367
1700	148	89	108	46	170	68	104	49	391
1715	115	71	89	42	135	63	78	41	317*
1730	78	46	55	33	86	43	57	26	212*
1745	45	22	29	20	53	27	29	7	116*

Coal City, IL 09/28/09
Broadway Rd and Reed Rd 09:18:46
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 1 broad/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	4	14	6	2	0	2	10	0	0	9	0	47
615	0	3	13	5	3	1	0	8	0	0	12	1	46
630	0	8	21	9	2	2	6	9	0	0	14	0	71
645	0	5	11	8	2	1	5	8	0	0	6	0	46
700	1	9	7	10	3	0	1	6	0	0	5	1	43
715	1	9	14	19	8	1	5	10	0	0	7	0	74
730	0	15	12	10	9	0	4	8	1	1	9	0	69
745	1	14	7	10	8	4	2	10	0	1	8	1	66
1600	1	27	18	13	16	6	7	30	0	0	4	1	123
1615	0	25	9	12	10	4	3	24	1	1	5	0	94
1630	0	14	13	12	8	7	5	14	0	0	4	1	78
1645	0	14	12	15	6	4	5	18	0	0	2	0	76
1700	0	13	10	13	5	5	4	10	0	0	2	0	62
1715	1	10	11	20	7	4	2	15	1	1	5	1	78
1730	1	10	12	11	8	2	1	11	0	0	9	0	65
1745	0	23	13	12	10	4	2	11	0	1	6	1	83
Total	6	203	197	185	107	45	54	202	3	5	107	7	1121

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 1 broad/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	18	8	12	9	16	25	4	2	47
615	16	9	8	13	14	25	4	3	46
630	29	13	15	14	18	41	10	2	71
645	16	11	13	6	16	22	6	2	46
700	17	13	7	6	17	13	9	4	43
715	24	28	15	7	29	26	10	9	74
730	27	19	13	10	18	25	16	10	69
745	22	22	12	10	21	17	19	9	66
1600	46	35	37	5	44	29	33	17	123
1615	34	26	28	6	36	17	30	11	94
1630	27	27	19	5	27	22	21	8	78
1645	26	25	23	2	33	19	18	6	76
1700	23	23	14	2	23	16	18	5	62
1715	22	31	18	7	36	18	15	9	78
1730	23	21	12	9	22	22	12	9	65
1745	36	26	13	8	24	21	28	10	83
Total	406	337	259	119	394	358	253	116	1121

Coal City, IL 09/28/09
Broadway Rd and Reed Rd 09:18:46
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 1 broad/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	16	56	24	8	0	8	40	0	0	36	0	188
615	0	12	52	20	12	4	0	32	0	0	48	4	184
630	0	32	84	36	8	8	24	36	0	0	56	0	284
645	0	20	44	32	8	4	20	32	0	0	24	0	184
700	4	36	28	40	12	0	4	24	0	0	20	4	172
715	4	36	56	76	32	4	20	40	0	0	28	0	296
730	0	60	48	40	36	0	16	32	4	4	36	0	276
745	4	56	28	40	32	16	8	40	0	4	32	4	264
1600	4	108	72	52	64	24	28	120	0	0	16	4	492
1615	0	100	36	48	40	16	12	96	4	4	20	0	376
1630	0	56	52	48	32	28	20	56	0	0	16	4	312
1645	0	56	48	60	24	16	20	72	0	0	8	0	304
1700	0	52	40	52	20	20	16	40	0	0	8	0	248
1715	4	40	44	80	28	16	8	60	4	4	20	4	312
1730	4	40	48	44	32	8	4	44	0	0	36	0	260
1745	0	92	52	48	40	16	8	44	0	4	24	4	332

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 1 broad/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	72	32	48	36	64	100	16	8	188
615	64	36	32	52	56	100	16	12	184
630	116	52	60	56	72	164	40	8	284
645	64	44	52	24	64	88	24	8	184
700	68	52	28	24	68	52	36	16	172
715	96	112	60	28	116	104	40	36	296
730	108	76	52	40	72	100	64	40	276
745	88	88	48	40	84	68	76	36	264
1600	184	140	148	20	176	116	132	68	492
1615	136	104	112	24	144	68	120	44	376
1630	108	108	76	20	108	88	84	32	312
1645	104	100	92	8	132	76	72	24	304
1700	92	92	56	8	92	64	72	20	248
1715	88	124	72	28	144	72	60	36	312
1730	92	84	48	36	88	88	48	36	260
1745	144	104	52	32	96	84	112	40	332

Coal City, IL 09/28/09
Broadway Rd and Reed Rd 09:18:46
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 1 broad/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	20	59	28	9	4	13	35	0	0	41	1	210
615	1	25	52	32	10	4	12	31	0	0	37	2	206
630	2	31	53	46	15	4	17	33	0	0	32	1	234
645	2	38	44	47	22	2	15	32	1	1	27	1	232
700	3	47	40	49	28	5	12	34	1	2	29	2	252
715	2	38	33	39	25	5	11	28	1	2	24	1	209*
730	1	29	19	20	17	4	6	18	1	2	17	1	135*
745	1	14	7	10	8	4	2	10	0	1	8	1	66*
1600	1	80	52	52	40	21	20	86	1	1	15	2	371
1615	0	66	44	52	29	20	17	66	1	1	13	1	310
1630	1	51	46	60	26	20	16	57	1	1	13	2	294
1645	2	47	45	59	26	15	12	54	1	1	18	1	281
1700	2	56	46	56	30	15	9	47	1	2	22	2	288
1715	2	43	36	43	25	10	5	37	1	2	20	2	226*
1730	1	33	25	23	18	6	3	22	0	1	15	1	148*
1745	0	23	13	12	10	4	2	11	0	1	6	1	83*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 1 broad/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	79	41	48	42	64	113	24	9	210
615	78	46	43	39	65	101	29	11	206
630	86	65	50	33	80	102	35	17	234
645	84	71	48	29	80	86	41	25	232
700	90	82	47	33	85	81	54	32	252
715	73	69	40	27	68	68	45	28	209*
730	49	41	25	20	39	42	35	19	135*
745	22	22	12	10	21	17	19	9	66*
1600	133	113	107	18	140	87	102	42	371
1615	110	101	84	15	119	74	87	30	310
1630	98	106	74	16	119	75	72	28	294
1645	94	100	67	20	114	75	63	29	281
1700	104	101	57	26	105	77	73	33	288
1715	81	78	43	24	82	61	55	28	226*
1730	59	47	25	17	46	43	40	19	148*
1745	36	26	13	8	24	21	28	10	83*

Coal City, IL 09/28/09
Broadway Rd and Braceville Rd 09:50:05
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 9 broad/brace

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	4	0	2	2	6	0	0	0	0	0	7	4	25
615	4	0	2	1	11	0	0	0	1	0	12	6	37
630	4	0	2	4	4	0	0	0	0	0	9	9	32
645	8	0	1	0	7	0	0	1	0	0	3	6	26
700	8	0	0	2	7	0	0	0	0	1	7	6	31
715	4	0	4	3	4	0	0	1	0	0	3	8	27
730	7	0	9	5	5	0	0	0	0	0	4	9	39
745	8	0	9	3	6	0	0	1	0	0	16	9	52
1600	20	0	10	13	6	0	0	0	0	1	10	10	70
1615	20	0	11	6	11	0	0	0	0	0	10	8	66
1630	19	1	5	6	13	0	1	0	0	0	7	15	67
1645	13	0	3	3	9	0	0	0	0	0	9	12	49
1700	25	0	4	8	5	0	0	0	0	0	9	6	57
1715	25	1	5	4	14	0	1	0	0	0	7	6	63
1730	8	0	2	3	7	2	0	0	0	0	13	7	42
1745	15	1	5	1	7	1	0	0	1	0	10	10	51
Total	192	3	74	64	122	3	2	3	2	2	136	131	734

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 9 broad/brace

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	6	8	0	11	6	9	0	10	25
615	6	12	1	18	7	14	0	16	37
630	6	8	0	18	13	11	0	8	32
645	9	7	1	9	7	4	0	15	26
700	8	9	0	14	8	7	1	15	31
715	8	7	1	11	12	7	0	8	27
730	16	10	0	13	14	13	0	12	39
745	17	9	1	25	13	25	0	14	52
1600	30	19	0	21	23	20	1	26	70
1615	31	17	0	18	14	21	0	31	66
1630	25	19	1	22	21	13	1	32	67
1645	16	12	0	21	15	12	0	22	49
1700	29	13	0	15	14	13	0	30	57
1715	31	18	1	13	10	13	1	39	63
1730	10	12	0	20	10	15	2	15	42
1745	21	9	1	20	11	15	2	23	51
Total	269	189	7	269	198	212	8	316	734

Coal City, IL 09/28/09
Broadway Rd and Braceville Rd 09:50:05
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 9 broad/brace

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	16	0	8	8	24	0	0	0	0	0	28	16	100
615	16	0	8	4	44	0	0	0	4	0	48	24	148
630	16	0	8	16	16	0	0	0	0	0	36	36	128
645	32	0	4	0	28	0	0	4	0	0	12	24	104
700	32	0	0	8	28	0	0	0	0	4	28	24	124
715	16	0	16	12	16	0	0	4	0	0	12	32	108
730	28	0	36	20	20	0	0	0	0	0	16	36	156
745	32	0	36	12	24	0	0	4	0	0	64	36	208
1600	80	0	40	52	24	0	0	0	0	4	40	40	280
1615	80	0	44	24	44	0	0	0	0	0	40	32	264
1630	76	4	20	24	52	0	4	0	0	0	28	60	268
1645	52	0	12	12	36	0	0	0	0	0	36	48	196
1700	100	0	16	32	20	0	0	0	0	0	36	24	228
1715	100	4	20	16	56	0	4	0	0	0	28	24	252
1730	32	0	8	12	28	8	0	0	0	0	52	28	168
1745	60	4	20	4	28	4	0	0	4	0	40	40	204

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 9 broad/brace

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	24	32	0	44	24	36	0	40	100
615	24	48	4	72	28	56	0	64	148
630	24	32	0	72	52	44	0	32	128
645	36	28	4	36	28	16	0	60	104
700	32	36	0	56	32	28	4	60	124
715	32	28	4	44	48	28	0	32	108
730	64	40	0	52	56	52	0	48	156
745	68	36	4	100	52	100	0	56	208
1600	120	76	0	84	92	80	4	104	280
1615	124	68	0	72	56	84	0	124	264
1630	100	76	4	88	84	52	4	128	268
1645	64	48	0	84	60	48	0	88	196
1700	116	52	0	60	56	52	0	120	228
1715	124	72	4	52	40	52	4	156	252
1730	40	48	0	80	40	60	8	60	168
1745	84	36	4	80	44	60	8	92	204

Coal City, IL 09/28/09
Broadway Rd and Braceville Rd 09:50:05
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 9 broad/brace

Begin Time	N-Approach RT	N-Approach TH	N-Approach LT	E-Approach RT	E-Approach TH	E-Approach LT	S-Approach RT	S-Approach TH	S-Approach LT	W-Approach RT	W-Approach TH	W-Approach LT	Int Total
600	20	0	7	7	28	0	0	1	1	0	31	25	120
615	24	0	5	7	29	0	0	1	1	1	31	27	126
630	24	0	7	9	22	0	0	2	0	1	22	29	116
645	27	0	14	10	23	0	0	2	0	1	17	29	123
700	27	0	22	13	22	0	0	2	0	1	30	32	149
715	19	0	22	11	15	0	0	2	0	0	23	26	118*
730	15	0	18	8	11	0	0	1	0	0	20	18	91*
745	8	0	9	3	6	0	0	1	0	0	16	9	52*
1600	72	1	29	28	39	0	1	0	0	1	36	45	252
1615	77	1	23	23	38	0	1	0	0	0	35	41	239
1630	82	2	17	21	41	0	2	0	0	0	32	39	236
1645	71	1	14	18	35	2	1	0	0	0	38	31	211
1700	73	2	16	16	33	3	1	0	1	0	39	29	213
1715	48	2	12	8	28	3	1	0	1	0	30	23	156*
1730	23	1	7	4	14	3	0	0	1	0	23	17	93*
1745	15	1	5	1	7	1	0	0	1	0	10	10	51*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 9 broad/brace

Begin Time	Approach Totals N	Approach Totals E	Approach Totals S	Approach Totals W	Exit Totals N	Exit Totals E	Exit Totals S	Exit Totals W	Int Total
600	27	35	2	56	33	38	0	49	120
615	29	36	2	59	35	36	1	54	126
630	31	31	2	52	40	29	1	46	116
645	41	33	2	47	41	31	1	50	123
700	49	35	2	63	47	52	1	49	149
715	41	26	2	49	39	45	0	34	118*
730	33	19	1	38	27	38	0	26	91*
745	17	9	1	25	13	25	0	14	52*
1600	102	67	1	82	73	66	2	111	252
1615	101	61	1	76	64	59	1	115	239
1630	101	62	2	71	60	51	2	123	236
1645	86	55	1	69	49	53	3	106	211
1700	91	52	2	68	45	56	5	107	213
1715	62	39	2	53	31	43	5	77	156*
1730	31	21	1	40	21	30	4	38	93*
1745	21	9	1	20	11	15	2	23	51*

Coal City, IL 09/28/09
Hickory St and Reed Rd 09:26:22
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 3 hick/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	3	2	0	1	0	0	2	0	9	1	0	1	19
615	6	0	0	0	0	0	2	1	19	4	0	3	35
630	6	1	2	1	0	1	3	1	16	10	0	1	42
645	5	1	1	1	0	2	0	1	11	3	0	2	27
700	8	1	0	2	0	0	2	2	19	3	0	1	38
715	13	0	1	0	0	2	2	4	12	5	0	3	42
730	8	2	1	0	0	4	1	2	14	8	0	1	41
745	5	2	1	1	0	0	1	4	6	4	0	4	28
1600	2	2	2	0	0	3	1	1	5	11	0	2	29
1615	5	2	2	2	0	1	2	1	5	8	0	8	36
1630	2	1	1	0	0	1	3	1	7	23	0	10	49
1645	3	2	2	3	0	3	2	3	8	26	0	7	59
1700	2	1	1	0	0	1	3	3	14	16	0	3	44
1715	2	1	3	1	0	1	1	2	7	12	0	3	33
1730	1	0	1	2	0	4	2	0	11	22	0	6	49
1745	5	1	2	2	0	3	1	2	6	14	0	7	43
Total	76	19	20	16	0	26	28	28	169	170	0	62	614

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 3 hick/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	5	1	11	2	2	2	3	12	19
615	6	0	22	7	4	2	4	25	35
630	9	2	20	11	3	5	12	22	42
645	7	3	12	5	4	1	6	16	27
700	9	2	23	4	5	2	4	27	38
715	14	2	18	8	7	3	7	25	42
730	11	4	17	9	3	2	14	22	41
745	8	1	11	8	9	2	6	11	28
1600	6	3	7	13	3	3	16	7	29
1615	9	3	8	16	11	4	11	10	36
1630	4	1	11	33	11	4	25	9	49
1645	7	6	13	33	13	4	31	11	59
1700	4	1	20	19	6	4	18	16	44
1715	6	2	10	15	6	4	14	9	33
1730	2	6	13	28	8	3	26	12	49
1745	8	5	9	21	11	3	18	11	43
Total	115	42	225	232	106	48	215	245	614

Coal City, IL 09/28/09
Hickory St and Reed Rd 09:26:22
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 3 hick/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	12	8	0	4	0	0	8	0	36	4	0	4	76
615	24	0	0	0	0	0	8	4	76	16	0	12	140
630	24	4	8	4	0	4	12	4	64	40	0	4	168
645	20	4	4	4	0	8	0	4	44	12	0	8	108
700	32	4	0	8	0	0	8	8	76	12	0	4	152
715	52	0	4	0	0	8	8	16	48	20	0	12	168
730	32	8	4	0	0	16	4	8	56	32	0	4	164
745	20	8	4	4	0	0	4	16	24	16	0	16	112
1600	8	8	8	0	0	12	4	4	20	44	0	8	116
1615	20	8	8	8	0	4	8	4	20	32	0	32	144
1630	8	4	4	0	0	4	12	4	28	92	0	40	196
1645	12	8	8	12	0	12	8	12	32	104	0	28	236
1700	8	4	4	0	0	4	12	12	56	64	0	12	176
1715	8	4	12	4	0	4	4	8	28	48	0	12	132
1730	4	0	4	8	0	16	8	0	44	88	0	24	196
1745	20	4	8	8	0	12	4	8	24	56	0	28	172

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 3 hick/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	20	4	44	8	8	8	12	48	76
615	24	0	88	28	16	8	16	100	140
630	36	8	80	44	12	20	48	88	168
645	28	12	48	20	16	4	24	64	108
700	36	8	92	16	20	8	16	108	152
715	56	8	72	32	28	12	28	100	168
730	44	16	68	36	12	8	56	88	164
745	32	4	44	32	36	8	24	44	112
1600	24	12	28	52	12	12	64	28	116
1615	36	12	32	64	44	16	44	40	144
1630	16	4	44	132	44	16	100	36	196
1645	28	24	52	132	52	16	124	44	236
1700	16	4	80	76	24	16	72	64	176
1715	24	8	40	60	24	16	56	36	132
1730	8	24	52	112	32	12	104	48	196
1745	32	20	36	84	44	12	72	44	172

Coal City, IL 09/28/09
Hickory St and Reed Rd 09:26:22
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 3 hick/reed

Begin Time	N-Approach RT	N-Approach TH	N-Approach LT	E-Approach RT	E-Approach TH	E-Approach LT	S-Approach RT	S-Approach TH	S-Approach LT	W-Approach RT	W-Approach TH	W-Approach LT	Int Total
600	20	4	3	3	0	3	7	3	55	18	0	7	123
615	25	3	3	4	0	3	7	5	65	20	0	7	142
630	32	3	4	4	0	5	7	8	58	21	0	7	149
645	34	4	3	3	0	8	5	9	56	19	0	7	148
700	34	5	3	3	0	6	6	12	51	20	0	9	149
715	26	4	3	1	0	6	4	10	32	17	0	8	111*
730	13	4	2	1	0	4	2	6	20	12	0	5	69*
745	5	2	1	1	0	0	1	4	6	4	0	4	28*
1600	12	7	7	5	0	8	8	6	25	68	0	27	173
1615	12	6	6	5	0	6	10	8	34	73	0	28	188
1630	9	5	7	4	0	6	9	9	36	77	0	23	185
1645	8	4	7	6	0	9	8	8	40	76	0	19	185
1700	10	3	7	5	0	9	7	7	38	64	0	19	169
1715	8	2	6	5	0	8	4	4	24	48	0	16	125*
1730	6	1	3	4	0	7	3	2	17	36	0	13	92*
1745	5	1	2	2	0	3	1	2	6	14	0	7	43*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 3 hick/reed

Begin Time	Approach Totals N	Approach Totals E	Approach Totals S	Approach Totals W	Exit Totals N	Exit Totals E	Exit Totals S	Exit Totals W	Int Total
600	27	6	65	25	13	10	25	75	123
615	31	7	77	27	16	10	26	90	142
630	39	9	73	28	19	11	29	90	149
645	41	11	70	26	19	8	31	90	148
700	42	9	69	29	24	9	31	85	149
715	33	7	46	25	19	7	27	58	111*
730	19	5	28	17	12	4	20	33	69*
745	8	1	11	8	9	2	6	11	28*
1600	26	13	39	95	38	15	83	37	173
1615	24	11	52	101	41	16	85	46	188
1630	21	10	54	100	36	16	88	45	185
1645	19	15	56	95	33	15	89	48	185
1700	20	14	52	83	31	14	76	48	169
1715	16	13	32	64	25	10	58	32	125*
1730	10	11	22	49	19	6	44	23	92*
1745	8	5	9	21	11	3	18	11	43*

Coal City, IL 09/28/09
I55 and Reed Rd 09:21:59
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 2 55/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	0	0	27	9	0	1	0	1	0	39	11	88
615	0	0	0	46	14	0	4	0	3	0	70	6	143
630	0	0	0	25	6	0	1	0	1	0	82	8	123
645	0	0	0	23	21	0	1	0	3	0	40	9	97
700	0	0	0	36	22	0	3	0	2	0	23	4	90
715	0	0	0	35	28	0	7	0	1	0	19	6	96
730	0	0	0	34	21	0	1	0	4	0	34	8	102
745	0	0	0	14	18	0	3	0	2	0	19	3	59
1600	0	0	0	17	31	0	4	0	3	0	53	4	112
1615	0	0	0	14	25	0	7	0	2	0	44	6	98
1630	0	0	0	20	24	0	2	0	1	0	65	7	119
1645	0	0	0	17	21	0	6	0	1	0	61	7	113
1700	0	0	0	20	22	0	5	0	0	0	33	5	85
1715	0	0	0	13	26	0	7	0	3	0	53	4	106
1730	0	0	0	18	26	0	5	0	2	0	64	2	117
1745	0	0	0	12	13	0	2	0	1	0	44	6	78
Total	0	0	0	371	327	0	59	0	30	0	743	96	1626

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 2 55/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	0	36	2	50	38	40	0	10	88
615	0	60	7	76	52	74	0	17	143
630	0	31	2	90	33	83	0	7	123
645	0	44	4	49	32	41	0	24	97
700	0	58	5	27	40	26	0	24	90
715	0	63	8	25	41	26	0	29	96
730	0	55	5	42	42	35	0	25	102
745	0	32	5	22	17	22	0	20	59
1600	0	48	7	57	21	57	0	34	112
1615	0	39	9	50	20	51	0	27	98
1630	0	44	3	72	27	67	0	25	119
1645	0	38	7	68	24	67	0	22	113
1700	0	42	5	38	25	38	0	22	85
1715	0	39	10	57	17	60	0	29	106
1730	0	44	7	66	20	69	0	28	117
1745	0	25	3	50	18	46	0	14	78
Total	0	698	89	839	467	802	0	357	1626

Coal City, IL 09/28/09
I55 and Reed Rd 09:21:59
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 2 55/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	0	0	108	36	0	4	0	4	0	156	44	352
615	0	0	0	184	56	0	16	0	12	0	280	24	572
630	0	0	0	100	24	0	4	0	4	0	328	32	492
645	0	0	0	92	84	0	4	0	12	0	160	36	388
700	0	0	0	144	88	0	12	0	8	0	92	16	360
715	0	0	0	140	112	0	28	0	4	0	76	24	384
730	0	0	0	136	84	0	4	0	16	0	136	32	408
745	0	0	0	56	72	0	12	0	8	0	76	12	236
1600	0	0	0	68	124	0	16	0	12	0	212	16	448
1615	0	0	0	56	100	0	28	0	8	0	176	24	392
1630	0	0	0	80	96	0	8	0	4	0	260	28	476
1645	0	0	0	68	84	0	24	0	4	0	244	28	452
1700	0	0	0	80	88	0	20	0	0	0	132	20	340
1715	0	0	0	52	104	0	28	0	12	0	212	16	424
1730	0	0	0	72	104	0	20	0	8	0	256	8	468
1745	0	0	0	48	52	0	8	0	4	0	176	24	312

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 2 55/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	0	144	8	200	152	160	0	40	352
615	0	240	28	304	208	296	0	68	572
630	0	124	8	360	132	332	0	28	492
645	0	176	16	196	128	164	0	96	388
700	0	232	20	108	160	104	0	96	360
715	0	252	32	100	164	104	0	116	384
730	0	220	20	168	168	140	0	100	408
745	0	128	20	88	68	88	0	80	236
1600	0	192	28	228	84	228	0	136	448
1615	0	156	36	200	80	204	0	108	392
1630	0	176	12	288	108	268	0	100	476
1645	0	152	28	272	96	268	0	88	452
1700	0	168	20	152	100	152	0	88	340
1715	0	156	40	228	68	240	0	116	424
1730	0	176	28	264	80	276	0	112	468
1745	0	100	12	200	72	184	0	56	312

Coal City, IL 09/28/09
I55 and Reed Rd 09:21:59
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 2 55/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	0	0	121	50	0	7	0	8	0	231	34	451
615	0	0	0	130	63	0	9	0	9	0	215	27	453
630	0	0	0	119	77	0	12	0	7	0	164	27	406
645	0	0	0	128	92	0	12	0	10	0	116	27	385
700	0	0	0	119	89	0	14	0	9	0	95	21	347
715	0	0	0	83	67	0	11	0	7	0	72	17	257*
730	0	0	0	48	39	0	4	0	6	0	53	11	161*
745	0	0	0	14	18	0	3	0	2	0	19	3	59*
1600	0	0	0	68	101	0	19	0	7	0	223	24	442
1615	0	0	0	71	92	0	20	0	4	0	203	25	415
1630	0	0	0	70	93	0	20	0	5	0	212	23	423
1645	0	0	0	68	95	0	23	0	6	0	211	18	421
1700	0	0	0	63	87	0	19	0	6	0	194	17	386
1715	0	0	0	43	65	0	14	0	6	0	161	12	301*
1730	0	0	0	30	39	0	7	0	3	0	108	8	195*
1745	0	0	0	12	13	0	2	0	1	0	44	6	78*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 2 55/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	0	171	15	265	155	238	0	58	451
615	0	193	18	242	157	224	0	72	453
630	0	196	19	191	146	176	0	84	406
645	0	220	22	143	155	128	0	102	385
700	0	208	23	116	140	109	0	98	347
715	0	150	18	89	100	83	0	74	257*
730	0	87	10	64	59	57	0	45	161*
745	0	32	5	22	17	22	0	20	59*
1600	0	169	26	247	92	242	0	108	442
1615	0	163	24	228	96	223	0	96	415
1630	0	163	25	235	93	232	0	98	423
1645	0	163	29	229	86	234	0	101	421
1700	0	150	25	211	80	213	0	93	386
1715	0	108	20	173	55	175	0	71	301*
1730	0	69	10	116	38	115	0	42	195*
1745	0	25	3	50	18	46	0	14	78*

Coal City, IL 09/28/09
I55 Southbound Ramp and Reed Rd 09:29:41
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 4 I55/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	3	0	30	0	6	5	0	0	0	1	29	0	74
615	2	0	37	0	15	3	0	0	0	2	37	0	96
630	3	0	48	0	13	2	0	0	0	1	41	0	108
645	3	0	28	0	16	2	0	0	0	0	25	0	74
700	1	0	11	0	19	6	0	0	0	1	14	0	52
715	4	0	9	0	24	5	0	0	0	0	20	0	62
730	5	0	17	0	21	5	0	0	0	3	21	0	72
745	2	0	8	0	18	2	0	0	0	3	14	0	47
1600	9	0	32	0	35	4	0	0	0	2	27	0	109
1615	11	0	24	0	23	3	0	0	0	1	23	0	85
1630	5	0	39	0	19	5	0	0	0	1	25	0	94
1645	6	0	39	0	20	4	0	0	0	1	25	0	95
1700	9	0	21	0	20	2	0	0	0	2	16	0	70
1715	13	0	29	0	27	1	0	0	0	2	25	0	97
1730	14	0	39	0	24	4	0	0	0	1	24	0	106
1745	7	0	27	0	18	2	0	0	0	2	25	0	81
Total	97	0	438	0	318	55	0	0	0	23	391	0	1322

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 4 I55/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	33	11	0	30	0	59	6	9	74
615	39	18	0	39	0	74	5	17	96
630	51	15	0	42	0	89	3	16	108
645	31	18	0	25	0	53	2	19	74
700	12	25	0	15	0	25	7	20	52
715	13	29	0	20	0	29	5	28	62
730	22	26	0	24	0	38	8	26	72
745	10	20	0	17	0	22	5	20	47
1600	41	39	0	29	0	59	6	44	109
1615	35	26	0	24	0	47	4	34	85
1630	44	24	0	26	0	64	6	24	94
1645	45	24	0	26	0	64	5	26	95
1700	30	22	0	18	0	37	4	29	70
1715	42	28	0	27	0	54	3	40	97
1730	53	28	0	25	0	63	5	38	106
1745	34	20	0	27	0	52	4	25	81
Total	535	373	0	414	0	829	78	415	1322

Coal City, IL 09/28/09
I55 Southbound Ramp and Reed Rd 09:29:41
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 4 I55/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	12	0	120	0	24	20	0	0	0	4	116	0	296
615	8	0	148	0	60	12	0	0	0	8	148	0	384
630	12	0	192	0	52	8	0	0	0	4	164	0	432
645	12	0	112	0	64	8	0	0	0	0	100	0	296
700	4	0	44	0	76	24	0	0	0	4	56	0	208
715	16	0	36	0	96	20	0	0	0	0	80	0	248
730	20	0	68	0	84	20	0	0	0	12	84	0	288
745	8	0	32	0	72	8	0	0	0	12	56	0	188
1600	36	0	128	0	140	16	0	0	0	8	108	0	436
1615	44	0	96	0	92	12	0	0	0	4	92	0	340
1630	20	0	156	0	76	20	0	0	0	4	100	0	376
1645	24	0	156	0	80	16	0	0	0	4	100	0	380
1700	36	0	84	0	80	8	0	0	0	8	64	0	280
1715	52	0	116	0	108	4	0	0	0	8	100	0	388
1730	56	0	156	0	96	16	0	0	0	4	96	0	424
1745	28	0	108	0	72	8	0	0	0	8	100	0	324

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 4 I55/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	132	44	0	120	0	236	24	36	296
615	156	72	0	156	0	296	20	68	384
630	204	60	0	168	0	356	12	64	432
645	124	72	0	100	0	212	8	76	296
700	48	100	0	60	0	100	28	80	208
715	52	116	0	80	0	116	20	112	248
730	88	104	0	96	0	152	32	104	288
745	40	80	0	68	0	88	20	80	188
1600	164	156	0	116	0	236	24	176	436
1615	140	104	0	96	0	188	16	136	340
1630	176	96	0	104	0	256	24	96	376
1645	180	96	0	104	0	256	20	104	380
1700	120	88	0	72	0	148	16	116	280
1715	168	112	0	108	0	216	12	160	388
1730	212	112	0	100	0	252	20	152	424
1745	136	80	0	108	0	208	16	100	324

Coal City, IL 09/28/09
I55 Southbound Ramp and Reed Rd 09:29:41
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 4 I55/reed

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	11	0	143	0	50	12	0	0	0	4	132	0	352
615	9	0	124	0	63	13	0	0	0	4	117	0	330
630	11	0	96	0	72	15	0	0	0	2	100	0	296
645	13	0	65	0	80	18	0	0	0	4	80	0	260
700	12	0	45	0	82	18	0	0	0	7	69	0	233
715	11	0	34	0	63	12	0	0	0	6	55	0	181*
730	7	0	25	0	39	7	0	0	0	6	35	0	119*
745	2	0	8	0	18	2	0	0	0	3	14	0	47*
1600	31	0	134	0	97	16	0	0	0	5	100	0	383
1615	31	0	123	0	82	14	0	0	0	5	89	0	344
1630	33	0	128	0	86	12	0	0	0	6	91	0	356
1645	42	0	128	0	91	11	0	0	0	6	90	0	368
1700	43	0	116	0	89	9	0	0	0	7	90	0	354
1715	34	0	95	0	69	7	0	0	0	5	74	0	284*
1730	21	0	66	0	42	6	0	0	0	3	49	0	187*
1745	7	0	27	0	18	2	0	0	0	2	25	0	81*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 4 I55/reed

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	154	62	0	136	0	275	16	61	352
615	133	76	0	121	0	241	17	72	330
630	107	87	0	102	0	196	17	83	296
645	78	98	0	84	0	145	22	93	260
700	57	100	0	76	0	114	25	94	233
715	45	75	0	61	0	89	18	74	181*
730	32	46	0	41	0	60	13	46	119*
745	10	20	0	17	0	22	5	20	47*
1600	165	113	0	105	0	234	21	128	383
1615	154	96	0	94	0	212	19	113	344
1630	161	98	0	97	0	219	18	119	356
1645	170	102	0	96	0	218	17	133	368
1700	159	98	0	97	0	206	16	132	354
1715	129	76	0	79	0	169	12	103	284*
1730	87	48	0	52	0	115	9	63	187*
1745	34	20	0	27	0	52	4	25	81*

Coal City, IL 09/28/09
Reed Rd and Will Rd 09:31:45
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 5 reed/will

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	0	2	1	0	0	0	0	0	0	0	0	3
615	0	0	7	1	0	0	0	0	0	0	0	0	8
630	0	0	0	1	0	0	0	0	0	0	0	0	1
645	0	0	0	2	0	0	0	0	0	0	0	0	2
700	0	0	2	1	0	0	0	0	0	0	0	0	3
715	0	0	0	0	0	0	0	0	0	0	0	1	1
730	0	0	3	0	0	0	0	0	0	0	0	0	3
745	0	0	2	1	0	0	0	0	0	0	0	1	4
1600	1	0	5	5	0	0	0	0	0	0	0	0	11
1615	0	0	3	6	0	0	0	0	0	0	0	0	9
1630	1	0	2	2	0	0	0	0	0	0	0	0	5
1645	1	0	6	5	0	0	0	0	0	0	0	1	13
1700	1	0	2	1	0	0	0	0	0	0	0	1	5
1715	1	0	3	2	0	0	0	0	0	0	0	0	6
1730	1	0	2	4	0	0	0	0	0	0	0	0	7
1745	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	6	0	39	33	0	0	0	0	0	0	0	4	82

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 5 reed/will

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	2	1	0	0	1	2	0	0	3
615	7	1	0	0	1	7	0	0	8
630	0	1	0	0	1	0	0	0	1
645	0	2	0	0	2	0	0	0	2
700	2	1	0	0	1	2	0	0	3
715	0	0	0	1	1	0	0	0	1
730	3	0	0	0	0	3	0	0	3
745	2	1	0	1	2	2	0	0	4
1600	6	5	0	0	5	5	0	1	11
1615	3	6	0	0	6	3	0	0	9
1630	3	2	0	0	2	2	0	1	5
1645	7	5	0	1	6	6	0	1	13
1700	3	1	0	1	2	2	0	1	5
1715	4	2	0	0	2	3	0	1	6
1730	3	4	0	0	4	2	0	1	7
1745	0	1	0	0	1	0	0	0	1
Total	45	33	0	4	37	39	0	6	82

Coal City, IL 09/28/09
Reed Rd and Will Rd 09:31:45
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 5 reed/will

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	0	8	4	0	0	0	0	0	0	0	0	12
615	0	0	28	4	0	0	0	0	0	0	0	0	32
630	0	0	0	4	0	0	0	0	0	0	0	0	4
645	0	0	0	8	0	0	0	0	0	0	0	0	8
700	0	0	8	4	0	0	0	0	0	0	0	0	12
715	0	0	0	0	0	0	0	0	0	0	0	4	4
730	0	0	12	0	0	0	0	0	0	0	0	0	12
745	0	0	8	4	0	0	0	0	0	0	0	4	16
1600	4	0	20	20	0	0	0	0	0	0	0	0	44
1615	0	0	12	24	0	0	0	0	0	0	0	0	36
1630	4	0	8	8	0	0	0	0	0	0	0	0	20
1645	4	0	24	20	0	0	0	0	0	0	0	4	52
1700	4	0	8	4	0	0	0	0	0	0	0	4	20
1715	4	0	12	8	0	0	0	0	0	0	0	0	24
1730	4	0	8	16	0	0	0	0	0	0	0	0	28
1745	0	0	0	4	0	0	0	0	0	0	0	0	4

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 5 reed/will

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	8	4	0	0	4	8	0	0	12
615	28	4	0	0	4	28	0	0	32
630	0	4	0	0	4	0	0	0	4
645	0	8	0	0	8	0	0	0	8
700	8	4	0	0	4	8	0	0	12
715	0	0	0	4	4	0	0	0	4
730	12	0	0	0	0	12	0	0	12
745	8	4	0	4	8	8	0	0	16
1600	24	20	0	0	20	20	0	4	44
1615	12	24	0	0	24	12	0	0	36
1630	12	8	0	0	8	8	0	4	20
1645	28	20	0	4	24	24	0	4	52
1700	12	4	0	4	8	8	0	4	20
1715	16	8	0	0	8	12	0	4	24
1730	12	16	0	0	16	8	0	4	28
1745	0	4	0	0	4	0	0	0	4

Coal City, IL 09/28/09
Reed Rd and Will Rd 09:31:45
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 5 reed/will

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	0	9	5	0	0	0	0	0	0	0	0	14
615	0	0	9	5	0	0	0	0	0	0	0	0	14
630	0	0	2	4	0	0	0	0	0	0	0	1	7
645	0	0	5	3	0	0	0	0	0	0	0	1	9
700	0	0	7	2	0	0	0	0	0	0	0	2	11
715	0	0	5	1	0	0	0	0	0	0	0	2	8*
730	0	0	5	1	0	0	0	0	0	0	0	1	7*
745	0	0	2	1	0	0	0	0	0	0	0	1	4*
1600	3	0	16	18	0	0	0	0	0	0	0	1	38
1615	3	0	13	14	0	0	0	0	0	0	0	2	32
1630	4	0	13	10	0	0	0	0	0	0	0	2	29
1645	4	0	13	12	0	0	0	0	0	0	0	2	31
1700	3	0	7	8	0	0	0	0	0	0	0	1	19
1715	2	0	5	7	0	0	0	0	0	0	0	0	14*
1730	1	0	2	5	0	0	0	0	0	0	0	0	8*
1745	0	0	0	1	0	0	0	0	0	0	0	0	1*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 5 reed/will

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	9	5	0	0	5	9	0	0	14
615	9	5	0	0	5	9	0	0	14
630	2	4	0	1	5	2	0	0	7
645	5	3	0	1	4	5	0	0	9
700	7	2	0	2	4	7	0	0	11
715	5	1	0	2	3	5	0	0	8*
730	5	1	0	1	2	5	0	0	7*
745	2	1	0	1	2	2	0	0	4*
1600	19	18	0	1	19	16	0	3	38
1615	16	14	0	2	16	13	0	3	32
1630	17	10	0	2	12	13	0	4	29
1645	17	12	0	2	14	13	0	4	31
1700	10	8	0	1	9	7	0	3	19
1715	7	7	0	0	7	5	0	2	14*
1730	3	5	0	0	5	2	0	1	8*
1745	0	1	0	0	1	0	0	0	1*

Coal City, IL 09/28/09
Reed Rd and Berta Rd 09:35:52
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 6 reed/berta

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	1	0	5	1	6	1	2	1	1	0	26	0	44
615	0	2	2	4	13	0	3	0	0	0	29	0	53
630	0	0	3	4	12	0	3	2	0	0	36	0	60
645	0	0	2	4	10	1	1	1	0	0	22	0	41
700	1	1	3	3	17	0	3	3	0	0	10	0	41
715	0	1	1	2	25	1	4	0	3	3	17	2	59
730	0	0	0	4	20	0	1	3	1	2	24	0	55
745	4	1	3	2	18	1	5	6	1	1	12	3	57
1600	1	3	5	1	24	6	1	1	1	3	23	3	72
1615	1	3	3	2	34	2	2	1	0	0	16	0	64
1630	1	5	9	1	19	5	0	2	1	0	23	1	67
1645	1	2	1	0	21	1	3	2	0	1	18	1	51
1700	1	4	3	2	21	3	0	4	0	0	14	2	54
1715	0	4	3	2	32	5	4	0	0	0	19	1	70
1730	1	0	6	5	23	9	1	3	1	1	19	0	69
1745	1	2	0	3	22	1	0	2	1	1	26	0	59
Total	13	28	49	40	317	36	33	31	10	12	334	13	916

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 6 reed/berta

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	6	8	4	26	2	33	1	8	44
615	4	17	3	29	4	34	2	13	53
630	3	16	5	36	6	42	0	12	60
645	2	15	2	22	5	25	1	10	41
700	5	20	6	10	6	16	1	18	41
715	2	28	7	22	4	22	5	28	59
730	0	24	5	26	7	25	2	21	55
745	8	21	12	16	11	20	3	23	57
1600	9	31	3	29	5	29	12	26	72
1615	7	38	3	16	3	21	5	35	64
1630	15	25	3	24	4	32	10	21	67
1645	4	22	5	20	3	22	4	22	51
1700	8	26	4	16	8	17	7	22	54
1715	7	39	4	20	3	26	9	32	70
1730	7	37	5	20	8	26	10	25	69
1745	3	26	3	27	5	26	4	24	59
Total	90	393	74	359	84	416	76	340	916

Coal City, IL 09/28/09
Reed Rd and Berta Rd 09:35:52
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 6 reed/berta

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	4	0	20	4	24	4	8	4	4	0	104	0	176
615	0	8	8	16	52	0	12	0	0	0	116	0	212
630	0	0	12	16	48	0	12	8	0	0	144	0	240
645	0	0	8	16	40	4	4	4	0	0	88	0	164
700	4	4	12	12	68	0	12	12	0	0	40	0	164
715	0	4	4	8	100	4	16	0	12	12	68	8	236
730	0	0	0	16	80	0	4	12	4	8	96	0	220
745	16	4	12	8	72	4	20	24	4	4	48	12	228
1600	4	12	20	4	96	24	4	4	4	12	92	12	288
1615	4	12	12	8	136	8	8	4	0	0	64	0	256
1630	4	20	36	4	76	20	0	8	4	0	92	4	268
1645	4	8	4	0	84	4	12	8	0	4	72	4	204
1700	4	16	12	8	84	12	0	16	0	0	56	8	216
1715	0	16	12	8	128	20	16	0	0	0	76	4	280
1730	4	0	24	20	92	36	4	12	4	4	76	0	276
1745	4	8	0	12	88	4	0	8	4	4	104	0	236

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 6 reed/berta

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	24	32	16	104	8	132	4	32	176
615	16	68	12	116	16	136	8	52	212
630	12	64	20	144	24	168	0	48	240
645	8	60	8	88	20	100	4	40	164
700	20	80	24	40	24	64	4	72	164
715	8	112	28	88	16	88	20	112	236
730	0	96	20	104	28	100	8	84	220
745	32	84	48	64	44	80	12	92	228
1600	36	124	12	116	20	116	48	104	288
1615	28	152	12	64	12	84	20	140	256
1630	60	100	12	96	16	128	40	84	268
1645	16	88	20	80	12	88	16	88	204
1700	32	104	16	64	32	68	28	88	216
1715	28	156	16	80	12	104	36	128	280
1730	28	148	20	80	32	104	40	100	276
1745	12	104	12	108	20	104	16	96	236

Coal City, IL 09/28/09
Reed Rd and Berta Rd 09:35:52
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 6 reed/berta

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	1	2	12	13	41	2	9	4	1	0	113	0	198
615	1	3	10	15	52	1	10	6	0	0	97	0	195
630	1	2	9	13	64	2	11	6	3	3	85	2	201
645	1	2	6	13	72	2	9	7	4	5	73	2	196
700	5	3	7	11	80	2	13	12	5	6	63	5	212
715	4	2	4	8	63	2	10	9	5	6	53	5	171*
730	4	1	3	6	38	1	6	9	2	3	36	3	112*
745	4	1	3	2	18	1	5	6	1	1	12	3	57*
1600	4	13	18	4	98	14	6	6	2	4	80	5	254
1615	4	14	16	5	95	11	5	9	1	1	71	4	236
1630	3	15	16	5	93	14	7	8	1	1	74	5	242
1645	3	10	13	9	97	18	8	9	1	2	70	4	244
1700	3	10	12	12	98	18	5	9	2	2	78	3	252
1715	2	6	9	10	77	15	5	5	2	2	64	1	198*
1730	2	2	6	8	45	10	1	5	2	2	45	0	128*
1745	1	2	0	3	22	1	0	2	1	1	26	0	59*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 6 reed/berta

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	15	56	14	113	17	134	4	43	198
615	14	68	16	97	21	117	4	53	195
630	12	79	20	90	21	105	7	68	201
645	9	87	20	80	22	88	9	77	196
700	15	93	30	74	28	83	11	90	212
715	10	73	24	64	22	67	10	72	171*
730	8	45	17	42	18	45	5	44	112*
745	8	21	12	16	11	20	3	23	57*
1600	35	116	14	89	15	104	31	104	254
1615	34	111	15	76	18	92	26	100	236
1630	34	112	16	80	18	97	30	97	242
1645	26	124	18	76	22	91	30	101	244
1700	25	128	16	83	24	95	30	103	252
1715	17	102	12	67	16	78	23	81	198*
1730	10	63	8	47	13	52	14	49	128*
1745	3	26	3	27	5	26	4	24	59*

Coal City, IL 09/28/09
Reed Rd and Carbon Hill Rd 09:39:25
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - by Mvmt

Intersection # 7 reed/carbon

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	2	7	2	0	0	1	1	0	0	1	0	14
615	1	1	9	2	0	0	2	2	0	1	1	1	20
630	0	2	12	2	1	0	2	3	0	0	0	0	22
645	0	0	5	1	1	0	1	3	0	0	0	0	11
700	0	4	3	3	1	0	0	2	0	0	2	0	15
715	0	5	7	6	2	1	0	3	0	1	0	0	25
730	0	5	7	7	2	2	1	4	0	0	1	0	29
745	0	8	13	6	0	1	1	5	1	2	2	0	39
1600	0	9	3	13	3	2	0	4	0	0	2	0	36
1615	1	3	4	5	3	2	1	7	0	0	1	0	27
1630	0	5	3	5	2	1	1	6	1	1	1	1	27
1645	1	4	3	5	0	1	0	5	0	0	0	0	19
1700	0	4	2	4	1	0	0	4	1	0	0	0	16
1715	3	4	4	5	2	1	0	8	0	0	2	0	29
1730	0	7	8	7	1	1	1	4	0	0	1	1	31
1745	1	6	7	8	0	1	0	7	1	1	1	0	33
Total	7	69	97	81	19	13	11	68	4	6	15	3	393

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Counts: All Vehicles - Totals

Intersection # 7 reed/carbon

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	9	2	2	1	3	9	2	0	14
615	11	2	4	3	5	12	2	1	20
630	14	3	5	0	5	14	2	1	22
645	5	2	4	0	4	6	0	1	11
700	7	4	2	2	5	5	4	1	15
715	12	9	3	1	9	7	7	2	25
730	12	11	5	1	11	9	7	2	29
745	21	7	7	4	11	16	11	1	39
1600	12	18	4	2	17	5	11	3	36
1615	8	10	8	1	12	6	5	4	27
1630	8	8	8	3	12	5	7	3	27
1645	8	6	5	0	10	3	5	1	19
1700	6	5	5	0	8	2	4	2	16
1715	11	8	8	2	13	6	5	5	29
1730	15	9	5	2	12	10	8	1	31
1745	14	9	8	2	15	8	8	2	33
Total	173	113	83	24	152	123	88	30	393

Coal City, IL 09/28/09
Reed Rd and Carbon Hill Rd 09:39:25
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: by Movement

Intersection # 7 reed/carbon

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	0	8	28	8	0	0	4	4	0	0	4	0	56
615	4	4	36	8	0	0	8	8	0	4	4	4	80
630	0	8	48	8	4	0	8	12	0	0	0	0	88
645	0	0	20	4	4	0	4	12	0	0	0	0	44
700	0	16	12	12	4	0	0	8	0	0	8	0	60
715	0	20	28	24	8	4	0	12	0	4	0	0	100
730	0	20	28	28	8	8	4	16	0	0	4	0	116
745	0	32	52	24	0	4	4	20	4	8	8	0	156
1600	0	36	12	52	12	8	0	16	0	0	8	0	144
1615	4	12	16	20	12	8	4	28	0	0	4	0	108
1630	0	20	12	20	8	4	4	24	4	4	4	4	108
1645	4	16	12	20	0	4	0	20	0	0	0	0	76
1700	0	16	8	16	4	0	0	16	4	0	0	0	64
1715	12	16	16	20	8	4	0	32	0	0	8	0	116
1730	0	28	32	28	4	4	4	16	0	0	4	4	124
1745	4	24	28	32	0	4	0	28	4	4	4	0	132

TURNS/TEAPAC[Ver 3.61.12] - 15-Minute Flow Rates: Appr/Exit Totals

Intersection # 7 reed/carbon

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	36	8	8	4	12	36	8	0	56
615	44	8	16	12	20	48	8	4	80
630	56	12	20	0	20	56	8	4	88
645	20	8	16	0	16	24	0	4	44
700	28	16	8	8	20	20	16	4	60
715	48	36	12	4	36	28	28	8	100
730	48	44	20	4	44	36	28	8	116
745	84	28	28	16	44	64	44	4	156
1600	48	72	16	8	68	20	44	12	144
1615	32	40	32	4	48	24	20	16	108
1630	32	32	32	12	48	20	28	12	108
1645	32	24	20	0	40	12	20	4	76
1700	24	20	20	0	32	8	16	8	64
1715	44	32	32	8	52	24	20	20	116
1730	60	36	20	8	48	40	32	4	124
1745	56	36	32	8	60	32	32	8	132

Coal City, IL 09/28/09
Reed Rd and Carbon Hill Rd 09:39:25
Thursday September 24, 2009

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: by Movement

Intersection # 7 reed/carbon

Begin	N-Approach			E-Approach			S-Approach			W-Approach			Int
Time	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
600	1	5	33	7	2	0	6	9	0	1	2	1	67
615	1	7	29	8	3	0	5	10	0	1	3	1	68
630	0	11	27	12	5	1	3	11	0	1	2	0	73
645	0	14	22	17	6	3	2	12	0	1	3	0	80
700	0	22	30	22	5	4	2	14	1	3	5	0	108
715	0	18	27	19	4	4	2	12	1	3	3	0	93*
730	0	13	20	13	2	3	2	9	1	2	3	0	68*
745	0	8	13	6	0	1	1	5	1	2	2	0	39*
1600	2	21	13	28	8	6	2	22	1	1	4	1	109
1615	2	16	12	19	6	4	2	22	2	1	2	1	89
1630	4	17	12	19	5	3	1	23	2	1	3	1	91
1645	4	19	17	21	4	3	1	21	1	0	3	1	95
1700	4	21	21	24	4	3	1	23	2	1	4	1	109
1715	4	17	19	20	3	3	1	19	1	1	4	1	93*
1730	1	13	15	15	1	2	1	11	1	1	2	1	64*
1745	1	6	7	8	0	1	0	7	1	1	1	0	33*

TURNS/TEAPAC[Ver 3.61.12] - 60-Minute Volumes: Appr/Exit Totals

Intersection # 7 reed/carbon

Begin	Approach Totals				Exit Totals				Int
Time	N	E	S	W	N	E	S	W	Total
600	39	9	15	4	17	41	6	3	67
615	37	11	15	5	19	37	8	4	68
630	38	18	14	3	23	32	13	5	73
645	36	26	14	4	29	27	18	6	80
700	52	31	17	8	36	37	29	6	108
715	45	27	15	6	31	32	25	5	93*
730	33	18	12	5	22	25	18	3	68*
745	21	7	7	4	11	16	11	1	39*
1600	36	42	25	6	51	19	28	11	109
1615	30	29	26	4	42	16	21	10	89
1630	33	27	26	5	43	16	21	11	91
1645	40	28	23	4	43	21	22	9	95
1700	46	31	26	6	48	26	25	10	109
1715	40	26	21	6	40	24	21	8	93*
1730	29	18	13	4	27	18	16	3	64*
1745	14	9	8	2	15	8	8	2	33*

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report

Street: Broadway Rd-North of Reed Rd

A study of vehicle traffic was conducted with HI-STAR unit number 7453. The study was done in the NB lane on Broadway Rd-North of Reed Rd in Coal City, IL in Grundy county. The study began on 09/29/2009 at 12:00 AM and concluded on 10/02/2009 at 12:00 AM, lasting a total of 72 hours. Data was recorded in 15 minute time periods. The total recorded volume of traffic showed 4,316 vehicles passed through the location with a peak volume of 48 on 09/30/2009 at 03:30 PM and a minimum volume of 0 on 09/29/2009 at 12:15 AM. The AADT Count for this study was 1,439.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	2	3	12	75	257	747	897	628	627	672	298	81	15	1

At least half of the vehicles were traveling in the 45 - 49 mph range or a lower speed. The average speed for all classified vehicles was 47 mph with 97.8 percent exceeding the posted speed of 30 mph. The HI-STAR found 24.7 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 40 mph and the 85th percentile was 58.12 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
3837	298	120	37	13	7	3	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 4,135 which represents 95.80 percent of the total classified vehicles. The number of Small Trucks in the study was 120 which represents 2.80 percent of the total classified vehicles. The number of Trucks/Buses in the study was 37 which represents 0.90 percent of the total classified vehicles. The number of Tractor Trailers in the study was 23 which represents 0.50 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 09/30/2009 at 03:30 PM the average headway between the vehicles was 18.37 seconds. The slowest traffic period was on 09/29/2009 at 12:15 AM. During this slowest period, the average headway was 900.00 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52 and 97 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report

Street: Broadway Rd - South of Reed Rd

A study of vehicle traffic was conducted with HI-STAR unit number 2932. The study was done in the NB lane on Broadway Rd - South of Reed Rd in Coal City, IL in Grundy county. The study began on 09/29/2009 at 12:00 AM and concluded on 10/02/2009 at 12:00 AM, lasting a total of 72 hours. Data was recorded in 15 minute time periods. The total recorded volume of traffic showed 2,690 vehicles passed through the location with a peak volume of 25 on 09/30/2009 at 01:30 PM and a minimum volume of 0 on 09/29/2009 at 12:15 AM. The AADT Count for this study was 897.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	6	1	2	2	3	30	91	231	492	694	678	327	115	18

At least half of the vehicles were traveling in the 55 - 59 mph range or a lower speed. The average speed for all classified vehicles was 58 mph with 99.5 percent exceeding the posted speed of 30 mph. The HI-STAR found 68.1 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 55 mph and the 85th percentile was 65.86 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
2380	236	46	16	4	4	1	3

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 2,616 which represents 97.20 percent of the total classified vehicles. The number of Vans/Pickups in the study was 46 which represents 1.70 percent of the total classified vehicles. The number of Trucks/Busses in the study was 16 which represents 0.60 percent of the total classified vehicles. The number of Tractor Trailers in the study was 12 which represents 0.40 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 09/30/2009 at 01:30 PM the average headway between the vehicles was 34.62 seconds. The slowest traffic period was on 09/29/2009 at 12:15 AM. During this slowest period, the average headway was 900.00 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52 and 95 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report

Street: Broadway Rd - South of Reed Rd

A study of vehicle traffic was conducted with HI-STAR unit number 3603. The study was done in the SB lane on Broadway Rd - South of Reed Rd in Coal City, IL in Grundy county. The study began on 09/29/2009 at 12:00 AM and concluded on 10/02/2009 at 12:00 AM, lasting a total of 72 hours. Data was recorded in 15 minute time periods. The total recorded volume of traffic showed 2,904 vehicles passed through the location with a peak volume of 30 on 09/29/2009 at 03:45 PM and a minimum volume of 0 on 09/29/2009 at 12:00 AM. The AADT Count for this study was 968.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	8	5	7	7	18	55	154	302	481	633	536	403	166	128

At least half of the vehicles were traveling in the 55 - 59 mph range or a lower speed. The average speed for all classified vehicles was 58 mph with 99.0 percent exceeding the posted speed of 30 mph. The HI-STAR found 64.2 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 55 mph and the 85th percentile was 68.25 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
2166	616	88	18	5	6	2	2

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 2,782 which represents 95.80 percent of the total classified vehicles. The number of Vans/Pickups in the study was 88 which represents 3.00 percent of the total classified vehicles. The number of Trucks/Busses in the study was 18 which represents 0.60 percent of the total classified vehicles. The number of Tractor Trailers in the study was 15 which represents 0.50 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 09/29/2009 at 03:45 PM the average headway between the vehicles was 29.03 seconds. The slowest traffic period was on 09/29/2009 at 12:00 AM. During this slowest period, the average headway was 900.00 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52 and 93 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report

Street: Reed Rd - East of Berta Rd

A study of vehicle traffic was conducted with HI-STAR unit number 6340. The study was done in the EB lane on Reed Rd - East of Berta Rd in Coal City, IL in Grundy county. The study began on 09/29/2009 at 12:00 AM and concluded on 10/02/2009 at 12:00 AM, lasting a total of 72 hours. Data was recorded in 15 minute time periods. The total recorded volume of traffic showed 3,711 vehicles passed through the location with a peak volume of 46 on 09/30/2009 at 06:15 AM and a minimum volume of 0 on 09/29/2009 at 12:00 AM. The AADT Count for this study was 1,237.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	3	5	0	7	10	50	180	570	1073	1115	480	140	50	28

At least half of the vehicles were traveling in the 50 - 54 mph range or a lower speed. The average speed for all classified vehicles was 55 mph with 99.6 percent exceeding the posted speed of 30 mph. The HI-STAR found 48.8 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 55 mph and the 85th percentile was 61.47 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
3277	292	53	28	26	25	8	2

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 3,569 which represents 96.20 percent of the total classified vehicles. The number of Vans/Pickups in the study was 53 which represents 1.40 percent of the total classified vehicles. The number of Trucks/Busses in the study was 28 which represents 0.80 percent of the total classified vehicles. The number of Tractor Trailers in the study was 61 which represents 1.60 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 09/30/2009 at 06:15 AM the average headway between the vehicles was 19.15 seconds. The slowest traffic period was on 09/29/2009 at 12:00 AM. During this slowest period, the average headway was 900.00 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50 and 91 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report

Street: Reed Rd - East of Berta Rd

A study of vehicle traffic was conducted with HI-STAR unit number 3366. The study was done in the WB lane on Reed Rd - East of Berta Rd in Coal City, IL in Grundy county. The study began on 09/29/2009 at 12:00 AM and concluded on 10/02/2009 at 12:00 AM, lasting a total of 72 hours. Data was recorded in 15 minute time periods. The total recorded volume of traffic showed 3,916 vehicles passed through the location with a peak volume of 57 on 09/30/2009 at 03:30 PM and a minimum volume of 0 on 09/29/2009 at 01:00 AM. The AADT Count for this study was 1,305.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	4	6	2	10	12	50	199	515	1040	1174	625	190	66	23

At least half of the vehicles were traveling in the 55 - 59 mph range or a lower speed. The average speed for all classified vehicles was 55 mph with 99.4 percent exceeding the posted speed of 30 mph. The HI-STAR found 53.0 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 55 mph and the 85th percentile was 62.53 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
3467	310	43	46	21	14	11	4

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 3,777 which represents 96.50 percent of the total classified vehicles. The number of Vans/Pickups in the study was 43 which represents 1.10 percent of the total classified vehicles. The number of Trucks/Busses in the study was 46 which represents 1.20 percent of the total classified vehicles. The number of Tractor Trailers in the study was 50 which represents 1.30 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 09/30/2009 at 03:30 PM the average headway between the vehicles was 15.52 seconds. The slowest traffic period was on 09/29/2009 at 01:00 AM. During this slowest period, the average headway was 900.00 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52 and 89 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report

Street: Reed Rd - West of Broadway Rd

A study of vehicle traffic was conducted with HI-STAR unit number 4901. The study was done in the EB lane on Reed Rd - West of Broadway Rd in Coal City, IL in Grundy county. The study began on 09/29/2009 at 12:00 AM and concluded on 10/02/2009 at 12:00 AM, lasting a total of 72 hours. Data was recorded in 15 minute time periods. The total recorded volume of traffic showed 1,157 vehicles passed through the location with a peak volume of 18 on 09/29/2009 at 06:30 AM and a minimum volume of 0 on 09/29/2009 at 12:00 AM. The AADT Count for this study was 386.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	7	9	4	22	49	140	287	321	201	83	13	11	7	2

At least half of the vehicles were traveling in the 45 - 49 mph range or a lower speed. The average speed for all classified vehicles was 46 mph with 96.3 percent exceeding the posted speed of 30 mph. The HI-STAR found 10.0 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 45 mph and the 85th percentile was 53.57 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
1026	79	36	14	1	0	0	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 1,105 which represents 95.60 percent of the total classified vehicles. The number of Vans/Pickups in the study was 36 which represents 3.10 percent of the total classified vehicles. The number of Trucks/Busses in the study was 14 which represents 1.20 percent of the total classified vehicles. The number of Tractor Trailers in the study was 1 which represents 0.10 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 09/29/2009 at 06:30 AM the average headway between the vehicles was 47.37 seconds. The slowest traffic period was on 09/29/2009 at 12:00 AM. During this slowest period, the average headway was 900.00 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52 and 99 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 100.00 percent of the time.

Nu-Metrics Traffic Analyzer Study
Computer Generated Summary Report

Street: Reed Rd - West of Broadway Rd

A study of vehicle traffic was conducted with HI-STAR unit number 1851. The study was done in the WB lane on Reed Rd - West of Broadway Rd in Coal City, IL in Grundy county. The study began on 09/29/2009 at 12:00 AM and concluded on 10/02/2009 at 12:00 AM, lasting a total of 72 hours. Data was recorded in 15 minute time periods. The total recorded volume of traffic showed 1,302 vehicles passed through the location with a peak volume of 25 on 10/01/2009 at 02:15 PM and a minimum volume of 0 on 09/29/2009 at 12:45 AM. The AADT Count for this study was 434.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin.

Chart 1

0 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 >
0	1	6	5	16	66	121	265	411	262	97	32	9	9	2

At least half of the vehicles were traveling in the 45 - 49 mph range or a lower speed. The average speed for all classified vehicles was 47 mph with 97.8 percent exceeding the posted speed of 30 mph. The HI-STAR found 11.4 percent of the total vehicles were traveling in excess of 55 mph. The mode speed for this traffic study was 45 mph and the 85th percentile was 54.12 mph.

CLASSIFICATION

Chart 2 lists the values of the eight classification bins and the total traffic volume accumulated for each bin.

Chart 2

0 to 20	21 to 27	28 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 >
1143	85	56	16	2	0	0	0

Most of the vehicles classified during the study were Passenger Cars. The number of Passenger Cars in the study was 1,228 which represents 94.30 percent of the total classified vehicles. The number of Vans/Pickups in the study was 56 which represents 4.30 percent of the total classified vehicles. The number of Trucks/Busses in the study was 16 which represents 1.20 percent of the total classified vehicles. The number of Tractor Trailers in the study was 2 which represents 0.20 percent of the total classified vehicles.

HEADWAY

During the peak time period, on 10/01/2009 at 02:15 PM the average headway between the vehicles was 34.62 seconds. The slowest traffic period was on 09/29/2009 at 12:45 AM. During this slowest period, the average headway was 900.00 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52 and 91 degrees Fahrenheit. The HI-STAR determined that the roadway surface was Dry 0.00 percent of the time.

Future Land Use & Trip Generation

FUTURE LAND USE AND TRIP GENERATION

Zone #	Land Use (a)	Land Use Size						AM Peak Hour Trip Generation										PM Peak Hour Trip Generation									
			Residential		Industrial/Office/Retail/Other			Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)		Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)	
		(A) Developable Acres	(B) Units/Acre	(C) =(A)*(B) Total No. Units	(D) =(A)*43560/1000 Square Footage (,000 sf)	(E) Floor Area Ratio	(F) =(D)*(E) Floor Area (,000 sf)	(G) =(C)*.75*.25 Inbound Trips	(H) =(C)*.75*.75 Outbound Trips	(I) =(C)*.51*.2 Inbound Trips	(J) =(C)*.51*.8 Outbound Trips	(K) =(F)*.92*.88 Inbound Trips	(L) =(F)*.92*.12 Outbound Trips	(M) =(F)*1.5*.88 Inbound Trips	(N) =(F)*1.5*.12 Outbound Trips	(O) =EXP((0.59*(LN(F) Inbound Trips	(P) =EXP((0.59*(LN(F) Outbound Trips	(Q) =(C)*.63 Inbound Trips	(R) =(C)*.37 Outbound Trips	(S) =(C)*.62*.65 Inbound Trips	(T) =(C)*.62*.35 Outbound Trips	(U) =(F)*.97*.12 Inbound Trips	(V) =(F)*.97*.88 Outbound Trips	(W) =(F)*1.5*.17 Inbound Trips	(X) =(F)*1.5*.83 Outbound Trips	(Y) =EXP((0.67*(LN(F) Inbound Trips	(Z) =(C)*3.73*.51 Outbound Trips
1	Residential 1	23	3.00	69				13	39									43	26								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	23						13	39	0	0	0	0	0	0	0	0	43	26	0	0	0	0	0	0	0	0
2	Residential 1	86	3.00	258				48	145									163	95								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	86						48	145	0	0	0	0	0	0	0	0	163	95	0	0	0	0	0	0	0	0
3	Residential 1	80	3.00	240				45	135									151	89								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail	55			2,396	0.2	479									237	151									891	927
	SUBTOTAL	135						45	135	0	0	0	0	0	0	237	151	151	89	0	0	0	0	0	0	891	927
4	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office	20			871	0.25	218							287	39									56	271		
	Industrial	105			4,574	0.3	1,372					1,111	151									160	1,171				
	Retail					0.2																					
	SUBTOTAL	125						0	0	0	0	1,111	151	287	39	0	0	0	0	0	0	160	1,171	56	271	0	0
5	Residential 1	140	3.00	420				79	236									265	155								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	140						79	236	0	0	0	0	0	0	0	0	265	155	0	0	0	0	0	0	0	0
6	Residential 1	120	3.00	360				68	203									227	133								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail	15			653	0.2	131									110	70									373	388
	SUBTOTAL	135						68	203	0	0	0	0	0	0	110	70	227	133	0	0	0	0	0	0	373	388
7	Residential 1	90	3.00	270				51	152									170	100								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail	35			1,525	0.2	305									181	116									658	685
	SUBTOTAL	125						51	152	0	0	0	0	0	0	181	116	170	100	0	0	0	0	0	0	658	685
8	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial	95			4,138	0.3	1,241					1,005	137									145	1,060				
	Retail	30			1,307	0.2	261									166	106									593	618
	SUBTOTAL	125						0	0	0	0	1,005	137	0	0	166	106	0	0	0	0	145	1,060	0	0	593	618

FUTURE LAND USE AND TRIP GENERATION

Zone #	Land Use (a)		Land Use Size					AM Peak Hour Trip Generation										PM Peak Hour Trip Generation									
			Residential		Industrial/Office/Retail/Other			Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)		Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)	
		(A) Developable Acres	(B) Units/Acre	(C) =(A)*(B) Total No. Units	(D) =(A)*43560/1000 Square Footage (,000 sf)	(E) Floor Area Ratio	(F) =(D)*(E) Floor Area (,000 sf)	(G) =(C)*.75*.25 Inbound Trips	(H) =(C)*.75*.75 Outbound Trips	(I) =(C)*.51*.2 Inbound Trips	(J) =(C)*.51*.8 Outbound Trips	(K) =(F)*.92*.88 Inbound Trips	(L) =(F)*.92*.12 Outbound Trips	(M) =(F)*1.5*.88 Inbound Trips	(N) =(F)*1.5*.12 Outbound Trips	(O) =EXP((0.59*(LN(F) Inbound Trips	(P) =EXP((0.59*(LN(F) Outbound Trips	(Q) =(C)*.63 Inbound Trips	(R) =(C)*.37 Outbound Trips	(S) =(C)*.62*.65 Inbound Trips	(T) =(C)*.62*.35 Outbound Trips	(U) =(F)*.97*.12 Inbound Trips	(V) =(F)*.97*.88 Outbound Trips	(W) =(F)*1.5*.17 Inbound Trips	(X) =(F)*1.5*.83 Outbound Trips	(Y) =EXP((0.67*(LN(F) Inbound Trips	(Z) =(C)*3.73*.51 Outbound Trips
9	Residential 1	140	3.00	420				79	236									265	155								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	140						79	236	0	0	0	0	0	0	0	0	265	155	0	0	0	0	0	0	0	0
10	Residential 1		3.00																								
	Residential 2	60	5.00	300				56	169									189	111								
	Residential 3	78	6.00	468						48	191									189	102						
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	138						56	169	48	191	0	0	0	0	0	0	189	111	189	102	0	0	0	0	0	0
11	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail	127			5,532	0.2	1,106									388	248									1,560	1,624
	SUBTOTAL	127						0	0	0	0	0	0	0	0	388	248	0	0	0	0	0	0	0	0	1,560	1,624
12	Residential 1	47	3.00	141				26	79									89	52								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail	7			305	0.2	61									70	45									224	233
	SUBTOTAL	54						26	79	0	0	0	0	0	0	70	45	89	52	0	0	0	0	0	0	224	233
13	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial	120			5,227	0.3	1,568					1,270	173									183	1,339				
	Retail					0.2																					
	SUBTOTAL	120						0	0	0	0	1,270	173	0	0	0	0	0	0	0	0	183	1,339	0	0	0	0
14	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial	120			5,227	0.3	1,568					1,270	173									183	1,339				
	Retail	15			653	0.2	131									110	70									373	388
	SUBTOTAL	135						0	0	0	0	1,270	173	0	0	110	70	0	0	0	0	183	1,339	0	0	373	388
15	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3	29	6.00	174						18	71									70	38						
	Office					0.25																					
	Industrial	60			2,614	0.3	784					635	87									91	669				
	Retail	25			1,089	0.2	218									149	95									525	547
	SUBTOTAL	114						0	0	18	71	635	87	0	0	149	95	0	0	70	38	91	669	0	0	525	547
16	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial	95			4,138	0.3	1,241					1,005	137									145	1,060				
	Retail	15			653	0.2	131									110	70									373	388
	SUBTOTAL	110						0	0	0	0	1,005	137	0	0	110	70	0	0	0	0	145	1,060	0	0	373	388

FUTURE LAND USE AND TRIP GENERATION

Zone #	Land Use (a)		Land Use Size					AM Peak Hour Trip Generation										PM Peak Hour Trip Generation									
			Residential		Industrial/Office/Retail/Other			Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)		Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)	
		(A) Developable Acres	(B) Units/Acre	(C) =(A)*(B) Total No. Units	(D) =(A)*43560/1000 Square Footage (,000 sf)	(E) Floor Area Ratio	(F) =(D)*(E) Floor Area (,000 sf)	(G) =(C)*.75*.25 Inbound Trips	(H) =(C)*.75*.75 Outbound Trips	(I) =(C)*.51*.2 Inbound Trips	(J) =(C)*.51*.8 Outbound Trips	(K) =(F)*.92*.88 Inbound Trips	(L) =(F)*.92*.12 Outbound Trips	(M) =(F)*1.5*.88 Inbound Trips	(N) =(F)*1.5*.12 Outbound Trips	(O) =EXP((0.59*(LN(F) Inbound Trips	(P) =EXP((0.59*(LN(F) Outbound Trips	(Q) =(C)*.63 Inbound Trips	(R) =(C)*.37 Outbound Trips	(S) =(C)*.62*.65 Inbound Trips	(T) =(C)*.62*.35 Outbound Trips	(U) =(F)*.97*.12 Inbound Trips	(V) =(F)*.97*.88 Outbound Trips	(W) =(F)*1.5*.17 Inbound Trips	(X) =(F)*1.5*.83 Outbound Trips	(Y) =EXP((0.67*(LN(F) Inbound Trips	(Z) =(C)*3.73*.51 Outbound Trips
17	Residential 1	126	3.00	378				71	213									238	140								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	126						71	213	0	0	0	0	0	0	0	0	238	140	0	0	0	0	0	0	0	0
18	Residential 1		3.00																								
	Residential 2	55	5.00	275				52	155									173	102								
	Residential 3	78	6.00	468						48	191									189	102						
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	133						52	155	48	191	0	0	0	0	0	0	173	102	189	102	0	0	0	0	0	0
19	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail	109			4,748	0.2	950									355	227									1,408	1,466
	SUBTOTAL	109						0	0	0	0	0	0	0	0	355	227	0	0	0	0	0	0	0	0	1,408	1,466
20	Residential 1	15	3.00	45				8	25									28	17								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial	110			4,792	0.3	1,437					1,164	159									167	1,227				
	Retail	8			348	0.2	70									76	49									245	255
	SUBTOTAL	133						8	25	0	0	1,164	159	0	0	76	49	28	17	0	0	167	1,227	0	0	245	255
21	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial	120			5,227	0.3	1,568					1,270	173									183	1,339				
	Retail					0.2																					
	SUBTOTAL	120						0	0	0	0	1,270	173	0	0	0	0	0	0	0	0	183	1,339	0	0	0	0
22	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial	115			5,009	0.3	1,503					1,217	166									175	1,283				
	Retail					0.2																					
	SUBTOTAL	115						0	0	0	0	1,217	166	0	0	0	0	0	0	0	0	175	1,283	0	0	0	0
23	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

FUTURE LAND USE AND TRIP GENERATION

Zone #	Land Use (a)		Land Use Size					AM Peak Hour Trip Generation										PM Peak Hour Trip Generation									
			Residential		Industrial/Office/Retail/Other			Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)		Residential 1/2 (a,b)		Residential 3 (c)		Industrial (d)		Office (e)		Retail (f)	
		(A) Developable Acres	(B) Units/Acre	(C) =(A)*(B) Total No. Units	(D) =(A)*43560/1000 Square Footage (,000 sf)	(E) Floor Area Ratio	(F) =(D)*(E) Floor Area (,000 sf)	(G) =(C)*.75*.25 Inbound Trips	(H) =(C)*.75*.75 Outbound Trips	(I) =(C)*.51*.2 Inbound Trips	(J) =(C)*.51*.8 Outbound Trips	(K) =(F)*.92*.88 Inbound Trips	(L) =(F)*.92*.12 Outbound Trips	(M) =(F)*1.5*.88 Inbound Trips	(N) =(F)*1.5*.12 Outbound Trips	(O) =EXP((0.59*(LN(F) Inbound Trips	(P) =EXP((0.59*(LN(F) Outbound Trips	(Q) =(C)*.63 Inbound Trips	(R) =(C)*.37 Outbound Trips	(S) =(C)*.62*.65 Inbound Trips	(T) =(C)*.62*.35 Outbound Trips	(U) =(F)*.97*.12 Inbound Trips	(V) =(F)*.97*.88 Outbound Trips	(W) =(F)*1.5*.17 Inbound Trips	(X) =(F)*1.5*.83 Outbound Trips	(Y) =EXP((0.67*(LN(F) Inbound Trips	(Z) =(C)*3.73*.51 Outbound Trips
24	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Residential 1		3.00																								
	Residential 2		5.00																								
	Residential 3		6.00																								
	Office					0.25																					
	Industrial					0.3																					
	Retail					0.2																					
	SUBTOTAL	0						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**2,545**		**4,286**			**16,344**	**596**	**1,787**	**113**	**453**	**9,945**	**1,356**	**287**	**39**	**1,951**	**1,247**	**2,001**	**1,175**	**447**	**241**	**1,430**	**10,486**	**56**	**271**	**7,223**	**7,518**

Note: See Figure 1 for zone locations.

(a) - Residential 1 generally contains single-family detached units as defined by ITE Land Use Code 210.

(b) - Residential 2 generally contains single-family and some two-family dwelling units as defined by ITE Land Use Code 210/230.

(c)- Residential 3 generally contains townhomes and multi-family dwelling units (i.e., condominiums and apartments) as defined by ITE Land Use Code 220/230.

(d) - Industrial generally consists of light industrial facilities as defined by ITE Land Use Code 110.

(e) - Office generally consists of general office buildings as defined by ITE Land Use Code 710.

(f) - Retail generally consists of shopping center development as defined by ITE Land Use Code 820.

CMAP Traffic Projections

Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800, Sears Tower
Chicago, IL 60606

voice 312-454-0400
fax 312-454-0411
www.cmap.illinois.gov

February 24, 2010

Craig Cassem, P.E.
County Engineer
Grundy County
310 Dupont Road
Morris, IL 60450

Subject: Reed Road and Broadway Road
Grundy County

Dear Mr. Cassem:

In response to a request made on your behalf and dated February 1, 2010, we have developed year 2030 average daily traffic (ADT) projections for the subject location. These are presented in the attached table.

Traffic projections are developed using existing ADT data provided in the request letter and the results from the Spring 2009 CMAP RTP/TIP Travel Demand Analysis. The regional travel model uses CMAP 2030 socioeconomic projections and assumes the implementation of the 2030 Regional Transportation Plan for the Northeastern Illinois area.

If you have any questions, please call Jose Rodriguez at (312) 386-8806.

Sincerely,

Donald P. Kopec
Deputy Director for Planning and Programming

cc: Gould (Will County); Russell (KLOA, Inc.)
M:\proj1\ceb\forecasts\2010 Response\wi-06-10g.docx

Table: 2030 ADT, Reed Road and Broadway Road project

ROAD SEGMENT	2030 ADT
Broadway Rd north of Reed Rd	5,000
Broadway Rd south of Reed Rd	3,000
Reed Rd / Kennedy Rd east of I-55	5,000
Reed Rd b/w I-55 and Berta Rd	6,000
Reed Rd b/w Berta Rd and Broadway Rd	3,000
Reed Rd b/w Broadway Rd and Carbon Hill Rd	500
Reed Rd west of Carbon Hill Rd	500
I-55 north of Reed Rd	35,000
I-55 south of Reed Rd	27,000
Southbound Exit Ramp, I-55 to Reed Rd	4,000
Southbound Entrance Ramp, Reed Rd to I-55	1,000
Northbound Exit Ramp, I-55 to Reed Rd	1,000
Northbound Entrance Ramp, Reed Rd to I-55	4,000
Berta Rd north of Reed Rd	2,000
Berta Rd south of Reed Rd	2,000
Carbon Hill Rd north of Reed Rd	1,000
Carbon Hill Rd south of Reed Rd	1,000
Spring Rd b/w County Line Rd and Berta Rd	2,000
Spring Rd b/w Berta Rd and Broadway Rd	2,000
Spring Rd b/w Broadway Rd and Carbon Hill Rd	1,000
Braceville Rd / Division St east of I-55	2,000
Braceville Rd from I-55 to Broadway Rd	3,000
Braceville Rd from Broadway Rd to Carbon Hill Rd	4,000
Braceville Rd west of Carbon Hill Rd	2,000

Capacity Analysis Worksheets
Existing Traffic Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	25	25	15	35	35	40	35	35	50	130	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	26	26	16	37	37	42	37	37	53	137	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	445	408	145	429	397	55	153			74		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	445	408	145	429	397	55	153			74		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	95	97	97	93	96	97			97		
cM capacity (veh/h)	454	499	903	476	506	1012	1428			1526		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	68	89	116	205
Volume Left	16	16	42	53
Volume Right	26	37	37	16
cSH	586	628	1428	1526
Volume to Capacity	0.12	0.14	0.03	0.03
Queue Length 95th (ft)	10	12	2	3
Control Delay (s)	11.9	11.7	2.9	2.1
Lane LOS	B	B	A	A
Approach Delay (s)	11.9	11.7	2.9	2.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	45	0	5	10	30	1	35	15	60	20	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	47	0	5	11	32	1	37	16	63	21	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	232	203	22	218	195	45	22			53		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	232	203	22	218	195	45	22			53		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	93	100	99	98	97	100			96		
cM capacity (veh/h)	671	665	1056	676	671	1025	1593			1553		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	47	54	85
Volume Left	5	5	1	63
Volume Right	0	32	16	1
cSH	666	873	1593	1553
Volume to Capacity	0.08	0.05	0.00	0.04
Queue Length 95th (ft)	6	4	0	3
Control Delay (s)	10.9	9.4	0.1	5.6
Lane LOS	B	A	A	A
Approach Delay (s)	10.9	9.4	0.1	5.6
Approach LOS	B	A		

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	35	1	1	30	10	1	1	1	10	1	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	37	1	1	32	11	1	1	1	11	1	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	42			38			151	134	37	131	129	37
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	42			38			151	134	37	131	129	37
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	99	100	98
cM capacity (veh/h)	1567			1572			789	743	1035	829	748	1035

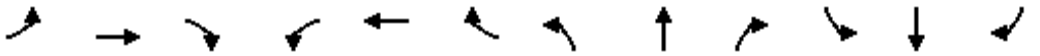
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	43	3	33
Volume Left	26	1	1	11
Volume Right	1	11	1	21
cSH	1567	1572	838	948
Volume to Capacity	0.02	0.00	0.00	0.03
Queue Length 95th (ft)	1	0	0	3
Control Delay (s)	3.1	0.2	9.3	8.9
Lane LOS	A	A	A	A
Approach Delay (s)	3.1	0.2	9.3	8.9
Approach LOS			A	A

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	210	20	5	95	5	55	5	10	5	5	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	221	21	5	100	5	58	5	11	5	5	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105			242			387	368	232	368	376	103
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			242			387	368	232	368	376	103
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			89	99	99	99	99	98
cM capacity (veh/h)	1486			1324			550	555	808	571	549	952

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	242	5	105	74	32
Volume Left	11	0	5	0	58	5
Volume Right	0	21	0	5	11	21
cSH	1486	1700	1324	1700	577	772
Volume to Capacity	0.01	0.14	0.00	0.06	0.13	0.04
Queue Length 95th (ft)	1	0	0	0	11	3
Control Delay (s)	7.4	0.0	7.7	0.0	12.2	9.9
Lane LOS	A		A		B	A
Approach Delay (s)	0.3		0.4		12.2	9.9
Approach LOS					B	A

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	230	0	0	50	120	10	0	10	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	37	242	0	0	53	126	11	0	11	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	179			242			432	495	242	442	432	116
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	179			242			432	495	242	442	432	116
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	100	99	100	100	100
cM capacity (veh/h)	1397			1324			523	463	797	508	503	937

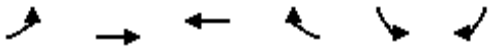
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	37	242	179	11	11
Volume Left	37	0	0	11	0
Volume Right	0	0	126	0	11
cSH	1397	1700	1700	523	797
Volume to Capacity	0.03	0.14	0.11	0.02	0.01
Queue Length 95th (ft)	2	0	0	2	1
Control Delay (s)	7.6	0.0	0.0	12.0	9.6
Lane LOS	A			B	A
Approach Delay (s)	1.0		0.0	10.8	
Approach LOS				B	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	135	5	15	50	0	0	0	0	145	0	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	142	5	16	53	0	0	0	0	153	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	53			147			245	229	145	229	232	53
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			147			245	229	145	229	232	53
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	79	100	98
cM capacity (veh/h)	1553			1434			692	663	903	720	661	1015

Direction, Lane #	EB 1	WB 1	WB 2	SB 1	SB 2
Volume Total	147	16	53	153	16
Volume Left	0	16	0	153	0
Volume Right	5	0	0	0	16
cSH	1700	1434	1700	720	1015
Volume to Capacity	0.09	0.01	0.03	0.21	0.02
Queue Length 95th (ft)	0	1	0	20	1
Control Delay (s)	0.0	7.5	0.0	11.3	8.6
Lane LOS		A		B	A
Approach Delay (s)	0.0	1.7		11.1	
Approach LOS				B	

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	1	130	5	60	10	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	137	5	63	11	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	68				176	37
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	68				176	37
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1533				813	1035

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	138	68	11	1
Volume Left	1	0	11	0
Volume Right	0	63	0	1
cSH	1533	1700	813	1035
Volume to Capacity	0.00	0.04	0.01	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.0	9.5	8.5
Lane LOS	A		A	A
Approach Delay (s)	0.1	0.0	9.4	
Approach LOS			A	

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	115	1	5	45	15	5	5	10	15	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	121	1	5	47	16	5	5	11	16	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	63			122			206	206	122	211	198	55
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	63			122			206	206	122	211	198	55
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	99	99	98	99	99
cM capacity (veh/h)	1539			1465			740	686	930	729	692	1012

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	68	21	26
Volume Left	5	5	5	16
Volume Right	1	16	11	5
cSH	1539	1465	806	764
Volume to Capacity	0.00	0.00	0.03	0.03
Queue Length 95th (ft)	0	0	2	3
Control Delay (s)	0.3	0.6	9.6	9.9
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.6	9.6	9.9
Approach LOS			A	A

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	5	1	5	10	1	10	10	35	5	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	5	5	1	5	11	1	11	11	37	5	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	113	105	8	107	102	16	11			21		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	113	105	8	107	102	16	11			21		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	100	99	99	100			98		
cM capacity (veh/h)	836	767	1074	847	769	1063	1609			1595		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	17	22	47
Volume Left	5	1	1	37
Volume Right	5	11	11	5
cSH	874	937	1609	1595
Volume to Capacity	0.02	0.02	0.00	0.02
Queue Length 95th (ft)	1	1	0	2
Control Delay (s)	9.2	8.9	0.3	5.7
Lane LOS	A	A	A	A
Approach Delay (s)	9.2	8.9	0.3	5.7
Approach LOS	A	A		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	25	10	10	20	45	20	135	15	50	130	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	26	11	11	21	47	21	142	16	53	137	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	500	450	145	466	450	150	153			158		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	500	450	145	466	450	150	153			158		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	95	99	98	96	95	99			96		
cM capacity (veh/h)	423	479	903	461	479	896	1428			1422		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	79	179	205
Volume Left	26	11	21	53
Volume Right	11	47	16	16
cSH	490	660	1428	1422
Volume to Capacity	0.13	0.12	0.01	0.04
Queue Length 95th (ft)	11	10	1	3
Control Delay (s)	13.4	11.2	1.0	2.2
Lane LOS	B	B	A	A
Approach Delay (s)	13.4	11.2	1.0	2.2
Approach LOS	B	B		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	15	5	25	40	55	5	90	20	55	80	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	16	5	26	42	58	5	95	21	58	84	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	397	329	87	332	321	105	89			116		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	397	329	87	332	321	105	89			116		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	99	96	93	94	100			96		
cM capacity (veh/h)	483	565	972	586	571	949	1506			1473		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	126	121	147
Volume Left	5	26	5	58
Volume Right	5	58	21	5
cSH	594	703	1506	1473
Volume to Capacity	0.04	0.18	0.00	0.04
Queue Length 95th (ft)	3	16	0	3
Control Delay (s)	11.3	11.2	0.3	3.2
Lane LOS	B	B	A	A
Approach Delay (s)	11.3	11.2	0.3	3.2
Approach LOS	B	B		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	45	35	1	1	40	30	1	1	1	30	1	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	47	37	1	1	42	32	1	1	1	32	1	79
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	74			38			272	208	37	194	193	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	74			38			272	208	37	194	193	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	96	100	92
cM capacity (veh/h)	1526			1572			612	667	1035	746	680	1008

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	85	75	3	112
Volume Left	47	1	1	32
Volume Right	1	32	1	79
cSH	1526	1572	732	913
Volume to Capacity	0.03	0.00	0.00	0.12
Queue Length 95th (ft)	2	0	0	10
Control Delay (s)	4.2	0.1	9.9	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	4.2	0.1	9.9	9.5
Approach LOS			A	A

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	145	70	10	130	5	25	10	10	10	10	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	32	153	74	11	137	5	26	11	11	11	11	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	142			226			432	416	189	392	450	139
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142			226			432	416	189	392	450	139
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	98	99	98	98	98
cM capacity (veh/h)	1441			1342			505	512	852	539	490	909

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	32	226	11	142	47	37
Volume Left	32	0	11	0	26	11
Volume Right	0	74	0	5	11	16
cSH	1441	1700	1342	1700	557	631
Volume to Capacity	0.02	0.13	0.01	0.08	0.09	0.06
Queue Length 95th (ft)	2	0	1	0	7	5
Control Delay (s)	7.6	0.0	7.7	0.0	12.1	11.1
Lane LOS	A		A		B	B
Approach Delay (s)	0.9		0.5		12.1	11.1
Approach LOS					B	B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	225	0	0	100	70	10	0	20	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	237	0	0	105	74	11	0	21	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	179			237			432	468	237	453	432	142
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	179			237			432	468	237	453	432	142
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			98	100	97	100	100	100
cM capacity (veh/h)	1397			1330			526	483	802	496	507	906

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	26	237	179	11	21
Volume Left	26	0	0	11	0
Volume Right	0	0	74	0	21
cSH	1397	1700	1700	526	802
Volume to Capacity	0.02	0.14	0.11	0.02	0.03
Queue Length 95th (ft)	1	0	0	2	2
Control Delay (s)	7.6	0.0	0.0	12.0	9.6
Lane LOS	A			B	A
Approach Delay (s)	0.8		0.0	10.4	
Approach LOS				B	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	100	5	15	100	0	0	0	0	135	0	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	105	5	16	105	0	0	0	0	142	0	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105			111			282	245	108	245	247	105
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105			111			282	245	108	245	247	105
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	80	100	96
cM capacity (veh/h)	1486			1479			639	650	946	703	648	949

Direction, Lane #	EB 1	WB 1	WB 2	SB 1	SB 2
Volume Total	111	16	105	142	37
Volume Left	0	16	0	142	0
Volume Right	5	0	0	0	37
cSH	1700	1479	1700	703	949
Volume to Capacity	0.07	0.01	0.06	0.20	0.04
Queue Length 95th (ft)	0	1	0	19	3
Control Delay (s)	0.0	7.5	0.0	11.4	8.9
Lane LOS		A		B	A
Approach Delay (s)	0.0	1.0		10.9	
Approach LOS				B	

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	1	90	20	115	15	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	95	21	121	16	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	142				178	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	142				178	82
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1441				811	978

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	96	142	16	5
Volume Left	1	0	16	0
Volume Right	0	121	0	5
cSH	1441	1700	811	978
Volume to Capacity	0.00	0.08	0.02	0.01
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.1	0.0	9.5	8.7
Lane LOS	A		A	A
Approach Delay (s)	0.1	0.0	9.3	
Approach LOS			A	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	80	5	15	100	5	5	10	10	20	15	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	84	5	16	105	5	5	11	11	21	16	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	111			89			250	239	87	253	239	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	111			89			250	239	87	253	239	108
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	98	99	97	98	99
cM capacity (veh/h)	1479			1506			679	652	972	677	652	946

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	95	126	26	42
Volume Left	5	16	5	21
Volume Right	5	5	11	5
cSH	1479	1506	758	692
Volume to Capacity	0.00	0.01	0.03	0.06
Queue Length 95th (ft)	0	1	3	5
Control Delay (s)	0.4	1.0	9.9	10.5
Lane LOS	A	A	A	B
Approach Delay (s)	0.4	1.0	9.9	10.5
Approach LOS			A	B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	5	5	10	10	30	5	25	5	35	20	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	5	5	11	11	32	5	26	5	37	21	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	174	139	24	145	139	29	26			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	174	139	24	145	139	29	26			32		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	99	99	97	100			98		
cM capacity (veh/h)	742	732	1053	799	732	1046	1588			1581		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	53	37	63
Volume Left	5	11	5	37
Volume Right	5	32	5	5
cSH	819	911	1588	1581
Volume to Capacity	0.02	0.06	0.00	0.02
Queue Length 95th (ft)	1	5	0	2
Control Delay (s)	9.5	9.2	1.1	4.3
Lane LOS	A	A	A	A
Approach Delay (s)	9.5	9.2	1.1	4.3
Approach LOS	A	A		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Capacity Analysis Worksheets
Projected 2030 Traffic Conditions

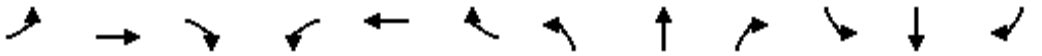
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.907			0.922			0.983			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1690	0	1770	1717	0	1770	3479	0	1770	3529	0
Flt Permitted	0.665			0.439			0.185			0.449		
Satd. Flow (perm)	1239	1690	0	818	1717	0	345	3479	0	836	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			52			15			3	
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1327			1204			1345			1349	
Travel Time (s)		30.2			27.4			26.2			26.3	
Volume (vph)	30	95	155	20	50	55	65	320	40	160	890	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	100	163	21	53	58	68	337	42	168	937	21
Lane Group Flow (vph)	32	263	0	21	111	0	68	379	0	168	958	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		8.0	22.0		8.0	22.0	
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	20.0	49.0	0.0	23.0	52.0	0.0
Total Split (%)	34.5%	34.5%	0.0%	34.5%	34.5%	0.0%	18.2%	44.5%	0.0%	20.9%	47.3%	0.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	19.1	19.1		19.1	19.1		76.2	71.3		82.0	75.7	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.69	0.65		0.75	0.69	
v/c Ratio	0.15	0.74		0.15	0.32		0.22	0.17		0.24	0.39	
Control Delay	37.3	41.9		37.9	23.0		4.8	6.1		5.4	9.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.3	41.9		37.9	23.0		4.8	6.1		5.4	9.1	
LOS	D	D		D	C		A	A		A	A	
Approach Delay		41.4			25.4			5.9			8.5	
Approach LOS		D			C			A			A	
Stops (vph)	25	166		18	49		16	125		43	381	
Fuel Used(gal)	1	6		0	2		1	5		2	13	
CO Emissions (g/hr)	47	394		31	122		57	341		144	938	
NOx Emissions (g/hr)	9	77		6	24		11	66		28	182	
VOC Emissions (g/hr)	11	91		7	28		13	79		33	217	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0		0	0		0	20		0	41	
Queue Length 50th (ft)	19	126		13	36		4	25		27	142	
Queue Length 95th (ft)	44	200		33	80		8	86		62	232	
Internal Link Dist (ft)		1247			1124			1265			1269	
Turn Bay Length (ft)												
Base Capacity (vph)	383	576		253	567		467	2260		791	2428	
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	0.08	0.46		0.08	0.20		0.15	0.17		0.21	0.39	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 45 (41%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Spring Rd & Broadway Rd



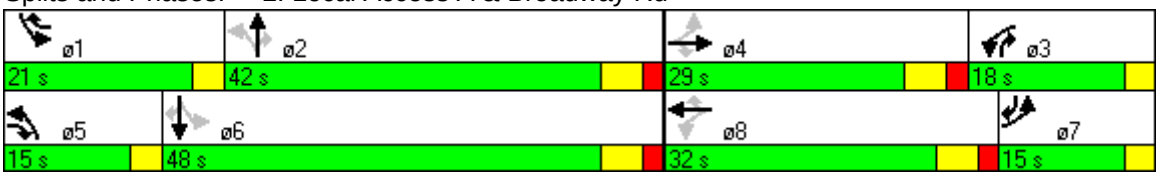
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.744			0.744			0.178			0.407		
Satd. Flow (perm)	1386	1961	1583	1386	1961	1583	332	3725	1583	758	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			32			158			11
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		796			787			1446			1345	
Travel Time (s)		18.1			17.9			28.2			26.2	
Volume (vph)	25	20	45	25	20	30	15	370	150	150	905	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	21	47	26	21	32	16	389	158	158	953	11
Lane Group Flow (vph)	26	21	47	26	21	32	16	389	158	158	953	11
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	15.0	29.0	15.0	18.0	32.0	21.0	15.0	42.0	18.0	21.0	48.0	15.0
Total Split (%)	13.6%	26.4%	13.6%	16.4%	29.1%	19.1%	13.6%	38.2%	16.4%	19.1%	43.6%	13.6%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	8.9	8.6	8.5	10.0	8.6	14.6	84.9	80.3	88.9	88.6	83.5	90.9
Actuated g/C Ratio	0.08	0.08	0.08	0.09	0.08	0.13	0.77	0.73	0.81	0.81	0.76	0.83
v/c Ratio	0.20	0.14	0.28	0.18	0.14	0.13	0.05	0.14	0.12	0.24	0.34	0.01
Control Delay	45.8	48.8	13.9	44.7	48.8	11.6	1.5	1.9	0.4	2.7	3.8	0.7
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	45.8	48.8	13.9	44.7	48.8	11.6	1.5	1.9	0.4	2.7	3.8	0.7
LOS	D	D	B	D	D	B	A	A	A	A	A	A
Approach Delay		30.5			32.4			1.5			3.6	
Approach LOS		C			C			A			A	
Stops (vph)	24	20	11	24	20	9	2	47	2	22	168	1
Fuel Used(gal)	1	0	0	1	0	0	0	4	2	2	11	0
CO Emissions (g/hr)	36	30	33	36	30	21	12	305	111	119	751	7
NOx Emissions (g/hr)	7	6	6	7	6	4	2	59	22	23	146	1
VOC Emissions (g/hr)	8	7	8	8	7	5	3	71	26	28	174	2

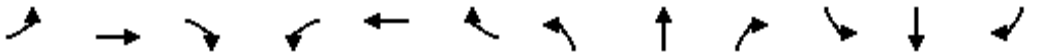
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	15	0	0	32	0
Queue Length 50th (ft)	18	14	0	18	14	0	1	4	0	7	61	0
Queue Length 95th (ft)	41	39	29	41	39	24	m3	28	0	m30	110	m1
Internal Link Dist (ft)		716			707			1366			1265	
Turn Bay Length (ft)												
Base Capacity (vph)	226	446	255	274	499	392	416	2720	1411	779	2826	1395
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	0.12	0.05	0.18	0.09	0.04	0.08	0.04	0.14	0.11	0.20	0.34	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 60 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 5.5 Intersection LOS: A
Intersection Capacity Utilization 45.2% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Local Access A & Broadway Rd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.696			0.598			0.172			0.474		
Satd. Flow (perm)	1296	1961	1583	1114	1961	1583	320	3725	1583	883	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			21			168			26
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		799			822			1397			1446	
Travel Time (s)		18.2			18.7			27.2			28.2	
Volume (vph)	110	135	95	20	45	20	25	360	160	100	850	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	142	100	21	47	21	26	379	168	105	895	26
Lane Group Flow (vph)	116	142	100	21	47	21	26	379	168	105	895	26
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0	8.0	8.0	20.0	8.0	8.0	20.0	8.0
Total Split (s)	19.0	28.0	17.0	18.0	27.0	17.0	17.0	47.0	18.0	17.0	47.0	19.0
Total Split (%)	17.3%	25.5%	15.5%	16.4%	24.5%	15.5%	15.5%	42.7%	16.4%	15.5%	42.7%	17.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	23.5	12.9	22.7	12.0	7.8	14.1	74.1	68.3	78.9	75.0	68.7	88.3
Actuated g/C Ratio	0.21	0.12	0.21	0.11	0.07	0.13	0.67	0.62	0.72	0.68	0.62	0.80
v/c Ratio	0.34	0.62	0.25	0.13	0.34	0.10	0.09	0.16	0.14	0.16	0.38	0.02
Control Delay	38.0	57.4	8.1	35.0	54.4	16.0	5.6	8.9	1.7	2.4	5.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	57.4	8.1	35.0	54.4	16.0	5.6	8.9	1.7	2.4	5.6	1.1
LOS	D	E	A	D	D	B	A	A	A	A	A	A
Approach Delay		37.4			40.8			6.6			5.1	
Approach LOS		D			D			A			A	
Stops (vph)	89	125	15	18	43	7	8	162	30	13	287	3
Fuel Used(gal)	2	3	1	0	1	0	0	5	2	1	12	0
CO Emissions (g/hr)	142	217	58	26	72	16	24	384	132	83	839	20
NOx Emissions (g/hr)	28	42	11	5	14	3	5	75	26	16	163	4
VOC Emissions (g/hr)	33	50	13	6	17	4	6	89	31	19	194	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	16	0	0	21	0
Queue Length 50th (ft)	70	97	0	12	32	0	4	74	0	10	81	0
Queue Length 95th (ft)	113	156	41	31	69	22	12	102	18	9	130	4
Internal Link Dist (ft)		719			742			1317			1366	
Turn Bay Length (ft)												
Base Capacity (vph)	348	428	503	280	410	317	400	2312	1278	735	2328	1292
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	0.33	0.33	0.20	0.08	0.11	0.07	0.07	0.16	0.13	0.14	0.38	0.02

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 82 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 49.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Mid-Mile #1 & Broadway Rd

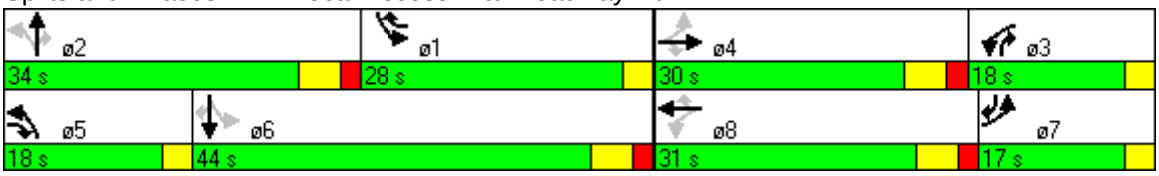
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.750			0.750			0.250			0.478		
Satd. Flow (perm)	1397	1961	1583	1397	1961	1583	466	3725	1583	890	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			47			84			53
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		964			811			1460			1397	
Travel Time (s)		21.9			18.4			28.4			27.2	
Volume (vph)	45	10	65	45	10	45	45	455	80	185	730	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	11	68	47	11	47	47	479	84	195	768	53
Lane Group Flow (vph)	47	11	68	47	11	47	47	479	84	195	768	53
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	17.0	30.0	18.0	18.0	31.0	28.0	18.0	34.0	18.0	28.0	44.0	17.0
Total Split (%)	15.5%	27.3%	16.4%	16.4%	28.2%	25.5%	16.4%	30.9%	16.4%	25.5%	40.0%	15.5%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	8.1	8.1	7.2	8.1	8.1	26.6	66.8	66.8	75.4	87.1	87.9	95.7
Actuated g/C Ratio	0.07	0.07	0.07	0.07	0.07	0.24	0.61	0.61	0.69	0.79	0.80	0.87
v/c Ratio	0.38	0.08	0.41	0.38	0.08	0.11	0.14	0.21	0.08	0.22	0.26	0.04
Control Delay	54.2	48.3	16.5	54.2	48.3	8.8	4.8	3.9	0.5	2.1	1.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	48.3	16.5	54.2	48.3	8.8	4.8	3.9	0.5	2.1	1.3	0.3
LOS	D	D	B	D	D	A	A	A	A	A	A	A
Approach Delay		33.4			33.3			3.5			1.4	
Approach LOS		C			C			A			A	
Stops (vph)	42	11	14	42	11	10	11	105	3	15	75	2
Fuel Used(gal)	1	0	1	1	0	0	1	6	1	2	8	1
CO Emissions (g/hr)	75	16	55	71	16	29	42	416	61	144	568	36

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	15	3	11	14	3	6	8	81	12	28	110	7
VOC Emissions (g/hr)	17	4	13	16	4	7	10	96	14	33	132	8
Dilemma Vehicles (#)	0	0	0	0	0	0	0	25	0	0	11	0
Queue Length 50th (ft)	33	7	0	33	7	0	6	32	0	3	5	0
Queue Length 95th (ft)	63	26	34	63	26	26	m19	71	7	23	77	0
Internal Link Dist (ft)		884			731			1380			1317	
Turn Bay Length (ft)	150		150	150		150	200		200	200		200
Base Capacity (vph)	232	464	286	248	481	419	449	2260	1111	897	2977	1454
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	0.20	0.02	0.24	0.19	0.02	0.11	0.10	0.21	0.08	0.22	0.26	0.04

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 19 (17%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 6.1 Intersection LOS: A
Intersection Capacity Utilization 41.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Local Access B & Broadway Rd



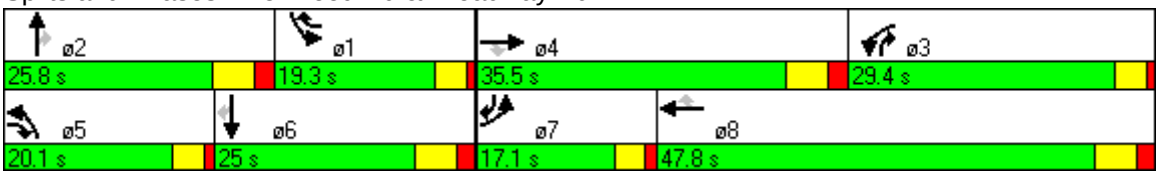
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	180		180	180		180	180		180	180		180
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			58			316			50			69
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
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1373			572			1261			1460	
Travel Time (s)		26.7			11.1			24.6			28.4	
Volume (vph)	80	830	275	470	1480	300	175	200	150	225	415	200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	874	289	495	1558	316	184	211	158	237	437	211
Lane Group Flow (vph)	84	874	289	495	1558	316	184	211	158	237	437	211
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	22.0	14.5	8.5	22.0	8.5	14.5	22.0	8.5	8.5	22.0	8.5
Total Split (s)	17.1	35.5	20.1	29.4	47.8	19.3	20.1	25.8	29.4	19.3	25.0	17.1
Total Split (%)	15.5%	32.3%	18.3%	26.7%	43.5%	17.5%	18.3%	23.5%	26.7%	17.5%	22.7%	15.5%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Min	None	None	Min	None
Act Effct Green (s)	7.6	38.0	49.0	25.4	55.8	73.2	11.0	13.1	42.5	17.5	19.6	31.2
Actuated g/C Ratio	0.07	0.35	0.45	0.23	0.51	0.67	0.10	0.12	0.39	0.16	0.18	0.28
v/c Ratio	0.35	0.47	0.39	0.62	0.57	0.27	0.53	0.47	0.25	0.43	0.66	0.42
Control Delay	60.1	8.2	5.3	20.0	3.1	0.9	37.8	34.1	7.5	33.5	36.4	11.9
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	60.1	8.2	5.3	20.0	3.1	0.9	37.8	34.1	7.5	33.5	36.4	11.9
LOS	E	A	A	C	A	A	D	C	A	C	D	B
Approach Delay		11.0			6.4			27.8			29.8	
Approach LOS		B			A			C			C	
Stops (vph)	66	306	71	388	355	24	151	171	47	171	344	120
Fuel Used(gal)	2	12	4	7	10	1	4	4	2	5	10	3
CO Emissions (g/hr)	159	833	249	474	680	103	285	314	136	363	702	244

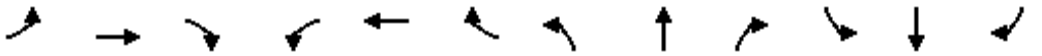
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	31	162	48	92	132	20	55	61	27	71	136	48
VOC Emissions (g/hr)	37	193	58	110	158	24	66	73	32	84	163	57
Dilemma Vehicles (#)	0	5	0	0	18	0	0	8	0	0	21	0
Queue Length 50th (ft)	27	70	45	145	12	0	65	75	12	69	144	55
Queue Length 95th (ft)	47	94	73	m182	186	m28	57	63	18	63	114	33
Internal Link Dist (ft)		1293			492			1181			1380	
Turn Bay Length (ft)	180		180	180		180	180		180	180		180
Base Capacity (vph)	409	1849	808	793	2713	1165	502	738	643	559	731	574
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	0.21	0.47	0.36	0.62	0.57	0.27	0.37	0.29	0.25	0.42	0.60	0.37

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 57 (52%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 59.7% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Reed Rd & Broadway Rd





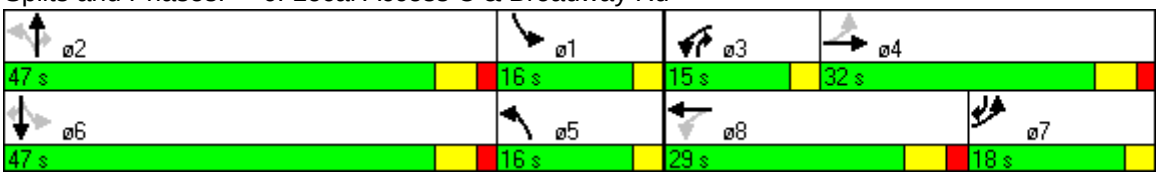
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.925			0.902				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1814	0	1770	1769	0	1770	3725	1583	1770	3725	1583
Flt Permitted	0.736			0.531			0.141			0.398		
Satd. Flow (perm)	1371	1814	0	989	1769	0	263	3725	1583	741	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			21				63			189
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1222			1178			1332			1261	
Travel Time (s)		27.8			26.8			25.9			24.6	
Volume (vph)	45	10	10	15	10	20	40	460	60	60	920	180
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	11	11	16	11	21	42	484	63	63	968	189
Lane Group Flow (vph)	47	22	0	16	32	0	42	484	63	63	968	189
Turn Type	pm+pt			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases	4			8			2		2	6		6
Detector Phases	7	4		3	8		5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0		8.0	22.0		8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	18.0	32.0	0.0	15.0	29.0	0.0	16.0	47.0	15.0	16.0	47.0	18.0
Total Split (%)	16.4%	29.1%	0.0%	13.6%	26.4%	0.0%	14.5%	42.7%	13.6%	14.5%	42.7%	16.4%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lag	Lag		Lead	Lead		Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max	None	None	C-Max	None
Act Effct Green (s)	8.0	8.5		9.8	8.5		85.0	80.5	91.4	85.8	82.2	94.5
Actuated g/C Ratio	0.07	0.08		0.09	0.08		0.77	0.73	0.83	0.78	0.75	0.86
v/c Ratio	0.38	0.15		0.11	0.21		0.16	0.18	0.05	0.10	0.35	0.14
Control Delay	57.2	33.0		46.6	28.1		3.6	1.4	0.1	1.6	3.3	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	33.0		46.6	28.1		3.6	1.4	0.1	1.6	3.3	0.2
LOS	E	C		D	C		A	A	A	A	A	A
Approach Delay		49.5			34.3			1.4			2.7	
Approach LOS		D			C			A			A	
Stops (vph)	43	14		16	15		7	23	0	7	236	1
Fuel Used(gal)	1	0		0	1		0	5	1	1	11	2
CO Emissions (g/hr)	83	29		26	37		33	331	40	43	752	116
NOx Emissions (g/hr)	16	6		5	7		6	64	8	8	146	22
VOC Emissions (g/hr)	19	7		6	9		8	77	9	10	174	27

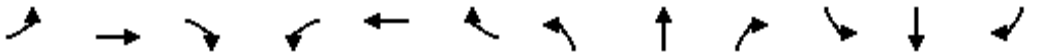
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0		0	0		0	12	0	0	29	0
Queue Length 50th (ft)	33	7		10	7		0	10	1	1	143	0
Queue Length 95th (ft)	69	32		33	38		14	14	0	m6	164	3
Internal Link Dist (ft)		1142			1098			1252			1181	
Turn Bay Length (ft)												
Base Capacity (vph)	241	470		203	418		385	2725	1369	740	2783	1387
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.05		0.08	0.08		0.11	0.18	0.05	0.09	0.35	0.14

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 4.8 Intersection LOS: A
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Local Access C & Broadway Rd





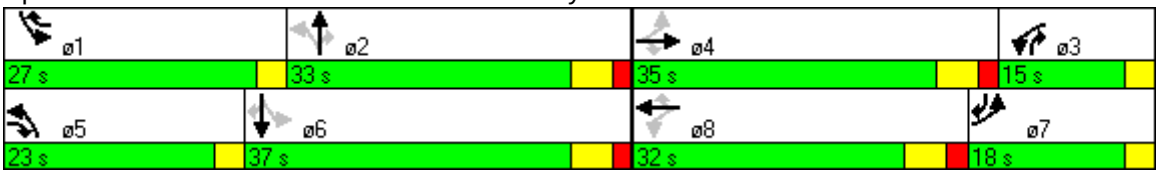
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.702			0.394			0.262			0.238		
Satd. Flow (perm)	1308	1961	1583	734	1961	1583	488	3725	1583	443	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			21			21			53			147
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1258			1382			1489			1332	
Travel Time (s)		28.6			31.4			29.0			25.9	
Volume (vph)	20	250	20	10	80	20	135	520	50	185	620	140
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	263	21	11	84	21	142	547	53	195	653	147
Lane Group Flow (vph)	21	263	21	11	84	21	142	547	53	195	653	147
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	18.0	35.0	23.0	15.0	32.0	27.0	23.0	33.0	15.0	27.0	37.0	18.0
Total Split (%)	16.4%	31.8%	20.9%	13.6%	29.1%	24.5%	20.9%	30.0%	13.6%	24.5%	33.6%	16.4%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	28.1	21.2	27.8	14.7	11.7	20.0	65.7	59.9	64.5	72.3	64.2	79.8
Actuated g/C Ratio	0.26	0.19	0.25	0.13	0.11	0.18	0.60	0.54	0.59	0.66	0.58	0.73
v/c Ratio	0.05	0.70	0.05	0.08	0.40	0.07	0.40	0.27	0.06	0.47	0.30	0.12
Control Delay	27.6	50.8	8.2	29.4	50.9	7.2	10.7	7.8	0.7	14.4	10.4	1.9
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	50.8	8.2	29.4	50.9	7.2	10.7	7.8	0.7	14.4	10.4	1.9
LOS	C	D	A	C	D	A	B	A	A	B	B	A
Approach Delay		46.3			41.0			7.8			9.9	
Approach LOS		D			D			A			A	
Stops (vph)	15	225	6	9	71	7	40	169	3	98	272	25
Fuel Used(gal)	0	6	0	0	2	0	2	8	1	3	9	2
CO Emissions (g/hr)	27	439	18	15	146	20	143	537	40	214	652	111
NOx Emissions (g/hr)	5	85	4	3	28	4	28	104	8	42	127	22
VOC Emissions (g/hr)	6	102	4	4	34	5	33	124	9	50	151	26

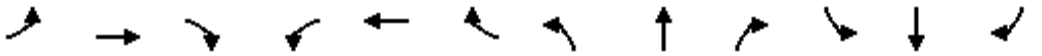
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	23	0	0	24	0
Queue Length 50th (ft)	11	175	0	6	56	0	15	33	0	19	127	17
Queue Length 95th (ft)	28	245	15	18	102	12	45	73	2	155	173	14
Internal Link Dist (ft)		1178			1302			1409			1252	
Turn Bay Length (ft)												
Base Capacity (vph)	401	553	604	244	499	491	547	2030	1034	575	2173	1192
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	0.05	0.48	0.03	0.05	0.17	0.04	0.26	0.27	0.05	0.34	0.30	0.12

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 64 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 46.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Mid-Mile #2 & Broadway Rd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.607			0.594			0.665			0.161		
Satd. Flow (perm)	1131	1961	1583	1106	1961	1583	1239	3725	1583	300	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			21			100			147
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1239			1305			2384			1392	
Travel Time (s)		28.2			29.7			46.4			27.1	
Volume (vph)	20	125	15	15	120	20	95	800	95	135	130	140
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	132	16	16	126	21	100	842	100	142	137	147
Lane Group Flow (vph)	21	132	16	16	126	21	100	842	100	142	137	147
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	16.0	28.0	16.0	16.0	28.0	22.0	16.0	44.0	16.0	22.0	50.0	16.0
Total Split (%)	14.5%	25.5%	14.5%	14.5%	25.5%	20.0%	14.5%	40.0%	14.5%	20.0%	45.5%	14.5%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	19.6	14.4	20.9	18.9	14.1	20.1	75.1	68.7	73.5	74.3	68.3	73.5
Actuated g/C Ratio	0.18	0.13	0.19	0.17	0.13	0.18	0.68	0.62	0.67	0.68	0.62	0.67
v/c Ratio	0.09	0.51	0.05	0.07	0.50	0.07	0.11	0.36	0.09	0.50	0.06	0.13
Control Delay	33.9	51.0	10.7	33.5	51.1	9.9	5.8	11.3	1.1	18.0	1.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	51.0	10.7	33.5	51.1	9.9	5.8	11.3	1.1	18.0	1.5	0.6
LOS	C	D	B	C	D	A	A	B	A	B	A	A
Approach Delay		45.1			44.0			9.8			6.7	
Approach LOS		D			D			A			A	
Stops (vph)	16	114	6	14	109	7	29	374	8	75	14	8
Fuel Used(gal)	0	3	0	0	3	0	2	18	2	2	1	1
CO Emissions (g/hr)	29	219	15	23	215	20	137	1288	120	169	101	104
NOx Emissions (g/hr)	6	43	3	5	42	4	27	251	23	33	20	20
VOC Emissions (g/hr)	7	51	3	5	50	5	32	298	28	39	24	24

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	36	0	0	1	0
Queue Length 50th (ft)	12	88	0	9	84	0	18	133	0	21	2	0
Queue Length 95th (ft)	31	143	15	26	139	16	42	225	12	54	4	0
Internal Link Dist (ft)		1159			1225			2304			1312	
Turn Bay Length (ft)												
Base Capacity (vph)	341	428	392	335	428	476	940	2326	1188	455	2312	1195
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	0.06	0.31	0.04	0.05	0.29	0.04	0.11	0.36	0.08	0.31	0.06	0.12

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 51.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: Grand Ridge Rd & Broadway Rd

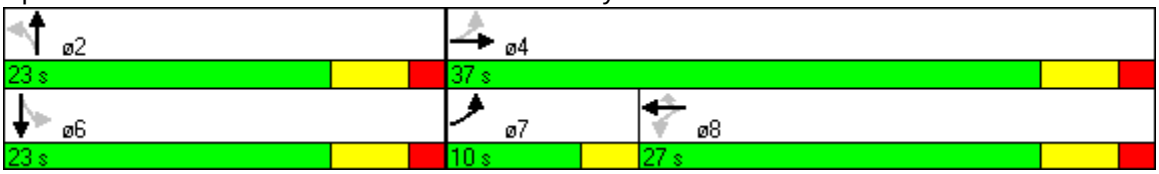
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	300		0
Storage Lanes	1		0	1		1	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
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		0.999				0.850		0.955			0.853	
Flt Protected	0.950			0.950				0.984		0.950		
Satd. Flow (prot)	1770	1861	0	1770	1863	1583	0	1750	0	1770	1589	0
Flt Permitted	0.587			0.689				0.952		0.756		
Satd. Flow (perm)	1093	1861	0	1283	1863	1583	0	1694	0	1408	1589	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				732		1			47	
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
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2800			2330			1866			1664	
Travel Time (s)		54.5			45.4			36.4			32.4	
Volume (vph)	295	100	1	1	100	695	1	1	1	115	1	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	311	105	1	1	105	732	1	1	1	121	1	47
Lane Group Flow (vph)	311	106	0	1	105	732	0	3	0	121	48	0
Turn Type	pm+pt			Perm		Perm	Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phases	7	4		8	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	22.0		22.0	22.0	22.0	22.0	22.0		22.0	22.0	
Total Split (s)	10.0	37.0	0.0	27.0	27.0	27.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Split (%)	16.7%	61.7%	0.0%	45.0%	45.0%	45.0%	38.3%	38.3%	0.0%	38.3%	38.3%	0.0%
Yellow Time (s)	3.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)	23.0	23.0		12.6	12.6	12.6		11.1		11.1	11.1	
Actuated g/C Ratio	0.54	0.54		0.30	0.30	0.30		0.26		0.26	0.26	
v/c Ratio	0.45	0.10		0.00	0.19	0.74		0.01		0.33	0.11	
Control Delay	8.1	5.4		10.0	12.0	6.6		12.7		16.8	6.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	8.1	5.4		10.0	12.0	6.6		12.7		16.8	6.3	
LOS	A	A		A	B	A		B		B	A	
Approach Delay		7.4			7.3			12.7			13.8	
Approach LOS		A			A			B			B	
Stops (vph)	141	42		2	65	84		4		85	13	
Fuel Used(gal)	8	2		0	2	13		0		4	1	
CO Emissions (g/hr)	525	173		2	169	927		5		259	86	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	102	34		0	33	180		1		50	17	
VOC Emissions (g/hr)	122	40		1	39	215		1		60	20	
Dilemma Vehicles (#)	0	11		0	10	0		0		0	5	
Queue Length 50th (ft)	33	10		0	18	0		0		21	0	
Queue Length 95th (ft)	86	31		3	48	57		5		70	20	
Internal Link Dist (ft)		2720			2250			1786			1584	
Turn Bay Length (ft)										300		
Base Capacity (vph)	693	1180		567	823	1108		650		539	637	
Starvation Cap Reductn	0	0		0	0	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.45	0.09		0.00	0.13	0.66		0.00		0.22	0.08	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 42.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 8.1 Intersection LOS: A
Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Braceville Rd & Broadway Rd



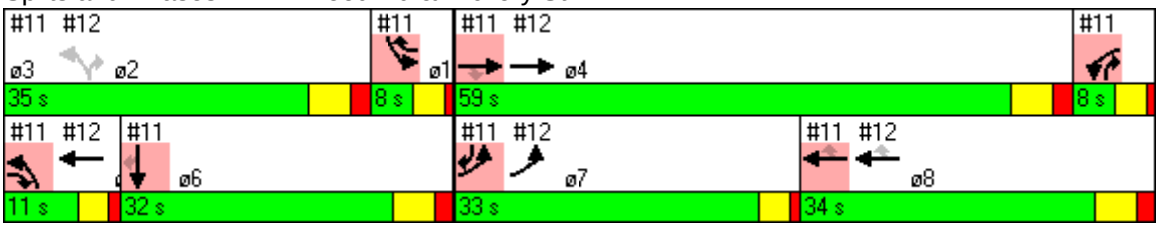
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			211			56			26			11
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		380			1151			1118			1110	
Travel Time (s)		7.4			22.4			25.4			25.2	
Volume (vph)	115	985	200	35	1355	65	65	25	25	45	80	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	1037	211	37	1426	68	68	26	26	47	84	11
Lane Group Flow (vph)	121	1037	211	37	1426	68	68	26	26	47	84	11
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	33.0	59.0	11.0	8.0	34.0	8.0	11.0	35.0	8.0	8.0	32.0	33.0
Total Split (%)	30.0%	53.6%	10.0%	7.3%	30.9%	7.3%	10.0%	31.8%	7.3%	7.3%	29.1%	30.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	29.0	51.4	59.2	9.4	30.0	34.0	7.0	31.0	43.6	4.0	26.3	59.4
Actuated g/C Ratio	0.27	0.47	0.55	0.09	0.28	0.31	0.06	0.29	0.40	0.04	0.24	0.55
v/c Ratio	0.13	0.41	0.22	0.12	0.96	0.13	0.31	0.05	0.04	0.37	0.18	0.01
Control Delay	18.9	5.6	0.5	48.7	55.2	5.4	53.0	29.2	8.4	60.2	33.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	5.7	0.5	48.7	55.2	5.4	53.0	29.2	8.4	60.2	33.3	5.6
LOS	B	A	A	D	E	A	D	C	A	E	C	A
Approach Delay		6.0			52.8			38.2			40.0	
Approach LOS		A			D			D			D	
Stops (vph)	35	115	1	33	1221	16	60	20	7	44	61	3
Fuel Used(gal)	1	5	1	1	36	1	2	0	0	1	2	0
CO Emissions (g/hr)	71	328	40	62	2493	51	112	33	21	83	110	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	14	64	8	12	485	10	22	6	4	16	21	2
VOC Emissions (g/hr)	17	76	9	14	578	12	26	8	5	19	25	2
Dilemma Vehicles (#)	0	45	0	0	60	0	0	0	0	0	0	0
Queue Length 50th (ft)	12	32	0	12	365	3	24	13	0	17	46	0
Queue Length 95th (ft)	28	42	1	31	#471	18	47	35	19	37	88	8
Internal Link Dist (ft)		300			1071			1038			1030	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	919	2803	961	297	1483	535	222	562	652	127	507	872
Starvation Cap Reductn	0	305	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	0.13	0.42	0.22	0.12	0.96	0.13	0.31	0.05	0.04	0.37	0.17	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 108.4
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 31.4 Intersection LOS: C
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Reed Rd & Hickory St



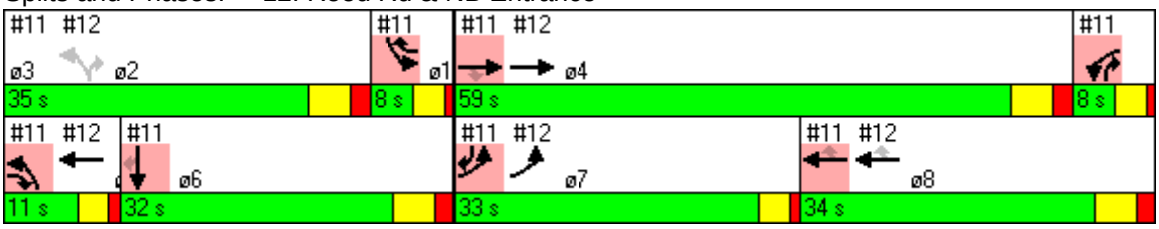
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	2000	2000	2000	1900	1900	1900
Storage Length (ft)	350		0	0		200	0		0	0		0
Storage Lanes	2		0	0		1	2		2	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50		50			
Trailing Detector (ft)	0	0			0	0	0		0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	1.00	0.88	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3433	5353	0	0	5353	1583	3614	0	2933	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	5353	0	0	5353	1583	3614	0	2933	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						57			121			
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1093			380			592			824	
Travel Time (s)		21.3			7.4			13.5			18.7	
Volume (vph)	850	1180	0	0	1360	70	960	0	120	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	895	1242	0	0	1432	74	1011	0	126	0	0	0
Lane Group Flow (vph)	895	1242	0	0	1432	74	1011	0	126	0	0	0
Turn Type	Prot					custom	custom		custom			
Protected Phases	7	4			8 5!							
Permitted Phases						8	2!		2			
Detector Phases	7	4			8 5	8	2		2			
Minimum Initial (s)	4.0	4.0				4.0	4.0		4.0			
Minimum Split (s)	8.0	22.0				22.0	22.0		22.0			
Total Split (s)	33.0	59.0	0.0	0.0	45.0	34.0	35.0	0.0	35.0	0.0	0.0	0.0
Total Split (%)	30.0%	53.6%	0.0%	0.0%	40.9%	30.9%	31.8%	0.0%	31.8%	0.0%	0.0%	0.0%
Yellow Time (s)	3.0	4.0				4.0	4.0		4.0			
All-Red Time (s)	1.0	2.0				2.0	2.0		2.0			
Lead/Lag	Lead	Lead				Lag	Lead		Lead			
Lead-Lag Optimize?	Yes	Yes				Yes	Yes		Yes			
Recall Mode	None	None				None	Min		Min			
Act Effct Green (s)	29.0	51.4			41.0	30.0	31.0		31.0			
Actuated g/C Ratio	0.27	0.47			0.38	0.28	0.29		0.29			
v/c Ratio	0.97	0.49			0.71	0.15	0.98		0.14			
Control Delay	64.2	21.3			4.4	6.1	62.3		6.4			
Queue Delay	0.0	0.0			0.4	0.0	0.0		0.0			
Total Delay	64.2	21.3			4.8	6.1	62.3		6.4			
LOS	E	C			A	A	E		A			
Approach Delay		39.2			4.9							
Approach LOS		D			A							
Stops (vph)	754	778			99	14	851		18			
Fuel Used(gal)	23	20			6	0	21		1			
CO Emissions (g/hr)	1642	1417			397	27	1490		57			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	319	276			77	5	290		11			
VOC Emissions (g/hr)	380	328			92	6	345		13			
Dilemma Vehicles (#)	0	54			53	0	0		0			
Queue Length 50th (ft)	325	240			19	2	367		1			
Queue Length 95th (ft)	#460	240			m21	m3	#508		26			
Internal Link Dist (ft)		1013			300			512			744	
Turn Bay Length (ft)	350					200						
Base Capacity (vph)	919	2803			2026	480	1034		926			
Starvation Cap Reductn	0	0			207	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	0.97	0.44			0.79	0.15	0.98		0.14			

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 108.4
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 32.4 Intersection LOS: C
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 12: Reed Rd & NB Entrance



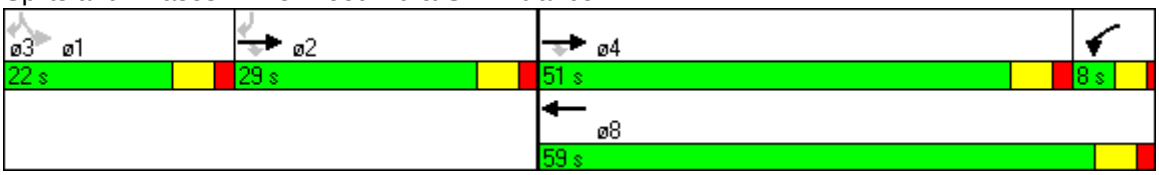
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	2000	2000	2000
Storage Length (ft)	0		300	200		0	0		0	0		0
Storage Lanes	0		1	2		0	0		0	2		2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50		50
Trailing Detector (ft)		0	0	0	0					0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	0.88
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	5353	1583	3433	5353	0	0	0	0	3614	0	2933
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	5353	1583	3433	5353	0	0	0	0	3614	0	2933
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			305									2
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		708			1093			500			652	
Travel Time (s)		13.8			21.3			11.4			14.8	
Volume (vph)	0	1785	290	20	2300	0	0	0	0	245	0	1180
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1879	305	21	2421	0	0	0	0	258	0	1242
Lane Group Flow (vph)	0	1879	305	21	2421	0	0	0	0	258	0	1242
Turn Type			Perm	Prot						custom		custom
Protected Phases		2 4		3	8							
Permitted Phases			2 4							1		1 2
Detector Phases		2 4	2 4	3	8					1		1 2
Minimum Initial (s)				4.0	4.0					4.0		
Minimum Split (s)				8.0	22.0					22.0		
Total Split (s)	0.0	80.0	80.0	8.0	59.0	0.0	0.0	0.0	0.0	22.0	0.0	51.0
Total Split (%)	0.0%	72.7%	72.7%	7.3%	53.6%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%	46.4%
Yellow Time (s)				3.0	4.0					4.0		
All-Red Time (s)				1.0	2.0					2.0		
Lead/Lag				Lag						Lead		
Lead-Lag Optimize?				Yes						Yes		
Recall Mode				None	C-Max					Min		
Act Effct Green (s)		80.8	80.8	4.0	55.0					18.0		47.0
Actuated g/C Ratio		0.73	0.73	0.04	0.50					0.16		0.43
v/c Ratio		0.48	0.25	0.17	0.90					0.44		0.99
Control Delay		5.1	2.1	54.6	31.1					44.1		55.1
Queue Delay		0.0	0.0	0.0	8.9					0.0		14.6
Total Delay		5.1	2.1	54.6	40.0					44.1		69.7
LOS		A	A	D	D					D		E
Approach Delay		4.7			40.2							
Approach LOS		A			D							
Stops (vph)		301	24	21	1986					216		1034
Fuel Used(gal)		13	2	1	48					5		25
CO Emissions (g/hr)		925	125	38	3332					324		1744

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)		180	24	7	648					63		339
VOC Emissions (g/hr)		214	29	9	772					75		404
Dilemma Vehicles (#)		146	0	0	104					0		0
Queue Length 50th (ft)		26	0	7	551					85		483
Queue Length 95th (ft)		172	52	21	628					126		#663
Internal Link Dist (ft)		628			1013			420			572	
Turn Bay Length (ft)			300	200								
Base Capacity (vph)		3932	1244	125	2677					591		1254
Starvation Cap Reductn		0	0	0	0					0		0
Spillback Cap Reductn		0	0	0	263					0		61
Storage Cap Reductn		0	0	0	0					0		0
Reduced v/c Ratio		0.48	0.25	0.17	1.00					0.44		1.04

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 106 (96%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 33.7 Intersection LOS: C
Intersection Capacity Utilization 88.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: Reed Rd & SB Entrance



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			32			126			12			21
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1493			708			1409			1457	
Travel Time (s)		29.1			13.8			32.0			33.1	
Volume (vph)	30	1930	30	100	3260	120	20	50	65	80	40	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	2032	32	105	3432	126	21	53	68	84	42	21
Lane Group Flow (vph)	32	2032	32	105	3432	126	21	53	68	84	42	21
Turn Type	Prot		pm+ov	Prot		pt+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0		8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	8.0	69.0	8.0	11.0	72.0	80.0	8.0	22.0	11.0	8.0	22.0	8.0
Total Split (%)	7.3%	62.7%	7.3%	10.0%	65.5%	72.7%	7.3%	20.0%	10.0%	7.3%	20.0%	7.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max		None	Max	None	None	Max	None
Act Effct Green (s)	4.0	65.1	69.1	6.9	71.2	79.2	4.0	18.0	24.9	4.0	21.2	29.2
Actuated g/C Ratio	0.04	0.59	0.63	0.06	0.65	0.72	0.04	0.16	0.23	0.04	0.19	0.27
v/c Ratio	0.26	0.64	0.03	0.49	0.99	0.11	0.17	0.09	0.19	0.67	0.06	0.05
Control Delay	45.3	12.7	1.5	52.2	25.4	2.4	54.6	39.5	23.1	78.2	38.6	13.5
Queue Delay	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	12.7	1.5	52.2	29.2	2.4	54.6	39.5	23.1	78.2	38.6	13.5
LOS	D	B	A	D	C	A	D	D	C	E	D	B
Approach Delay		13.0			28.9			33.9			57.7	
Approach LOS		B			C			C			E	
Stops (vph)	29	900	4	96	2029	16	21	42	41	73	33	7
Fuel Used(gal)	1	33	0	2	49	1	1	1	1	3	1	0
CO Emissions (g/hr)	57	2275	25	160	3408	55	39	83	87	181	66	22

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	11	443	5	31	663	11	8	16	17	35	13	4
VOC Emissions (g/hr)	13	527	6	37	790	13	9	19	20	42	15	5
Dilemma Vehicles (#)	0	37	0	0	192	0	0	0	0	0	0	0
Queue Length 50th (ft)	11	265	1	38	~943	6	7	16	27	30	13	0
Queue Length 95th (ft)	m17	m260	m2	m41	m#1010	m9	21	35	60	#68	30	21
Internal Link Dist (ft)		1413			628			1329			1377	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	125	3169	1007	218	3465	1175	125	610	369	125	718	436
Starvation Cap Reductn	0	0	0	0	58	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	0.26	0.64	0.03	0.48	1.01	0.11	0.17	0.09	0.18	0.67	0.06	0.05

Intersection Summary

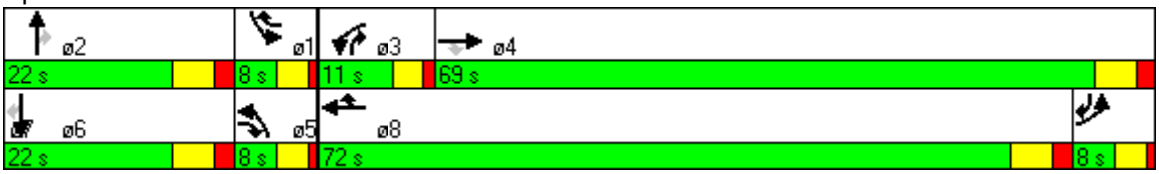
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 89 (81%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 76.5% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 14: Reed Rd & Will Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		0	300		0	300		0	300		0
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			32			130			13			21
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1399			1493			1245			1568	
Travel Time (s)		27.3			29.1			28.3			35.6	
Volume (vph)	30	1775	30	100	3060	140	20	45	65	150	70	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	1868	32	105	3221	147	21	47	68	158	74	21
Lane Group Flow (vph)	32	1868	32	105	3221	147	21	47	68	158	74	21
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	8.0	68.0	8.0	11.0	71.0	9.0	8.0	22.0	11.0	9.0	23.0	8.0
Total Split (%)	7.3%	61.8%	7.3%	10.0%	64.5%	8.2%	7.3%	20.0%	10.0%	8.2%	20.9%	7.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	4.0	64.0	72.0	7.0	70.2	76.8	4.0	18.0	29.0	5.0	22.2	27.8
Actuated g/C Ratio	0.04	0.58	0.65	0.06	0.64	0.70	0.04	0.16	0.26	0.05	0.20	0.25
v/c Ratio	0.26	0.60	0.03	0.48	0.94	0.13	0.17	0.08	0.16	1.01	0.10	0.05
Control Delay	43.3	12.2	2.0	33.4	6.1	0.1	54.6	39.4	26.8	128.3	37.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	12.2	2.0	33.4	6.1	0.1	54.6	39.4	26.8	128.3	37.9	11.1
LOS	D	B	A	C	A	A	D	D	C	F	D	B
Approach Delay		12.5			6.7			35.4			92.2	
Approach LOS		B			A			D			F	
Stops (vph)	30	850	4	91	420	0	21	37	40	123	57	7
Fuel Used(gal)	1	29	0	2	40	2	1	1	1	6	2	0
CO Emissions (g/hr)	55	2008	24	171	2793	106	37	70	84	450	120	23

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	11	391	5	33	543	21	7	14	16	87	23	4
VOC Emissions (g/hr)	13	465	6	40	647	24	9	16	20	104	28	5
Dilemma Vehicles (#)	0	189	0	0	139	0	0	0	0	0	0	0
Queue Length 50th (ft)	10	244	1	35	8	1	7	14	30	~59	23	0
Queue Length 95th (ft)	m20	317	m2	m36	m10	m1	21	32	66	#128	45	18
Internal Link Dist (ft)		1319			1413			1165			1488	
Turn Bay Length (ft)	300			300			300			300		
Base Capacity (vph)	125	3114	1047	218	3416	1145	125	610	427	156	751	416
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	0.26	0.60	0.03	0.48	0.94	0.13	0.17	0.08	0.16	1.01	0.10	0.05

Intersection Summary

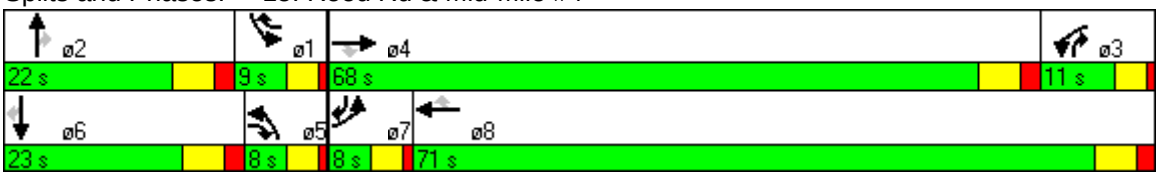
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 108 (98%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 13.0 Intersection LOS: B
Intersection Capacity Utilization 73.8% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 15: Reed Rd & Mid-Mile #4



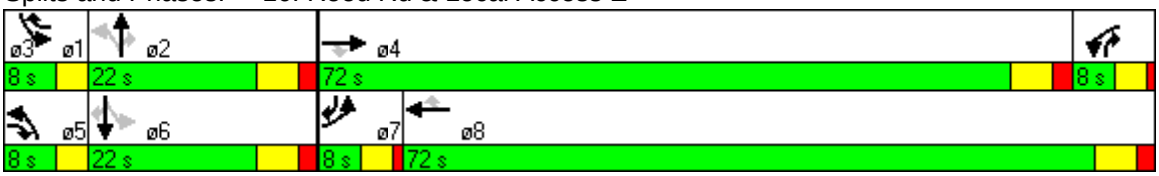
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	2		1	2		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.744			0.744		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	1386	1961	1583	1386	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			5			26			59			64
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1355			1399			1240			1412	
Travel Time (s)		26.4			27.3			28.2			32.1	
Volume (vph)	10	1775	5	20	3055	25	35	20	70	80	20	65
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	1868	5	21	3216	26	37	21	74	84	21	68
Lane Group Flow (vph)	11	1868	5	21	3216	26	37	21	74	84	21	68
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	8.0	72.0	8.0	8.0	72.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (%)	7.3%	65.5%	7.3%	7.3%	65.5%	7.3%	7.3%	20.0%	7.3%	7.3%	20.0%	7.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0	0.0	0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	4.0	69.6	74.4	4.0	69.6	77.6	22.8	19.6	24.4	23.6	21.2	29.2
Actuated g/C Ratio	0.04	0.63	0.68	0.04	0.63	0.71	0.21	0.18	0.22	0.21	0.19	0.27
v/c Ratio	0.09	0.55	0.00	0.17	0.95	0.02	0.12	0.06	0.19	0.27	0.06	0.15
Control Delay	38.1	12.8	2.2	37.6	10.9	0.0	34.1	39.6	11.2	37.4	39.2	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	12.8	2.2	37.6	10.9	0.0	34.1	39.6	11.2	37.4	39.2	10.1
LOS	D	B	A	D	B	A	C	D	B	D	D	B
Approach Delay		12.9			11.0			22.1			26.9	
Approach LOS		B			B			C			C	
Stops (vph)	11	1083	1	20	756	0	29	18	20	71	18	14
Fuel Used(gal)	0	30	0	1	43	0	1	0	1	2	0	1
CO Emissions (g/hr)	18	2105	4	35	3028	18	52	32	66	132	33	65

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	4	410	1	7	589	3	10	6	13	26	7	13
VOC Emissions (g/hr)	4	488	1	8	702	4	12	7	15	30	8	15
Dilemma Vehicles (#)	0	131	0	0	218	0	0	0	0	0	0	0
Queue Length 50th (ft)	3	290	1	7	128	0	20	13	7	48	13	2
Queue Length 95th (ft)	m6	350	m1	m7	#158	m0	48	36	42	91	36	38
Internal Link Dist (ft)		1275			1319			1160			1332	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	125	3387	1072	125	3387	1125	301	350	397	311	378	467
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	0.09	0.55	0.00	0.17	0.95	0.02	0.12	0.06	0.19	0.27	0.06	0.15

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 15 (14%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 12.4 Intersection LOS: B
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Reed Rd & Local Access E



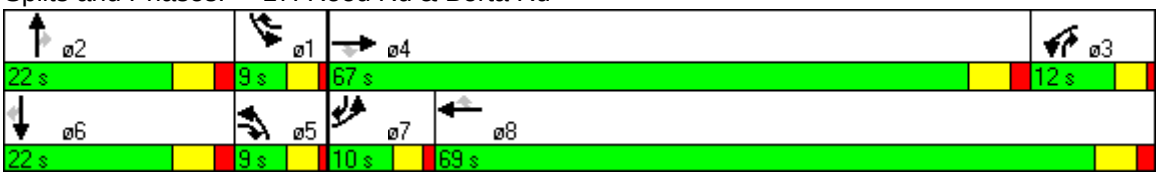
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			5			96			32			3
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1380			1355			1341			1502	
Travel Time (s)		26.9			26.4			30.5			34.1	
Volume (vph)	55	1565	5	130	2900	125	115	150	70	65	160	70
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	1647	5	137	3053	132	121	158	74	68	168	74
Lane Group Flow (vph)	58	1647	5	137	3053	132	121	158	74	68	168	74
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	10.0
Total Split (s)	10.0	67.0	9.0	12.0	69.0	9.0	9.0	22.0	12.0	9.0	22.0	10.0
Total Split (%)	9.1%	60.9%	8.2%	10.9%	62.7%	8.2%	8.2%	20.0%	10.9%	8.2%	20.0%	9.1%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	5.9	63.0	72.0	8.0	67.0	72.8	5.0	18.0	30.0	5.0	18.0	23.9
Actuated g/C Ratio	0.05	0.57	0.65	0.07	0.61	0.66	0.05	0.16	0.27	0.05	0.16	0.22
v/c Ratio	0.32	0.54	0.00	0.55	0.94	0.12	0.78	0.49	0.16	0.44	0.52	0.21
Control Delay	53.1	18.0	10.0	34.2	6.5	0.1	83.3	47.8	19.9	60.1	48.7	27.0
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	53.1	18.0	10.0	34.2	6.5	0.1	83.3	47.8	19.9	60.1	48.7	27.0
LOS	D	B	A	C	A	A	F	D	B	E	D	C
Approach Delay		19.2			7.4			54.1			46.0	
Approach LOS		B			A			D			D	
Stops (vph)	55	639	4	119	947	0	105	134	32	62	143	52
Fuel Used(gal)	2	26	0	3	39	1	4	4	1	2	4	1
CO Emissions (g/hr)	109	1827	6	215	2749	86	261	263	83	133	297	104

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	21	356	1	42	535	17	51	51	16	26	58	20
VOC Emissions (g/hr)	25	424	1	50	637	20	60	61	19	31	69	24
Dilemma Vehicles (#)	0	189	0	0	99	0	0	0	0	0	0	0
Queue Length 50th (ft)	23	197	1	46	21	0	44	103	22	24	110	35
Queue Length 95th (ft)	m41	263	m2	m49	m#42	m0	#94	170	60	48	180	70
Internal Link Dist (ft)		1300			1275			1261			1422	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	187	3066	1038	250	3260	1080	156	321	455	156	321	348
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	0.31	0.54	0.00	0.55	0.94	0.12	0.78	0.49	0.16	0.44	0.52	0.21

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 44 (40%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 15.9 Intersection LOS: B
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Reed Rd & Berta Rd



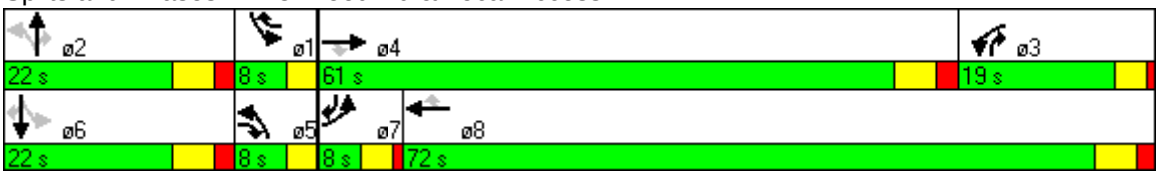
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	150		0	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	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	5353	1583	1770	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.754			0.744		
Satd. Flow (perm)	1770	5353	1583	1770	5353	1583	1405	1961	1583	1386	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			5			12			74			16
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1408			1380			1282			1514	
Travel Time (s)		27.4			26.9			29.1			34.4	
Volume (vph)	5	1500	5	120	2945	20	35	20	70	55	5	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	1579	5	126	3100	21	37	21	74	58	5	16
Lane Group Flow (vph)	5	1579	5	126	3100	21	37	21	74	58	5	16
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	8.0	61.0	8.0	19.0	72.0	8.0	8.0	22.0	19.0	8.0	22.0	8.0
Total Split (%)	7.3%	55.5%	7.3%	17.3%	65.5%	7.3%	7.3%	20.0%	17.3%	7.3%	20.0%	7.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0	0.0	0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	4.3	58.6	65.0	15.0	74.4	79.2	22.0	18.0	37.0	22.8	19.6	25.5
Actuated g/C Ratio	0.04	0.53	0.59	0.14	0.68	0.72	0.20	0.16	0.34	0.21	0.18	0.23
v/c Ratio	0.07	0.55	0.01	0.52	0.86	0.02	0.13	0.07	0.13	0.19	0.01	0.04
Control Delay	65.0	11.9	1.8	33.2	6.4	1.7	34.5	39.6	6.5	35.6	38.8	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	11.9	1.8	33.2	6.4	1.7	34.5	39.6	6.5	35.6	38.8	12.3
LOS	E	B	A	C	A	A	C	D	A	D	D	B
Approach Delay		12.1			7.4			19.6			31.1	
Approach LOS		B			A			B			C	
Stops (vph)	7	1193	1	104	505	2	29	18	10	43	6	6
Fuel Used(gal)	0	28	0	3	37	0	1	0	1	1	0	0
CO Emissions (g/hr)	12	1948	4	195	2585	15	53	32	59	90	9	17

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	2	379	1	38	503	3	10	6	12	17	2	3
VOC Emissions (g/hr)	3	451	1	45	599	4	12	7	14	21	2	4
Dilemma Vehicles (#)	0	8	0	0	188	0	0	0	0	0	0	0
Queue Length 50th (ft)	3	395	0	77	141	1	20	13	0	33	3	0
Queue Length 95th (ft)	m8	406	m0	m83	158	m0	48	36	32	68	14	16
Internal Link Dist (ft)		1328			1300			1202			1434	
Turn Bay Length (ft)	150		150	150		150	150			150		
Base Capacity (vph)	69	2852	937	241	3620	1143	294	321	582	301	350	379
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	0.07	0.55	0.01	0.52	0.86	0.02	0.13	0.07	0.13	0.19	0.01	0.04

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 60 (55%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 9.6 Intersection LOS: A
Intersection Capacity Utilization 77.1% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Reed Rd & Local Access F



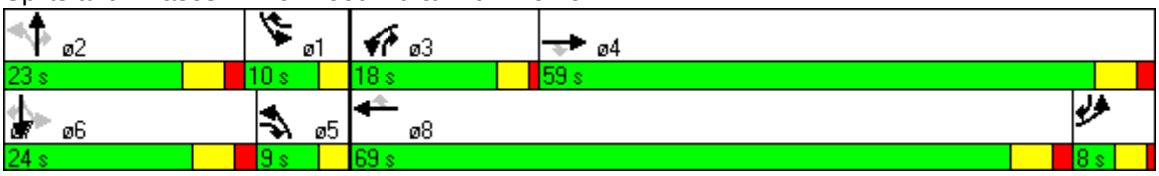
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	200		200	200		200
Storage Lanes	2		1	2		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.313			0.552		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	583	1961	1583	1028	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132			219			47			32
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1016			1408			1348			1611	
Travel Time (s)		19.8			27.4			30.6			36.6	
Volume (vph)	20	1355	130	250	2470	275	65	130	45	110	220	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	1426	137	263	2600	289	68	137	47	116	232	32
Lane Group Flow (vph)	21	1426	137	263	2600	289	68	137	47	116	232	32
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	8.0	59.0	9.0	18.0	69.0	10.0	9.0	23.0	18.0	10.0	24.0	8.0
Total Split (%)	7.3%	53.6%	8.2%	16.4%	62.7%	9.1%	8.2%	20.9%	16.4%	9.1%	21.8%	7.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0	0.0	0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	4.0	56.7	61.5	12.5	68.4	78.2	23.8	19.0	31.5	25.8	20.0	28.0
Actuated g/C Ratio	0.04	0.52	0.56	0.11	0.62	0.71	0.22	0.17	0.29	0.23	0.18	0.25
v/c Ratio	0.17	0.52	0.15	0.67	0.78	0.24	0.38	0.40	0.10	0.41	0.65	0.07
Control Delay	39.8	11.1	1.0	59.5	5.4	0.3	42.1	44.6	6.2	39.3	51.3	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	11.1	1.0	59.5	5.4	0.3	42.1	44.6	6.2	39.3	51.3	11.1
LOS	D	B	A	E	A	A	D	D	A	D	D	B
Approach Delay		10.6			9.5			36.8			44.2	
Approach LOS		B			A			D			D	
Stops (vph)	22	430	9	222	1264	4	51	113	10	85	202	8
Fuel Used(gal)	0	16	1	7	37	3	2	3	1	3	6	0
CO Emissions (g/hr)	33	1135	73	506	2610	199	106	222	41	191	432	34

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	6	221	14	98	508	39	21	43	8	37	84	7
VOC Emissions (g/hr)	8	263	17	117	605	46	25	51	9	44	100	8
Dilemma Vehicles (#)	0	21	0	0	18	0	0	0	0	0	0	0
Queue Length 50th (ft)	7	128	1	86	173	1	37	87	0	65	154	0
Queue Length 95th (ft)	m18	128	2	m100	215	m0	74	148	22	114	238	24
Internal Link Dist (ft)		936			1328			1268			1531	
Turn Bay Length (ft)	150		150	150		150	200		200	200		200
Base Capacity (vph)	125	2758	945	438	3329	1162	181	339	508	283	357	427
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	0.17	0.52	0.14	0.60	0.78	0.25	0.38	0.40	0.09	0.41	0.65	0.07

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 4 (4%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.5 Intersection LOS: B
Intersection Capacity Utilization 76.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Reed Rd & Mid-Mile #5



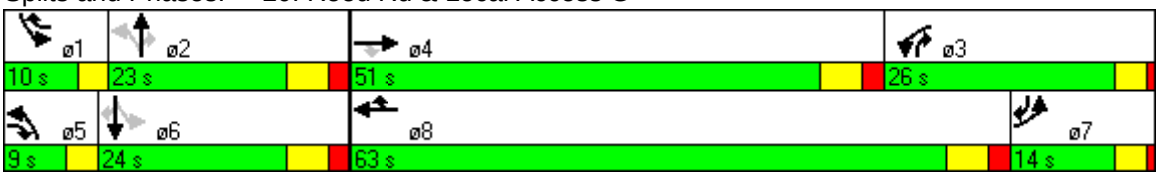
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	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	5353	1583	1770	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.709			0.673		
Satd. Flow (perm)	1770	5353	1583	1770	5353	1583	1321	1961	1583	1254	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			158			103			32
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1176			1016			1206			1406	
Travel Time (s)		22.9			19.8			27.4			32.0	
Volume (vph)	65	1025	115	200	2215	150	25	70	180	80	70	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	1079	121	211	2332	158	26	74	189	84	74	32
Lane Group Flow (vph)	68	1079	121	211	2332	158	26	74	189	84	74	32
Turn Type	Prot		pm+ov	Prot		pt+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Permitted Phases			4				2		2	6		6
Detector Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0		8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	14.0	51.0	9.0	26.0	63.0	73.0	9.0	23.0	26.0	10.0	24.0	14.0
Total Split (%)	12.7%	46.4%	8.2%	23.6%	57.3%	66.4%	8.2%	20.9%	23.6%	9.1%	21.8%	12.7%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0		0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max		None	Max	None	None	Max	None
Act Effct Green (s)	8.6	47.0	52.4	19.4	59.8	66.8	26.8	21.4	40.8	28.4	22.2	30.8
Actuated g/C Ratio	0.08	0.43	0.48	0.18	0.54	0.61	0.24	0.19	0.37	0.26	0.20	0.28
v/c Ratio	0.49	0.47	0.15	0.68	0.80	0.15	0.08	0.19	0.29	0.24	0.19	0.07
Control Delay	54.4	36.8	5.3	40.7	3.9	0.2	30.9	40.4	8.7	33.0	39.5	7.7
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	54.4	36.8	5.3	40.7	3.9	0.2	30.9	40.4	8.7	33.0	39.5	7.7
LOS	D	D	A	D	A	A	C	D	A	C	D	A
Approach Delay		34.7			6.6			18.8			31.2	
Approach LOS		C			A			B			C	
Stops (vph)	50	822	57	199	615	0	21	60	54	62	59	8
Fuel Used(gal)	2	23	2	5	23	1	1	2	2	2	2	0
CO Emissions (g/hr)	115	1577	107	323	1583	77	36	109	162	123	116	29
NOx Emissions (g/hr)	22	307	21	63	308	15	7	21	31	24	23	6
VOC Emissions (g/hr)	27	365	25	75	367	18	8	25	37	28	27	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	34	0	0	25	0	0	0	0	0	0	0
Queue Length 50th (ft)	29	235	34	159	24	0	14	45	31	45	45	0
Queue Length 95th (ft)	79	286	29	m205	27	m0	36	89	71	87	88	20
Internal Link Dist (ft)		1096			936			1126			1326	
Turn Bay Length (ft)												
Base Capacity (vph)	161	2287	818	354	2909	1025	346	382	688	356	397	487
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	0.42	0.47	0.15	0.60	0.80	0.15	0.08	0.19	0.27	0.24	0.19	0.07

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 8 (7%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 65.4% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Reed Rd & Local Access G



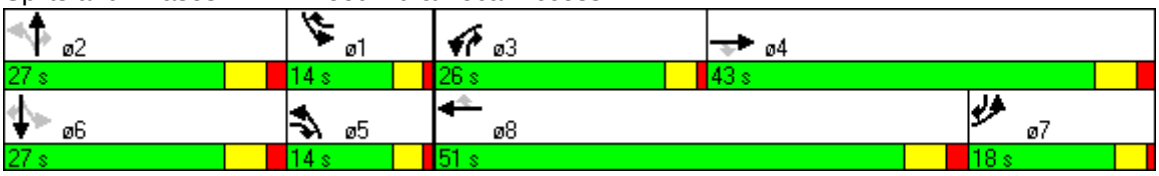
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	1		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	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	5353	1583	1770	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.750			0.754		
Satd. Flow (perm)	1770	5353	1583	1770	5353	1583	1397	1961	1583	1405	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87			43			42			42
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1317			1373			1112			1156	
Travel Time (s)		25.7			26.7			25.3			26.3	
Volume (vph)	55	1095	85	145	1660	50	30	5	40	50	10	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	1153	89	153	1747	53	32	5	42	53	11	42
Lane Group Flow (vph)	58	1153	89	153	1747	53	32	5	42	53	11	42
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	9.0	22.0	8.0	8.0	22.0	9.0	8.0	22.0	8.0
Total Split (s)	18.0	43.0	14.0	26.0	51.0	14.0	14.0	27.0	26.0	14.0	27.0	18.0
Total Split (%)	16.4%	39.1%	12.7%	23.6%	46.4%	12.7%	12.7%	24.5%	23.6%	12.7%	24.5%	16.4%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	12.3	53.9	59.5	13.4	56.9	64.6	28.6	23.0	37.2	28.6	23.0	38.5
Actuated g/C Ratio	0.11	0.49	0.54	0.12	0.52	0.59	0.26	0.21	0.34	0.26	0.21	0.35
v/c Ratio	0.29	0.44	0.10	0.71	0.63	0.06	0.08	0.01	0.07	0.14	0.03	0.07
Control Delay	24.9	4.5	0.6	55.5	11.6	0.3	28.8	34.8	4.9	29.6	35.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	4.5	0.6	55.5	11.6	0.3	28.8	34.8	4.9	29.6	35.0	7.1
LOS	C	A	A	E	B	A	C	C	A	C	C	A
Approach Delay		5.2			14.7			16.5			21.3	
Approach LOS		A			B			B			C	
Stops (vph)	48	205	4	122	1164	0	23	6	8	37	9	8
Fuel Used(gal)	1	13	1	4	29	0	1	0	0	1	0	0
CO Emissions (g/hr)	81	906	59	279	2035	35	39	8	30	67	15	32

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	16	176	12	54	396	7	8	2	6	13	3	6
VOC Emissions (g/hr)	19	210	14	65	472	8	9	2	7	15	3	7
Dilemma Vehicles (#)	0	20	0	0	57	0	0	0	0	0	0	0
Queue Length 50th (ft)	40	80	1	95	334	0	16	3	0	27	6	0
Queue Length 95th (ft)	68	76	1	124	360	m0	40	13	18	58	22	23
Internal Link Dist (ft)		1237			1293			1032			1076	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	225	2621	956	354	2768	947	453	410	683	455	410	616
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	0.26	0.44	0.09	0.43	0.63	0.06	0.07	0.01	0.06	0.12	0.03	0.07

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 6 (5%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 53.2% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Reed Rd & Local Access I



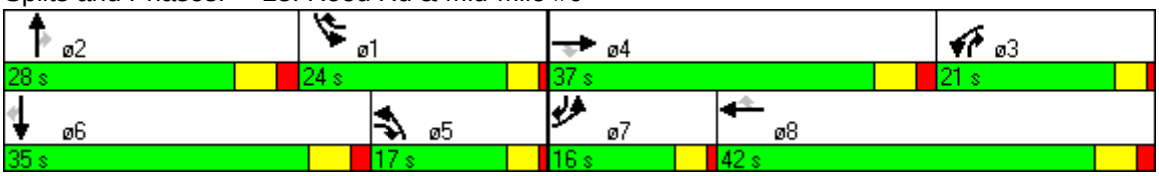
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			63			53			74
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		748			1317			1076			1158	
Travel Time (s)		14.6			25.7			24.5			26.3	
Volume (vph)	15	935	130	195	1165	60	25	25	50	250	115	70
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	984	137	205	1226	63	26	26	53	263	121	74
Lane Group Flow (vph)	16	984	137	205	1226	63	26	26	53	263	121	74
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	16.0	37.0	17.0	21.0	42.0	24.0	17.0	28.0	21.0	24.0	35.0	16.0
Total Split (%)	14.5%	33.6%	15.5%	19.1%	38.2%	21.8%	15.5%	25.5%	19.1%	21.8%	31.8%	14.5%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	5.9	53.9	67.4	17.0	66.8	91.5	9.6	8.8	22.6	21.5	13.6	19.5
Actuated g/C Ratio	0.05	0.49	0.61	0.15	0.61	0.83	0.09	0.08	0.21	0.20	0.12	0.18
v/c Ratio	0.09	0.38	0.13	0.39	0.38	0.05	0.09	0.17	0.14	0.39	0.50	0.22
Control Delay	49.6	17.7	3.6	28.0	1.0	0.0	45.8	49.0	9.0	41.1	51.6	7.0
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	49.6	17.7	3.6	28.0	1.0	0.0	45.8	49.0	9.0	41.1	51.6	7.0
LOS	D	B	A	C	A	A	D	D	A	D	D	A
Approach Delay		16.4			4.7			28.0			38.4	
Approach LOS		B			A			C			D	
Stops (vph)	16	687	30	180	35	0	24	24	10	214	105	13
Fuel Used(gal)	0	19	2	4	12	1	1	1	1	6	3	1
CO Emissions (g/hr)	30	1303	121	302	810	40	40	41	40	387	198	56
NOx Emissions (g/hr)	6	254	23	59	158	8	8	8	8	75	38	11
VOC Emissions (g/hr)	7	302	28	70	188	9	9	10	9	90	46	13

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	10	0	0	10	0	0	0	0	0	0	0
Queue Length 50th (ft)	5	111	15	72	8	0	8	18	0	78	81	0
Queue Length 95th (ft)	m9	130	17	112	10	m0	22	45	30	127	136	29
Internal Link Dist (ft)		668			1237			996			1078	
Turn Bay Length (ft)												
Base Capacity (vph)	375	2622	1010	531	3253	1341	406	428	368	700	553	425
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	0.04	0.38	0.14	0.39	0.38	0.05	0.06	0.06	0.14	0.38	0.22	0.17

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 21 (19%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 14.5 Intersection LOS: B
Intersection Capacity Utilization 48.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Reed Rd & Mid-Mile #6



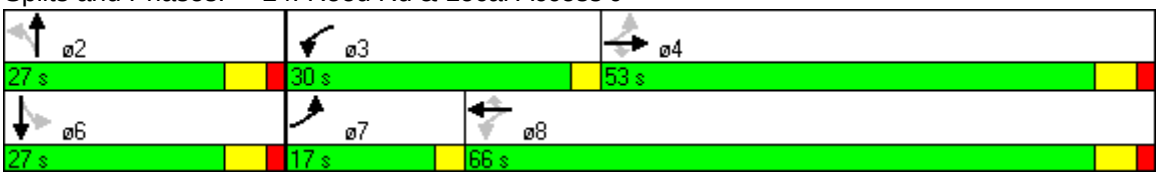
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.909			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3725	1583	1770	3725	1583	1770	1693	0	1770	1801	0
Flt Permitted	0.183			0.142			0.670			0.722		
Satd. Flow (perm)	341	3725	1583	265	3725	1583	1248	1693	0	1345	1801	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			63		32			12	
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1359			750			1021			1127	
Travel Time (s)		26.5			14.6			23.2			25.6	
Volume (vph)	15	975	130	195	1165	60	20	20	30	90	70	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1026	137	205	1226	63	21	21	32	95	74	21
Lane Group Flow (vph)	16	1026	137	205	1226	63	21	53	0	95	95	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	22.0	22.0	8.0	22.0	22.0	22.0	22.0		22.0	22.0	
Total Split (s)	17.0	53.0	53.0	30.0	66.0	66.0	27.0	27.0	0.0	27.0	27.0	0.0
Total Split (%)	15.5%	48.2%	48.2%	27.3%	60.0%	60.0%	24.5%	24.5%	0.0%	24.5%	24.5%	0.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)	59.1	54.2	54.2	65.0	62.0	62.0	36.3	36.3		36.3	36.3	
Actuated g/C Ratio	0.54	0.49	0.49	0.59	0.56	0.56	0.33	0.33		0.33	0.33	
v/c Ratio	0.06	0.56	0.16	0.79	0.58	0.07	0.05	0.09		0.21	0.16	
Control Delay	7.7	18.9	2.6	45.4	7.8	0.2	31.4	16.7		32.8	27.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.7	18.9	2.6	45.4	7.8	0.2	31.4	16.7		32.8	27.8	
LOS	A	B	A	D	A	A	C	B		C	C	
Approach Delay		16.9			12.7			20.9			30.3	
Approach LOS		B			B			C			C	
Stops (vph)	4	408	9	150	495	0	16	19		68	59	
Fuel Used(gal)	0	16	1	5	18	1	0	1		2	2	
CO Emissions (g/hr)	14	1146	99	352	1271	46	26	47		124	114	
NOx Emissions (g/hr)	3	223	19	69	247	9	5	9		24	22	
VOC Emissions (g/hr)	3	266	23	82	294	11	6	11		29	26	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	60	0	0	27	0	0	0		0	0	
Queue Length 50th (ft)	2	56	0	51	30	0	12	12		55	47	
Queue Length 95th (ft)	m2	92	m4	93	37	1	35	48		112	99	
Internal Link Dist (ft)		1279			670			941			1047	
Turn Bay Length (ft)												
Base Capacity (vph)	370	1974	903	514	2333	1015	418	589		451	612	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.04	0.52	0.15	0.40	0.53	0.06	0.05	0.09		0.21	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 58.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Reed Rd & Local Access J



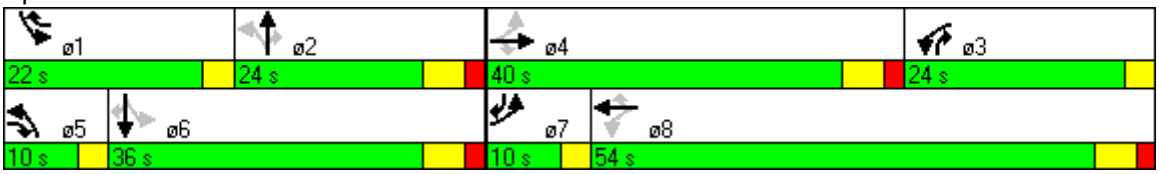
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	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	3725	1583	1770	3725	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.133			0.228			0.602			0.605		
Satd. Flow (perm)	248	3725	1583	425	3725	1583	1121	1961	1583	1127	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			74			221			89			116
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		2199			1359			2795			2943	
Travel Time (s)		42.8			26.5			63.5			66.9	
Volume (vph)	20	790	70	220	775	210	15	45	85	245	240	110
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	832	74	232	816	221	16	47	89	258	253	116
Lane Group Flow (vph)	21	832	74	232	816	221	16	47	89	258	253	116
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	10.0	40.0	10.0	24.0	54.0	22.0	10.0	24.0	24.0	22.0	36.0	10.0
Total Split (%)	9.1%	36.4%	9.1%	21.8%	49.1%	20.0%	9.1%	21.8%	21.8%	20.0%	32.7%	9.1%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Min	None	None	Min	None
Act Effct Green (s)	47.2	47.2	52.4	61.8	61.8	82.1	15.7	10.5	30.5	30.8	23.3	32.7
Actuated g/C Ratio	0.43	0.43	0.48	0.56	0.56	0.75	0.14	0.10	0.28	0.28	0.21	0.30
v/c Ratio	0.12	0.52	0.09	0.48	0.39	0.18	0.08	0.25	0.18	0.63	0.61	0.21
Control Delay	22.0	25.4	2.4	10.0	2.2	0.3	28.3	48.2	4.0	39.8	45.8	5.8
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	22.0	25.4	2.4	10.0	2.2	0.3	28.3	48.2	4.0	39.8	45.8	5.8
LOS	C	C	A	A	A	A	C	D	A	D	D	A
Approach Delay		23.5			3.3			20.2			35.9	
Approach LOS		C			A			C			D	
Stops (vph)	13	571	9	83	47	1	15	41	12	199	212	14
Fuel Used(gal)	1	21	1	3	8	2	0	2	2	9	9	3
CO Emissions (g/hr)	35	1463	85	226	580	145	35	115	139	608	623	191
NOx Emissions (g/hr)	7	285	17	44	113	28	7	22	27	118	121	37
VOC Emissions (g/hr)	8	339	20	52	135	34	8	27	32	141	144	44

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	36	0	0	12	0	0	0	0	0	0	0
Queue Length 50th (ft)	9	226	0	28	16	0	8	32	0	151	164	0
Queue Length 95th (ft)	26	313	14	105	32	0	23	66	22	215	237	38
Internal Link Dist (ft)		2119			1279			2715			2863	
Turn Bay Length (ft)												
Base Capacity (vph)	191	1597	803	483	2092	1258	203	357	503	421	570	563
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	0.11	0.52	0.09	0.48	0.39	0.18	0.08	0.13	0.18	0.61	0.44	0.21

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 59 (54%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 63.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 25: Reed Rd & Carbon Hill Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	70	15	15	120	20	95	655	90	135	375	140
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	74	16	16	126	21	100	689	95	142	395	147
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1308	1663	197	1424	1716	345	542			784		
vC1, stage 1 conf vol	679	679		889	889							
vC2, stage 2 conf vol	629	984		534	826							
vCu, unblocked vol	1308	1663	197	1424	1716	345	542			784		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	49	98	91	32	97	90			83		
cM capacity (veh/h)	87	143	811	175	187	651	1023			830		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	21	89	16	147	100	345	345	95	142	197	197	147
Volume Left	21	0	16	0	100	0	0	0	142	0	0	0
Volume Right	0	16	0	21	0	0	0	95	0	0	0	147
cSH	87	167	175	208	1023	1700	1700	1700	830	1700	1700	1700
Volume to Capacity	0.24	0.53	0.09	0.71	0.10	0.20	0.20	0.06	0.17	0.12	0.12	0.09
Queue Length 95th (ft)	22	67	7	114	8	0	0	0	15	0	0	0
Control Delay (s)	58.7	48.8	27.7	55.8	8.9	0.0	0.0	0.0	10.2	0.0	0.0	0.0
Lane LOS	F	E	D	F	A				B			
Approach Delay (s)	50.7		53.1		1.0				2.1			
Approach LOS	F		F									

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱			↱			↱
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	1105	100	0	2190	80	0	0	100	0	0	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1163	105	0	2305	84	0	0	105	0	0	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572			1176							
pX, platoon unblocked	0.61			0.89			0.66	0.66	0.89	0.66	0.66	0.61
vC, conflicting volume	2389			1268			1984	3553	388	2798	3574	768
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1995			1046			699	3060	52	1925	3092	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	88	100	100	92
cM capacity (veh/h)	173			586			200	8	890	24	8	659

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	388	388	388	105	768	768	768	84	105	53
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	105	0	0	0	84	105	53
cSH	1700	1700	1700	1700	1700	1700	1700	1700	890	659
Volume to Capacity	0.23	0.23	0.23	0.06	0.45	0.45	0.45	0.05	0.12	0.08
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	10	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	10.9
Lane LOS									A	B
Approach Delay (s)	0.0				0.0				9.6	10.9
Approach LOS									A	B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.906			0.902			0.987			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1688	0	1770	1680	0	1770	3493	0	1770	3514	0
Flt Permitted	0.350			0.692			0.281			0.114		
Satd. Flow (perm)	652	1688	0	1289	1680	0	523	3493	0	212	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			122			18			8	
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1327			1204			1345			1349	
Travel Time (s)		30.2			27.4			26.2			26.3	
Volume (vph)	35	35	60	20	100	190	200	1150	105	75	655	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	37	37	63	21	105	200	211	1211	111	79	689	32
Lane Group Flow (vph)	37	100	0	21	305	0	211	1322	0	79	721	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		8.0	22.0		8.0	22.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	13.0	42.0	0.0	10.0	39.0	0.0
Total Split (%)	30.7%	30.7%	0.0%	30.7%	30.7%	0.0%	17.3%	56.0%	0.0%	13.3%	52.0%	0.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	2.0		0.0	2.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	14.9	14.9		14.9	14.9		49.9	44.3		47.0	41.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.67	0.59		0.63	0.55	
v/c Ratio	0.28	0.26		0.08	0.70		0.46	0.64		0.32	0.37	
Control Delay	29.7	12.4		23.0	25.2		5.7	10.7		8.8	11.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.7	12.4		23.0	25.2		5.7	10.7		8.8	11.1	
LOS	C	B		C	C		A	B		A	B	
Approach Delay		17.0			25.1			10.1			10.8	
Approach LOS		B			C			B			B	
Stops (vph)	30	35		18	162		40	842		28	371	
Fuel Used(gal)	1	1		0	5		2	21		1	11	
CO Emissions (g/hr)	52	99		27	357		173	1487		75	769	
NOx Emissions (g/hr)	10	19		5	69		34	289		15	150	
VOC Emissions (g/hr)	12	23		6	83		40	345		17	178	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0		0	0		0	59		0	46	
Queue Length 50th (ft)	15	14		8	77		13	272		10	88	
Queue Length 95th (ft)	39	49		24	151		m25	354		26	154	
Internal Link Dist (ft)		1247			1124			1265			1269	
Turn Bay Length (ft)												
Base Capacity (vph)	165	475		327	517		509	2072		260	1949	
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	0.22	0.21		0.06	0.59		0.41	0.64		0.30	0.37	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 57 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 12.4 Intersection LOS: B
Intersection Capacity Utilization 72.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Spring Rd & Broadway Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.744			0.744			0.264			0.133		
Satd. Flow (perm)	1386	1961	1583	1386	1961	1583	492	3725	1583	248	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84			125			37			26
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		796			787			1446			1345	
Travel Time (s)		18.1			17.9			28.2			26.2	
Volume (vph)	115	20	80	150	20	150	125	1130	35	35	675	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	21	84	158	21	158	132	1189	37	37	711	26
Lane Group Flow (vph)	121	21	84	158	21	158	132	1189	37	37	711	26
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	9.0	22.0	10.0	9.0	22.0	8.0	10.0	36.0	9.0	8.0	34.0	9.0
Total Split (%)	12.0%	29.3%	13.3%	12.0%	29.3%	10.7%	13.3%	48.0%	12.0%	10.7%	45.3%	12.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	6.9	8.1	7.8	7.4	8.1	10.7	54.2	49.1	58.6	56.2	51.4	60.4
Actuated g/C Ratio	0.09	0.11	0.10	0.10	0.11	0.14	0.72	0.65	0.78	0.75	0.69	0.81
v/c Ratio	0.79	0.10	0.35	0.96	0.10	0.47	0.30	0.49	0.03	0.12	0.28	0.02
Control Delay	66.0	30.8	10.8	95.5	30.8	13.5	2.2	2.3	0.1	2.8	2.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	30.8	10.8	95.5	30.8	13.5	2.2	2.3	0.1	2.8	2.1	0.1
LOS	E	C	B	F	C	B	A	A	A	A	A	A
Approach Delay		42.2			53.0			2.2			2.1	
Approach LOS		D			D			A			A	
Stops (vph)	104	22	17	131	22	43	9	125	0	4	169	0
Fuel Used(gal)	3	0	1	5	0	2	1	13	0	0	8	0
CO Emissions (g/hr)	198	26	54	319	26	110	100	927	26	27	568	17
NOx Emissions (g/hr)	39	5	10	62	5	21	19	180	5	5	110	3
VOC Emissions (g/hr)	46	6	12	74	6	25	23	215	6	6	132	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	40	0	0	19	0
Queue Length 50th (ft)	~59	9	0	~98	9	15	3	23	0	1	3	0
Queue Length 95th (ft)	88	28	31	112	28	56	9	38	m0	10	12	m0
Internal Link Dist (ft)		716			707			1366			1265	
Turn Bay Length (ft)												
Base Capacity (vph)	153	471	258	165	471	334	464	2437	1244	302	2553	1280
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	0.79	0.04	0.33	0.96	0.04	0.47	0.28	0.49	0.03	0.12	0.28	0.02

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 20 (27%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 58.0% ICU Level of Service B
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Local Access A & Broadway Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.612			0.722			0.248			0.121		
Satd. Flow (perm)	1140	1961	1583	1345	1961	1583	462	3725	1583	225	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68			115			105			121
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		799			822			1397			1446	
Travel Time (s)		18.2			18.7			27.2			28.2	
Volume (vph)	40	50	65	75	140	135	125	1115	100	15	775	115
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	53	68	79	147	142	132	1174	105	16	816	121
Lane Group Flow (vph)	42	53	68	79	147	142	132	1174	105	16	816	121
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0	8.0	8.0	20.0	8.0	8.0	20.0	8.0
Total Split (s)	8.0	20.0	10.0	8.0	20.0	10.0	10.0	37.0	8.0	10.0	37.0	8.0
Total Split (%)	10.7%	26.7%	13.3%	10.7%	26.7%	13.3%	13.3%	49.3%	10.7%	13.3%	49.3%	10.7%
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)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	11.5	9.8	16.7	14.1	10.5	18.4	49.0	42.2	52.8	48.0	44.0	50.4
Actuated g/C Ratio	0.15	0.13	0.22	0.19	0.14	0.25	0.65	0.56	0.70	0.64	0.59	0.67
v/c Ratio	0.20	0.21	0.17	0.27	0.53	0.30	0.31	0.56	0.09	0.06	0.37	0.11
Control Delay	23.7	29.2	6.1	23.9	36.4	7.7	5.6	10.9	1.1	6.4	16.5	5.9
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	23.7	29.2	6.1	23.9	36.4	7.7	5.6	10.9	1.1	6.4	16.5	5.9
LOS	C	C	A	C	D	A	A	B	A	A	B	A
Approach Delay		18.1			22.7			9.7			15.0	
Approach LOS		B			C			A			B	
Stops (vph)	31	43	12	59	125	31	28	752	10	7	516	32
Fuel Used(gal)	1	1	1	1	3	1	2	19	1	0	15	2
CO Emissions (g/hr)	43	59	39	82	184	87	113	1354	77	16	1019	110
NOx Emissions (g/hr)	8	12	7	16	36	17	22	263	15	3	198	21
VOC Emissions (g/hr)	10	14	9	19	43	20	26	314	18	4	236	26

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	42	0	0	14	0
Queue Length 50th (ft)	15	22	0	29	64	9	17	265	14	4	168	0
Queue Length 95th (ft)	36	49	25	57	112	45	m20	m201	m0	m9	m212	m49
Internal Link Dist (ft)		719			742			1317			1366	
Turn Bay Length (ft)												
Base Capacity (vph)	208	418	406	290	418	479	422	2097	1146	271	2186	1104
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	0.20	0.13	0.17	0.27	0.35	0.30	0.31	0.56	0.09	0.06	0.37	0.11

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 64 (85%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 13.5 Intersection LOS: B
Intersection Capacity Utilization 56.3% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mid-Mile #1 & Broadway Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.733			0.733			0.298			0.154		
Satd. Flow (perm)	1365	1961	1583	1365	1961	1583	555	3725	1583	287	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			142			115			121			195
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		964			811			1460			1397	
Travel Time (s)		21.9			18.4			28.4			27.2	
Volume (vph)	185	35	135	205	35	210	155	945	115	145	585	185
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	195	37	142	216	37	221	163	995	121	153	616	195
Lane Group Flow (vph)	195	37	142	216	37	221	163	995	121	153	616	195
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	10.0	22.0	13.0	10.0	22.0	12.0	13.0	31.0	10.0	12.0	30.0	10.0
Total Split (%)	13.3%	29.3%	17.3%	13.3%	29.3%	16.0%	17.3%	41.3%	13.3%	16.0%	40.0%	13.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	10.0	8.7	11.9	10.0	8.7	14.3	49.0	42.7	52.7	53.3	45.1	55.1
Actuated g/C Ratio	0.13	0.12	0.16	0.13	0.12	0.19	0.65	0.57	0.70	0.71	0.60	0.73
v/c Ratio	0.91	0.16	0.38	1.00	0.16	0.56	0.35	0.47	0.11	0.41	0.28	0.16
Control Delay	71.9	31.0	7.1	94.7	31.0	16.8	7.0	11.1	1.6	8.0	5.1	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	31.0	7.1	94.7	31.0	16.8	7.0	11.1	1.6	8.0	5.1	2.2
LOS	E	C	A	F	C	B	A	B	A	A	A	A
Approach Delay		43.2			53.4			9.7			5.0	
Approach LOS		D			D			A			A	
Stops (vph)	176	33	20	192	33	86	49	463	12	47	248	52
Fuel Used(gal)	5	1	1	6	1	3	2	16	1	2	8	2
CO Emissions (g/hr)	354	47	92	441	44	176	155	1089	94	143	585	164

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	69	9	18	86	8	34	30	212	18	28	114	32
VOC Emissions (g/hr)	82	11	21	102	10	41	36	252	22	33	136	38
Dilemma Vehicles (#)	0	0	0	0	0	0	0	69	0	0	16	0
Queue Length 50th (ft)	~123	16	0	~143	16	47	33	176	0	18	5	0
Queue Length 95th (ft)	131	40	37	#150	40	77	m66	322	m13	11	150	39
Internal Link Dist (ft)		884			731			1380			1317	
Turn Bay Length (ft)	150		150	150		150	200		200	200		200
Base Capacity (vph)	215	471	423	215	471	415	528	2121	1148	400	2239	1214
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	0.91	0.08	0.34	1.00	0.08	0.53	0.31	0.47	0.11	0.38	0.28	0.16

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 34 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 19.0 Intersection LOS: B
Intersection Capacity Utilization 60.9% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Local Access B & Broadway Rd

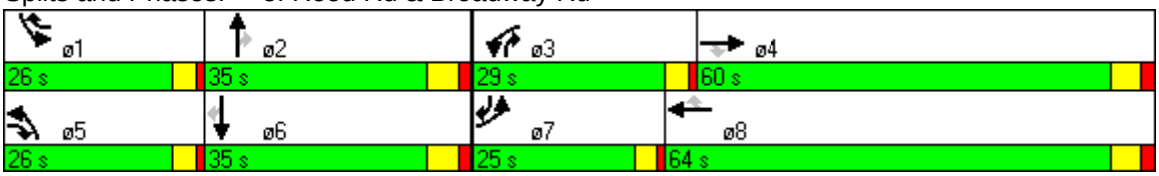
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	180		180	180		180	180		180	180		180
Storage Lanes	2		1	2		1	2		2	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	0.88	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)	3433	5353	1583	3433	5353	1583	3433	3725	2787	3433	3725	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	3725	2787	3433	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			37			11			13
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
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1373			572			1261			1460	
Travel Time (s)		26.7			11.1			24.6			28.4	
Volume (vph)	330	1645	210	285	1695	385	340	500	470	425	315	185
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	347	1732	221	300	1784	405	358	526	495	447	332	195
Lane Group Flow (vph)	347	1732	221	300	1784	405	358	526	495	447	332	195
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	22.0	14.5	8.5	22.0	8.5	14.5	22.0	8.5	8.5	22.0	8.5
Total Split (s)	25.0	60.0	26.0	29.0	64.0	26.0	26.0	35.0	29.0	26.0	35.0	25.0
Total Split (%)	16.7%	40.0%	17.3%	19.3%	42.7%	17.3%	17.3%	23.3%	19.3%	17.3%	23.3%	16.7%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Min	None	None	Min	None
Act Effct Green (s)	19.3	61.9	86.2	22.8	65.3	90.9	20.3	27.8	54.5	21.6	29.1	52.4
Actuated g/C Ratio	0.13	0.41	0.57	0.15	0.44	0.61	0.14	0.19	0.36	0.14	0.19	0.35
v/c Ratio	0.78	0.78	0.23	0.58	0.77	0.42	0.77	0.76	0.49	0.90	0.46	0.35
Control Delay	72.5	44.3	10.4	72.4	20.4	13.1	65.8	68.6	35.3	76.7	57.4	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	44.3	10.4	72.4	20.4	13.1	65.8	68.6	35.3	76.7	57.4	40.5
LOS	E	D	B	E	C	B	E	E	D	E	E	D
Approach Delay		45.3			25.5			55.9			62.9	
Approach LOS		D			C			E			E	
Stops (vph)	320	1256	109	238	1374	280	318	487	337	386	281	134
Fuel Used(gal)	11	41	3	7	24	5	10	15	10	14	9	4
CO Emissions (g/hr)	737	2837	234	501	1704	330	702	1063	712	980	637	313

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	143	552	46	97	332	64	137	207	139	191	124	61
VOC Emissions (g/hr)	171	658	54	116	395	76	163	246	165	227	148	73
Dilemma Vehicles (#)	0	56	0	0	9	0	0	4	0	0	13	0
Queue Length 50th (ft)	176	540	45	115	576	217	177	277	188	226	152	125
Queue Length 95th (ft)	232	435	72	m173	697	414	206	332	276	m#278	m206	m215
Internal Link Dist (ft)		1293			492			1181			1380	
Turn Bay Length (ft)	180		180	180		180	180		180	180		180
Base Capacity (vph)	483	2208	976	580	2331	978	504	770	1068	504	770	580
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	0.72	0.78	0.23	0.52	0.77	0.41	0.71	0.68	0.46	0.89	0.43	0.34

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 135 (90%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 42.8 Intersection LOS: D
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Reed Rd & Broadway Rd



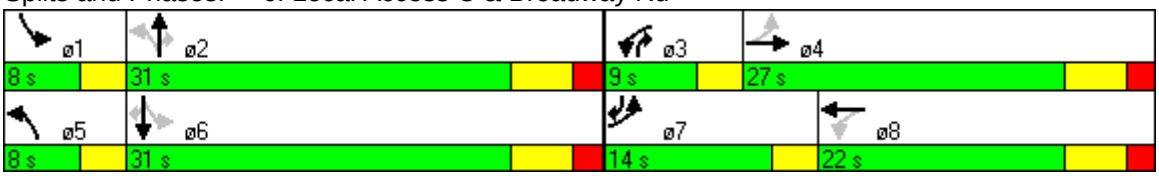
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	50
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.919			0.891				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1802	0	1770	1747	0	1770	3725	1583	1770	3725	1583
Flt Permitted	0.435			0.682			0.285			0.148		
Satd. Flow (perm)	810	1802	0	1270	1747	0	531	3725	1583	276	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			142				47			147
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1222			1178			1332			1261	
Travel Time (s)		27.8			26.8			25.9			24.6	
Volume (vph)	230	50	60	90	50	135	30	945	45	35	635	140
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	242	53	63	95	53	142	32	995	47	37	668	147
Lane Group Flow (vph)	242	116	0	95	195	0	32	995	47	37	668	147
Turn Type	pm+pt			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4		3	8		5	2	3	1	6	7
Permitted Phases	4			8			2		2	6		6
Detector Phases	7	4		3	8		5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0		8.0	22.0		8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	14.0	27.0	0.0	9.0	22.0	0.0	8.0	31.0	9.0	8.0	31.0	14.0
Total Split (%)	18.7%	36.0%	0.0%	12.0%	29.3%	0.0%	10.7%	41.3%	12.0%	10.7%	41.3%	18.7%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max	None	None	C-Max	None
Act Effct Green (s)	24.1	16.9		15.3	10.3		39.6	36.7	45.7	42.0	39.4	53.1
Actuated g/C Ratio	0.32	0.23		0.20	0.14		0.53	0.49	0.61	0.56	0.53	0.71
v/c Ratio	0.63	0.26		0.33	0.54		0.09	0.55	0.05	0.14	0.34	0.13
Control Delay	27.3	13.7		21.0	15.1		3.8	9.3	1.2	10.0	13.5	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	13.7		21.0	15.1		3.8	9.3	1.2	10.0	13.5	2.7
LOS	C	B		C	B		A	A	A	B	B	A
Approach Delay		22.9			17.0			8.8			11.5	
Approach LOS		C			B			A			B	
Stops (vph)	170	45		68	57		8	584	9	16	315	22
Fuel Used(gal)	4	2		2	3		0	15	1	1	10	2
CO Emissions (g/hr)	308	112		111	181		26	1067	36	36	691	106
NOx Emissions (g/hr)	60	22		22	35		5	208	7	7	135	21
VOC Emissions (g/hr)	71	26		26	42		6	247	8	8	160	25

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0		0	0		0	20	0	0	40	0
Queue Length 50th (ft)	88	21		32	23		1	178	0	14	144	0
Queue Length 95th (ft)	133	56		57	74		m4	301	m7	m29	193	39
Internal Link Dist (ft)		1142			1098			1252			1181	
Turn Bay Length (ft)												
Base Capacity (vph)	388	596		293	527		358	1825	984	267	1955	1168
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.19		0.32	0.37		0.09	0.55	0.05	0.14	0.34	0.13

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 20 (27%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 62.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Local Access C & Broadway Rd



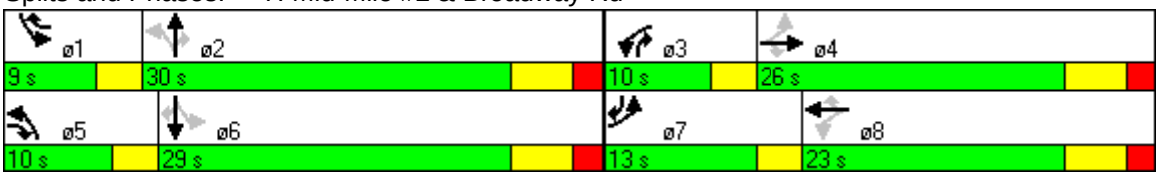
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.364			0.689			0.196			0.207		
Satd. Flow (perm)	678	1961	1583	1283	1961	1583	365	3725	1583	386	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			142			116			11			21
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1258			1382			1489			1332	
Travel Time (s)		28.6			31.4			29.0			25.9	
Volume (vph)	145	100	135	85	250	110	45	765	10	25	740	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	153	105	142	89	263	116	47	805	11	26	779	21
Lane Group Flow (vph)	153	105	142	89	263	116	47	805	11	26	779	21
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	13.0	26.0	10.0	10.0	23.0	9.0	10.0	30.0	10.0	9.0	29.0	13.0
Total Split (%)	17.3%	34.7%	13.3%	13.3%	30.7%	12.0%	13.3%	40.0%	13.3%	12.0%	38.7%	17.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	27.4	20.4	29.8	21.9	16.2	25.1	35.9	31.4	41.1	34.0	29.2	41.4
Actuated g/C Ratio	0.37	0.27	0.40	0.29	0.22	0.33	0.48	0.42	0.55	0.45	0.39	0.55
v/c Ratio	0.42	0.20	0.20	0.22	0.62	0.19	0.17	0.52	0.01	0.10	0.54	0.02
Control Delay	18.4	21.9	3.4	15.6	32.9	4.3	15.5	22.0	4.4	6.8	18.4	5.8
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	18.4	21.9	3.4	15.6	32.9	4.3	15.5	22.0	4.4	6.8	18.4	5.8
LOS	B	C	A	B	C	A	B	C	A	A	B	A
Approach Delay		14.0			22.5			21.4			17.8	
Approach LOS		B			C			C			B	
Stops (vph)	91	72	17	56	218	16	29	564	4	0	628	10
Fuel Used(gal)	2	2	2	1	6	1	1	16	0	0	15	0
CO Emissions (g/hr)	173	127	106	104	390	96	59	1111	10	19	1022	20
NOx Emissions (g/hr)	34	25	21	20	76	19	11	216	2	4	199	4
VOC Emissions (g/hr)	40	30	24	24	90	22	14	258	2	4	237	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	96	0	0	15	0
Queue Length 50th (ft)	46	38	0	26	110	0	10	146	1	0	180	3
Queue Length 95th (ft)	80	73	30	51	176	30	m34	255	m5	0	232	12
Internal Link Dist (ft)		1178			1302			1409			1252	
Turn Bay Length (ft)												
Base Capacity (vph)	381	575	727	419	497	610	289	1559	879	269	1450	899
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	0.40	0.18	0.20	0.21	0.53	0.19	0.16	0.52	0.01	0.10	0.54	0.02

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 60 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 19.3 Intersection LOS: B
Intersection Capacity Utilization 57.3% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Mid-Mile #2 & Broadway Rd



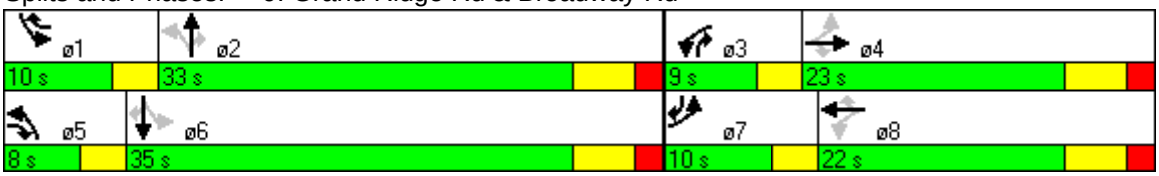
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1961	1583	1770	1961	1583	1770	3725	1583	1770	3725	1583
Flt Permitted	0.610			0.676			0.149			0.491		
Satd. Flow (perm)	1136	1961	1583	1259	1961	1583	278	3725	1583	915	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			153			16			53
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
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1239			1305			2384			1392	
Travel Time (s)		28.2			29.7			46.4			27.1	
Volume (vph)	140	120	95	100	130	145	15	325	15	100	990	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	126	100	105	137	153	16	342	16	105	1042	53
Lane Group Flow (vph)	147	126	100	105	137	153	16	342	16	105	1042	53
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	10.0	23.0	8.0	9.0	22.0	10.0	8.0	33.0	9.0	10.0	35.0	10.0
Total Split (%)	13.3%	30.7%	10.7%	12.0%	29.3%	13.3%	10.7%	44.0%	12.0%	13.3%	46.7%	13.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	17.8	13.0	21.8	15.5	12.2	19.2	42.2	37.4	46.3	44.2	39.7	50.9
Actuated g/C Ratio	0.24	0.17	0.29	0.21	0.16	0.26	0.56	0.50	0.62	0.59	0.53	0.68
v/c Ratio	0.45	0.37	0.19	0.36	0.43	0.29	0.06	0.18	0.02	0.18	0.53	0.05
Control Delay	25.0	29.5	5.0	23.1	31.7	4.9	8.0	12.2	4.2	4.4	6.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	29.5	5.0	23.1	31.7	4.9	8.0	12.2	4.2	4.4	6.8	0.2
LOS	C	C	A	C	C	A	A	B	A	A	A	A
Approach Delay		21.2			19.0			11.7			6.3	
Approach LOS		C			B			B			A	
Stops (vph)	107	100	16	77	111	20	8	179	4	21	252	0
Fuel Used(gal)	3	2	1	2	3	2	0	8	0	1	13	1
CO Emissions (g/hr)	186	170	77	134	194	121	24	542	21	88	924	35
NOx Emissions (g/hr)	36	33	15	26	38	24	5	105	4	17	180	7
VOC Emissions (g/hr)	43	39	18	31	45	28	6	126	5	20	214	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	0	0	0	0	0	0	22	0	0	61	0
Queue Length 50th (ft)	52	52	0	36	58	0	3	46	0	9	65	0
Queue Length 95th (ft)	90	93	29	67	102	36	11	81	8	24	110	m0
Internal Link Dist (ft)		1159			1225			2304			1312	
Turn Bay Length (ft)												
Base Capacity (vph)	324	497	532	296	471	532	253	1858	985	613	1970	1091
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	0.45	0.25	0.19	0.35	0.29	0.29	0.06	0.18	0.02	0.17	0.53	0.05

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 32 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 56.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Grand Ridge Rd & Broadway Rd



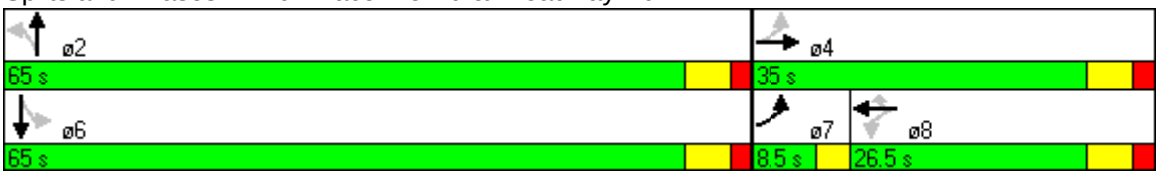
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	300		0
Storage Lanes	1		0	1		1	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
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		0.999				0.850		0.955			0.850	
Flt Protected	0.950			0.950				0.984		0.950		
Satd. Flow (prot)	1770	1861	0	1770	1863	1583	0	1750	0	1770	1583	0
Flt Permitted	0.564			0.689				0.954		0.756		
Satd. Flow (perm)	1051	1861	0	1283	1863	1583	0	1697	0	1408	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						263		1			374	
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
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		2800			2330			1866			1664	
Travel Time (s)		54.5			45.4			36.4			32.4	
Volume (vph)	105	100	1	1	100	250	1	1	1	830	1	355
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	111	105	1	1	105	263	1	1	1	874	1	374
Lane Group Flow (vph)	111	106	0	1	105	263	0	3	0	874	375	0
Turn Type	pm+pt			Perm		Perm	Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phases	7	4		8	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	22.0		26.5	26.5	26.5	42.0	42.0		22.0	22.0	
Total Split (s)	8.5	35.0	0.0	26.5	26.5	26.5	65.0	65.0	0.0	65.0	65.0	0.0
Total Split (%)	8.5%	35.0%	0.0%	26.5%	26.5%	26.5%	65.0%	65.0%	0.0%	65.0%	65.0%	0.0%
Yellow Time (s)	3.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)	19.1	18.9		12.2	12.2	12.2		61.8		61.8	61.8	
Actuated g/C Ratio	0.21	0.21		0.14	0.14	0.14		0.70		0.70	0.70	
v/c Ratio	0.43	0.27		0.01	0.41	0.59		0.00		0.89	0.31	
Control Delay	34.1	29.9		32.0	40.0	10.6		5.0		26.5	1.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	34.1	29.9		32.0	40.0	10.6		5.0		26.5	1.4	
LOS	C	C		C	D	B		A		C	A	
Approach Delay		32.0			19.0			5.0			18.9	
Approach LOS		C			B			A			B	
Stops (vph)	82	78		2	86	33		1		576	15	
Fuel Used(gal)	3	3		0	3	5		0		28	9	
CO Emissions (g/hr)	242	227		3	220	349		4		1967	595	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	47	44		1	43	68		1		383	116	
VOC Emissions (g/hr)	56	53		1	51	81		1		456	138	
Dilemma Vehicles (#)	0	6		0	6	0		0		0	20	
Queue Length 50th (ft)	52	49		1	55	0		0		366	0	
Queue Length 95th (ft)	96	93		5	104	66		3		#752	29	
Internal Link Dist (ft)		2720			2250			1786			1584	
Turn Bay Length (ft)										300		
Base Capacity (vph)	257	574		293	424	564		1183		981	1216	
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	0.43	0.18		0.00	0.25	0.47		0.00		0.89	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 88.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 71.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Braceville Rd & Broadway Rd



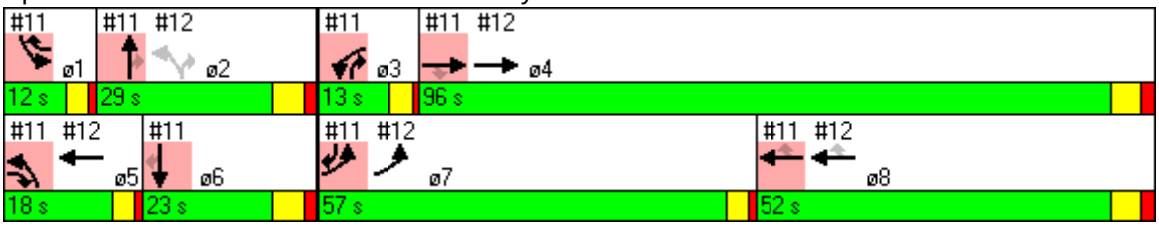
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158			140			21			5
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		380			1151			1118			1110	
Travel Time (s)		7.4			22.4			25.4			25.2	
Volume (vph)	50	1660	150	110	1580	225	250	130	115	215	75	150
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1747	158	116	1663	237	263	137	121	226	79	158
Lane Group Flow (vph)	53	1747	158	116	1663	237	263	137	121	226	79	158
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	57.0	96.0	18.0	13.0	52.0	12.0	18.0	29.0	13.0	12.0	23.0	57.0
Total Split (%)	38.0%	64.0%	12.0%	8.7%	34.7%	8.0%	12.0%	19.3%	8.7%	8.0%	15.3%	38.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Min	None	None	Min	None
Act Effct Green (s)	53.0	92.3	110.3	8.7	48.0	60.0	14.0	25.0	37.7	8.0	19.0	76.0
Actuated g/C Ratio	0.35	0.62	0.74	0.06	0.32	0.40	0.09	0.17	0.25	0.05	0.13	0.51
v/c Ratio	0.04	0.53	0.13	0.58	0.97	0.33	0.82	0.42	0.29	1.23	0.32	0.20
Control Delay	28.3	2.3	0.2	80.9	65.9	13.5	87.2	60.5	39.3	199.0	63.5	20.4
Queue Delay	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	2.3	0.2	80.9	66.1	13.5	87.2	60.5	39.3	199.0	63.5	20.4
LOS	C	A	A	F	E	B	F	E	D	F	E	C
Approach Delay		2.8			60.7			69.1			114.9	
Approach LOS		A			E			E			F	
Stops (vph)	23	59	0	106	1458	64	235	115	76	170	67	77
Fuel Used(gal)	1	6	0	4	45	3	8	3	2	12	2	2
CO Emissions (g/hr)	42	403	29	246	3166	208	554	236	164	805	139	164

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	8	78	6	48	616	40	108	46	32	157	27	32
VOC Emissions (g/hr)	10	93	7	57	734	48	128	55	38	186	32	38
Dilemma Vehicles (#)	0	39	0	0	51	0	0	0	0	0	0	0
Queue Length 50th (ft)	11	15	0	58	589	60	132	122	79	~140	71	80
Queue Length 95th (ft)	m23	43	0	93	#695	129	#203	192	139	#230	127	126
Internal Link Dist (ft)		300			1071			1038			1030	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	1213	3294	1206	206	1713	717	320	327	417	183	248	805
Starvation Cap Reductn	0	255	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	2	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	0.04	0.57	0.13	0.56	0.97	0.33	0.82	0.42	0.29	1.23	0.32	0.20

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 120 (80%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 43.8 Intersection LOS: D
Intersection Capacity Utilization 59.8% ICU Level of Service B
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Reed Rd & Hickory St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	2000	2000	2000	1900	1900	1900
Storage Length (ft)	350		0	0		200	0		0	0		0
Storage Lanes	2		0	0		1	2		2	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50		50			
Trailing Detector (ft)	0	0			0	0	0		0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	1.00	0.88	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3433	5353	0	0	5353	1583	3614	0	2933	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	5353	0	0	5353	1583	3614	0	2933	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						137			25			
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1093			380			592			824	
Travel Time (s)		21.3			7.4			13.5			18.7	
Volume (vph)	1350	1835	0	0	1710	270	600	0	25	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1421	1932	0	0	1800	284	632	0	26	0	0	0
Lane Group Flow (vph)	1421	1932	0	0	1800	284	632	0	26	0	0	0
Turn Type	Prot					custom	custom		custom			
Protected Phases	7	4			8 5!							
Permitted Phases						8	2!		2			
Detector Phases	7	4			8 5	8	2		2			
Minimum Initial (s)	4.0	4.0				4.0	4.0		4.0			
Minimum Split (s)	8.0	22.0				22.0	22.0		22.0			
Total Split (s)	57.0	96.0	0.0	0.0	70.0	52.0	29.0	0.0	29.0	0.0	0.0	0.0
Total Split (%)	38.0%	64.0%	0.0%	0.0%	46.7%	34.7%	19.3%	0.0%	19.3%	0.0%	0.0%	0.0%
Yellow Time (s)	3.0	4.0				4.0	4.0		4.0			
All-Red Time (s)	1.0	2.0				2.0	2.0		2.0			
Lead/Lag	Lead	Lag				Lag	Lag		Lag			
Lead-Lag Optimize?	Yes	Yes				Yes	Yes		Yes			
Recall Mode	None	C-Max				C-Max	Min		Min			
Act Effct Green (s)	53.0	92.3			66.0	48.0	25.0		25.0			
Actuated g/C Ratio	0.35	0.62			0.44	0.32	0.17		0.17			
v/c Ratio	1.17	0.59			0.76	0.47	1.05		0.05			
Control Delay	132.5	25.0			9.2	10.2	109.2		18.8			
Queue Delay	0.0	0.0			2.4	1.1	0.0		0.0			
Total Delay	132.5	25.0			11.5	11.3	109.2		18.8			
LOS	F	C			B	B	F		B			
Approach Delay		70.6			11.5							
Approach LOS		E			B							
Stops (vph)	1181	1113			223	91	534		7			
Fuel Used(gal)	56	32			10	2	19		0			
CO Emissions (g/hr)	3911	2250			668	139	1332		17			

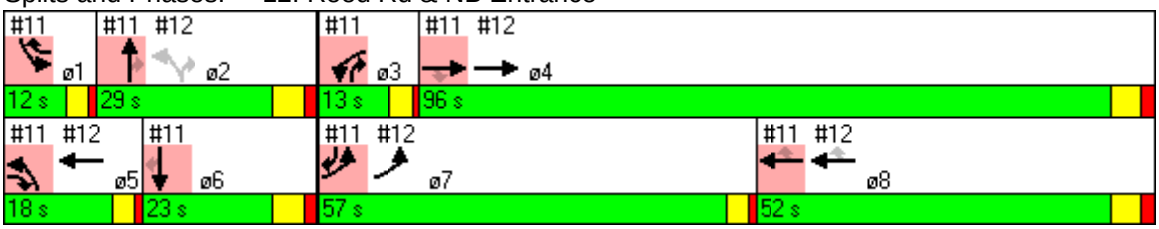
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	761	438			130	27	259		3			
VOC Emissions (g/hr)	906	522			155	32	309		4			
Dilemma Vehicles (#)	0	82			86	0	0		0			
Queue Length 50th (ft)	~873	437			86	34	~345		0			
Queue Length 95th (ft)	#1014	466			m100	m50	#471		16			
Internal Link Dist (ft)		1013			300			512			744	
Turn Bay Length (ft)	350					200						
Base Capacity (vph)	1213	3294			2355	600	602		510			
Starvation Cap Reductn	0	0			408	145	0		0			
Spillback Cap Reductn	0	0			0	0	0		0			
Storage Cap Reductn	0	0			0	0	0		0			
Reduced v/c Ratio	1.17	0.59			0.92	0.62	1.05		0.05			

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 120 (80%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 54.2 Intersection LOS: D
Intersection Capacity Utilization 96.2% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

Splits and Phases: 12: Reed Rd & NB Entrance



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱	↰↰	↑↑↑					↰↰		↱↱
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	2000	2000	2000
Storage Length (ft)	0		300	200		0	0		0	0		0
Storage Lanes	0		1	2		0	0		0	2		2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50		50
Trailing Detector (ft)		0	0	0	0					0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	0.88
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	5353	1583	3433	5353	0	0	0	0	3614	0	2933
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	5353	1583	3433	5353	0	0	0	0	3614	0	2933
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			702									3
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		708			1093			500			652	
Travel Time (s)		13.8			21.3			11.4			14.8	
Volume (vph)	0	3105	1245	130	2260	0	0	0	0	80	0	1200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	3268	1311	137	2379	0	0	0	0	84	0	1263
Lane Group Flow (vph)	0	3268	1311	137	2379	0	0	0	0	84	0	1263
Turn Type			Perm	Prot						custom		custom
Protected Phases		2 4		3	8							
Permitted Phases			2 4							1		1 2
Detector Phases		2 4	2 4	3	8					1		1 2
Minimum Initial (s)				4.0	4.0					4.0		
Minimum Split (s)				8.0	22.0					22.0		
Total Split (s)	0.0	111.0	111.0	17.0	83.0	0.0	0.0	0.0	0.0	22.0	0.0	67.0
Total Split (%)	0.0%	74.0%	74.0%	11.3%	55.3%	0.0%	0.0%	0.0%	0.0%	14.7%	0.0%	44.7%
Yellow Time (s)				3.0	4.0					4.0		
All-Red Time (s)				1.0	2.0					2.0		
Lead/Lag				Lag						Lead		
Lead-Lag Optimize?				Yes						Yes		
Recall Mode				None	C-Max					Min		
Act Effct Green (s)		107.0	107.0	13.0	79.0					18.0		63.0
Actuated g/C Ratio		0.71	0.71	0.09	0.53					0.12		0.42
v/c Ratio		0.86	0.99	0.46	0.84					0.19		1.02
Control Delay		13.5	20.2	41.9	7.3					60.8		74.2
Queue Delay		9.6	5.0	0.0	0.2					0.0		0.0
Total Delay		23.1	25.1	41.9	7.5					60.8		74.2
LOS		C	C	D	A					E		E
Approach Delay		23.7			9.4							
Approach LOS		C			A							
Stops (vph)		1149	370	118	1272					71		1069
Fuel Used(gal)		33	14	3	31					2		30
CO Emissions (g/hr)		2310	997	211	2150					125		2106

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)		449	194	41	418					24		410
VOC Emissions (g/hr)		535	231	49	498					29		488
Dilemma Vehicles (#)		145	0	0	59					0		0
Queue Length 50th (ft)		456	460	63	329					38		~744
Queue Length 95th (ft)		m369	m232	m78	m389					66		#897
Internal Link Dist (ft)		628			1013			420			572	
Turn Bay Length (ft)			300	200								
Base Capacity (vph)		3818	1330	298	2819					434		1234
Starvation Cap Reductn		573	29	0	0					0		0
Spillback Cap Reductn		0	0	0	62					0		0
Storage Cap Reductn		0	0	0	0					0		0
Reduced v/c Ratio		1.01	1.01	0.46	0.86					0.19		1.02

Intersection Summary

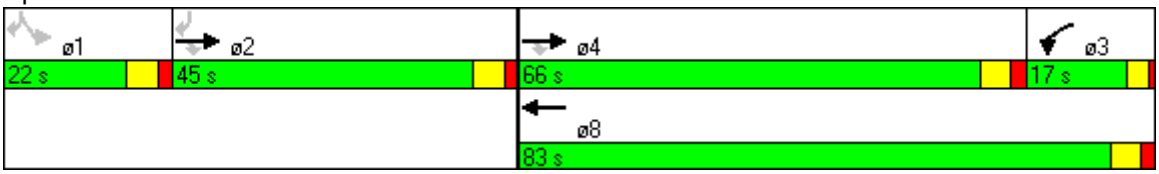
Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 27.3 Intersection LOS: C
Intersection Capacity Utilization 96.2% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 13: Reed Rd & SB Entrance



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	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)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	3725	1583	3433	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115			44			2			5
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1493			708			1409			1457	
Travel Time (s)		29.1			13.8			32.0			33.1	
Volume (vph)	170	3850	200	280	2880	300	100	200	250	250	190	120
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	4053	211	295	3032	316	105	211	263	263	200	126
Lane Group Flow (vph)	179	4053	211	295	3032	316	105	211	263	263	200	126
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	11.0	99.0	11.0	15.0	103.0	17.0	11.0	19.0	15.0	17.0	25.0	11.0
Total Split (%)	7.3%	66.0%	7.3%	10.0%	68.7%	11.3%	7.3%	12.7%	10.0%	11.3%	16.7%	7.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	7.0	95.0	106.0	11.0	99.0	116.0	7.0	15.0	30.0	13.0	21.0	32.0
Actuated g/C Ratio	0.05	0.63	0.71	0.07	0.66	0.77	0.05	0.10	0.20	0.09	0.14	0.21
v/c Ratio	1.12	1.20	0.18	1.17	0.86	0.26	0.66	0.57	0.83	0.88	0.38	0.37
Control Delay	125.7	107.3	0.4	151.7	15.4	2.8	89.5	70.8	78.6	96.5	61.1	52.0
Queue Delay	0.0	1.3	0.0	0.0	1.4	0.0	0.0	0.0	9.1	1.1	0.0	0.0
Total Delay	125.7	108.5	0.4	151.7	16.8	2.8	89.5	70.8	87.7	97.6	61.1	52.0
LOS	F	F	A	F	B	A	F	E	F	F	E	D
Approach Delay		104.1			26.5			81.9			75.4	
Approach LOS		F			C			F			E	
Stops (vph)	140	2782	7	231	1519	46	95	188	228	229	170	96
Fuel Used(gal)	7	146	2	12	35	2	3	6	8	9	5	3
CO Emissions (g/hr)	506	10240	156	826	2459	143	241	428	560	630	382	221

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	98	1992	30	161	478	28	47	83	109	123	74	43
VOC Emissions (g/hr)	117	2373	36	191	570	33	56	99	130	146	88	51
Dilemma Vehicles (#)	0	144	0	0	107	0	0	0	0	0	0	0
Queue Length 50th (ft)	~105	~1744	2	~177	531	42	53	105	248	133	95	102
Queue Length 95th (ft)	m#92	m#1488	m1	m#212	m538	m49	#92	151	#397	#215	137	167
Internal Link Dist (ft)		1413			628			1329			1377	
Turn Bay Length (ft)	300		300	300		300	300		300	300		300
Base Capacity (vph)	160	3390	1152	252	3533	1234	160	373	318	298	522	342
Starvation Cap Reductn	0	0	0	0	296	0	0	0	0	0	0	0
Spillback Cap Reductn	0	8	0	0	0	0	0	0	35	4	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	1.20	0.18	1.17	0.94	0.26	0.66	0.57	0.93	0.89	0.38	0.37

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 131 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 70.3 Intersection LOS: E
Intersection Capacity Utilization 104.4% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 14: Reed Rd & Will Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		0	300		0	300		0	300		0
Storage Lanes	2		1	2		2	2		2	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.88	0.97	0.95	0.88	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)	3433	5353	1583	3433	5353	2787	3433	3725	2787	3433	3725	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	2787	3433	3725	2787	3433	3725	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			81			2			13
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1399			1493			1245			1568	
Travel Time (s)		27.3			29.1			28.3			35.6	
Volume (vph)	120	3720	75	250	2510	340	100	235	250	250	225	120
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	3916	79	263	2642	358	105	247	263	263	237	126
Lane Group Flow (vph)	126	3916	79	263	2642	358	105	247	263	263	237	126
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	13.0	103.0	13.0	13.0	103.0	16.0	13.0	18.0	13.0	16.0	21.0	13.0
Total Split (%)	8.7%	68.7%	8.7%	8.7%	68.7%	10.7%	8.7%	12.0%	8.7%	10.7%	14.0%	8.7%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	8.8	99.0	111.6	9.0	99.2	115.2	8.6	14.0	27.0	12.0	17.4	30.2
Actuated g/C Ratio	0.06	0.66	0.74	0.06	0.66	0.77	0.06	0.09	0.18	0.08	0.12	0.20
v/c Ratio	0.63	1.11	0.07	1.28	0.75	0.17	0.53	0.71	0.52	0.96	0.55	0.38
Control Delay	72.6	68.1	1.7	187.0	18.6	4.1	78.9	78.0	59.5	111.8	68.0	50.4
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	72.6	68.1	1.7	187.0	18.6	4.1	78.9	78.0	59.5	111.8	68.0	50.4
LOS	E	E	A	F	B	A	E	E	E	F	E	D
Approach Delay		67.0			30.6			70.2			82.9	
Approach LOS		E			C			E			F	
Stops (vph)	119	2555	6	192	1114	85	96	225	221	223	210	93
Fuel Used(gal)	4	108	1	14	45	5	3	7	7	10	7	3
CO Emissions (g/hr)	271	7574	58	955	3143	321	217	507	467	697	491	224

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	53	1474	11	186	611	62	42	99	91	136	96	44
VOC Emissions (g/hr)	63	1755	13	221	728	74	50	118	108	162	114	52
Dilemma Vehicles (#)	0	151	0	0	125	0	0	0	0	0	0	0
Queue Length 50th (ft)	66	~1588	3	~167	433	33	52	125	132	134	117	97
Queue Length 95th (ft)	m67	m#1542	m3	m#217	510	m53	86	176	186	#227	165	163
Internal Link Dist (ft)		1319			1413			1165			1488	
Turn Bay Length (ft)	300			300			300			300		
Base Capacity (vph)	206	3533	1192	206	3541	2160	206	348	503	275	432	331
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	0.61	1.11	0.07	1.28	0.75	0.17	0.51	0.71	0.52	0.96	0.55	0.38

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 109 (73%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 54.6 Intersection LOS: D
Intersection Capacity Utilization 102.1% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 15: Reed Rd & Mid-Mile #4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		0	150		0	150		0	150		0
Storage Lanes	2		1	2		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.750			0.750		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	1397	1961	1583	1397	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			30			121			29			26
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1355			1399			1240			1412	
Travel Time (s)		26.4			27.3			28.2			32.1	
Volume (vph)	40	3725	35	100	2515	115	20	10	140	50	10	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	3921	37	105	2647	121	21	11	147	53	11	26
Lane Group Flow (vph)	42	3921	37	105	2647	121	21	11	147	53	11	26
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	9.0	112.0	8.0	8.0	111.0	8.0	8.0	22.0	8.0	8.0	22.0	9.0
Total Split (%)	6.0%	74.7%	5.3%	5.3%	74.0%	5.3%	5.3%	14.7%	5.3%	5.3%	14.7%	6.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0	0.0	0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	5.0	108.0	116.0	4.0	108.8	116.8	22.0	18.0	26.0	22.8	19.6	28.6
Actuated g/C Ratio	0.03	0.72	0.77	0.03	0.73	0.78	0.15	0.12	0.17	0.15	0.13	0.19
v/c Ratio	0.37	1.02	0.03	1.14	0.68	0.10	0.10	0.05	0.49	0.24	0.04	0.08
Control Delay	71.3	18.0	0.3	171.9	13.2	1.8	53.3	59.1	51.0	56.9	59.1	17.4
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	18.4	0.3	171.9	13.2	1.8	53.3	59.1	51.0	56.9	59.1	17.4
LOS	E	B	A	F	B	A	D	E	D	E	E	B
Approach Delay		18.8			18.5			51.8			45.8	
Approach LOS		B			B			D			D	
Stops (vph)	39	806	0	77	921	13	16	10	101	46	10	7
Fuel Used(gal)	1	56	0	5	39	1	0	0	3	1	0	0
CO Emissions (g/hr)	88	3927	24	356	2731	91	35	19	235	97	20	28

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	17	764	5	69	531	18	7	4	46	19	4	5
VOC Emissions (g/hr)	20	910	6	82	633	21	8	4	55	22	5	7
Dilemma Vehicles (#)	0	149	0	0	127	0	0	0	0	0	0	0
Queue Length 50th (ft)	22	~303	0	~61	380	7	17	10	105	45	10	0
Queue Length 95th (ft)	m22	m270	m1	m#101	367	m12	44	30	181	88	30	28
Internal Link Dist (ft)		1275			1319			1160			1332	
Turn Bay Length (ft)	150			150			150			150		
Base Capacity (vph)	114	3854	1231	92	3882	1260	215	235	298	222	256	323
Starvation Cap Reductn	0	4	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	0.37	1.02	0.03	1.14	0.68	0.10	0.10	0.05	0.49	0.24	0.04	0.08

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 98 (65%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 19.8 Intersection LOS: B
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 16: Reed Rd & Local Access E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	2		1	2		1	2		1	2		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			20			74			1			5
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1380			1355			1341			1502	
Travel Time (s)		26.9			26.4			30.5			34.1	
Volume (vph)	90	3490	30	80	2395	85	145	215	150	160	210	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	3674	32	84	2521	89	153	226	158	168	221	79
Lane Group Flow (vph)	95	3674	32	84	2521	89	153	226	158	168	221	79
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	10.0
Total Split (s)	13.0	104.0	11.0	9.0	100.0	12.0	11.0	25.0	9.0	12.0	26.0	13.0
Total Split (%)	8.7%	69.3%	7.3%	6.0%	66.7%	8.0%	7.3%	16.7%	6.0%	8.0%	17.3%	8.7%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	8.5	100.0	111.0	5.0	96.5	108.5	7.0	21.0	30.0	8.0	22.0	34.5
Actuated g/C Ratio	0.06	0.67	0.74	0.03	0.64	0.72	0.05	0.14	0.20	0.05	0.15	0.23
v/c Ratio	0.49	1.03	0.03	0.74	0.73	0.08	0.96	0.82	0.50	0.92	0.77	0.21
Control Delay	85.2	28.0	0.3	86.1	14.1	2.1	130.1	86.1	59.2	117.3	79.5	45.4
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	85.2	28.0	0.3	86.1	14.1	2.1	130.1	86.1	59.2	117.3	79.5	45.4
LOS	F	C	A	F	B	A	F	F	E	F	E	D
Approach Delay		29.2			16.0			90.7			87.3	
Approach LOS		C			B			F			F	
Stops (vph)	90	2046	0	76	762	7	125	200	131	143	196	56
Fuel Used(gal)	3	70	0	3	36	1	6	7	4	6	7	2
CO Emissions (g/hr)	219	4894	21	193	2520	64	423	498	287	453	485	131

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	43	952	4	37	490	13	82	97	56	88	94	26
VOC Emissions (g/hr)	51	1134	5	45	584	15	98	115	66	105	112	30
Dilemma Vehicles (#)	0	137	0	0	134	0	0	0	0	0	0	0
Queue Length 50th (ft)	51	~1391	0	43	304	7	78	218	138	86	211	59
Queue Length 95th (ft)	m54	#1446	m0	m#70	354	m12	#154	#354	215	#160	#331	108
Internal Link Dist (ft)		1300			1275			1261			1422	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	206	3569	1177	114	3445	1166	160	275	317	183	288	373
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	0.46	1.03	0.03	0.74	0.73	0.08	0.96	0.82	0.50	0.92	0.77	0.21

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 94 (63%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 32.5 Intersection LOS: C
Intersection Capacity Utilization 89.4% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 17: Reed Rd & Berta Rd

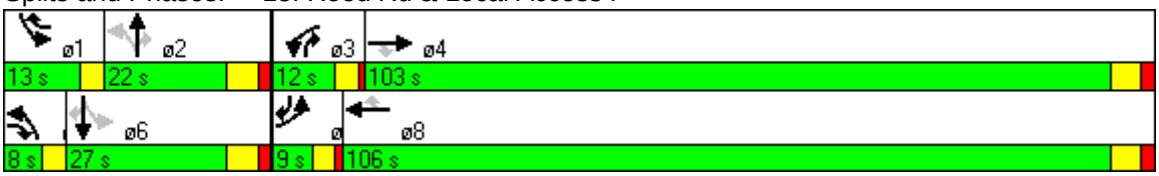
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	150		0	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	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	5353	1583	1770	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.744			0.614		
Satd. Flow (perm)	1770	5353	1583	1770	5353	1583	1386	1961	1583	1144	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			10			47			11			11
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1408			1380			1282			1514	
Travel Time (s)		27.4			26.9			29.1			34.4	
Volume (vph)	15	3235	20	75	2480	60	20	10	160	215	20	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	3405	21	79	2611	63	21	11	168	226	21	11
Lane Group Flow (vph)	16	3405	21	79	2611	63	21	11	168	226	21	11
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	9.0	103.0	8.0	12.0	106.0	13.0	8.0	22.0	12.0	13.0	27.0	9.0
Total Split (%)	6.0%	68.7%	5.3%	8.0%	70.7%	8.7%	5.3%	14.7%	8.0%	8.7%	18.0%	6.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0	0.0	0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	5.0	99.0	107.0	8.0	105.6	118.6	22.0	18.0	30.0	31.0	24.6	33.6
Actuated g/C Ratio	0.03	0.66	0.71	0.05	0.70	0.79	0.15	0.12	0.20	0.21	0.16	0.22
v/c Ratio	0.27	0.96	0.02	0.84	0.69	0.05	0.10	0.05	0.52	0.82	0.07	0.03
Control Delay	80.3	9.5	0.9	96.8	17.1	2.1	49.4	59.1	56.4	79.5	55.2	21.8
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	80.3	9.5	0.9	96.8	17.1	2.1	49.4	59.1	56.4	79.5	55.2	21.8
LOS	F	A	A	F	B	A	D	E	E	E	E	C
Approach Delay		9.8			19.1			55.8			75.1	
Approach LOS		A			B			E			E	
Stops (vph)	16	665	1	63	1261	10	16	10	132	185	18	4
Fuel Used(gal)	1	44	0	3	43	1	0	0	4	7	1	0
CO Emissions (g/hr)	36	3085	15	189	2995	49	34	19	291	492	39	13

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	7	600	3	37	583	10	7	4	57	96	8	3
VOC Emissions (g/hr)	8	715	3	44	694	11	8	4	67	114	9	3
Dilemma Vehicles (#)	0	38	0	0	146	0	0	0	0	0	0	0
Queue Length 50th (ft)	16	190	0	75	542	8	17	10	139	203	18	0
Queue Length 95th (ft)	m17	197	m0	m#122	520	m12	42	30	219	#343	45	18
Internal Link Dist (ft)		1328			1300			1202			1434	
Turn Bay Length (ft)	150		150	150		150	150			150		
Base Capacity (vph)	59	3533	1132	94	3768	1262	214	235	325	274	322	363
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	0.27	0.96	0.02	0.84	0.69	0.05	0.10	0.05	0.52	0.82	0.07	0.03

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 68 (45%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 17.5 Intersection LOS: B
Intersection Capacity Utilization 91.2% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Reed Rd & Local Access F



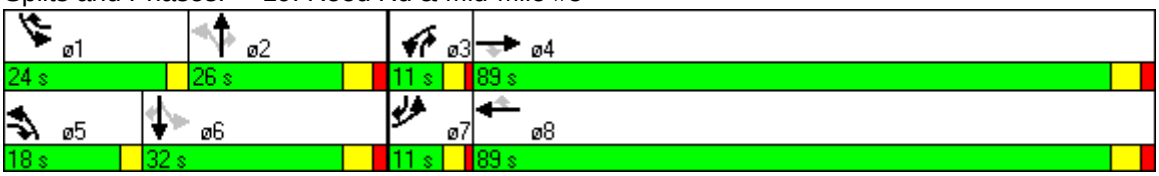
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	200		200	200		200
Storage Lanes	2		1	2		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.435			0.154		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	810	1961	1583	287	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			34			47			23			53
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1016			1408			1348			1611	
Travel Time (s)		19.8			27.4			30.6			36.6	
Volume (vph)	75	2775	65	135	2310	65	140	250	245	250	205	70
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	2921	68	142	2432	68	147	263	258	263	216	74
Lane Group Flow (vph)	79	2921	68	142	2432	68	147	263	258	263	216	74
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	11.0	89.0	18.0	11.0	89.0	24.0	18.0	26.0	11.0	24.0	32.0	11.0
Total Split (%)	7.3%	59.3%	12.0%	7.3%	59.3%	16.0%	12.0%	17.3%	7.3%	16.0%	21.3%	7.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0	0.0	0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	6.9	85.0	101.5	7.0	85.1	108.8	34.8	22.3	33.3	46.0	29.5	40.4
Actuated g/C Ratio	0.05	0.57	0.68	0.05	0.57	0.73	0.23	0.15	0.22	0.31	0.20	0.27
v/c Ratio	0.50	0.96	0.06	0.89	0.80	0.06	0.55	0.90	0.70	0.93	0.56	0.16
Control Delay	81.3	19.7	0.5	91.6	31.7	6.0	48.4	94.7	60.1	81.6	61.3	16.8
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	20.1	0.5	91.6	31.7	6.0	48.4	94.7	60.1	81.6	61.3	16.8
LOS	F	C	A	F	C	A	D	F	E	F	E	B
Approach Delay		21.2			34.3			71.1			65.0	
Approach LOS		C			C			E			E	
Stops (vph)	73	1072	2	123	1626	15	113	225	207	185	182	20
Fuel Used(gal)	2	40	0	5	51	1	3	9	7	8	6	1
CO Emissions (g/hr)	164	2763	35	336	3540	60	243	607	470	581	429	86

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	32	538	7	65	689	12	47	118	91	113	83	17
VOC Emissions (g/hr)	38	640	8	78	820	14	56	141	109	135	99	20
Dilemma Vehicles (#)	0	122	0	0	2	0	0	0	0	0	0	0
Queue Length 50th (ft)	40	289	1	74	527	14	109	257	215	210	195	16
Queue Length 95th (ft)	m50	511	m1	m#133	523	m23	172	#428	320	#380	286	58
Internal Link Dist (ft)		936			1328			1268			1531	
Turn Bay Length (ft)	150		150	150		150	200		200	200		200
Base Capacity (vph)	160	3033	1098	160	3037	1164	286	292	369	286	386	466
Starvation Cap Reductn	0	16	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	0.49	0.97	0.06	0.89	0.80	0.06	0.51	0.90	0.70	0.92	0.56	0.16

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 54 (36%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Reed Rd & Mid-Mile #5



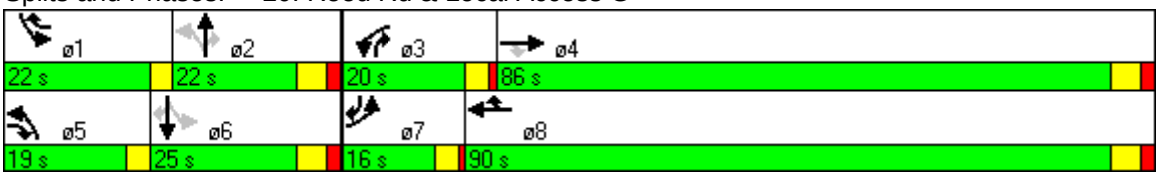
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	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	5353	1583	1770	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.611			0.419		
Satd. Flow (perm)	1770	5353	1583	1770	5353	1583	1138	1961	1583	780	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			58			158			41			37
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1176			1016			1206			1406	
Travel Time (s)		22.9			19.8			27.4			32.0	
Volume (vph)	70	2455	65	110	2260	150	150	110	260	200	110	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	2584	68	116	2379	158	158	116	274	211	116	37
Lane Group Flow (vph)	74	2584	68	116	2379	158	158	116	274	211	116	37
Turn Type	Prot		pm+ov	Prot		pt+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Permitted Phases			4				2		2	6		6
Detector Phases	7	4	5	3	8	8 1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0		8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	16.0	86.0	19.0	20.0	90.0	112.0	19.0	22.0	20.0	22.0	25.0	16.0
Total Split (%)	10.7%	57.3%	12.7%	13.3%	60.0%	74.7%	12.7%	14.7%	13.3%	14.7%	16.7%	10.7%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	0.0	1.0	2.0		0.0	2.0	1.0	0.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max		None	Max	None	None	Max	None
Act Effct Green (s)	10.4	84.1	101.6	13.9	87.6	108.1	32.9	19.4	37.3	39.1	22.5	36.9
Actuated g/C Ratio	0.07	0.56	0.68	0.09	0.58	0.72	0.22	0.13	0.25	0.26	0.15	0.25
v/c Ratio	0.60	0.86	0.06	0.71	0.76	0.13	0.51	0.46	0.64	0.67	0.39	0.09
Control Delay	80.0	36.1	5.8	91.1	11.7	0.1	51.3	67.6	50.4	57.7	62.8	13.0
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	36.4	5.8	91.1	11.8	0.1	51.3	67.6	50.4	57.7	62.8	13.0
LOS	F	D	A	F	B	A	D	E	D	E	E	B
Approach Delay		36.9			14.5			54.3			54.8	
Approach LOS		D			B			D			D	
Stops (vph)	64	2331	18	110	459	0	126	101	199	166	99	8
Fuel Used(gal)	2	56	1	4	25	1	4	3	6	5	3	1
CO Emissions (g/hr)	155	3945	53	257	1777	77	257	217	434	382	221	36
NOx Emissions (g/hr)	30	768	10	50	346	15	50	42	85	74	43	7
VOC Emissions (g/hr)	36	914	12	60	412	18	60	50	101	88	51	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	22	0	0	104	0	0	0	0	0	0	0
Queue Length 50th (ft)	65	960	17	120	214	0	125	108	207	173	105	0
Queue Length 95th (ft)	m92	961	m24	m154	280	m0	194	177	309	256	172	31
Internal Link Dist (ft)		1096			936			1126			1326	
Turn Bay Length (ft)												
Base Capacity (vph)	142	3000	1106	189	3125	1199	325	254	446	324	294	434
Starvation Cap Reductn	0	0	0	0	42	0	0	0	0	0	0	0
Spillback Cap Reductn	0	84	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	0.89	0.06	0.61	0.77	0.13	0.49	0.46	0.61	0.65	0.39	0.09

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 57 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 30.0 Intersection LOS: C
Intersection Capacity Utilization 82.2% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Reed Rd & Local Access G



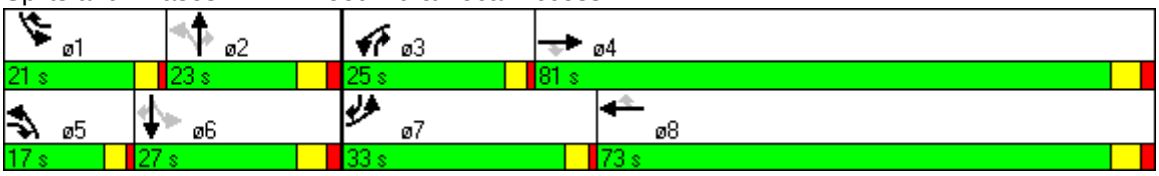
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	1		1	1		1	1		1	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	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	5353	1583	1770	5353	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.950			0.950			0.744			0.606		
Satd. Flow (perm)	1770	5353	1583	1770	5353	1583	1386	1961	1583	1129	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			112			58			66
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1317			1373			1112			1156	
Travel Time (s)		25.7			26.7			25.3			26.3	
Volume (vph)	200	1735	90	135	1900	185	140	35	265	185	20	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	1826	95	142	2000	195	147	37	279	195	21	216
Lane Group Flow (vph)	211	1826	95	142	2000	195	147	37	279	195	21	216
Turn Type	Prot		pm+ov	Prot		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	9.0	22.0	8.0	8.0	22.0	9.0	8.0	22.0	8.0
Total Split (s)	33.0	81.0	17.0	25.0	73.0	21.0	17.0	23.0	25.0	21.0	27.0	33.0
Total Split (%)	22.0%	54.0%	11.3%	16.7%	48.7%	14.0%	11.3%	15.3%	16.7%	14.0%	18.0%	22.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Max	None	None	Max	None
Act Effct Green (s)	22.2	81.1	97.5	16.9	75.8	95.8	32.4	20.0	40.9	39.6	23.6	49.8
Actuated g/C Ratio	0.15	0.54	0.65	0.11	0.51	0.64	0.22	0.13	0.27	0.26	0.16	0.33
v/c Ratio	0.81	0.63	0.09	0.71	0.74	0.19	0.44	0.14	0.59	0.53	0.07	0.38
Control Delay	84.3	18.5	2.9	87.7	15.1	0.8	49.4	59.9	42.3	51.4	55.2	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.3	18.5	2.9	87.7	15.1	0.8	49.4	59.9	42.3	51.4	55.2	27.3
LOS	F	B	A	F	B	A	D	E	D	D	E	C
Approach Delay		24.3			18.3			45.9			39.6	
Approach LOS		C			B			D			D	
Stops (vph)	194	737	14	134	500	4	120	30	182	150	18	105
Fuel Used(gal)	7	29	1	5	28	2	3	1	6	4	1	4
CO Emissions (g/hr)	475	1998	71	332	1987	132	230	63	390	310	35	249

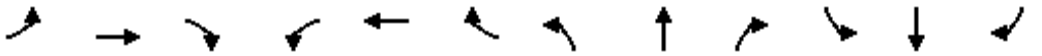
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
NOx Emissions (g/hr)	92	389	14	65	387	26	45	12	76	60	7	49
VOC Emissions (g/hr)	110	463	16	77	461	31	53	15	90	72	8	58
Dilemma Vehicles (#)	0	71	0	0	36	0	0	0	0	0	0	0
Queue Length 50th (ft)	210	215	3	147	176	1	116	33	190	158	18	111
Queue Length 95th (ft)	m287	490	m16	m195	212	m6	182	70	283	237	45	174
Internal Link Dist (ft)		1237			1293			1032			1076	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	342	2896	1058	248	2706	1062	339	262	516	374	309	638
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	0.62	0.63	0.09	0.57	0.74	0.18	0.43	0.14	0.54	0.52	0.07	0.34

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 144 (96%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 24.8 Intersection LOS: C
Intersection Capacity Utilization 72.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Reed Rd & Local Access I





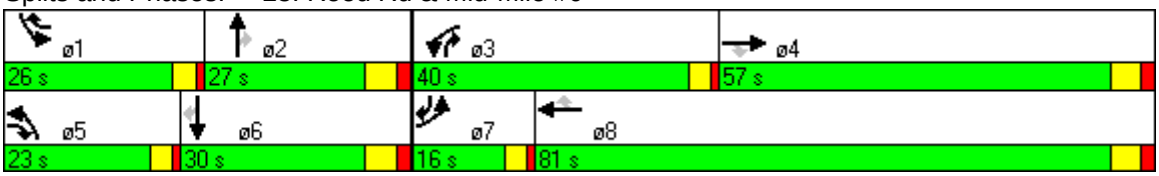
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5353	1583	3433	5353	1583	3433	1961	1583	3433	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100			275			33			27
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		748			1317			1076			1158	
Travel Time (s)		14.6			25.7			24.5			26.3	
Volume (vph)	90	1390	95	55	1815	375	215	145	395	240	50	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	95	1463	100	58	1911	395	226	153	416	253	53	32
Lane Group Flow (vph)	95	1463	100	58	1911	395	226	153	416	253	53	32
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	16.0	57.0	23.0	40.0	81.0	26.0	23.0	27.0	40.0	26.0	30.0	16.0
Total Split (%)	10.7%	38.0%	15.3%	26.7%	54.0%	17.3%	15.3%	18.0%	26.7%	17.3%	20.0%	10.7%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	9.4	75.0	97.4	24.4	90.0	109.8	18.4	18.7	47.1	15.9	18.6	29.6
Actuated g/C Ratio	0.06	0.50	0.65	0.16	0.60	0.73	0.12	0.12	0.31	0.11	0.12	0.20
v/c Ratio	0.44	0.55	0.09	0.10	0.60	0.32	0.54	0.62	0.80	0.70	0.22	0.10
Control Delay	63.8	40.4	12.7	70.1	11.0	0.6	67.7	73.0	54.5	74.8	58.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	40.4	12.7	70.1	11.0	0.6	67.7	73.0	54.5	74.8	58.6	17.2
LOS	E	D	B	E	B	A	E	E	D	E	E	B
Approach Delay		40.1			10.7			61.8			66.8	
Approach LOS		D			B			E			E	
Stops (vph)	81	1216	40	53	405	4	200	135	329	227	42	9
Fuel Used(gal)	3	36	2	2	24	4	6	4	10	7	1	0
CO Emissions (g/hr)	192	2490	110	119	1702	254	410	288	665	495	90	30
NOx Emissions (g/hr)	37	484	21	23	331	49	80	56	129	96	17	6
VOC Emissions (g/hr)	45	577	26	28	394	59	95	67	154	115	21	7

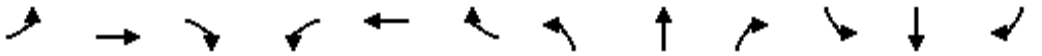
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	24	0	0	78	0	0	0	0	0	0	0
Queue Length 50th (ft)	46	465	21	30	152	1	111	144	348	125	47	4
Queue Length 95th (ft)	m61	547	m67	m43	230	0	153	214	426	168	87	31
Internal Link Dist (ft)		668			1237			996			1078	
Turn Bay Length (ft)												
Base Capacity (vph)	275	2677	1088	824	3210	1286	478	305	640	504	340	361
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	0.35	0.55	0.09	0.07	0.60	0.31	0.47	0.50	0.65	0.50	0.16	0.09

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 22 (15%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 31.7 Intersection LOS: C
Intersection Capacity Utilization 66.8% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Reed Rd & Mid-Mile #6





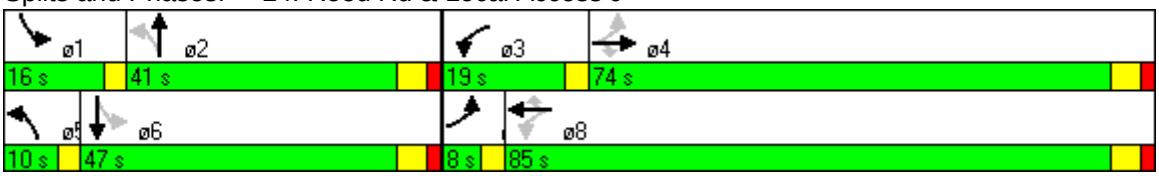
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.898			0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3725	1583	1770	3725	1583	1770	1673	0	1770	1740	0
Flt Permitted	0.057			0.073			0.695			0.187		
Satd. Flow (perm)	106	3725	1583	136	3725	1583	1295	1673	0	348	1740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			46			122		68			27	
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1359			750			1021			1127	
Travel Time (s)		26.5			14.6			23.2			25.6	
Volume (vph)	50	1230	60	130	1735	195	135	105	225	150	50	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	1295	63	137	1826	205	142	111	237	158	53	42
Lane Group Flow (vph)	53	1295	63	137	1826	205	142	348	0	158	95	0
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phases	7	4	4	3	8	8	5	2		1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	22.0	22.0	8.0	22.0	22.0	8.0	22.0		8.0	22.0	
Total Split (s)	8.0	74.0	74.0	19.0	85.0	85.0	10.0	41.0	0.0	16.0	47.0	0.0
Total Split (%)	5.3%	49.3%	49.3%	12.7%	56.7%	56.7%	6.7%	27.3%	0.0%	10.7%	31.3%	0.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0		0.0	2.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	78.3	73.4	73.4	86.1	79.9	79.9	47.1	39.8		53.8	43.7	
Actuated g/C Ratio	0.52	0.49	0.49	0.57	0.53	0.53	0.31	0.27		0.36	0.29	
v/c Ratio	0.49	0.71	0.08	0.75	0.92	0.23	0.33	0.70		0.68	0.18	
Control Delay	32.7	22.9	4.0	47.6	31.6	5.2	39.4	49.8		50.4	30.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	32.7	22.9	4.0	47.6	31.6	5.2	39.4	49.8		50.4	30.2	
LOS	C	C	A	D	C	A	D	D		D	C	
Approach Delay		22.4			30.1			46.8			42.8	
Approach LOS		C			C			D			D	
Stops (vph)	31	662	13	114	1679	73	122	248		105	48	
Fuel Used(gal)	1	23	1	4	43	3	3	7		3	2	
CO Emissions (g/hr)	74	1593	51	246	2975	200	198	514		240	113	
NOx Emissions (g/hr)	14	310	10	48	579	39	39	100		47	22	
VOC Emissions (g/hr)	17	369	12	57	689	46	46	119		56	26	

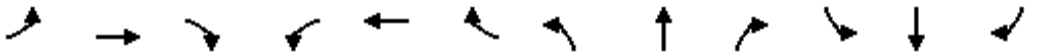
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	27	0	0	26	0	0	0		0	0	
Queue Length 50th (ft)	16	351	4	43	997	28	102	269		115	52	
Queue Length 95th (ft)	m44	m407	m13	117	1063	92	154	382		170	99	
Internal Link Dist (ft)		1279			670			941			1047	
Turn Bay Length (ft)												
Base Capacity (vph)	109	1843	806	242	2023	915	430	503		240	543	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.49	0.70	0.08	0.57	0.90	0.22	0.33	0.69		0.66	0.17	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 8 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 89.9% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Reed Rd & Local Access J





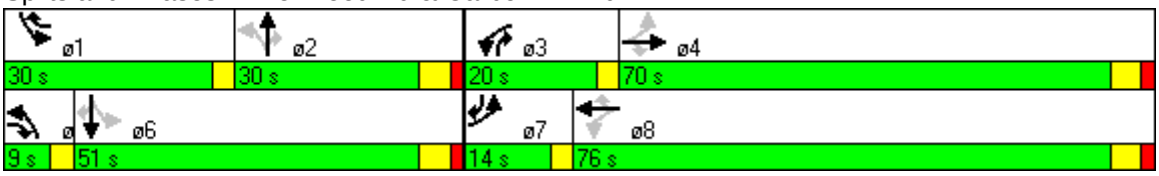
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	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	3725	1583	1770	3725	1583	1770	1961	1583	1770	1961	1583
Flt Permitted	0.061			0.210			0.713			0.133		
Satd. Flow (perm)	114	3725	1583	391	3725	1583	1328	1961	1583	248	1961	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			146			107			32
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
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		2199			1359			2795			2943	
Travel Time (s)		42.8			26.5			63.5			66.9	
Volume (vph)	120	785	15	155	1515	240	75	270	275	285	65	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	126	826	16	163	1595	253	79	284	289	300	68	32
Lane Group Flow (vph)	126	826	16	163	1595	253	79	284	289	300	68	32
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phases	7	4	5	3	8	1	5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0	8.0	22.0	8.0
Total Split (s)	14.0	70.0	9.0	20.0	76.0	30.0	9.0	30.0	20.0	30.0	51.0	14.0
Total Split (%)	9.3%	46.7%	6.0%	13.3%	50.7%	20.0%	6.0%	20.0%	13.3%	20.0%	34.0%	9.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	Min	None	None	Min	None
Act Effct Green (s)	86.3	77.2	86.2	83.6	75.9	103.7	30.2	25.2	37.0	53.0	44.0	57.1
Actuated g/C Ratio	0.58	0.51	0.57	0.56	0.51	0.69	0.20	0.17	0.25	0.35	0.29	0.38
v/c Ratio	0.76	0.43	0.02	0.56	0.85	0.22	0.28	0.86	0.61	0.91	0.12	0.05
Control Delay	54.8	24.5	6.5	15.4	17.9	0.2	39.2	84.9	36.4	74.0	38.1	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	24.5	6.5	15.4	17.9	0.2	39.2	84.9	36.4	74.0	38.1	8.5
LOS	D	C	A	B	B	A	D	F	D	E	D	A
Approach Delay		28.1			15.5			57.9			62.7	
Approach LOS		C			B			E			E	
Stops (vph)	65	481	3	37	635	0	67	249	157	221	45	6
Fuel Used(gal)	4	20	0	2	25	2	3	12	9	12	2	1
CO Emissions (g/hr)	261	1397	20	160	1758	165	182	834	622	843	157	54
NOx Emissions (g/hr)	51	272	4	31	342	32	35	162	121	164	31	11
VOC Emissions (g/hr)	60	324	5	37	407	38	42	193	144	195	36	13

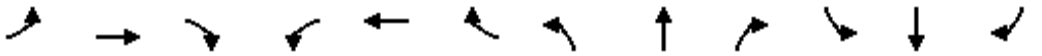
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Dilemma Vehicles (#)	0	26	0	0	75	0	0	0	0	0	0	0
Queue Length 50th (ft)	63	270	0	36	194	1	51	272	159	234	47	0
Queue Length 95th (ft)	#164	344	12	m59	534	m1	90	#422	253	#391	87	22
Internal Link Dist (ft)		2119			1279			2715			2863	
Turn Bay Length (ft)												
Base Capacity (vph)	177	1918	917	379	1884	1160	282	341	552	351	614	632
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	0.71	0.43	0.02	0.43	0.85	0.22	0.28	0.83	0.52	0.85	0.11	0.05

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 78 (52%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 30.0 Intersection LOS: C
Intersection Capacity Utilization 89.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Reed Rd & Carbon Hill Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	110	75	110	110	75	110	15	580	15	20	920	20
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	116	79	116	116	79	116	16	611	16	21	968	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1503	1668	484	1324	1674	305	989			626		
vC1, stage 1 conf vol	1011	1011		642	642							
vC2, stage 2 conf vol	492	658		682	1032							
vCu, unblocked vol	1503	1668	484	1324	1674	305	989			626		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	42	69	78	40	68	83	98			98		
cM capacity (veh/h)	201	258	529	194	249	691	694			951		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	116	195	116	195	16	305	305	16	21	484	484	21
Volume Left	116	0	116	0	16	0	0	0	21	0	0	0
Volume Right	0	116	0	116	0	0	0	16	0	0	0	21
cSH	201	371	194	402	694	1700	1700	1700	951	1700	1700	1700
Volume to Capacity	0.58	0.52	0.60	0.48	0.02	0.18	0.18	0.01	0.02	0.28	0.28	0.01
Queue Length 95th (ft)	79	73	83	64	2	0	0	0	2	0	0	0
Control Delay (s)	44.8	24.9	47.9	22.1	10.3	0.0	0.0	0.0	8.9	0.0	0.0	0.0
Lane LOS	E	C	E	C	B				A			
Approach Delay (s)	32.4		31.7		0.3				0.2			
Approach LOS	D		D									

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	2440	100	0	2290	155	0	0	150	0	0	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	2568	105	0	2411	163	0	0	158	0	0	79
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		572			1176							
pX, platoon unblocked	0.65			0.72			0.79	0.79	0.72	0.79	0.79	0.65
vC, conflicting volume	2574			2674			3451	5142	856	3425	5084	804
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2341			2545			1955	4098	8	1921	4025	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	79	100	100	89
cM capacity (veh/h)	134			123			27	2	768	25	2	702

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	856	856	856	105	804	804	804	163	158	79
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	105	0	0	0	163	158	79
cSH	1700	1700	1700	1700	1700	1700	1700	1700	768	702
Volume to Capacity	0.50	0.50	0.50	0.06	0.47	0.47	0.47	0.10	0.21	0.11
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	19	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	10.8
Lane LOS									B	B
Approach Delay (s)	0.0				0.0				10.9	10.8
Approach LOS									B	B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		