## Traffic Impact Study

# Redevelopment of Sinclair Gas and Popeyes Pub Property 2058 East Main Street Town of Cortlandt, New York 

PREPARED FOR:

Palisades Fuel

65 South Highland Avenue
Ossining, NY 10562

PREPARED BY:
Kimley-Horn of New York, P.C.
1 North Lexington Avenue, Suite 505
White Plains, NY 10601
914.368.9200

## TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY ..... 1
1.1 Summary ..... 1
1.2 Project Description ..... 1
1.3 Study Methodology ..... 2
1.4 Findings .....  3
1.5 Conclusions ..... 3
2.0 INTRODUCTION ..... 5
3.0 EXISTING CONDITIONS ..... 7
3.1 Roadway Network ..... 7
3.2 Description of Study Intersections ..... 7
3.3 Pedestrian Facilities ..... 9
3.4 Crash History and Safety Assessment ..... 10
3.5 Traffic Data Collection ..... 11
4.0 FUTURE NO-BUILD CONDITIONS ..... 13
4.1 Background Traffic Growth ..... 13
4.2 Vicinity Developments ..... 13
5.0 PROJECT TRAFFIC ..... 18
5.1 Trip Generation ..... 18
5.2 Trip Distribution and Assignment ..... 21
6.0 FUTURE BUILD TRAFFIC CONDITIONS ..... 24
$7.0 \quad$ CAPACITY ANALYSIS ..... 26
7.1 Intersection Capacity Analysis ..... 26
8.0 SIGNAL WARRANT ANALYSIS ..... 32
9.0 ALTERNATIVE BUILD ANALYSIS ..... 34
10.0 PROJECT TRAFFIC IMPACT ..... 38
11.0 POST CONSTRUCTION MONITORING PLAN ..... 41
12.0 CONCLUSIONS ..... 42

## APPENDIX

Synchro Capacity Analyses
Queuing Summary Tables
Accident Data
Signal Warrant Analysis
Gasland Comparison Analysis Tables

## FIGURES

Figure 1 - Project Location ...................................................................................................................... 6
Figure 2 - Intersection Geometry ............................................................................................................ 8
Figure 3 - Existing Traffic Volumes ....................................................................................................... 12
Figure 4 - Grown Peak Hour Traffic Volumes ........................................................................................ 15
Figure 5 - Vicinity Devt Peak Hour Traffic Volumes............................................................................... 16
Figure 6 - No-Build Peak Hour Traffic Volumes ..................................................................................... 17
Figure 7 - Trip Distribution (Signalized)................................................................................................. 22
Figure 8 - Project Generated Trips (Signalized) ..................................................................................... 23
Figure 9 - Build Peak Hour Volumes (Signalized).................................................................................. 25
Figure 10 - Project Generated Trips (Unsignalized) ............................................................................... 35
Figure 11 - Build Peak Hour Volumes (Unsignalized)............................................................................ 36

TABLES
Table 1 - Crash Summary .................................................................................................................... 10
Table 2 - Trip Generation ..................................................................................................................... 20
Table 3 - LOS Criteria .......................................................................................................................... 26
Table 4 - Existing Conditions - Intersection Capacity Analysis Results ................................................... 27
Table 5 - No-Build Conditions - Intersection Capacity Analysis Results.................................................. 28
Table 6 - Build Conditions - Intersection Capacity Analysis Results ....................................................... 29
Table 7 - Signal Warrant Analysis Summary ......................................................................................... 32
Table 8 - Build Conditions (Unsignalized) - Intersection Capacity Analysis Results ................................ 37
Table 9 - No-Build \& Build (Signalized) Comparison .............................................................................. 38
Table 10 - No-Build \& Build (Unsignalized) Comparison ......................................................................... 39

### 1.0 EXECUTIVE SUMMARY

This report has been prepared by Kimley-Horn of New York, P.C. to document the potential traffic impacts associated with the proposed redevelopment of the property at 2058 East Main Street in the Town of Cortlandt, Westchester County, New York (the "Project"). This traffic impact study evaluated both existing and future traffic conditions surrounding the site both with and without the Project. The anticipated year of completion of this development is 2022.

### 1.1 Summary

As detailed hereafter, the analyses indicate that the demand exists for the installation of a traffic signal at the intersection of US Route 6 with the westbound ramps of the Bear Mountain Parkway ("BMP" or "the Parkway"). In simple terms, the volume of traffic on US Rt 6 is currently so great that many motorists, who would otherwise use this exit from the Bear Mountain Parkway, instead use Locust Avenue or Conklin Avenue. This is evident from the calculated peak-hour delays exiting the Parkway (minutes, not seconds), the difference in peak-hour traffic volumes that get on the Parkway at this intersection versus those the get off the Parkway at this intersection (dozens of vehicles), as well as the difference in peak-hour traffic volumes that get off the Parkway at this intersection versus at the eastbound Parkway Exit (also dozens of vehicles). The bottom line is that motorists want to use this exit but cannot and, if a traffic signal is installed, the requisite traffic signal warrant volumes will be satisfied.

Additional analyses performed for this study revealed that, if a traffic signal is not installed at this intersection, the volume of traffic that would visit the new gas station and convenience store would be half the level that would visit with the installation of the traffic signal. Because accessing US Route 6 from the subject site takes so long without the aid of a traffic signal, most potential customers will forego stopping at this site and will, instead, visit a more convenient location, such as the Gasland station a few hundred feet to the west. This is evident from the fact that, combined, less than $30 \%$ of current site-generated traffic uses the westbound Parkway ramps or turns left in or out from/to US Route 6 to access the site.

Regardless of whether or not a traffic signal is installed, both sets of analyses indicate that the proposed redevelopment of the property will not have a significant adverse impact on area traffic operating conditions.

### 1.2 Project Description

The Project site is situated on the north side of East Main Street (US Route 6), to the east of the Bear Mountain Parkway. The property is currently developed with a gas station with four fueling positions, a residence and a vacant commercial building formerly occupied by Popeye's Pub. Access to the property is currently provided by two full movement driveways along the gas station frontage. It is proposed to
demolish the existing buildings and construct a larger gas station with 12 fueling positions, and a 3,320 square-foot (sf) convenience store with a drive-thru. The Project will have two access driveways; a oneway access for right-turn entering traffic from Route 6 westbound and a two-way driveway located opposite the Bear Mountain Parkway westbound ramps.

### 1.3 Study Methodology

To assess existing traffic conditions at the study intersections, and due to the current COVID-19 pandemic, the Town determined that 2019 existing traffic volumes contained in the traffic study ${ }^{1}$ for the nearby Gasland development would be appropriate to use. The 2019 traffic volumes for the weekday AM and PM weekday peak hours and the Saturday Midday peak hour were increased by $1 \%$ to represent 2020 existing conditions.

The 2020 existing peak-hour volumes were grown to the year 2022 by $2 \%$ per year (a total of 4 percent) and traffic volumes from 16 proposed vicinity developments ${ }^{2}$ in the Towns of Cortlandt and Yorktown, as well as the City of Peekskill were added to the grown volumes to represent future conditions without the Project ("No-Build").

The trips anticipated to be generated by the Project during the peak hours were forecast based on the Institute of Transportation Engineers' (ITE) publication, Trip Generation Manual, 10th Edition. It is conservatively estimated that, if a traffic signal is installed at the main site driveway, the Project will add 160 new vehicular trips to the surrounding roadways during the weekday AM peak hour, 168 new trips during the PM peak hour and 208 new vehicular trips during the Saturday Midday peak hour.

These trips were distributed to the roadways and added to the No-Build volumes to represent future conditions with the Project ("Build"). Two Build analyses were conducted; one assuming the site driveway intersection with Route 6 and the BMP westbound ramps remains unsignalized resulting in only half of the potential customers visiting the site and the second Build analysis assuming a traffic signal is installed at the intersection assuming all potential customers visit the site. No credit was taken for any of the customers that would otherwise have stopped at the Gasland facility.

Synchro analyses were conducted for the Existing, No-Build and the two Build traffic volume conditions and compared to intersection capacities to identify Project impacts.

[^0]To identify any existing safety concerns, a crash analysis was performed at the study intersections which revealed that the study intersections currently experience an accident rate that is higher than the Statewide average.

### 1.4 Findings

At the unsignalized US Route 6 intersection with the Bear Mountain Parkway Westbound Ramp and Site Driveway, the results of the Synchro analysis indicate that, substantial delays are currently experienced on the Ramp and Site driveway approaches. In the future under No-Build conditions (without the Project but with forecast increases in existing volumes), there will be significant increases in delay on the minor street approaches. Under future Build conditions (with the Project traffic added to the No-Build volumes), there will be further increases in delay on the minor street approaches, though they will be greatly reduced if a traffic signal is installed. Under Build conditions with the signal installation, the intersection will operate acceptably, and the minor street delays will be dramatically reduced. If a signal is not installed, the volume of traffic that will be generated by the gas station will be halved and there will be no material change to the operation of the intersection.

At the signalized US Route 6 intersection with the Bear Mountain Parkway Eastbound Ramp and the Gasland Driveway, the results of the Synchro analysis reveal that the overall intersection currently operates at acceptable levels during the peak hours. In the future, under No-Build conditions, the Synchro analysis indicates that the overall intersection will continue to operate acceptably, although with significant increase in delays on the Ramp approach as compared to existing conditions. Under future Build conditions (with the proposed Project traffic), the overall intersection and individual movements will continue to operate at No-Build levels of service. Overall delays will increase by less than one second.

A traffic signal warrant analysis conducted for the US Route 6 intersection with the BMP Westbound ramp and Site driveway for the Build condition reveals that traffic signal will be warranted, based on the signal warrant volume criteria.

### 1.5 Conclusions

The data presented in this study indicates that the demand exists for the installation of a traffic signal at the intersection of US Route 6 with the westbound ramps of the Bear Mountain Parkway. With the installation of a traffic signal, the proposed redevelopment of the subject property could add up to 265 new trips to the surrounding roadway during the busiest hour, though this value is conservative as it assumes none of these trips will be siphoned off from the Gasland station and that the sole purpose for $75 \%$ of the patrons' is a destination trip just to get gas (when most of us get gas on our way to do something else). Even with these
conservative projections, the data indicate that any traffic impact the Project might have would be mitigated by the installation of a traffic signal.

Alternatively, if the New York State Department of Transportation (NYSDOT) declines to grant approval for the installation of a traffic signal, the number of trips generated by the Project is expected to be more than halved and, with this smaller level of traffic activity, the subject development would not have a significant impact on area traffic operating conditions.

In conclusion, regardless of whether or not a traffic signal is installed at the site driveway, both sets of analyses indicate that the proposed redevelopment of the property will not have a significant adverse impact on traffic operations in the study area.

### 2.0 INTRODUCTION

This Traffic Impact Study has been prepared by Kimley-Horn of New York, P.C. to document the potential traffic impacts associated with the proposed redevelopment of the property at 2058 East Main Street (US Route 6) in the Town of Cortlandt, Westchester County, New York. This report evaluates both existing and future traffic conditions surrounding the site both with and without the Project. The anticipated year of completion of this development is 2022.

The Project site is situated on the north side of East Main Street (US Route 6), to the east of the Bear Mountain Parkway ("BMP") and opposite the BMP westbound ramp, as illustrated in Figure 1. The property is currently developed with a gas station with four fueling positions, a residence and a vacant commercial building formerly occupied by Popeye's Pub. Access to the property is currently provided by two full movement driveways along the gas station frontage.

It is proposed to demolish the existing buildings and construct a larger gas station with 12 fueling positions, and a 3,320 square-foot (sf) convenience store with a drive-thru. The Project will have two access driveways; a one-way access for right-turn entering traffic from Route 6 westbound and a two-way driveway located opposite the Bear Mountain Parkway westbound ramps.

This study was conducted in accordance with the Town's approved Scoping outline for the Project and evaluates existing traffic conditions as well as future conditions without the Project ("No-Build") and with the Project ("Build"). The No-Build condition is the benchmark against which the potential impacts of the proposed Project are compared. Two study intersections were identified by the Town as requiring analysis:

- US Route 6 \& Bear Mountain Parkway westbound ramp \& Site Driveway (unsignalized)
- US Route 6 \& Bear Mountain Parkway eastbound ramp \& proposed Gasland Driveway (signalized)

This study draws from the 2019 traffic study conducted for the recently approved Gasland development located along US Route 6 to the west of the BMP.


Kimley») Horn
Proposed Redevelopment Town of Cortlandt, NY

Project Location
Figure

### 3.0 EXISTING CONDITIONS

### 3.1 Roadway Network

Evaluation of the traffic impacts associated with the proposed Project requires a thorough understanding of the existing roadway system in the vicinity of the site. The existing conditions observed in the study area include an inventory of the roadways, speed limits, intersection geometry, traffic control devices, pavement condition and markings. This information is provided below.

East Main Street (US Route 6) is an east-west State highway classified as an urban "principal arterial - other" which travels through the immediate region from Peekskill in the west to Brewster in the east. Within the study area, it provides five lanes with two through lanes per direction and a center lane for left turns. The roadway narrows to four lanes (two travel lanes per direction) as it passes under the Bear Mountain Parkway overpass. The pavement is in fair to good condition. Sidewalks are provided along the north side of the roadway. US Route 6 is under the jurisdiction of the New York State Department of Transportation (NYSDOT). The posted speed limit in the study area is 40 miles per hour (mph).

Bear Mountain State Parkway is a generally east to west oriented State highway which runs for approximately 4 miles from its intersection with US Routes $6,9 \& 202$ in Peekskill in the west through Cortlandt to US Route 202 in the east. The highway is classified as an urban "principal arterial expressway" and is under the jurisdiction of the NYSDOT. It provides one travel lane per direction to the east of its interchange with US Route 6 and three travel lanes (two eastbound travel lanes; one westbound travel lane) to the west of US Route 6. Within the study area, the Parkway is divided by a guiderail and the pavement is in generally good condition. The highway has a posted speed limit of 45 mph . There are no pedestrian facilities on the Parkway.

### 3.2 Description of Study Intersections

## East Main Street (US Route 6) at Bear Mountain Parkway Westbound Ramp \& Site Driveway -

 The BMP Westbound Ramp forms the northbound approach and the Site Driveway forms the southbound approach to this four-legged, unsignalized intersection with US Route 6. US Route 6 eastbound provides a shared left-turn/through lane and a shared through/right-turn lane while the westbound approach provides an exclusive left-turn lane and two through lanes. The BMP ramp provides two approach lanes that are striped as a left-turn lane and a right-turn lane. The site driveway approach, which is slightly offset from the BMP ramp, provides one lane permitting all movements. The intersection is controlled by a Stop sign on the BMP ramp. Crosswalks are not provided at the intersection. The intersection geometry is shown on Figure 2.

A signal warrant analysis conducted at this intersection for the Gasland development ${ }^{3}$ indicated that the intersection does not currently meet the NYSDOT requirements for signalization due to the relatively low volumes of traffic exiting the Parkway at this location.

East Main Street (US Route 6) at Bear Mountain Parkway Eastbound Ramp \& Gasland Driveway - The BMP Eastbound Ramp forms the southbound approach and the driveway to an existing commercial property (future Gasland site) forms the northbound approach to this four-legged signalized intersection with US Route 6. US Route 6 eastbound provides an exclusive left-turn lane and two through lanes while the westbound approach provides a shared left-turn/through lane and a shared through/right-turn lane. The BMP ramp provides a left-turn lane and a right-turn lane. The driveway approach provides one lane permitting all movements. The intersection is controlled by a multi-phase traffic signal. Crosswalks and pedestrian displays are provided on the north leg of the intersection.

The intersection will be reconstructed as part of the Gasland development, which is anticipated to be completed in 2021. The BMP ramp will be widened to provide a three-lane approach with a left-turn lane, a shared left-turn/through lane and a right-turn lane. US Route 6 will be widened to provide a left-turn lane in the westbound direction and the Gasland driveway will be constructed to provide a shared left-turn/through lane and a right-turn lane. A new crosswalk will be added on the west leg of Route 6 which will connect to a new sidewalk on the south side of Route 6, between the Gasland driveway and Parkway Drive to the west. The reconstructed traffic signal will include Adaptive Traffic Signal Control (ATSC). The Gasland developer will also install ATSC at two other signalized intersections ${ }^{4}$ along Route 6. This study includes these intersection modifications as part of the analysis of the future 2022 No-Build and Build conditions. The existing and proposed intersection geometry for this intersection is shown graphically on Figure 2.

### 3.3 Pedestrian Facilities

The majority of development along US 6 between the eastbound Bear Mt. Parkway Ramp and Locust Avenue is on the north side of the roadway and a continuous sidewalk connects these properties. There is no sidewalk on the south side of the road in this location, except for a 60 -foot long, 35 " wide strip directly under the bridge that carries the Bear-Mountain Parkway over the roadway.

North side sidewalk pavement conditions are generally acceptable in the study area (no buckling or major cracks), however, none of the curb ramps are ADA compliant. The utility pole at the existing driveway to the subject site blocks a portion of the ramp, however, the sidewalk is 7 ' wide at that

[^1]location, leaving sufficient width for walkers and the disabled to pass. The sidewalk area next to this utility pole is not paved but is proposed to be reconstructed in that area as part of the Project.

The vegetation adjacent to the sidewalk is not maintained between the subject site and the eastbound Bear Mt. Parkway Ramp with the result that foliage growth reduces the effective width of the sidewalk. Under the overpass, at the narrowest point, the sidewalk is 35 " from curb to abutment, which is not ADA compliant (the sidewalk would need to be widened by 19 " to meet the minimum ADA requirements for sidewalks or by 7 " to meet the minimum requirement for an accessible route).

Under the proposed plan, the sidewalk, crosswalk and sidewalk curb ramps will be reconstructed across the front of the property to comply with current ADA requirements.

### 3.4 Crash History and Safety Assessment

A review of crash records provided by the NYSDOT for US Route 6 for the most recent three-year period (from September 2016 through August 2019) indicate that a total of 40 crashes occurred in the study area. Injuries occurred in 6 of the crashes and there was one fatality that involved a motorcyclist. None of the crashes involved pedestrians or bicyclists.

A total of 16 crashes occurred at the intersection of US Route 6 with the BMP Westbound Ramp/Site Driveway and 22 crashes occurred at the US Route 6 signalized intersection with the BMP Eastbound Ramp. Two crashes occurred between the two intersections. A review of the data indicated that the crashes were mostly rear-end, overtaking and right-angle collisions. The accident rates for the two study intersections were calculated and compared to Statewide averages for similar intersection types. This comparison revealed that both study intersections exceed the Statewide average. Table 1 provides a summary of the accident data.

| Table 1-Crash Summary |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9/1/2016 to 8/31/2019 |  |  |  |  |  |  |  |  |  |  |  |

### 3.5 Traffic Data Collection

Due to the current Covid-19 pandemic, it is currently not possible to collect representative turning movement counts at the study intersections. However, the Town of Cortlandt determined that 2019 existing traffic volumes contained in the traffic study ${ }^{5}$ for the nearby Gasland development would be acceptable to use. The 2019 traffic volumes for the weekday AM and PM peak hours and the Saturday Midday peak hour were increased by $1 \%$ to represent 2020 existing conditions. The resulting 2020 Existing Peak Hour Traffic Volumes are provided in Figure 3.

A review of the Existing volumes reveals that the Saturday Midday peak hour experiences the highest volumes ( $58 \%$ higher than the AM peak hour volumes and $15 \%$ higher than the PM peak hour volumes). The PM peak hour volumes are $38 \%$ higher than the AM peak hour volumes.

[^2]

### 4.0 FUTURE NO-BUILD CONDITIONS

The future No-Build conditions are the forecast traffic conditions that are expected to occur without the proposed development. This includes background traffic growth and traffic associated with any other planned / approved developments, as described below.

### 4.1 Background Traffic Growth

Background traffic growth represents typical traffic growth not associated with any planned development. Growth rate information was provided by the Town of Cortlandt which indicated that an annual growth rate of $2 \%$ per year ( $4 \%$ total) would be appropriate. The grown traffic volumes are shown on Figure 4.

### 4.2 Vicinity Developments

Traffic volumes associated with the following 16 proposed vicinity developments ${ }^{6}$ in the Towns of Cortlandt and Yorktown, as well as the City of Peekskill were added to the grown volumes.

## Town of Cortlandt

- Gasland Development
- Shop Rite (relocated to Cortlandt Crossing)
- Cortlandt Crossing (unoccupied space)
- Hanover Estates
- Pondview Commons
- The Sentinel Assisted Living
- Medical Oriented District (MOD)


## Town of Yorktown

- Lowe's
- Mohegan Audi Expansion
- CVS
- Envirogreen Associates Commercial
- Route 6 (Mohegan Avenue)
- Roma Building Redevelopment
- Weyant Residential Development


## City of Peekskill

- Trinity Associates (52 dwelling units)
- Forth Hill Residences (balance)
- One Park Place (150 du)

[^3]The vicinity development volumes, shown on Figure 5, were added to the Grown traffic volumes to represent the future conditions without the Project ("No-Build"). Compared to the Existing volumes, the No-Build traffic volumes represent an increase of $23 \%$. This is considered to be an extremely conservative projection ( $28 \%$ increase over 2019 traffic volumes by 2022). The No-Build volumes are shown on Figure 6.




### 5.0 PROJECT TRAFFIC

Project traffic is the number of vehicle trips forecast to be generated by the proposed development. This Project traffic is calculated and dispersed throughout the road network and onto the study intersections by using trip generation, trip distribution, and trip assignment.

### 5.1 Trip Generation

The Project site is situated on the north side of East Main Street (US Route 6), to the east of the Bear Mountain Parkway. The property is currently developed with a gas station with four fueling positions, a residence and a vacant commercial building formerly occupied by Popeye's Pub. Access to the property is currently provided by two full movement driveways along the gas station frontage. It is proposed to demolish the existing buildings and construct a larger gas station with 12 fueling positions, and a 3,320 square-foot (sf) convenience store with a drive-thru. The Project will have two access driveways; a one-way access for right-turn entering traffic from Route 6 westbound and a two-way driveway located opposite the Bear Mountain Parkway ("BMP") westbound ramps.

The trips anticipated to be generated by the Project during the peak hours were forecast based on the Institute of Transportation Engineers' (ITE) publication, Trip Generation Manual, 10th Edition. The trip rates for ITE Land Use Code (LUC) 853 (Convenience Market with Gasoline Pumps) and LUC 945 (Gasoline/Service Station with Convenience Market) were carefully reviewed. It was determined that using trip rates based on fueling positions rather than on the convenience store square footage would result in higher trip generations and provide a more conservative approach. For the AM and PM peak weekday hours, the trip rates for fueling positions based on LUC 853 were used as those rates are higher than the rates for LUC 945. As LUC 853 does not provide Saturday rates based on fueling positions, the ratio of Saturday/PM LUC 945 rates were used to develop the Saturday Project trips for LUC 853 from the PM LUC 853 value.

ITE also indicates that a substantial number of trips to a convenience store and fueling station are drawn from the existing passing traffic stream and are not new trips added to the roadways, as most of us pump gas or stop for a convenience item on our way to somewhere else. Per ITE, these passby trips can represent up to 62 percent of Project trips for gas stations and convenience stores; however, a pass-by credit of only $25 \%$ was used in this Study in accordance with NYSDOT guidelines. Based on these conservative assumptions, it is conservatively estimated that the Project will add 187 new vehicular trips during the weekday AM peak hour, 206 new trips during the PM peak hour and 265 new vehicular trips during the Saturday Midday peak hour. An additional 31 trips in and 31 trips out of the development are projected to come from passing traffic on US Route 6 (passby trips) in the AM peak hour. Similarly, 35 entering and 35 exiting trips in the weekday PM peak
hour, and 44 entering and 44 exiting trips in the Saturday peak hour are projected to come from passing traffic on US Route 6. These trip generation projections are summarized below in Table 2.

It is noted, however, that the property is currently developed with a gas station, a single-family residence and the former Popeye's Pub. As indicated in Figure 3, the existing development on the site generates 35 trips in the weekday AM peak hour, 52 trips in the weekday PM peak hour and 56 trips in the Saturday Midday peak hour. Assuming the same $25 \%$ pass-by rate used for the proposed action, of these driveway trips, 4 entering and 4 exiting trips in the AM peak-hour would come from passing traffic on US Route 6 (pass-by trips) in the AM peak hour. Similarly, 7 entering and 7 exiting trips in the weekday PM peak hour, and 9 entering and 9 exiting trips in the Saturday peak hour come from passing traffic on US Route 6. These existing trips are also presented in Table 2.

Table 2 - Trip Generation

| Condition | Trip Types | Weekday AM Peak Hour |  |  | Weekday PM Peak Hour |  |  | Saturday Midday Peak Hour |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | Enter | Exit | Total | Enter | Exit | Total | Enter | Exit |
| Proposed Project | Total Trips | 249 | 125 | 124 | 276 | 138 | 138 | 353 | 177 | 176 |
|  | Pass-by Trips | 62 | 31 | 31 | 70 | 35 | 35 | 88 | 44 | 44 |
|  | New Trips | 187 | 94 | 93 | 206 | 103 | 103 | 265 | 133 | 132 |
| Existing Site | Total Trips | 35 | 19 | 16 | 52 | 26 | 26 | 75 | 38 | 37 |
|  | Pass-by Trips | 8 | 4 | 4 | 14 | 7 | 7 | 18 | 9 | 9 |
|  | New Trips | 27 | 15 | 12 | 38 | 19 | 19 | 57 | 29 | 28 |
| Net Change | Total Trips | 214 | 106 | 108 | 224 | 112 | 112 | 278 | 139 | 139 |
|  | Pass-by Trips | 54 | 27 | 27 | 56 | 28 | 28 | 70 | 35 | 35 |
|  | New Trips | 160 | 79 | 81 | 168 | 84 | 84 | 208 | 104 | 104 |

Source: Based on ITE Trip Generation Manual, $10^{\text {th }}$ Edition.
As can be seen from Table 2, the proposed redevelopment of the property is conservatively proposed to add 160 new trips to the surrounding roadways during the weekday AM peak hour, 168 new trips to the surrounding roadway network during the weekday PM peak hour and 208 new trips to the surrounding roadway network during the Saturday Midday peak hour.

Based on the values in Table 2, it is estimated that up to 20 vehicles per hour will use the drive-thru during any of the peak hours and that queues will be limited to two vehicles, or three at most.

### 5.2 Trip Distribution and Assignment

Trip arrival and departure distributions, which show how Project-generated trips will travel to and from the site, have been forecast by evaluating the existing traffic patterns and volumes on the study area roadways.

With the installation of a traffic signal at the site driveway, easy access to and from the site would be provided from both US Route 6 and the Bear Mountain Parkway. For this condition, the Project's trip origins and destinations were determined based, primarily, on the average annual daily traffic volumes on these roadways on either side of the site (as indicated on the NYSDOT's "Traffic Data Viewer").

The trip distributions with the installation of a traffic signal are shown on Figure 7. The new Project trips were distributed to the roadways based on the Signalized trip distributions. The pass-by trips were assigned based on the average annual daily traffic volumes on US Route 6 on either side of the site, with the assumption that, with the installation of a traffic signal, westbound (right-in/right-out) traffic would be $33 \%$ more likely to visit the site than eastbound (left-in/left-out) traffic. The sum of the new Project trips and the pass-by trips are shown on Figure 8.

With signalization of the Route 6 intersection with the BMP westbound ramp and the Site driveway, it is projected that some of the existing drivers destined to Route 6 who currently use Locust Avenue or Conklin Avenue rather than the BMP westbound ramp would use the ramp to access Route 6. These trip diversions were determined based on a review of the difference in traffic volumes between vehicles entering the BMP opposite the site driveway and vehicle exiting the BMP opposite the site driveway.

This data (taken from the Gasland Traffic Study) indicate that between 25 and 60 more vehicles turn onto the Parkway from the west than turn off the Parkway to the west (indicating the difficulty of making left-turns. Similarly, the data indicate that between 160 and 240 more vehicles turn onto the Parkway from the east than turn off the Parkway to the east (partially attributable to the inability of right-turning vehicles accessing US Route 6 because of the left-turn queue).

To account for the benefits of installing a traffic signal at this intersection, it was assumed that between 26 and 57 additional left-turns would be made from the parkway exit to westbound US Route 6 and that between 35 and 53 additional right-turns would be made from the parkway exit to eastbound US Route 6.



### 6.0 FUTURE BUILD TRAFFIC CONDITIONS

The Future Build conditions are defined as the forecast traffic conditions on the roadway network in the year 2022, with the proposed development. The future traffic volumes with the Project were determined by subtracting the existing traffic currently generated by the property from the No-Build volumes (shown in Figure 6), adding the new Project trips and the Project pass-by trips (shown in Figure 8) and adding the additional left and right-turning vehicles that would exit the Parkway opposite the site driveway. The resulting Build traffic volumes are shown in Figure 9.


### 7.0 CAPACITY ANALYSIS

### 7.1 Intersection Capacity Analysis

An intersection capacity analysis was conducted with the Existing, No-Build and Build peak-hour traffic volumes (shown on Figures 3, 6 and 9) to assess the quality of the traffic flow at the study intersections. The criteria used to analyze the study intersections is based on the evaluation criteria contained in the Transportation Research Board's Highway Capacity Manual ("HCM") 6 Edition. The term "level of service" ("LOS") is used to denote the different operating conditions that occur at an intersection under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, and freedom to maneuver. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A to $F$, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

Synchro 10 software was used to model the study intersections based on the parameters mentioned above. Synchro 10 software is widely used by traffic engineering professionals, is approved for use by the NYSDOT, and is consistent with the procedures in the HCM.

The LOS designations, which are based on delay, are reported differently for signalized and unsignalized intersections. For signalized intersections, LOS is based on the average control delay per vehicle for the various lane group movements within the intersection. LOS can be reported for individual turning movements, approaches, or for the intersection as a whole. For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designation is for the critical movement exiting the side street, which is generally the left turn out of the side street or side driveway. For the purposes of this analysis, control delay is defined as the total elapsed time that includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation.

The control delay criteria for the range of service levels for signalized and unsignalized intersections are shown below in Table 3.

| Table 3 - LOS Criteria |  |  |
| :---: | :---: | :---: |
| Level-of-Service (LOS) | Control Delay Per Vehicle |  |
|  | Signalized Intersections |  |
| A | $\leq 10.0$ seconds |  |
| B | $>10.0$ and $\leq 20.0$ seconds |  |
| C | $>20.0$ and $\leq 35.0$ seconds |  |
| D | $>35.0$ and $\leq 55.0$ seconds |  |
| E | $>55.0$ and $\leq 80.0$ seconds |  |
| F | $>80.0$ seconds |  |
| $>25.0$ and $\leq 15.0$ and $\leq 25.0$ seconds $\leq 35.0$ seconds |  |  |
| Soconds |  |  |

Source: Transportation Research Board. Highway Capacity Manual.

The results of the intersection analysis for the Existing, No-Build and the Build volume conditions for the three peak hours are summarized in Tables 4 to $\mathbf{6}$ below. Based on a review of the initial analyses, it was determined that the primary site driveway should have a left-turn lane and a separate through/right-turn lane and the Build analyses reflect this condition. The Synchro worksheets are provided in the Appendix along with Queuing summary tables.

| Intersection | Mvmt/ Approach | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} \text { Delay } \\ \text { (secs) } \end{gathered}$ | LOS | $\begin{gathered} \text { Delay } \\ \text { (secs) } \\ \hline \end{gathered}$ | LOS | $\begin{gathered} \text { Delay } \\ \text { (secs) } \\ \hline \end{gathered}$ | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Unsignalized) | EB LTR | 9.0 | A | 9.8 | A | 10.9 | B |
|  | WB L | 11.4 | B | 17.7 | C | 20.8 | C |
|  | WB TR | 0.0 | A | 0.0 | A | 0.0 | A |
|  | NB L | 62.6 | F | 300.0 | F | 300.0 | F |
|  | NB TR | 15.2 | C | 13.9 | B | 14.7 | B |
|  | SB LTR | 30.5 | D | 120.6 | F | 300.0 | F |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Commercial Drwy (Signalized) | EB L | 35.3 | D | 40.7 | D | 44.2 | D |
|  | EB TR | 12.5 | B | 15.9 | B | 14.3 | B |
|  | EB | 13.6 | B | 16.8 | B | 15.6 | B |
|  | WB LTR | 20.1 | C | 28.2 | C | 29.9 | C |
|  | NB LTR | 0.0 | A | 0.2 | A | 0.5 | A |
|  | SB L | 27.2 | C | 31.6 | C | 43.5 | D |
|  | SB TR | 7.1 | A | 0.1 | A | 8.3 | A |
|  | SB | 22.6 | C | 28.3 | C | 38.9 | D |
|  | INT | 18.5 | B | 23.7 | C | 26.2 | C |

Note: LOS = Level of Service. Delay is shown in seconds.
Delays of 300 seconds or more at unsignalized intersections are simply noted as 300 seconds.

| Table 5 - No-Build Conditions - Intersection Capacity Analysis Results |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intersection | Mvmt/ Approach | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  |
|  |  | $\begin{aligned} & \text { Delay } \\ & \text { (secs) } \end{aligned}$ | LOS | $\begin{aligned} & \hline \text { Delay } \\ & \text { (secs) } \end{aligned}$ | LOS | Delay (secs) | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Unsignalized) | EB LTR | 9.6 | A | 10.6 | B | 12.2 | B |
|  | WB L | 13.4 | B | 33.3 | D | 49.3 | E |
|  | WB TR | 0.0 | A | 0.0 | A | 0.0 | A |
|  | NB L | 160.6 | F | 300.0 | F | 300.0 | F |
|  | NB TR | 18.0 | C | 16.8 | C | 18.7 | B |
|  | SB LTR | 52.2 | F | 300.0 | F | 300.0 | F |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy $\left(\right.$ Signalized) ${ }^{1}$ | EB L | 12.9 | B | 15.6 | B | 16.6 | B |
|  | EB TR | 18.3 | B | 25.9 | C | 25.0 | C |
|  | EB | 18.1 | B | 25.5 | C | 24.7 | C |
|  | WB L | 12.7 | B | 16.8 | B | 13.2 | B |
|  | WB TR | 20.8 | C | 25.5 | C | 29.7 | C |
|  | WB | 20.3 | C | 25.0 | C | 29.1 | C |
|  | NB LT | 43.7 | D | 52.4 | D | 79.1 | E |
|  | NB R | 1.1 | A | 1.5 | A | 3.2 | A |
|  | NB | 26.6 | C | 31.2 | C | 47.2 | D |
|  | SB L | 57.6 | E | 48.5 | D | 60.3 | E |
|  | SB T | 56.8 | E | 47.6 | D | 60.4 | E |
|  | SB R | 5.7 | A | 5.2 | A | 18.2 | B |
|  | SB | 42.9 | D | 40.5 | D | 50.8 | D |
|  | INT | 25.3 | C | 28.7 | C | 32.6 | C |

Note: 1. Includes Gasland intersection modifications.
LOS = Level of Service. Delay is shown in seconds.
Delays of 300 seconds or more at unsignalized intersections are simply noted as 300 seconds.

| Table 6 - Build Conditions - Intersection Capacity Analysis Results |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intersection | Mvmt/ Approach | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  |
|  |  | $\begin{aligned} & \hline \text { Delay } \\ & \text { (secs) } \end{aligned}$ | LOS | $\begin{aligned} & \hline \text { Delay } \\ & \text { (secs) } \end{aligned}$ | LOS | $\begin{aligned} & \text { Delay } \\ & \text { (secs) } \end{aligned}$ | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Signalized) | EB LTR | 7.8 | A | 32.8 | C | 76.6 | E |
|  | WB L | 11.0 | B | 52.0 | D | 79.3 | E |
|  | WB TR | 4.0 | A | 3.6 | A | 4.4 | A |
|  | WB | 5.5 | A | 14.7 | B | 19.0 | B |
|  | NB L | 48.0 | D | 47.4 | D | 79.6 | E |
|  | NB TR | 15.5 | B | 19.2 | B | 19.5 | B |
|  | NB | 29.1 | C | 29.4 | C | 40.0 | D |
|  | SB L | 38.9 | D | 44.0 | D | 75.4 | E |
|  | SB TR | 16.6 | B | 19.9 | B | 21.7 | C |
|  | SB | 23.2 | C | 27.1 | C | 37.7 | D |
|  | INT | 9.4 | A | 24.8 | C | 47.5 | D |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 13.4 | B | 16.6 | B | 14.8 | B |
|  | EB TR | 18.9 | B | 27.2 | C | 24.8 | C |
|  | EB | 18.6 | B | 26.8 | C | 24.3 | C |
|  | WB L | 11.6 | B | 15.5 | B | 10.0 | A |
|  | WB TR | 22.0 | C | 26.2 | C | 28.4 | C |
|  | WB | 21.5 | C | 25.7 | C | 28.7 | C |
|  | NB LT | 43.7 | D | 52.4 | D | 66.6 | E |
|  | NB R | 1.1 | A | 1.5 | A | 2.3 | A |
|  | NB | 26.6 | C | 31.2 | C | 39.6 | D |
|  | SB L | 59.4 | E | 48.7 | D | 64.3 | E |
|  | SB LT | 57.7 | E | 47.5 | D | 64.0 | E |
|  | SB R | 5.7 | A | 5.1 | A | 10.8 | B |
|  | SB | 44.5 | D | 40.8 | D | 52.6 | D |
|  | INT | 26.2 | C | 29.5 | C | 32.4 | C |

Note: LOS = Level of Service. Delay is shown in seconds.
Delays of 300 seconds or more at unsignalized intersections are simply noted as 300 seconds.

A descriptive summary of the Synchro analysis results shown in Tables 4 through 6 for each study intersection is provided below.

## US Route 6 \& BMP Westbound Ramp/Site Driveway

- Under Existing conditions at this unsignalized intersection, the northbound Ramp approach and southbound Site driveway approach experience significant delays during each peak hour. The northbound left-turn from the BMP westbound off-ramp operates at level of service (LOS) "F" during the weekday AM, PM and Saturday Midday peak hours. The Site driveway operates at LOS "F" during the PM and Saturday peak hours. Left-turn movements on US Route 6 operate at LOS "C" or better during the peak hours.
- In the future under No-Build conditions (without the proposed Project, but with forecast increases in existing traffic volumes and vicinity development volumes), compared to the existing conditions, the minor street approaches will see significant increases in delay and will continue to operate at LOS "F" during the peak hours. The westbound left-turn movement on US Route 6 will also see significant increases in delay during the PM and Saturday peak hours (of 15.6 seconds and 28.5 seconds, respectively) resulting in the LOS degrading from "C" during both hours under existing conditions to LOS "D" (PM) and LOS "E" (Saturday).
- Under future Build conditions (with the proposed Project traffic, with a traffic signal installed), compared to No-Build conditions, the overall intersection will operate at acceptable LOS "D" or better during each peak hour. Delays on the site driveway and Parkway ramp approaches will be improved to tolerable levels, while the US Route 6 approaches will operate at LOS "C" or better, except during the Saturday midday peak-hour.

A review of the existing geometry at this intersection revealed that the separation between the ramp and the BMP bridge is not sufficient to allow the roadway to be restriped to provide an eastbound left-turn lane.

## US Route 6 \& BMP Eastbound Ramp/Gasland Driveway

- Under Existing conditions at this signalized intersection, the overall intersection operates at LOS "B" during the weekday AM peak hour and at LOS "C" during the weekday PM peak hour and Saturday Midday peak hour.
- In the future under No-Build conditions (without the proposed Project, but with the Gasland development's proposed intersection improvements and forecast increases in existing traffic volumes and vicinity development volumes), compared to the existing conditions, the southbound BMP Eastbound ramp approach will see increased delays resulting in a degradation in level of service during the AM and PM peak hours from LOS "C" under existing conditions to LOS "D" under No-Build conditions. The overall intersection will continue to operate acceptably at LOS "C during each peak hour.
- Under future Build conditions (with the proposed Project traffic, with a traffic signal installed at the adjacent BMP Westbound ramp/Site driveway intersection), compared to No-Build conditions, the overall intersection will continue to operate at LOS "C during each peak hour and there will be no change in LOS on individual movements, except for a threshold "A" to "B" LOS change on the westbound left-turn movement.

As per the study scope provided by the Town, the results of the analyses above were compared to those of the Gasland traffic study. Tables showing that comparison are provided in the Appendix.

### 8.0 SIGNAL WARRANT ANALYSIS

A signal warrant analysis was conducted at the US Route 6 intersection with the Bear Mountain Parkway Westbound Ramps and Site Driveway to determine if signal installation would be warranted based on the future Build volume conditions.

As previously discussed, the current level of use of the westbound Parkway ramp is curtailed by the heavy volumes of traffic on US Route 6 and the limited ability of vehicles to access it from the ramp or the site. This is evidenced by the fact that approximately 10 times as much traffic exits at the eastbound Parkway ramp, where there is a traffic signal, as well as by the fact that almost 7 times as many vehicles get on at the westbound ramp than get off. The latent demand to exit via the westbound ramp, along with the potential demand to enter and exit the subject development via the ramp, were conservatively considered in the projection of future traffic volumes, assuming that the benefits of a traffic signal were available at the intersection.

The signal warrant analysis was conducted based on the traffic signal warrant criteria provided in Section 4C of the Manual of Uniform Traffic Control Devices (MUTCD), 2009. The results of the analysis, which are summarized in Table 7 below, clearly demonstrate that the traffic signal volume warrants will be satisfied (even the 4-hour warrant will be satisfied for 13 hours). The warrant analysis is provided in the Appendix.

| Table 7 - Signal Warrant Analysis Summary |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Warrant No. 1 |  |  | Warrant No. 2 |
|  | Condition A | Condition B | Four-Hour | Peak Hour No. 3 |
|  | Hours Met | Hours Met | Hours Met | Hours Met |
| Weekday | 0 | 13 | 13 | 3 |
|  | 0 | 4 | 1 |  |

It is noted that the most recent approval for the Gasland projects contained requirements that conditions at this intersection be monitored and, should it be determined that a traffic signal is warranted, the owner of that developments would be required to make a fair-share contribution to the cost of installation.

## Excerpt from Gasland Resolution of Approval.

7. Applicant shall submit for review to the Town and its Traffic Consultant a post construction monitoring program to commence no later than 6 months after the certificate of occupancy is issued. Applicant shall study the AM, PM and Saturday mid-day peak hours (during School year) and compare as-built conditions to LOS Analysis at minimum. Applicant shall analyze and install an additional traffic signal with adaptive controls at the westbound BMP ramp and its intersection with US Route 6 / Cortlandt Boulevard if warranted or directed by the NYSDOT.

### 9.0 ALTERNATIVE BUILD ANALYSIS

The decision to permit the installation of a traffic signal rests with the NYSDOT. As previously discussed, at present, traffic volumes exiting the westbound Parkway at US Route 6 do not currently rise to the level that would warrant the installation of a traffic signal. This is primarily because delays exiting at this location are so extensive that motorists take either Locust Avenue or Conklin Avenue instead. As indicated in the previous section, while the data indicates that the level of traffic activity on the ramp would meet signal warrants if a traffic signal were installed, the NYSDOT could ultimately decide that a traffic signal may not be installed at this intersection.

Regardless, the applicant has vested rights to develop the subject property and an additional analysis was conducted to evaluate the Project's potential traffic impacts should the application be approved without the installation of the signal. As indicated in Table 5 of this report, even without the construction of the new facility, the analyses indicate that it will take in excess of 5 minutes to turn left out of the site or to cross to or from the opposing BMP exit. As a result, it is expected that almost none of the trips that are required to make these maneuvers (either entering or exiting) will ever materialize as the motorists will simply go to another gas station.

Based on the revised trip projections, which are conservative in that the number of vehicles remaining on these movements will remain, on average, more than twice the volumes on these movements today, it is calculated that the number of customers visiting the store will be halved. The projected traffic volumes for this analysis are shown on Figure 10 and the Build traffic volumes for this scenario were calculated by subtracting the existing traffic currently generated by the property from the No-Build volumes (shown in Figure 6) and adding the new Project trips and the Project pass-by trips (shown in Figure 10). The resulting Build Unsignalized traffic volumes are shown in Figure 11.

Intersection capacity analyses were conducted with Build Unsignalized peak-hour traffic volumes (shown on Figure 11) to assess the quality of the traffic flow at the study intersections using the criteria outlined in the Transportation Research Board's Highway Capacity Manual ("HCM") 6 ${ }^{\text {th }}$ Edition. The results of this analysis are presented in Table 8.



| Intersection | Mvmt/ Approach | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { Delay } \\ & \text { (secs) } \end{aligned}$ | LOS | Delay (secs) | LOS | Delay (secs) | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Unsignalized) | EB LTR | 9.7 | A | 10.8 | B | 12.8 | B |
|  | WB L | 13.4 | B | 33.0 | D | 48.5 | E |
|  | WB TR | 0.5 | A | 0.0 | A | 0.0 | A |
|  | NB L | 300.0 | F | 300.0 | F | 300.0 | F |
|  | NB TR | 46.6 | E | 300.0 | F | 19.2 | F |
|  | SB LTR | 157.1 | F | 300.0 | F | 300.0 | F |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 13.0 | B | 15.9 | B | 17.4 | B |
|  | EB TR | 18.7 | B | 26.4 | C | 25.6 | C |
|  | EB | 18.4 | B | 26.0 | C | 25.2 | C |
|  | WB L | 12.9 | B | 17.2 | B | 14.3 | B |
|  | WB TR | 21.2 | C | 25.9 | C | 30.1 | C |
|  | WB | 20.8 | C | 25.5 | C | 29.6 | C |
|  | NB LT | 43.7 | D | 52.4 | D | 75.8 | E |
|  | NB R | 1.1 | A | 1.5 | A | 3.2 | A |
|  | NB | 26.6 | C | 31.2 | C | 45.3 | D |
|  | SB L | 58.0 | E | 48.6 | D | 65.5 | E |
|  | SB T | 56.7 | E | 47.7 | D | 65.4 | E |
|  | SB R | 5.7 | A | 5.2 | A | 10.3 | B |
|  | SB | 43.2 | D | 40.6 | D | 53.1 | D |
|  | INT | 25.6 | C | 29.0 | C | 33.3 | C |

Note: LOS = Level of Service. Delay is shown in seconds.
Delays of 300 seconds or more at unsignalized intersections are simply noted as 300 seconds

As can be seen from the Table, "F" levels of service will continue to prevail on the driveway and BMP ramp approaches to US Route 6 at the subject site while overall LOS "C" conditions will be provided at the intersection

### 10.0 PROJECT TRAFFIC IMPACT

The impact of the proposed redevelopment of the property is presented in Tables 9 and 10 below, which compare No-Build with Build conditions both with and without the installation of a new traffic signal at the site driveway, respectively.

| Table 9 - No-Build \& Build (Signalized) Comparison |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intersection | Appr | No-Build Conditions |  |  |  |  |  | Build Conditions (Signalized) |  |  |  |  |  |
|  |  | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  |
|  |  | $\begin{aligned} & \hline \text { Delay } \\ & \text { (secs) } \\ & \hline \end{aligned}$ | LOS | Delay (secs) | LOS | $\begin{aligned} & \hline \text { Delay } \\ & \text { (secs) } \\ & \hline \end{aligned}$ | LOS | $\begin{aligned} & \hline \text { Delay } \\ & \text { (secs) } \\ & \hline \end{aligned}$ | LOS | $\begin{gathered} \hline \text { Delay } \\ \text { (secs) } \\ \hline \end{gathered}$ | LOS | $\begin{aligned} & \hline \text { Delay } \\ & \text { (secs) } \\ & \hline \end{aligned}$ | LOS |
| E. Main St <br> (US Route 6) <br> \& Bear Mtn <br> Pkwy WB On/Off Ramps \& Site Access (Unsignalized No-Build/ Signalized Build) | EB LTR | 9.6 | A | 10.6 | B | 12.2 | B | 7.8 | A | 32.8 | C | 76.6 | E |
|  | WB L | 13.4 | B | 33.3 | D | 49.3 | E | 11.0 | B | 52.0 | D | 79.3 | E |
|  | WB TR | 0.0 | A | 0.0 | A | 0.0 | A | 4.0 | A | 3.6 | A | 4.4 | A |
|  | WB | N/A | N/A | N/A | N/A | N/A | N/A | 5.5 | A | 14.7 | B | 19.0 | B |
|  | NB L | 160.6 | F | 300.0 | F | 300.0 | F | 48.0 | D | 47.4 | D | 79.6 | E |
|  | NB TR | 18.0 | C | 16.8 | C | 18.7 | C | 15.5 | B | 19.2 | B | 19.5 | B |
|  | NB | N/A | N/A | N/A | N/A | N/A | N/A | 29.1 | C | 29.4 | C | 40.0 | D |
|  | SB L | N/A | N/A | N/A | N/A | N/A | N/A | 38.9 | D | 44.0 | D | 75.4 | E |
|  | SB TR | N/A | N/A | N/A | N/A | N/A | N/A | 16.6 | B | 19.9 | B | 21.7 | C |
|  | SB LTR | 52.2 | F | 300.0 | F | 300.0 | F | N/A | N/A | N/A | N/A | N/A | N/A |
|  | SB | N/A | N/A | N/A | N/A | N/A | N/A | 23.2 | C | 27.1 | C | 37.7 | D |
|  | INT | N/A | N/A | N/A | N/A | N/A | N/A | 9.4 | A | 24.8 | C | 47.5 | D |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 12.9 | B | 15.6 | B | 16.6 | B | 13.4 | B | 16.6 | B | 14.8 | B |
|  | EB T | 18.3 | B | 25.9 | C | 25 | C | 18.9 | B | 27.2 | C | 24.8 | C |
|  | EB | 18.1 | B | 25.5 | C | 24.7 | C | 18.6 | B | 26.8 | C | 24.3 | C |
|  | WB L | 12.7 | B | 16.8 | B | 13.2 | B | 11.6 | B | 15.5 | B | 10.0 | A |
|  | WB TR | 20.8 | C | 25.5 | C | 29.7 | C | 22.0 | C | 26.2 | C | 28.4 | C |
|  | WB | 20.3 | C | 25 | C | 29.1 | C | 21.5 | C | 25.7 | C | 28.7 | C |
|  | NB LT | 43.7 | D | 52.4 | D | 79.1 | E | 43.7 | D | 52.4 | D | 66.6 | E |
|  | NB R | 1.1 | A | 1.5 | A | 3.2 | A | 1.1 | A | 1.5 | A | 2.3 | A |
|  | NB | 26.6 | C | 31.2 | C | 47.2 | D | 26.6 | C | 31.2 | C | 39.6 | D |
|  | SB L | 57.6 | E | 48.5 | D | 60.3 | E | 59.4 | E | 48.7 | D | 64.3 | E |
|  | SB LT | 56.8 | E | 47.6 | D | 60.4 | E | 57.7 | E | 47.5 | D | 64.0 | E |
|  | SB R | 5.7 | A | 5.2 | A | 18.2 | B | 5.7 | A | 5.1 | A | 10.8 | B |
|  | SB | 42.9 | D | 40.5 | D | 50.8 | D | 44.5 | D | 40.8 | D | 52.6 | D |
|  | INT | 25.3 | C | 28.7 | C | 32.6 | C | 26.2 | C | 29.5 | C | 32.4 | C |


| Table 10 - No-Build \& Build (Unsignalized) Comparison |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intersection | Appr | No-Build Conditions |  |  |  |  |  | Build Conditions (Unsignalized) |  |  |  |  |  |
|  |  | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  | AM Peak Hour |  | PM Peak Hour |  | SAT Peak Hour |  |
|  |  | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Unsignalized) | EB LTR | 9.6 | A | 10.6 | B | 12.2 | B | 9.7 | A | 10.8 | B | 12.8 | B |
|  | WB L | 13.4 | B | 33.3 | D | 49.3 | E | 13.4 | B | 33.0 | D | 48.5 | E |
|  | WB TR | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | A |
|  | WB | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
|  | NB L | 160.6 | F | 300.0 | F | 300.0 | F | 300.0 | F | 300.0 | F | 300.0 | F |
|  | NB TR | 18.0 | C | 16.8 | C | 18.7 | C | 46.6 | E | 300.0 | F | 19.2 | C |
|  | NB | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
|  | SB L | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
|  | SB TR | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
|  | SB LTR | 52.2 | F | 300.0 | F | 300.0 | F | 157.1 | F | 300.0 | F | 300.0 | F |
|  | SB | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
|  | INT | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 12.9 | B | 15.6 | B | 16.6 | B | 13.0 | B | 15.9 | B | 17.4 | B |
|  | EB T | 18.3 | B | 25.9 | C | 25 | C | 18.7 | B | 26.4 | C | 25.6 | C |
|  | EB | 18.1 | B | 25.5 | C | 24.7 | C | 18.4 | B | 26.0 | C | 25.2 | C |
|  | WB L | 12.7 | B | 16.8 | B | 13.2 | B | 12.9 | B | 17.2 | B | 14.3 | B |
|  | WB TR | 20.8 | C | 25.5 | C | 29.7 | C | 21.2 | C | 25.9 | C | 30.1 | C |
|  | WB | 20.3 | C | 25 | C | 29.1 | C | 20.8 | C | 25.5 | C | 29.6 | C |
|  | NB LT | 43.7 | D | 52.4 | D | 79.1 | E | 43.7 | D | 52.4 | D | 75.8 | E |
|  | NB R | 1.1 | A | 1.5 | A | 3.2 | A | 1.1 | A | 1.5 | A | 3.2 | A |
|  | NB | 26.6 | C | 31.2 | C | 47.2 | D | 26.6 | C | 31.2 | C | 45.3 | D |
|  | SB L | 57.6 | E | 48.5 | D | 60.3 | E | 58.0 | E | 48.6 | D | 65.5 | E |
|  | SB LT | 56.8 | E | 47.6 | D | 60.4 | E | 56.7 | E | 47.7 | D | 65.4 | E |
|  | SB R | 5.7 | A | 5.2 | A | 18.2 | B | 5.7 | A | 5.2 | A | 10.3 | B |
|  | SB | 42.9 | D | 40.5 | D | 50.8 | D | 43.2 | D | 40.6 | D | 53.1 | D |
|  | INT | 25.3 | C | 28.7 | C | 32.6 | C | 25.6 | C | 29.0 | C | 33.3 | C |

As can be seen from Table 9, with the installation of a traffic signal at the intersection of the BMP westbound ramp and Site driveway with US Route 6, delays in excess of several minutes to access US Route 6 from either the site driveway or the Bear Mountain Parkway ramp will be reduced to just over one minute. The overall intersection will operate at acceptable LOS " D " or better during each peak hour. The US Route 6 approaches will operate at LOS "C" or better, except during the Saturday midday peak-hour.

At the intersection of the eastbound BMP ramp with US Route 6 , the overall intersection will continue to operate at LOS "C during each peak hour with Project-generated traffic and there will be no deterioration in LOS on individual movements. Overall intersection delay will increase by 0.9 seconds or less while delays on individual movements will increase by 4.0 seconds or less.

As can be seen from Table 10, without the installation of a traffic signal at the intersection of the BMP westbound ramp and Site driveway with US Route 6, delays in excess of several minutes will continue to be experienced by motorists to access US Route 6 from either the site driveway or the Bear Mountain Parkway ramp.

At the intersection of the eastbound BMP ramp with US Route 6 for the no-signal-installation scenario, the overall intersection will continue to operate at LOS "C" during each peak hour with Project-generated traffic and there will be no change in LOS on individual movements. Overall intersection delay will increase by 0.7 seconds or less while delays on individual movements will increase by 5.2 seconds or less.

As can be seen from above, the proposed redevelopment of the property will not have a significant impact under either scenario at the intersection of US Route 6 with the eastbound BMP ramp. At the westbound ramp, the installation of a traffic signal will mitigate the impact of the additional traffic generated by the Project and, if a signal is not permitted to be installed, the level of traffic visiting the new facility will be reduced so significantly that it will not materially alter operating conditions at that intersection.

### 11.0 POST CONSTRUCTION MONITORING PLAN

Per the Scope for the Project, a post-construction monitoring plan has been developed to ensure that the traffic projections and Synchro analysis contained in the Study are representative of future conditions with the Project. Once the Project is completed and has been in operation for one-year, the following tasks will be conducted:

- Accident Review - Accident records for the study intersections for the Project's first year of operation will be obtained from the NYSDOT. The records will be reviewed for any unusual patterns or frequency of crashes by location and compared to the previously documented accident history for the study intersections.
- Traffic Counts and Trip Generations - Traffic counts will be conducted on a typical weekday and Saturday at the US Route 6 intersection with the Site driveway and the BMP Westbound Ramp. The counts will be tabulated, and the weekday AM peak hour, weekday PM peak hour and Saturday Midday peak hour volumes identified. The counted volumes will be compared to the Build volume projections contained in this Study. Likewise, the counted entering and exiting trips at the Site driveway will be compared to the Project's trip generations contained in this Study.
- Intersection Operations - Surveys will be taken at the Site driveway intersection with US Route 6 to identify prevailing delays. The surveyed delays will be compared to the delays projected in the Build Synchro analysis in this Study.

Based on the results of the above comparisons, a determination will be made as to the need for additional measures to improve capacity and safety.

### 12.0 CONCLUSIONS

Based on the analysis provided herein, it is concluded that, with the proposed signal installation, the increase in traffic volumes associated with the proposed gas station redevelopment will not have a significant adverse impact on traffic operations at the study intersections. The signal warrant analysis has determined that, with the installation of a traffic signal at the site driveway, traffic volumes will satisfy signal warrant criteria.

## Kimley»>Horn

## Appendix

> Synchro Capacity Analyses
> Queuing Summary Tables
$>$ Accident Data
Signal Warrant Analysis
Gasland Comparison Analysis Tables

| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 2.3 |  |  |  |  |  |  |  |  |  |  |  |
| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ |  | ${ }^{7}$ | $\uparrow$ |  |  | ثF |  | ${ }^{7}$ | 中 $\uparrow$ |  |
| Traffic Vol, veh/h | 3 | 2 | 11 | 13 | 2 | 25 | 2 | 780 | 41 | 191 | 641 | 15 |
| Future Vol, veh/h | 3 | 2 | 11 | 13 | 2 | 25 | 2 | 780 | 41 | 191 | 641 | 15 |
| Conflicting Peds, \#/hr | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 65 | - | - | - | - | - | 0 | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | -1 | - | - | -4 | - | - | 1 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 6 | 5 | 2 | 4 | 2 |
| Mvmt Flow | 3 | 2 | 12 | 14 | 2 | 27 | 2 | 830 | 44 | 203 | 682 | 16 |



| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations |  | $\uparrow$ |  | \% | F |  | \% | 性 |  |  | * $\uparrow$ |  |
| Traffic Volume (vph) | 1 | 0 | 1 | 304 | 2 | 86 | 28 | 522 | 1 | 1 | 523 | 147 |
| Future Volume (vph) | 1 | 0 | 1 | 304 | 2 | 86 | 28 | 522 | 1 | 1 | 523 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade (\%) |  | 0\% |  |  | -6\% |  |  | 1\% |  |  | 0\% |  |
| Storage Length (ft) | 0 |  | 0 | 135 |  | 0 | 45 |  | 0 | 0 |  | 0 |
| Storage Lanes | 0 |  | 0 | 1 |  | 0 | 1 |  | 0 | 0 |  | 0 |
| Taper Length (ft) | 25 |  |  | 86 |  |  | 86 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Frt |  | 0.932 |  |  | 0.853 |  |  |  |  |  | 0.967 |  |
| Flt Protected |  | 0.976 |  | 0.950 |  |  | 0.950 |  |  |  |  |  |
| Satd. Flow (prot) | 0 | 1694 | 0 | 1745 | 1582 | 0 | 1669 | 3276 | 0 | 0 | 3238 | 0 |
| Flt Permitted |  |  |  | 0.950 |  |  | 0.950 |  |  |  | 0.954 |  |
| Satd. Flow (perm) | 0 | 1736 | 0 | 1745 | 1582 | 0 | 1669 | 3276 | 0 | 0 | 3089 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 157 |  |  | 96 |  |  |  |  |  | 37 |  |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance (ft) |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time (s) |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (\%) | 2\% | 2\% | 2\% | 3\% | 2\% | 2\% | 4\% | 6\% | 2\% | 2\% | 4\% | 5\% |
| Adj. Flow (vph) | 1 | 0 | 1 | 338 | 2 | 96 | 31 | 580 | 1 | 1 | 581 | 163 |

Shared Lane Traffic (\%)

| Lane Group Flow (vph) | 0 | 2 | 0 | 338 | 98 | 0 | 31 | 581 | 0 | 0 | 745 | 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(t) |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(ft) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru |  | Left | Thru |  | Left | Thru |  | Left | Thru |  |
| Leading Detector (ft) | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector (ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position(ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size(ft) | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  |

Detector 1 Channel

| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) |  | 94 |  | 94 |  | 94 |  | 94 |
| Detector 2 Size(ft) |  | 6 |  | 6 |  | 6 |  | 6 |
| Detector 2 Type |  | $\mathrm{Cl}+\mathrm{Ex}$ |  | Cl+Ex |  | Cl+Ex |  | Cl+Ex |
| Detector 2 Channel |  |  |  |  |  |  |  |  |


| Detector 2 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| :--- | :--- | :--- | :--- | :--- |

2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


1: US Rt 6 (E. Main St) \& BMP WB Ramp/Site Drwy

| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 3.9 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |  |
| Lane Configurations |  | ¢ |  | \% | $\uparrow$ |  |  | * $\uparrow$ |  | ${ }^{7}$ | 中 |  |  |
| Traffic Vol, veh/h | 3 | 2 | 11 | 24 | 2 | 35 | 2 | 908 | 93 | 210 | 769 | 16 |  |
| Future Vol, veh/h | 3 | 2 | 11 | 24 | 2 | 35 | 2 | 908 | 93 | 210 | 769 | 16 |  |
| Conflicting Peds, \#/hr |  | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |  |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |  |
| RT Channelized |  | - | None | - | - | None | - | - | None | - |  | None |  |
| Storage Length |  | - | - | 65 | - | - | - | - |  | 0 | - | - |  |
| Veh in Median Storage, \# |  | 0 | - | . | 0 | - | - | 0 | - | - | 0 | - |  |
| Grade, \% |  | -1 | - | - | -4 | - | - | 1 | - | - | 0 | - |  |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |  |
| Heavy Vehicles, \% |  | 2 | 2 | 2 | 2 | 4 | 2 | 6 | 5 | 2 | 4 | 2 |  |
| Mvmt Flow |  | 2 | 12 | 26 | 2 | 37 | 2 | 966 | 99 | 223 | 818 | 17 |  |



|  | $\cdots$ | $\dagger$ | 「 | $\cdots$ | $\downarrow$ | $\downarrow$ | 4 | $\nearrow$ | $\downarrow$ | $\frac{1}{7}$ | 4 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{7}$ | $\uparrow$ | $\stackrel{7}{ }$ | \％ | 个4 |  | \％ | 个 ${ }_{\text {a }}$ |  |
| Trafic Volume（vph） | 51 | 25 | 51 | 326 | 33 | 138 | 35 | 631 | 0 | 45 | 601 | 165 |
| Future Volume（vph） | 51 | 25 | 51 | 326 | 33 | 138 | 35 | 631 | 0 | 45 | 601 | 165 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 14 | 14 | 14 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（tt） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.968 |  |
| Flt Protected |  | 0.968 |  | 0.950 | 0.961 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1923 | 1689 | 1658 | 1680 | 1631 | 1669 | 3276 | 0 | 1652 | 3241 | 0 |
| Flt Permitted |  | 0.968 |  | 0.950 | 0.961 |  | 0.235 |  |  | 0.338 |  |  |
| Satd．Flow（perm） | 0 | 1923 | 1689 | 1658 | 1680 | 1631 | 413 | 3276 | 0 | 588 | 3241 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 182 |  |  | 153 |  |  |  |  | 38 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles（\％） | 2\％ | 2\％ | 2\％ | 3\％ | 2\％ | 2\％ | 4\％ | 6\％ | 2\％ | 2\％ | 4\％ | 5\％ |
| Adj．Flow（vph） | 57 | 28 | 57 | 362 | 37 | 153 | 39 | 701 | 0 | 50 | 668 | 183 |
| Shared Lane Traffic（\％） |  |  |  | 45\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 85 | 57 | 199 | 200 | 153 | 39 | 701 | 0 | 50 | 851 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（ft） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（ft） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 0.92 | 0.92 | 0.92 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（ft） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  | Cl＋Ex | Cl＋Ex |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size（ft） |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | Cl＋Ex |  |  | Cl＋Ex |  |  | Cl＋Ex |  |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend（s） |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |

2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp

|  | 4 |  |  | 4 |  | $\downarrow$ | $\stackrel{4}{ }$ | $\ngtr$ | $\downarrow$ | ! | $\chi$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Turn Type | Split | NA | Perm | Split | NA | custom | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  | 6 | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  |
| Minimum Split (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 |  |
| Total Split (s) | 28.0 | 28.0 | 28.0 | 22.0 | 22.0 |  | 10.0 | 30.0 |  | 10.0 | 30.0 |  |
| Total Split (\%) | 31.1\% | 31.1\% | 31.1\% | 24.4\% | 24.4\% |  | 11.1\% | 33.3\% |  | 11.1\% | 33.3\% |  |
| Maximum Green (s) | 22.0 | 22.0 | 22.0 | 16.0 | 16.0 |  | 4.0 | 24.0 |  | 4.0 | 24.0 |  |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 6.0 | 6.0 | 6.0 | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 3.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Min |  | None | C-Min |  |
| Walk Time (s) |  |  |  | 7.0 | 7.0 |  |  | 7.0 |  |  | 8.0 |  |
| Flash Dont Walk (s) |  |  |  | 16.0 | 16.0 |  |  | 14.0 |  |  | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  | 0 | 0 |  |  | 0 |  |  | 1 |  |
| Act Efft Green (s) |  | 9.3 | 9.3 | 13.9 | 13.9 | 23.9 | 47.6 | 45.2 |  | 45.2 | 41.2 |  |
| Actuated g/C Ratio |  | 0.10 | 0.10 | 0.15 | 0.15 | 0.27 | 0.53 | 0.50 |  | 0.50 | 0.46 |  |
| $\mathrm{v} / \mathrm{C}$ Ratio |  | 0.43 | 0.17 | 0.78 | 0.78 | 0.28 | 0.14 | 0.43 |  | 0.15 | 0.57 |  |
| Control Delay |  | 43.7 | 1.1 | 57.6 | 56.8 | 5.7 | 12.9 | 18.3 |  | 12.7 | 20.8 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay |  | 43.7 | 1.1 | 57.6 | 56.8 | 5.7 | 12.9 | 18.3 |  | 12.7 | 20.8 |  |
| LOS |  | D | A | E | E | A | B | B |  | B | C |  |
| Approach Delay |  | 26.6 |  |  | 42.9 |  |  | 18.1 |  |  | 20.3 |  |
| Approach LOS |  | C |  |  | D |  |  | B |  |  | C |  |
| Queue Length 50th (ft) |  | 46 | 0 | 113 | 113 | 0 | 10 | 152 |  | 13 | 186 |  |
| Queue Length 95th (ft) |  | 88 | 0 | \#206 | \#204 | 43 | 28 | 222 |  | 34 | 272 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 470 | 550 | 294 | 298 | 518 | 274 | 1645 |  | 342 | 1504 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.18 | 0.10 | 0.68 | 0.67 | 0.30 | 0.14 | 0.43 |  | 0.15 | 0.57 |  |

## Intersection Summary

## Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 ( $0 \%$ ), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

## Maximum v/c Ratio: 0.78

Intersection Signal Delay: 25.3
Intersection LOS: C

2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp
Intersection Capacity Utilization 56.8\%
ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


|  | $\cdots$ | + | $\lambda$ | m | k | 5 | $\cdots$ | 7 | ra | 4 | $\lambda$ | $\cdots$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations | ${ }^{7}$ | $\uparrow$ |  | ${ }^{1 /}$ | $\uparrow$ |  |  | * ${ }^{1}$ |  | ${ }^{7}$ | 中 ${ }^{\text {a }}$ |  |
| Traffic Volume (vph) | 37 | 21 | 66 | 81 | 24 | 88 | 63 | 893 | 93 | 210 | 733 | 39 |
| Future Volume (vph) | 37 | 21 | 66 | 81 | 24 | 88 | 63 | 893 | 93 | 210 | 733 | 39 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 12 | 11 | 12 | 12 | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (\%) |  | -1\% |  |  | -4\% |  |  | 1\% |  |  | 0\% |  |
| Storage Length (ft) | 0 |  | 0 | 65 |  | 0 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 0 | 1 |  | 0 | 0 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 25 |  |  | 25 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | 0.99 |  |  |  |  |  | 1.00 |  |  | 1.00 |  |
| Frt |  | 0.886 |  |  | 0.882 |  |  | 0.987 |  |  | 0.993 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  |  | 0.997 |  | 0.950 |  |  |
| Satd. Flow (prot) | 1660 | 1532 | 0 | 1745 | 1650 | 0 | 0 | 3345 | 0 | 1711 | 3446 | 0 |
| Flt Permitted | 0.642 |  |  | 0.697 |  |  |  | 0.839 |  | 0.189 |  |  |
| Satd. Flow (perm) | 1120 | 1532 | 0 | 1280 | 1650 | 0 | 0 | 2815 | 0 | 340 | 3446 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 70 |  |  | 94 |  |  | 17 |  |  | 13 |  |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance (ft) |  | 190 |  |  | 295 |  |  | 434 |  |  | 510 |  |
| Travel Time (s) |  | 4.3 |  |  | 6.7 |  |  | 7.4 |  |  | 8.7 |  |
| Confl. Peds. (\#/hr) | 1 |  | 1 |  |  |  | 1 |  |  |  |  | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (\%) | 2\% | 2\% | 2\% | 2\% | 2\% | 4\% | 2\% | 6\% | 5\% | 2\% | 4\% | 2\% |
| Adj. Flow (vph) | 39 | 22 | 70 | 86 | 26 | 94 | 67 | 950 | 99 | 223 | 780 | 41 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 39 | 92 | 0 | 86 | 120 | 0 | 0 | 1116 | 0 | 223 | 821 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(ft) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.09 | 1.09 | 0.99 | 1.02 | 0.97 | 0.97 | 1.01 | 1.01 | 1.01 | 1.04 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru |  | Left | Thru |  | Left | Thru |  | Left | Thru |  |
| Leading Detector (ft) | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector (ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position(ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size(ft) | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position(ft) |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size(ft) |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | Cl+Ex |  |


| Lane Group | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Perm | NA |  | Perm | NA |  | Perm | NA |  | pm+pt | NA |  |
| Protected Phases |  | 6 |  |  | 2 |  |  | 4 |  | 3 | 8 |  |
| Permitted Phases | 6 |  |  | 2 |  |  | 4 |  |  | 8 |  |  |
| Detector Phase | 6 | 6 |  | 2 | 2 |  | 4 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 23.0 | 23.0 |  | 23.0 | 23.0 |  | 23.0 | 23.0 |  | 10.0 | 23.0 |  |
| Total Split (s) | 25.0 | 25.0 |  | 25.0 | 25.0 |  | 53.0 | 53.0 |  | 12.0 | 65.0 |  |
| Total Split (\%) | 27.8\% | 27.8\% |  | 27.8\% | 27.8\% |  | 58.9\% | 58.9\% |  | 13.3\% | 72.2\% |  |
| Maximum Green (s) | 20.0 | 20.0 |  | 20.0 | 20.0 |  | 48.0 | 48.0 |  | 7.0 | 60.0 |  |
| Yellow Time (s) | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  |
| All-Red Time (s) | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  |  | 5.0 |  | 5.0 | 5.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lag | Lag |  | Lead |  |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes |  |  |
| Vehicle Extension (s) | 3.0 | 3.0 |  | 3.0 | 3.0 |  | 3.0 | 3.0 |  | 3.0 | 3.0 |  |
| Recall Mode | None | None |  | None | None |  | C-Min | C-Min |  | Min | C-Min |  |
| Walk Time (s) | 7.0 | 7.0 |  | 7.0 | 7.0 |  | 7.0 | 7.0 |  |  | 7.0 |  |
| Flash Dont Walk (s) | 11.0 | 11.0 |  | 11.0 | 11.0 |  | 11.0 | 11.0 |  |  | 11.0 |  |
| Pedestrian Calls (\#/hr) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| Act Effct Green (s) | 11.3 | 11.3 |  | 11.3 | 11.3 |  |  | 56.7 |  | 68.7 | 68.7 |  |
| Actuated g/C Ratio | 0.13 | 0.13 |  | 0.13 | 0.13 |  |  | 0.63 |  | 0.76 | 0.76 |  |
| v/c Ratio | 0.28 | 0.36 |  | 0.53 | 0.41 |  |  | 0.63 |  | 0.61 | 0.31 |  |
| Control Delay | 38.9 | 16.6 |  | 48.0 | 15.5 |  |  | 7.7 |  | 11.0 | 4.0 |  |
| Queue Delay | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.1 |  | 0.0 | 0.0 |  |
| Total Delay | 38.9 | 16.6 |  | 48.0 | 15.5 |  |  | 7.8 |  | 11.0 | 4.0 |  |
| LOS | D | B |  | D | B |  |  | A |  | B | A |  |
| Approach Delay |  | 23.2 |  |  | 29.1 |  |  | 7.8 |  |  | 5.5 |  |
| Approach LOS |  | C |  |  | C |  |  | A |  |  | A |  |
| Queue Length 50th (ft) | 20 | 11 |  | 47 | 13 |  |  | 141 |  | 27 | 59 |  |
| Queue Length 95th (ft) | 48 | 52 |  | 88 | 59 |  |  | 151 |  | 61 | 104 |  |
| Internal Link Dist (ft) |  | 110 |  |  | 215 |  |  | 354 |  |  | 430 |  |
| Turn Bay Length (ft) |  |  |  | 65 |  |  |  |  |  |  |  |  |
| Base Capacity (vph) | 248 | 394 |  | 284 | 439 |  |  | 1778 |  | 366 | 2632 |  |
| Starvation Cap Reductn | 0 | 0 |  | 0 | 0 |  |  | 77 |  | 0 | 0 |  |
| Spillback Cap Reductn | 0 | 0 |  | 0 | 0 |  |  | 0 |  | 0 | 0 |  |
| Storage Cap Reductn | 0 | 0 |  | 0 | 0 |  |  | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio | 0.16 | 0.23 |  | 0.30 | 0.27 |  |  | 0.66 |  | 0.61 | 0.31 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 0 (0\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 70 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |

Maximum v/c Ratio: 0.63
Intersection Signal Delay: 9.4 Intersection LOS: A
Intersection Capacity Utilization 74.6\% ICU Level of Service D

Analysis Period (min) 15
Splits and Phases: 1: US Rt 6 (E. Main St) \& BMP WB Ramp/Site Drwy


|  | $\cdots$ |  | 1 |  |  | $\pm$ | 4 | $>$ | \％ | 1 | 1 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }_{1}$ | $\uparrow$ | 「 | ${ }^{7}$ | 44 |  | ${ }^{1}$ | 中 ${ }^{\text {W }}$ |  |
| Traffic Volume（vph） | 51 | 25 | 51 | 347 | 33 | 138 | 35 | 657 | 0 | 45 | 660 | 182 |
| Future Volume（vph） | 51 | 25 | 51 | 347 | 33 | 138 | 35 | 657 | 0 | 45 | 660 | 182 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 14 | 14 | 14 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.968 |  |
| Flt Protected |  | 0.968 |  | 0.950 | 0.960 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1923 | 1689 | 1658 | 1678 | 1631 | 1669 | 3276 | 0 | 1652 | 3241 | 0 |
| Flt Permitted |  | 0.968 |  | 0.950 | 0.960 |  | 0.198 |  |  | 0.321 |  |  |
| Satd．Flow（perm） | 0 | 1923 | 1689 | 1658 | 1678 | 1631 | 348 | 3276 | 0 | 558 | 3241 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 182 |  |  | 153 |  |  |  |  | 38 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles（\％） | 2\％ | 2\％ | 2\％ | 3\％ | 2\％ | 2\％ | 4\％ | 6\％ | 2\％ | 2\％ | 4\％ | 5\％ |
| Adj．Flow（vph） | 57 | 28 | 57 | 386 | 37 | 153 | 39 | 730 | 0 | 50 | 733 | 202 |
| Shared Lane Traffic（\％） |  |  |  | 45\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 85 | 57 | 212 | 211 | 153 | 39 | 730 | 0 | 50 | 935 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（ft） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（ft） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 0.92 | 0.92 | 0.92 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（ft） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size（ft） |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend（s） |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |


| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Turn Type | Split | NA | Perm | Split | NA | custom | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  | 6 | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  |
| Minimum Split (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 |  |
| Total Split (s) | 28.0 | 28.0 | 28.0 | 22.0 | 22.0 |  | 10.0 | 30.0 |  | 10.0 | 30.0 |  |
| Total Split (\%) | 31.1\% | 31.1\% | 31.1\% | 24.4\% | 24.4\% |  | 11.1\% | 33.3\% |  | 11.1\% | 33.3\% |  |
| Maximum Green (s) | 22.0 | 22.0 | 22.0 | 16.0 | 16.0 |  | 4.0 | 24.0 |  | 4.0 | 24.0 |  |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 6.0 | 6.0 | 6.0 | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 3.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Min |  | None | C-Min |  |
| Walk Time (s) |  |  |  | 7.0 | 7.0 |  |  | 7.0 |  |  | 8.0 |  |
| Flash Dont Walk (s) |  |  |  | 16.0 | 16.0 |  |  | 14.0 |  |  | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  | 0 | 0 |  |  | 0 |  |  | 1 |  |
| Act Effct Green (s) |  | 9.3 | 9.3 | 14.3 | 14.3 | 24.3 | 47.1 | 44.7 |  | 44.7 | 40.7 |  |
| Actuated g/C Ratio |  | 0.10 | 0.10 | 0.16 | 0.16 | 0.27 | 0.52 | 0.50 |  | 0.50 | 0.45 |  |
| v/c Ratio |  | 0.43 | 0.17 | 0.80 | 0.79 | 0.28 | 0.16 | 0.45 |  | 0.15 | 0.63 |  |
| Control Delay |  | 43.7 | 1.1 | 59.4 | 57.7 | 5.7 | 13.4 | 18.8 |  | 11.6 | 22.0 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay |  | 43.7 | 1.1 | 59.4 | 57.7 | 5.7 | 13.4 | 18.9 |  | 11.6 | 22.0 |  |
| LOS |  | D | A | E | E | A | B | B |  | B | C |  |
| Approach Delay |  | 26.6 |  |  | 44.5 |  |  | 18.6 |  |  | 21.5 |  |
| Approach LOS |  | C |  |  | D |  |  | B |  |  | C |  |
| Queue Length 50th (ft) |  | 46 | 0 | 121 | 120 | 0 | 10 | 162 |  | 15 | 228 |  |
| Queue Length 95th (ft) |  | 88 | 0 | \#226 | \#222 | 43 | 28 | 234 |  | 26 | 318 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 470 | 550 | 294 | 298 | 540 | 240 | 1627 |  | 325 | 1487 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn |  | 0 | 4 | 0 | 0 | 0 | 0 | 77 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.18 | 0.10 | 0.72 | 0.71 | 0.28 | 0.16 | 0.47 |  | 0.15 | 0.63 |  |

## Intersection Summary

## Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 75 (83\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow

## Natural Cycle: 60

Control Type: Actuated-Coordinated

## Maximum v/c Ratio: 0.80

Intersection Signal Delay: 26.2
Intersection LOS: C

Intersection Capacity Utilization 59.5\%
ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 11.4 |  |  |  |  |  |  |  |  |  |  |  |
| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | * |  | ${ }^{7}$ | $\uparrow$ |  |  | $\uparrow \uparrow$ |  | ${ }^{7}$ | 中 ${ }^{\text {P }}$ |  |
| Traffic Vol, veh/h | 11 | 7 | 50 | 24 | 9 | 35 | 37 | 903 | 93 | 210 | 752 | 23 |
| Future Vol, veh/h | 11 | 7 | 50 | 24 | 9 | 35 | 37 | 903 | 93 | 210 | 752 | 23 |
| Conflicting Peds, \#/hr | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 65 | - | - | - | - | - | 0 | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | -1 | - | - | -4 | - | - | 1 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 6 | 5 | 2 | 4 | 2 |
| Mvmt Flow | 12 | 7 | 53 | 26 | 10 | 37 | 39 | 961 | 99 | 223 | 800 | 24 |



|  | H |  |  | $\cdots$ |  | $\pm$ | 4 | 7 | － | 1 | $\lambda$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{1}$ | $\uparrow$ | 「 | ${ }^{1}$ | 中4 |  | ${ }^{1}$ | 中t |  |
| Traffic Volume（vph） | 51 | 25 | 51 | 332 | 33 | 138 | 35 | 656 | 0 | 45 | 621 | 167 |
| Future Volume（vph） | 51 | 25 | 51 | 332 | 33 | 138 | 35 | 656 | 0 | 45 | 621 | 167 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 14 | 14 | 14 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.968 |  |
| Flt Protected |  | 0.968 |  | 0.950 | 0.961 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1923 | 1689 | 1658 | 1680 | 1631 | 1669 | 3276 | 0 | 1652 | 3241 | 0 |
| Flt Permitted |  | 0.968 |  | 0.950 | 0.961 |  | 0.224 |  |  | 0.323 |  |  |
| Satd．Flow（perm） | 0 | 1923 | 1689 | 1658 | 1680 | 1631 | 394 | 3276 | 0 | 562 | 3241 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 182 |  |  | 153 |  |  |  |  | 37 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles（\％） | 2\％ | 2\％ | 2\％ | 3\％ | 2\％ | 2\％ | 4\％ | 6\％ | 2\％ | 2\％ | 4\％ | 5\％ |
| Adj．Flow（vph） | 57 | 28 | 57 | 369 | 37 | 153 | 39 | 729 | 0 | 50 | 690 | 186 |
| Shared Lane Traffic（\％） |  |  |  | 45\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 85 | 57 | 203 | 203 | 153 | 39 | 729 | 0 | 50 | 876 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（ft） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（ft） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 0.92 | 0.92 | 0.92 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（ft） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl＋Ex | Cl＋Ex | $\mathrm{Cl}+\mathrm{Ex}$ | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex |  | Cl＋Ex | Cl＋Ex |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size（ft） |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | Cl＋Ex |  |  | Cl＋Ex |  |  | Cl＋Ex |  |  | Cl＋Ex |  |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend（s） |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |


| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Turn Type | Split | NA | Perm | Split | NA | custom | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  | 6 | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  |
| Minimum Split (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |  | 10.0 | 10.0 |  | 10.0 | 10.0 |  |
| Total Split (s) | 28.0 | 28.0 | 28.0 | 22.0 | 22.0 |  | 10.0 | 30.0 |  | 10.0 | 30.0 |  |
| Total Split (\%) | 31.1\% | 31.1\% | 31.1\% | 24.4\% | 24.4\% |  | 11.1\% | 33.3\% |  | 11.1\% | 33.3\% |  |
| Maximum Green (s) | 22.0 | 22.0 | 22.0 | 16.0 | 16.0 |  | 4.0 | 24.0 |  | 4.0 | 24.0 |  |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 6.0 | 6.0 | 6.0 | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 3.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Min |  | None | C-Min |  |
| Walk Time (s) |  |  |  | 7.0 | 7.0 |  |  | 7.0 |  |  | 8.0 |  |
| Flash Dont Walk (s) |  |  |  | 16.0 | 16.0 |  |  | 14.0 |  |  | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  | 0 | 0 |  |  | 0 |  |  | 1 |  |
| Act Effct Green (s) |  | 9.3 | 9.3 | 14.0 | 14.0 | 24.0 | 47.4 | 45.0 |  | 45.0 | 41.0 |  |
| Actuated g/C Ratio |  | 0.10 | 0.10 | 0.16 | 0.16 | 0.27 | 0.53 | 0.50 |  | 0.50 | 0.46 |  |
| v/c Ratio |  | 0.43 | 0.17 | 0.79 | 0.78 | 0.28 | 0.15 | 0.44 |  | 0.15 | 0.59 |  |
| Control Delay |  | 43.7 | 1.1 | 58.0 | 56.7 | 5.7 | 13.0 | 18.7 |  | 12.9 | 21.2 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay |  | 43.7 | 1.1 | 58.0 | 56.7 | 5.7 | 13.0 | 18.7 |  | 12.9 | 21.2 |  |
| LOS |  | D | A | E | E | A | B | B |  | B | C |  |
| Approach Delay |  | 26.6 |  |  | 43.2 |  |  | 18.4 |  |  | 20.8 |  |
| Approach LOS |  | C |  |  | D |  |  | B |  |  | C |  |
| Queue Length 50th (ft) |  | 46 | 0 | 115 | 115 | 0 | 10 | 161 |  | 13 | 195 |  |
| Queue Length 95th (ft) |  | 88 | 0 | \#212 | \#209 | 43 | 28 | 233 |  | 34 | 283 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 470 | 550 | 294 | 298 | 518 | 264 | 1639 |  | 329 | 1497 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.18 | 0.10 | 0.69 | 0.68 | 0.30 | 0.15 | 0.44 |  | 0.15 | 0.59 |  |

## Intersection Summary

## Area Type: Other

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 25.6
Intersection LOS: C

Intersection Capacity Utilization 57.6\%
ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 6.1 |  |  |  |  |  |  |  |  |  |  |  |
| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ |  | ${ }^{7}$ | $\uparrow$ |  |  | * $\uparrow$ |  | ${ }^{7}$ | 中 $\uparrow$ |  |
| Traffic Vol, veh/h | 4 | 3 | 19 | 15 | 0 | 28 | 12 | 1151 | 72 | 268 | 834 | 14 |
| Future Vol, veh/h | 4 | 3 | 19 | 15 | 0 | 28 | 12 | 1151 | 72 | 268 | 834 | 14 |
| Conflicting Peds, \#/hr | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 65 | - | - | - | - | - | 0 | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | -1 | - | - | -4 | - | - | 1 | - | - | 0 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, \% | 2 | 2 | 5 | 2 | 2 | 11 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 3 | 19 | 15 | 0 | 29 | 12 | 1174 | 73 | 273 | 851 | 14 |



|  | $\cdots$ |  |  |  | $\downarrow$ | $\downarrow$ | 4 | $\nearrow$ | $\not$ | $\frac{1}{1}$ | $\cdots$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | \$ |  | \% | $\uparrow$ |  | \% | 中t |  |  | $\uparrow \uparrow$ |  |
| Traffic Volume (vph) | 1 | 0 | 5 | 406 | - | 47 | 31 | 829 | 0 | 2 | 709 | 153 |
| Future Volume (vph) | 1 | 0 | 5 | 406 | 0 | 47 | 31 | 829 | 0 | 2 | 709 | 153 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade (\%) |  | 0\% |  |  | -6\% |  |  | 1\% |  |  | 0\% |  |
| Storage Length (ft) | 0 |  | 0 | 135 |  | 0 | 45 |  | 0 | 50 |  | 0 |
| Storage Lanes | 0 |  | 0 | 1 |  | 0 | 1 |  | 0 | 0 |  | 0 |
| Taper Length (ft) | 25 |  |  | 86 |  |  | 86 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  |  |  | 1.00 |  |  |  | 1.00 |  |
| Frt |  | 0.887 |  |  | 0.850 |  |  |  |  |  | 0.973 |  |
| Flt Protected |  | 0.992 |  | 0.950 |  |  | 0.950 |  |  |  |  |  |
| Satd. Flow (prot) | 0 | 1639 | 0 | 1762 | 1576 | 0 | 1686 | 3404 | 0 | 0 | 3314 | 0 |
| Flt Permitted |  |  |  | 0.950 |  |  | 0.950 |  |  |  | 0.953 |  |
| Satd. Flow (perm) | 0 | 1652 | 0 | 1762 | 1576 | 0 | 1683 | 3404 | 0 | 0 | 3158 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 157 |  |  | 429 |  |  |  |  |  | 26 |  |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance (ft) |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time (s) |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  |  | 3 |  |  |  |  | 3 |
| 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 |
| Heavy Vehicles (\%) | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 3\% | 2\% | 2\% | 2\% | 2\% | 2\% |
| Adj. Flow (vph) | 1 | 0 | 5 | 427 | 0 | 49 | 33 | 873 | 0 | 2 | 746 | 161 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 0 | 6 | 0 | 427 | 49 | 0 | 33 | 873 | 0 | 0 | 909 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(ft) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 |  |  | 2 |  | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru |  | Left | Thru |  | Left | Thru |  | Left | Thru |  |
| Leading Detector (ft) | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector (ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position(ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size(ft) | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position(ft) |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size(ft) |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | Cl+Ex |  |  | Cl+Ex |  |  | Cl+Ex |  |  | Cl+Ex |  |


|  | $\pm$ |  |  |  |  | $\pm$ | 4 | $\ngtr$ | П | - | 1 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Perm | NA |  | Split | NA |  | custom | NA |  | Perm | NA |  |
| Protected Phases |  | 4 |  | 3 | 3 |  | 6 | 1 |  |  | 5 |  |
| Permitted Phases | 4 |  |  |  |  |  | 6 |  |  | 5 |  |  |
| Detector Phase | 4 | 4 |  | 3 | 3 |  | 6 | 1 |  | 5 | 5 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 10.0 | 10.0 |  |
| Minimum Split (s) | 11.0 | 11.0 |  | 11.0 | 11.0 |  | 11.0 | 16.0 |  | 32.0 | 32.0 |  |
| Total Split (s) | 16.0 | 16.0 |  | 31.0 | 31.0 |  | 16.0 | 57.0 |  | 41.0 | 41.0 |  |
| Total Split (\%) | 15.4\% | 15.4\% |  | 29.8\% | 29.8\% |  | 15.4\% | 54.8\% |  | 39.4\% | 39.4\% |  |
| Maximum Green (s) | 10.0 | 10.0 |  | 25.0 | 25.0 |  | 10.0 | 51.0 |  | 35.0 | 35.0 |  |
| Yellow Time (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  |
| Total Lost Time (s) |  | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |  | 6.0 |  |
| Lead/Lag | Lag | Lag |  | Lead | Lead |  | Lag |  |  | Lead | Lead |  |
| Lead-Lag Optimize? | Yes | Yes |  | Yes | Yes |  | Yes |  |  | Yes | Yes |  |
| Vehicle Extension (s) | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 2.0 | 2.0 |  |
| Recall Mode | None | None |  | None | None |  | None | Min |  | Min | Min |  |
| Walk Time (s) |  |  |  |  |  |  |  |  |  | 8.0 | 8.0 |  |
| Flash Dont Walk (s) |  |  |  |  |  |  |  |  |  | 18.0 | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  |  |  |  |  |  |  | 5 | 5 |  |
| Act Effct Green (s) |  | 5.3 |  | 25.9 | 25.9 |  | 6.4 | 32.3 |  |  | 25.4 |  |
| Actuated g/C Ratio |  | 0.07 |  | 0.36 | 0.36 |  | 0.09 | 0.45 |  |  | 0.35 |  |
| v/c Ratio |  | 0.02 |  | 0.68 | 0.06 |  | 0.22 | 0.58 |  |  | 0.81 |  |
| Control Delay |  | 0.2 |  | 31.6 | 0.1 |  | 40.7 | 15.9 |  |  | 28.2 |  |
| Queue Delay |  | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  |
| Total Delay |  | 0.2 |  | 31.6 | 0.1 |  | 40.7 | 15.9 |  |  | 28.2 |  |
| LOS |  | A |  | C | A |  | D | B |  |  | C |  |
| Approach Delay |  | 0.2 |  |  | 28.3 |  |  | 16.8 |  |  | 28.2 |  |
| Approach LOS |  | A |  |  | C |  |  | B |  |  | C |  |
| Queue Length 50th (ft) |  | 0 |  | 174 | 0 |  | 15 | 133 |  |  | 194 |  |
| Queue Length 95th (ft) |  | 0 |  | \#449 | 0 |  | 49 | 233 |  |  | 336 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  |  | 45 |  |  |  |  |  |
| Base Capacity (vph) |  | 374 |  | 641 | 846 |  | 245 | 2528 |  |  | 1622 |  |
| Starvation Cap Reductn |  | 0 |  | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| Spillback Cap Reductn |  | 0 |  | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| Storage Cap Reductn |  | 0 |  | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| Reduced v/c Ratio |  | 0.02 |  | 0.67 | 0.06 |  | 0.13 | 0.35 |  |  | 0.56 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 104 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 72.5 |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 80 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Uncoordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.81 |  |  |  |  |  |  |  |  |  |  |  |  |

Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 65.1\% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp




HCMLOS F

| Minor Lane/Major Mvmt | NEL | NET | NERNWLn1NWLn2 SELn1 | SWL | SWT | SWR |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | :--- |
| Capacity (veh/h) | 653 | - | - | - | 350 | 12 | 427 | - | - |
| HCM Lane V/C Ratio | 0.019 | - | - | -0.128 | 2.296 | 0.734 | - | - |  |
| HCM Control Delay (s) | 10.6 | 0.8 | - | - | $16.8 \$ 1225$ | 33.3 | - | - |  |
| HCM Lane LOS | B | A | - | - | C | F | D | - | - |
| HCM 95th \%tile Q(veh) | 0.1 | - | - | - | 0.4 | 4.3 | 5.9 | - | - |

## Notes

$\sim$ : Volume exceeds capacity $\quad \$$ : Delay exceeds $300 \mathrm{~s} \quad+$ : Computation Not Defined $\quad$ : All major volume in platoon

|  | 4 | $\uparrow$ |  |  | $\downarrow$ | $\downarrow$ | 4 | $\nearrow$ | \％ | 1 | 4 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{7}$ | $\uparrow$ | 「 | ${ }^{7}$ | 个4 |  | ${ }^{7}$ | 个 ${ }_{\text {a }}$ |  |
| Traffic Volume（vph） | 56 | 28 | 60 | 450 | 35 | 104 | 42 | 1018 | 0 | 50 | 832 | 182 |
| Future Volume（vph） | 56 | 28 | 60 | 450 | 35 | 104 | 42 | 1018 | 0 | 50 | 832 | 182 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 14 | 14 | 14 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  |  |  | 1.00 |  |  |  | 1.00 |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.973 |  |
| Flt Protected |  | 0.968 |  | 0.950 | 0.959 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1923 | 1689 | 1674 | 1690 | 1631 | 1686 | 3404 | 0 | 1652 | 3314 | 0 |
| Flt Permitted |  | 0.968 |  | 0.950 | 0.959 |  | 0.146 |  |  | 0.144 |  |  |
| Satd．Flow（perm） | 0 | 1923 | 1689 | 1674 | 1690 | 1631 | 259 | 3404 | 0 | 250 | 3314 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 182 |  |  | 109 |  |  |  |  | 33 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  |  | 3 |  |  |  |  | 3 |
| 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 |
| Heavy Vehicles（\％） | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 3\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ |
| Adj．Flow（vph） | 59 | 29 | 63 | 474 | 37 | 109 | 44 | 1072 | 0 | 53 | 876 | 192 |
| Shared Lane Traffic（\％） |  |  |  | 46\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 88 | 63 | 256 | 255 | 109 | 44 | 1072 | 0 | 53 | 1068 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（tt） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（t） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 0.92 | 0.92 | 0.92 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 0 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（f） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex |  | Cl＋Ex | Cl＋Ex |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size（ft） |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | Cl＋Ex |  |  | Cl＋Ex |  |  | Cl＋Ex |  |  | Cl＋Ex |  |


|  | $\pm$ |  |  | $\dagger$ |  | $\downarrow$ | 4 | $\ngtr$ | ¢ | 1 | 1 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Split | NA | Perm | Split | NA | custom | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  | 6 | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 11.0 | 11.0 | 11.0 | 32.0 | 32.0 |  | 11.0 | 11.0 |  | 11.0 | 11.0 |  |
| Total Split (s) | 14.0 | 14.0 | 14.0 | 27.0 | 27.0 |  | 10.0 | 39.0 |  | 10.0 | 39.0 |  |
| Total Split (\%) | 15.6\% | 15.6\% | 15.6\% | 30.0\% | 30.0\% |  | 11.1\% | 43.3\% |  | 11.1\% | 43.3\% |  |
| Maximum Green (s) | 8.0 | 8.0 | 8.0 | 21.0 | 21.0 |  | 4.0 | 33.0 |  | 4.0 | 33.0 |  |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 6.0 | 6.0 | 6.0 | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |  | 3.0 | 2.0 |  | 2.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Max |  | None | C-Min |  |
| Walk Time (s) |  |  |  | 8.0 | 8.0 |  |  | 8.0 |  |  | 8.0 |  |
| Flash Dont Walk (s) |  |  |  | 18.0 | 18.0 |  |  | 18.0 |  |  | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  | 5 | 5 |  |  | 5 |  |  | 5 |  |
| Act Effct Green (s) |  | 7.6 | 7.6 | 18.1 | 18.1 | 28.1 | 43.9 | 40.7 |  | 43.9 | 40.7 |  |
| Actuated g/C Ratio |  | 0.08 | 0.08 | 0.20 | 0.20 | 0.31 | 0.49 | 0.45 |  | 0.49 | 0.45 |  |
| v/c Ratio |  | 0.54 | 0.20 | 0.76 | 0.75 | 0.19 | 0.23 | 0.70 |  | 0.29 | 0.70 |  |
| Control Delay |  | 52.4 | 1.5 | 48.5 | 47.6 | 5.2 | 15.6 | 25.9 |  | 16.8 | 25.5 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay |  | 52.4 | 1.5 | 48.5 | 47.6 | 5.2 | 15.6 | 25.9 |  | 16.8 | 25.5 |  |
| LOS |  | D | A | D | D | A | B | C |  | B | C |  |
| Approach Delay |  | 31.2 |  |  | 40.5 |  |  | 25.5 |  |  | 25.0 |  |
| Approach LOS |  | C |  |  | D |  |  | C |  |  | C |  |
| Queue Length 50th (ft) |  | 49 | 0 | 142 | 141 | 0 | 12 | 283 |  | 15 | 276 |  |
| Queue Length 95th (ft) |  | 96 | 0 | 226 | 225 | 34 | 31 | \#390 |  | 36 | \#401 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 170 | 315 | 390 | 394 | 562 | 189 | 1538 |  | 184 | 1515 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.52 | 0.20 | 0.66 | 0.65 | 0.19 | 0.23 | 0.70 |  | 0.29 | 0.70 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 42 (47\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |

2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 28.7 Intersection LOS: C
Intersection Capacity Utilization 68.1\% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


|  | $\cdots$ | - | $\lambda$ | m |  | 5 | $\cdots$ | 7 | Pa | W | $\lambda$ | k- |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations | ${ }^{*}$ | $\uparrow$ |  | ${ }^{7}$ | $\hat{\beta}$ |  |  | * $\uparrow$ |  | ${ }^{7}$ | 中t |  |
| Traffic Volume (vph) | 41 | 24 | 73 | 59 | 25 | 79 | 70 | 1339 | 155 | 307 | 989 | 43 |
| Future Volume (vph) | 41 | 24 | 73 | 59 | 25 | 79 | 70 | 1339 | 155 | 307 | 989 | 43 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 12 | 11 | 12 | 12 | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (\%) |  | -1\% |  |  | -4\% |  |  | 1\% |  |  | 0\% |  |
| Storage Length (ft) | 0 |  | 0 | 65 |  | 0 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 0 | 1 |  | 0 | 0 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 25 |  |  | 25 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | 0.99 |  |  |  |  |  | 1.00 |  |  | 1.00 |  |
| Frt |  | 0.887 |  |  | 0.886 |  |  | 0.985 |  |  | 0.994 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  |  | 0.998 |  | 0.950 |  |  |
| Satd. Flow (prot) | 1660 | 1497 | 0 | 1745 | 1578 | 0 | 0 | 3462 | 0 | 1711 | 3515 | 0 |
| Flt Permitted | 0.684 |  |  | 0.694 |  |  |  | 0.825 |  | 0.072 |  |  |
| Satd. Flow (perm) | 1190 | 1497 | 0 | 1275 | 1578 | 0 | 0 | 2862 | 0 | 130 | 3515 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 74 |  |  | 81 |  |  | 20 |  |  | 16 |  |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance (ft) |  | 190 |  |  | 295 |  |  | 434 |  |  | 510 |  |
| Travel Time (s) |  | 4.3 |  |  | 6.7 |  |  | 7.4 |  |  | 8.7 |  |
| Confl. Peds. (\#/hr) | 3 |  | 3 |  |  |  | 3 |  |  |  |  | 3 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (\%) | 2\% | 2\% | 5\% | 2\% | 2\% | 11\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% |
| Adj. Flow (vph) | 42 | 24 | 74 | 60 | 26 | 81 | 71 | 1366 | 158 | 313 | 1009 | 44 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 42 | 98 | 0 | 60 | 107 | 0 | 0 | 1595 | 0 | 313 | 1053 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(ft) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.09 | 1.09 | 0.99 | 1.02 | 0.97 | 0.97 | 1.01 | 1.01 | 1.01 | 1.04 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru |  | Left | Thru |  | Left | Thru |  | Left | Thru |  |
| Leading Detector (ft) | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector (ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position(ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size(ft) | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position(ft) |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size(ft) |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |


| Lane Group | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Perm | NA |  | custom | NA |  | Perm | NA |  | pm+pt | NA |  |
| Protected Phases |  | 6 |  |  |  |  |  | 4 |  | 3 | 8 |  |
| Permitted Phases | 6 |  |  | 2 | 2 |  | 4 |  |  | 8 |  |  |
| Detector Phase | 6 | 6 |  | 2 | 2 |  | 4 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 4.0 | 5.0 |  |
| Minimum Split (s) | 23.0 | 23.0 |  | 23.0 | 23.0 |  | 23.0 | 23.0 |  | 10.0 | 23.0 |  |
| Total Split (s) | 15.0 | 15.0 |  | 15.0 | 15.0 |  | 54.0 | 54.0 |  | 21.0 | 75.0 |  |
| Total Split (\%) | 16.7\% | 16.7\% |  | 16.7\% | 16.7\% |  | 60.0\% | 60.0\% |  | 23.3\% | 83.3\% |  |
| Maximum Green (s) | 10.0 | 10.0 |  | 10.0 | 10.0 |  | 49.0 | 49.0 |  | 15.0 | 70.0 |  |
| Yellow Time (s) | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 5.0 | 4.0 |  |
| All-Red Time (s) | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  |  | 5.0 |  | 6.0 | 5.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lag | Lag |  | Lead |  |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes |  |  |
| Vehicle Extension (s) | 3.0 | 3.0 |  | 3.0 | 3.0 |  | 3.0 | 3.0 |  | 3.0 | 3.0 |  |
| Recall Mode | Max | Max |  | Max | Max |  | C-Max | C-Max |  | None | C-Max |  |
| Walk Time (s) | 7.0 | 7.0 |  | 7.0 | 7.0 |  |  |  |  |  |  |  |
| Flash Dont Walk (s) | 11.0 | 11.0 |  | 11.0 | 11.0 |  |  |  |  |  |  |  |
| Pedestrian Calls (\#/hr) | 0 | 0 |  | 0 | 0 |  |  |  |  |  |  |  |
| Act Effct Green (s) | 10.0 | 10.0 |  | 10.0 | 10.0 |  |  | 49.7 |  | 69.0 | 70.0 |  |
| Actuated g/C Ratio | 0.11 | 0.11 |  | 0.11 | 0.11 |  |  | 0.55 |  | 0.77 | 0.78 |  |
| v/c Ratio | 0.32 | 0.42 |  | 0.43 | 0.43 |  |  | 1.00 |  | 0.89 | 0.38 |  |
| Control Delay | 44.0 | 19.8 |  | 47.4 | 19.2 |  |  | 32.8 |  | 52.0 | 3.6 |  |
| Queue Delay | 0.0 | 0.1 |  | 0.0 | 0.0 |  |  | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay | 44.0 | 19.9 |  | 47.4 | 19.2 |  |  | 32.8 |  | 52.0 | 3.6 |  |
| LOS | D | B |  | D | B |  |  | C |  | D | A |  |
| Approach Delay |  | 27.1 |  |  | 29.4 |  |  | 32.8 |  |  | 14.7 |  |
| Approach LOS |  | C |  |  | C |  |  | C |  |  | B |  |
| Queue Length 50th (ft) | 22 | 13 |  | 32 | 14 |  |  | $\sim 515$ |  | 124 | 75 |  |
| Queue Length 95th (ft) | 55 | 59 |  | 72 | 63 |  |  | \#624 |  | \#271 | 97 |  |
| Internal Link Dist (ft) |  | 110 |  |  | 215 |  |  | 354 |  |  | 430 |  |
| Turn Bay Length (ft) |  |  |  | 65 |  |  |  |  |  |  |  |  |
| Base Capacity (vph) | 132 | 232 |  | 141 | 247 |  |  | 1590 |  | 363 | 2737 |  |
| Starvation Cap Reductn | 0 | 0 |  | 0 | 0 |  |  | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn | 0 | 4 |  | 0 | 0 |  |  | 0 |  | 0 | 199 |  |
| Storage Cap Reductn | 0 | 0 |  | 0 | 0 |  |  | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio | 0.32 | 0.43 |  | 0.43 | 0.43 |  |  | 1.00 |  | 0.86 | 0.41 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 20 (22\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 100 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |

## Maximum v/c Ratio: 1.00

Intersection Signal Delay: 24.8 Intersection LOS: C
Intersection Capacity Utilization 100.2\% 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.
Splits and Phases: 1: US Rt 6 (E. Main St) \& BMP WB Ramp/Site Drwy


|  | $\cdots$ |  |  | $\cdots$ |  | $\pm$ | 4 | $\nearrow$ | $\square$ | 1 | $\lambda$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{1}$ | $\uparrow$ | 「 | ${ }^{7}$ | 中4 |  | ${ }^{7}$ | 中 ${ }^{\text {W }}$ |  |
| Traffic Volume（vph） | 56 | 28 | 60 | 468 | 35 | 104 | 42 | 1041 | 0 | 50 | 868 | 197 |
| Future Volume（vph） | 56 | 28 | 60 | 468 | 35 | 104 | 42 | 1041 | 0 | 50 | 868 | 197 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 14 | 14 | 14 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  |  |  | 1.00 |  |  |  | 1.00 |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.972 |  |
| Flt Protected |  | 0.968 |  | 0.950 | 0.959 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1923 | 1689 | 1674 | 1690 | 1631 | 1686 | 3404 | 0 | 1652 | 3310 | 0 |
| Flt Permitted |  | 0.968 |  | 0.950 | 0.959 |  | 0.123 |  |  | 0.132 |  |  |
| Satd．Flow（perm） | 0 | 1923 | 1689 | 1674 | 1690 | 1631 | 218 | 3404 | 0 | 229 | 3310 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 182 |  |  | 109 |  |  |  |  | 34 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  |  | 3 |  |  |  |  | 3 |
| 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 |
| Heavy Vehicles（\％） | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 3\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ |
| Adj．Flow（vph） | 59 | 29 | 63 | 493 | 37 | 109 | 44 | 1096 | 0 | 53 | 914 | 207 |
| Shared Lane Traffic（\％） |  |  |  | 46\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 88 | 63 | 266 | 264 | 109 | 44 | 1096 | 0 | 53 | 1121 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（ft） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（ft） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 0.92 | 0.92 | 0.92 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（ft） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size（ft） |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | Cl＋Ex |  |  | Cl＋Ex |  |


|  | $\pm$ |  |  | $\dagger$ |  | $\downarrow$ | 4 | $\ngtr$ | ¢ | 1 | 1 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Split | NA | Perm | Split | NA | custom | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  | 6 | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 11.0 | 11.0 | 11.0 | 32.0 | 32.0 |  | 11.0 | 11.0 |  | 11.0 | 11.0 |  |
| Total Split (s) | 14.0 | 14.0 | 14.0 | 27.0 | 27.0 |  | 10.0 | 39.0 |  | 10.0 | 39.0 |  |
| Total Split (\%) | 15.6\% | 15.6\% | 15.6\% | 30.0\% | 30.0\% |  | 11.1\% | 43.3\% |  | 11.1\% | 43.3\% |  |
| Maximum Green (s) | 8.0 | 8.0 | 8.0 | 21.0 | 21.0 |  | 4.0 | 33.0 |  | 4.0 | 33.0 |  |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 6.0 | 6.0 | 6.0 | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |  | 3.0 | 2.0 |  | 2.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Min |  | None | C-Min |  |
| Walk Time (s) |  |  |  | 8.0 | 8.0 |  |  | 8.0 |  |  | 8.0 |  |
| Flash Dont Walk (s) |  |  |  | 18.0 | 18.0 |  |  | 18.0 |  |  | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  | 5 | 5 |  |  | 5 |  |  | 5 |  |
| Act Effct Green (s) |  | 7.6 | 7.6 | 18.6 | 18.6 | 28.6 | 43.4 | 40.2 |  | 43.4 | 40.2 |  |
| Actuated g/C Ratio |  | 0.08 | 0.08 | 0.21 | 0.21 | 0.32 | 0.48 | 0.45 |  | 0.48 | 0.45 |  |
| v/c Ratio |  | 0.54 | 0.20 | 0.77 | 0.76 | 0.18 | 0.26 | 0.72 |  | 0.31 | 0.75 |  |
| Control Delay |  | 52.4 | 1.5 | 48.7 | 47.5 | 5.1 | 16.6 | 26.9 |  | 15.5 | 26.1 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |  | 0.0 | 0.1 |  |
| Total Delay |  | 52.4 | 1.5 | 48.7 | 47.5 | 5.1 | 16.6 | 27.2 |  | 15.5 | 26.2 |  |
| LOS |  | D | A | D | D | A | B | C |  | B | C |  |
| Approach Delay |  | 31.2 |  |  | 40.8 |  |  | 26.8 |  |  | 25.7 |  |
| Approach LOS |  | C |  |  | D |  |  | C |  |  | C |  |
| Queue Length 50th (ft) |  | 49 | 0 | 145 | 144 | 0 | 13 | 301 |  | 17 | 311 |  |
| Queue Length 95th (ft) |  | 96 | 0 | \#236 | 233 | 34 | 31 | \#422 |  | 37 | \#439 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 170 | 315 | 390 | 394 | 584 | 170 | 1519 |  | 173 | 1496 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 21 |  |
| Spillback Cap Reductn |  | 0 | 4 | 0 | 0 | 0 | 0 | 78 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.52 | 0.20 | 0.68 | 0.67 | 0.19 | 0.26 | 0.76 |  | 0.31 | 0.76 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 13 (14\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |



Intersection Signal Delay: 29.5 Intersection LOS: C
Intersection Capacity Utilization 70.1\% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp




HCM LOS

| Minor Lane/Major Mvmt | NEL | NET | NERNWLn1NWLn2 SELn1 | SWL | SWT | SWR |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Capacity (veh/h) | 658 | - | - | - | 19 | - | 429 | - |
| HCM Lane V/C Ratio | 0.064 | - | - | -2.993 | - | -73 | - | - |
| HCM Control Delay (s) | 10.8 | 2.5 | - | $\$ 1230.9$ | - | 33 | - | - |
| HCM Lane LOS | B | A | - | - | F | - | D | - |
| HCM 95th \%otile Q(veh) | 0.2 | - | - | - | 7.1 | - | 5.8 | - |


|  | 4 | $\dagger$ |  |  | $\downarrow$ | $\downarrow$ | 4 | $\nearrow$ | \％ | 1 | 4 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{7}$ | $\uparrow$ | 「 | ${ }^{7}$ | 个4 |  | ${ }^{7}$ | 个 ${ }_{\text {a }}$ |  |
| Traffic Volume（vph） | 56 | 28 | 60 | 452 | 35 | 104 | 42 | 1040 | 0 | 50 | 850 | 181 |
| Future Volume（vph） | 56 | 28 | 60 | 452 | 35 | 104 | 42 | 1040 | 0 | 50 | 850 | 181 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 14 | 14 | 14 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  |  |  | 1.00 |  |  |  | 1.00 |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.974 |  |
| Flt Protected |  | 0.968 |  | 0.950 | 0.959 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1923 | 1689 | 1674 | 1690 | 1631 | 1686 | 3404 | 0 | 1652 | 3318 | 0 |
| Flt Permitted |  | 0.968 |  | 0.950 | 0.959 |  | 0.138 |  |  | 0.135 |  |  |
| Satd．Flow（perm） | 0 | 1923 | 1689 | 1674 | 1690 | 1631 | 245 | 3404 | 0 | 235 | 3318 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 182 |  |  | 109 |  |  |  |  | 32 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ ft ） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  |  | 3 |  |  |  |  | 3 |
| 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 |
| Heavy Vehicles（\％） | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 3\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ |
| Adj．Flow（vph） | 59 | 29 | 63 | 476 | 37 | 109 | 44 | 1095 | 0 | 53 | 895 | 191 |
| Shared Lane Traffic（\％） |  |  |  | 46\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 88 | 63 | 257 | 256 | 109 | 44 | 1095 | 0 | 53 | 1086 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（tt） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（t） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 0.92 | 0.92 | 0.92 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 0 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（f） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex |  | Cl＋Ex | Cl＋Ex |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size（ft） |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | Cl＋Ex |  |  | Cl＋Ex |  |  | Cl＋Ex |  |  | Cl＋Ex |  |


|  | 4 |  |  | 1 |  | $\downarrow$ | 4 | - | \% | \% | 1 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Split | NA | Perm | Split | NA | custom | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  | 6 | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 11.0 | 11.0 | 11.0 | 32.0 | 32.0 |  | 11.0 | 11.0 |  | 11.0 | 11.0 |  |
| Total Split (s) | 14.0 | 14.0 | 14.0 | 27.0 | 27.0 |  | 10.0 | 39.0 |  | 10.0 | 39.0 |  |
| Total Split (\%) | 15.6\% | 15.6\% | 15.6\% | 30.0\% | 30.0\% |  | 11.1\% | 43.3\% |  | 11.1\% | 43.3\% |  |
| Maximum Green (s) | 8.0 | 8.0 | 8.0 | 21.0 | 21.0 |  | 4.0 | 33.0 |  | 4.0 | 33.0 |  |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 6.0 | 6.0 | 6.0 | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |  | 3.0 | 2.0 |  | 2.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Max |  | None | C-Min |  |
| Walk Time (s) |  |  |  | 8.0 | 8.0 |  |  | 8.0 |  |  | 8.0 |  |
| Flash Dont Walk (s) |  |  |  | 18.0 | 18.0 |  |  | 18.0 |  |  | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  | 5 | 5 |  |  | 5 |  |  | 5 |  |
| Act Effct Green (s) |  | 7.6 | 7.6 | 18.2 | 18.2 | 28.2 | 43.8 | 40.6 |  | 43.8 | 40.6 |  |
| Actuated g/C Ratio |  | 0.08 | 0.08 | 0.20 | 0.20 | 0.31 | 0.49 | 0.45 |  | 0.49 | 0.45 |  |
| v/c Ratio |  | 0.54 | 0.20 | 0.76 | 0.75 | 0.19 | 0.24 | 0.71 |  | 0.30 | 0.72 |  |
| Control Delay |  | 52.4 | 1.5 | 48.6 | 47.7 | 5.2 | 15.9 | 26.4 |  | 17.2 | 25.9 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay |  | 52.4 | 1.5 | 48.6 | 47.7 | 5.2 | 15.9 | 26.4 |  | 17.2 | 25.9 |  |
| LOS |  | D | A | D | D | A | B | C |  | B | C |  |
| Approach Delay |  | 31.2 |  |  | 40.6 |  |  | 26.0 |  |  | 25.5 |  |
| Approach LOS |  | C |  |  | D |  |  | C |  |  | C |  |
| Queue Length 50th (ft) |  | 49 | 0 | 143 | 142 | 0 | 12 | 293 |  | 15 | 283 |  |
| Queue Length 95th (ft) |  | 96 | 0 | 228 | 226 | 34 | 31 | \#422 |  | 36 | \#414 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 170 | 315 | 390 | 394 | 562 | 183 | 1537 |  | 177 | 1515 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.52 | 0.20 | 0.66 | 0.65 | 0.19 | 0.24 | 0.71 |  | 0.30 | 0.72 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 42 (47\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |



Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization 68.6\% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 32 |  |  |  |  |  |  |  |  |  |  |  |
| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | * |  | ${ }^{7}$ | $\uparrow$ |  |  | $\uparrow \uparrow$ |  | ${ }^{7}$ | 中 ${ }^{\text {a }}$ |  |
| Traffic Vol, veh/h | 4 | 4 | 29 | 25 | 0 | 49 | 11 | 1235 | 64 | 270 | 1042 | 27 |
| Future Vol, veh/h | 4 | 4 | 29 | 25 | 0 | 49 | 11 | 1235 | 64 | 270 | 1042 | 27 |
| Conflicting Peds, \#/hr | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 65 | - | - | - | - | - | 0 | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | -1 | - | - | -4 | - | - | 1 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 4 | 30 | 26 | 0 | 51 | 11 | 1286 | 67 | 281 | 1085 | 28 |



| Minor Lane/Major Mvmt | NEL | NET | NERNWLn11 | WWLn2 SELn1 | SWL | SWT | SWR |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Capacity (veh/h) | 619 | - | 6 | 42233 | 504 | - | - |  |
| HCM Lane V/C Ratio | 0.019 | - | 4.34 | 0.1211 .168 | 0.558 | - | - | - |
| HCM Control Delay (s) | 10.9 | 0.4 | \$ 2674.4 | $14.7 \$ 394.3$ | 20.8 | - | - |  |
| HCM Lane LOS | B | A | F | B F | C | - | - |  |
| HCM 95th \%tile Q(veh) | 0.1 | - | 4.6 | $0.4 \quad 4.2$ | 3.4 | - | - | - |
| Notes |  |  |  |  |  |  |  |  |
| $\sim$ : Volume exceeds capacity | \$: Delay exceeds 300s |  |  | +: Computation Not Defined |  |  | *: All | All major volume in platoon |


|  | $\cdots$ | 4 |  | $\omega$ |  | $\downarrow$ | 4 | $>$ | \% | 1 | $\lambda$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\ddagger$ |  | ${ }^{4}$ | $\uparrow$ |  | ${ }^{7}$ | 中 ${ }^{\text {a }}$ |  |  | * $\uparrow$ |  |
| Traffic Volume (vph) | 6 | 0 | 8 | 423 | 2 | 62 | 40 | 884 | 3 | 8 | 884 | 201 |
| Future Volume (vph) | 6 | 0 | 8 | 423 | 2 | 62 | 40 | 884 | 3 | 8 | 884 | 201 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade (\%) |  | 0\% |  |  | -6\% |  |  | 1\% |  |  | 0\% |  |
| Storage Length (ft) | 0 |  | 0 | 135 |  | 0 | 45 |  | 0 | 0 |  | 0 |
| Storage Lanes | 0 |  | 0 | 1 |  | 0 | 1 |  | 0 | 0 |  | 0 |
| Taper Length (ft) | 25 |  |  | 86 |  |  | 86 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  | 0.99 |  | 1.00 |  |  |  | 0.99 |  |
| Frt |  | 0.923 |  |  | 0.854 |  |  |  |  |  | 0.972 |  |
| Flt Protected |  | 0.979 |  | 0.950 |  |  | 0.950 |  |  |  |  |  |
| Satd. Flow (prot) | 0 | 1583 | 0 | 1762 | 1564 | 0 | 1702 | 3404 | 0 | 0 | 3308 | 0 |
| Flt Permitted |  |  |  | 0.950 |  |  | 0.950 |  |  |  | 0.947 |  |
| Satd. Flow (perm) | 0 | 1617 | 0 | 1762 | 1564 | 0 | 1699 | 3404 | 0 | 0 | 3133 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 157 |  |  | 65 |  |  |  |  |  | 28 |  |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance (ft) |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time (s) |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  | 1 | 4 |  |  |  |  | 4 |
| 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 |
| Heavy Vehicles (\%) | 17\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% |
| Adj. Flow (vph) | 6 | 0 | 8 | 445 | 2 | 65 | 42 | 931 | 3 | 8 | 931 | 212 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 0 | 14 | 0 | 445 | 67 | 0 | 42 | 934 | 0 | 0 | 1151 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(ft) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru |  | Left | Thru |  | Left | Thru |  | Left | Thru |  |
| Leading Detector (ft) | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector (ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position(ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size(ft) | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | Cl+Ex | Cl+Ex |  | $\mathrm{Cl}+\mathrm{Ex}$ | Cl+Ex |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position(ft) |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size(ft) |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | Cl+Ex |  |  | Cl+Ex |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | Cl+Ex |  |


|  | H |  |  | $\cdots$ |  | $\downarrow$ | 4 | $\nearrow$ | $\square$ | \% | $\downarrow$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Perm | NA |  | Split | NA |  | custom | NA |  | Perm | NA |  |
| Protected Phases |  | 4 |  | 3 | 3 |  | 6 | 1 |  |  | 5 |  |
| Permitted Phases | 4 |  |  |  |  |  | 6 |  |  | 5 |  |  |
| Detector Phase | 4 | 4 |  | 3 | 3 |  | 6 | 1 |  | 5 | 5 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 10.0 |  | 10.0 | 10.0 |  |
| Minimum Split (s) | 11.0 | 11.0 |  | 11.0 | 11.0 |  | 11.0 | 16.0 |  | 32.0 | 32.0 |  |
| Total Split (s) | 16.0 | 16.0 |  | 31.0 | 31.0 |  | 16.0 | 57.0 |  | 41.0 | 41.0 |  |
| Total Split (\%) | 15.4\% | 15.4\% |  | 29.8\% | 29.8\% |  | 15.4\% | 54.8\% |  | 39.4\% | 39.4\% |  |
| Maximum Green (s) | 10.0 | 10.0 |  | 25.0 | 25.0 |  | 10.0 | 51.0 |  | 35.0 | 35.0 |  |
| Yellow Time (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| All-Red Time (s) | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  |
| Total Lost Time (s) |  | 6.0 |  | 6.0 | 6.0 |  | 6.0 | 6.0 |  |  | 6.0 |  |
| Lead/Lag | Lag | Lag |  | Lead | Lead |  | Lag |  |  | Lead | Lead |  |
| Lead-Lag Optimize? | Yes | Yes |  | Yes | Yes |  | Yes |  |  | Yes | Yes |  |
| Vehicle Extension (s) | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 2.0 | 2.0 |  |
| Recall Mode | None | None |  | None | None |  | None | Min |  | Min | Min |  |
| Walk Time (s) |  |  |  |  |  |  |  |  |  | 8.0 | 8.0 |  |
| Flash Dont Walk (s) |  |  |  |  |  |  |  |  |  | 18.0 | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  |  |  |  |  |  |  | 5 | 5 |  |
| Act Effct Green (s) |  | 5.1 |  | 25.4 | 25.4 |  | 6.8 | 43.2 |  |  | 35.5 |  |
| Actuated g/C Ratio |  | 0.06 |  | 0.31 | 0.31 |  | 0.08 | 0.52 |  |  | 0.43 |  |
| v/c Ratio |  | 0.06 |  | 0.82 | 0.13 |  | 0.30 | 0.52 |  |  | 0.85 |  |
| Control Delay |  | 0.5 |  | 43.5 | 8.3 |  | 44.2 | 14.3 |  |  | 29.9 |  |
| Queue Delay |  | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | 0.0 |  |
| Total Delay |  | 0.5 |  | 43.5 | 8.3 |  | 44.2 | 14.3 |  |  | 29.9 |  |
| LOS |  | A |  | D | A |  | D | B |  |  | C |  |
| Approach Delay |  | 0.5 |  |  | 38.9 |  |  | 15.6 |  |  | 29.9 |  |
| Approach LOS |  | A |  |  | D |  |  | B |  |  | C |  |
| Queue Length 50th (ft) |  | 0 |  | 221 | 1 |  | 22 | 145 |  |  | 281 |  |
| Queue Length 95th (ft) |  | 0 |  | \#482 | 33 |  | 58 | 254 |  |  | \#532 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  |  | 45 |  |  |  |  |  |
| Base Capacity (vph) |  | 336 |  | 540 | 525 |  | 209 | 2131 |  |  | 1362 |  |
| Starvation Cap Reductn |  | 0 |  | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| Spillback Cap Reductn |  | 0 |  | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| Storage Cap Reductn |  | 0 |  | 0 | 0 |  | 0 | 0 |  |  | 0 |  |
| Reduced v/c Ratio |  | 0.04 |  | 0.82 | 0.13 |  | 0.20 | 0.44 |  |  | 0.85 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 104 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 82.6 |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Uncoordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.85 |  |  |  |  |  |  |  |  |  |  |  |  |

Intersection Signal Delay: 26.2 Intersection LOS: C
Intersection Capacity Utilization 76.8\% 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.

Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp




HCM LOS F $\qquad$

| Minor Lane/Major Mvmt | NEL | NET | NERNWLn | 1NWLn2 | ELn1 | SWL | SWT | SWR |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Capacity (veh/h) | 508 | - | - | 339 | 6 | 382 | - | - |  |
| HCM Lane V/C Ratio | 0.023 | - | - | 0.224 | 6.597 | 0.848 | - |  | - |
| HCM Control Delay (s) | 12.2 | 2.3 | - | 18.8 | 699.4 | 49.3 | - |  |  |
| HCM Lane LOS | B | A | - | C | F | E | - | - |  |
| HCM 95th \%tile Q(veh) | 0.1 | - | - | 0.8 | 6.5 | 8 | - |  | - |
| Notes |  |  |  |  |  |  |  |  |  |
| $\sim$ : Volume exceeds capacity | \$: Delay exceeds 300s |  |  | +: Computation Not Defined |  |  |  | *: All major volume in platoon |  |


|  | H | 4 |  | $\cdots$ |  | $\downarrow$ | 4 | 7 | $\square$ | \％ | $\cdots$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{*}$ | $\uparrow$ | 「 | ${ }^{7}$ | 中4 |  | ${ }^{*}$ | 中 ${ }^{\text {F }}$ |  |
| Traffic Volume（vph） | 53 | 23 | 55 | 471 | 31 | 146 | 53 | 1090 | 0 | 49 | 1036 | 240 |
| Future Volume（vph） | 53 | 23 | 55 | 471 | 31 | 146 | 53 | 1090 | 0 | 49 | 1036 | 240 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  | 0.99 |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.972 |  |
| Flt Protected |  | 0.966 |  | 0.950 | 0.958 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1631 | 1583 | 1674 | 1688 | 1631 | 1702 | 3404 | 0 | 1652 | 3307 | 0 |
| Flt Permitted |  | 0.966 |  | 0.950 | 0.958 |  | 0.088 |  |  | 0.148 |  |  |
| Satd．Flow（perm） | 0 | 1631 | 1583 | 1674 | 1688 | 1631 | 158 | 3404 | 0 | 257 | 3307 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 109 |  |  | 64 |  |  |  |  | 30 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  | 1 | 4 |  |  |  |  | 4 |
| 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 |
| Heavy Vehicles（\％） | 17\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ |
| Adj．Flow（vph） | 56 | 24 | 58 | 496 | 33 | 154 | 56 | 1147 | 0 | 52 | 1091 | 253 |
| Shared Lane Traffic（\％） |  |  |  | 47\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 80 | 58 | 263 | 266 | 154 | 56 | 1147 | 0 | 52 | 1344 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（ft） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（ft） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |


| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（ft） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | $\mathrm{Cl}+\mathrm{Ex}$ | Cl＋Ex |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |

Detector 1 Channel

|  |  |  |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | :---: |
| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay $(\mathrm{s})$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 | 9 | 6 |
| Detector 2 Size（ft） | 6 |  |  | 6 |  |  | 6 | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |
| Detector 2 Type | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  |  |  |  |  |


|  | H |  |  | 1 |  | $\pm$ |  | $\nearrow$ | $\xrightarrow{\square}$ | \% | $\downarrow$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Split | NA | Perm | Split | NA | pt+ov | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  |  | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |  | 10.0 | 31.0 |  | 29.0 | 31.0 |  |
| Total Split (s) | 10.0 | 10.0 | 10.0 | 40.0 | 40.0 |  | 13.0 | 57.0 |  | 13.0 | 57.0 |  |
| Total Split (\%) | 8.3\% | 8.3\% | 8.3\% | 33.3\% | 33.3\% |  | 10.8\% | 47.5\% |  | 10.8\% | 47.5\% |  |
| Maximum Green (s) | 5.0 | 5.0 | 5.0 | 35.0 | 35.0 |  | 8.0 | 52.0 |  | 8.5 | 52.0 |  |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 3.5 | 4.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 4.5 | 5.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 3.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Min |  | None | C-Min |  |
| Walk Time (s) |  |  |  |  |  |  |  |  |  | 7.0 | 8.0 |  |
| Flash Dont Walk (s) |  |  |  |  |  |  |  |  |  | 16.0 | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  |  |  |  |  |  |  | 1 | 4 |  |
| Act Effct Green (s) |  | 9.2 | 9.2 | 24.3 | 24.3 | 35.6 | 67.0 | 61.7 |  | 68.1 | 60.3 |  |
| Actuated g/C Ratio |  | 0.08 | 0.08 | 0.20 | 0.20 | 0.30 | 0.56 | 0.51 |  | 0.57 | 0.50 |  |
| v/c Ratio |  | 0.65 | 0.26 | 0.78 | 0.78 | 0.29 | 0.33 | 0.66 |  | 0.23 | 0.80 |  |
| Control Delay |  | 79.1 | 3.2 | 60.3 | 60.4 | 18.2 | 16.6 | 25.0 |  | 13.2 | 29.7 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay |  | 79.1 | 3.2 | 60.3 | 60.4 | 18.2 | 16.6 | 25.0 |  | 13.2 | 29.7 |  |
| LOS |  | E | A | E | E | B | B | C |  | B | C |  |
| Approach Delay |  | 47.2 |  |  | 50.8 |  |  | 24.7 |  |  | 29.1 |  |
| Approach LOS |  | D |  |  | D |  |  | C |  |  | C |  |
| Queue Length 50th (ft) |  | 62 | 0 | 204 | 207 | 52 | 17 | 337 |  | 15 | 426 |  |
| Queue Length 95th (ft) |  | \#179 | 4 | 277 | 281 | 93 | 39 | 481 |  | 37 | \#615 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 124 | 221 | 488 | 492 | 564 | 192 | 1750 |  | 251 | 1675 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.65 | 0.26 | 0.54 | 0.54 | 0.27 | 0.29 | 0.66 |  | 0.21 | 0.80 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 120 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 120 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 0 (0\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |

2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 32.6 Intersection LOS: C
Intersection Capacity Utilization 72.9\% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


|  | $\cdots$ | + | 2 | m |  | ( | $\cdots$ | 7 | Pa | $\underline{4}$ | $\downarrow$ | 1- |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations | ${ }^{7}$ | $\uparrow$ |  | ${ }^{1}$ | $\uparrow$ |  |  | * $\uparrow$ |  | ${ }^{1}$ | 中 ${ }^{\text {W }}$ |  |
| Traffic Volume (vph) | 52 | 30 | 93 | 77 | 32 | 117 | 90 | 1428 | 151 | 311 | 1221 | 55 |
| Future Volume (vph) | 52 | 30 | 93 | 77 | 32 | 117 | 90 | 1428 | 151 | 311 | 1221 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 10 | 12 | 11 | 12 | 12 | 12 | 12 | 12 | 11 | 12 | 12 |
| Grade (\%) |  | -1\% |  |  | -4\% |  |  | 1\% |  |  | 0\% |  |
| Storage Length (ft) | 0 |  | 0 | 65 |  | 0 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 0 | 1 |  | 0 | 0 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 25 |  |  | 25 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | 0.99 |  |  |  |  |  | 1.00 |  |  | 1.00 |  |
| Frt |  | 0.886 |  |  | 0.882 |  |  | 0.986 |  |  | 0.994 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  |  | 0.997 |  | 0.950 |  |  |
| Satd. Flow (prot) | 1660 | 1527 | 0 | 1711 | 1676 | 0 | 0 | 3462 | 0 | 1711 | 3515 | 0 |
| Flt Permitted | 0.457 |  |  | 0.570 |  |  |  | 0.740 |  | 0.065 |  |  |
| Satd. Flow (perm) | 795 | 1527 | 0 | 1027 | 1676 | 0 | 0 | 2569 | 0 | 117 | 3515 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  | 97 |  |  | 122 |  |  | 19 |  |  | 15 |  |
| Link Speed (mph) |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance (ft) |  | 190 |  |  | 295 |  |  | 434 |  |  | 510 |  |
| Travel Time (s) |  | 4.3 |  |  | 6.7 |  |  | 7.4 |  |  | 8.7 |  |
| Confl. Peds. (\#/hr) | 4 |  | 4 |  |  |  | 4 |  |  |  |  | 4 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (\%) | 2\% | 2\% | 2\% | 4\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% | 2\% |
| Adj. Flow (vph) | 54 | 31 | 97 | 80 | 33 | 122 | 94 | 1488 | 157 | 324 | 1272 | 57 |
| Shared Lane Traffic (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group Flow (vph) | 54 | 128 | 0 | 80 | 155 | 0 | 0 | 1739 | 0 | 324 | 1329 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset(ft) |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width(ft) |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |
| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| Headway Factor | 1.09 | 1.09 | 0.99 | 1.02 | 0.97 | 0.97 | 1.01 | 1.01 | 1.01 | 1.04 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru |  | Left | Thru |  | Left | Thru |  | Left | Thru |  |
| Leading Detector (ft) | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector (ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position(ft) | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size(ft) | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | $\mathrm{Cl}+\mathrm{Ex}$ | Cl+Ex |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  | $\mathrm{Cl}+\mathrm{Ex}$ | Cl+Ex |  | Cl+Ex | $\mathrm{Cl}+\mathrm{Ex}$ |  |
| Detector 1 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 1 Extend (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Queue (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 1 Delay (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Detector 2 Position(ft) |  | 94 |  |  | 94 |  |  | 94 |  |  | 94 |  |
| Detector 2 Size(ft) |  | 6 |  |  | 6 |  |  | 6 |  |  | 6 |  |
| Detector 2 Type |  | Cl+Ex |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |


| Lane Group | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Perm | NA |  | Perm | NA |  | Perm | NA |  | pm+pt | NA |  |
| Protected Phases |  | 6 |  |  | 2 |  |  | 4 |  | 3 | 8 |  |
| Permitted Phases | 6 |  |  | 2 |  |  | 4 |  |  | 8 |  |  |
| Detector Phase | 6 | 6 |  | 2 | 2 |  | 4 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 11.0 | 11.0 |  | 11.0 | 11.0 |  | 23.0 | 23.0 |  | 11.0 | 23.0 |  |
| Total Split (s) | 16.0 | 16.0 |  | 16.0 | 16.0 |  | 61.0 | 61.0 |  | 19.0 | 80.0 |  |
| Total Split (\%) | 16.7\% | 16.7\% |  | 16.7\% | 16.7\% |  | 63.5\% | 63.5\% |  | 19.8\% | 83.3\% |  |
| Maximum Green (s) | 11.0 | 11.0 |  | 11.0 | 11.0 |  | 56.0 | 56.0 |  | 14.0 | 75.0 |  |
| Yellow Time (s) | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 4.0 | 4.0 |  |
| All-Red Time (s) | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 |  | 0.0 | 0.0 |  |  | -1.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 5.0 | 5.0 |  | 5.0 | 5.0 |  |  | 4.0 |  | 5.0 | 5.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lag | Lag |  | Lead |  |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes |  |  |
| Vehicle Extension (s) | 3.0 | 3.0 |  | 3.0 | 3.0 |  | 3.0 | 3.0 |  | 3.0 | 3.0 |  |
| Recall Mode | None | None |  | None | None |  | C-Min | C-Min |  | None | C-Min |  |
| Walk Time (s) | 7.0 | 7.0 |  | 7.0 | 7.0 |  |  |  |  |  |  |  |
| Flash Dont Walk (s) | 11.0 | 11.0 |  | 11.0 | 11.0 |  |  |  |  |  |  |  |
| Pedestrian Calls (\#/hr) | 0 | 0 |  | 0 | 0 |  |  |  |  |  |  |  |
| Act Effct Green (s) | 10.1 | 10.1 |  | 10.1 | 10.1 |  |  | 57.9 |  | 75.9 | 75.9 |  |
| Actuated g/C Ratio | 0.11 | 0.11 |  | 0.11 | 0.11 |  |  | 0.60 |  | 0.79 | 0.79 |  |
| v/c Ratio | 0.64 | 0.52 |  | 0.74 | 0.54 |  |  | 1.12 |  | 1.00 | 0.48 |  |
| Control Delay | 75.4 | 21.2 |  | 79.6 | 19.5 |  |  | 76.6 |  | 79.3 | 4.1 |  |
| Queue Delay | 0.0 | 0.5 |  | 0.0 | 0.0 |  |  | 0.0 |  | 0.0 | 0.3 |  |
| Total Delay | 75.4 | 21.7 |  | 79.6 | 19.5 |  |  | 76.6 |  | 79.3 | 4.4 |  |
| LOS | E | C |  | E | B |  |  | E |  | E | A |  |
| Approach Delay |  | 37.7 |  |  | 40.0 |  |  | 76.6 |  |  | 19.0 |  |
| Approach LOS |  | D |  |  | D |  |  | E |  |  | B |  |
| Queue Length 50th (ft) | 32 | 17 |  | 48 | 18 |  |  | ~662 |  | ~150 | 115 |  |
| Queue Length 95th (ft) | \#89 | 73 |  | \#120 | 78 |  |  | \#778 |  | \#329 | 146 |  |
| Internal Link Dist (ft) |  | 110 |  |  | 215 |  |  | 354 |  |  | 430 |  |
| Turn Bay Length (ft) |  |  |  | 65 |  |  |  |  |  |  |  |  |
| Base Capacity (vph) | 91 | 260 |  | 117 | 300 |  |  | 1556 |  | 324 | 2780 |  |
| Starvation Cap Reductn | 0 | 0 |  | 0 | 0 |  |  | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn | 0 | 18 |  | 0 | 0 |  |  | 0 |  | 0 | 672 |  |
| Storage Cap Reductn | 0 | 0 |  | 0 | 0 |  |  | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio | 0.59 | 0.53 |  | 0.68 | 0.52 |  |  | 1.12 |  | 1.00 | 0.63 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 96 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 96 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 1 (1\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |

Maximum v/c Ratio: 1.12
Intersection Signal Delay: $47.5 \quad$ Intersection LOS: D
Intersection Capacity Utilization 111.3\% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
Splits and Phases: 1: US Rt 6 (E. Main St) \& BMP WB Ramp/Site Drwy


|  | H | $\dagger$ |  |  |  | $\downarrow$ | 4 | － | \％ | \％ | $\lambda$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{*}$ | $\uparrow$ | 「 | ${ }^{7}$ | 中4 |  | ${ }^{1}$ | 中 ${ }^{\text {F }}$ |  |
| Traffic Volume（vph） | 53 | 23 | 55 | 497 | 31 | 146 | 53 | 1123 | 0 | 49 | 1080 | 258 |
| Future Volume（vph） | 53 | 23 | 55 | 497 | 31 | 146 | 53 | 1123 | 0 | 49 | 1080 | 258 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  | 0.99 |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.971 |  |
| Flt Protected |  | 0.966 |  | 0.950 | 0.958 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1631 | 1583 | 1674 | 1688 | 1631 | 1702 | 3404 | 0 | 1652 | 3305 | 0 |
| Flt Permitted |  | 0.966 |  | 0.950 | 0.958 |  | 0.086 |  |  | 0.132 |  |  |
| Satd．Flow（perm） | 0 | 1631 | 1583 | 1674 | 1688 | 1631 | 154 | 3404 | 0 | 229 | 3305 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 136 |  |  | 99 |  |  |  |  | 38 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  | 1 | 4 |  |  |  |  | 4 |
| 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 |
| Heavy Vehicles（\％） | 17\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ |
| Adj．Flow（vph） | 56 | 24 | 58 | 523 | 33 | 154 | 56 | 1182 | 0 | 52 | 1137 | 272 |
| Shared Lane Traffic（\％） |  |  |  | 47\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 80 | 58 | 277 | 279 | 154 | 56 | 1182 | 0 | 52 | 1409 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（ft） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（ft） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |


| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（ft） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | $\mathrm{Cl}+\mathrm{Ex}$ | Cl＋Ex |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |

Detector 1 Channel

| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Detector 1 Queue $(\mathrm{s})$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay $(\mathrm{s})$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 | 6 | 6 |
| Detector 2 Size（ft） | 6 |  | 6 |  |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |  |  |
| Detector 2 Type | $\mathrm{Cl}+\mathrm{Ex}$ |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | Cl |  |  |  |  |


|  | $\pm$ |  |  | $\dagger$ |  | $\pm$ | 4 | $\ngtr$ | ¢ | 1 | 1 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Split | NA | Perm | Split | NA | pt+ov | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  |  | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |  | 11.0 | 31.0 |  | 29.0 | 31.0 |  |
| Total Split (s) | 13.0 | 13.0 | 13.0 | 25.0 | 25.0 |  | 12.0 | 46.0 |  | 12.0 | 46.0 |  |
| Total Split (\%) | 13.5\% | 13.5\% | 13.5\% | 26.0\% | 26.0\% |  | 12.5\% | 47.9\% |  | 12.5\% | 47.9\% |  |
| Maximum Green (s) | 8.0 | 8.0 | 8.0 | 20.0 | 20.0 |  | 7.0 | 41.0 |  | 7.5 | 41.0 |  |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 3.5 | 4.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 4.5 | 5.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 3.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Min |  | None | C-Min |  |
| Walk Time (s) |  |  |  |  |  |  |  |  |  | 7.0 | 8.0 |  |
| Flash Dont Walk (s) |  |  |  |  |  |  |  |  |  | 16.0 | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  |  |  |  |  |  |  | 1 | 4 |  |
| Act Effct Green (s) |  | 7.4 | 7.4 | 18.3 | 18.3 | 29.2 | 53.1 | 48.2 |  | 53.6 | 46.4 |  |
| Actuated g/C Ratio |  | 0.08 | 0.08 | 0.19 | 0.19 | 0.30 | 0.55 | 0.50 |  | 0.56 | 0.48 |  |
| v/c Ratio |  | 0.65 | 0.24 | 0.87 | 0.87 | 0.27 | 0.31 | 0.69 |  | 0.23 | 0.87 |  |
| Control Delay |  | 66.6 | 2.2 | 64.3 | 64.0 | 10.8 | 14.8 | 23.6 |  | 10.0 | 29.2 |  |
| Queue Delay |  | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 |  | 0.0 | 0.1 |  |
| Total Delay |  | 66.6 | 2.3 | 64.3 | 64.0 | 10.8 | 14.8 | 24.8 |  | 10.0 | 29.4 |  |
| LOS |  | E | A | E | E | B | B | C |  | A | C |  |
| Approach Delay |  | 39.6 |  |  | 52.6 |  |  | 24.3 |  |  | 28.7 |  |
| Approach LOS |  | D |  |  | D |  |  | C |  |  | C |  |
| Queue Length 50th (ft) |  | 48 | 0 | 169 | 170 | 23 | 15 | 319 |  | 13 | 426 |  |
| Queue Length 95th (ft) |  | \#109 | 0 | \#305 | \#304 | 68 | 33 | 413 |  | m26 | \#597 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 135 | 256 | 348 | 351 | 573 | 198 | 1708 |  | 241 | 1618 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 11 |  |
| Spillback Cap Reductn |  | 0 | 11 | 0 | 0 | 0 | 0 | 295 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.59 | 0.24 | 0.80 | 0.79 | 0.27 | 0.28 | 0.84 |  | 0.22 | 0.88 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 96 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 96 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 95 (99\%), Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |

Maximum v/c Ratio: 0.87
Intersection Signal Delay: 32.4 Intersection LOS: C
Intersection Capacity Utilization 73.6\% 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 95 th percentile queue is metered by upstream signal.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp




HCM LOS

| Minor Lane/Major Mvmt | NEL | NET | NERNWLn1NWLn2 SELn1 | SWL | SWT | SWR |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | :--- |
| Capacity (veh/h) | 517 | - | - | -341 | -384 | - | - |  |
| HCM Lane V/C Ratio | 0.107 | - | - | -0.257 | -0.844 | - | - |  |
| HCM Control Delay (s) | 12.8 | 6 | - | - | 19.2 | -48.5 | - | - |
| HCM Lane LOS | B | A | - | - | C | - | $E$ | - |
| HCM 95th \%otile Q(veh) | 0.4 | - | - | - | 1 | - | 7.9 | - |


|  | H | $\dagger$ |  |  |  | $\downarrow$ | 4 | $\nearrow$ | \％ | \％ | $\lambda$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Lane Configurations |  | $\uparrow$ | 「 | ${ }^{*}$ | $\uparrow$ | 「 | ＊ | 中4 |  | ${ }^{1}$ | 中 ${ }^{\text {a }}$ |  |
| Traffic Volume（vph） | 53 | 23 | 55 | 476 | 31 | 146 | 53 | 1122 | 0 | 49 | 1056 | 237 |
| Future Volume（vph） | 53 | 23 | 55 | 476 | 31 | 146 | 53 | 1122 | 0 | 49 | 1056 | 237 |
| Ideal Flow（vphpl） | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 11 | 11 | 12 | 11 | 11 | 12 | 10 | 11 | 11 |
| Grade（\％） |  | 0\％ |  |  | －6\％ |  |  | 1\％ |  |  | 0\％ |  |
| Storage Length（ft） | 0 |  | 0 | 135 |  | 135 | 45 |  | 0 | 80 |  | 0 |
| Storage Lanes | 0 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length（ft） | 25 |  |  | 86 |  |  | 86 |  |  | 86 |  |  |
| Lane Util．Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  | 0.99 |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  |  |  | 0.973 |  |
| Flt Protected |  | 0.966 |  | 0.950 | 0.958 |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 0 | 1631 | 1583 | 1674 | 1688 | 1631 | 1702 | 3404 | 0 | 1652 | 3311 | 0 |
| Flt Permitted |  | 0.966 |  | 0.950 | 0.958 |  | 0.087 |  |  | 0.142 |  |  |
| Satd．Flow（perm） | 0 | 1631 | 1583 | 1674 | 1688 | 1631 | 156 | 3404 | 0 | 247 | 3311 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 109 |  |  | 114 |  |  |  |  | 28 |  |
| Link Speed（mph） |  | 30 |  |  | 30 |  |  | 40 |  |  | 40 |  |
| Link Distance（ft） |  | 170 |  |  | 339 |  |  | 421 |  |  | 434 |  |
| Travel Time（s） |  | 3.9 |  |  | 7.7 |  |  | 7.2 |  |  | 7.4 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  | 1 | 4 |  |  |  |  | 4 |
| 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 |
| Heavy Vehicles（\％） | 17\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ | 2\％ |
| Adj．Flow（vph） | 56 | 24 | 58 | 501 | 33 | 154 | 56 | 1181 | 0 | 52 | 1112 | 249 |
| Shared Lane Traffic（\％） |  |  |  | 47\％ |  |  |  |  |  |  |  |  |
| Lane Group Flow（vph） | 0 | 80 | 58 | 266 | 268 | 154 | 56 | 1181 | 0 | 52 | 1361 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width（ft） |  | 11 |  |  | 11 |  |  | 11 |  |  | 11 |  |
| Link Offset（ft） |  | 0 |  |  | 0 |  |  | 0 |  |  | 0 |  |
| Crosswalk Width（ft） |  | 16 |  |  | 16 |  |  | 16 |  |  | 16 |  |


| Two way Left Turn Lane |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 0.96 | 1.05 | 1.05 | 1.01 | 1.09 | 1.04 | 1.04 |
| Turning Speed（mph） | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 | 15 |  | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |  | 1 | 2 |  |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru |  | Left | Thru |  |
| Leading Detector（ft） | 20 | 100 | 20 | 20 | 100 | 20 | 20 | 100 |  | 20 | 100 |  |
| Trailing Detector（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Position（ft） | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Detector 1 Size（ft） | 20 | 6 | 20 | 20 | 6 | 20 | 20 | 6 |  | 20 | 6 |  |
| Detector 1 Type | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ | Cl＋Ex | Cl＋Ex | Cl＋Ex | Cl＋Ex | $\mathrm{Cl}+\mathrm{Ex}$ | Cl＋Ex |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |

Detector 1 Channel

| Detector 1 Extend（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Detector 1 Queue $(\mathrm{s})$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay $(\mathrm{s})$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position（ft） |  | 94 |  |  | 94 |  |  | 94 | 6 | 6 |
| Detector 2 Size（ft） | 6 |  | 6 |  |  | $\mathrm{Cl}+\mathrm{Ex}$ | $\mathrm{Cl}+\mathrm{Ex}$ |  |  |  |
| Detector 2 Type | $\mathrm{Cl}+\mathrm{Ex}$ |  | $\mathrm{Cl}+\mathrm{Ex}$ |  |  | Cl |  |  |  |  |


|  | $\pm$ |  |  | $\dagger$ |  | $\downarrow$ | 4 | $\ngtr$ | ¢ | 1 | 1 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | NBL | NBT | NBR | SBL | SBT | SBR | NEL | NET | NER | SWL | SWT | SWR |
| Detector 2 Channel |  |  |  |  |  |  |  |  |  |  |  |  |
| Detector 2 Extend (s) |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |  | 0.0 |  |
| Turn Type | Split | NA | Perm | Split | NA | pt+ov | pm+pt | NA |  | pm+pt | NA |  |
| Protected Phases | 2 | 2 |  | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Permitted Phases |  |  | 2 |  |  |  | 4 |  |  | 8 |  |  |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | 67 | 7 | 4 |  | 3 | 8 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |  | 11.0 | 31.0 |  | 29.0 | 31.0 |  |
| Total Split (s) | 16.0 | 16.0 | 16.0 | 34.0 | 34.0 |  | 13.0 | 57.0 |  | 13.0 | 57.0 |  |
| Total Split (\%) | 13.3\% | 13.3\% | 13.3\% | 28.3\% | 28.3\% |  | 10.8\% | 47.5\% |  | 10.8\% | 47.5\% |  |
| Maximum Green (s) | 11.0 | 11.0 | 11.0 | 29.0 | 29.0 |  | 8.0 | 52.0 |  | 8.5 | 52.0 |  |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |  | 4.0 | 4.0 |  | 3.5 | 4.0 |  |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  | 1.0 | 1.0 |  | 1.0 | 1.0 |  |
| Lost Time Adjust (s) |  | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) |  | 5.0 | 5.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  | 4.5 | 5.0 |  |
| Lead/Lag |  |  |  |  |  |  | Lead | Lag |  | Lead | Lag |  |
| Lead-Lag Optimize? |  |  |  |  |  |  | Yes | Yes |  | Yes | Yes |  |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |  | 2.0 | 2.0 |  | 3.0 | 2.0 |  |
| Recall Mode | None | None | None | Min | Min |  | None | C-Min |  | None | C-Min |  |
| Walk Time (s) |  |  |  |  |  |  |  |  |  | 7.0 | 8.0 |  |
| Flash Dont Walk (s) |  |  |  |  |  |  |  |  |  | 16.0 | 18.0 |  |
| Pedestrian Calls (\#/hr) |  |  |  |  |  |  |  |  |  | 1 | 4 |  |
| Act Effct Green (s) |  | 9.3 | 9.3 | 23.4 | 23.4 | 34.7 | 68.1 | 62.8 |  | 68.6 | 61.1 |  |
| Actuated g/C Ratio |  | 0.08 | 0.08 | 0.20 | 0.20 | 0.29 | 0.57 | 0.52 |  | 0.57 | 0.51 |  |
| v/c Ratio |  | 0.64 | 0.26 | 0.82 | 0.82 | 0.28 | 0.33 | 0.66 |  | 0.23 | 0.80 |  |
| Control Delay |  | 75.8 | 3.2 | 65.5 | 65.4 | 10.3 | 17.4 | 25.6 |  | 14.3 | 30.1 |  |
| Queue Delay |  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay |  | 75.8 | 3.2 | 65.5 | 65.4 | 10.3 | 17.4 | 25.6 |  | 14.3 | 30.1 |  |
| LOS |  | E | A | E | E | B | B | C |  | B | C |  |
| Approach Delay |  | 45.3 |  |  | 53.1 |  |  | 25.2 |  |  | 29.6 |  |
| Approach LOS |  | D |  |  | D |  |  | C |  |  | C |  |
| Queue Length 50th (ft) |  | 61 | 0 | 207 | 209 | 22 | 17 | 362 |  | 16 | 449 |  |
| Queue Length 95th (ft) |  | 114 | 4 | 297 | 298 | 68 | 40 | 502 |  | 38 | \#671 |  |
| Internal Link Dist (ft) |  | 90 |  |  | 259 |  |  | 341 |  |  | 354 |  |
| Turn Bay Length (ft) |  |  |  | 135 |  | 135 | 45 |  |  | 80 |  |  |
| Base Capacity (vph) |  | 149 | 244 | 404 | 407 | 564 | 193 | 1782 |  | 243 | 1699 |  |
| Starvation Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Spillback Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Storage Cap Reductn |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 0 |  |
| Reduced v/c Ratio |  | 0.54 | 0.24 | 0.66 | 0.66 | 0.27 | 0.29 | 0.66 |  | 0.21 | 0.80 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 120 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 120 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: $0(0 \%)$, Referenced to phase 4:NETL and 8:SWTL, Start of Yellow |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 90 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |

## Maximum v/c Ratio: 0.82

Intersection Signal Delay: 33.3 Intersection LOS: C
Intersection Capacity Utilization 73.0\% 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.
Splits and Phases: 2: US Rt 6 (E. Main St) \& Gasland Drwy/BMP EB Ramp


## Kimley»)Horn

$>$ Queuing Summary Tables

| Intersection | Approach | Storage Length (ft) | AM Peak Hour |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Existing | No-Build | Build Signalized | Build Unsignalized |
|  |  |  | 95\% | 95\% | 95\% | 95\% |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access | EB LTR | 305/355* | 0 | 0 | 151 | 5 |
|  | WB LTR | 900 | 28 | 38 | N/A | 38 |
|  | WB L | 125 | N/A | N/A | 61 | N/A |
|  | WB TR | 900 | N/A | N/A | 104 | N/A |
|  | NB L | 75 | 15 | 53 | 88 | 73 |
|  | NB TR | 175 | 5 | 10 | 59 | 38 |
|  | SB LTR | 50 | 10 | 15 | N/A | 115 |
|  | SBL | 50 | N/A | N/A | 48 | N/A |
|  | SB TR | 50 | N/A | N/A | 52 | N/A |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 50 | 47 | 28 | 28 | 28 |
|  | EB TR | 200 | 147 | 222 | 234 | 233 |
|  | WB LTR | 305 | 257 | N/A | N/A | N/A |
|  | WB L | 80 | N/A | 34 | 26 | 34 |
|  | WB TR | 355 | N/A | 272 | 318 | 283 |
|  | NB LTR | 50 | 0 | N/A | N/A | N/A |
|  | NB LT | 50 | N/A | 88 | 88 | 88 |
|  | NB R | 50 | N/A | 0 | 0 | 0 |
|  | SB L | 135 | 317 | 206 | 226 | 212 |
|  | SB TR/LT* | 350 | 39 | 204 | 222 | 209 |
|  | SB R | 135 | N/A | 43 | 43 | 43 |
| Intersection | Approach | Storage Length (ft) | PM Peak Hour |  |  |  |
|  |  |  | Existing | No-Build | Build Signalized | Build Unsignalized |
|  |  |  | 95\% | 95\% | 95\% | 95\% |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access | EB LTR | 305/355* | 0 | 3 | 624 | 5 |
|  | WB LTR | 900 | 68 | 148 | N/A | 145 |
|  | WB L | 125 | N/A | N/A | 271 | N/A |
|  | WB TR | 900 | N/A | N/A | 97 | N/A |
|  | NB L | 75 | 55 | 0 | 72 | 0 |
|  | NB TR | 175 | 5 | 10 | 63 | 178 |
|  | SB LTR | 50 | 45 | 108 | N/A | 0 |
|  | SBL | 50 | N/A | N/A | 55 | N/A |
|  | SB TR | 50 | N/A | N/A | 59 | N/A |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 50 | 49 | 31 | 31 | 31 |
|  | EB TR | 200 | 233 | 390 | 422 | 422 |
|  | WB LTR | 305 | 336 | N/A | N/A | N/A |
|  | WB L | 80 | N/A | 36 | 37 | 36 |
|  | WB TR | 355 | N/A | 401 | 439 | 414 |
|  | NB LTR | 50 | 0 | N/A | N/A | N/A |
|  | NB LT | 50 | N/A | 96 | 96 | 96 |
|  | NB R | 50 | N/A | 0 | 0 | 0 |
|  | SB L | 135 | 449 | 226 | 236 | 228 |
|  | SB TR/LT* | 350 | 0 | 225 | 233 | 226 |
|  | SBR | 135 | N/A | 34 | 34 | 34 |
| Intersection | Approach | Storage Length (ft) | Saturday Peak Hour |  |  |  |
|  |  |  | Existing | No-Build | Build Signalized | Build Unsignalized |
|  |  |  | 95\% | 95\% | 95\% | 95\% |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access | EB LTR | 305/355* | 3 | 3 | 778 | 10 |
|  | WB LTR | 900 | 85 | 200 | N/A | 198 |
|  | WB L | 125 | N/A | N/A | 329 | N/A |
|  | WB TR | 900 | N/A | N/A | 146 | N/A |
|  | NB L | 75 | 115 | 0 | 120 | 0 |
|  | NB TR | 175 | 10 | 20 | 78 | 25 |
|  | SB LTR | 50 | 105 | 163 | N/A | 0 |
|  | SBL | 50 | N/A | N/A | 89 | N/A |
|  | SB TR | 50 | N/A | N/A | 73 | N/A |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EBL | 50 | 58 | 39 | 33 | 40 |
|  | EB TR | 200 | 254 | 481 | 413 | 502 |
|  | WB LTR | 305 | 532 | N/A | N/A | N/A |
|  | WB L | 80 | N/A | 37 | 26 | 38 |
|  | WB TR | 355 | N/A | 615 | 597 | 671 |
|  | NB LTR | 50 | 0 | N/A | N/A | N/A |
|  | NB LT | 50 | N/A | 179 | 109 | 114 |
|  | NB R | 50 | N/A | 4 | 0 | 4 |
|  | SB L | 135 | 482 | 277 | 305 | 297 |
|  | SB TR/LT* | 350 | 33 | 281 | 304 | 298 |
|  | SB R | 135 | N/A | 93 | 68 | 68 |

Unsignalized intersections based on $25^{\prime}$ per vehicle
Signalized intersections, Synchro provides queue length in feet

* Existing/Future conditions


## Kimley»)Horn

> Accident Data

# Accident Location Information System(ALIS) 

Accident Verbal Description<br>17231_VDR<br>Date in this report covers the period -9/1/2016-8/31/2019

Complete Accident data from NYSDMV is only available thru 8/31/2019 12:00:00 AM
County: Westchester Muni: Cortlandt(T) Ref. Marker: 987 H 87012007 Street: BEAR MOUNTAIN STATE PKWY
AT INTERSECTION WITH [Route] 6


County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033002 Street: E MAIN ST
AT INTERSECTION WITH Bear Mountain State Pkwy

| 9/26/2016 | Mon 16:10 PM | Persons Killed: 0 | Persons Injured: 0 | Extent of Injuries: | Case: 2016-36407219 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Accident Class: | PERTY DAMAGE | Police A | NYSP CORTLANDT | Num of Veh: 2 |
|  | Type Of Accide | OLLISION WITH M | OOTOR VEHICLE | Traffic | ic Control: STOP SIGN |
|  | Manner of Colli | HEAD ON |  | Weather: | CLEAR |
|  | Road Surface Co | ion: DRY | Road Char.: CURVE AN | ADE Ligh | ht Condition: DAYLIGHT |
|  | Loc. of Ped/Bic | NOT APPLICABLE |  | f Ped/Bicycle: NOT AP | PPLICABLE |
| Veh :1 | OTHER | Registered Weight: |  | ate of Registration: -3 |  |
|  | Num of Occupants: 0 |  | Driver's Age: | Sex: | Citation Issued: |
|  | Direction of Tr | SOUTH | Public Property Damage: | R Schoo | ol Bus Involved: OTHER |

Pre-Accd Action: MAKING RIGHT TURN
Apparent Factors: TURNING IMPROPER, UNSAFE SPEED







| Num of Occupants: 2 | Driver's Age: 28 | Sex: M | Citation Issued: N |
| :--- | :---: | :---: | :---: |
| Direction of Travel: WEST | Public Property Damage: OTHER |  | School Bus Involved: OTHER |

## Pre-Accd Action: GOING STRAIGHT AHEAD <br> Apparent Factors: NOT APPLICABLE, FOLLOWING TOO CLOSELY



Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE


| County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033004 Street: E MAIN ST |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 22 Meters North of Parking Lot |  |  |  |  |
| 7/15/2017 | Sat 12:21 PM Persons Killed: 0 | Persons Injured: 0 | Extent of Injuries: | Case: 2017-36809589 |
|  | Accident Class: NON-REPORTABLE | Police A | NYSP CORTLANDT | Num of Veh: 2 |
|  | Type Of Accident: COLLISION WITH MOTOR VEHICLE |  |  | Traffic Control: NONE |
|  | Manner of Collision: REAR END |  | Weath | er: CLEAR |
|  | Road Surface Condition: DRY Road Char.: STRAIGHT |  | LEVEL L | Light Condition: DAYLIGHT |
|  | Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT |  |  | APPLICABLE |
| Veh :2 | CAR/VAN/PICKUP | Registered Weight: | State of Registration: NY |  |
|  | Num of Occupants: 2 | Driver's Age: | Sex: | Citation Issued: |
|  | Direction of Travel: EAST P | Public Property Damage: | R School Bus Involved: OTHER |  |
|  | Pre-Accd Action: PARKED |  |  |  |
|  | Apparent Factors: NOT APPLICABLE, NOT APPLICABLE |  |  |  |
| Veh :1 | CAR/VAN/PICKUP | Registered Weight: | State of Registration: NY |  |
|  | Num of Occupants: 1 | Driver's Age: 18 | Sex: M | Citation Issued: N |
|  | Direction of Travel: SOUTH-WEST | Public Property Damage: OTHER S |  | School Bus Involved: OTHER |
|  | Pre-Accd Action: BACKING |  |  |  |
|  | Apparent Factors: BACKING UNSAFEL | ELY, NOT APPLICABLE |  |  |

County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033002 Street: [Route] 6
8/16/2017 Wed 16:10 PM Persons Killed: $0 \quad$ Persons Injured: $0 \quad$ Extent of Injuries: 2017-36854238 Accident Class: PROPERTY DAMAGE Police Agency: PD WESTCHESTER COUNTY DPS Num of Veh: 2 Type Of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL Manner of Collision: REAR END Weather: CLEAR
Road Surface Condition: DRY Road Char.: STRAIGHT AND LEVEL
Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

Veh :1

Veh :2
CAR/VAN/PICKUP
Num of Occupants: 4

Registered Weight: 3280
Driver's Age: 27
Public Property Damage: OTHER
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: DRIVER INATTENTION, NOT APPLICABLE

| CAR/VAN/PICKUP | Registered |
| :--- | ---: |
| Num of Occupants: 1 | Driv |
| Direction of Travel: WEST | Public Pr |
| Pre-Accd Action: GOING STRAIGHT AHEAD |  |

Registered Weight: 4788
Driver's Age: 36

State of Registration: NY
Sex: M Citation Issued: N
School Bus Involved: OTHER

State of Registration: NY
Sex: F Citation Issued: N

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE


Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE

Veh :1
CAR/VAN/PICKUP Registered Weight:
Num of Occupants: 1
Driver's Age: 58

State of Registration: NY
Sex: F Citation Issued: N
Direction of Travel: WEST Public Property Damage: OTHER School Bus Involved: OTHER

Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE, FOLLOWING TOO CLOSELY

County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033002 Street: E MAIN ST

| AT INTERSECTION WITH Ramp |  |  | Persons Killed: 0 | Persons Injured: 0 |
| :--- | :--- | :--- | :--- | :--- | Extent of Injuries: $\mathbf{1 0} / \mathbf{2 4 / 2 0 1 7} \quad$ Tue 08:55 AM $\quad$ Case: 2017-36949540

Accident Class: PROPERTY DAMAGE Police Agency: NYSP CORTLANDT Num of Veh: 2
Type Of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: TRAFFIC SIGNAL
Manner of Collision: LEFT TURN (WITH OTHER CAR) Weather: RAIN
Road Surface Condition: WET Road Char.: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE

| Veh :2 | CAR/VAN/PICKUP | Registered Weight: 3569 | State of Registration: NY |
| :--- | :--- | :---: | :---: |
|  | Num of Occupants: 1 | Driver's Age: 59 | Sex: M | Citation Issued: N

Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE

Veh :1

CAR/VAN/PICKUP Registered Weight: 3759 | State of Registration: NY |  |
| :--- | :--- |
| Sex: M | Citation Issued: N |

Num of Occupants: $1 \quad$ Driver's Age: 82
Direction of Travel: WEST Public Property Damage: OTHER
School Bus Involved: OTHER
Pre-Accd Action: MAKING LEFT TURN
Apparent Factors: FAILURE TO YIELD RIGHT OF WAY, NOT APPLICABLE
County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033004 Street: E MAIN ST


Pre-Accd Action: SLOWED OR STOPPING
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE
Veh :
CAR/VAN/PICKUP
State of Registration: NY
Num of Occu
Sex: F Citation Issued: N
Direction of Travel: EAST Public Property Damage: OTHER
School Bus Involved: OTHER
Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY, NOT APPLICABLE

County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033003 Street: E MAIN ST
AT INTERSECTION WITH Ramp

| 11/27/2017 | Mon 20:27 PM | Persons Killed: 0 | Persons Injured: 0 |
| :--- | :--- | :---: | :---: |$\quad$ Extent of Injuries:

Case: 2017-37019652
Accident Class: PROPERTY DAMAGE Police Agency: NYSP CORTLANDT Num of Veh: 2
Type Of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NONE
Manner of Collision: OVERTAKING Weather: CLOUDY
Road Surface Condition: DRY Road Char.: STRAIGHT AND LEVEL Light Condition: DARK-ROAD LIGHTED
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE
Veh :2
CAR/VAN/PICKUP
Registered Weight: 4077
State of Registration: NY
Num of Occupants: 1
Driver's Age: 55
Direction of Travel: WEST Public Property Damage: OTHER
Sex: M Citation Issued: N

Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE

Veh :1
CAR/VAN/PICKUP
Registered Weight:
State of Registration: NY

| Num of Occupants: 1 | Driver's Age: 55 | Sex: M | Citation Issued: Y |
| :--- | :---: | :---: | :---: |
| Direction of Travel: WEST | Public Property Damage: OTHER |  | School Bus Involved: OTHER |

Pre-Accd Action: CHANGING LANES
Apparent Factors: UNSAFE LANE CHANGE, NOT APPLICABLE







County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033003 Street: E MAIN ST
AT INTERSECTION WITH Ramp


Pre-Accd Action: GOING STRAIGHT AHEAD
Apparent Factors: FOLLOWING TOO CLOSELY, UNSAFE SPEED

Veh :2

| CAR/VAN/PICKUP | Registered Weight: 4572 | State of Registration: NY |  |
| :--- | :---: | :---: | :---: |
| Num of Occupants: 5 | Driver's Age: 48 | Sex: F | Citation Issued: N |
| Direction of Travel: NORTH-EAST | Public Property Damage: OTHER | School Bus Involved: OTHER |  |

Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE

County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033002 Street: E MAIN ST
10/19/2018 Fri 17:53 PM Persons Killed: $1 \quad$ Persons Injured: $0 \quad$ Extent of Injuries: $K \quad$ Case: 2018-37549719
Accident Class: FATAL Police Agency: PD WESTCHESTER COUNTY DPS
Type Of Accident: COLLISION WITH MOTOR VEHICLE
Manner of Collision: LEFT TURN (AGAINST OTHER CAR)
Road Surface Condition: DRY Road Char: STRAIGHT AND LEVEL
Loc. of Ped/Bicycle: NOT APPLICABLE Action of Ped/Bicycle: NOT APPLICABLE







Pre-Accd Action: STARTING FROM PARKING
Apparent Factors: TURNING IMPROPER, UNSAFE SPEED

Veh :2

| CAR/VAN/PICKUP | Registered Weight: 3146 |
| :--- | ---: |
| Num of Occupants: 1 | Driver's Age |

State of Registration: NY
Sex: Citation Issued:

| Direction of Travel: WEST Public Property Damage: OTHER | School Bus Involved: OTHER |
| :--- | :--- | :--- |
| Pre-Accd Action: PARKED |  |
| Apparent Factors: NOT ENTERED, NOT ENTERED |  |



County: Westchester Muni: Cortlandt(T) Ref. Marker: 687033002 Street: E MAIN ST
62 Meters East of Ramp


Type Of Accident: COLLISION WITH MOTOR VEHICLE Traffic Control: NO PASSING ZONE
Manner of Collision: OTHER Weather: CLEAR

Road Surface Condition: DRY Road Char.: STRAIGHT AND LEVEL Light Condition: DAYLIGHT
Loc. of Ped/Bicycle: NOT APPLICABLE
Action of Ped/Bicycle: NOT APPLICABLE
Veh :2
CAR/VAN/PICKUP Registered Weight: 2614
State of Registration: NY
Num of Occupants: 2
Direction of Travel: WEST
Driver's Age: 17
Sex: M Citation Issued: N
School Bus Involved: OTHER
Pre-Accd Action: STOPPED IN TRAFFIC
Apparent Factors: NOT APPLICABLE, NOT APPLICABLE



## Kimley»)Horn

Signal Warrant Analysis

US Route 6 \& BMP WB Ramp/Palisades Site Drwy
Weekday - Signal Warrant Analysis - 2022 Build Volumes

|  | Warrant No. 1 - Eight-Hour Vehicle Warrant - 100\% |  |  |  |  |  | Warrant No. 1 - Condition A \& B Combined - 70\% |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Condition A - Minimum Vehicular Volume |  |  | Condition B - Interruption of Continuous Traffic |  |  | Condition A - Minimum Vehicular Volume |  |  | Condition B - Interruption of Continuous Traffic |  |  |
| Time Start | Major St | Minor St | Meets Warrant? | Major St US Route 6 | Minor St | Meets Warrant? | $\begin{array}{\|c\|} \hline \text { Major St } \\ \hline \text { US Route } 6 \end{array}$ | Minor St | Meets Warrant? | $\begin{gathered} \hline \text { Major St } \\ \hline \text { US Route } 6 \end{gathered}$ | Minor St | Meets Warrant? |
|  | US Route 6 | BMP Off-Ramp |  |  | BMP Off-Ramp |  |  |  |  |  |  |  |
| 12:00 AM | 213 | 13 | NO | 213 | 13 | NO | 213 | 13 | NO | 213 | 13 | NO |
| 1:00 AM | 119 | 10 | NO | 119 | 10 | NO | 119 | 10 | NO | 119 | 10 | NO |
| 2:00 AM | 88 | 8 | NO | 88 | 8 | NO | 88 | 8 | NO | 88 | 8 | NO |
| 3:00 AM | 96 | 8 | NO | 96 | 8 | NO | 96 | 8 | NO | 96 | 8 | NO |
| 4:00 AM | 137 | 18 | NO | 137 | 18 | NO | 137 | 18 | NO | 137 | 18 | NO |
| 5:00 AM | 339 | 43 | NO | 339 | 43 | NO | 339 | 43 | NO | 339 | 43 | NO |
| 6:00 AM | 901 | 85 | NO | 901 | 85 | NO | 901 | 85 | NO | 901 | 85 | YES |
| 7:00 AM | 1881 | 124 | NO | 1881 | 124 | YES | 1881 | 124 | NO | 1881 | 124 | YES |
| 8:00 AM | 2032 | 194 | NO | 2032 | 194 | YES | 2032 | 194 | YES | 2032 | 194 | YES |
| 9:00 AM | 1550 | 120 | NO | 1550 | 120 | YES | 1550 | 120 | NO | 1550 | 120 | YES |
| 10:00 AM | 1928 | 136 | NO | 1928 | 136 | YES | 1928 | 136 | NO | 1928 | 136 | YES |
| 11:00 AM | 1935 | 136 | NO | 1935 | 136 | YES | 1935 | 136 | NO | 1935 | 136 | YES |
| 12:00 PM | 1947 | 136 | NO | 1947 | 136 | YES | 1947 | 136 | NO | 1947 | 136 | YES |
| 1:00 PM | 1935 | 119 | NO | 1935 | 119 | YES | 1935 | 119 | NO | 1935 | 119 | YES |
| 2:00 PM | 1947 | 119 | NO | 1947 | 119 | YES | 1947 | 119 | NO | 1947 | 119 | YES |
| 3:00 PM | 1961 | 119 | NO | 1961 | 119 | YES | 1961 | 119 | NO | 1961 | 119 | YES |
| 4:00 PM | 2587 | 171 | NO | 2587 | 171 | YES | 2587 | 171 | YES | 2587 | 171 | YES |
| 5:00 PM | 2904 | 163 | NO | 2904 | 163 | YES | 2904 | 163 | YES | 2904 | 163 | YES |
| 6:00 PM | 1968 | 119 | NO | 1968 | 119 | YES | 1968 | 119 | NO | 1968 | 119 | YES |
| 7:00 PM | 1964 | 119 | NO | 1964 | 119 | YES | 1964 | 119 | NO | 1964 | 119 | YES |
| 8:00 PM | 1402 | 77 | NO | 1402 | 77 | NO | 1402 | 77 | NO | 1402 | 77 | YES |
| 9:00 PM | 955 | 66 | NO | 955 | 66 | NO | 955 | 66 | NO | 955 | 66 | NO |
| 10:00 PM | 640 | 48 | NO | 640 | 48 | NO | 640 | 48 | NO | 640 | 48 | NO |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Number of Hours met: |  | 0 | Number of Hours met: |  | 13 | Number of Hours met: |  | 3 | Number of Hours met: |  | 15 |

US Route 6 \& BMP WB Ramp/Palisades Site Drwy
Saturday - Signal Warrant Analysis - 2022 Build Volumes

|  | Warrant No. 1 - Eight-Hour Vehicle Warrant - 100\% |  |  |  |  |  | Warrant No. 1 - Condition A \& B Combined-70\% |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Condition A - Minimum Vehicular Volume |  |  | Condition B - Interruption of Continuous Traffic |  |  | Condition A - Minimum Vehicular Volume |  |  | Condition B - Interruption of Continuous |  |  |
| Time Start | Major St | Minor St | Meets Warrant? | Major St <br> US Route 6 | $\begin{gathered} \hline \text { Minor St } \\ \hline \text { BMP Off-Ramp } \\ \hline \end{gathered}$ | Meets Warrant? | $\begin{gathered} \hline \text { Major St } \\ \hline \text { US Route } 6 \end{gathered}$ | Minor St | Meets Warrant? | $\begin{array}{\|c\|} \hline \text { Major St } \\ \hline \text { US Route } 6 \\ \hline \end{array}$ | Minor St | Meets Warrant? |
|  | US Route 6 | BMP Off-Ramp |  |  |  |  |  |  |  |  |  |  |
| 12:00 AM | 606 | 17 | NO | 606 | 17 | NO | 606 | $17$ | NO | 606 | 17 | NO |
| 1:00 AM | 440 | 12 | NO | $\begin{aligned} & 440 \\ & 265 \end{aligned}$ | 12 | NO | 440 | $12$ | NO | 440 | 12 | NO |
| 2:00 AM | 265 | 7 | NO |  | 7 | NO | 265 | 7 | NO | 265 | 7 | NO |
| 3:00 AM | 187 | 5 | NO | 187 | 5 | NO | 187 | 57 | NO | 187 | 57 | NO |
| 4:00 AM | 271 | 7 | NO | 271 | 7 | NO | 271 |  | NO | 271 |  | NO |
| 5:00 AM | 452 | 12 | NO | 452 | 12 | NO | 452 | 12 | NO | 452 | 12 | NO |
| 6:00 AM | 1155 | 32 | NO | 1155 | 32 | NO | 1155 | 32 | NO | 1155 | 32 | NO |
| 7:00 AM | 1795 | 87 | NO | 1795 | 87 | NO | 1795 | 87 | NO | 1795 | 87 | YES |
| 8:00 AM | 2276 | 63 | NO | 2276 | 63 | NO | 2276 | 63 | NO | 2276 | 63 | NO |
| 9:00 AM | 2782 | 76 | NO | 2782 | 76 | NO | 2782 | 76 | NO | 2782 | 76 | YES |
| 10:00 AM | 3289 | 90 | NO | 3289 | 90 | NO | 3289 | 90101 | NO | 3289 | $\begin{gathered} 90 \\ 101 \end{gathered}$ | YES |
| 11:00 AM | 3678 | 101 | NO | 3678 | 101 | YES | 3678 |  | NO | 3678 |  | YES |
| 12:00 PM | 3527 | 97 | NO | 3527 | 97 | NO | 3527 | 101 97 | NO | 3527 | 101 97 | YES |
| 1:00 PM | 4251 | 117 | NO | 4251 | 117 | YES | 4251 | 117 | NO | 4251 | 117 | YES |
| 2:00 PM | 3889 | 107 | NO | 3889 | 107 | YES | 3889 | 107 | NO | 3889 | 107 | YES |
| 3:00 PM | 3816 | 105 | NO | 3816 | 105 | YES | 3816 | 105 | NO | 3816 | 105 | YES |
| 4:00 PM | 3409 | 94 | NO | 3409 | 94 | NO | 3409 | 94 | NO | 3409 | 9495 | YES |
| 5:00 PM | 3467 | 95 | NO | 3467 | 95 | NO | 3467 | 95 | NO | 3467 |  | YES |
| 6:00 PM | 3379 | 93 | NO | 3379 | 93 | NO | 3379 |  | NO | 3379 | 93 | YES |
| 7:00 PM | 2632 | 72 | NO | 2632 | 72 | NO | 2632 | 72 | NO | 2632 | 72 | YES |
| 8:00 PM | 2496 | 69 | NO | 2496 | 69 | NO | 2496 | 69 | NO | 2496 | 69 | NO |
| 9:00 PM | 2240 | 62 | NO | 2240 | 62 | NO | 2240 | 62 | NO | 2240 | 62 | NO |
| 10:00 PM | 1639 | 79 | NO | 1639 | 79 | NO | 1639 | 79 | NO | 1639 | 79 | YES |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Number of Hours met: |  | 0 | Number of Hours met: |  | 4 | Number of Hours met: |  | 0 | Number of Hours met: |  | 13 |

## Weekday

|  | Warrant No. 2 - Four-Hour Vehicle Warrant |  |  | Warrant No. 3 - Peak-Hour Vehicle Warrant |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Time End | Major St | Minor St | Meets Warrant? | Major St | Minor St | Meets Warrant? |
|  | US Route 6 | BMP Off-Ramp | 40 mph or more | US Route 6 | BMP Off-Ramp | 40 mph or more |
| 12:00 AM | 213 | 13 | NO | 213 | 13 | NO |
| 1:00 AM | 119 | 10 | NO | 119 | 10 | NO |
| 2:00 AM | 88 | 8 | NO | 88 | 8 | NO |
| 3:00 AM | 96 | 8 | NO | 96 | 8 | NO |
| 4:00 AM | 137 | 18 | NO | 137 | 18 | NO |
| 5:00 AM | 339 | 43 | NO | 339 | 43 | NO |
| 6:00 AM | 901 | 85 | NO | 901 | 85 | NO |
| 7:00 AM | 1881 | 124 | YES | 1881 | 124 | NO |
| 8:00 AM | 2032 | 194 | YES | 2032 | 194 | YES |
| 9:00 AM | 1550 | 120 | YES | 1550 | 120 | NO |
| 10:00 AM | 1928 | 136 | YES | 1928 | 136 | NO |
| 11:00 AM | 1935 | 136 | YES | 1935 | 136 | NO |
| 12:00 PM | 1947 | 136 | YES | 1947 | 136 | NO |
| 1:00 PM | 1935 | 119 | YES | 1935 | 119 | NO |
| 2:00 PM | 1947 | 119 | YES | 1947 | 119 | NO |
| 3:00 PM | 1961 | 119 | YES | 1961 | 119 | NO |
| 4:00 PM | 2587 | 171 | YES | 2587 | 171 | YES |
| 5:00 PM | 2904 | 163 | YES | 2904 | 163 | YES |
| 6:00 PM | 1968 | 119 | YES | 1968 | 119 | NO |
| 7:00 PM | 1964 | 119 | YES | 1964 | 119 | NO |
| 8:00 PM | 1402 | 77 | NO | 1402 | 77 | NO |
| 9:00 PM | 955 | 66 | NO | 955 | 66 | NO |
| 10:00 PM | 640 | 48 | NO | 640 | 48 | NO |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | Num | r of Hours met: | 13 | Num | r of Hours met: | 3 |

## Saturday



## Kimley»)Horn

## Existing Gasland Level of Service Comparison

Proposed Redevelopment Project vs. Gasland Development

| Intersection | Approach | Existing Conditions Comparison (Signalized Site Driveway) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AM Peak Hour |  |  |  | PM Peak Hour |  |  |  | SAT Peak Hour |  |  |  |
|  |  | Proposed Project |  | Gasland |  | Proposed Project |  | Gasland |  | Proposed Project |  | Gasland |  |
|  |  | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Signalized) | EB LTR | 9.0 | A | 9.0 | A | 9.8 | A | 9.7 | A | 10.9 | B | 10.9 | B |
|  | WB L | 11.4 | B | N/A | N/A | 17.7 | C | N/A | N/A | 20.8 | C | N/A | N/A |
|  | WB TR | 0.0 | A | N/A | N/A | 0.0 | A | N/A | N/A | 0.0 | A | N/A | N/A |
|  | WB LTR | N/A | N/A | 11.3 | B | N/A | N/A | 17.3 | C | N/A | N/A | 20.2 | C |
|  | NB L | 62.6 | F | 60.8 | F | 300.0 | F | 300.0 | F | 300.0 | F | 300.0 | F |
|  | NB TR | 15.2 | C | 15.0 | C | 13.9 | B | 13.8 | B | 14.7 | B | 14.6 | B |
|  | SB LTR | 30.5 | D | 30.0 | D | 120.6 | F | 111.4 | F | 300.0 | F | 300.0 | F |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 35.3 | D | 35.0 | D | 40.7 | D | 40.4 | D | 44.2 | D | 44.1 | D |
|  | EB TR | 12.5 | B | 12.4 | B | 15.9 | B | 15.9 | B | 14.3 | B | 15.0 | B |
|  | EB | 13.6 | B | 13.6 | B | 16.8 | B | 16.8 | B | 15.6 | B | 16.2 | B |
|  | WB TR | N/A | N/A | 20.2 | C | N/A | N/A | 28.0 | C | N/A | N/A | 29.4 | C |
|  | WB LTR | 20.1 | C | N/A | N/A | 28.2 | C | N/A | N/A | 29.9 | C | N/A | N/A |
|  | NB LTR | 0.0 | A | 0.0 | A | 0.2 | A | 0.2 | A | 0.5 | A | 0.5 | A |
|  | SB L | 27.2 | C | 26.8 | C | 31.6 | C | 31.5 | C | 43.5 | D | 42.9 | D |
|  | SB TR | 7.1 | A | 7.1 | A | 0.1 | A | 0.1 | A | 8.3 | A | 8.4 | A |
|  | SB | 22.6 | C | 22.4 | C | 28.3 | C | 28.2 | C | 38.9 | D | 38.4 | D |
|  | INT | 18.5 | B | 18.5 | B | 23.7 | C | 23.5 | C | 26.2 | C | 26.2 | C |

Note: Gasland Build LOS/delay values from Table 2S in Maser Consulting's 10/31/2019 Traffic Impact Study

## No-Build Gasland Level of Service Comparison

Proposed Redevelopment Project vs. Gasland Development

| Intersection | Approach | No Build Conditions Comparison (Signalized Site Driveway) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AM Peak Hour |  |  |  | PM Peak Hour |  |  |  | SAT Peak Hour |  |  |  |
|  |  | Proposed Project |  | Gasland |  | Proposed Project |  | Gasland |  | Proposed Project |  | Gasland |  |
|  |  | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Signalized) | EB LTR | 9.6 | A | 9.4 | A | 10.6 | B | 10.4 | B | 12.3 | B | 11.9 | B |
|  | WB L | 13.4 | B | N/A | N/A | 33.3 | D | N/A | N/A | 49.3 | E | N/A | N/A |
|  | WB TR | 0.0 | A | N/A | N/A | 0.0 | A | N/A | N/A | 0.0 | A | N/A | N/A |
|  | WB LTR | N/A | N/A | 12.7 | B | N/A | N/A | 28.4 | D | N/A | N/A | 40.6 | E |
|  | NB L | 160.6 | F | 110.1 | F | 300.0 | F | 300.0 | F | 300.0 | F | 300.0 | F |
|  | NB TR | 18.0 | C | 16.6 | C | 16.8 | C | 16.1 | C | 18.7 | C | 17.9 | C |
|  | SB LTR | 52.2 | F | 44.0 | E | 300.0 | F | 300.0 | F | 300.0 | F | 300.0 | F |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 12.9 | B | 38.6 | D | 15.6 | B | 43.8 | D | 16.6 | B | 46.6 | D |
|  | EB T | 18.3 | B | 13.1 | B | 25.9 | C | 16.8 | B | 25.0 | C | 17.9 | B |
|  | EB | 18.1 | B | 14.4 | B | 25.5 | C | 17.9 | B | 24.7 | C | 19.2 | B |
|  | WB L | 12.7 | B | N/A | N/A | 16.8 | B | N/A | N/A | 13.2 | B | N/A | N/A |
|  | WB TR | 20.8 | C | 24.6 | C | 25.5 | C | 28.6 | C | 29.7 | C | 57.7 | E |
|  | WB | 20.3 | C | 24.6 | C | 25.0 | C | 28.6 | C | 29.1 | C | 57.7 | E |
|  | NB LTR | N/A | N/A | 0.0 | A | N/A | N/A | 0.2 | A | N/A | N/A | 0.5 | A |
|  | NB LT | 43.7 | D | N/A | N/A | 52.4 | D | N/A | N/A | 79.1 | E | N/A | N/A |
|  | NB R | 1.1 | A | N/A | N/A | 1.5 | A | N/A | N/A | 3.2 | A | N/A | N/A |
|  | NB | 26.6 | C | 0.0 | A | 31.2 | C | 0.2 | A | 47.2 | D | 0.5 | A |
|  | SB L | 57.6 | E | 31.4 | C | 48.5 | D | 42.7 | D | 60.3 | E | 61.1 | E |
|  | SB TR | N/A | N/A | 6.5 | A | N/A | N/A | 0.4 | A | N/A | N/A | 6.4 | A |
|  | SB LT | 56.8 | E | N/A | N/A | 47.6 | D | N/A | N/A | 60.4 | E | N/A | N/A |
|  | SB R | 5.7 | A | N/A | N/A | 5.2 | A | N/A | N/A | 18.2 | B | N/A | N/A |
|  | SB | 42.9 | D | 23.9 | C | 40.5 | D | 34.7 | C | 50.8 | D | 48.0 | D |
|  | INT | 25.3 | C | 20.8 | C | 28.7 | C | 25.5 | C | 32.6 | C | 41.1 | D |

Note: Gasland Build LOS/delay values from Table 2S in Maser Consulting's 10/31/2019 Traffic Impact Study

Build Gasland Level of Service Comparison
Proposed Redevelopment Project vs. Gasland Development

| Intersection | Approach | Build Conditions Comparison (Signalized Site Driveway) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AM Peak Hour |  |  |  | PM Peak Hour |  |  |  | SAT Peak Hour |  |  |  |
|  |  | Proposed Project |  | Gasland |  | Proposed Project |  | Gasland |  | Proposed Project |  | Gasland |  |
|  |  | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS | Delay (secs) | LOS |
| E. Main St (US Route 6) \& Bear Mtn Pkwy WB On/Off Ramps \& Site Access (Signalized) | EB LTR | 7.8 | A | 5.6 | A | 32.8 | C | 32.3 | C | 76.6 | E | 17.5 | B |
|  | WB L | 11.0 | B | 8.2 | A | 52.0 | D | 38.5 | D | 79.3 | E | 46.9 | D |
|  | WB TR | 4.0 | A | 2.0 | A | 3.6 | A | 5.0 | A | 4.4 | A | 3.2 | A |
|  | WB | 5.5 | A | 3.3 | A | 14.7 | B | 12.7 | B | 19.0 | B | 11.7 | B |
|  | NB L | 48.0 | D | 42.3 | D | 47.4 | D | 36.0 | D | 79.6 | E | 58.2 | E |
|  | NB TR | 15.5 | B | 17.4 | B | 19.2 | B | 0.3 | A | 19.5 | B | 0.6 | A |
|  | NB | 29.1 | C | 27.3 | C | 29.4 | C | 15.7 | B | 40.0 | D | 22.5 | C |
|  | SB LTR | N/A | N/A | 24.6 | C | N/A | N/A | 18.8 | B | N/A | N/A | 24.8 | C |
|  | SB L | 38.9 | D | N/A | N/A | 44.0 | D | N/A | N/A | 75.4 | E | N/A | N/A |
|  | SB TR | 16.6 | B | N/A | N/A | 19.9 | B | N/A | N/A | 21.7 | C | N/A | N/A |
|  | SB | 23.2 | C | 24.6 | C | 27.1 | C | 18.8 | B | 37.7 | D | 24.8 | C |
|  | INT | 9.4 | A | 5.3 | A | 24.8 | C | 22.9 | C | 47.5 | D | 15.0 | B |
| E. Main St (US Route 6) \& Bear Mtn Pkwy EB On/Off Ramps \& Gasland Drwy (Signalized) | EB L | 13.4 | B | 8.7 | A | 16.6 | B | 17.6 | B | 14.8 | B | 15.4 | B |
|  | EB T | 18.9 | B | 16.0 | B | 27.2 | C | 26.0 | C | 24.8 | C | 46.8 | D |
|  | EB | 18.6 | B | 15.6 | B | 26.8 | C | 25.6 | C | 24.3 | C | 45.4 | D |
|  | WB L | 11.6 | B | 10.6 | B | 15.5 | B | 14.4 | B | 10.0 | A | 10.1 | B |
|  | WB TR | 22.0 | C | 18.2 | B | 26.2 | C | 22.6 | C | 28.4 | C | 27.0 | C |
|  | WB | 21.5 | C | 17.8 | B | 25.7 | C | 22.2 | C | 28.7 | C | 26.5 | C |
|  | NB LT | 43.7 | D | 46.4 | D | 52.4 | D | 65.2 | E | 66.6 | E | 77.3 | E |
|  | NB R | 1.1 | A | 1.5 | A | 1.5 | A | 1.9 | A | 2.3 | A | 2.4 | A |
|  | NB | 26.6 | C | 28.4 | C | 31.2 | C | 38.7 | D | 39.6 | D | 47.4 | D |
|  | SB L | 59.4 | E | 47.2 | D | 48.7 | D | 52.9 | D | 64.3 | E | 61.3 | E |
|  | SB LT | 57.7 | E | 46.8 | D | 47.5 | D | 52.0 | D | 64.0 | E | 61.0 | E |
|  | SB R | 5.7 | A | 7.8 | A | 5.1 | A | 1.9 | A | 10.8 | B | 18.3 | B |
|  | SB | 44.5 | D | 36.1 | D | 40.8 | D | 43.5 | D | 52.6 | D | 51.4 | D |
|  | INT | 26.2 | C | 22.1 | C | 29.5 | C | 28.7 | C | 32.4 | C | 39.0 | D |

Note: Gasland Build LOS/delay values from Table 2S in Maser Consulting's 10/31/2019Traffic Impact Study


[^0]:    ${ }^{1} 2019$ Existing traffic volumes from Maser Consulting's Traffic Impact Study for Gasland Cortlandt, revision date of 10/31/2029
    ${ }^{2}$ Vicinity development volumes were obtained from the 2019 Gasland Traffic Impact Study prepared by Maser Consulting.

[^1]:    ${ }^{3}$ Maser Consulting, P.C. Traffic Impact Study dated 10/31/2019
    ${ }^{4}$ ATSC will be installed at the Route 6 intersections with Jacobs Hill Road/Parkway Drive and Locust Avenue.

[^2]:    ${ }^{5} 2019$ Existing traffic volumes from Maser Consulting's Traffic Impact Study for Gasland Cortlandt, revision date of 10/31/2029

[^3]:    ${ }^{6}$ Vicinity development volumes were obtained from the 2019 Gasland Traffic Impact Study prepared by Maser Consulting.

