

# Traffic Impact Study Proposed Dunkin Drive-Through

Albuquerque, New Mexico



Prepared For:

## NMR, LLC



May 22, 2024

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# I. Executive Summary

This report summarizes the results of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed Dunkin Drive-Through (Dunkin) and retail building to be located in the southeast quadrant of the intersection of Central Avenue NW and 98<sup>th</sup> Street SW in Albuquerque, New Mexico. This report is an update to the traffic study previously prepared by Lee Engineering dated May 2022. The objectives of the traffic study are as follows:

- Determine the existing vehicular conditions in the study area to establish a base condition.
- Assess the impact that the proposed development will have on traffic conditions in the area.
- Determine any roadway or access modifications and/or improvements that will be necessary to effectively accommodate and mitigate future conditions.

Vehicle, pedestrian, and bicycle counts conducted during the weekday morning and weekday evening peak periods at the intersections of Central Avenue with 98<sup>th</sup> Street, Westland Road, and Unser Boulevard were utilized to determine the peak hour of traffic activity during these time periods.

As proposed, the site will be developed with an approximately 2,140 square-foot Dunkin and an approximately 6,000 square-foot strip retail plaza. A total of 14 parking spaces will serve the proposed Dunkin and a total of 24 parking spaces will serve the proposed retail building. The proposed Dunkin will be served with a drive-through that will provide stacking for up to 16 vehicles. Access to the site will be provided via two proposed access drives on Central Avenue and a proposed access drive on 98<sup>th</sup> Street.

It should be noted that the site plan has been modified from its original version to swap the locations of the proposed Dunkin and proposed strip retail building. This change was made to locate the Dunkin to the east, farther away from signalized intersection of Central Avenue with 98<sup>th</sup> Street, to ensure drive-through operations and queues do not impact the adjacent roadways, particularly 98<sup>th</sup> Street.

Based on the proceeding analyses and recommendations, the following conclusions have been made:

- The proposed Dunkin and retail building will be located at 9700 Central Avenue SW. The buildings will be 2,140 and 6,000 square feet, respectively, and will share a 38-space parking lot. The Dunkin will provide a drive-through that will accommodate 16 vehicles.
- Access to the site will be provided via two right-in/right-out access drives on Central Avenue and one right-in only access drive located on 98<sup>th</sup> Street.
- The volume of traffic estimated to be generated by Dunkin will be reduced due to the volume of pass-by trips anticipated to be diverted from the existing traffic on the roadways, primarily in the northbound direction on 98<sup>th</sup> Street and eastbound direction on Central Avenue.



- The access drives are projected to be adequate in accommodating the traffic estimated to be generated by the development and will provide flexible and efficient access to the site.
- The provision of a right-in access drive on 98<sup>th</sup> Street will be beneficial based on the following:
  - Given that the northbound traffic on 98<sup>th</sup> Street, especially in the morning peak hour, is significantly higher than the two-way traffic on Central Avenue, a direct access to 98<sup>th</sup> Street will provide convenient entry to the site without the traffic having to travel onto Central Avenue.
  - This will in turn reduce the traffic load at the intersection of 98<sup>th</sup> Street with Central Avenue by eliminating the additional northbound right-turn movements that will occur.
  - A northbound right-turn lane currently exists on 98<sup>th</sup> Street, which can also serve as a deceleration lane for the proposed access drive. This right turn lane currently operates under yield control at Central Avenue
- Given the location of the site to the southwest of downtown Albuquerque, it is anticipated that the majority of northbound traffic in the weekday morning peak hour is traffic desiring to travel east on I-40. In lieu of performing a U-turn at Westland Road, these vehicles have the ability to travel east on Central Avenue to Unser Boulevard SW to access its interchange with I-40.
- It is recommended that the median “nose” be modified similar to the intersections of Central Avenue with 94<sup>th</sup> Street and 90<sup>th</sup> Street, where the median opening accommodates left-turn movements/U-turns without left-turn lanes.
- As part of the proposed development, stop signs should be provided for outbound traffic from both access drives on Central Avenue
- The drive-through stacking of 16 vehicles will be adequate in accommodating the peak drive-through activity for the coffee shop. The final site traffic layout and queueing acceptance is dependent on the Traffic Circulation Layout (TCL) approval by the City.
- Clear intersection sight distance should be provided at each driveway as per COA DPM 7-4(I)(5)(iii) Intersection Sight Distance.

# 1. Introduction

This report summarizes the results of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed Dunkin Drive-Through (Dunkin) and retail building to be located in the southeast quadrant of the intersection of Central Avenue and 98<sup>th</sup> Street in Albuquerque, New Mexico. This report is an update to the traffic study previously prepared by Lee Engineering dated May 2022. The scoping document for the original traffic impact study can be found in the Appendix.

As proposed, the site will be developed with an approximately 2,140 square-foot Dunkin and an approximately 6,000 square-foot strip retail plaza. A total of 14 parking spaces will serve the proposed Dunkin and a total of 24 parking spaces will serve the proposed retail building. The proposed Dunkin will be served with a drive-through that will provide stacking for up to 16 vehicles. Access to the development is proposed off Central Avenue and 98<sup>th</sup> Street.

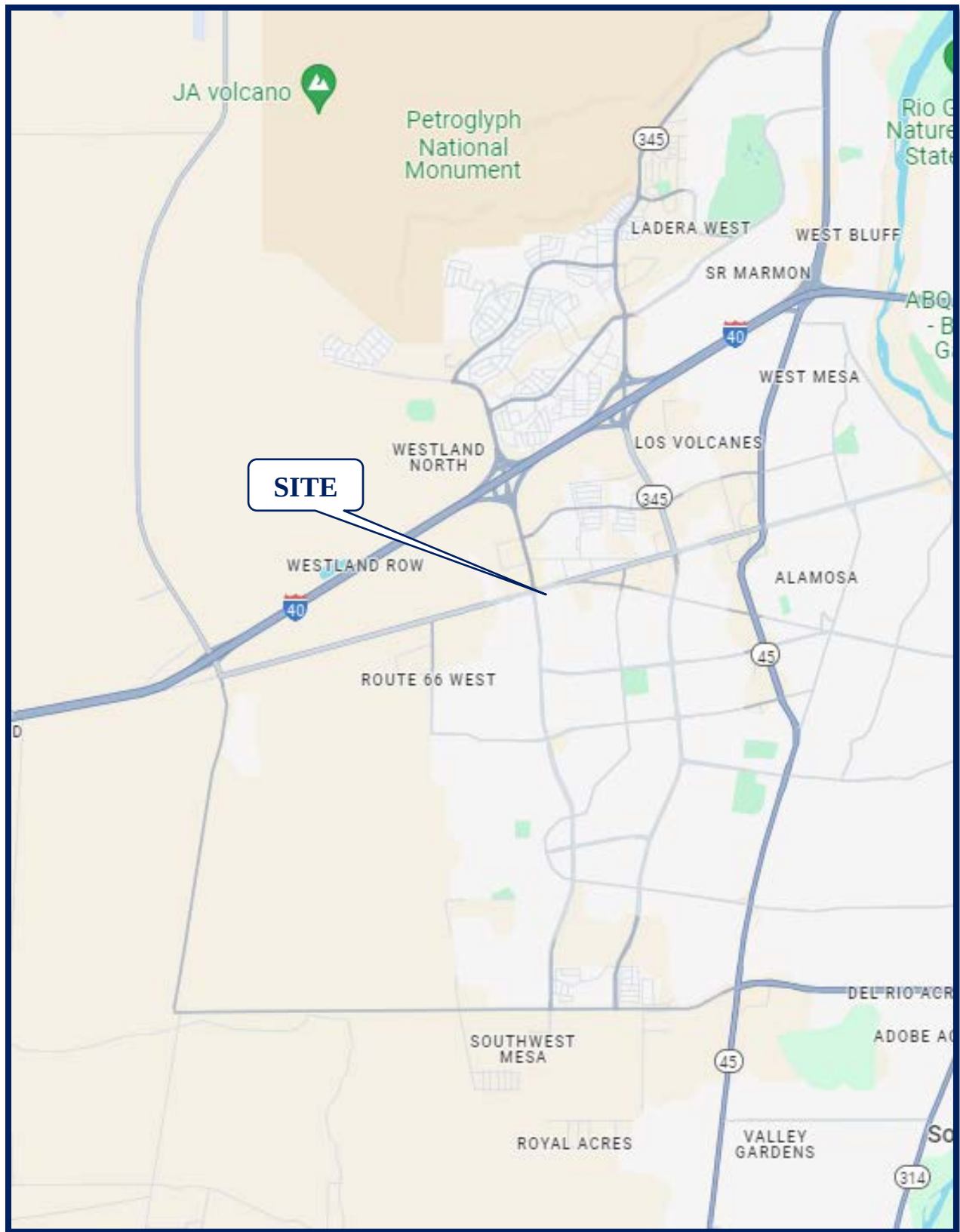
**Figure 1** shows the location of the site in relation to the area roadway network. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

- Existing roadway conditions
- Crash summary for the intersections of Central Avenue with 98<sup>th</sup> Street and Central Avenue with Westland Road
- A description of the proposed site
- Directional distribution of the site traffic
- Vehicle trip generation for the site
- Future traffic conditions, including access to the site
- Traffic analyses for the weekday morning and weekday evening peak hours
- Recommendations with respect to the adequacy of site access and adjacent roadway system

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Existing Conditions – Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area.
2. No-Build Conditions – Analyzes the capacity of the existing roadway system using the ambient area growth not attributable to any particular development and the traffic anticipated to be generated by other area developments.
3. Total Projected – Analyzes the capacity of the future roadway system using the projected traffic volumes that include the existing traffic volumes, ambient area growth, the traffic generated by other area developments, and traffic estimated to be generated by the proposed development.



**Site Location**

**Figure 1**





Aerial View of Site

Figure 2



## 2. Existing Conditions

The following provides a detailed description of the physical characteristics of the adjacent roadways, including geometry and traffic control, adjacent land uses, and peak hour traffic flows.

### Site Location

The site of the proposed Dunkin is located on the southeast corner of the intersection of Central Avenue with 98<sup>th</sup> Street. Land uses within the vicinity of the site are primarily commercial along Central Avenue and along 98<sup>th</sup> Street north of Central Avenue. South of Central Avenue, residential land uses are located on both sides of the road.

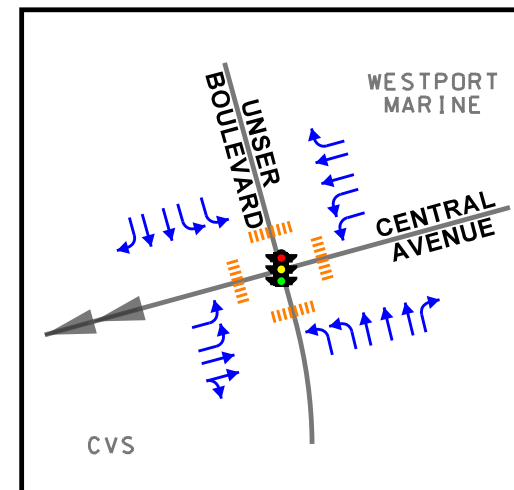
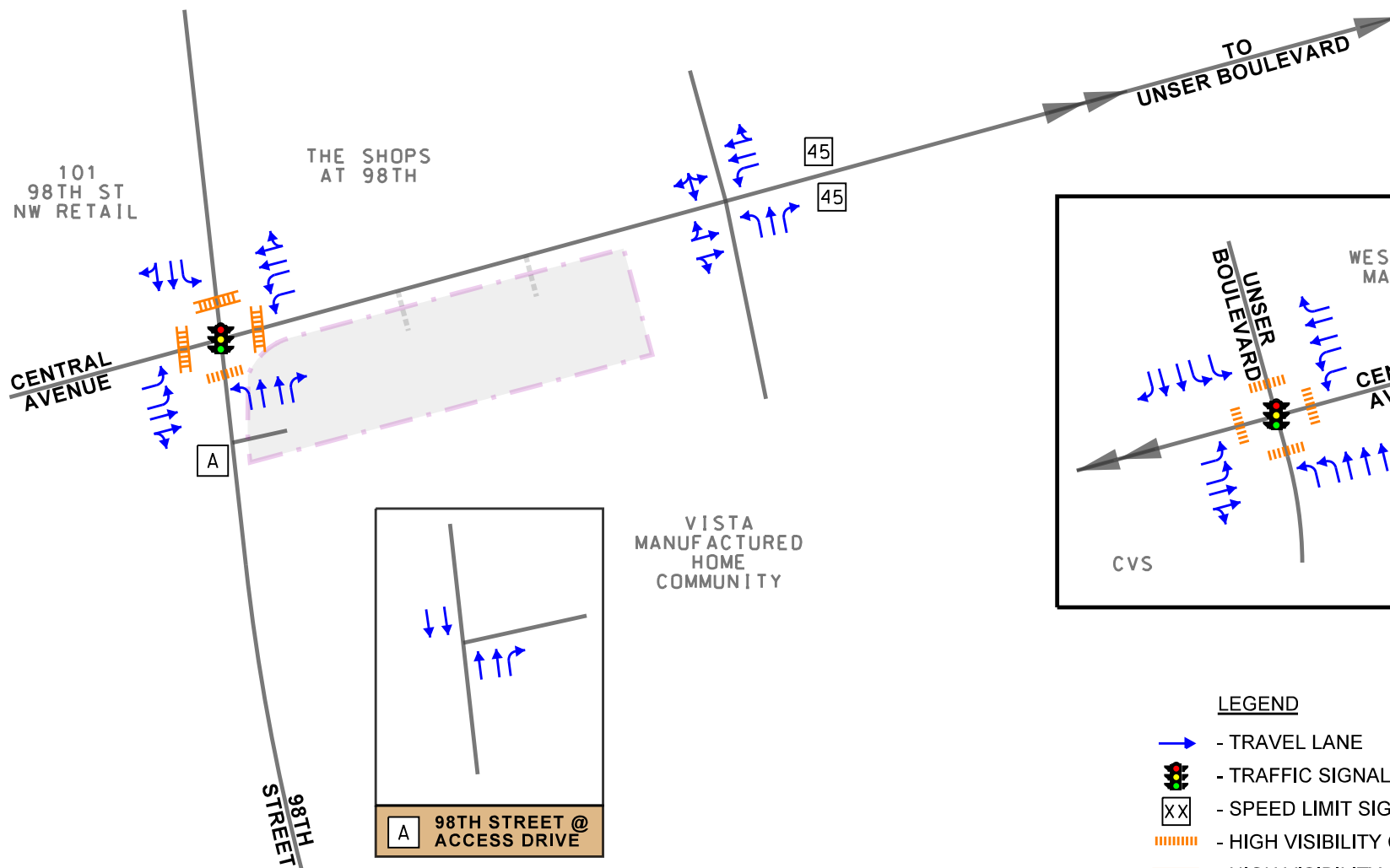
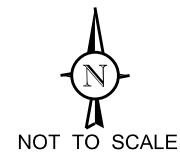
### Existing Roadway Characteristics

Some of the key characteristics of the existing roadways within the study area are described below and illustrated in **Figure 3**.

*Central Avenue* is an east-west urban principal arterial roadway that provides two lanes in each direction. At its signalized intersection with 98<sup>th</sup> Street, Central Avenue provides dual left-turn lanes, a through lane, and a combined through/channelized right-turn lane on the eastbound and westbound approaches. High-visibility crosswalks are provided on the east and west legs of the intersection. At its unsignalized intersection with Westland Drive, Central Avenue provides a combined left-turn lane/through lane and a combined through/right-turn lane on the eastbound approach. On the westbound approach, Central Avenue provides a left-turn lane, a through lane, and a combined through/right-turn lane. At its signalized intersection with Unser Boulevard, Central Avenue provides dual left-turn lanes, a through lane, and a combined through/right-turn lane on the eastbound approach. On the westbound approach, Central Avenue provides dual left-turn lanes, two through lanes, and a right-turn lane. An on-roadway bike lane is provided on the north side of the roadway. High-visibility crosswalks are provided on the east and west legs of the intersection. Central Avenue is under the jurisdiction of the City of Albuquerque and has a posted speed limit of 45 miles per hour.

*98<sup>th</sup> Street* is a north-south urban principal arterial roadway that provides two lanes in each direction. At its signalized intersection with Central Avenue, 98<sup>th</sup> Street provides a left-turn lane, two through lanes, and a channelized right-turn lane on the northbound approach. On the southbound approach, 98<sup>th</sup> Street provides a left-turn lane, a through lane, and a combined through/channelized right-turn lane. High-visibility crosswalks are provided on the north and south legs of the intersection. 98<sup>th</sup> Street is under the jurisdiction of the City of Albuquerque and has a posted speed limit of 45 miles per hour.

*Westland Drive* is a north-south local roadway that provides access to commercial uses to the north and the Vista Manufactured Home Community to the south. At its unsignalized intersection with Central Avenue, Westland Drive provides a left-turn lane, a through lane, and a right-turn lane on the northbound approach and a combined left-turn/through/right-turn lane on the southbound approach.



#### LEGEND

- TRAVEL LANE
- TRAFFIC SIGNAL
- SPEED LIMIT SIGN
- HIGH VISIBILITY CROSSWALK
- HIGH VISIBILITY CROSSWALK

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Existing Roadway Characteristics



Job No: 23-211

Figure: 3

*Unser Boulevard* is a north-south arterial roadway that generally provides two lanes in each direction. At its signalized intersection with Central Avenue, Unser Boulevard provides dual left-turn lanes, three through lanes, and a right-turn lane on the northbound approach. On the southbound approach, Unser Boulevard provides dual left-turn lanes, two through lanes, and a right-turn lane. High-visibility crosswalks are provided on the north and south legs of the intersection. A two-way multi-use path parallels the east side of the roadway and there are bike lanes provided on the northbound and southbound roadway. Unser Boulevard is under the jurisdiction of the State of New Mexico and has a posted speed limit of 40 miles per hour.

## Existing Traffic Volumes

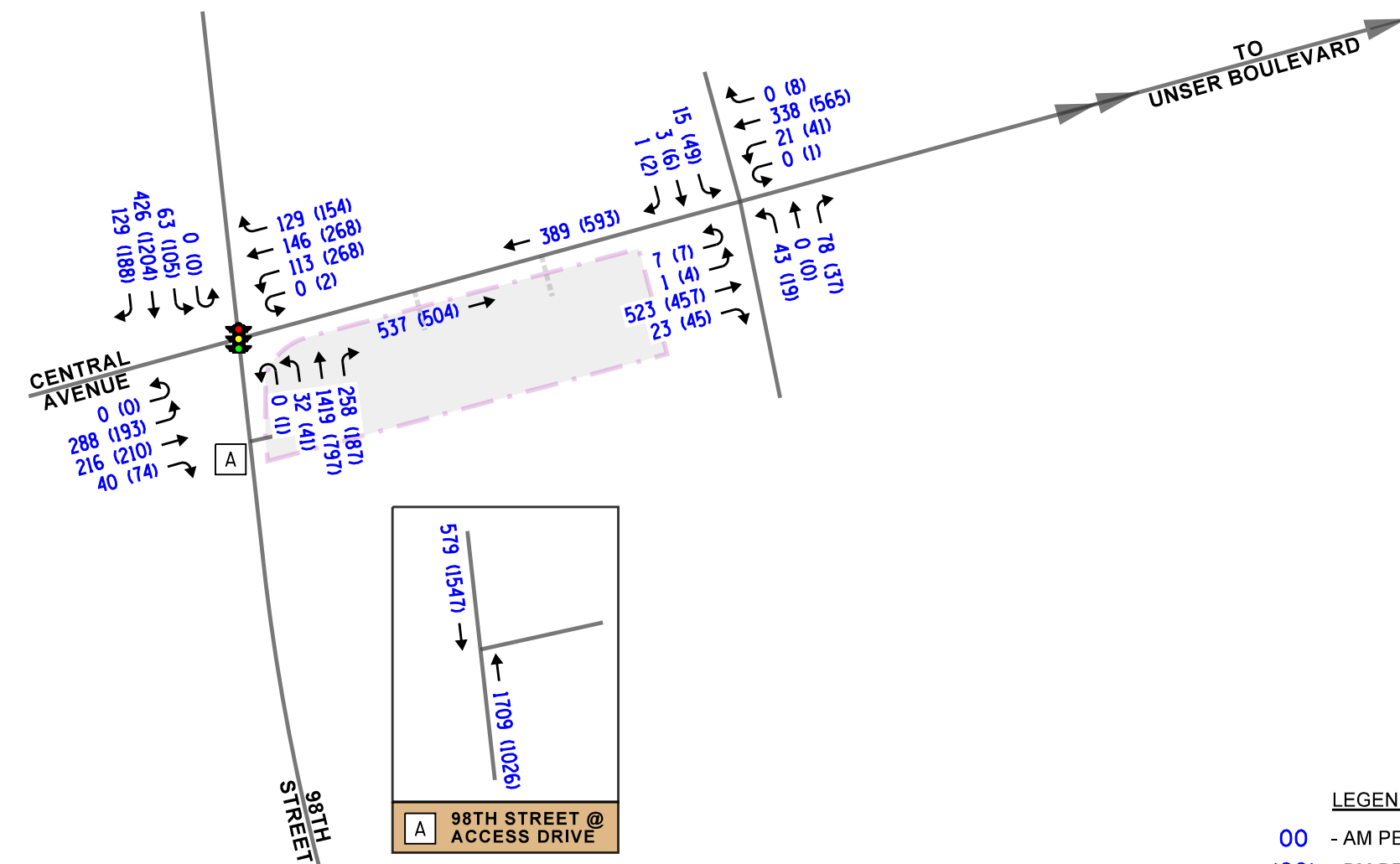
In order to determine current vehicle, pedestrian, and bicycle conditions within the study area, peak period turning movement, pedestrian, and bicycle counts that were collected as part of the original traffic impact study were utilized. These counts were conducted on March 27, 2023 during the weekday morning (6:00 A.M. to 9:00 A.M.) and evening (4:00 P.M. to 6:00 P.M.) peak periods at the intersections of Central Avenue with 98<sup>th</sup> Street and Central Avenue with Westland Road. **Figure 4** illustrates the existing peak hour vehicle traffic volumes. Summaries of the traffic counts are included in the Appendix.

## Crash Data

A crash summary for the intersections within the study area has been completed. This summary aims to highlight trends and observations from summarized crash data. Crash data was provided by NMDOT for 2016 to 2020 in aggregate form and is summarized in **Table 1**. From Table 1, the following observations are made:

- The intersection of 98th Street with Central Avenue experienced 296 crashes between 2016 and 2020.
  - The most frequent crash type involved vehicles traveling in the same direction resulting in a rear end collision.
  - Approximately 50 percent of crashes occurred in the daylight, resulting in property damage only.
  - No fatal crashes were reported between 2016 and 2020 with approximately 30 percent of crashes involving an injury.
  - The most common cause of a crash was due to driver inattention.
  - Four crashes reported involved a pedestrian.
- The intersection of Central Avenue with Westland Road experienced 14 crashes between 2016 and 2020.
  - The most common crash type was vehicles traveling in the same direction, both going straight.
  - Approximately 40 percent of crashes occurred in the daylight with another 40 percent of crashes occurring in the dark.
  - No fatal crashes were reported between 2016 and 2020 with 43 percent of crashes involving an injury.
  - The most common cause of a crash was due to a vehicle failing to yield right of way.





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## Existing Traffic Volumes



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Figure: 4

Table 1  
CRASH SUMMARY

| Crash Summary          |                                                           | 98 <sup>th</sup> St & Central Ave | Central Ave & Westland Rd |
|------------------------|-----------------------------------------------------------|-----------------------------------|---------------------------|
| Total Crashes          |                                                           | 296                               | 14                        |
| By Year                | 2016                                                      | 73                                | 2                         |
|                        | 2017                                                      | 58                                | 2                         |
|                        | 2018                                                      | 74                                | 4                         |
|                        | 2019                                                      | 43                                | 5                         |
|                        | 2020                                                      | 48                                | 1                         |
| By Type                | Fixed Object                                              | 8                                 | 1                         |
|                        | Other Vehicle - Both Going Straight/Entering At Angle     | 26                                | 1                         |
|                        | Other Vehicle - From Opposite Direction                   | 23                                | 2                         |
|                        | Other Vehicle - From Opposite Direction/Both Going        | 8                                 | 0                         |
|                        | Other Vehicle - From Same Direction/Both Going Straight   | 33                                | 2                         |
|                        | Other Vehicle - From Same Direction/Rear End Collision    | 27                                | 0                         |
|                        | Other Vehicle - One Left Turn/Entering At Angle           | 23                                | 2                         |
|                        | Pedestrian                                                | 4                                 | 0                         |
|                        | % Other Vehicle - From Same Direction/Both Going Straight | 11%                               | 14%                       |
|                        | % Other Vehicle - From Same Direction/Rear End Collision  | 9%                                | 0%                        |
|                        | % Other Vehicle - Both Going Straight/Entering At Angle   | 9%                                | 7%                        |
| By Lighting Conditions | Daylight                                                  | 138                               | 6                         |
|                        | Dawn/Dusk                                                 | 0                                 | 0                         |
|                        | Dark                                                      | 60                                | 6                         |
|                        | Left Blank                                                | 83                                | 2                         |
|                        | % Day                                                     | 47%                               | 43%                       |
| By Severity            | Property Damage Only                                      | 206                               | 8                         |
|                        | Injury                                                    | 90                                | 6                         |
|                        | Fatality                                                  | 0                                 | 0                         |
|                        | % Property Damage Only                                    | 70%                               | 57%                       |
|                        | % Injury                                                  | 30%                               | 43%                       |
| By Cause               | Alcohol/Drug Involved                                     | 9                                 | 1                         |
|                        | Collision with Motor Vehicle                              | 41                                | 1                         |
|                        | Collision with Person                                     | 1                                 | 0                         |
|                        | Disregarded Traffic Signal                                | 14                                | 1                         |
|                        | Driver Inattention                                        | 53                                | 3                         |
|                        | Failed to Yield Right of Way                              | 40                                | 5                         |
|                        | Following Too Closely                                     | 17                                | 0                         |
|                        | Pedestrian Error                                          | 1                                 | 0                         |
|                        | % Driver Inattention                                      | 18%                               | 21%                       |
|                        | % Collision With Motor Vehicle                            | 14%                               | 7%                        |
|                        | % Failed to Yield Right of Way                            | 14%                               | 36%                       |
|                        | % Collision with Person/ Pedestrian Error                 | 1%                                | 0%                        |

### 3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development including the directional distribution and volumes of traffic that it will generate.

#### Proposed Site and Use Plan

As proposed, the site will be developed with an approximately 2,140 square-foot Dunkin and an approximately 6,000 square-foot strip retail plaza. A total of 14 parking spaces will serve the proposed Dunkin and a total of 24 parking spaces will serve the proposed retail building. The proposed Dunkin will be served with a drive-through that will provide stacking for up to 16 vehicles. It should be noted that the site plan has been modified from its original version to swap the locations of the proposed Dunkin and proposed strip retail building. This change was made to locate the Dunkin to the east, farther away from signalized intersection of Central Avenue with 98<sup>th</sup> Street, to ensure drive-through operations and queues do not impact the adjacent roadways, particularly 98<sup>th</sup> Street. Access to the site will be provided via the following:

- Two proposed access drives on Central Avenue, located approximately 250 feet and 385 feet east of 98<sup>th</sup> Street, respectively (centerline-to-centerline). Both access drives will provide one inbound lane and one outbound lane. Outbound movements should be under stop-sign control. Due to the existing barrier median located on Central Avenue within of the vicinity of this access drive, this access drive will be restricted to right-turn movements only. As part of the proposed development, an exclusive right-turn will be provided on Central Avenue at both access drives. Two access drives on Central Avenue are proposed to better accommodate fire trucks.
- A proposed access drive on 98<sup>th</sup> Street located approximately 175 feet south of Central Avenue (centerline-to-centerline) or 110 feet south of 98<sup>th</sup> Street stop bar at Central Avenue. This access drive will provide one inbound lane that will be constructed to provide additional deceleration space for northbound right-turn vehicles. Due to the existing barrier median located on 98<sup>th</sup> Avenue in the vicinity of this access drive, turning movements at this access drive will be restricted to right-turn movements in only.

Overall, the provision of access drives on both 98<sup>th</sup> Street and Central Avenue will be beneficial as it will reduce the traffic load at a single access point and will reduce the number of site-generated vehicles traversing the signalized intersection of Central Avenue with 98<sup>th</sup> Street.

It should be noted that the proposed access system will eliminate an existing right-in/right-out access drive on 98<sup>th</sup> Street and will provide two dedicated access drives on Central Avenue. Currently, the site frontage on Central Avenue does not provide any curb so vehicles can enter and exit the site at any location. Therefore, the provision of a single access point on Central Avenue will improve the flow of traffic along the site frontage and will regulate turning movements to/from Central Avenue.

A copy of the updated site plan is included in the Appendix.

## Directional Distribution of Site Traffic

The directional distribution of how traffic will approach and depart the site was estimated based on the general travel patterns through the study area derived from the peak hour traffic volumes and based on the directional distribution as utilized in the May 2022 traffic impact study. Furthermore, the directional distribution takes into consideration the access limitations due to the existing barrier median on Central Avenue and the ability of vehicles to access eastbound I-40 via Unser Boulevard, approximately one mile east of the site. **Figure 5** shows the established directional distribution for the proposed development and illustrates the distance in feet between the access drives and the existing roadways.

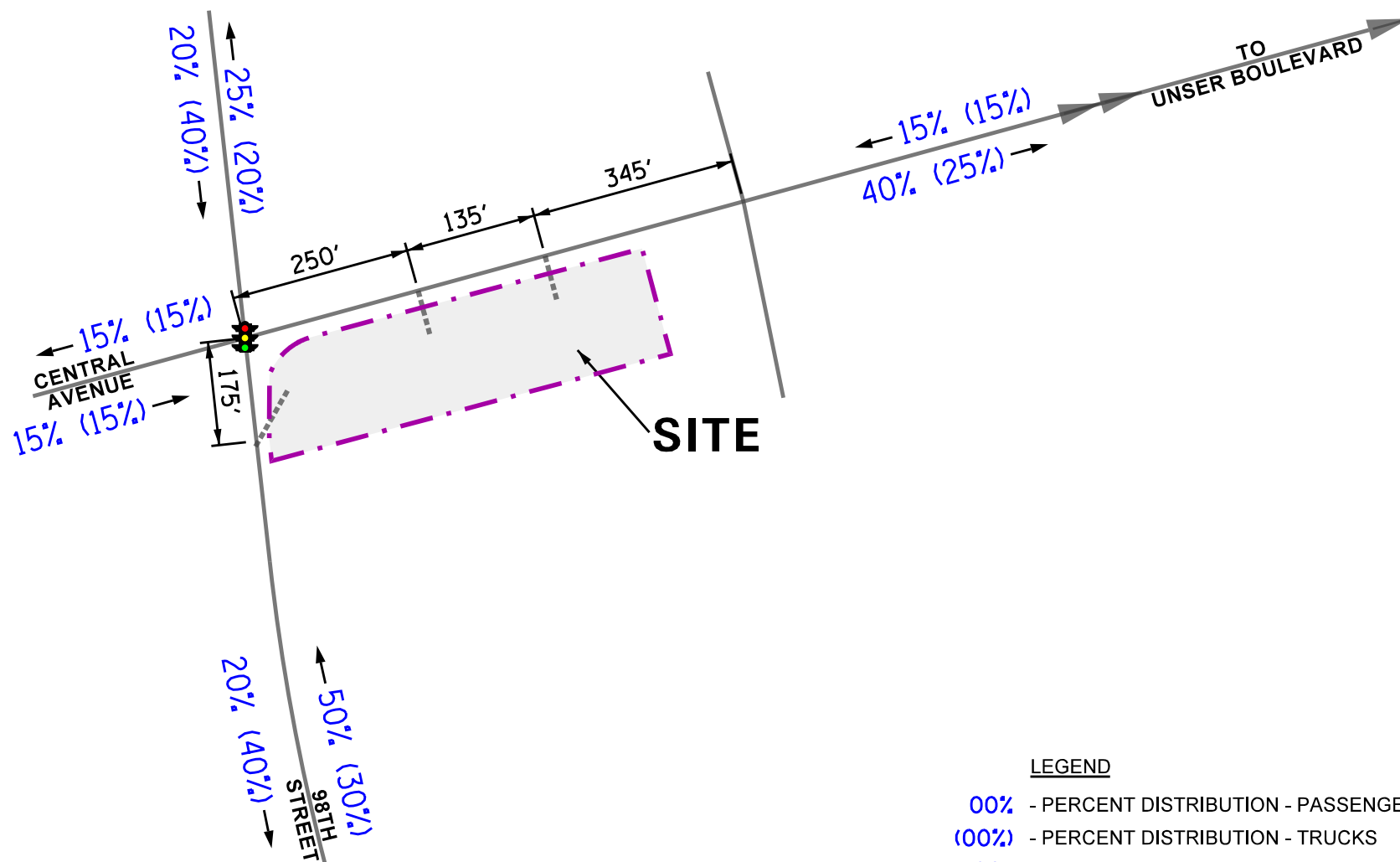
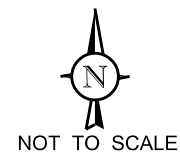
## Proposed Site Traffic Generation

The estimate of vehicle traffic to be generated by the proposed development is based upon the proposed land use types and sizes. The vehicle trip generation was calculated using data published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11<sup>th</sup> Edition. Land-Use Code 937 (Coffee/Donut Shop with Drive-Through Window) was utilized for the proposed coffee shop and Land-Use Code 822 (Strip Retail Plaza <40k) was utilized for the retail plaza. The ITE trip generation sheets are included in the Appendix. It is important to note that surveys conducted by ITE have shown that a percentage of trips made to coffee/donut shops with drive-through lanes and retail plazas are diverted from the existing traffic on the roadway system. This is particularly true during the weekday morning and weekday evening peak hours when traffic is diverted from work-to-lunch and work-to-home trips. Such diverted trips are referred to as “pass-by” trips. Based on information published by ITE for coffee/donut shops, approximately 85 to 95 percent of trips made to coffee/donut shops and 20 to 40 percent of trips made to retail plazas are pass-by trips. However, in order to provide a conservative analysis, only a 70 percent pass-by reduction was applied to the trips estimated to be generated by Dunkin and no pass-by reduction was applied to the trips generated by the retail plaza. **Table 2** shows the estimated vehicle trip generation for the weekday morning peak hour, weekday evening peak hour, and daily trips.

Table 2  
ESTIMATED PEAK HOUR VEHICLE TRIP GENERATION

| ITE Land Use Code      | Type/Size                                         | Weekday Morning Peak Hour |           |           | Weekday Evening Peak Hour |           |           | Daily Two-Way Trips |            |            |
|------------------------|---------------------------------------------------|---------------------------|-----------|-----------|---------------------------|-----------|-----------|---------------------|------------|------------|
|                        |                                                   | In                        | Out       | Total     | In                        | Out       | Total     | In                  | Out        | Total      |
| 937                    | Coffee/Donut Shop with Drive-Through (2,140 s.f.) | 109                       | 105       | 214       | 49                        | 48        | 97        | 665                 | 665        | 1,330      |
|                        | 70% Pass-By Reduction                             | -75                       | -75       | -150      | -34                       | -34       | -68       | -465                | -465       | -930       |
| 822                    | Strip Retail Plaza (<40k) (6,000 s.f.)            | <u>12</u>                 | <u>9</u>  | <u>21</u> | <u>27</u>                 | <u>27</u> | <u>54</u> | <u>242</u>          | <u>242</u> | <u>484</u> |
| <b>Total New Trips</b> |                                                   | <b>46</b>                 | <b>39</b> | <b>85</b> | <b>42</b>                 | <b>41</b> | <b>83</b> | <b>442</b>          | <b>442</b> | <b>884</b> |





Proposed Dunkin'  
Drive-Through  
Albuquerque, New Mexico

Directional Distribution



Job No: 23-211

Figure: 5

## 4. Projected Traffic Conditions

The total projected traffic volumes include the base traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed development.

### Development Traffic Assignment

The estimated weekday morning and weekday evening peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). **Figure 6** illustrates the traffic assignment of the new passenger vehicle trips and **Figure 7** illustrates the traffic assignment of the pass-by vehicle trips.

### Ambient Traffic Growth

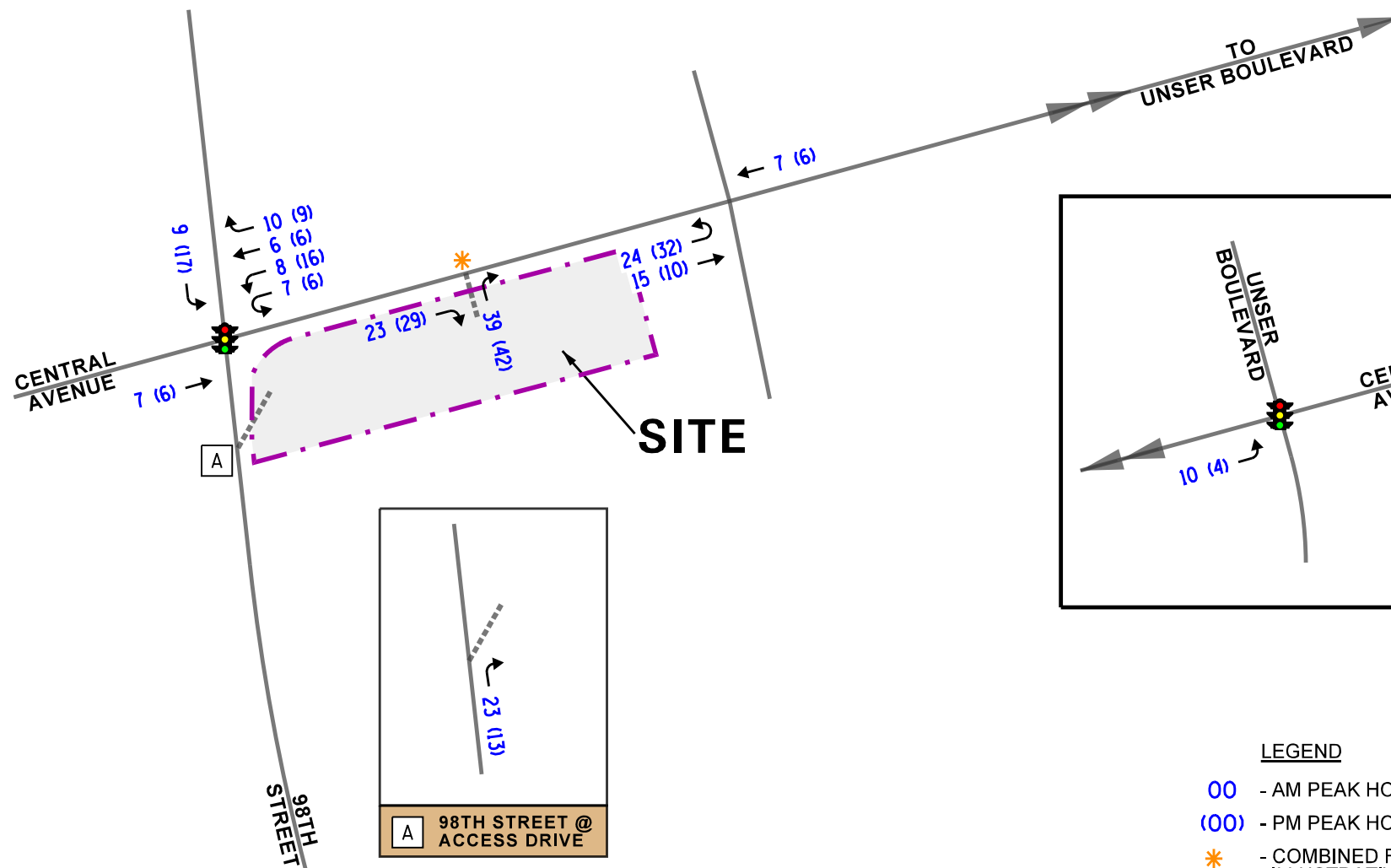
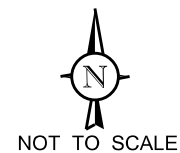
The existing traffic volumes were increased by an annually compounded ambient growth factor of 4.0 percent per year for one year (buildout) and 10 years (horizon year) to represent Year 2024 and Year 2034 no-build conditions, respectively. This background growth was determined from travel demand models provided by the Mid-Region Council of Governments (MRCOG) for Central Avenue, 98<sup>th</sup> Street, 99<sup>th</sup> Street, 86<sup>th</sup> Street, and 87<sup>th</sup> Street as determined as part of the traffic impact study previously prepared for the site by Lee Engineering. Furthermore, the peak hour trips anticipated to be generated by the proposed Westpointe development and the 98<sup>th</sup> & Bluewater development, which are both located to the north of the site, were included in the Year 2024 and Year 2034 no-build conditions. **Figure 8** shows the Year 2024 no-build traffic volumes. **Figure 9** shows the Year 2034 no-build traffic volumes.

### Year 2024 Total Projected Traffic Volumes

The new and pass-by development-generated traffic (Figures 6 and 7) was added to the Year 2024 no-build traffic volumes (Figure 8) to determine the Year 2024 total projected traffic volumes. These volumes are illustrated in **Figure 10**.

### Year 2034 Total Projected Traffic Volumes

The new and pass-by development-generated traffic (Figures 6 and 7) was added to the Year 2034 no-build traffic volumes (Figure 9) to determine the Year 2034 total projected traffic volumes. These volumes are illustrated in **Figure 11**.



Proposed Dunkin  
Drive-Through  
Albuquerque, New Mexico

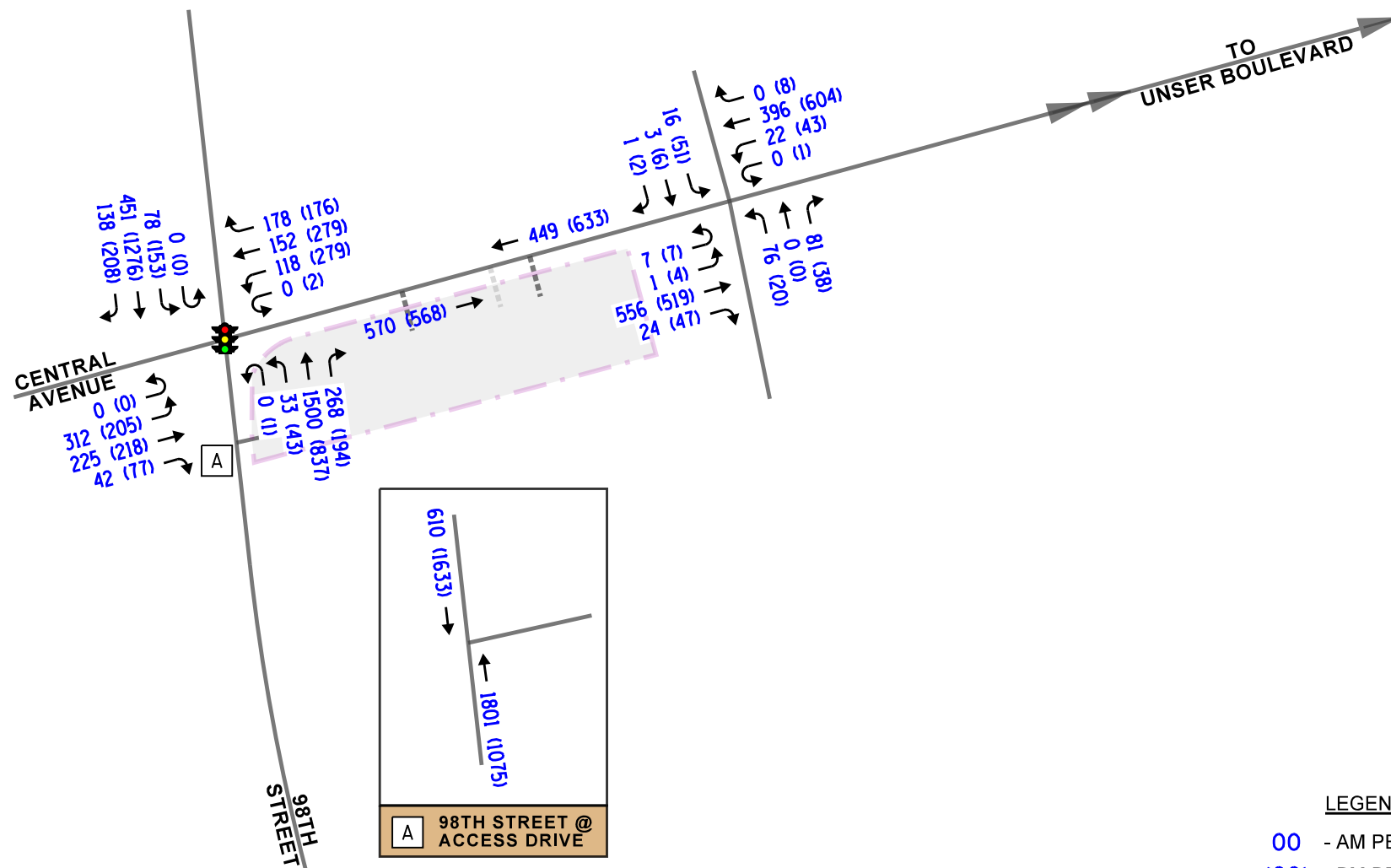
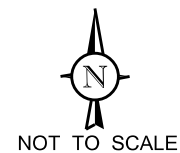
New Site Traffic Volumes



Job No: 23-211

Figure: 6





Proposed Dunkin  
Drive-Through  
Albuquerque, New Mexico

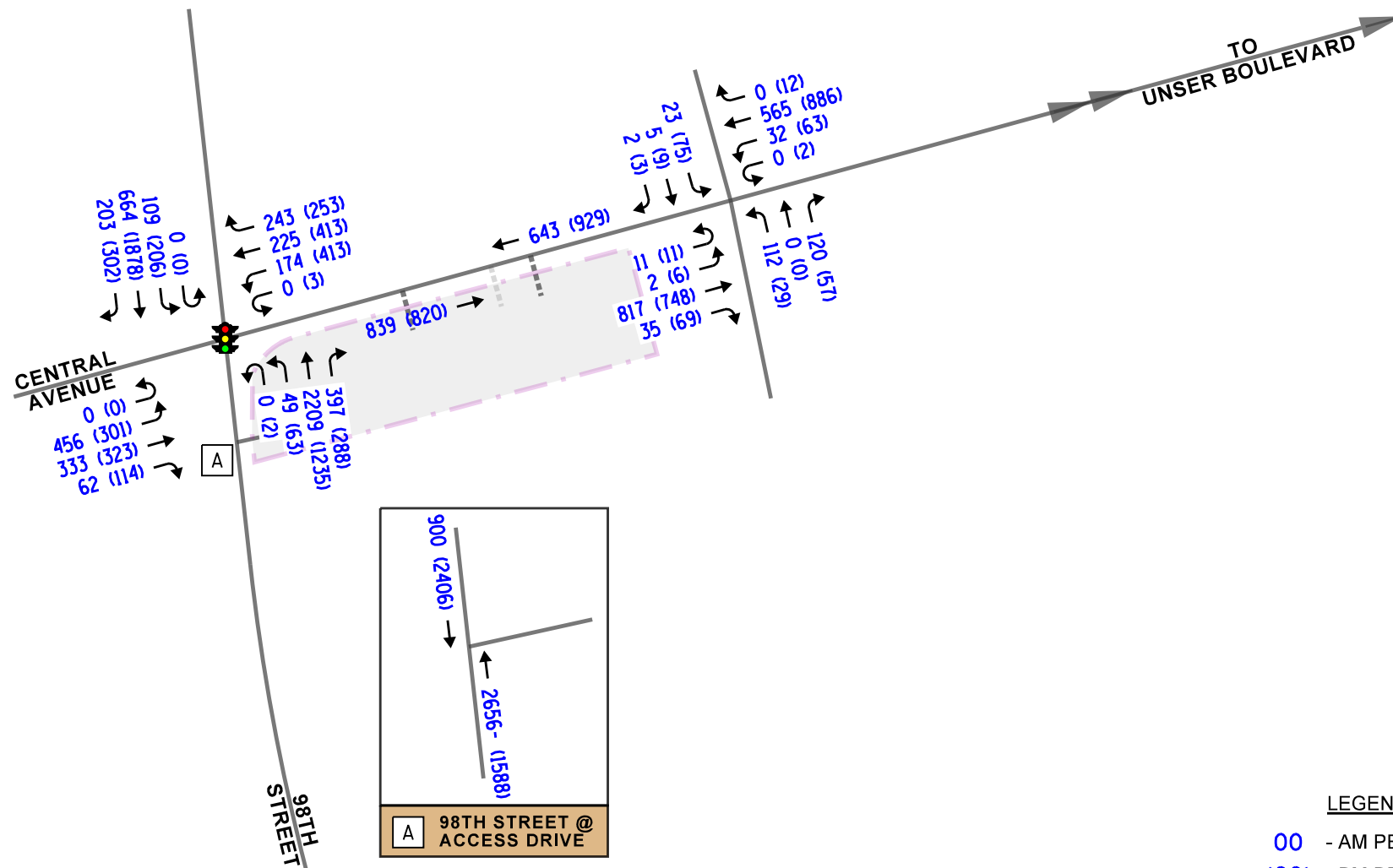
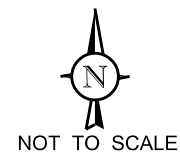
Year 2024 No-Build Traffic Volumes



Job No: 23-211

Figure: 8





**LEGEND**

- 00 - AM PEAK HOUR
- (00) - PM PEAK HOUR

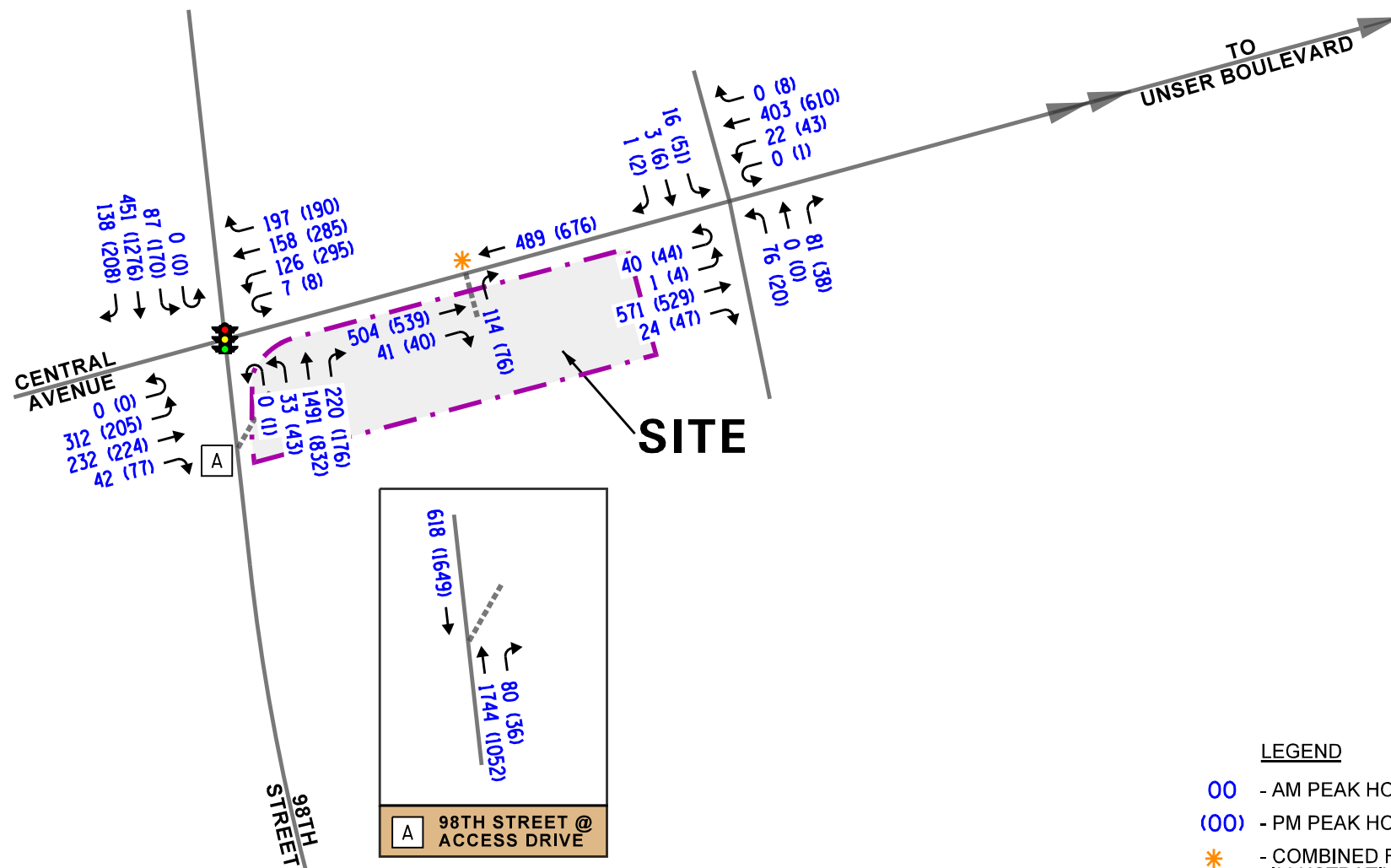
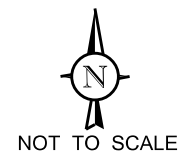
Proposed Dunkin  
Drive-Through  
Albuquerque, New Mexico

Year 2034 No-Build Traffic Volumes



Job No: 23-211

Figure: 9

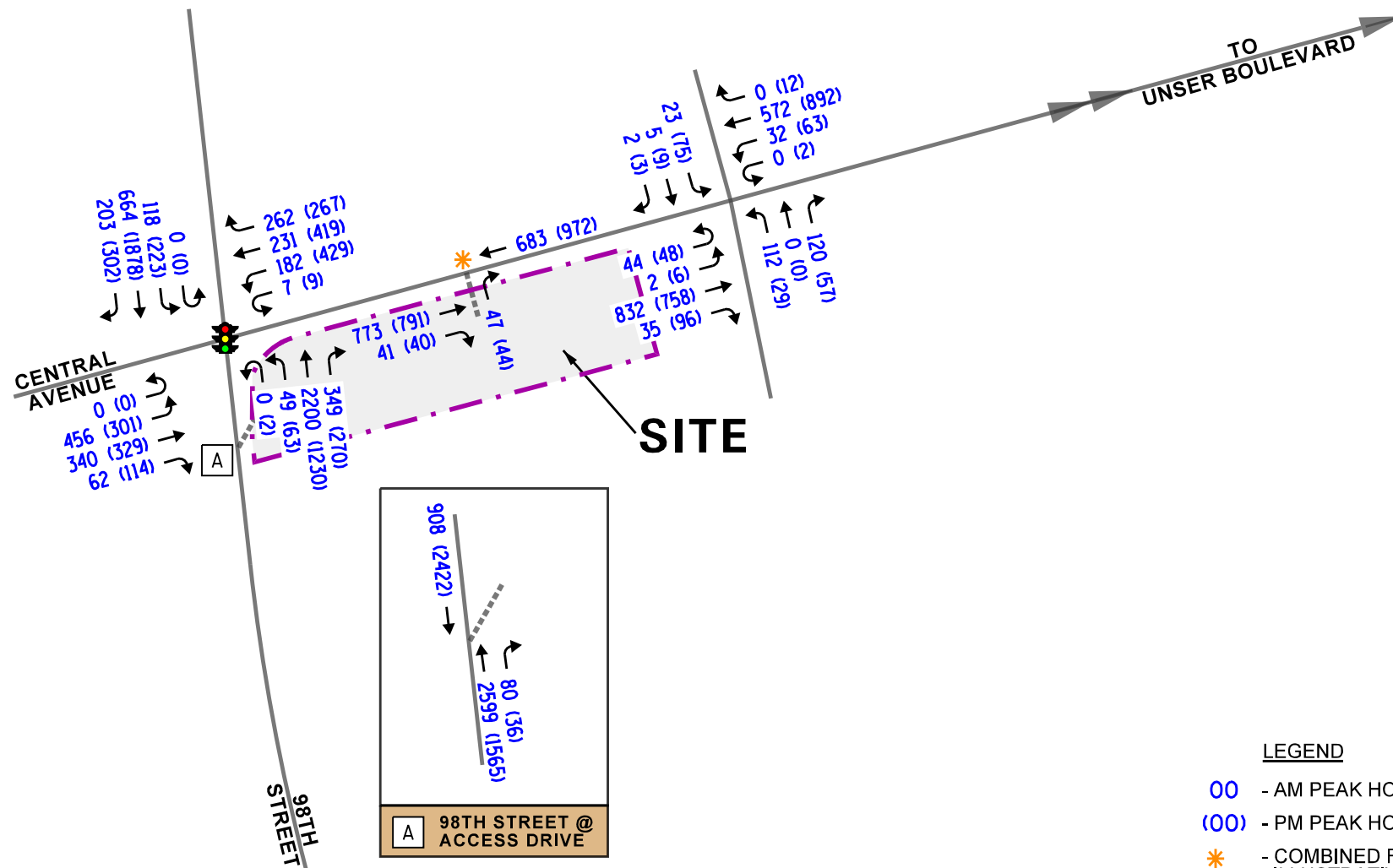
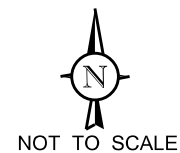


Proposed Dunkin  
Drive-Through  
Albuquerque, New Mexico

Year 2024 Total Traffic Volumes



Job No: 23-211 Figure: 10



Proposed Dunkin  
Drive-Through  
Albuquerque, New Mexico

Year 2034 Total Traffic Volumes



Job No: 23-211 Figure: 11

## 5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

### Traffic Analyses

Intersection analyses were performed for the weekday morning and weekday evening peak hours for the existing, no-build, and total projected traffic volumes for Year 2024 (buildout) and Year 2034 (horizon) years.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6<sup>th</sup> Edition and analyzed using Synchro/SimTraffic 11 software. The analysis for the signalized intersections of Central Avenue with 98<sup>th</sup> Avenue and Unser Boulevard were accomplished utilizing actual cycle lengths and phasings.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service, overall intersection delay (measured in seconds), volume-to-capacity ratios, and 95<sup>th</sup> percentile queues for the existing, no-build, and total projected conditions are presented in **Tables 3** through **14**. A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 3a

CAPACITY ANALYSIS RESULTS – SIGNALIZED – CENTRAL AVENUE WITH 98<sup>th</sup> STREET

| Existing<br>Conditions                                        | Peak Hour          | Eastbound                    |           |                | Westbound |           |   | Northbound |           |          | Southbound |           |          | Overall  |
|---------------------------------------------------------------|--------------------|------------------------------|-----------|----------------|-----------|-----------|---|------------|-----------|----------|------------|-----------|----------|----------|
|                                                               |                    | L                            | T         | R              | L         | T         | R | L          | T         | R        | L          | T         | R        |          |
|                                                               | Weekday<br>Morning | E<br>65.7                    | D<br>36.9 |                | D<br>64.0 | C<br>25.7 |   | B<br>14.9  | D<br>40.1 | A<br>0.2 | C<br>27.7  | C<br>22.3 | A<br>0.1 | C – 34.2 |
|                                                               |                    | D – 52.1                     |           |                | D – 36.9  |           |   | C – 33.6   |           |          | B – 18.2   |           |          |          |
|                                                               | Weekday<br>Evening | D<br>52.1                    | C<br>29.2 |                | D<br>53.4 | C<br>26.5 |   | C<br>20.5  | C<br>33.5 | A<br>0.2 | C<br>21.7  | D<br>42.0 | A<br>0.2 | C – 33.7 |
| D – 38.5                                                      |                    |                              | D – 37.0  |                |           | C – 26.9  |   |            | D – 35.3  |          |            |           |          |          |
| Year 2024 No-<br>Build Conditions                             | Weekday<br>Morning | E<br>67.4                    | D<br>37.2 |                | E<br>64.1 | C<br>30.5 |   | B<br>14.9  | D<br>44.8 | A<br>0.3 | C<br>34.4  | C<br>22.6 | A<br>0.1 | D – 37.1 |
|                                                               |                    | D – 53.5                     |           |                | D – 39.4  |           |   | D – 37.6   |           |          | B – 19.6   |           |          |          |
|                                                               | Weekday<br>Evening | D<br>52.0                    | C<br>29.6 |                | D<br>53.9 | C<br>26.2 |   | C<br>20.7  | C<br>34.6 | A<br>0.2 | C<br>30.0  | E<br>59.1 | A<br>0.2 | D – 39.7 |
|                                                               |                    | D – 38.8                     |           |                | D – 36.8  |           |   | C – 27.8   |           |          | D – 48.9   |           |          |          |
| Year 2024 No-<br>Build Conditions                             | Weekday<br>Morning | F<br>99+                     | D<br>41.2 |                | E<br>69.4 | D<br>40.9 |   | B<br>15.7  | F<br>99+  | A<br>0.4 | E<br>55.5  | C<br>26.0 | A<br>0.2 | F – 99+  |
|                                                               |                    | E – 76.3                     |           |                | D – 48.6  |           |   | F – 99+    |           |          | C – 24.0   |           |          |          |
|                                                               | Weekday<br>Evening | D<br>54.8                    | C<br>34.9 |                | E<br>67.4 | D<br>36.3 |   | C<br>23.4  | E<br>63.9 | A<br>0.3 | F<br>99.3  | F<br>99+  | A<br>0.3 | F – 99+  |
|                                                               |                    | D – 43.0                     |           |                | D – 48.2  |           |   | D – 50.7   |           |          | F – 99+    |           |          |          |
| Letter denotes Level of Service Delay is measured in seconds. |                    | L – Left Turn<br>T – Through |           | R – Right Turn |           |           |   |            |           |          |            |           |          |          |

Table 3b

CAPACITY ANALYSIS RESULTS – SIGNALIZED – CENTRAL AVENUE WITH 98<sup>th</sup> STREET

| Year 2024<br>Projected<br>Conditions | Peak Hour                            | Eastbound       |           |                | Westbound |           |           | Northbound |           |           | Southbound |           |           | Overall  |         |
|--------------------------------------|--------------------------------------|-----------------|-----------|----------------|-----------|-----------|-----------|------------|-----------|-----------|------------|-----------|-----------|----------|---------|
|                                      |                                      | L               | T         | R              | L         | T         | R         | L          | T         | R         | L          | T         | R         |          |         |
|                                      | Weekday Morning                      | E<br>67.4       | D<br>37.8 |                | E<br>65.9 | C<br>31.4 |           | B<br>14.9  | D<br>50.0 | A<br>0.2  | D<br>40.1  | C<br>22.6 | A<br>0.1  | D – 40.1 |         |
|                                      |                                      | D – 53.5        |           |                | D – 40.8  |           |           | D – 43.1   |           |           | C – 20.2   |           |           |          |         |
|                                      | Weekday Evening                      | D<br>52.0       | C<br>30.3 |                | E<br>55.0 | C<br>25.7 |           | C<br>20.6  | C<br>34.7 | A<br>0.1  | C<br>34.1  | E<br>59.1 | A<br>0.2  | D – 37.9 |         |
|                                      |                                      | D – 39.1        |           |                | D – 37.1  |           |           | C – 28.3   |           |           | D – 49.2   |           |           |          |         |
|                                      | Year 2024<br>Projected<br>Conditions | Weekday Morning | F<br>99+  | D<br>41.6      |           | E<br>72.3 | D<br>42.3 |            | B<br>15.7 | F<br>99+  | A<br>0.4   | E<br>65.1 | C<br>26.0 | A<br>0.2 | F – 99+ |
|                                      |                                      |                 | E – 76.2  |                |           | D – 50.6  |           |            | F – 99+   |           |            | C – 25.4  |           |          |         |
|                                      |                                      | Weekday Evening | D<br>54.8 | D<br>35.3      |           | E<br>73.5 | D<br>36.8 |            | C<br>23.4 | E<br>63.0 | A<br>0.2   | F<br>99+  | F<br>99+  | A<br>0.3 | F – 99+ |
|                                      |                                      |                 | D – 43.2  |                |           | D – 51.1  |           |            | D – 50.5  |           |            | F – 99+   |           |          |         |
| Letter denotes Level of Service      |                                      | L – Left Turn   |           | R – Right Turn |           |           |           |            |           |           |            |           |           |          |         |
| Delay is measured in seconds.        |                                      | T – Through     |           |                |           |           |           |            |           |           |            |           |           |          |         |



Table 4a

CAPACITY ANALYSIS RESULTS – CENTRAL AVENUE WITH 98<sup>th</sup> STREET V/C RATIO (95<sup>TH</sup> PERCENTILE QUEUE)

|                                                          | Peak Hour       | Eastbound     |               |               | Westbound     |              |                | Northbound  |               |                | Southbound  |   |   |
|----------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|--------------|----------------|-------------|---------------|----------------|-------------|---|---|
|                                                          |                 | L             | T             | R             | L             | T            | R              | L           | T             | R              | L           | T | R |
| Existing Conditions                                      | Weekday Morning | 0.73<br>(175) | 0.29<br>(130) | 0.48<br>(81)  | 0.36<br>(104) | 0.07<br>(30) | 0.87<br>(723)  | 0.17<br>(0) | 0.46<br>(57)  | 0.27<br>(166)  | 0.09<br>(0) |   |   |
|                                                          | Weekday Evening | 0.54<br>(103) | 0.32<br>(114) | 0.65<br>(138) | 0.43<br>(153) | 0.27<br>(37) | 0.64<br>(322)  | 0.12<br>(0) | 0.41<br>(75)  | 0.89<br>(621)  | 0.13<br>(0) |   |   |
| Year 2024 No-Build Conditions                            | Weekday Morning | 0.76<br>(189) | 0.30<br>(135) | 0.49<br>(84)  | 0.44<br>(135) | 0.07<br>(30) | 0.93<br>(833)  | 0.18<br>(0) | 0.56<br>(76)  | 0.28<br>(176)  | 0.09<br>(0) |   |   |
|                                                          | Weekday Evening | 0.56<br>(108) | 0.33<br>(119) | 0.67<br>(143) | 0.46<br>(162) | 0.28<br>(38) | 0.68<br>(342)  | 0.13<br>(0) | 0.63<br>(107) | 0.99<br>(680)  | 0.14<br>(0) |   |   |
| Year 2024 No-Build Conditions                            | Weekday Morning | 1.04<br>(332) | 0.46<br>(202) | 0.66<br>(117) | 0.65<br>(216) | 0.15<br>(41) | 1.42<br>(1505) | 0.27<br>(0) | 0.77<br>(148) | 0.43<br>(268)  | 0.14<br>(0) |   |   |
|                                                          | Weekday Evening | 0.70<br>(153) | 0.52<br>(182) | 0.88<br>(238) | 0.72<br>(267) | 0.39<br>(51) | 1.01<br>(626)  | 0.19<br>(0) | 1.03<br>(263) | 1.47<br>(1157) | 0.20<br>(0) |   |   |
| Year 2024 Projected Conditions                           | Weekday Morning | 0.76<br>(189) | 0.32<br>(140) | 0.53<br>(93)  | 0.47<br>(144) | 0.07<br>(30) | 0.96<br>(824)  | 0.15<br>(0) | 0.62<br>(101) | 0.28<br>(176)  | 0.09<br>(0) |   |   |
|                                                          | Weekday Evening | 0.56<br>(108) | 0.35<br>(123) | 0.70<br>(155) | 0.48<br>(163) | 0.28<br>(38) | 0.68<br>(340)  | 0.11<br>(0) | 0.69<br>(130) | 0.99<br>(680)  | 0.14<br>(0) |   |   |
| Year 2024 Projected Conditions                           | Weekday Morning | 1.04<br>(332) | 0.48<br>(205) | 0.70<br>(126) | 0.69<br>(228) | 0.15<br>(41) | 1.41<br>(1496) | 0.23<br>(0) | 0.83<br>(169) | 0.43<br>(268)  | 0.14<br>(0) |   |   |
|                                                          | Weekday Evening | 0.70<br>(153) | 0.53<br>(185) | 0.93<br>(257) | 0.74<br>(272) | 0.39<br>(51) | 1.00<br>(622)  | 0.18<br>(0) | 1.12<br>(296) | 1.47<br>(1157) | 0.20<br>(0) |   |   |
| Note: 95 <sup>th</sup> percentile queue measured in feet |                 |               |               |               |               |              |                |             |               |                |             |   |   |

Table 5

## CAPACITY ANALYSIS RESULTS – EXISTING CONDITIONS

| Intersection                                                                                                         | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|----------------------------------------------------------------------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                                                                                      | LOS                       | Delay | LOS                       | Delay |
| <b>Central Avenue with Westland Road</b>                                                                             |                           |       |                           |       |
| • Northbound Left Turn                                                                                               | B                         | 14.8  | B                         | 14.6  |
| • Northbound Through                                                                                                 | A                         | 0.0   | A                         | 0.0   |
| • Northbound Right Turn                                                                                              | A                         | 9.5   | A                         | 9.1   |
| • Southbound Approach                                                                                                | B                         | 14.2  | C                         | 18.8  |
| • Eastbound Left Turn                                                                                                | A                         | 9.1   | B                         | 10.2  |
| • Westbound Left Turn                                                                                                | A                         | 8.0   | A                         | 7.9   |
| LOS = Level of Service      Note: All intersections under two-way stop sign control<br>Delay is measured in seconds. |                           |       |                           |       |

Table 6

## CAPACITY ANALYSIS RESULTS – EXISTING CONDITIONS

V/C RATIO (95<sup>TH</sup> PERCENTILE QUEUE)

| Intersection                                              | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|-----------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                           | v/c                       | Queue | v/c                       | Queue |
| <b>Central Avenue with Westland Road</b>                  |                           |       |                           |       |
| • Northbound Left Turn                                    | 0.179                     | 25.0  | 0.051                     | 25.0  |
| • Northbound Through                                      | 0.000                     | 0.0   | 0.000                     | 0.0   |
| • Northbound Right Turn                                   | 0.097                     | 25.0  | 0.043                     | 25.0  |
| • Southbound Approach                                     | 0.051                     | 25.0  | 0.187                     | 25.0  |
| • Eastbound Left Turn                                     | 0.001                     | 25.0  | 0.006                     | 25.0  |
| • Westbound Left Turn                                     | 0.019                     | 25.0  | 0.034                     | 25.0  |
| Note: 95 <sup>th</sup> percentile queues measured in feet |                           |       |                           |       |

Table 7

## CAPACITY ANALYSIS RESULTS – YEAR 2024 NO-BUILD CONDITIONS

| Intersection                                                                                                         | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|----------------------------------------------------------------------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                                                                                      | LOS                       | Delay | LOS                       | Delay |
| <b>Central Avenue with Westland Road</b>                                                                             |                           |       |                           |       |
| • Northbound Left Turn                                                                                               | C                         | 15.4  | C                         | 15.2  |
| • Northbound Through                                                                                                 | A                         | 0.0   | A                         | 0.0   |
| • Northbound Right Turn                                                                                              | A                         | 9.7   | A                         | 9.3   |
| • Southbound Approach                                                                                                | C                         | 15.1  | C                         | 20.2  |
| • Eastbound Left Turn                                                                                                | A                         | 9.5   | B                         | 10.5  |
| • Westbound Left Turn                                                                                                | A                         | 8.0   | A                         | 7.9   |
| LOS = Level of Service      Note: All intersections under two-way stop sign control<br>Delay is measured in seconds. |                           |       |                           |       |

Table 8

## CAPACITY ANALYSIS RESULTS – YEAR 2024 NO-BUILD CONDITIONS

V/C RATIO (95<sup>TH</sup> PERCENTILE QUEUE)

| Intersection                                              | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|-----------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                           | v/c                       | Queue | v/c                       | Queue |
| <b>Central Avenue with Westland Road</b>                  |                           |       |                           |       |
| • Northbound Left Turn                                    | 0.195                     | 25.0  | 0.056                     | 25.0  |
| • Northbound Through                                      | 0.000                     | 0.0   | 0.000                     | 0.0   |
| • Northbound Right Turn                                   | 0.103                     | 25.0  | 0.045                     | 25.0  |
| • Southbound Approach                                     | 0.058                     | 25.0  | 0.208                     | 25.0  |
| • Eastbound Left Turn                                     | 0.001                     | 25.0  | 0.006                     | 25.0  |
| • Westbound Left Turn                                     | 0.020                     | 25.0  | 0.036                     | 25.0  |
| Note: 95 <sup>th</sup> percentile queues measured in feet |                           |       |                           |       |

Table 9

## CAPACITY ANALYSIS RESULTS – YEAR 2034 NO-BUILD CONDITIONS

| Intersection                                                                                                         | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|----------------------------------------------------------------------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                                                                                      | LOS                       | Delay | LOS                       | Delay |
| <b>Central Avenue with Westland Road</b>                                                                             |                           |       |                           |       |
| • Northbound Left Turn                                                                                               | C                         | 22.8  | C                         | 21.2  |
| • Northbound Through                                                                                                 | A                         | 0.0   | A                         | 0.0   |
| • Northbound Right Turn                                                                                              | B                         | 10.9  | A                         | 9.8   |
| • Southbound Approach                                                                                                | C                         | 21.0  | E                         | 46.6  |
| • Eastbound Left Turn                                                                                                | B                         | 10.9  | B                         | 13.5  |
| • Westbound Left Turn                                                                                                | A                         | 8.4   | A                         | 8.5   |
| LOS = Level of Service      Note: All intersections under two-way stop sign control<br>Delay is measured in seconds. |                           |       |                           |       |

Table 10

## CAPACITY ANALYSIS RESULTS – YEAR 2034 NO-BUILD CONDITIONS

V/C RATIO (95<sup>TH</sup> PERCENTILE QUEUE)

| Intersection                                              | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|-----------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                           | v/c                       | Queue | v/c                       | Queue |
| <b>Central Avenue with Westland Road</b>                  |                           |       |                           |       |
| • Northbound Left Turn                                    | 0.380                     | 43.0  | 0.121                     | 25.0  |
| • Northbound Through                                      | 0.000                     | 0.0   | 0.000                     | 0.0   |
| • Northbound Right Turn                                   | 0.177                     | 25.0  | 0.075                     | 25.0  |
| • Southbound Approach                                     | 0.128                     | 25.0  | 0.526                     | 25.0  |
| • Eastbound Left Turn                                     | 0.004                     | 25.0  | 0.014                     | 25.0  |
| • Westbound Left Turn                                     | 0.032                     | 25.0  | 0.062                     | 68.0  |
| Note: 95 <sup>th</sup> percentile queues measured in feet |                           |       |                           |       |

Table 11

## CAPACITY ANALYSIS RESULTS – YEAR 2024 PROJECTED CONDITIONS

| Intersection                                                                                                                                                                    | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                                                                                                                                                 | LOS                       | Delay | LOS                       | Delay |
| <b>Central Avenue with Westland Road</b>                                                                                                                                        |                           |       |                           |       |
| • Northbound Left Turn                                                                                                                                                          | C                         | 17.8  | C                         | 17.2  |
| • Northbound Through                                                                                                                                                            | A                         | 0.0   | A                         | 0.0   |
| • Northbound Right Turn                                                                                                                                                         | A                         | 9.7   | A                         | 9.3   |
| • Southbound Approach                                                                                                                                                           | C                         | 16.5  | C                         | 23.3  |
| • Eastbound Left Turn                                                                                                                                                           | B                         | 10.0  | B                         | 12.0  |
| • Westbound Left Turn                                                                                                                                                           | A                         | 8.0   | A                         | 8.0   |
| <b>Central Avenue with Access Drives<sup>1</sup></b>                                                                                                                            |                           |       |                           |       |
| • Northbound Approach                                                                                                                                                           | B                         | 11.0  | B                         | 10.8  |
| LOS = Level of Service      Note: All intersections under two-way stop sign control<br>Delay is measured in seconds.      1 – combined for illustrative and analytical purposes |                           |       |                           |       |

Table 12

## CAPACITY ANALYSIS RESULTS – YEAR 2024 PROJECTED CONDITIONS

V/C RATIO (95<sup>TH</sup> PERCENTILE QUEUE)

| Intersection                                                                                                       | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|--------------------------------------------------------------------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                                                                                    | v/c                       | Queue | v/c                       | Queue |
| <b>Central Avenue with Westland Road</b>                                                                           |                           |       |                           |       |
| • Northbound Left Turn                                                                                             | 0.229                     | 25.0  | 0.067                     | 25.0  |
| • Northbound Through                                                                                               | 0.000                     | 0.0   | 0.000                     | 0.0   |
| • Northbound Right Turn                                                                                            | 0.103                     | 25.0  | 0.045                     | 25.0  |
| • Southbound Approach                                                                                              | 0.066                     | 25.0  | 0.241                     | 25.0  |
| • Eastbound Left Turn                                                                                              | 0.001                     | 25.0  | 0.007                     | 25.0  |
| • Westbound Left Turn                                                                                              | 0.020                     | 25.0  | 0.037                     | 25.0  |
| <b>Central Avenue with Access Drive<sup>1</sup></b>                                                                |                           |       |                           |       |
| • Northbound Approach                                                                                              | 0.168                     | 25.0  | 0.115                     | 25.0  |
| Note: 95 <sup>th</sup> percentile queues measured in feet<br>1 – combined for illustrative and analytical purposes |                           |       |                           |       |

Table 13

## CAPACITY ANALYSIS RESULTS – YEAR 2034 PROJECTED CONDITIONS

| Intersection                                                                                                                                                                    | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                                                                                                                                                 | LOS                       | Delay | LOS                       | Delay |
| <b>Central Avenue with Westland Road</b>                                                                                                                                        |                           |       |                           |       |
| • Northbound Left Turn                                                                                                                                                          | D                         | 30.2  | D                         | 26.7  |
| • Northbound Through                                                                                                                                                            | --                        | --    | --                        | --    |
| • Northbound Right Turn                                                                                                                                                         | B                         | 10.9  | A                         | 9.8   |
| • Southbound Approach                                                                                                                                                           | C                         | 24.8  | F                         | 78.5  |
| • Eastbound Left Turn                                                                                                                                                           | B                         | 11.7  | C                         | 16.1  |
| • Westbound Left Turn                                                                                                                                                           | A                         | 8.5   | A                         | 8.5   |
| <b>Central Avenue with Access Drive<sup>1</sup></b>                                                                                                                             |                           |       |                           |       |
| • Northbound Approach                                                                                                                                                           | B                         | 12.8  | B                         | 12.3  |
| LOS = Level of Service      Note: All intersections under two-way stop sign control<br>Delay is measured in seconds.      1 – combined for illustrative and analytical purposes |                           |       |                           |       |

Table 14

## CAPACITY ANALYSIS RESULTS – YEAR 2034 PROJECTED CONDITIONS

V/C RATIO (95<sup>TH</sup> PERCENTILE QUEUE)

| Intersection                                                                                                       | Weekday Morning Peak Hour |       | Weekday Evening Peak Hour |       |
|--------------------------------------------------------------------------------------------------------------------|---------------------------|-------|---------------------------|-------|
|                                                                                                                    | v/c                       | Queue | v/c                       | Queue |
| <b>Central Avenue with Westland Road</b>                                                                           |                           |       |                           |       |
| • Northbound Left Turn                                                                                             | 0.468                     | 58    | 0.156                     | 25.0  |
| • Northbound Through                                                                                               | --                        | --    | --                        | --    |
| • Northbound Right Turn                                                                                            | 0.177                     | 25.0  | 0.075                     | 25.0  |
| • Southbound Approach                                                                                              | 0.153                     | 25.0  | 0.694                     | 98.0  |
| • Eastbound Left Turn                                                                                              | 0.004                     | 0.00  | 0.017                     | 25.0  |
| • Westbound Left Turn                                                                                              | 0.033                     | 25.0  | 0.063                     | 25.0  |
| <b>Central Avenue with Access Drive<sup>1</sup></b>                                                                |                           |       |                           |       |
| • Northbound Approach                                                                                              | 0.207                     | 25.0  | 0.140                     | 25.0  |
| Note: 95 <sup>th</sup> percentile queues measured in feet<br>1 – combined for illustrative and analytical purposes |                           |       |                           |       |

## Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the site-generated traffic.

### *Central Avenue with 98<sup>th</sup> Avenue*

The results of the capacity analysis indicate that overall this intersection currently operates at Level of Service (LOS) C during the weekday morning and weekday evening peak hours. Furthermore, all of the movements currently operate at LOS D or better during the peak hours except for the eastbound left-turn movement, which currently operates at LOS E.

Under Year 2024 no-build conditions, this intersection overall is projected to operate at LOS D during the weekday morning and weekday evening peak hours with increases in delay of three seconds and six seconds, respectively. All of the approaches are projected to continue operating at existing levels of service except for the northbound approach during the weekday morning peak hour, which is projected to operate at LOS D with increases in delay of four seconds over existing conditions.

Under Year 2024 total projected conditions, the intersection overall and all of the approaches are projected to operate at no-build levels of service except for the southbound approach during the weekday morning peak hour, which is projected to operate at LOS C during the weekday evening peak hour with an increase in delay of less than one second over no-build conditions.

Under Year 2034 no-build and total projected conditions, the intersection overall is projected to operate at LOS F during both peak hours. This level of service is primarily the result of the existing northbound and southbound traffic volumes increased by a 54 percent regional growth factor.

Overall, the proposed development is only projected to increase the volume of traffic traversing this intersection by less than two percent during the peak hours under Year 2024 conditions. Under Year 2034 conditions, the proposed development is projected to increase the volume of traffic traversing this intersection by approximately one percent.

As such, this intersection has sufficient reserve capacity to accommodate the traffic estimated to be generated by the proposed development under buildout conditions. While this intersection, particularly the northbound and southbound through movements, is projected to operate over capacity under Year 2034 conditions, the resulting level of service is primarily the result of the existing traffic volumes increased by the 54 percent regional growth factor.

### *Central Avenue with Westland Avenue*

The results of the capacity analysis indicate that all of the critical movements at this intersection currently operate at LOS C or better during the weekday morning and weekday evening peak hours. Under Year 2024 no-build and total projected conditions, all of the critical movements at this intersection are projected to operate at LOS C or better during the peak hours.



Under Year 2034 no-build and total projected conditions, all of the critical movements are projected to operate at the acceptable LOS D or better during the peak hours except for the southbound approach, which is projected to operate at LOS E during the weekday evening peak hour under no-build conditions and at LOS F during the weekday evening peak hour under total projected conditions.

However, the volume-to-capacity ratio for the southbound approach is projected to be less than one, indicating the approach has sufficient capacity to accommodate the projected traffic volumes, and the 95<sup>th</sup> percentile queues are projected to be three vehicles.

### *Proposed Access Evaluation*

The results of the capacity analysis indicate that under Year 2024 buildout year conditions, outbound movements from the proposed access drives are projected to operate at LOS B during the weekday morning and weekday evening peak hours with 95<sup>th</sup> percentile queues of one to two vehicles.

Under Year 2034 horizon year conditions, outbound movements from the access drives are projected to continue operating at LOS B during the peak hours. Overall, the provision of a right-in/ access drive on 98<sup>th</sup> Street will be adequate and beneficial for the site based on the following:

- The site is currently served by an existing access drive off 98<sup>th</sup> Street that allows both right-in and right-out movements.
- Traffic generated by drive-through coffee shops are primarily diverted from existing traffic on the adjacent roadway system. Providing convenient access on both roadways is paramount to the success and viability of these establishments.
- Given that the northbound traffic on 98<sup>th</sup> Street, especially in the morning peak hour, is significantly higher than the two-way traffic on Central Avenue, a direct access to 98<sup>th</sup> Street will provide convenient entry to the site without the traffic having to travel onto Central Avenue.
- This will in turn reduce the traffic load at the intersection of 98<sup>th</sup> Street with Central Avenue by eliminating the additional northbound right-turn movements that will occur.
- Having all right turns enter off Central Avenue will significantly increase the amount of traffic entering the site from the west. This will have the potential to back up traffic onto Central Avenue and create undue on-site circulation and congestion.
- A northbound right-turn lane currently exists on 98<sup>th</sup> Street, which can also serve as a deceleration lane for the proposed access drive. This right-turn lane currently operates under yield control at Central Avenue.
- An eastbound right-turn lane will be provided on Central Avenue in order to accommodate the traffic projected to enter the site.

- Providing an eastbound left-turn lane on Central Avenue at Westland Road as requested by the City is not necessary for the following reasons:
  - Left-turn movements are currently occurring at this location.
  - Given the location of the site to the southwest of downtown Albuquerque, it is anticipated that the majority of northbound traffic in the weekday morning peak hour is traffic desiring to travel east on I-40. In lieu of performing a U-turn at Westland Road, these vehicles have the ability to access I-40 via the Unser Boulevard SW interchange.
  - Traffic desiring to travel west on Central Avenue will be the primary contributors to vehicles that need to make the U-turn at this intersection. This amounts to 15 percent (six vehicles) in the weekday morning and weekday evening peak hours.
  - While southbound 98<sup>th</sup> Street traffic may also be contributing to U-turn maneuvers at this intersection (20 percent in the weekday morning peak hour and 40 percent during the weekday evening peak hour), there are other alternative routes for drivers who may be traveling south on 98<sup>th</sup> Street to access the residential neighborhood to the east of 98<sup>th</sup> Street to utilize, including 94<sup>th</sup> Street, 90<sup>th</sup> Street, and 86<sup>th</sup> Street.
  - As can be seen from Figure 10, upon buildout there are projected to be 41 left-turns/U-turns during the weekday morning peak hour and 48 left-turns/U-turns during the weekday evening peak hour. This amount of traffic translates to approximately one to two vehicles per minute, which can be accommodated by the median opening that currently exists. This median can accommodate up to two vehicles without blocking eastbound traffic and is consistent with the median breaks provided at 94<sup>th</sup> Street and 90<sup>th</sup> Street.
  - It is recommended that the median “nose” be modified similar to the intersections of Central Avenue with 94<sup>th</sup> Street and 90<sup>th</sup> Street, where the median opening accommodates left-turn movements/U-turns without left-turn lanes.

#### *Central Avenue with Unser Boulevard*

As previously indicated, due to the location of the site to the southwest of downtown Albuquerque, it is anticipated that the majority of northbound traffic in the weekday morning peak hour is traffic desiring to travel east on I-40. In lieu of existing onto 98<sup>th</sup> Street or performing an eastbound U-turn at Westland Road, vehicles have the ability to access I-40 via the Unser Boulevard SW interchange.

A review of historic traffic data for the intersection of Central Avenue with Unser Boulevard indicates that the most recent available data is from 2008. Since 2008, this intersection has experienced significant capacity improvements including dual left-turn lanes on all four approaches, exclusive right-turn lanes on the westbound, northbound, and southbound approaches, and three northbound through lanes with the ability to provide a third southbound through lane via restriping.

With the proposed access configuration, it is anticipated that the proposed development will only add approximately 10 eastbound left-turn movements during the weekday morning peak hour and four eastbound left-turn movements during the weekday evening peak hour. With the existing capacity provided at this intersection, it is anticipated that this nominal increase in traffic will have a limited impact on the operations of this intersection.

### On-Site Circulation and Drive-Through Stacking

Based on a review of the site plan, vehicles will enter the drive-through lanes on the northeast corner of the site then travel east and south along the site and make a right turn towards the pick-up window located on the north side of the building. Vehicles will then exit the drive-through just west of the building and will be able to proceed either access drive on Central Avenue.

A stop sign should be provided for outbound movements from the drive-through onto the main circulation drive aisle and a “Do Not Enter” sign should be provided at the drive-through exit facing west.

Based on the site plan, the drive-through facility will provide stacking for approximately 16 vehicles. Observations conducted by KLOA, Inc. at existing coffee shops in the Chicagoland area indicated the following:

- During the weekday morning peak period (6:30 A.M. to 9:00 A.M.), an average queue of seven vehicles and a maximum queue of 12 vehicles was observed.
- During the weekday evening peak period (4:00 P.M. to 6:30 P.M.), an average queue of one vehicle and a maximum queue of two vehicles was observed.

As such, the proposed stacking for 16 vehicles will be adequate in accommodating the average and peak drive-through stacking anticipated for the coffee shop.

## 7. Conclusion

Based on the proceeding analyses and recommendations, the following conclusions have been made:

- The proposed Dunkin and retail building will be located at 9700 Central Avenue SW. The buildings will be 2,140 and 6,000 square feet, respectively, and will share a 38-space parking lot. The Dunkin will provide a drive-through that will accommodate 16 vehicles.
- Access to the site will be provided via two right-in/right-out access drives on Central Avenue and one right-in only access drive located on 98<sup>th</sup> Street.
- The volume of traffic estimated to be generated by Dunkin will be reduced due to the volume of pass-by trips anticipated to be diverted from the existing traffic on the roadways, primarily in the northbound direction on 98<sup>th</sup> Street and eastbound direction on Central Avenue.
- The access drives are projected to be adequate in accommodating the traffic estimated to be generated by the development and will provide flexible and efficient access to the site.
- The provision of a right-in access drive on 98<sup>th</sup> Street will be beneficial based on the following:
  - Given that the northbound traffic on 98<sup>th</sup> Street, especially in the morning peak hour, is significantly higher than the two-way traffic on Central Avenue, a direct access to 98<sup>th</sup> Street will provide convenient entry to the site without the traffic having to travel onto Central Avenue.
  - This will in turn reduce the traffic load at the intersection of 98<sup>th</sup> Street with Central Avenue by eliminating the additional northbound right-turn movements that will occur.
  - A northbound right-turn lane currently exists on 98<sup>th</sup> Street, which can also serve as a deceleration lane for the proposed access drive. This right turn lane currently operates under yield control at Central Avenue
- Given the location of the site to the southwest of downtown Albuquerque, it is anticipated that the majority of northbound traffic in the weekday morning peak hour is traffic desiring to travel east on I-40. In lieu of performing a U-turn at Westland Road, these vehicles have the ability to travel east on Central Avenue to Unser Boulevard SW to access its interchange with I-40.

- It is recommended that the median “nose” be modified similar to the intersections of Central Avenue with 94<sup>th</sup> Street and 90<sup>th</sup> Street, where the median opening accommodates left-turn movements/U-turns without left-turn lanes.
- As part of the proposed development, stop signs should be provided for outbound traffic from both access drives on Central Avenue
- The drive-through stacking of 16 vehicles will be adequate in accommodating the peak drive-through activity for the coffee shop. The final site traffic layout and queueing acceptance is dependent on the Traffic Circulation Layout (TCL) approval by the City.
- Clear intersection sight distance should be provided at each driveway as per COA DPM 7-4(I)(5)(iii) Intersection Sight Distance.

# Appendix

Scope of Traffic Impact Study  
Traffic Count Summary Sheets  
Site Plan  
ITE Trip Generation Summary Sheets  
Level of Service Criteria  
Capacity Analysis Summary Sheets

## Scope of Traffic Impact Study





8220 SAN PEDRO DR NE  
SUITE 150  
ALBUQUERQUE, NM 87113  
505/338-0988  
www.lee-eng.com

**LEE ENGINEERING**

## **Agenda for 98<sup>th</sup> Central TIA**

**December 21, 2022**

**-Meeting Notes in Red-**

### **Attendees:**

**Matt Grush – City of Albuquerque**

**Jonathon Kruse – Lee Engineering**

**Jeff Wooten – Wooten Engineering**

1. Introductions
2. Review of Site Plan
  - a. Site Plan & land Uses
3. Discussion of Scope for TIS
  - a. Study Intersections
    - i. **98<sup>th</sup> & Central**
    - ii. **Site Driveways**
  - b. Data Collection
  - c. Trip Generation, Pass By, & Internal Capture
    - i. Trip Generation Manual (11<sup>th</sup> Edition) Land Use – See attachments for details.
    - ii. Pass-by trips
    - iii. No Internal Capture
    - iv. Trips distributed based on existing traffic patterns
  - d. Known Developments or Pending Improvements in Area:
    - i. **Westpoint**
    - ii. **DutchBros/Wataburger (Check what is built)**
  - e. Build-out Year and Growth Rate
    - i. Build-Out Year (2023)
      1. Will look at MRCOG Model Projections and calculate growth rate (if any), otherwise will assume 1% growth per year.
  - f. Analysis scenarios
    - i. Existing Conditions Background (No Build)
    - ii. Opening Year Background (No Build)
    - iii. Opening Year Buildout (Full Build)
    - iv. Opening Year Buildout Optimized (if required)
      1. All scenarios with existing signal timings except opening year buildout optimized.
    - v. Horizon Year **+10**
  - g. Required Analysis & Methodology
    - i. LOS Capacity analysis based on HCM 6<sup>th</sup> Edition (HCS)
    - ii. 95<sup>th</sup> Percentile Queue demands (HCS)



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www.lee-eng.com

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1. Capacity & Queueing for network peak rather than individual intersection peaks
- iii. Auxiliary Lane Analysis
- iv. Sight Distance Analysis at Proposed Driveways
- v. Crash Summary **5 years**
- vi. **Weaving at west driveway**
- vii. **Internal Queueing forgone for additional cars on site plan.**
  1. **Mention active queue management and discussion.**
4. Agency Input (Comments & Issues)
5. Meeting Notes (distributed by Lee Engineering)

## Traffic Count Summary Sheets



Lee Engineering, LLC  
Phoenix, Arizona - Dallas, Texas  
Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

Count Name: NM309.04 Central 98th Fast Food  
TIS  
Site Code:  
Start Date: 03/28/2023  
Page No: 1

### Turning Movement Data

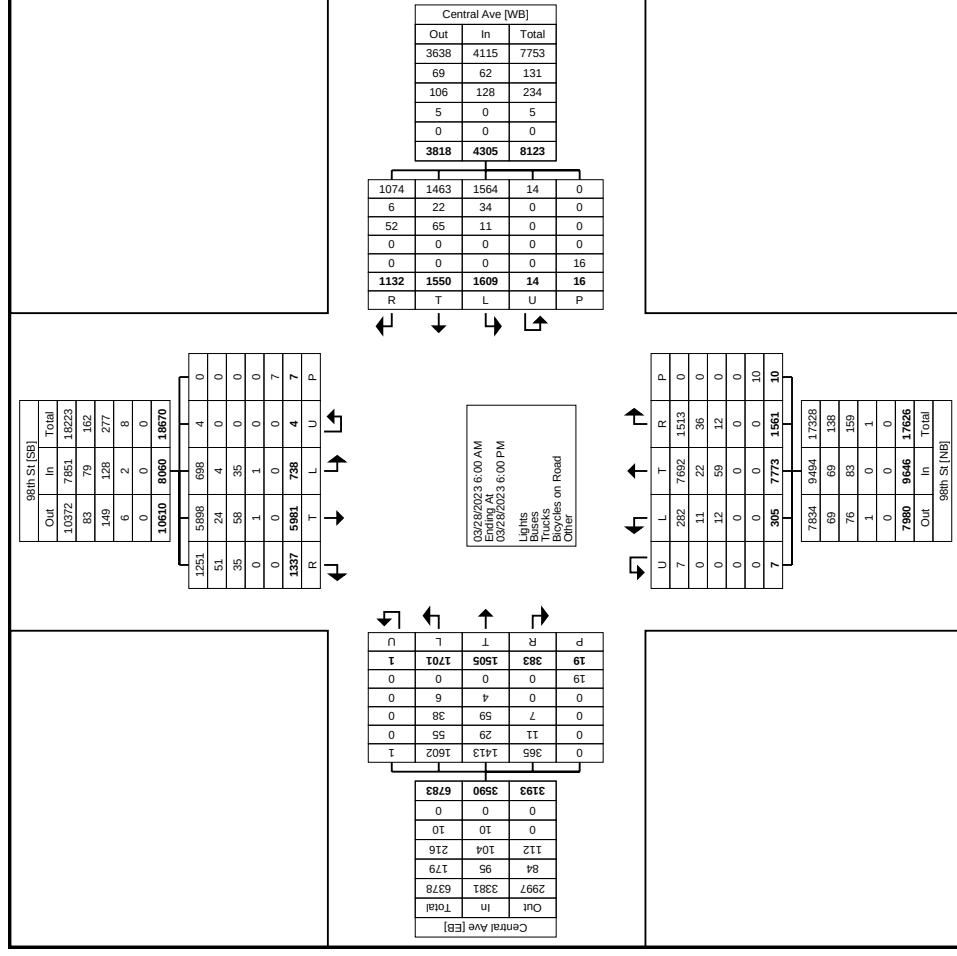
| Start Time    | Central Ave<br>Eastbound |      |      |       |                 |      | Central Ave<br>Westbound |        |      |      |       |                 | 98th St<br>Northbound |               |        |      |      |       | 98th St<br>Southbound |      |               |        |      |      | Int.<br>Total |       |                 |      |               |
|---------------|--------------------------|------|------|-------|-----------------|------|--------------------------|--------|------|------|-------|-----------------|-----------------------|---------------|--------|------|------|-------|-----------------------|------|---------------|--------|------|------|---------------|-------|-----------------|------|---------------|
|               | U-Turn                   | Left | Thru | Right | Right<br>on Red | Peds | App.<br>Total            | U-Turn | Left | Thru | Right | Right<br>on Red | Peds                  | App.<br>Total | U-Turn | Left | Thru | Right | Right<br>on Red       | Peds | App.<br>Total | U-Turn | Left | Thru |               | Right | Right<br>on Red | Peds | App.<br>Total |
| 6:00 AM       | 0                        | 42   | 21   | 2     | 3               | 0    | 68                       | 0      | 6    | 23   | 6     | 5               | 2                     | 40            | 0      | 7    | 204  | 20    | 7                     | 0    | 238           | 0      | 4    | 25   | 22            | 7     | 0               | 58   | 404           |
| 6:15 AM       | 0                        | 45   | 26   | 4     | 0               | 0    | 75                       | 0      | 10   | 25   | 6     | 9               | 0                     | 50            | 0      | 6    | 282  | 24    | 2                     | 0    | 314           | 0      | 7    | 41   | 9             | 3     | 1               | 60   | 499           |
| 6:30 AM       | 0                        | 49   | 35   | 4     | 6               | 0    | 94                       | 0      | 12   | 36   | 12    | 8               | 0                     | 68            | 0      | 9    | 320  | 25    | 11                    | 0    | 365           | 0      | 11   | 43   | 16            | 16    | 0               | 86   | 613           |
| 6:45 AM       | 0                        | 56   | 56   | 2     | 5               | 0    | 119                      | 0      | 10   | 27   | 12    | 9               | 0                     | 58            | 0      | 11   | 322  | 32    | 18                    | 0    | 383           | 0      | 9    | 70   | 14            | 15    | 0               | 108  | 668           |
| Hourly Total  | 0                        | 192  | 138  | 12    | 14              | 0    | 356                      | 0      | 38   | 111  | 36    | 31              | 2                     | 216           | 0      | 33   | 1128 | 101   | 38                    | 0    | 1300          | 0      | 31   | 179  | 61            | 41    | 1               | 312  | 2184          |
| 7:00 AM       | 0                        | 78   | 53   | 10    | 3               | 3    | 144                      | 0      | 15   | 30   | 15    | 12              | 1                     | 72            | 0      | 8    | 359  | 26    | 28                    | 3    | 421           | 0      | 16   | 75   | 17            | 10    | 0               | 118  | 755           |
| 7:15 AM       | 0                        | 74   | 49   | 3     | 7               | 1    | 133                      | 0      | 38   | 43   | 19    | 12              | 2                     | 112           | 0      | 13   | 360  | 36    | 31                    | 0    | 440           | 0      | 13   | 115  | 14            | 20    | 0               | 162  | 847           |
| 7:30 AM       | 0                        | 68   | 66   | 3     | 7               | 0    | 144                      | 0      | 28   | 45   | 25    | 17              | 0                     | 115           | 0      | 5    | 360  | 29    | 38                    | 0    | 432           | 0      | 19   | 109  | 15            | 19    | 0               | 162  | 853           |
| 7:45 AM       | 0                        | 68   | 48   | 1     | 6               | 0    | 123                      | 0      | 32   | 28   | 17    | 12              | 1                     | 89            | 0      | 6    | 340  | 33    | 37                    | 0    | 416           | 0      | 15   | 127  | 15            | 19    | 1               | 176  | 804           |
| Hourly Total  | 0                        | 288  | 216  | 17    | 23              | 4    | 544                      | 0      | 113  | 146  | 76    | 53              | 4                     | 388           | 0      | 32   | 1419 | 124   | 134                   | 3    | 1709          | 0      | 63   | 426  | 61            | 68    | 1               | 618  | 3259          |
| 8:00 AM       | 0                        | 50   | 41   | 4     | 3               | 1    | 98                       | 0      | 24   | 27   | 16    | 11              | 0                     | 78            | 0      | 4    | 262  | 38    | 17                    | 0    | 321           | 0      | 9    | 115  | 17            | 27    | 0               | 168  | 665           |
| 8:15 AM       | 0                        | 49   | 32   | 3     | 2               | 0    | 86                       | 0      | 23   | 32   | 15    | 28              | 0                     | 98            | 1      | 11   | 283  | 26    | 22                    | 0    | 343           | 0      | 10   | 95   | 11            | 14    | 0               | 130  | 657           |
| 8:30 AM       | 0                        | 56   | 30   | 1     | 3               | 0    | 90                       | 0      | 26   | 30   | 13    | 12              | 0                     | 81            | 0      | 6    | 274  | 31    | 18                    | 0    | 329           | 0      | 17   | 99   | 23            | 27    | 0               | 166  | 666           |
| 8:45 AM       | 0                        | 45   | 34   | 3     | 2               | 0    | 84                       | 0      | 37   | 22   | 12    | 8               | 0                     | 79            | 0      | 11   | 209  | 31    | 14                    | 0    | 265           | 0      | 21   | 109  | 7             | 13    | 0               | 150  | 578           |
| Hourly Total  | 0                        | 200  | 137  | 11    | 10              | 1    | 358                      | 0      | 110  | 111  | 56    | 59              | 0                     | 336           | 1      | 32   | 1028 | 126   | 71                    | 0    | 1258          | 0      | 57   | 418  | 58            | 81    | 0               | 614  | 2566          |
| *** BREAK *** | -                        | -    | -    | -     | -               | -    | -                        | -      | -    | -    | -     | -               | -                     | -             | -      | -    | -    | -     | -                     | -    | -             | -      | -    | -    | -             | -     | -               | -    |               |
| 11:00 AM      | 0                        | 37   | 33   | 3     | 3               | 1    | 76                       | 1      | 36   | 34   | 12    | 16              | 0                     | 99            | 0      | 1    | 137  | 18    | 15                    | 0    | 171           | 0      | 23   | 85   | 18            | 12    | 0               | 138  | 484           |
| 11:15 AM      | 0                        | 27   | 32   | 5     | 3               | 0    | 67                       | 2      | 47   | 32   | 7     | 14              | 0                     | 102           | 1      | 4    | 161  | 17    | 11                    | 0    | 194           | 0      | 11   | 118  | 14            | 8     | 0               | 151  | 514           |
| 11:30 AM      | 0                        | 32   | 32   | 6     | 3               | 1    | 73                       | 2      | 53   | 26   | 18    | 21              | 0                     | 120           | 0      | 5    | 148  | 24    | 8                     | 0    | 185           | 0      | 24   | 106  | 15            | 10    | 0               | 155  | 533           |
| 11:45 AM      | 0                        | 45   | 39   | 3     | 2               | 0    | 89                       | 0      | 44   | 25   | 14    | 13              | 1                     | 96            | 0      | 6    | 136  | 25    | 15                    | 0    | 182           | 0      | 23   | 106  | 18            | 14    | 0               | 161  | 528           |
| Hourly Total  | 0                        | 141  | 136  | 17    | 11              | 2    | 305                      | 5      | 180  | 117  | 51    | 64              | 1                     | 417           | 1      | 16   | 582  | 84    | 49                    | 0    | 732           | 0      | 81   | 415  | 65            | 44    | 0               | 605  | 2059          |
| 12:00 PM      | 1                        | 30   | 33   | 3     | 3               | 0    | 70                       | 0      | 42   | 34   | 14    | 18              | 1                     | 108           | 0      | 2    | 144  | 17    | 15                    | 1    | 178           | 0      | 27   | 134  | 18            | 15    | 1               | 194  | 550           |
| 12:15 PM      | 0                        | 33   | 23   | 3     | 5               | 0    | 64                       | 1      | 48   | 46   | 15    | 14              | 1                     | 124           | 0      | 6    | 150  | 23    | 13                    | 0    | 192           | 1      | 25   | 128  | 21            | 16    | 1               | 191  | 571           |
| 12:30 PM      | 0                        | 40   | 30   | 2     | 2               | 0    | 74                       | 0      | 38   | 43   | 27    | 19              | 0                     | 127           | 0      | 7    | 151  | 26    | 11                    | 0    | 195           | 0      | 30   | 159  | 25            | 19    | 0               | 233  | 629           |
| 12:45 PM      | 0                        | 32   | 30   | 1     | 7               | 1    | 70                       | 0      | 39   | 39   | 14    | 19              | 0                     | 111           | 0      | 8    | 167  | 26    | 21                    | 0    | 222           | 1      | 29   | 140  | 21            | 15    | 0               | 206  | 609           |
| Hourly Total  | 1                        | 135  | 116  | 9     | 17              | 1    | 278                      | 1      | 167  | 162  | 70    | 70              | 2                     | 470           | 0      | 23   | 612  | 92    | 60                    | 1    | 787           | 2      | 111  | 561  | 85            | 65    | 2               | 824  | 2359          |
| 1:00 PM       | 0                        | 39   | 34   | 2     | 7               | 2    | 82                       | 0      | 50   | 37   | 14    | 17              | 0                     | 118           | 0      | 7    | 141  | 22    | 20                    | 0    | 190           | 0      | 28   | 153  | 21            | 17    | 0               | 219  | 609           |
| 1:15 PM       | 0                        | 36   | 42   | 3     | 5               | 3    | 86                       | 1      | 53   | 45   | 16    | 15              | 0                     | 130           | 0      | 9    | 161  | 32    | 15                    | 2    | 217           | 0      | 36   | 149  | 12            | 15    | 0               | 212  | 645           |
| 1:30 PM       | 0                        | 42   | 51   | 2     | 2               | 0    | 97                       | 0      | 44   | 40   | 17    | 17              | 0                     | 118           | 0      | 10   | 176  | 22    | 13                    | 0    | 221           | 0      | 21   | 141  | 17            | 18    | 0               | 197  | 633           |
| 1:45 PM       | 0                        | 30   | 44   | 8     | 4               | 0    | 86                       | 0      | 45   | 40   | 11    | 15              | 4                     | 111           | 0      | 8    | 174  | 23    | 11                    | 0    | 216           | 0      | 20   | 166  | 17            | 10    | 0               | 213  | 626           |
| Hourly Total  | 0                        | 147  | 171  | 15    | 18              | 5    | 351                      | 1      | 192  | 162  | 58    | 64              | 4                     | 477           | 0      | 34   | 652  | 99    | 59                    | 2    | 844           | 0      | 105  | 609  | 67            | 60    | 0               | 841  | 2513          |
| *** BREAK *** | -                        | -    | -    | -     | -               | -    | -                        | -      | -    | -    | -     | -               | -                     | -             | -      | -    | -    | -     | -                     | -    | -             | -      | -    | -    | -             | -     | -               | -    |               |
| 3:00 PM       | 0                        | 49   | 43   | 15    | 11              | 0    | 118                      | 0      | 69   | 54   | 11    | 22              | 2                     | 156           | 0      | 9    | 163  | 43    | 18                    | 0    | 233           | 0      | 24   | 231  | 30            | 16    | 0               | 301  | 808           |
| 3:15 PM       | 0                        | 54   | 46   | 1     | 6               | 1    | 107                      | 0      | 59   | 49   | 18    | 21              | 0                     | 147           | 1      | 13   | 211  | 31    | 12                    | 1    | 268           | 0      | 29   | 276  | 32            | 20    | 1               | 357  | 879           |
| 3:30 PM       | 0                        | 56   | 48   | 6     | 5               | 3    | 115                      | 0      | 64   | 61   | 25    | 11              | 1                     | 161           | 0      | 12   | 236  | 20    | 14                    | 3    | 282           | 0      | 21   | 262  | 49            | 20    | 0               | 352  | 910           |

|                         |       |      |      |      |      |      |      |       |      |      |      |      |      |      |       |      |      |      |      |       |      |       |      |      |      |      |   |      |       |
|-------------------------|-------|------|------|------|------|------|------|-------|------|------|------|------|------|------|-------|------|------|------|------|-------|------|-------|------|------|------|------|---|------|-------|
| 3:45 PM                 | 0     | 48   | 42   | 5    | 10   | 0    | 105  | 1     | 60   | 42   | 21   | 18   | 0    | 142  | 0     | 14   | 186  | 27   | 8    | 0     | 235  | 0     | 20   | 281  | 39   | 9    | 0 | 349  | 831   |
| Hourly Total            | 0     | 207  | 179  | 27   | 32   | 4    | 445  | 1     | 252  | 206  | 75   | 72   | 3    | 606  | 1     | 48   | 796  | 121  | 52   | 4     | 1018 | 0     | 94   | 1050 | 150  | 65   | 1 | 1359 | 3428  |
| 4:00 PM                 | 0     | 46   | 56   | 16   | 14   | 0    | 132  | 0     | 85   | 52   | 23   | 14   | 0    | 174  | 0     | 6    | 193  | 23   | 12   | 0     | 234  | 0     | 24   | 275  | 29   | 9    | 0 | 337  | 877   |
| 4:15 PM                 | 0     | 43   | 66   | 11   | 9    | 0    | 129  | 0     | 71   | 64   | 14   | 14   | 0    | 163  | 0     | 12   | 224  | 28   | 21   | 0     | 285  | 0     | 26   | 265  | 32   | 18   | 0 | 341  | 918   |
| 4:30 PM                 | 0     | 52   | 48   | 7    | 12   | 0    | 119  | 0     | 80   | 82   | 22   | 17   | 0    | 201  | 1     | 13   | 197  | 32   | 20   | 0     | 263  | 0     | 28   | 294  | 22   | 20   | 0 | 364  | 947   |
| 4:45 PM                 | 0     | 45   | 45   | 5    | 13   | 1    | 108  | 1     | 61   | 60   | 14   | 27   | 0    | 163  | 0     | 9    | 199  | 33   | 11   | 0     | 252  | 0     | 23   | 322  | 34   | 13   | 1 | 392  | 915   |
| Hourly Total            | 0     | 186  | 215  | 39   | 48   | 1    | 488  | 1     | 297  | 258  | 73   | 72   | 0    | 701  | 1     | 40   | 813  | 116  | 64   | 0     | 1034 | 0     | 101  | 1156 | 117  | 60   | 1 | 1434 | 3657  |
| 5:00 PM                 | 0     | 53   | 51   | 11   | 6    | 0    | 121  | 1     | 56   | 62   | 25   | 21   | 0    | 165  | 0     | 7    | 177  | 24   | 18   | 0     | 226  | 0     | 28   | 323  | 40   | 9    | 0 | 400  | 912   |
| 5:15 PM                 | 0     | 53   | 43   | 7    | 4    | 0    | 107  | 1     | 75   | 64   | 18   | 13   | 0    | 171  | 2     | 12   | 200  | 31   | 10   | 0     | 255  | 0     | 28   | 290  | 31   | 14   | 1 | 363  | 896   |
| 5:30 PM                 | 0     | 55   | 63   | 16   | 9    | 1    | 143  | 1     | 65   | 77   | 21   | 19   | 0    | 183  | 0     | 14   | 192  | 32   | 9    | 0     | 247  | 1     | 22   | 270  | 34   | 6    | 0 | 333  | 906   |
| 5:45 PM                 | 0     | 44   | 40   | 4    | 6    | 0    | 94   | 2     | 64   | 74   | 18   | 17   | 0    | 175  | 1     | 14   | 174  | 38   | 9    | 0     | 236  | 1     | 17   | 284  | 40   | 15   | 0 | 357  | 862   |
| Hourly Total            | 0     | 205  | 197  | 38   | 25   | 1    | 485  | 5     | 260  | 277  | 82   | 70   | 0    | 694  | 3     | 47   | 743  | 125  | 46   | 0     | 964  | 2     | 95   | 1167 | 145  | 44   | 1 | 1453 | 3576  |
| Grand Total             | 1     | 1701 | 1505 | 185  | 198  | 19   | 3590 | 14    | 1609 | 1550 | 577  | 555  | 16   | 4305 | 7     | 305  | 7773 | 988  | 573  | 10    | 9646 | 4     | 738  | 5981 | 809  | 528  | 7 | 8060 | 25601 |
| Approach %              | 0.0   | 47.4 | 41.9 | 5.2  | 5.5  | -    | -    | 0.3   | 37.4 | 36.0 | 13.4 | 12.9 | -    | -    | 0.1   | 3.2  | 80.6 | 10.2 | 5.9  | -     | -    | 0.0   | 9.2  | 74.2 | 10.0 | 6.6  | - | -    | -     |
| Total %                 | 0.0   | 6.6  | 5.9  | 0.7  | 0.8  | -    | 14.0 | 0.1   | 6.3  | 6.1  | 2.3  | 2.2  | -    | 16.8 | 0.0   | 1.2  | 30.4 | 3.9  | 2.2  | -     | 37.7 | 0.0   | 2.9  | 23.4 | 3.2  | 2.1  | - | 31.5 | -     |
| Lights                  | 1     | 1602 | 1413 | 176  | 189  | -    | 3381 | 14    | 1564 | 1463 | 536  | 538  | -    | 4115 | 7     | 282  | 7692 | 956  | 557  | -     | 9494 | 4     | 698  | 5898 | 768  | 483  | - | 7851 | 24841 |
| % Lights                | 100.0 | 94.2 | 93.9 | 95.1 | 95.5 | -    | 94.2 | 100.0 | 97.2 | 94.4 | 92.9 | 96.9 | -    | 95.6 | 100.0 | 92.5 | 99.0 | 96.8 | 97.2 | -     | 98.4 | 100.0 | 94.6 | 98.6 | 94.9 | 91.5 | - | 97.4 | 97.0  |
| Buses                   | 0     | 55   | 29   | 4    | 7    | -    | 95   | 0     | 34   | 22   | 4    | 2    | -    | 62   | 0     | 11   | 22   | 23   | 13   | -     | 69   | 0     | 4    | 24   | 26   | 25   | - | 79   | 305   |
| % Buses                 | 0.0   | 3.2  | 1.9  | 2.2  | 3.5  | -    | 2.6  | 0.0   | 2.1  | 1.4  | 0.7  | 0.4  | -    | 1.4  | 0.0   | 3.6  | 0.3  | 2.3  | 2.3  | -     | 0.7  | 0.0   | 0.5  | 0.4  | 3.2  | 4.7  | - | 1.0  | 1.2   |
| Trucks                  | 0     | 38   | 59   | 5    | 2    | -    | 104  | 0     | 11   | 65   | 37   | 15   | -    | 128  | 0     | 12   | 59   | 9    | 3    | -     | 83   | 0     | 35   | 58   | 15   | 20   | - | 128  | 443   |
| % Trucks                | 0.0   | 2.2  | 3.9  | 2.7  | 1.0  | -    | 2.9  | 0.0   | 0.7  | 4.2  | 6.4  | 2.7  | -    | 3.0  | 0.0   | 3.9  | 0.8  | 0.9  | 0.5  | -     | 0.9  | 0.0   | 4.7  | 1.0  | 1.9  | 3.8  | - | 1.6  | 1.7   |
| Bicycles on Road        | 0     | 6    | 4    | 0    | 0    | -    | 10   | 0     | 0    | 0    | 0    | 0    | -    | 0    | 0     | 0    | 0    | 0    | 0    | -     | 0    | 0     | 1    | 1    | 0    | 0    | - | 2    | 12    |
| % Bicycles on Road      | 0.0   | 0.4  | 0.3  | 0.0  | 0.0  | -    | 0.3  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | -    | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | -     | 0.0  | 0.0   | 0.1  | 0.0  | 0.0  | 0.0  | - | 0.0  | 0.0   |
| Bicycles on Crosswalk   | -     | -    | -    | -    | -    | 1    | -    | -     | -    | -    | -    | -    | 3    | -    | -     | -    | -    | -    | -    | 0     | -    | -     | -    | -    | -    | 2    | - | -    | -     |
| % Bicycles on Crosswalk | -     | -    | -    | -    | -    | 5.3  | -    | -     | -    | -    | -    | -    | 18.8 | -    | -     | -    | -    | -    | -    | 0.0   | -    | -     | -    | -    | -    | 28.6 | - | -    | -     |
| Pedestrians             | -     | -    | -    | -    | -    | 18   | -    | -     | -    | -    | -    | -    | 13   | -    | -     | -    | -    | -    | -    | 10    | -    | -     | -    | -    | -    | 5    | - | -    | -     |
| % Pedestrians           | -     | -    | -    | -    | -    | 94.7 | -    | -     | -    | -    | -    | -    | 81.3 | -    | -     | -    | -    | -    | -    | 100.0 | -    | -     | -    | -    | -    | 71.4 | - | -    | -     |



Lee Engineering, LLC  
Phoenix, Arizona - Dallas, Texas  
Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

Count Name: NM309.04 Central 98th Fast Food  
TIS  
Site Code:  
Start Date: 03/28/2023  
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Turning Movement Data Plot



Lee Engineering, LLC  
Phoenix, Arizona - Dallas, Texas  
Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

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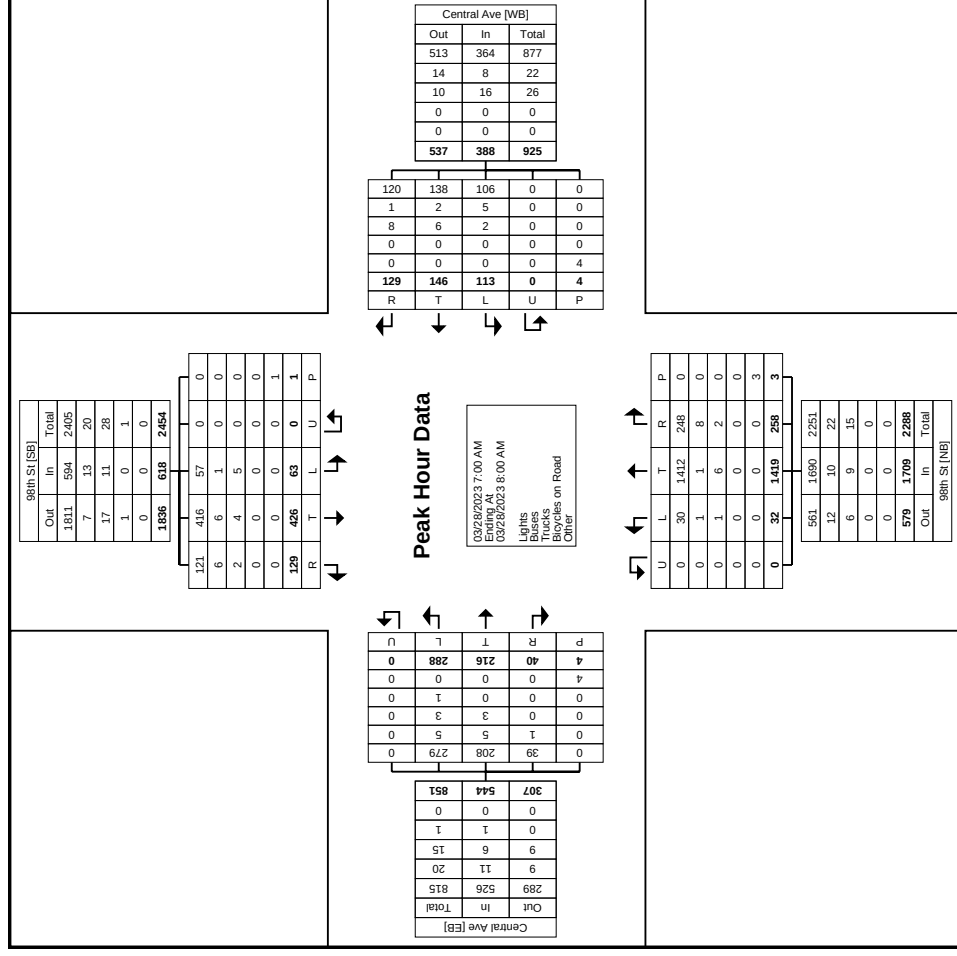
### Turning Movement Peak Hour Data (7:00 AM)

| Start Time              | Central Ave Eastbound |       |       |       |              |       | Central Ave Westbound |        |       |       |       |              | 98th St Northbound |            |        |       |       |       | 98th St Southbound |       |            |        |       |       |       |              |       |            |            |   |
|-------------------------|-----------------------|-------|-------|-------|--------------|-------|-----------------------|--------|-------|-------|-------|--------------|--------------------|------------|--------|-------|-------|-------|--------------------|-------|------------|--------|-------|-------|-------|--------------|-------|------------|------------|---|
|                         | U-Turn                | Left  | Thru  | Right | Right on Red | Peds  | App. Total            | U-Turn | Left  | Thru  | Right | Right on Red | Peds               | App. Total | U-Turn | Left  | Thru  | Right | Right on Red       | Peds  | App. Total | U-Turn | Left  | Thru  | Right | Right on Red | Peds  | App. Total | Int. Total |   |
| 7:00 AM                 | 0                     | 78    | 53    | 10    | 3            | 3     | 144                   | 0      | 15    | 30    | 15    | 12           | 1                  | 72         | 0      | 8     | 359   | 26    | 28                 | 3     | 421        | 0      | 16    | 75    | 17    | 10           | 0     | 118        | 755        |   |
| 7:15 AM                 | 0                     | 74    | 49    | 3     | 7            | 1     | 133                   | 0      | 38    | 43    | 19    | 12           | 2                  | 112        | 0      | 13    | 360   | 36    | 31                 | 0     | 440        | 0      | 13    | 115   | 14    | 20           | 0     | 162        | 847        |   |
| 7:30 AM                 | 0                     | 68    | 66    | 3     | 7            | 0     | 144                   | 0      | 28    | 45    | 25    | 17           | 0                  | 115        | 0      | 5     | 360   | 29    | 38                 | 0     | 432        | 0      | 19    | 109   | 15    | 19           | 0     | 162        | 853        |   |
| 7:45 AM                 | 0                     | 68    | 48    | 1     | 6            | 0     | 123                   | 0      | 32    | 28    | 17    | 12           | 1                  | 89         | 0      | 6     | 340   | 33    | 37                 | 0     | 416        | 0      | 15    | 127   | 15    | 19           | 1     | 176        | 804        |   |
| Total                   | 0                     | 288   | 216   | 17    | 23           | 4     | 544                   | 0      | 113   | 146   | 76    | 53           | 4                  | 388        | 0      | 32    | 1419  | 124   | 134                | 3     | 1709       | 0      | 63    | 426   | 61    | 68           | 1     | 618        | 3259       |   |
| Approach %              | 0.0                   | 52.9  | 39.7  | 3.1   | 4.2          | -     | -                     | 0.0    | 29.1  | 37.6  | 19.6  | 13.7         | -                  | -          | 0.0    | 1.9   | 83.0  | 7.3   | 7.8                | -     | -          | 0.0    | 10.2  | 68.9  | 9.9   | 11.0         | -     | -          | -          | - |
| Total %                 | 0.0                   | 8.8   | 6.6   | 0.5   | 0.7          | -     | 16.7                  | 0.0    | 3.5   | 4.5   | 2.3   | 1.6          | -                  | 11.9       | 0.0    | 1.0   | 43.5  | 3.8   | 4.1                | -     | 52.4       | 0.0    | 1.9   | 13.1  | 1.9   | 2.1          | -     | 19.0       | -          | - |
| PHF                     | 0.000                 | 0.923 | 0.818 | 0.425 | 0.821        | -     | 0.944                 | 0.000  | 0.743 | 0.811 | 0.760 | 0.779        | -                  | 0.843      | 0.000  | 0.615 | 0.985 | 0.861 | 0.882              | -     | 0.971      | 0.000  | 0.829 | 0.839 | 0.897 | 0.850        | -     | 0.878      | 0.955      | - |
| Lights                  | 0                     | 279   | 208   | 17    | 22           | -     | 526                   | 0      | 106   | 138   | 69    | 51           | -                  | 364        | 0      | 30    | 1412  | 119   | 129                | -     | 1690       | 0      | 57    | 416   | 59    | 62           | -     | 594        | 3174       | - |
| % Lights                | -                     | 96.9  | 96.3  | 100.0 | 95.7         | -     | 96.7                  | -      | 93.8  | 94.5  | 90.8  | 96.2         | -                  | 93.8       | -      | 93.8  | 99.5  | 96.0  | 96.3               | -     | 98.9       | -      | 90.5  | 97.7  | 96.7  | 91.2         | -     | 96.1       | 97.4       | - |
| Buses                   | 0                     | 5     | 5     | 0     | 1            | -     | 11                    | 0      | 5     | 2     | 1     | 0            | -                  | 8          | 0      | 1     | 1     | 3     | 5                  | -     | 10         | 0      | 1     | 6     | 2     | 4            | -     | 13         | 42         | - |
| % Buses                 | -                     | 1.7   | 2.3   | 0.0   | 4.3          | -     | 2.0                   | -      | 4.4   | 1.4   | 1.3   | 0.0          | -                  | 2.1        | -      | 3.1   | 0.1   | 2.4   | 3.7                | -     | 0.6        | -      | 1.6   | 1.4   | 3.3   | 5.9          | -     | 2.1        | 1.3        | - |
| Trucks                  | 0                     | 3     | 3     | 0     | 0            | -     | 6                     | 0      | 2     | 6     | 6     | 2            | -                  | 16         | 0      | 1     | 6     | 2     | 0                  | -     | 9          | 0      | 5     | 4     | 0     | 2            | -     | 11         | 42         | - |
| % Trucks                | -                     | 1.0   | 1.4   | 0.0   | 0.0          | -     | 1.1                   | -      | 1.8   | 4.1   | 7.9   | 3.8          | -                  | 4.1        | -      | 3.1   | 0.4   | 1.6   | 0.0                | -     | 0.5        | -      | 7.9   | 0.9   | 0.0   | 2.9          | -     | 1.8        | 1.3        | - |
| Bicycles on Road        | 0                     | 1     | 0     | 0     | 0            | -     | 1                     | 0      | 0     | 0     | 0     | 0            | -                  | 0          | 0      | 0     | 0     | 0     | 0                  | -     | 0          | 0      | 0     | 0     | 0     | 0            | -     | 0          | 1          | - |
| % Bicycles on Road      | -                     | 0.3   | 0.0   | 0.0   | 0.0          | -     | 0.2                   | -      | 0.0   | 0.0   | 0.0   | 0.0          | -                  | 0.0        | -      | 0.0   | 0.0   | 0.0   | 0.0                | -     | 0.0        | -      | 0.0   | 0.0   | 0.0   | 0.0          | -     | 0.0        | 0.0        | - |
| Bicycles on Crosswalk   | -                     | -     | -     | -     | -            | 0     | -                     | -      | -     | -     | -     | -            | 1                  | -          | -      | -     | -     | -     | -                  | 0     | -          | -      | -     | -     | -     | -            | 0     | -          | -          | - |
| % Bicycles on Crosswalk | -                     | -     | -     | -     | -            | 0.0   | -                     | -      | -     | -     | -     | -            | 25.0               | -          | -      | -     | -     | -     | -                  | 0.0   | -          | -      | -     | -     | -     | -            | 0.0   | -          | -          | - |
| Pedestrians             | -                     | -     | -     | -     | -            | 4     | -                     | -      | -     | -     | -     | -            | 3                  | -          | -      | -     | -     | -     | -                  | 3     | -          | -      | -     | -     | -     | -            | 1     | -          | -          | - |
| % Pedestrians           | -                     | -     | -     | -     | -            | 100.0 | -                     | -      | -     | -     | -     | -            | 75.0               | -          | -      | -     | -     | -     | -                  | 100.0 | -          | -      | -     | -     | -     | -            | 100.0 | -          | -          | - |

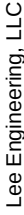


Lee Engineering, LLC  
Phoenix, Arizona - Dallas, Texas  
Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

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Albuquerque, New Mexico, United States 87113

5053380988 zbaiamonte@lee-eng.com

Site Code:

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## Turning Movement Peak Hour Data (11:00 AM)

| Start Time              | Central Ave Eastbound |       |       |       |              |       | Central Ave Westbound |        |       |       |       |              | 98th St Northbound |            |        |       |       |       | 98th St Southbound |      |            |        |       |       |       |              |      |            |            |
|-------------------------|-----------------------|-------|-------|-------|--------------|-------|-----------------------|--------|-------|-------|-------|--------------|--------------------|------------|--------|-------|-------|-------|--------------------|------|------------|--------|-------|-------|-------|--------------|------|------------|------------|
|                         | U-Turn                | Left  | Thru  | Right | Right on Red | Peds  | App. Total            | U-Turn | Left  | Thru  | Right | Right on Red | Peds               | App. Total | U-Turn | Left  | Thru  | Right | Right on Red       | Peds | App. Total | U-Turn | Left  | Thru  | Right | Right on Red | Peds | App. Total | Int. Total |
| 11:00 AM                | 0                     | 37    | 33    | 3     | 3            | 1     | 76                    | 1      | 36    | 34    | 12    | 16           | 0                  | 99         | 0      | 1     | 137   | 18    | 15                 | 0    | 171        | 0      | 23    | 85    | 18    | 12           | 0    | 138        | 484        |
| 11:15 AM                | 0                     | 27    | 32    | 5     | 3            | 0     | 67                    | 2      | 47    | 32    | 7     | 14           | 0                  | 102        | 1      | 4     | 161   | 17    | 11                 | 0    | 194        | 0      | 11    | 118   | 14    | 8            | 0    | 151        | 514        |
| 11:30 AM                | 0                     | 32    | 32    | 6     | 3            | 1     | 73                    | 2      | 53    | 26    | 18    | 21           | 0                  | 120        | 0      | 5     | 148   | 24    | 8                  | 0    | 185        | 0      | 24    | 106   | 15    | 10           | 0    | 155        | 533        |
| 11:45 AM                | 0                     | 45    | 39    | 3     | 2            | 0     | 89                    | 0      | 44    | 25    | 14    | 13           | 1                  | 96         | 0      | 6     | 136   | 25    | 15                 | 0    | 182        | 0      | 23    | 106   | 18    | 14           | 0    | 161        | 528        |
| Total                   | 0                     | 141   | 136   | 17    | 11           | 2     | 305                   | 5      | 180   | 117   | 51    | 64           | 1                  | 417        | 1      | 16    | 582   | 84    | 49                 | 0    | 732        | 0      | 81    | 415   | 65    | 44           | 0    | 605        | 2059       |
| Approach %              | 0.0                   | 46.2  | 44.6  | 5.6   | 3.6          | -     | -                     | 1.2    | 43.2  | 28.1  | 12.2  | 15.3         | -                  | -          | 0.1    | 2.2   | 79.5  | 11.5  | 6.7                | -    | -          | 0.0    | 13.4  | 68.6  | 10.7  | 7.3          | -    | -          | -          |
| Total %                 | 0.0                   | 6.8   | 6.6   | 0.8   | 0.5          | -     | 14.8                  | 0.2    | 8.7   | 5.7   | 2.5   | 3.1          | -                  | 20.3       | 0.0    | 0.8   | 28.3  | 4.1   | 2.4                | -    | 35.6       | 0.0    | 3.9   | 20.2  | 3.2   | 2.1          | -    | 29.4       | -          |
| PHF                     | 0.000                 | 0.783 | 0.872 | 0.708 | 0.917        | -     | 0.857                 | 0.625  | 0.849 | 0.860 | 0.708 | 0.762        | -                  | 0.869      | 0.250  | 0.667 | 0.904 | 0.840 | 0.817              | -    | 0.943      | 0.000  | 0.844 | 0.879 | 0.903 | 0.786        | -    | 0.939      | 0.966      |
| Lights                  | 0                     | 124   | 125   | 16    | 10           | -     | 275                   | 5      | 176   | 113   | 45    | 62           | -                  | 401        | 1      | 15    | 572   | 80    | 48                 | -    | 716        | 0      | 73    | 408   | 62    | 42           | -    | 585        | 1977       |
| % Lights                | -                     | 87.9  | 91.9  | 94.1  | 90.9         | -     | 90.2                  | 100.0  | 97.8  | 96.6  | 88.2  | 96.9         | -                  | 96.2       | 100.0  | 93.8  | 98.3  | 95.2  | 98.0               | -    | 97.8       | -      | 90.1  | 98.3  | 95.4  | 95.5         | -    | 96.7       | 96.0       |
| Buses                   | 0                     | 8     | 2     | 0     | 0            | -     | 10                    | 0      | 1     | 1     | 0     | 1            | -                  | 3          | 0      | 0     | 2     | 4     | 1                  | -    | 7          | 0      | 1     | 0     | 1     | 1            | -    | 3          | 23         |
| % Buses                 | -                     | 5.7   | 1.5   | 0.0   | 0.0          | -     | 3.3                   | 0.0    | 0.6   | 0.9   | 0.0   | 1.6          | -                  | 0.7        | 0.0    | 0.0   | 0.3   | 4.8   | 2.0                | -    | 1.0        | -      | 1.2   | 0.0   | 1.5   | 2.3          | -    | 0.5        | 1.1        |
| Trucks                  | 0                     | 4     | 9     | 1     | 1            | -     | 15                    | 0      | 3     | 3     | 6     | 1            | -                  | 13         | 0      | 1     | 8     | 0     | 0                  | -    | 9          | 0      | 6     | 7     | 2     | 1            | -    | 16         | 53         |
| % Trucks                | -                     | 2.8   | 6.6   | 5.9   | 9.1          | -     | 4.9                   | 0.0    | 1.7   | 2.6   | 11.8  | 1.6          | -                  | 3.1        | 0.0    | 6.3   | 1.4   | 0.0   | 0.0                | -    | 1.2        | -      | 7.4   | 1.7   | 3.1   | 2.3          | -    | 2.6        | 2.6        |
| Bicycles on Road        | 0                     | 5     | 0     | 0     | 0            | -     | 5                     | 0      | 0     | 0     | 0     | 0            | -                  | 0          | 0      | 0     | 0     | 0     | 0                  | -    | 0          | 0      | 1     | 0     | 0     | 0            | -    | 1          | 6          |
| % Bicycles on Road      | -                     | 3.5   | 0.0   | 0.0   | 0.0          | -     | 1.6                   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0          | -                  | 0.0        | 0.0    | 0.0   | 0.0   | 0.0   | 0.0                | -    | 0.0        | -      | 1.2   | 0.0   | 0.0   | 0.0          | -    | 0.2        | 0.3        |
| Bicycles on Crosswalk   | -                     | -     | -     | -     | -            | 0     | -                     | -      | -     | -     | -     | -            | 0                  | -          | -      | -     | -     | -     | -                  | 0    | -          | -      | -     | -     | -     | -            | 0    | -          | -          |
| % Bicycles on Crosswalk | -                     | -     | -     | -     | -            | 0.0   | -                     | -      | -     | -     | -     | -            | 0.0                | -          | -      | -     | -     | -     | -                  | -    | -          | -      | -     | -     | -     | -            | -    | -          | -          |
| Pedestrians             | -                     | -     | -     | -     | -            | 2     | -                     | -      | -     | -     | -     | -            | 1                  | -          | -      | -     | -     | -     | -                  | 0    | -          | -      | -     | -     | -     | -            | 0    | -          | -          |
| % Pedestrians           | -                     | -     | -     | -     | -            | 100.0 | -                     | -      | -     | -     | -     | -            | 100.0              | -          | -      | -     | -     | -     | -                  | -    | -          | -      | -     | -     | -     | -            | -    | -          | -          |

**Central Ave [WB]**

| Out        | In         | Total      |
|------------|------------|------------|
| 331        | 401        | 732        |
| 8          | 3          | 11         |
| 15         | 13         | 28         |
| 1          | 0          | 1          |
| 0          | 0          | 0          |
| <b>355</b> | <b>417</b> | <b>772</b> |

**98th St [SB]**

| Out        | In         | Total       |
|------------|------------|-------------|
| 903        | 595        | 1398        |
| 11         | 3          | 14          |
| 19         | 16         | 35          |
| 5          | 1          | 6           |
| 0          | 0          | 0           |
| <b>938</b> | <b>605</b> | <b>1443</b> |

**Central Ave [EB]**

| Out        | In         | Total      |
|------------|------------|------------|
| 232        | 275        | 507        |
| 3          | 10         | 13         |
| 7          | 15         | 22         |
| 0          | 5          | 5          |
| 0          | 0          | 0          |
| <b>242</b> | <b>305</b> | <b>547</b> |

**98th St [NB]**

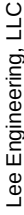
| Out        | In         | Total       |
|------------|------------|-------------|
| 624        | 732        | 1356        |
| 0          | 0          | 0           |
| 0          | 0          | 0           |
| 0          | 0          | 0           |
| 0          | 0          | 0           |
| 0          | 0          | 0           |
| 1          | 16         | 133         |
| <b>611</b> | <b>716</b> | <b>1327</b> |

**Peak Hour Data**

03/28/2023 11:00 AM  
Ending At:  
03/28/2023 12:00 PM

Lights  
Buses  
Trucks  
Motorcycles on Road  
Other

Turning Movement Peak Hour Data Plot (11:00 AM)



Phoenix, Arizona - Dallas, Texas

Oklahoma City, Oklahoma - San Antonio, Texas

Albuquerque, New Mexico, United States 87113

5053380988 zbaiamonte@lee-eng.com

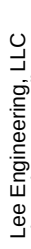
Site Code:

Start Date: 03/28/2023

Page No: 8

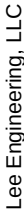
## Turning Movement Peak Hour Data (1:00 PM)

| Start Time              | Central Ave Eastbound |       |       |       |              |       |            | Central Ave Westbound |      |      |       |              |      |            | 98th St Northbound |       |       |       |              |      |            | 98th St Southbound |      |      |       |              |       |            | Int. Total |       |       |   |       |       |
|-------------------------|-----------------------|-------|-------|-------|--------------|-------|------------|-----------------------|------|------|-------|--------------|------|------------|--------------------|-------|-------|-------|--------------|------|------------|--------------------|------|------|-------|--------------|-------|------------|------------|-------|-------|---|-------|-------|
|                         | U-Turn                | Left  | Thru  | Right | Right on Red | Peds  | App. Total | U-Turn                | Left | Thru | Right | Right on Red | Peds | App. Total | U-Turn             | Left  | Thru  | Right | Right on Red | Peds | App. Total | U-Turn             | Left | Thru | Right | Right on Red | Peds  | App. Total |            |       |       |   |       |       |
| 1:00 PM                 | 0                     | 39    | 34    | 2     | 7            | 2     | 82         |                       |      |      |       |              |      |            | 0                  | 50    | 37    | 14    | 17           | 0    | 118        |                    |      |      |       |              | 0     | 28         | 153        | 21    | 17    | 0 | 219   | 609   |
| 1:15 PM                 | 0                     | 36    | 42    | 3     | 5            | 3     | 86         |                       |      |      |       |              |      |            | 1                  | 53    | 45    | 16    | 15           | 0    | 130        |                    |      |      |       |              | 0     | 36         | 149        | 12    | 15    | 0 | 212   | 645   |
| 1:30 PM                 | 0                     | 42    | 51    | 2     | 2            | 0     | 97         |                       |      |      |       |              |      |            | 0                  | 44    | 40    | 17    | 17           | 0    | 118        |                    |      |      |       |              | 0     | 21         | 141        | 17    | 18    | 0 | 197   | 633   |
| 1:45 PM                 | 0                     | 30    | 44    | 8     | 4            | 0     | 86         |                       |      |      |       |              |      |            | 0                  | 45    | 40    | 11    | 15           | 4    | 111        |                    |      |      |       |              | 0     | 20         | 166        | 17    | 10    | 0 | 213   | 626   |
| Total                   | 0                     | 147   | 171   | 15    | 18           | 5     | 351        |                       |      |      |       |              |      |            | 1                  | 192   | 162   | 58    | 64           | 4    | 477        |                    |      |      |       |              | 0     | 34         | 652        | 99    | 59    | 2 | 844   | 2513  |
| Approach %              | 0.0                   | 41.9  | 48.7  | 4.3   | 5.1          | -     | -          |                       |      |      |       |              |      |            | 0.2                | 40.3  | 34.0  | 12.2  | 13.4         | -    | -          |                    |      |      |       |              | 0.0   | 12.5       | 72.4       | 8.0   | 7.1   | - | -     | -     |
| Total %                 | 0.0                   | 5.8   | 6.8   | 0.6   | 0.7          | -     | 14.0       |                       |      |      |       |              |      |            | 0.0                | 7.6   | 6.4   | 2.3   | 2.5          | -    | 19.0       |                    |      |      |       |              | 0.0   | 4.2        | 24.2       | 2.7   | 2.4   | - | 33.5  | -     |
| PHF                     | 0.000                 | 0.875 | 0.838 | 0.469 | 0.643        | -     | 0.905      |                       |      |      |       |              |      |            | 0.250              | 0.906 | 0.900 | 0.853 | 0.941        | -    | 0.917      |                    |      |      |       |              | 0.000 | 0.729      | 0.917      | 0.798 | 0.833 | - | 0.960 | 0.974 |
| Lights                  | 0                     | 129   | 152   | 15    | 18           | -     | 314        |                       |      |      |       |              |      |            | 1                  | 185   | 151   | 54    | 63           | -    | 454        |                    |      |      |       |              | 0     | 95         | 597        | 66    | 56    | - | 814   | 2406  |
| % Lights                | -                     | 87.8  | 88.9  | 100.0 | 100.0        | -     | 89.5       |                       |      |      |       |              |      |            | 100.0              | 96.4  | 93.2  | 93.1  | 98.4         | -    | 95.2       |                    |      |      |       |              | -     | 90.5       | 98.0       | 98.5  | 93.3  | - | 96.8  | 95.7  |
| Buses                   | 0                     | 10    | 2     | 0     | 0            | -     | 12         |                       |      |      |       |              |      |            | 0                  | 4     | 1     | 0     | 0            | -    | 5          |                    |      |      |       |              | 0     | 0          | 0          | 0     | 1     | - | 1     | 22    |
| % Buses                 | -                     | 6.8   | 1.2   | 0.0   | 0.0          | -     | 3.4        |                       |      |      |       |              |      |            | 0.0                | 2.1   | 0.6   | 0.0   | 0.0          | -    | 1.0        |                    |      |      |       |              | -     | 0.0        | 0.0        | 0.0   | 1.7   | - | 0.1   | 0.9   |
| Trucks                  | 0                     | 8     | 13    | 0     | 0            | -     | 21         |                       |      |      |       |              |      |            | 0                  | 3     | 10    | 4     | 1            | -    | 18         |                    |      |      |       |              | 0     | 10         | 12         | 1     | 3     | - | 26    | 81    |
| % Trucks                | -                     | 5.4   | 7.6   | 0.0   | 0.0          | -     | 6.0        |                       |      |      |       |              |      |            | 0.0                | 1.6   | 6.2   | 6.9   | 1.6          | -    | 3.8        |                    |      |      |       |              | -     | 9.5        | 2.0        | 1.5   | 5.0   | - | 3.1   | 3.2   |
| Bicycles on Road        | 0                     | 0     | 4     | 0     | 0            | -     | 4          |                       |      |      |       |              |      |            | 0                  | 0     | 0     | 0     | 0            | -    | 0          |                    |      |      |       |              | 0     | 0          | 0          | 0     | 0     | - | 0     | 4     |
| % Bicycles on Road      | -                     | 0.0   | 2.3   | 0.0   | 0.0          | -     | 1.1        |                       |      |      |       |              |      |            | 0.0                | 0.0   | 0.0   | 0.0   | 0.0          | -    | 0.0        |                    |      |      |       |              | -     | 0.0        | 0.0        | 0.0   | 0.0   | - | 0.0   | 0.2   |
| Bicycles on Crosswalk   | -                     | -     | -     | -     | -            | 0     | -          |                       |      |      |       |              |      |            | -                  | -     | -     | -     | -            | 1    | -          |                    |      |      |       |              | -     | -          | -          | -     | -     | 0 | -     | -     |
| % Bicycles on Crosswalk | -                     | -     | -     | -     | -            | 0.0   | -          |                       |      |      |       |              |      |            | -                  | -     | -     | -     | -            | 0.0  | -          |                    |      |      |       |              | -     | -          | -          | -     | -     | - | -     | -     |
| Pedestrians             | -                     | -     | -     | -     | -            | 5     | -          |                       |      |      |       |              |      |            | -                  | -     | -     | -     | -            | 3    | -          |                    |      |      |       |              | -     | -          | -          | -     | -     | 0 | -     | -     |
| % Pedestrians           | -                     | -     | -     | -     | -            | 100.0 | -          |                       |      |      |       |              |      |            | -                  | -     | -     | -     | -            | 75.0 | -          |                    |      |      |       |              | -     | -          | -          | -     | -     | - | -     | -     |



Phoenix, Arizona - Dallas, Texas  
Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

Turning Movement Peak Hour Data Plot (1:00 PM)



Phoenix, Arizona - Dallas, Texas

Oklahoma City, Oklahoma - San Antonio, Texas

Albuquerque, New Mexico, United States 87113

5053380988 zbaiamonte@lee-eng.com

Site Code:

Start Date: 03/28/2023

Page No: 10

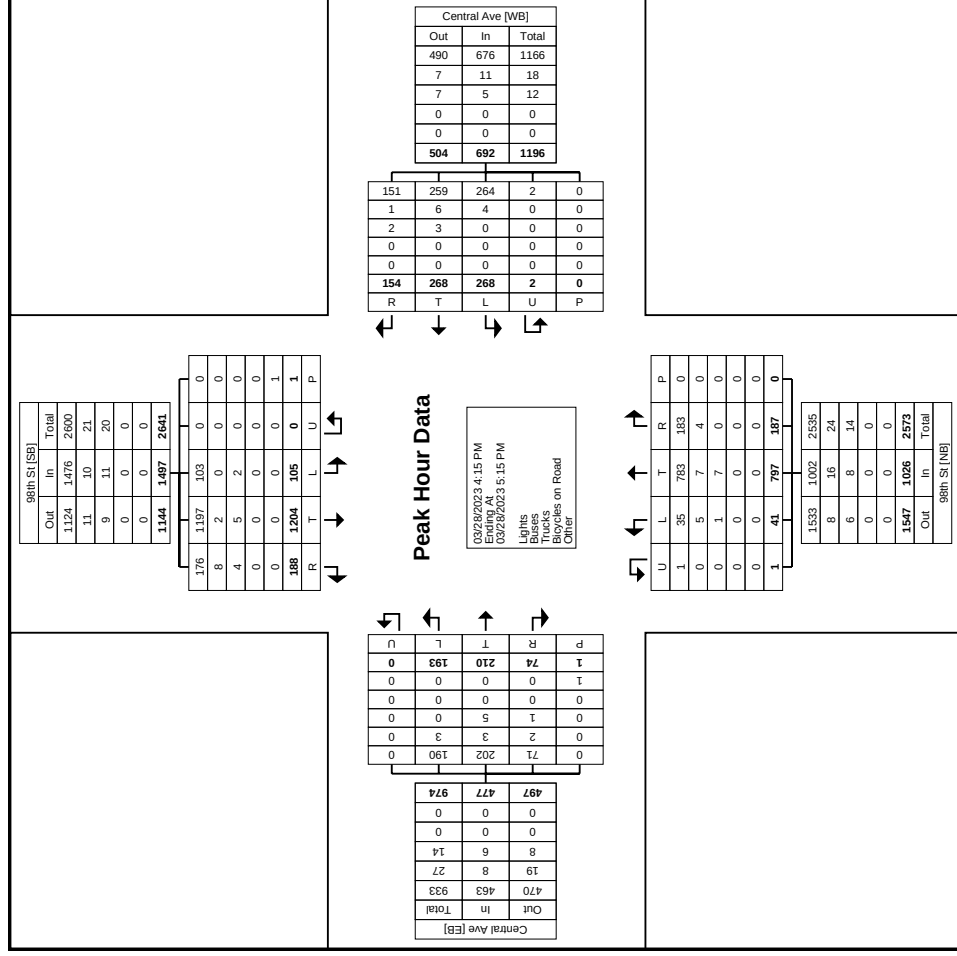
## Turning Movement Peak Hour Data (4:15 PM)

[illegible]



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Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

Count Name: NM309.04 Central 98th Fast Food  
TIS  
Site Code:  
Start Date: 03/28/2023  
Page No: 11



Turning Movement Peak Hour Data Plot (4:15 PM)



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Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

Count Name: NM309.04 Central 98th Fast Food  
TIS  
Site Code:  
Start Date: 03/28/2023  
Page No: 1

## Turning Movement Data

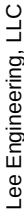
| Start Time    | Central Ave<br>Eastbound |      |      |       |      |            | Central Ave<br>Westbound |      |      |       |      |            | Westland Rd<br>Northbound |      |      |       |      |            | Westland Rd<br>Southbound |      |      |       |      |            |            |
|---------------|--------------------------|------|------|-------|------|------------|--------------------------|------|------|-------|------|------------|---------------------------|------|------|-------|------|------------|---------------------------|------|------|-------|------|------------|------------|
|               | U-Turn                   | Left | Thru | Right | Peds | App. Total | U-Turn                   | Left | Thru | Right | Peds | App. Total | U-Turn                    | Left | Thru | Right | Peds | App. Total | U-Turn                    | Left | Thru | Right | Peds | App. Total | Int. Total |
| 6:00 AM       | 0                        | 0    | 55   | 2     | 0    | 57         | 0                        | 1    | 38   | 0     | 0    | 39         | 0                         | 6    | 0    | 6     | 0    | 12         | 0                         | 1    | 0    | 0     | 0    | 1          | 109        |
| 6:15 AM       | 0                        | 0    | 54   | 0     | 0    | 54         | 1                        | 2    | 37   | 0     | 0    | 40         | 0                         | 7    | 0    | 7     | 0    | 14         | 0                         | 3    | 0    | 0     | 0    | 3          | 111        |
| 6:30 AM       | 1                        | 1    | 77   | 1     | 0    | 80         | 0                        | 2    | 57   | 2     | 0    | 61         | 0                         | 8    | 0    | 17    | 0    | 25         | 0                         | 1    | 0    | 0     | 0    | 1          | 167        |
| 6:45 AM       | 3                        | 2    | 114  | 5     | 0    | 124        | 0                        | 3    | 52   | 0     | 0    | 55         | 0                         | 8    | 0    | 8     | 1    | 16         | 0                         | 4    | 1    | 0     | 0    | 5          | 200        |
| Hourly Total  | 4                        | 3    | 300  | 8     | 0    | 315        | 1                        | 8    | 184  | 2     | 0    | 195        | 0                         | 29   | 0    | 38    | 1    | 67         | 0                         | 9    | 1    | 0     | 0    | 10         | 587        |
| 7:00 AM       | 0                        | 0    | 121  | 3     | 0    | 124        | 0                        | 2    | 64   | 0     | 0    | 66         | 0                         | 9    | 0    | 16    | 0    | 25         | 0                         | 2    | 2    | 0     | 2    | 4          | 219        |
| 7:15 AM       | 2                        | 0    | 124  | 5     | 1    | 131        | 0                        | 2    | 98   | 0     | 0    | 100        | 0                         | 10   | 0    | 29    | 1    | 39         | 0                         | 1    | 0    | 1     | 0    | 2          | 272        |
| 7:30 AM       | 3                        | 0    | 139  | 8     | 0    | 150        | 0                        | 9    | 94   | 0     | 0    | 103        | 0                         | 15   | 0    | 13    | 0    | 28         | 0                         | 7    | 1    | 0     | 0    | 8          | 289        |
| 7:45 AM       | 2                        | 1    | 139  | 7     | 0    | 149        | 0                        | 8    | 82   | 0     | 0    | 90         | 0                         | 9    | 0    | 20    | 0    | 29         | 0                         | 5    | 0    | 0     | 0    | 5          | 273        |
| Hourly Total  | 7                        | 1    | 523  | 23    | 1    | 554        | 0                        | 21   | 338  | 0     | 0    | 359        | 0                         | 43   | 0    | 78    | 1    | 121        | 0                         | 15   | 3    | 1     | 2    | 19         | 1053       |
| 8:00 AM       | 2                        | 2    | 99   | 2     | 0    | 105        | 0                        | 5    | 68   | 0     | 0    | 73         | 0                         | 6    | 0    | 14    | 0    | 20         | 0                         | 3    | 0    | 1     | 0    | 4          | 202        |
| 8:15 AM       | 1                        | 1    | 84   | 3     | 0    | 89         | 0                        | 8    | 93   | 2     | 0    | 103        | 0                         | 5    | 0    | 11    | 0    | 16         | 0                         | 2    | 0    | 0     | 0    | 2          | 210        |
| 8:30 AM       | 0                        | 0    | 87   | 4     | 0    | 91         | 0                        | 5    | 81   | 1     | 0    | 87         | 0                         | 3    | 0    | 4     | 0    | 7          | 0                         | 4    | 1    | 1     | 0    | 6          | 191        |
| 8:45 AM       | 1                        | 1    | 100  | 4     | 0    | 106        | 2                        | 7    | 61   | 1     | 0    | 71         | 0                         | 8    | 0    | 11    | 0    | 19         | 0                         | 6    | 0    | 1     | 1    | 7          | 203        |
| Hourly Total  | 4                        | 4    | 370  | 13    | 0    | 391        | 2                        | 25   | 303  | 4     | 0    | 334        | 0                         | 22   | 0    | 40    | 0    | 62         | 0                         | 15   | 1    | 3     | 1    | 19         | 806        |
| *** BREAK *** | -                        | -    | -    | -     | -    | -          | -                        | -    | -    | -     | -    | -          | -                         | -    | -    | -     | -    | -          | -                         | -    | -    | -     | -    | -          | -          |
| 11:00 AM      | 0                        | 2    | 93   | 5     | 0    | 100        | 1                        | 4    | 87   | 1     | 0    | 93         | 0                         | 2    | 0    | 3     | 0    | 5          | 0                         | 8    | 2    | 1     | 0    | 11         | 209        |
| 11:15 AM      | 2                        | 2    | 60   | 3     | 1    | 67         | 0                        | 5    | 84   | 4     | 0    | 93         | 0                         | 5    | 0    | 8     | 0    | 13         | 2                         | 8    | 1    | 0     | 0    | 11         | 184        |
| 11:30 AM      | 0                        | 3    | 83   | 1     | 0    | 87         | 0                        | 5    | 114  | 0     | 0    | 119        | 0                         | 3    | 0    | 5     | 0    | 8          | 0                         | 8    | 4    | 2     | 0    | 14         | 228        |
| 11:45 AM      | 3                        | 3    | 99   | 2     | 0    | 107        | 2                        | 1    | 77   | 0     | 0    | 80         | 0                         | 4    | 1    | 2     | 0    | 7          | 0                         | 11   | 0    | 3     | 0    | 14         | 208        |
| Hourly Total  | 5                        | 10   | 335  | 11    | 1    | 361        | 3                        | 15   | 362  | 5     | 0    | 385        | 0                         | 14   | 1    | 18    | 0    | 33         | 2                         | 35   | 7    | 6     | 0    | 50         | 829        |
| 12:00 PM      | 4                        | 0    | 83   | 6     | 0    | 93         | 1                        | 2    | 97   | 1     | 0    | 101        | 0                         | 1    | 0    | 4     | 2    | 5          | 0                         | 11   | 0    | 0     | 1    | 11         | 210        |
| 12:15 PM      | 1                        | 1    | 79   | 3     | 1    | 84         | 0                        | 6    | 95   | 1     | 0    | 102        | 0                         | 6    | 0    | 2     | 0    | 8          | 0                         | 8    | 0    | 1     | 0    | 9          | 203        |
| 12:30 PM      | 3                        | 1    | 90   | 5     | 0    | 99         | 0                        | 7    | 124  | 1     | 0    | 132        | 0                         | 6    | 0    | 3     | 1    | 9          | 0                         | 10   | 0    | 2     | 0    | 12         | 252        |
| 12:45 PM      | 3                        | 4    | 89   | 10    | 0    | 106        | 0                        | 4    | 107  | 2     | 0    | 113        | 0                         | 5    | 0    | 11    | 0    | 16         | 0                         | 14   | 1    | 1     | 0    | 16         | 251        |
| Hourly Total  | 11                       | 6    | 341  | 24    | 1    | 382        | 1                        | 19   | 423  | 5     | 0    | 448        | 0                         | 18   | 0    | 20    | 3    | 38         | 0                         | 43   | 1    | 4     | 1    | 48         | 916        |
| 1:00 PM       | 1                        | 2    | 95   | 10    | 0    | 108        | 0                        | 4    | 107  | 4     | 0    | 115        | 0                         | 2    | 0    | 6     | 1    | 8          | 0                         | 6    | 1    | 1     | 0    | 8          | 239        |
| 1:15 PM       | 0                        | 0    | 112  | 5     | 0    | 117        | 0                        | 2    | 108  | 2     | 0    | 112        | 0                         | 3    | 1    | 6     | 0    | 10         | 0                         | 9    | 0    | 2     | 0    | 11         | 250        |
| 1:30 PM       | 1                        | 5    | 114  | 2     | 0    | 122        | 0                        | 7    | 106  | 1     | 2    | 114        | 0                         | 7    | 0    | 7     | 2    | 14         | 0                         | 11   | 1    | 2     | 0    | 14         | 264        |
| 1:45 PM       | 0                        | 4    | 86   | 6     | 1    | 96         | 1                        | 5    | 98   | 2     | 0    | 106        | 0                         | 6    | 0    | 10    | 0    | 16         | 0                         | 11   | 0    | 1     | 0    | 12         | 230        |
| Hourly Total  | 2                        | 11   | 407  | 23    | 1    | 443        | 1                        | 18   | 419  | 9     | 2    | 447        | 0                         | 18   | 1    | 29    | 3    | 48         | 0                         | 37   | 2    | 6     | 0    | 45         | 983        |
| *** BREAK *** | -                        | -    | -    | -     | -    | -          | -                        | -    | -    | -     | -    | -          | -                         | -    | -    | -     | -    | -          | -                         | -    | -    | -     | -    | -          | -          |
| 3:00 PM       | 2                        | 5    | 113  | 8     | 0    | 128        | 1                        | 9    | 140  | 0     | 0    | 150        | 1                         | 6    | 0    | 9     | 1    | 16         | 0                         | 10   | 4    | 3     | 0    | 17         | 311        |
| 3:15 PM       | 3                        | 3    | 111  | 5     | 0    | 122        | 0                        | 11   | 126  | 2     | 0    | 139        | 0                         | 6    | 0    | 5     | 0    | 11         | 0                         | 18   | 5    | 0     | 1    | 23         | 295        |
| 3:30 PM       | 0                        | 1    | 92   | 8     | 0    | 101        | 0                        | 9    | 135  | 0     | 0    | 144        | 0                         | 7    | 0    | 11    | 1    | 18         | 0                         | 8    | 1    | 1     | 0    | 10         | 273        |

|                         |      |      |      |      |       |      |      |      |      |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |      |
|-------------------------|------|------|------|------|-------|------|------|------|------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|------|------|------|
| 3:45 PM                 | 0    | 1    | 98   | 5    | 0     | 104  | 0    | 12   | 138  | 1    | 0     | 151  | 0     | 5    | 1     | 9    | 0     | 15   | 0     | 11   | 4     | 0    | 0    | 15   | 285  |
| Hourly Total            | 5    | 10   | 414  | 26   | 0     | 455  | 1    | 41   | 539  | 3    | 0     | 584  | 1     | 24   | 1     | 34   | 2     | 60   | 0     | 47   | 14    | 4    | 1    | 65   | 1164 |
| 4:00 PM                 | 5    | 0    | 102  | 10   | 0     | 117  | 0    | 10   | 143  | 2    | 0     | 155  | 0     | 2    | 0     | 9    | 0     | 11   | 0     | 12   | 2     | 3    | 0    | 17   | 300  |
| 4:15 PM                 | 2    | 3    | 121  | 11   | 0     | 137  | 0    | 11   | 131  | 3    | 0     | 145  | 0     | 2    | 0     | 13   | 0     | 15   | 0     | 16   | 0     | 1    | 0    | 17   | 314  |
| 4:30 PM                 | 1    | 0    | 117  | 10   | 0     | 128  | 0    | 12   | 159  | 0    | 0     | 171  | 0     | 5    | 0     | 7    | 1     | 12   | 0     | 11   | 4     | 1    | 0    | 16   | 327  |
| 4:45 PM                 | 1    | 1    | 109  | 11   | 0     | 122  | 1    | 8    | 133  | 2    | 0     | 144  | 0     | 7    | 0     | 8    | 0     | 15   | 0     | 9    | 0     | 0    | 0    | 9    | 290  |
| Hourly Total            | 9    | 4    | 449  | 42   | 0     | 504  | 1    | 41   | 566  | 7    | 0     | 615  | 0     | 16   | 0     | 37   | 1     | 53   | 0     | 48   | 6     | 5    | 0    | 59   | 1231 |
| 5:00 PM                 | 3    | 0    | 110  | 13   | 0     | 126  | 0    | 10   | 142  | 3    | 0     | 155  | 0     | 5    | 0     | 9    | 0     | 14   | 0     | 13   | 2     | 0    | 1    | 15   | 310  |
| 5:15 PM                 | 4    | 3    | 89   | 12   | 0     | 108  | 0    | 13   | 130  | 0    | 0     | 143  | 0     | 7    | 0     | 11   | 0     | 18   | 0     | 15   | 2     | 2    | 0    | 19   | 288  |
| 5:30 PM                 | 3    | 1    | 115  | 10   | 1     | 129  | 0    | 11   | 149  | 0    | 0     | 160  | 0     | 5    | 0     | 6    | 0     | 11   | 0     | 19   | 2     | 1    | 1    | 22   | 322  |
| 5:45 PM                 | 0    | 0    | 92   | 5    | 0     | 97   | 0    | 7    | 153  | 1    | 0     | 161  | 0     | 7    | 0     | 16   | 0     | 23   | 0     | 14   | 5     | 0    | 1    | 19   | 300  |
| Hourly Total            | 10   | 4    | 406  | 40   | 1     | 460  | 0    | 41   | 574  | 4    | 0     | 619  | 0     | 24   | 0     | 42   | 0     | 66   | 0     | 61   | 11    | 3    | 3    | 75   | 1220 |
| Grand Total             | 57   | 53   | 3545 | 210  | 5     | 3865 | 10   | 229  | 3708 | 39   | 2     | 3986 | 1     | 208  | 3     | 336  | 11    | 548  | 2     | 310  | 46    | 32   | 8    | 390  | 8789 |
| Approach %              | 1.5  | 1.4  | 91.7 | 5.4  | -     | -    | 0.3  | 5.7  | 93.0 | 1.0  | -     | -    | 0.2   | 38.0 | 0.5   | 61.3 | -     | -    | 0.5   | 79.5 | 11.8  | 8.2  | -    | -    | -    |
| Total %                 | 0.6  | 0.6  | 40.3 | 2.4  | -     | 44.0 | 0.1  | 2.6  | 42.2 | 0.4  | -     | 45.4 | 0.0   | 2.4  | 0.0   | 3.8  | -     | 6.2  | 0.0   | 3.5  | 0.5   | 0.4  | -    | 4.4  | -    |
| Lights                  | 56   | 47   | 3371 | 206  | -     | 3680 | 9    | 228  | 3533 | 37   | -     | 3807 | 1     | 205  | 3     | 332  | -     | 541  | 2     | 304  | 46    | 29   | -    | 381  | 8409 |
| % Lights                | 98.2 | 88.7 | 95.1 | 98.1 | -     | 95.2 | 90.0 | 99.6 | 95.3 | 94.9 | -     | 95.5 | 100.0 | 98.6 | 100.0 | 98.8 | -     | 98.7 | 100.0 | 98.1 | 100.0 | 90.6 | -    | 97.7 | 95.7 |
| Buses                   | 0    | 0    | 65   | 2    | -     | 67   | 0    | 0    | 62   | 0    | -     | 62   | 0     | 1    | 0     | 2    | -     | 3    | 0     | 1    | 0     | 0    | -    | 1    | 133  |
| % Buses                 | 0.0  | 0.0  | 1.8  | 1.0  | -     | 1.7  | 0.0  | 0.0  | 1.7  | 0.0  | -     | 1.6  | 0.0   | 0.5  | 0.0   | 0.6  | -     | 0.5  | 0.0   | 0.3  | 0.0   | 0.0  | -    | 0.3  | 1.5  |
| Trucks                  | 1    | 5    | 103  | 2    | -     | 111  | 1    | 1    | 113  | 2    | -     | 117  | 0     | 2    | 0     | 2    | -     | 4    | 0     | 5    | 0     | 2    | -    | 7    | 239  |
| % Trucks                | 1.8  | 9.4  | 2.9  | 1.0  | -     | 2.9  | 10.0 | 0.4  | 3.0  | 5.1  | -     | 2.9  | 0.0   | 1.0  | 0.0   | 0.6  | -     | 0.7  | 0.0   | 1.6  | 0.0   | 6.3  | -    | 1.8  | 2.7  |
| Bicycles on Road        | 0    | 1    | 6    | 0    | -     | 7    | 0    | 0    | 0    | 0    | -     | 0    | 0     | 0    | 0     | 0    | -     | 0    | 0     | 0    | 0     | 1    | -    | 1    | 8    |
| % Bicycles on Road      | 0.0  | 1.9  | 0.2  | 0.0  | -     | 0.2  | 0.0  | 0.0  | 0.0  | 0.0  | -     | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | -     | 0.0  | 0.0   | 0.0  | 0.0   | 3.1  | -    | 0.3  | 0.1  |
| Bicycles on Crosswalk   | -    | -    | -    | -    | 0     | -    | -    | -    | -    | -    | 0     | -    | -     | -    | -     | -    | 0     | -    | -     | -    | -     | -    | 1    | -    | -    |
| % Bicycles on Crosswalk | -    | -    | -    | -    | 0.0   | -    | -    | -    | -    | -    | 0.0   | -    | -     | -    | -     | -    | 0.0   | -    | -     | -    | -     | -    | 12.5 | -    | -    |
| Pedestrians             | -    | -    | -    | -    | 5     | -    | -    | -    | -    | -    | 2     | -    | -     | -    | -     | -    | 11    | -    | -     | -    | -     | -    | 7    | -    | -    |
| % Pedestrians           | -    | -    | -    | -    | 100.0 | -    | -    | -    | -    | -    | 100.0 | -    | -     | -    | -     | -    | 100.0 | -    | -     | -    | -     | -    | 87.5 | -    | -    |





## Turning Movement Data Plot



Phoenix, Arizona - Dallas, Texas

Oklahoma City, Oklahoma - San Antonio, Texas

Albuquerque, New Mexico, United States 87113

5053380988 zbaiamonte@lee-eng.com

Site Code:

Start Date: 03/28/2023

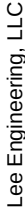
Page No: 4

## Turning Movement Peak Hour Data (7:00 AM)

| Start Time              | Central Ave Eastbound |       |       |       |       |            | Central Ave Westbound |       |       |       |      |            | Westland Rd Northbound |       |       |       |      |            | Westland Rd Southbound |       |       |       |       |            | Int. Total |
|-------------------------|-----------------------|-------|-------|-------|-------|------------|-----------------------|-------|-------|-------|------|------------|------------------------|-------|-------|-------|------|------------|------------------------|-------|-------|-------|-------|------------|------------|
|                         | U-Turn                | Left  | Thru  | Right | Peds  | App. Total | U-Turn                | Left  | Thru  | Right | Peds | App. Total | U-Turn                 | Left  | Thru  | Right | Peds | App. Total | U-Turn                 | Left  | Thru  | Right | Peds  | App. Total |            |
| 7:00 AM                 | 0                     | 0     | 121   | 3     | 0     | 124        | 0                     | 2     | 64    | 0     | 0    | 66         | 0                      | 9     | 0     | 16    | 0    | 25         | 0                      | 2     | 2     | 0     | 2     | 4          | 219        |
| 7:15 AM                 | 2                     | 0     | 124   | 5     | 1     | 131        | 0                     | 2     | 98    | 0     | 0    | 100        | 0                      | 10    | 0     | 29    | 1    | 39         | 0                      | 1     | 0     | 1     | 0     | 2          | 272        |
| 7:30 AM                 | 3                     | 0     | 139   | 8     | 0     | 150        | 0                     | 9     | 94    | 0     | 0    | 103        | 0                      | 15    | 0     | 13    | 0    | 28         | 0                      | 7     | 1     | 0     | 0     | 8          | 289        |
| 7:45 AM                 | 2                     | 1     | 139   | 7     | 0     | 149        | 0                     | 8     | 82    | 0     | 0    | 90         | 0                      | 9     | 0     | 20    | 0    | 29         | 0                      | 5     | 0     | 0     | 0     | 5          | 273        |
| Total                   | 7                     | 1     | 523   | 23    | 1     | 554        | 0                     | 21    | 338   | 0     | 0    | 359        | 0                      | 43    | 0     | 78    | 1    | 121        | 0                      | 15    | 3     | 1     | 2     | 19         | 1053       |
| Approach %              | 1.3                   | 0.2   | 94.4  | 4.2   | -     | -          | 0.0                   | 5.8   | 94.2  | 0.0   | -    | -          | 0.0                    | 35.5  | 0.0   | 64.5  | -    | -          | 0.0                    | 78.9  | 15.8  | 5.3   | -     | -          | -          |
| Total %                 | 0.7                   | 0.1   | 49.7  | 2.2   | -     | 52.6       | 0.0                   | 2.0   | 32.1  | 0.0   | -    | 34.1       | 0.0                    | 4.1   | 0.0   | 7.4   | -    | 11.5       | 0.0                    | 1.4   | 0.3   | 0.1   | -     | 1.8        | -          |
| PHF                     | 0.583                 | 0.250 | 0.941 | 0.719 | -     | 0.923      | 0.000                 | 0.583 | 0.862 | 0.000 | -    | 0.871      | 0.000                  | 0.717 | 0.000 | 0.672 | -    | 0.776      | 0.000                  | 0.536 | 0.375 | 0.250 | -     | 0.594      | 0.911      |
| Lights                  | 7                     | 1     | 500   | 22    | -     | 530        | 0                     | 20    | 315   | 0     | -    | 335        | 0                      | 42    | 0     | 75    | -    | 117        | 0                      | 14    | 3     | 1     | -     | 18         | 1000       |
| % Lights                | 100.0                 | 100.0 | 95.6  | 95.7  | -     | 95.7       | -                     | 95.2  | 93.2  | -     | -    | 93.3       | -                      | 97.7  | -     | 96.2  | -    | 96.7       | -                      | 93.3  | 100.0 | 100.0 | -     | 94.7       | 95.0       |
| Buses                   | 0                     | 0     | 13    | 1     | -     | 14         | 0                     | 0     | 6     | 0     | -    | 6          | 0                      | 0     | 0     | 1     | -    | 1          | 0                      | 0     | 0     | 0     | -     | 0          | 21         |
| % Buses                 | 0.0                   | 0.0   | 2.5   | 4.3   | -     | 2.5        | -                     | 0.0   | 1.8   | -     | -    | 1.7        | -                      | 0.0   | -     | 1.3   | -    | 0.8        | -                      | 0.0   | 0.0   | 0.0   | -     | 0.0        | 2.0        |
| Trucks                  | 0                     | 0     | 9     | 0     | -     | 9          | 0                     | 1     | 17    | 0     | -    | 18         | 0                      | 1     | 0     | 2     | -    | 3          | 0                      | 1     | 0     | 0     | -     | 1          | 31         |
| % Trucks                | 0.0                   | 0.0   | 1.7   | 0.0   | -     | 1.6        | -                     | 4.8   | 5.0   | -     | -    | 5.0        | -                      | 2.3   | -     | 2.6   | -    | 2.5        | -                      | 6.7   | 0.0   | 0.0   | -     | 5.3        | 2.9        |
| Bicycles on Road        | 0                     | 0     | 1     | 0     | -     | 1          | 0                     | 0     | 0     | 0     | -    | 0          | 0                      | 0     | 0     | 0     | -    | 0          | 0                      | 0     | 0     | 0     | -     | 0          | 1          |
| % Bicycles on Road      | 0.0                   | 0.0   | 0.2   | 0.0   | -     | 0.2        | -                     | 0.0   | 0.0   | -     | -    | 0.0        | -                      | 0.0   | -     | 0.0   | -    | 0.0        | -                      | 0.0   | 0.0   | 0.0   | -     | 0.0        | 0.1        |
| Bicycles on Crosswalk   | -                     | -     | -     | -     | 0     | -          | -                     | -     | -     | -     | 0    | -          | -                      | -     | -     | -     | -    | 0          | -                      | -     | -     | -     | 0     | -          | -          |
| % Bicycles on Crosswalk | -                     | -     | -     | -     | 0.0   | -          | -                     | -     | -     | -     | -    | -          | -                      | -     | -     | -     | -    | 0.0        | -                      | -     | -     | -     | 0.0   | -          | -          |
| Pedestrians             | -                     | -     | -     | -     | 1     | -          | -                     | -     | -     | -     | 0    | -          | -                      | -     | -     | -     | -    | 1          | -                      | -     | -     | -     | 2     | -          | -          |
| % Pedestrians           | -                     | -     | -     | -     | 100.0 | -          | -                     | -     | -     | -     | -    | -          | -                      | -     | -     | -     | -    | 100.0      | -                      | -     | -     | -     | 100.0 | -          | -          |



### Turning Movement Peak Hour Data Plot (7:00 AM)



Phoenix, Arizona - Dallas, Texas  
Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiamonte@lee-eng.com

TIS

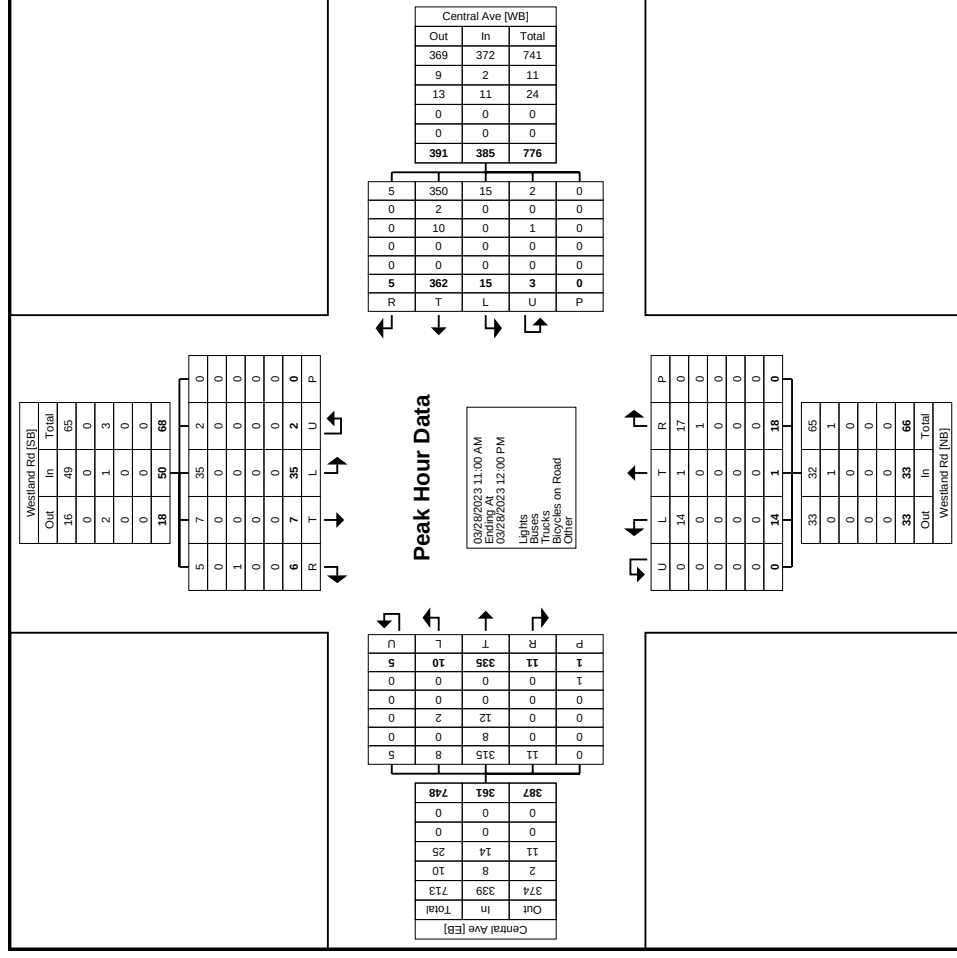
## Turning Movement Peak Hour Data (11:00 AM)

[illegible]



Lee Engineering, LLC  
Phoenix, Arizona - Dallas, Texas  
Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

Count Name: NM309.04 Central 98th Fast Food  
TIS  
Site Code:  
Start Date: 03/28/2023  
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Oklahoma City, Oklahoma - San Antonio, Texas  
Albuquerque, New Mexico, United States 87113  
5053380988 zbaiaamonte@lee-eng.com

Count Name: NM309.04 Central 98th Fast Food  
TIS  
Site Code:  
Start Date: 03/28/2023  
Page No: 8

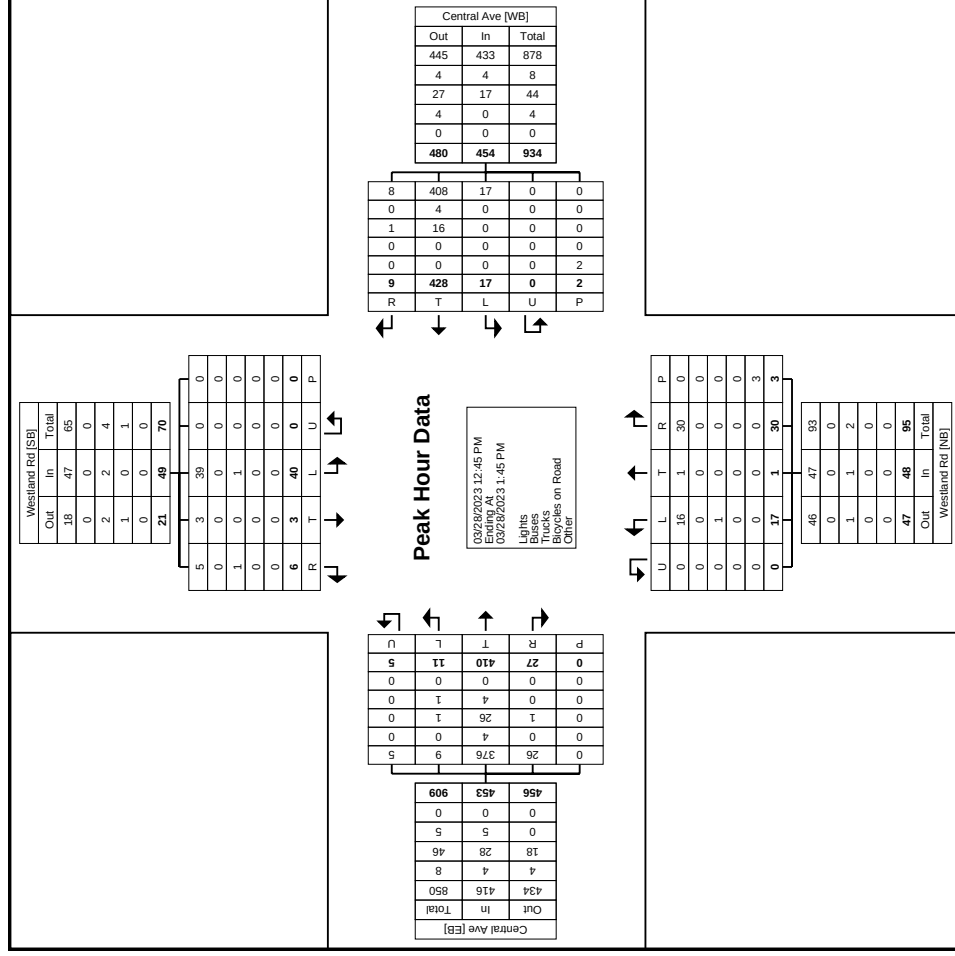
### Turning Movement Peak Hour Data (12:45 PM)

| Start Time              | Central Ave<br>Eastbound |       |       |       |      |            | Central Ave<br>Westbound |       |       |       |       |            | Westland Rd<br>Northbound |       |       |       |       |            | Westland Rd<br>Southbound |       |       |       |      |            | Int. Total |
|-------------------------|--------------------------|-------|-------|-------|------|------------|--------------------------|-------|-------|-------|-------|------------|---------------------------|-------|-------|-------|-------|------------|---------------------------|-------|-------|-------|------|------------|------------|
|                         | U-Turn                   | Left  | Thru  | Right | Peds | App. Total | U-Turn                   | Left  | Thru  | Right | Peds  | App. Total | U-Turn                    | Left  | Thru  | Right | Peds  | App. Total | U-Turn                    | Left  | Thru  | Right | Peds | App. Total |            |
| 12:45 PM                | 3                        | 4     | 89    | 10    | 0    | 106        | 0                        | 4     | 107   | 2     | 0     | 113        | 0                         | 5     | 0     | 11    | 0     | 16         | 0                         | 14    | 1     | 1     | 0    | 16         | 251        |
| 1:00 PM                 | 1                        | 2     | 95    | 10    | 0    | 108        | 0                        | 4     | 107   | 4     | 0     | 115        | 0                         | 2     | 0     | 6     | 1     | 8          | 0                         | 6     | 1     | 1     | 0    | 8          | 239        |
| 1:15 PM                 | 0                        | 0     | 112   | 5     | 0    | 117        | 0                        | 2     | 108   | 2     | 0     | 112        | 0                         | 3     | 1     | 6     | 0     | 10         | 0                         | 9     | 0     | 2     | 0    | 11         | 250        |
| 1:30 PM                 | 1                        | 5     | 114   | 2     | 0    | 122        | 0                        | 7     | 106   | 1     | 2     | 114        | 0                         | 7     | 0     | 7     | 2     | 14         | 0                         | 11    | 1     | 2     | 0    | 14         | 264        |
| Total                   | 5                        | 11    | 410   | 27    | 0    | 453        | 0                        | 17    | 428   | 9     | 2     | 454        | 0                         | 17    | 1     | 30    | 3     | 48         | 0                         | 40    | 3     | 6     | 0    | 49         | 1004       |
| Approach %              | 1.1                      | 2.4   | 90.5  | 6.0   | -    | -          | 0.0                      | 3.7   | 94.3  | 2.0   | -     | -          | 0.0                       | 35.4  | 2.1   | 62.5  | -     | -          | 0.0                       | 81.6  | 6.1   | 12.2  | -    | -          | -          |
| Total %                 | 0.5                      | 1.1   | 40.8  | 2.7   | -    | 45.1       | 0.0                      | 1.7   | 42.6  | 0.9   | -     | 45.2       | 0.0                       | 1.7   | 0.1   | 3.0   | -     | 4.8        | 0.0                       | 4.0   | 0.3   | 0.6   | -    | 4.9        | -          |
| PHF                     | 0.417                    | 0.550 | 0.899 | 0.675 | -    | 0.928      | 0.000                    | 0.607 | 0.991 | 0.563 | -     | 0.987      | 0.000                     | 0.607 | 0.250 | 0.682 | -     | 0.750      | 0.000                     | 0.714 | 0.750 | 0.750 | -    | 0.766      | 0.951      |
| Lights                  | 5                        | 9     | 376   | 26    | -    | 416        | 0                        | 17    | 408   | 8     | -     | 433        | 0                         | 16    | 1     | 30    | -     | 47         | 0                         | 39    | 3     | 5     | -    | 47         | 943        |
| % Lights                | 100.0                    | 81.8  | 91.7  | 96.3  | -    | 91.8       | -                        | 100.0 | 95.3  | 88.9  | -     | 95.4       | -                         | 94.1  | 100.0 | 100.0 | -     | 97.9       | -                         | 97.5  | 100.0 | 83.3  | -    | 95.9       | 93.9       |
| Buses                   | 0                        | 0     | 4     | 0     | -    | 4          | 0                        | 0     | 4     | 0     | -     | 4          | 0                         | 0     | 0     | 0     | -     | 0          | 0                         | 0     | 0     | 0     | -    | 0          | 8          |
| % Buses                 | 0.0                      | 0.0   | 1.0   | 0.0   | -    | 0.9        | -                        | 0.0   | 0.9   | 0.0   | -     | 0.9        | -                         | 0.0   | 0.0   | 0.0   | -     | 0.0        | -                         | 0.0   | 0.0   | 0.0   | -    | 0.0        | 0.8        |
| Trucks                  | 0                        | 1     | 26    | 1     | -    | 28         | 0                        | 0     | 16    | 1     | -     | 17         | 0                         | 1     | 0     | 0     | -     | 1          | 0                         | 1     | 0     | 1     | -    | 2          | 48         |
| % Trucks                | 0.0                      | 9.1   | 6.3   | 3.7   | -    | 6.2        | -                        | 0.0   | 3.7   | 11.1  | -     | 3.7        | -                         | 5.9   | 0.0   | 0.0   | -     | 2.1        | -                         | 2.5   | 0.0   | 16.7  | -    | 4.1        | 4.8        |
| Bicycles on Road        | 0                        | 1     | 4     | 0     | -    | 5          | 0                        | 0     | 0     | 0     | -     | 0          | 0                         | 0     | 0     | 0     | -     | 0          | 0                         | 0     | 0     | 0     | -    | 0          | 5          |
| % Bicycles on Road      | 0.0                      | 9.1   | 1.0   | 0.0   | -    | 1.1        | -                        | 0.0   | 0.0   | 0.0   | -     | 0.0        | -                         | 0.0   | 0.0   | 0.0   | -     | 0.0        | -                         | 0.0   | 0.0   | 0.0   | -    | 0.0        | 0.5        |
| Bicycles on Crosswalk   | -                        | -     | -     | -     | 0    | -          | -                        | -     | -     | -     | 0     | -          | -                         | -     | -     | -     | 0     | -          | -                         | -     | -     | -     | 0    | -          | -          |
| % Bicycles on Crosswalk | -                        | -     | -     | -     | -    | -          | -                        | -     | -     | -     | 0.0   | -          | -                         | -     | -     | -     | 0.0   | -          | -                         | -     | -     | -     | -    | -          | -          |
| Pedestrians             | -                        | -     | -     | -     | 0    | -          | -                        | -     | -     | -     | 2     | -          | -                         | -     | -     | -     | 3     | -          | -                         | -     | -     | -     | 0    | -          | -          |
| % Pedestrians           | -                        | -     | -     | -     | -    | -          | -                        | -     | -     | -     | 100.0 | -          | -                         | -     | -     | -     | 100.0 | -          | -                         | -     | -     | -     | -    | -          | -          |



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5053380988 zbaiaamonte@lee-eng.com

Count Name: NM309.04 Central 98th Fast Food  
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Count Name: NM309.04 Central 98th Fast Food  
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Site Code:  
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### Turning Movement Peak Hour Data (4:15 PM)

| Start Time              | Central Ave Eastbound |       |       |       |      |            | Central Ave Westbound |       |       |       |      |            | Westland Rd Northbound |       |       |       |      |            | Westland Rd Southbound |       |       |       |       |            | Int. Total |
|-------------------------|-----------------------|-------|-------|-------|------|------------|-----------------------|-------|-------|-------|------|------------|------------------------|-------|-------|-------|------|------------|------------------------|-------|-------|-------|-------|------------|------------|
|                         | U-Turn                | Left  | Thru  | Right | Peds | App. Total | U-Turn                | Left  | Thru  | Right | Peds | App. Total | U-Turn                 | Left  | Thru  | Right | Peds | App. Total | U-Turn                 | Left  | Thru  | Right | Peds  | App. Total |            |
| 4:15 PM                 | 2                     | 3     | 121   | 11    | 0    | 137        | 0                     | 11    | 131   | 3     | 0    | 145        | 0                      | 2     | 0     | 13    | 0    | 15         | 0                      | 16    | 0     | 1     | 0     | 17         | 314        |
| 4:30 PM                 | 1                     | 0     | 117   | 10    | 0    | 128        | 0                     | 12    | 159   | 0     | 0    | 171        | 0                      | 5     | 0     | 7     | 1    | 12         | 0                      | 11    | 4     | 1     | 0     | 16         | 327        |
| 4:45 PM                 | 1                     | 1     | 109   | 11    | 0    | 122        | 1                     | 8     | 133   | 2     | 0    | 144        | 0                      | 7     | 0     | 8     | 0    | 15         | 0                      | 9     | 0     | 0     | 0     | 9          | 290        |
| 5:00 PM                 | 3                     | 0     | 110   | 13    | 0    | 126        | 0                     | 10    | 142   | 3     | 0    | 155        | 0                      | 5     | 0     | 9     | 0    | 14         | 0                      | 13    | 2     | 0     | 1     | 15         | 310        |
| Total                   | 7                     | 4     | 457   | 45    | 0    | 513        | 1                     | 41    | 565   | 8     | 0    | 615        | 0                      | 19    | 0     | 37    | 1    | 56         | 0                      | 49    | 6     | 2     | 1     | 57         | 1241       |
| Approach %              | 1.4                   | 0.8   | 89.1  | 8.8   | -    | -          | 0.2                   | 6.7   | 91.9  | 1.3   | -    | -          | 0.0                    | 33.9  | 0.0   | 66.1  | -    | -          | 0.0                    | 86.0  | 10.5  | 3.5   | -     | -          | -          |
| Total %                 | 0.6                   | 0.3   | 36.8  | 3.6   | -    | 41.3       | 0.1                   | 3.3   | 45.5  | 0.6   | -    | 49.6       | 0.0                    | 1.5   | 0.0   | 3.0   | -    | 4.5        | 0.0                    | 3.9   | 0.5   | 0.2   | -     | 4.6        | -          |
| PHF                     | 0.583                 | 0.333 | 0.944 | 0.865 | -    | 0.936      | 0.250                 | 0.854 | 0.888 | 0.667 | -    | 0.899      | 0.000                  | 0.679 | 0.000 | 0.712 | -    | 0.933      | 0.000                  | 0.766 | 0.375 | 0.500 | -     | 0.838      | 0.949      |
| Lights                  | 7                     | 4     | 443   | 44    | -    | 498        | 1                     | 41    | 551   | 8     | -    | 601        | 0                      | 19    | 0     | 37    | -    | 56         | 0                      | 49    | 6     | 2     | -     | 57         | 1212       |
| % Lights                | 100.0                 | 100.0 | 96.9  | 97.8  | -    | 97.1       | 100.0                 | 100.0 | 97.5  | 100.0 | -    | 97.7       | -                      | 100.0 | -     | 100.0 | -    | 100.0      | -                      | 100.0 | 100.0 | 100.0 | -     | 100.0      | 97.7       |
| Buses                   | 0                     | 0     | 7     | 1     | -    | 8          | 0                     | 0     | 9     | 0     | -    | 9          | 0                      | 0     | 0     | 0     | -    | 0          | 0                      | 0     | 0     | 0     | -     | 0          | 17         |
| % Buses                 | 0.0                   | 0.0   | 1.5   | 2.2   | -    | 1.6        | 0.0                   | 0.0   | 1.6   | 0.0   | -    | 1.5        | -                      | 0.0   | -     | 0.0   | -    | 0.0        | -                      | 0.0   | 0.0   | 0.0   | -     | 0.0        | 1.4        |
| Trucks                  | 0                     | 0     | 7     | 0     | -    | 7          | 0                     | 0     | 5     | 0     | -    | 5          | 0                      | 0     | 0     | 0     | -    | 0          | 0                      | 0     | 0     | 0     | -     | 0          | 12         |
| % Trucks                | 0.0                   | 0.0   | 1.5   | 0.0   | -    | 1.4        | 0.0                   | 0.0   | 0.9   | 0.0   | -    | 0.8        | -                      | 0.0   | -     | 0.0   | -    | 0.0        | -                      | 0.0   | 0.0   | 0.0   | -     | 0.0        | 1.0        |
| Bicycles on Road        | 0                     | 0     | 0     | 0     | -    | 0          | 0                     | 0     | 0     | 0     | -    | 0          | 0                      | 0     | 0     | 0     | -    | 0          | 0                      | 0     | 0     | 0     | -     | 0          | 0          |
| % Bicycles on Road      | 0.0                   | 0.0   | 0.0   | 0.0   | -    | 0.0        | 0.0                   | 0.0   | 0.0   | 0.0   | -    | 0.0        | -                      | 0.0   | -     | 0.0   | -    | 0.0        | -                      | 0.0   | 0.0   | 0.0   | -     | 0.0        | 0.0        |
| Bicycles on Crosswalk   | -                     | -     | -     | -     | 0    | -          | -                     | -     | -     | -     | 0    | -          | -                      | -     | -     | -     | -    | 0          | -                      | -     | -     | -     | 0     | -          | -          |
| % Bicycles on Crosswalk | -                     | -     | -     | -     | -    | -          | -                     | -     | -     | -     | -    | -          | -                      | -     | -     | -     | -    | 0.0        | -                      | -     | -     | -     | 0.0   | -          | -          |
| Pedestrians             | -                     | -     | -     | -     | 0    | -          | -                     | -     | -     | -     | 1    | -          | -                      | -     | -     | -     | -    | 1          | -                      | -     | -     | -     | 1     | -          | -          |
| % Pedestrians           | -                     | -     | -     | -     | -    | -          | -                     | -     | -     | -     | -    | -          | -                      | -     | -     | -     | -    | 100.0      | -                      | -     | -     | -     | 100.0 | -          | -          |





Turning Movement Peak Hour Data Plot (4:15 PM)

## Site Plan





VICINITY MAP - Zone Map K-9-Z

Legal Description:

The Remaining Portions of Lots 19 through 27 in Block 10 of the original Townsite of Westland, within the Town of Atrisco Grant, Bernalillo County, NM.

CAUTION - NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL NEW MEXICO ONE CALL (811) AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

| PARKING CALCULATIONS    |           |                    |
|-------------------------|-----------|--------------------|
| BUILDING AREA:          |           | AREA (SQUARE FEET) |
| RESTAURANT              |           | +/- 2,140 SF       |
| RETAIL                  |           | +/- 6,000 SF       |
| PARKING REQUIREMENTS:   |           |                    |
| RESTAURANT (5/1,000 SF) | REQUIRED  | PROVIDED           |
|                         | 10 spaces | 14 spaces          |
| RETAIL (2.5/1,000 SF)   | REQUIRED  | PROVIDED           |
|                         | 15 spaces | 24 spaces          |
| TOTAL                   | 27 spaces | 38 spaces          |
|                         |           |                    |
| HANDICAP PARKING        | REQUIRED  | PROVIDED           |
|                         | 3 spaces  | 3 spaces           |
| MOTORCYCLE PARKING      | REQUIRED  | PROVIDED           |
|                         | 1 spaces  | 2 spaces           |
| BICYCLE PARKING         | REQUIRED  | PROVIDED           |
|                         | 3 spaces  | 3 spaces           |
| DRIVE-THRU QUEUEING     | REQUIRED  | PROVIDED           |
|                         | 12 spaces | 16 spaces          |

| Line Table |               |             |
|------------|---------------|-------------|
| Line #     | Direction     | Length (ft) |
| L1         | N 06°04'47" W | 17.56'      |
| L2         | N 00°15'40" E | 74.84'      |
| L3         | S 15°05'00" E | 10.00'      |
| L4         | N 73°16'13" E | 2640.13'    |
| L5         | N 00°31'13" E | 18.00'      |
| L6         | S 75°09'22" W | 2.09'       |
| L7         | N 00°17'47" E | 31.44'      |
| L8         | N 74°55'56" E | 52.02'      |

| Curve Table |        |        |           |              |                 |
|-------------|--------|--------|-----------|--------------|-----------------|
| Curve #     | Length | Radius | Delta     | Chord Length | Chord Direction |
| C1          | 70.06' | 75.00' | 53°31'19" | 67.54'       | N 48°15'41" E   |

Retail Development  
9700 Central Ave SW  
Albuquerque, NM 87121

Conceptual Site Plan - Option 1a

NOT FOR CONSTRUCTION

Wooten Engineering  
PO Box 15814  
Rio Rancho, N.M. 87174  
Phone: (505) 980-3560

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C1.0a



## ITE Trip Generation Summary Sheets

# Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 6

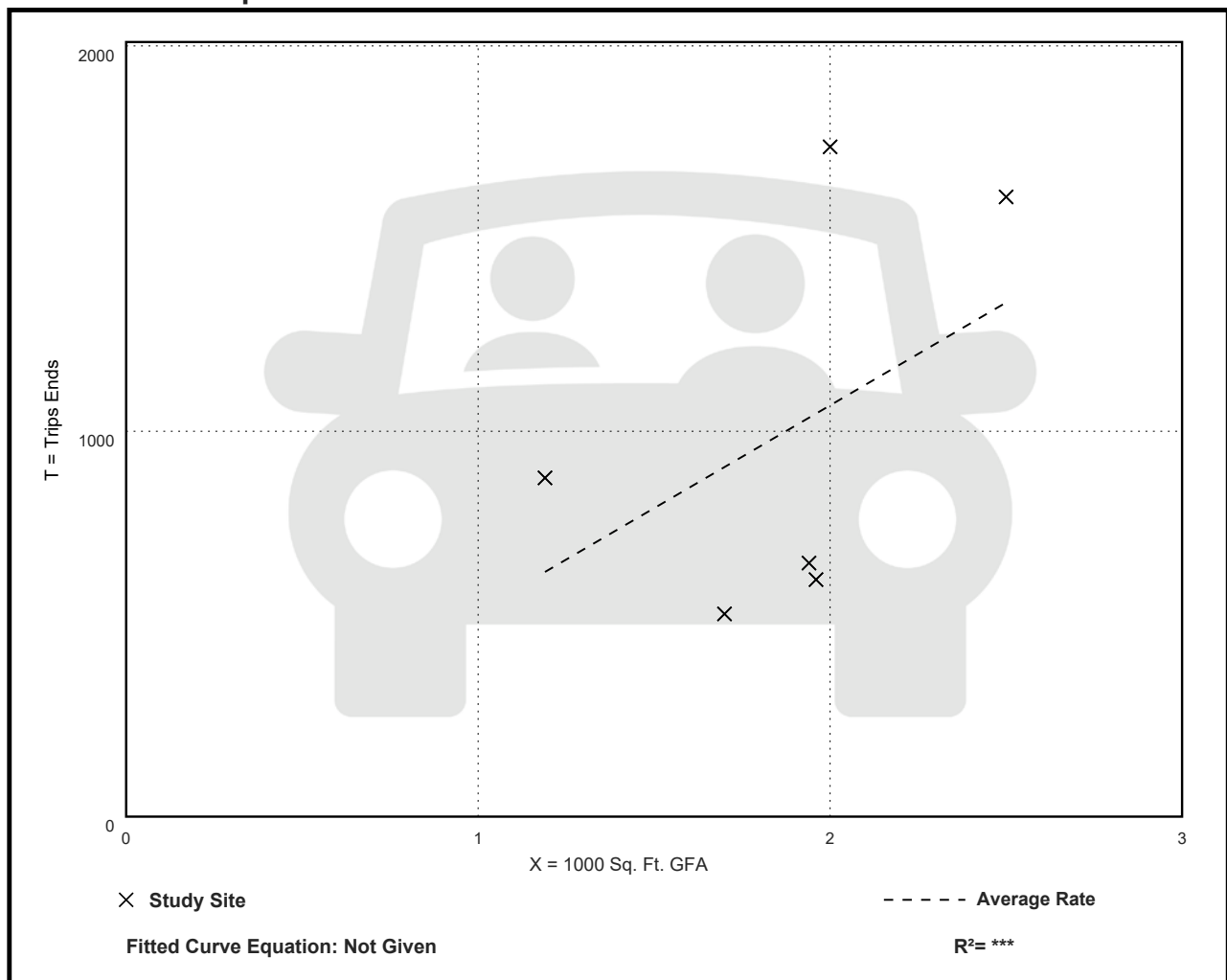
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates  | Standard Deviation |
|--------------|-----------------|--------------------|
| 533.57       | 309.41 - 869.00 | 243.65             |

## Data Plot and Equation



# Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 78

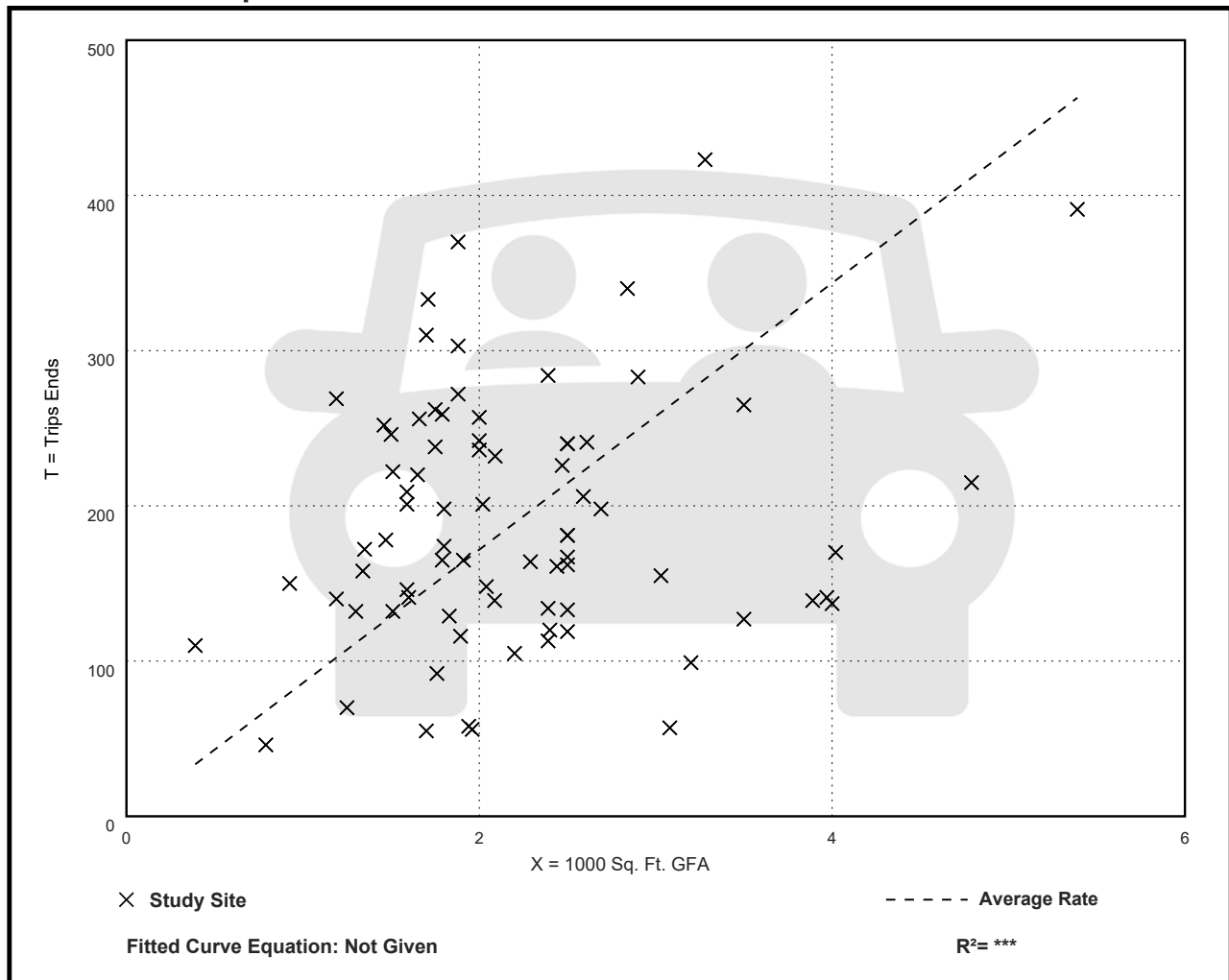
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 85.88        | 18.51 - 282.05 | 44.92              |

## Data Plot and Equation



# Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 36

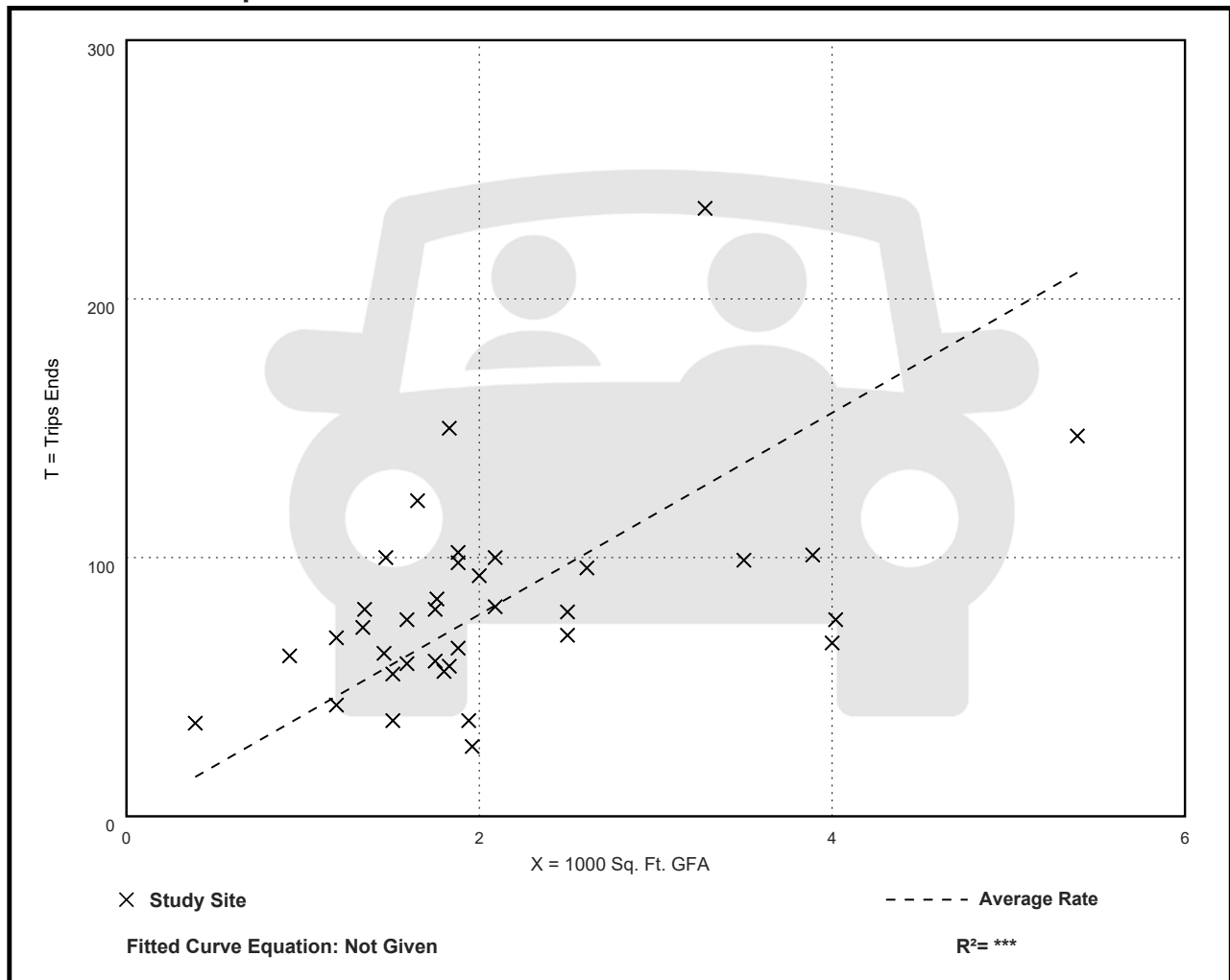
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 38.99        | 13.78 - 92.31  | 17.79              |

## Data Plot and Equation



# Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 4

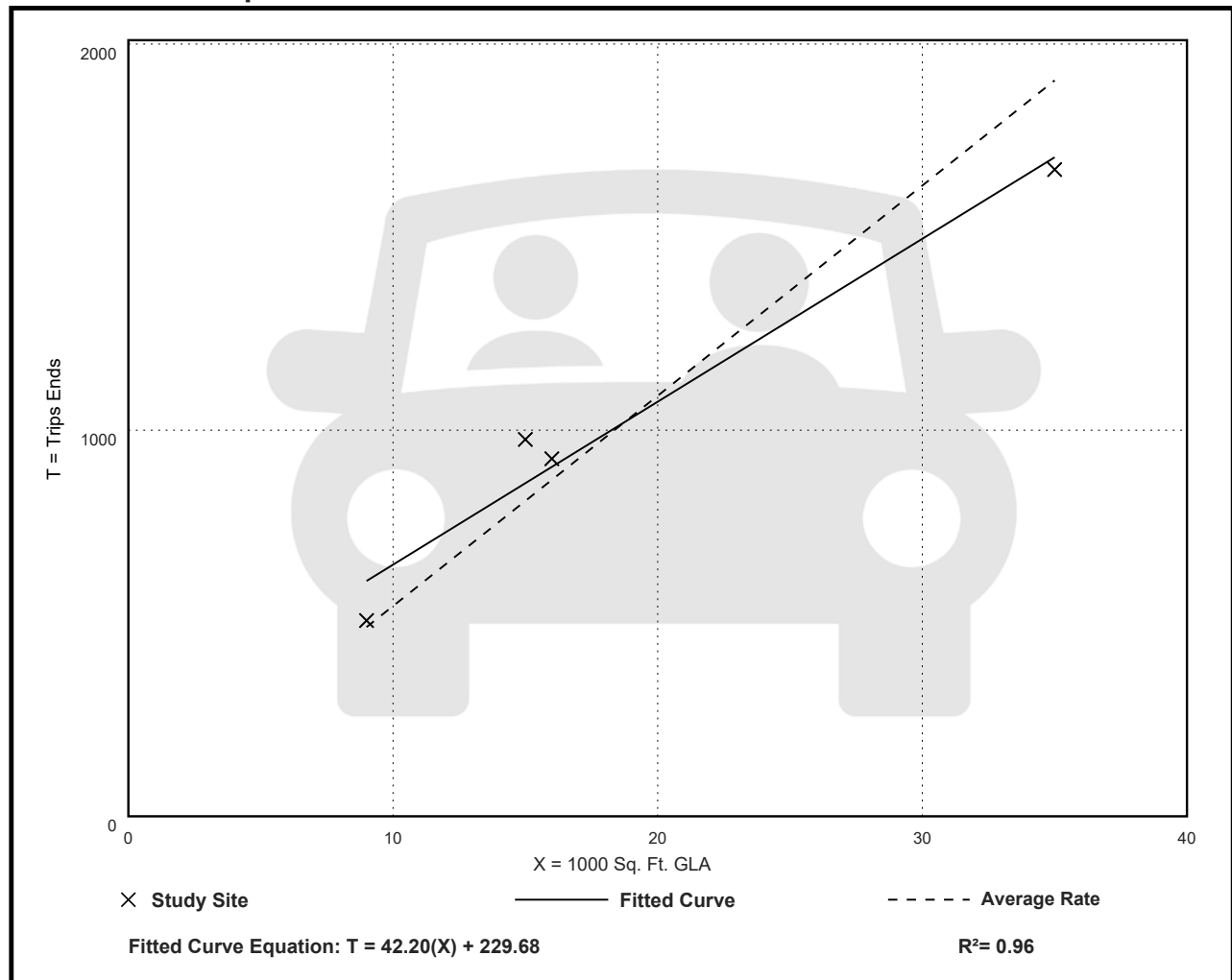
Avg. 1000 Sq. Ft. GLA: 19

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 54.45        | 47.86 - 65.07  | 7.81               |

## Data Plot and Equation





# Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 5

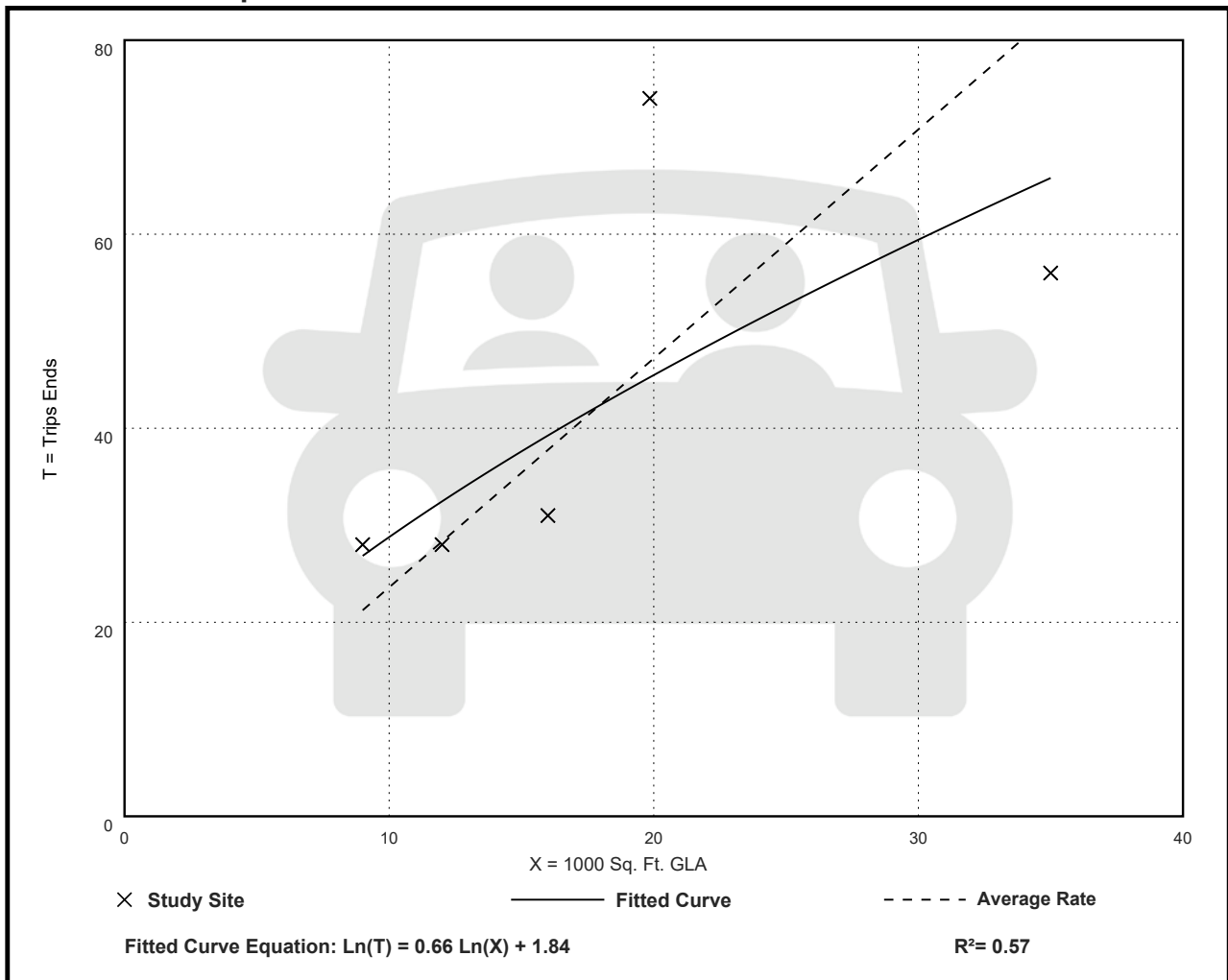
Avg. 1000 Sq. Ft. GLA: 18

Directional Distribution: 60% entering, 40% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 2.36         | 1.60 - 3.73    | 0.94               |

## Data Plot and Equation



# Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 25

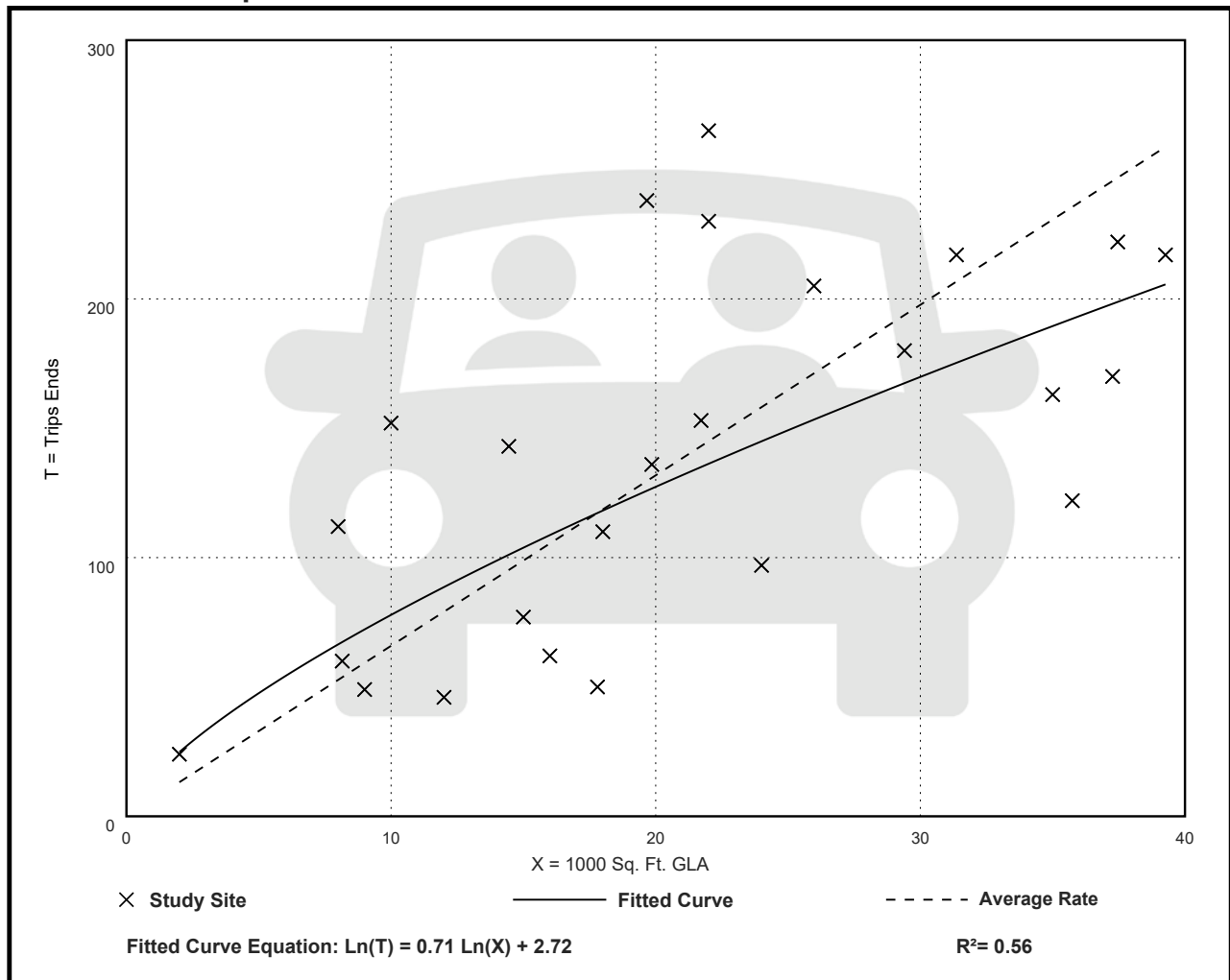
Avg. 1000 Sq. Ft. GLA: 21

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 6.59         | 2.81 - 15.20   | 2.94               |

## Data Plot and Equation



## Level of Service Criteria

## LEVEL OF SERVICE CRITERIA

| Signalized Intersections   |                                                                                                                                                                                                                                                                                          |                                             |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Level of Service           | Interpretation                                                                                                                                                                                                                                                                           | Average Control Delay (seconds per vehicle) |
| A                          | Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.                                                                                                                                                            | $\leq 10$                                   |
| B                          | Good progression, with more vehicles stopping than for Level of Service A.                                                                                                                                                                                                               | $> 10 - 20$                                 |
| C                          | Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping. | $> 20 - 35$                                 |
| D                          | The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.                                                                                                             | $> 35 - 55$                                 |
| E                          | Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.                                                                                                                                                   | $> 55 - 80$                                 |
| F                          | The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.                                                                                                                                                  | $> 80.0$                                    |
| Unsignalized Intersections |                                                                                                                                                                                                                                                                                          |                                             |
| Level of Service           | Average Total Delay (SEC/VEH)                                                                                                                                                                                                                                                            |                                             |
| A                          | 0 - 10                                                                                                                                                                                                                                                                                   |                                             |
| B                          | $> 10 - 15$                                                                                                                                                                                                                                                                              |                                             |
| C                          | $> 15 - 25$                                                                                                                                                                                                                                                                              |                                             |
| D                          | $> 25 - 35$                                                                                                                                                                                                                                                                              |                                             |
| E                          | $> 35 - 50$                                                                                                                                                                                                                                                                              |                                             |
| F                          | $> 50$                                                                                                                                                                                                                                                                                   |                                             |

Source: *Highway Capacity Manual*, 6<sup>th</sup> Edition.

Capacity Analysis Summary Sheets  
Existing Weekday Morning Peak Hour

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |                                                                                   |  |  |                                                                                   |   |  |  |  |  |  |
| Traffic Volume (vph)    | 288                                                                               | 216                                                                               | 40                                                                                | 113                                                                               | 146                                                                               | 129                                                                               | 32                                                                                  | 1419                                                                                | 258                                                                                 | 63                                                                                  | 426                                                                                 | 129                                                                                 |
| Future Volume (vph)     | 288                                                                               | 216                                                                               | 40                                                                                | 113                                                                               | 146                                                                               | 129                                                                               | 32                                                                                  | 1419                                                                                | 258                                                                                 | 63                                                                                  | 426                                                                                 | 129                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 | 165                                                                               |                                                                                   | 0                                                                                 | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     | 75                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 | 2                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                   | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |                                                                                     |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.976                                                                             |                                                                                   |                                                                                   | 0.930                                                                             |                                                                                   |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)       | 3400                                                                              | 3388                                                                              | 0                                                                                 | 3303                                                                              | 3212                                                                              | 0                                                                                 | 1703                                                                                | 3762                                                                                | 1553                                                                                | 1656                                                                                | 3539                                                                                | 1524                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.472                                                                               |                                                                                     |                                                                                     | 0.066                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)       | 3400                                                                              | 3388                                                                              | 0                                                                                 | 3303                                                                              | 3212                                                                              | 0                                                                                 | 846                                                                                 | 3762                                                                                | 1553                                                                                | 115                                                                                 | 3539                                                                                | 1524                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)       |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 123                                                                               |                                                                                   |                                                                                     |                                                                                     | 197                                                                                 |                                                                                     |                                                                                     | 197                                                                                 |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   | 45                                                                                |                                                                                   |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   | 340                                                                               |                                                                                   |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     | 964                                                                                 |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                   |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     | 14.6                                                                                |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 3%                                                                                | 4%                                                                                | 4%                                                                                | 6%                                                                                | 5%                                                                                | 4%                                                                                | 6%                                                                                  | 1%                                                                                  | 4%                                                                                  | 9%                                                                                  | 2%                                                                                  | 6%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 300                                                                               | 267                                                                               | 0                                                                                 | 118                                                                               | 286                                                                               | 0                                                                                 | 33                                                                                  | 1478                                                                                | 269                                                                                 | 66                                                                                  | 444                                                                                 | 134                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  | Free                                                                                |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |                                                                                     | Free                                                                                |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |                                                                                     |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 15.0                                                                              |                                                                                   | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 | 15.0                                                                                |                                                                                     |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 | 25.0                                                                                |                                                                                     |
| Total Split (s)         | 22.0                                                                              | 40.0                                                                              |                                                                                   | 16.0                                                                              | 34.0                                                                              |                                                                                   | 12.0                                                                                | 62.0                                                                                |                                                                                     | 12.0                                                                                | 62.0                                                                                |                                                                                     |
| Total Split (%)         | 16.9%                                                                             | 30.8%                                                                             |                                                                                   | 12.3%                                                                             | 26.2%                                                                             |                                                                                   | 9.2%                                                                                | 47.7%                                                                               |                                                                                     | 9.2%                                                                                | 47.7%                                                                               |                                                                                     |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 | 4.5                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 | 1.5                                                                                 |                                                                                     |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                   | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                | Max                                                                                 |                                                                                     |
| Act Effect Green (s)    | 15.8                                                                              | 34.8                                                                              |                                                                                   | 9.7                                                                               | 28.7                                                                              |                                                                                   | 65.5                                                                                | 58.5                                                                                | 130.0                                                                               | 67.0                                                                                | 61.0                                                                                | 130.0                                                                               |
| Actuated g/C Ratio      | 0.12                                                                              | 0.27                                                                              |                                                                                   | 0.07                                                                              | 0.22                                                                              |                                                                                   | 0.50                                                                                | 0.45                                                                                | 1.00                                                                                | 0.52                                                                                | 0.47                                                                                | 1.00                                                                                |



# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| v/c Ratio               | 0.73                                                                              | 0.29                                                                              |                                                                                   | 0.48                                                                              | 0.36                                                                              |                                                                                   | 0.07                                                                               | 0.87                                                                                | 0.17                                                                                | 0.46                                                                                | 0.27                                                                                | 0.09                                                                                |
| Control Delay           | 65.7                                                                              | 36.9                                                                              |                                                                                   | 64.0                                                                              | 25.7                                                                              |                                                                                   | 14.9                                                                               | 40.1                                                                                | 0.2                                                                                 | 27.7                                                                                | 22.3                                                                                | 0.1                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 65.7                                                                              | 36.9                                                                              |                                                                                   | 64.0                                                                              | 25.7                                                                              |                                                                                   | 14.9                                                                               | 40.1                                                                                | 0.2                                                                                 | 27.7                                                                                | 22.3                                                                                | 0.1                                                                                 |
| LOS                     | E                                                                                 | D                                                                                 |                                                                                   | E                                                                                 | C                                                                                 |                                                                                   | B                                                                                  | D                                                                                   | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 52.1                                                                              |                                                                                   |                                                                                   | 36.9                                                                              |                                                                                   |                                                                                    | 33.6                                                                                |                                                                                     |                                                                                     | 18.2                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Queue Length 50th (ft)  | 126                                                                               | 88                                                                                |                                                                                   | 50                                                                                | 60                                                                                |                                                                                   | 13                                                                                 | 605                                                                                 | 0                                                                                   | 26                                                                                  | 124                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | 175                                                                               | 130                                                                               |                                                                                   | 81                                                                                | 104                                                                               |                                                                                   | 30                                                                                 | #723                                                                                | 0                                                                                   | 57                                                                                  | 166                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   | 260                                                                               |                                                                                   |                                                                                    | 479                                                                                 |                                                                                     |                                                                                     | 884                                                                                 |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                   | 220                                                                                |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     | 75                                                                                  |
| Base Capacity (vph)     | 457                                                                               | 918                                                                               |                                                                                   | 292                                                                               | 805                                                                               |                                                                                   | 478                                                                                | 1692                                                                                | 1553                                                                                | 148                                                                                 | 1661                                                                                | 1524                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.66                                                                              | 0.29                                                                              |                                                                                   | 0.40                                                                              | 0.36                                                                              |                                                                                   | 0.07                                                                               | 0.87                                                                                | 0.17                                                                                | 0.45                                                                                | 0.27                                                                                | 0.09                                                                                |

### Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 39 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 34.2

Intersection LOS: C

Intersection Capacity Utilization 79.8%

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: 1: 98th Street & Central Avenue

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |  |   |
| Ø1                                                                                  | Ø2 (R)                                                                              |                                                                                     | Ø3                                                                                  | Ø4                                                                                  |                                                                                      |
| 16 s                                                                                | 40 s                                                                                |                                                                                     | 12 s                                                                                | 62 s                                                                                |                                                                                      |
|  |  |  |  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              |                                                                                     | Ø7                                                                                  | Ø8                                                                                  |                                                                                      |
| 22 s                                                                                | 34 s                                                                                |                                                                                     | 12 s                                                                                | 62 s                                                                                |                                                                                      |

# HCM 6th TWSC

## 2: Central Avenue

02/23/2024

| Intersection               |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
|----------------------------|--------|------------------------|-------|-------|----------------------------|------|------|--------|--------------------------------|------|--------|------|------|
| Int Delay, s/veh           | 2.2    |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR   | WBL                        | WBT  | WBR  | NBL    | NBT                            | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations        |        |                        | ↕↕    |       | ↕                          | ↕↕   |      | ↕      | ↕                              | ↕    |        | ↕    |      |
| Traffic Vol, veh/h         | 7      | 1                      | 523   | 23    | 21                         | 338  | 0    | 73     | 0                              | 78   | 15     | 3    | 1    |
| Future Vol, veh/h          | 7      | 1                      | 523   | 23    | 21                         | 338  | 0    | 73     | 0                              | 78   | 15     | 3    | 1    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0     | 0                          | 0    | 0    | 0      | 0                              | 0    | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free  | Free                       | Free | Free | Stop   | Stop                           | Stop | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None  | -                          | -    | None | -      | -                              | None | -      | -    | None |
| Storage Length             | -      | -                      | -     | -     | 90                         | -    | -    | 0      | -                              | 0    | -      | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 1                              | -    | -      | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 0                              | -    | -      | 0    | -    |
| Peak Hour Factor           | 91     | 91                     | 91    | 91    | 91                         | 91   | 91   | 91     | 91                             | 91   | 91     | 91   | 91   |
| Heavy Vehicles, %          | 0      | 0                      | 4     | 4     | 5                          | 7    | 0    | 2      | 0                              | 4    | 7      | 0    | 0    |
| Mvmt Flow                  | 8      | 1                      | 575   | 25    | 23                         | 371  | 0    | 80     | 0                              | 86   | 16     | 3    | 1    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Major/Minor                | Major1 |                        |       |       | Major2                     |      |      | Minor1 |                                |      | Minor2 |      |      |
| Conflicting Flow All       | 371    | 371                    | 0     | 0     | 600                        | 0    | 0    | 839    | 1023                           | 300  | 723    | 1035 | 186  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 606    | 606                            | -    | 417    | 417  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 233    | 417                            | -    | 306    | 618  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -     | 4.2                        | -    | -    | 7.54   | 6.5                            | 6.98 | 7.64   | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -     | 2.25                       | -    | -    | 3.52   | 4                              | 3.34 | 3.57   | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 845    | 1199                   | -     | -     | 1228                       | -    | -    | 259    | 238                            | *884 | *305   | 234  | 831  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 749    | 679                            | -    | *571   | 595  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 749    | 595                            | -    | *827   | 670  | -    |
| Platoon blocked, %         |        |                        | -     | -     | 1                          | -    | -    |        |                                | 1    |        |      |      |
| Mov Cap-1 Maneuver         | 876    | 876                    | -     | -     | 1228                       | -    | -    | 250    | 230                            | *884 | *268   | 226  | 831  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -     | -                          | -    | -    | 447    | 386                            | -    | *406   | 381  | -    |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 738    | 669                            | -    | *562   | 584  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 730    | 584                            | -    | *736   | 660  | -    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Approach                   | EB     |                        |       |       | WB                         |      |      | NB     |                                |      | SB     |      |      |
| HCM Control Delay, s       | 0.2    |                        |       |       | 0.5                        |      |      | 12.1   |                                |      | 14.2   |      |      |
| HCM LOS                    |        |                        |       |       |                            |      |      | B      |                                |      | B      |      |      |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3 | EBL                        | EBT  | EBR  | WBL    | WBT                            | WBR  | SBLn1  |      |      |
| Capacity (veh/h)           | 447    |                        | -     | 884   | 876                        | -    | -    | 1228   | -                              | -    | 413    |      |      |
| HCM Lane V/C Ratio         | 0.179  |                        | -     | 0.097 | 0.001                      | -    | -    | 0.019  | -                              | -    | 0.051  |      |      |
| HCM Control Delay (s)      | 14.8   |                        | 0     | 9.5   | 9.1                        | 0.1  | -    | 8      | -                              | -    | 14.2   |      |      |
| HCM Lane LOS               | B      |                        | A     | A     | A                          | A    | -    | A      | -                              | -    | B      |      |      |
| HCM 95th %tile Q(veh)      | 0.6    |                        | -     | 0.3   | 0                          | -    | -    | 0.1    | -                              | -    | 0.2    |      |      |
| Notes                      |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |       | +: Computation Not Defined |      |      |        | *: All major volume in platoon |      |        |      |      |

Capacity Analysis Summary Sheets  
Existing Weekday Evening Peak Hour

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| Lane Configurations     |  |  |                                                                                   |                                                                                   |  |  |                                                                                    |                                                                                     |  |  |  |  |
| Traffic Volume (vph)    | 193                                                                               | 210                                                                               | 74                                                                                | 2                                                                                 | 268                                                                               | 268                                                                               | 154                                                                                | 1                                                                                   | 41                                                                                  | 797                                                                                 | 187                                                                                 | 105                                                                                 |
| Future Volume (vph)     | 193                                                                               | 210                                                                               | 74                                                                                | 2                                                                                 | 268                                                                               | 268                                                                               | 154                                                                                | 1                                                                                   | 41                                                                                  | 797                                                                                 | 187                                                                                 | 105                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                 | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 |                                                                                   | 165                                                                               |                                                                                   | 0                                                                                  |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 0                                                                                  |                                                                                     | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                    |                                                                                     | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.961                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.945                                                                             |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |
| Satd. Flow (prot)       | 3433                                                                              | 3327                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3312                                                                              | 0                                                                                  | 0                                                                                   | 1574                                                                                | 3725                                                                                | 1568                                                                                | 1770                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.102                                                                               |                                                                                     |                                                                                     | 0.188                                                                               |
| Satd. Flow (perm)       | 3433                                                                              | 3327                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3312                                                                              | 0                                                                                  | 0                                                                                   | 169                                                                                 | 3725                                                                                | 1568                                                                                | 350                                                                                 |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                                |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |
| Satd. Flow (RTOR)       |                                                                                   | 43                                                                                |                                                                                   |                                                                                   |                                                                                   | 99                                                                                |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 188                                                                                 |                                                                                     |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |                                                                                   | 45                                                                                |                                                                                    |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   |                                                                                   | 340                                                                               |                                                                                    |                                                                                     |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                    |                                                                                     |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                               | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 2%                                                                                | 4%                                                                                | 5%                                                                                | 0%                                                                                | 2%                                                                                | 3%                                                                                | 3%                                                                                 | 0%                                                                                  | 15%                                                                                 | 2%                                                                                  | 3%                                                                                  | 2%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 197                                                                               | 290                                                                               | 0                                                                                 | 0                                                                                 | 275                                                                               | 430                                                                               | 0                                                                                  | 0                                                                                   | 43                                                                                  | 813                                                                                 | 191                                                                                 | 107                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | Prot                                                                              | NA                                                                                |                                                                                    | pm+pt                                                                               | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 3.0                                                                               | 15.0                                                                              |                                                                                    | 3.0                                                                                 | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 9.5                                                                               | 25.0                                                                              |                                                                                    | 9.5                                                                                 | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 |
| Total Split (s)         | 20.0                                                                              | 34.0                                                                              |                                                                                   | 20.0                                                                              | 20.0                                                                              | 34.0                                                                              |                                                                                    | 13.0                                                                                | 13.0                                                                                | 43.0                                                                                |                                                                                     | 13.0                                                                                |
| Total Split (%)         | 18.2%                                                                             | 30.9%                                                                             |                                                                                   | 18.2%                                                                             | 18.2%                                                                             | 30.9%                                                                             |                                                                                    | 11.8%                                                                               | 11.8%                                                                               | 39.1%                                                                               |                                                                                     | 11.8%                                                                               |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 3.5                                                                               | 6.0                                                                               |                                                                                    | 3.5                                                                                 | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |                                                                                    | 1.0                                                                                 | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                    |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lead                                                                              | Lag                                                                               |                                                                                    | Lead                                                                                | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                    | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | None                                                                              | C-Max                                                                             |                                                                                    | None                                                                                | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                |
| Act Effect Green (s)    | 11.6                                                                              | 29.0                                                                              |                                                                                   |                                                                                   | 13.5                                                                              | 30.9                                                                              |                                                                                    |                                                                                     | 46.0                                                                                | 37.5                                                                                | 110.0                                                                               | 49.2                                                                                |
| Actuated g/C Ratio      | 0.11                                                                              | 0.26                                                                              |                                                                                   |                                                                                   | 0.12                                                                              | 0.28                                                                              |                                                                                    |                                                                                     | 0.42                                                                                | 0.34                                                                                | 1.00                                                                                | 0.45                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024



| Lane Group              | SBT   | SBR   |
|-------------------------|-------|-------|
| Lane Configurations     | ↑↑    | ↑     |
| Traffic Volume (vph)    | 1204  | 188   |
| Future Volume (vph)     | 1204  | 188   |
| Ideal Flow (vphpl)      | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    |
| Grade (%)               | 0%    |       |
| Storage Length (ft)     |       | 75    |
| Storage Lanes           |       | 1     |
| Taper Length (ft)       |       |       |
| Lane Util. Factor       | 0.95  | 1.00  |
| Ped Bike Factor         |       |       |
| Frt                     |       | 0.850 |
| Flt Protected           |       |       |
| Satd. Flow (prot)       | 3574  | 1524  |
| Flt Permitted           |       |       |
| Satd. Flow (perm)       | 3574  | 1524  |
| Right Turn on Red       |       | Yes   |
| Satd. Flow (RTOR)       |       | 188   |
| Link Speed (mph)        | 45    |       |
| Link Distance (ft)      | 964   |       |
| Travel Time (s)         | 14.6  |       |
| Confl. Peds. (#/hr)     |       |       |
| Confl. Bikes (#/hr)     |       |       |
| Peak Hour Factor        | 0.98  | 0.98  |
| Growth Factor           | 100%  | 100%  |
| Heavy Vehicles (%)      | 1%    | 6%    |
| Bus Blockages (#/hr)    | 0     | 0     |
| Parking (#/hr)          |       |       |
| Mid-Block Traffic (%)   | 0%    |       |
| Shared Lane Traffic (%) |       |       |
| Lane Group Flow (vph)   | 1229  | 192   |
| Turn Type               | NA    | Free  |
| Protected Phases        | 4     |       |
| Permitted Phases        |       | Free  |
| Detector Phase          | 4     |       |
| Switch Phase            |       |       |
| Minimum Initial (s)     | 15.0  |       |
| Minimum Split (s)       | 25.0  |       |
| Total Split (s)         | 43.0  |       |
| Total Split (%)         | 39.1% |       |
| Yellow Time (s)         | 4.5   |       |
| All-Red Time (s)        | 1.5   |       |
| Lost Time Adjust (s)    | 0.0   |       |
| Total Lost Time (s)     | 6.0   |       |
| Lead/Lag                | Lag   |       |
| Lead-Lag Optimize?      | Yes   |       |
| Recall Mode             | Max   |       |
| Act Effct Green (s)     | 42.6  | 110.0 |
| Actuated g/C Ratio      | 0.39  | 1.00  |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| v/c Ratio               | 0.54                                                                              | 0.32                                                                              |                                                                                   |                                                                                   | 0.65                                                                              | 0.43                                                                              |                                                                                    |                                                                                     | 0.27                                                                                | 0.64                                                                                | 0.12                                                                                | 0.41                                                                                |
| Control Delay           | 52.1                                                                              | 29.2                                                                              |                                                                                   |                                                                                   | 53.4                                                                              | 26.5                                                                              |                                                                                    |                                                                                     | 20.5                                                                                | 33.5                                                                                | 0.2                                                                                 | 21.7                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 52.1                                                                              | 29.2                                                                              |                                                                                   |                                                                                   | 53.4                                                                              | 26.5                                                                              |                                                                                    |                                                                                     | 20.5                                                                                | 33.5                                                                                | 0.2                                                                                 | 21.7                                                                                |
| LOS                     | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 | C                                                                                 |                                                                                    |                                                                                     | C                                                                                   | C                                                                                   | A                                                                                   | C                                                                                   |
| Approach Delay          |                                                                                   | 38.5                                                                              |                                                                                   |                                                                                   |                                                                                   | 37.0                                                                              |                                                                                    |                                                                                     |                                                                                     | 26.9                                                                                |                                                                                     |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                    |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Queue Length 50th (ft)  | 69                                                                                | 73                                                                                |                                                                                   |                                                                                   | 96                                                                                | 98                                                                                |                                                                                    |                                                                                     | 16                                                                                  | 254                                                                                 | 0                                                                                   | 42                                                                                  |
| Queue Length 95th (ft)  | 103                                                                               | 114                                                                               |                                                                                   |                                                                                   | 138                                                                               | 153                                                                               |                                                                                    |                                                                                     | 37                                                                                  | 322                                                                                 | 0                                                                                   | 75                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 260                                                                               |                                                                                    |                                                                                     |                                                                                     | 479                                                                                 |                                                                                     |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                    |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Base Capacity (vph)     | 483                                                                               | 907                                                                               |                                                                                   |                                                                                   | 483                                                                               | 1001                                                                              |                                                                                    |                                                                                     | 181                                                                                 | 1268                                                                                | 1568                                                                                | 266                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.41                                                                              | 0.32                                                                              |                                                                                   |                                                                                   | 0.57                                                                              | 0.43                                                                              |                                                                                    |                                                                                     | 0.24                                                                                | 0.64                                                                                | 0.12                                                                                | 0.40                                                                                |

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 33.7

Intersection LOS: C

Intersection Capacity Utilization 76.0%

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: 1: 98th Street & Central Avenue

|                                                                                        |                                                                                            |                                                                                        |                                                                                         |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 20 s                                                                                   | 34 s                                                                                       | 13 s                                                                                   | 43 s                                                                                    |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 20 s                                                                                   | 34 s                                                                                       | 13 s                                                                                   | 43 s                                                                                    |



Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024



| Lane Group              | SBT  | SBR  |
|-------------------------|------|------|
| v/c Ratio               | 0.89 | 0.13 |
| Control Delay           | 42.0 | 0.2  |
| Queue Delay             | 0.0  | 0.0  |
| Total Delay             | 42.0 | 0.2  |
| LOS                     | D    | A    |
| Approach Delay          | 35.3 |      |
| Approach LOS            | D    |      |
| Queue Length 50th (ft)  | 449  | 0    |
| Queue Length 95th (ft)  | #621 | 0    |
| Internal Link Dist (ft) | 884  |      |
| Turn Bay Length (ft)    |      | 75   |
| Base Capacity (vph)     | 1384 | 1524 |
| Starvation Cap Reductn  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    |
| Reduced v/c Ratio       | 0.89 | 0.13 |
| Intersection Summary    |      |      |

# HCM 6th TWSC

## 2: Central Avenue

02/23/2024

| Intersection               |        |                        |       |       |        |                            |      |       |        |                                |       |        |      |      |
|----------------------------|--------|------------------------|-------|-------|--------|----------------------------|------|-------|--------|--------------------------------|-------|--------|------|------|
| Int Delay, s/veh           | 1.8    |                        |       |       |        |                            |      |       |        |                                |       |        |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR   | WBU    | WBL                        | WBT  | WBR   | NBL    | NBT                            | NBR   | SBL    | SBT  | SBR  |
| Lane Configurations        |        |                        | ↕↕    |       |        | ↕                          | ↕↕   |       | ↕      | ↕                              | ↕     |        | ↕    |      |
| Traffic Vol, veh/h         | 7      | 4                      | 457   | 45    | 1      | 41                         | 565  | 8     | 19     | 0                              | 37    | 49     | 6    | 2    |
| Future Vol, veh/h          | 7      | 4                      | 457   | 45    | 1      | 41                         | 565  | 8     | 19     | 0                              | 37    | 49     | 6    | 2    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0     | 0      | 0                          | 0    | 0     | 0      | 0                              | 0     | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free  | Free   | Free                       | Free | Free  | Stop   | Stop                           | Stop  | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None  | -      | -                          | -    | None  | -      | -                              | None  | -      | -    | None |
| Storage Length             | -      | -                      | -     | -     | -      | 90                         | -    | -     | 0      | -                              | 0     | -      | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -     | -      | -                          | 0    | -     | -      | 1                              | -     | -      | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -     | -      | -                          | 0    | -     | -      | 0                              | -     | -      | 0    | -    |
| Peak Hour Factor           | 95     | 95                     | 95    | 95    | 95     | 95                         | 95   | 95    | 95     | 95                             | 95    | 95     | 95   | 95   |
| Heavy Vehicles, %          | 0      | 0                      | 3     | 2     | 0      | 0                          | 2    | 0     | 0      | 0                              | 0     | 0      | 0    | 0    |
| Mvmt Flow                  | 7      | 4                      | 481   | 47    | 1      | 43                         | 595  | 8     | 20     | 0                              | 39    | 52     | 6    | 2    |
|                            |        |                        |       |       |        |                            |      |       |        |                                |       |        |      |      |
| Major/Minor                | Major1 |                        |       |       | Major2 |                            |      |       | Minor1 |                                |       | Minor2 |      |      |
| Conflicting Flow All       | 603    | 603                    | 0     | 0     | 528    | 528                        | 0    | 0     | 916    | 1218                           | 264   | 950    | 1237 | 302  |
| Stage 1                    | -      | -                      | -     | -     | -      | -                          | -    | -     | 527    | 527                            | -     | 687    | 687  | -    |
| Stage 2                    | -      | -                      | -     | -     | -      | -                          | -    | -     | 389    | 691                            | -     | 263    | 550  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -     | 6.4    | 4.1                        | -    | -     | 7.5    | 6.5                            | 6.9   | 7.5    | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -     | -      | -                          | -    | -     | 6.5    | 5.5                            | -     | 6.5    | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -     | -      | -                          | -    | -     | 6.5    | 5.5                            | -     | 6.5    | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -     | 2.5    | 2.2                        | -    | -     | 3.5    | 4                              | 3.3   | 3.5    | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 603    | 984                    | -     | -     | 1112   | 1309                       | -    | -     | 230    | 182                            | *915  | *218   | 177  | 700  |
| Stage 1                    | -      | -                      | -     | -     | -      | -                          | -    | -     | 800    | 715                            | -     | *408   | 450  | -    |
| Stage 2                    | -      | -                      | -     | -     | -      | -                          | -    | -     | 612    | 449                            | -     | *863   | 696  | -    |
| Platoon blocked, %         |        |                        | -     | -     | 1      | 1                          | -    | -     |        |                                | 1     |        |      |      |
| Mov Cap-1 Maneuver         | 700    | 700                    | -     | -     | 1302   | 1302                       | -    | -     | 216    | 172                            | *915  | *200   | 167  | 700  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -     | -      | -                          | -    | -     | 395    | 312                            | -     | *316   | 308  | -    |
| Stage 1                    | -      | -                      | -     | -     | -      | -                          | -    | -     | 781    | 697                            | -     | *398   | 435  | -    |
| Stage 2                    | -      | -                      | -     | -     | -      | -                          | -    | -     | 581    | 434                            | -     | *807   | 679  | -    |
|                            |        |                        |       |       |        |                            |      |       |        |                                |       |        |      |      |
| Approach                   | EB     |                        |       |       | WB     |                            |      |       | NB     |                                |       | SB     |      |      |
| HCM Control Delay, s       | 0.4    |                        |       |       | 0.5    |                            |      |       | 11     |                                |       | 18.8   |      |      |
| HCM LOS                    |        |                        |       |       |        |                            |      |       | B      |                                |       | C      |      |      |
|                            |        |                        |       |       |        |                            |      |       |        |                                |       |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3 | EBL    | EBT                        | EBR  | WBL   | WBT    | WBR                            | SBLn1 |        |      |      |
| Capacity (veh/h)           | 395    |                        | -     | 915   | 700    | -                          | -    | 1302  | -      | -                              | 321   |        |      |      |
| HCM Lane V/C Ratio         | 0.051  |                        | -     | 0.043 | 0.006  | -                          | -    | 0.034 | -      | -                              | 0.187 |        |      |      |
| HCM Control Delay (s)      | 14.6   |                        | 0     | 9.1   | 10.2   | 0.2                        | -    | 7.9   | -      | -                              | 18.8  |        |      |      |
| HCM Lane LOS               | B      |                        | A     | A     | B      | A                          | -    | A     | -      | -                              | C     |        |      |      |
| HCM 95th %tile Q(veh)      | 0.2    |                        | -     | 0.1   | 0      | -                          | -    | 0.1   | -      | -                              | 0.7   |        |      |      |
| Notes                      |        |                        |       |       |        |                            |      |       |        |                                |       |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |       |        | +: Computation Not Defined |      |       |        | *: All major volume in platoon |       |        |      |      |

Capacity Analysis Summary Sheets  
Year 2024 No-Build Weekday Morning Peak Hour

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |                                                                                   |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)    | 312                                                                               | 225                                                                               | 42                                                                                | 118                                                                               | 152                                                                               | 178                                                                               | 33                                                                                 | 1500                                                                                | 268                                                                                 | 78                                                                                  | 451                                                                                 | 129                                                                                 |
| Future Volume (vph)     | 312                                                                               | 225                                                                               | 42                                                                                | 118                                                                               | 152                                                                               | 178                                                                               | 33                                                                                 | 1500                                                                                | 268                                                                                 | 78                                                                                  | 451                                                                                 | 129                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 2000                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                 | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 | 165                                                                               |                                                                                   | 0                                                                                 | 220                                                                                |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     | 75                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 | 2                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                  |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                   | 180                                                                                |                                                                                     |                                                                                     | 185                                                                                 |                                                                                     |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                               | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.976                                                                             |                                                                                   |                                                                                   | 0.919                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)       | 3400                                                                              | 3388                                                                              | 0                                                                                 | 3303                                                                              | 3176                                                                              | 0                                                                                 | 1703                                                                               | 3762                                                                                | 1553                                                                                | 1656                                                                                | 3539                                                                                | 1524                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.456                                                                              |                                                                                     |                                                                                     | 0.066                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)       | 3400                                                                              | 3388                                                                              | 0                                                                                 | 3303                                                                              | 3176                                                                              | 0                                                                                 | 817                                                                                | 3762                                                                                | 1553                                                                                | 115                                                                                 | 3539                                                                                | 1524                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)       |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 119                                                                               |                                                                                   |                                                                                    |                                                                                     | 197                                                                                 |                                                                                     |                                                                                     | 197                                                                                 |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   | 45                                                                                |                                                                                   |                                                                                    | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   | 340                                                                               |                                                                                   |                                                                                    | 559                                                                                 |                                                                                     |                                                                                     | 964                                                                                 |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                   |                                                                                    | 8.5                                                                                 |                                                                                     |                                                                                     | 14.6                                                                                |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                               | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 3%                                                                                | 4%                                                                                | 4%                                                                                | 6%                                                                                | 5%                                                                                | 4%                                                                                | 6%                                                                                 | 1%                                                                                  | 4%                                                                                  | 9%                                                                                  | 2%                                                                                  | 6%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 325                                                                               | 278                                                                               | 0                                                                                 | 123                                                                               | 343                                                                               | 0                                                                                 | 34                                                                                 | 1563                                                                                | 279                                                                                 | 81                                                                                  | 470                                                                                 | 134                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | NA                                                                                |                                                                                   | pm+pt                                                                              | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  | Free                                                                                |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 8                                                                                  |                                                                                     | Free                                                                                | 4                                                                                   |                                                                                     | Free                                                                                |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |                                                                                     |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 15.0                                                                              |                                                                                   | 3.0                                                                                | 15.0                                                                                |                                                                                     | 3.0                                                                                 | 15.0                                                                                |                                                                                     |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                                | 24.0                                                                                |                                                                                     | 9.5                                                                                 | 25.0                                                                                |                                                                                     |
| Total Split (s)         | 22.0                                                                              | 40.0                                                                              |                                                                                   | 16.0                                                                              | 34.0                                                                              |                                                                                   | 12.0                                                                               | 62.0                                                                                |                                                                                     | 12.0                                                                                | 62.0                                                                                |                                                                                     |
| Total Split (%)         | 16.9%                                                                             | 30.8%                                                                             |                                                                                   | 12.3%                                                                             | 26.2%                                                                             |                                                                                   | 9.2%                                                                               | 47.7%                                                                               |                                                                                     | 9.2%                                                                                | 47.7%                                                                               |                                                                                     |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                                | 4.5                                                                                 |                                                                                     | 3.5                                                                                 | 4.5                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                                | 1.5                                                                                 |                                                                                     | 1.0                                                                                 | 1.5                                                                                 |                                                                                     |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                   | 4.5                                                                                | 6.0                                                                                 |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                               | Max                                                                                 |                                                                                     | None                                                                                | Max                                                                                 |                                                                                     |
| Act Effect Green (s)    | 16.3                                                                              | 34.6                                                                              |                                                                                   | 9.9                                                                               | 28.2                                                                              |                                                                                   | 65.4                                                                               | 58.4                                                                                | 130.0                                                                               | 67.0                                                                                | 61.0                                                                                | 130.0                                                                               |
| Actuated g/C Ratio      | 0.13                                                                              | 0.27                                                                              |                                                                                   | 0.08                                                                              | 0.22                                                                              |                                                                                   | 0.50                                                                               | 0.45                                                                                | 1.00                                                                                | 0.52                                                                                | 0.47                                                                                | 1.00                                                                                |

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| v/c Ratio               | 0.76                                                                              | 0.30                                                                              |                                                                                   | 0.49                                                                              | 0.44                                                                              |                                                                                   | 0.07                                                                               | 0.93                                                                                | 0.18                                                                                | 0.56                                                                                | 0.28                                                                                | 0.09                                                                                |
| Control Delay           | 67.4                                                                              | 37.2                                                                              |                                                                                   | 64.1                                                                              | 30.5                                                                              |                                                                                   | 14.9                                                                               | 44.8                                                                                | 0.3                                                                                 | 34.4                                                                                | 22.6                                                                                | 0.1                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 67.4                                                                              | 37.2                                                                              |                                                                                   | 64.1                                                                              | 30.5                                                                              |                                                                                   | 14.9                                                                               | 44.8                                                                                | 0.3                                                                                 | 34.4                                                                                | 22.6                                                                                | 0.1                                                                                 |
| LOS                     | E                                                                                 | D                                                                                 |                                                                                   | E                                                                                 | C                                                                                 |                                                                                   | B                                                                                  | D                                                                                   | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 53.5                                                                              |                                                                                   |                                                                                   | 39.4                                                                              |                                                                                   |                                                                                    | 37.6                                                                                |                                                                                     |                                                                                     | 19.6                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Queue Length 50th (ft)  | 137                                                                               | 93                                                                                |                                                                                   | 52                                                                                | 86                                                                                |                                                                                   | 13                                                                                 | 664                                                                                 | 0                                                                                   | 32                                                                                  | 133                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | 189                                                                               | 135                                                                               |                                                                                   | 84                                                                                | 135                                                                               |                                                                                   | 30                                                                                 | #833                                                                                | 0                                                                                   | 76                                                                                  | 176                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   | 260                                                                               |                                                                                   |                                                                                    | 479                                                                                 |                                                                                     |                                                                                     | 884                                                                                 |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                   | 220                                                                                |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     | 75                                                                                  |
| Base Capacity (vph)     | 457                                                                               | 913                                                                               |                                                                                   | 292                                                                               | 782                                                                               |                                                                                   | 465                                                                                | 1689                                                                                | 1553                                                                                | 148                                                                                 | 1660                                                                                | 1524                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.71                                                                              | 0.30                                                                              |                                                                                   | 0.42                                                                              | 0.44                                                                              |                                                                                   | 0.07                                                                               | 0.93                                                                                | 0.18                                                                                | 0.55                                                                                | 0.28                                                                                | 0.09                                                                                |

### Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 39 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.1

Intersection LOS: D

Intersection Capacity Utilization 83.4%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

### Splits and Phases: 1: 98th Street & Central Avenue

|                                                                                        |                                                                                            |                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 16 s                                                                                   | 40 s                                                                                       | 12 s                                                                                   | 62 s                                                                                   |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 22 s                                                                                   | 34 s                                                                                       | 12 s                                                                                   | 62 s                                                                                   |

HCM 6th TWSC  
2: Central Avenue

02/23/2024

| Intersection               |                   |                        |      |      |                            |       |      |        |                                |       |        |       |      |
|----------------------------|-------------------|------------------------|------|------|----------------------------|-------|------|--------|--------------------------------|-------|--------|-------|------|
| Int Delay, s/veh           | 2.2               |                        |      |      |                            |       |      |        |                                |       |        |       |      |
| Movement                   | EBU               | EBL                    | EBT  | EBR  | WBL                        | WBT   | WBR  | NBL    | NBT                            | NBR   | SBL    | SBT   | SBR  |
| Lane Configurations        |                   |                        | ↕↕   |      | ↕                          | ↕↕    |      | ↕      | ↕                              | ↕     |        | ↕     |      |
| Traffic Vol, veh/h         | 7                 | 1                      | 556  | 24   | 22                         | 396   | 0    | 76     | 0                              | 81    | 16     | 3     | 1    |
| Future Vol, veh/h          | 7                 | 1                      | 556  | 24   | 22                         | 396   | 0    | 76     | 0                              | 81    | 16     | 3     | 1    |
| Conflicting Peds, #/hr     | 0                 | 0                      | 0    | 0    | 0                          | 0     | 0    | 0      | 0                              | 0     | 0      | 0     | 0    |
| Sign Control               | Free              | Free                   | Free | Free | Free                       | Free  | Free | Stop   | Stop                           | Stop  | Stop   | Stop  | Stop |
| RT Channelized             | -                 | -                      | -    | None | -                          | -     | None | -      | -                              | None  | -      | -     | None |
| Storage Length             | -                 | -                      | -    | -    | 90                         | -     | -    | 0      | -                              | 0     | -      | -     | -    |
| Veh in Median Storage, #   | -                 | -                      | 0    | -    | -                          | 0     | -    | -      | 1                              | -     | -      | 1     | -    |
| Grade, %                   | -                 | -                      | 0    | -    | -                          | 0     | -    | -      | 0                              | -     | -      | 0     | -    |
| Peak Hour Factor           | 91                | 91                     | 91   | 91   | 91                         | 91    | 91   | 91     | 91                             | 91    | 91     | 91    | 91   |
| Heavy Vehicles, %          | 0                 | 0                      | 4    | 4    | 5                          | 7     | 0    | 2      | 0                              | 4     | 7      | 0     | 0    |
| Mvmt Flow                  | 8                 | 1                      | 611  | 26   | 24                         | 435   | 0    | 84     | 0                              | 89    | 18     | 3     | 1    |
|                            |                   |                        |      |      |                            |       |      |        |                                |       |        |       |      |
| Major/Minor                | Major1            |                        |      |      | Major2                     |       |      | Minor1 |                                |       | Minor2 |       |      |
| Conflicting Flow All       | 435               | 435                    | 0    | 0    | 637                        | 0     | 0    | 909    | 1125                           | 319   | 807    | 1138  | 218  |
| Stage 1                    | -                 | -                      | -    | -    | -                          | -     | -    | 642    | 642                            | -     | 483    | 483   | -    |
| Stage 2                    | -                 | -                      | -    | -    | -                          | -     | -    | 267    | 483                            | -     | 324    | 655   | -    |
| Critical Hdwy              | 6.4               | 4.1                    | -    | -    | 4.2                        | -     | -    | 7.54   | 6.5                            | 6.98  | 7.64   | 6.5   | 6.9  |
| Critical Hdwy Stg 1        | -                 | -                      | -    | -    | -                          | -     | -    | 6.54   | 5.5                            | -     | 6.64   | 5.5   | -    |
| Critical Hdwy Stg 2        | -                 | -                      | -    | -    | -                          | -     | -    | 6.54   | 5.5                            | -     | 6.64   | 5.5   | -    |
| Follow-up Hdwy             | 2.5               | 2.2                    | -    | -    | 2.25                       | -     | -    | 3.52   | 4                              | 3.34  | 3.57   | 4     | 3.3  |
| Pot Cap-1 Maneuver         | 770               | 1135                   | -    | -    | 1231                       | -     | -    | 230    | 207                            | *861  | *264   | 203   | 792  |
| Stage 1                    | -                 | -                      | -    | -    | -                          | -     | -    | 763    | 684                            | -     | *521   | 556   | -    |
| Stage 2                    | -                 | -                      | -    | -    | -                          | -     | -    | 715    | 556                            | -     | *805   | 673   | -    |
| Platoon blocked, %         |                   |                        | -    | -    | 1                          | -     | -    |        |                                | 1     |        |       |      |
| Mov Cap-1 Maneuver         | 801               | 801                    | -    | -    | 1231                       | -     | -    | 222    | 200                            | *861  | *230   | 196   | 792  |
| Mov Cap-2 Maneuver         | -                 | -                      | -    | -    | -                          | -     | -    | 428    | 362                            | -     | *369   | 357   | -    |
| Stage 1                    | -                 | -                      | -    | -    | -                          | -     | -    | 750    | 672                            | -     | *512   | 545   | -    |
| Stage 2                    | -                 | -                      | -    | -    | -                          | -     | -    | 696    | 545                            | -     | *710   | 662   | -    |
|                            |                   |                        |      |      |                            |       |      |        |                                |       |        |       |      |
| Approach                   | EB                |                        |      |      | WB                         |       |      | NB     |                                |       | SB     |       |      |
| HCM Control Delay, s       | 0.3               |                        |      |      | 0.4                        |       |      | 12.5   |                                |       | 15.1   |       |      |
| HCM LOS                    |                   |                        |      |      |                            |       |      | B      |                                |       | C      |       |      |
|                            |                   |                        |      |      |                            |       |      |        |                                |       |        |       |      |
| Minor Lane/Major Mvmt      | NBLn1 NBLn2 NBLn3 |                        |      | EBL  | EBT                        | EBR   | WBL  | WBT    | WBR                            | SBLn1 |        |       |      |
| Capacity (veh/h)           | 428               |                        |      | -    | 861                        | 801   | -    | -      | 1231                           | -     | -      | 377   |      |
| HCM Lane V/C Ratio         | 0.195             |                        |      | -    | 0.103                      | 0.001 | -    | -      | 0.02                           | -     | -      | 0.058 |      |
| HCM Control Delay (s)      | 15.4              |                        |      | 0    | 9.7                        | 9.5   | 0.2  | -      | 8                              | -     | -      | 15.1  |      |
| HCM Lane LOS               | C                 |                        |      | A    | A                          | A     | A    | -      | A                              | -     | -      | C     |      |
| HCM 95th %tile Q(veh)      | 0.7               |                        |      | -    | 0.3                        | 0     | -    | -      | 0.1                            | -     | -      | 0.2   |      |
|                            |                   |                        |      |      |                            |       |      |        |                                |       |        |       |      |
| Notes                      |                   |                        |      |      |                            |       |      |        |                                |       |        |       |      |
| ~: Volume exceeds capacity |                   | \$: Delay exceeds 300s |      |      | +: Computation Not Defined |       |      |        | *: All major volume in platoon |       |        |       |      |



Capacity Analysis Summary Sheets  
Year 2024 No-Build Weekday Evening Peak Hour

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| Lane Configurations     |  |  |                                                                                   |                                                                                   |  |  |                                                                                    |                                                                                     |  |  |  |  |
| Traffic Volume (vph)    | 205                                                                               | 218                                                                               | 77                                                                                | 2                                                                                 | 279                                                                               | 279                                                                               | 176                                                                                | 1                                                                                   | 43                                                                                  | 837                                                                                 | 194                                                                                 | 153                                                                                 |
| Future Volume (vph)     | 205                                                                               | 218                                                                               | 77                                                                                | 2                                                                                 | 279                                                                               | 279                                                                               | 176                                                                                | 1                                                                                   | 43                                                                                  | 837                                                                                 | 194                                                                                 | 153                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                 | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 |                                                                                   | 165                                                                               |                                                                                   | 0                                                                                  |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 0                                                                                  |                                                                                     | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                    |                                                                                     | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.961                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.942                                                                             |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |
| Satd. Flow (prot)       | 3433                                                                              | 3327                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3302                                                                              | 0                                                                                  | 0                                                                                   | 1574                                                                                | 3725                                                                                | 1568                                                                                | 1770                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.105                                                                               |                                                                                     |                                                                                     | 0.165                                                                               |
| Satd. Flow (perm)       | 3433                                                                              | 3327                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3302                                                                              | 0                                                                                  | 0                                                                                   | 174                                                                                 | 3725                                                                                | 1568                                                                                | 307                                                                                 |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                                |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |
| Satd. Flow (RTOR)       |                                                                                   | 43                                                                                |                                                                                   |                                                                                   |                                                                                   | 120                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 188                                                                                 |                                                                                     |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |                                                                                   | 45                                                                                |                                                                                    |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   |                                                                                   | 340                                                                               |                                                                                    |                                                                                     |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                    |                                                                                     |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                               | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 2%                                                                                | 4%                                                                                | 5%                                                                                | 0%                                                                                | 2%                                                                                | 3%                                                                                | 3%                                                                                 | 0%                                                                                  | 15%                                                                                 | 2%                                                                                  | 3%                                                                                  | 2%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 209                                                                               | 301                                                                               | 0                                                                                 | 0                                                                                 | 287                                                                               | 465                                                                               | 0                                                                                  | 0                                                                                   | 45                                                                                  | 854                                                                                 | 198                                                                                 | 156                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | Prot                                                                              | NA                                                                                |                                                                                    | pm+pt                                                                               | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 3.0                                                                               | 15.0                                                                              |                                                                                    | 3.0                                                                                 | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 9.5                                                                               | 25.0                                                                              |                                                                                    | 9.5                                                                                 | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 |
| Total Split (s)         | 20.0                                                                              | 34.0                                                                              |                                                                                   | 20.0                                                                              | 20.0                                                                              | 34.0                                                                              |                                                                                    | 13.0                                                                                | 13.0                                                                                | 43.0                                                                                |                                                                                     | 13.0                                                                                |
| Total Split (%)         | 18.2%                                                                             | 30.9%                                                                             |                                                                                   | 18.2%                                                                             | 18.2%                                                                             | 30.9%                                                                             |                                                                                    | 11.8%                                                                               | 11.8%                                                                               | 39.1%                                                                               |                                                                                     | 11.8%                                                                               |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 3.5                                                                               | 6.0                                                                               |                                                                                    | 3.5                                                                                 | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |                                                                                    | 1.0                                                                                 | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                    |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lead                                                                              | Lag                                                                               |                                                                                    | Lead                                                                                | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                    | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | None                                                                              | C-Max                                                                             |                                                                                    | None                                                                                | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                |
| Act Effect Green (s)    | 12.0                                                                              | 28.8                                                                              |                                                                                   |                                                                                   | 13.7                                                                              | 30.5                                                                              |                                                                                    |                                                                                     | 45.8                                                                                | 37.2                                                                                | 110.0                                                                               | 48.7                                                                                |
| Actuated g/C Ratio      | 0.11                                                                              | 0.26                                                                              |                                                                                   |                                                                                   | 0.12                                                                              | 0.28                                                                              |                                                                                    |                                                                                     | 0.42                                                                                | 0.34                                                                                | 1.00                                                                                | 0.44                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024



| Lane Group              | SBT   | SBR   |
|-------------------------|-------|-------|
| Lane Configurations     | ↑↑    | ↑     |
| Traffic Volume (vph)    | 1276  | 208   |
| Future Volume (vph)     | 1276  | 208   |
| Ideal Flow (vphpl)      | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    |
| Grade (%)               | 0%    |       |
| Storage Length (ft)     |       | 75    |
| Storage Lanes           |       | 1     |
| Taper Length (ft)       |       |       |
| Lane Util. Factor       | 0.95  | 1.00  |
| Ped Bike Factor         |       |       |
| Frt                     |       | 0.850 |
| Flt Protected           |       |       |
| Satd. Flow (prot)       | 3574  | 1524  |
| Flt Permitted           |       |       |
| Satd. Flow (perm)       | 3574  | 1524  |
| Right Turn on Red       |       | Yes   |
| Satd. Flow (RTOR)       |       | 188   |
| Link Speed (mph)        | 45    |       |
| Link Distance (ft)      | 964   |       |
| Travel Time (s)         | 14.6  |       |
| Confl. Peds. (#/hr)     |       |       |
| Confl. Bikes (#/hr)     |       |       |
| Peak Hour Factor        | 0.98  | 0.98  |
| Growth Factor           | 100%  | 100%  |
| Heavy Vehicles (%)      | 1%    | 6%    |
| Bus Blockages (#/hr)    | 0     | 0     |
| Parking (#/hr)          |       |       |
| Mid-Block Traffic (%)   | 0%    |       |
| Shared Lane Traffic (%) |       |       |
| Lane Group Flow (vph)   | 1302  | 212   |
| Turn Type               | NA    | Free  |
| Protected Phases        | 4     |       |
| Permitted Phases        |       | Free  |
| Detector Phase          | 4     |       |
| Switch Phase            |       |       |
| Minimum Initial (s)     | 15.0  |       |
| Minimum Split (s)       | 25.0  |       |
| Total Split (s)         | 43.0  |       |
| Total Split (%)         | 39.1% |       |
| Yellow Time (s)         | 4.5   |       |
| All-Red Time (s)        | 1.5   |       |
| Lost Time Adjust (s)    | 0.0   |       |
| Total Lost Time (s)     | 6.0   |       |
| Lead/Lag                | Lag   |       |
| Lead-Lag Optimize?      | Yes   |       |
| Recall Mode             | Max   |       |
| Act Effct Green (s)     | 40.4  | 110.0 |
| Actuated g/C Ratio      | 0.37  | 1.00  |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| v/c Ratio               | 0.56                                                                              | 0.33                                                                              |                                                                                   |                                                                                   | 0.67                                                                              | 0.46                                                                              |                                                                                    |                                                                                     | 0.28                                                                                | 0.68                                                                                | 0.13                                                                                | 0.63                                                                                |
| Control Delay           | 52.0                                                                              | 29.6                                                                              |                                                                                   |                                                                                   | 53.9                                                                              | 26.2                                                                              |                                                                                    |                                                                                     | 20.7                                                                                | 34.6                                                                                | 0.2                                                                                 | 30.0                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 52.0                                                                              | 29.6                                                                              |                                                                                   |                                                                                   | 53.9                                                                              | 26.2                                                                              |                                                                                    |                                                                                     | 20.7                                                                                | 34.6                                                                                | 0.2                                                                                 | 30.0                                                                                |
| LOS                     | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   | D                                                                                 | C                                                                                 |                                                                                    |                                                                                     | C                                                                                   | C                                                                                   | A                                                                                   | C                                                                                   |
| Approach Delay          |                                                                                   | 38.8                                                                              |                                                                                   |                                                                                   |                                                                                   | 36.8                                                                              |                                                                                    |                                                                                     |                                                                                     | 27.8                                                                                |                                                                                     |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                    |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Queue Length 50th (ft)  | 73                                                                                | 77                                                                                |                                                                                   |                                                                                   | 100                                                                               | 104                                                                               |                                                                                    |                                                                                     | 17                                                                                  | 271                                                                                 | 0                                                                                   | 62                                                                                  |
| Queue Length 95th (ft)  | 108                                                                               | 119                                                                               |                                                                                   |                                                                                   | 143                                                                               | 162                                                                               |                                                                                    |                                                                                     | 38                                                                                  | 342                                                                                 | 0                                                                                   | #107                                                                                |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 260                                                                               |                                                                                    |                                                                                     |                                                                                     | 479                                                                                 |                                                                                     |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                    |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Base Capacity (vph)     | 483                                                                               | 901                                                                               |                                                                                   |                                                                                   | 483                                                                               | 1002                                                                              |                                                                                    |                                                                                     | 182                                                                                 | 1258                                                                                | 1568                                                                                | 248                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.43                                                                              | 0.33                                                                              |                                                                                   |                                                                                   | 0.59                                                                              | 0.46                                                                              |                                                                                    |                                                                                     | 0.25                                                                                | 0.68                                                                                | 0.13                                                                                | 0.63                                                                                |

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 39.7

Intersection LOS: D

Intersection Capacity Utilization 78.3%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: 98th Street & Central Avenue

|                                                                                        |                                                                                            |                                                                                        |                                                                                         |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 20 s                                                                                   | 34 s                                                                                       | 13 s                                                                                   | 43 s                                                                                    |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 20 s                                                                                   | 34 s                                                                                       | 13 s                                                                                   | 43 s                                                                                    |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024



| Lane Group              | SBT  | SBR  |
|-------------------------|------|------|
| v/c Ratio               | 0.99 | 0.14 |
| Control Delay           | 59.1 | 0.2  |
| Queue Delay             | 0.0  | 0.0  |
| Total Delay             | 59.1 | 0.2  |
| LOS                     | E    | A    |
| Approach Delay          | 48.9 |      |
| Approach LOS            | D    |      |
| Queue Length 50th (ft)  | ~526 | 0    |
| Queue Length 95th (ft)  | #680 | 0    |
| Internal Link Dist (ft) | 884  |      |
| Turn Bay Length (ft)    |      | 75   |
| Base Capacity (vph)     | 1312 | 1524 |
| Starvation Cap Reductn  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    |
| Reduced v/c Ratio       | 0.99 | 0.14 |
| Intersection Summary    |      |      |

# HCM 6th TWSC

## 2: Central Avenue

02/23/2024

| Intersection               |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
|----------------------------|--------|------------------------|-------|--------|----------------------------|------|--------|-------|--------------------------------|--------|-------|------|------|------|
| Int Delay, s/veh           | 1.8    |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR    | WBU                        | WBL  | WBT    | WBR   | NBL                            | NBT    | NBR   | SBL  | SBT  | SBR  |
| Lane Configurations        |        |                        | ↕↕    |        |                            | ↕    | ↕↕     |       | ↕                              | ↕      | ↗     |      | ↕↕   |      |
| Traffic Vol, veh/h         | 7      | 4                      | 519   | 47     | 1                          | 43   | 604    | 8     | 20                             | 0      | 38    | 51   | 6    | 2    |
| Future Vol, veh/h          | 7      | 4                      | 519   | 47     | 1                          | 43   | 604    | 8     | 20                             | 0      | 38    | 51   | 6    | 2    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0      | 0                          | 0    | 0      | 0     | 0                              | 0      | 0     | 0    | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free   | Free                       | Free | Free   | Free  | Stop                           | Stop   | Stop  | Stop | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None   | -                          | -    | -      | None  | -                              | -      | None  | -    | -    | None |
| Storage Length             | -      | -                      | -     | -      | -                          | 90   | -      | -     | 0                              | -      | 0     | -    | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -      | -                          | -    | 0      | -     | -                              | 1      | -     | -    | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -      | -                          | -    | 0      | -     | -                              | 0      | -     | -    | 0    | -    |
| Peak Hour Factor           | 95     | 95                     | 95    | 95     | 95                         | 95   | 95     | 95    | 95                             | 95     | 95    | 95   | 95   | 95   |
| Heavy Vehicles, %          | 0      | 0                      | 3     | 2      | 0                          | 0    | 2      | 0     | 0                              | 0      | 0     | 0    | 0    | 0    |
| Mvmt Flow                  | 7      | 4                      | 546   | 49     | 1                          | 45   | 636    | 8     | 21                             | 0      | 40    | 54   | 6    | 2    |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Major/Minor                | Major1 |                        |       | Major2 |                            |      | Minor1 |       |                                | Minor2 |       |      |      |      |
| Conflicting Flow All       | 644    | 644                    | 0     | 0      | 596                        | 595  | 0      | 0     | 1006                           | 1329   | 298   | 1027 | 1349 | 322  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 593                            | 593    | -     | 732  | 732  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 413                            | 736    | -     | 295  | 617  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -      | 6.4                        | 4.1  | -      | -     | 7.5                            | 6.5    | 6.9   | 7.5  | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -      | -                          | -    | -      | -     | 6.5                            | 5.5    | -     | 6.5  | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -      | -                          | -    | -      | -     | 6.5                            | 5.5    | -     | 6.5  | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -      | 2.5                        | 2.2  | -      | -     | 3.5                            | 4      | 3.3   | 3.5  | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 568    | 951                    | -     | -      | 1092                       | 1280 | -      | -     | 198                            | 156    | *887  | *191 | 152  | 680  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 788                            | 701    | -     | *383 | 430  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 592                            | 428    | -     | *837 | 681  | -    |
| Platoon blocked, %         |        |                        | -     | -      | 1                          | 1    | -      | -     |                                |        | 1     |      |      |      |
| Mov Cap-1 Maneuver         | 664    | 664                    | -     | -      | 1273                       | 1273 | -      | -     | 185                            | 146    | *887  | *174 | 143  | 680  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -      | -                          | -    | -      | -     | 373                            | 291    | -     | *293 | 288  | -    |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 767                            | 682    | -     | *373 | 415  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 560                            | 413    | -     | *778 | 663  | -    |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Approach                   | EB     |                        |       | WB     |                            |      | NB     |       |                                | SB     |       |      |      |      |
| HCM Control Delay, s       | 0.5    |                        |       | 0.5    |                            |      | 11.3   |       |                                | 20.2   |       |      |      |      |
| HCM LOS                    |        |                        |       |        |                            |      | B      |       |                                | C      |       |      |      |      |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3  | EBL                        | EBT  | EBR    | WBL   | WBT                            | WBR    | SBLn1 |      |      |      |
| Capacity (veh/h)           | 373    |                        | -     | 887    | 664                        | -    | -      | 1273  | -                              | -      | 298   |      |      |      |
| HCM Lane V/C Ratio         | 0.056  |                        | -     | 0.045  | 0.006                      | -    | -      | 0.036 | -                              | -      | 0.208 |      |      |      |
| HCM Control Delay (s)      | 15.2   |                        | 0     | 9.3    | 10.5                       | 0.3  | -      | 7.9   | -                              | -      | 20.2  |      |      |      |
| HCM Lane LOS               | C      |                        | A     | A      | B                          | A    | -      | A     | -                              | -      | C     |      |      |      |
| HCM 95th %tile Q(veh)      | 0.2    |                        | -     | 0.1    | 0                          | -    | -      | 0.1   | -                              | -      | 0.8   |      |      |      |
| Notes                      |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |        | +: Computation Not Defined |      |        |       | *: All major volume in platoon |        |       |      |      |      |

Capacity Analysis Summary Sheets  
Year 2034 No-Build Weekday Morning Peak Hour



# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |                                                                                   |  |  |                                                                                   |   |  |  |  |  |  |
| Traffic Volume (vph)    | 456                                                                               | 333                                                                               | 62                                                                                | 174                                                                               | 225                                                                               | 243                                                                               | 49                                                                                  | 2209                                                                                | 397                                                                                 | 109                                                                                 | 664                                                                                 | 203                                                                                 |
| Future Volume (vph)     | 456                                                                               | 333                                                                               | 62                                                                                | 174                                                                               | 225                                                                               | 243                                                                               | 49                                                                                  | 2209                                                                                | 397                                                                                 | 109                                                                                 | 664                                                                                 | 203                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 | 165                                                                               |                                                                                   | 0                                                                                 | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     | 75                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 | 2                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                   | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |                                                                                     |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.976                                                                             |                                                                                   |                                                                                   | 0.922                                                                             |                                                                                   |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)       | 3400                                                                              | 3388                                                                              | 0                                                                                 | 3303                                                                              | 3186                                                                              | 0                                                                                 | 1703                                                                                | 3762                                                                                | 1553                                                                                | 1656                                                                                | 3539                                                                                | 1524                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.317                                                                               |                                                                                     |                                                                                     | 0.068                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)       | 3400                                                                              | 3388                                                                              | 0                                                                                 | 3303                                                                              | 3186                                                                              | 0                                                                                 | 568                                                                                 | 3762                                                                                | 1553                                                                                | 119                                                                                 | 3539                                                                                | 1524                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)       |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 109                                                                               |                                                                                   |                                                                                     |                                                                                     | 197                                                                                 |                                                                                     |                                                                                     | 197                                                                                 |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   | 45                                                                                |                                                                                   |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   | 340                                                                               |                                                                                   |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     | 964                                                                                 |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                   |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     | 14.6                                                                                |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 3%                                                                                | 4%                                                                                | 4%                                                                                | 6%                                                                                | 5%                                                                                | 4%                                                                                | 6%                                                                                  | 1%                                                                                  | 4%                                                                                  | 9%                                                                                  | 2%                                                                                  | 6%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 475                                                                               | 412                                                                               | 0                                                                                 | 181                                                                               | 487                                                                               | 0                                                                                 | 51                                                                                  | 2301                                                                                | 414                                                                                 | 114                                                                                 | 692                                                                                 | 211                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  | Free                                                                                |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |                                                                                     | Free                                                                                |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |                                                                                     |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 15.0                                                                              |                                                                                   | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 | 15.0                                                                                |                                                                                     |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 | 25.0                                                                                |                                                                                     |
| Total Split (s)         | 22.0                                                                              | 40.0                                                                              |                                                                                   | 16.0                                                                              | 34.0                                                                              |                                                                                   | 12.0                                                                                | 62.0                                                                                |                                                                                     | 12.0                                                                                | 62.0                                                                                |                                                                                     |
| Total Split (%)         | 16.9%                                                                             | 30.8%                                                                             |                                                                                   | 12.3%                                                                             | 26.2%                                                                             |                                                                                   | 9.2%                                                                                | 47.7%                                                                               |                                                                                     | 9.2%                                                                                | 47.7%                                                                               |                                                                                     |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 | 4.5                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 | 1.5                                                                                 |                                                                                     |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                   | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 |                                                                                     |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                | Max                                                                                 |                                                                                     |
| Act Effect Green (s)    | 17.5                                                                              | 33.6                                                                              |                                                                                   | 10.9                                                                              | 27.0                                                                              |                                                                                   | 64.4                                                                                | 56.0                                                                                | 130.0                                                                               | 66.1                                                                                | 58.6                                                                                | 130.0                                                                               |
| Actuated g/C Ratio      | 0.13                                                                              | 0.26                                                                              |                                                                                   | 0.08                                                                              | 0.21                                                                              |                                                                                   | 0.50                                                                                | 0.43                                                                                | 1.00                                                                                | 0.51                                                                                | 0.45                                                                                | 1.00                                                                                |

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| v/c Ratio               | 1.04                                                                              | 0.46                                                                              |                                                                                   | 0.66                                                                              | 0.65                                                                              |                                                                                   | 0.15                                                                               | 1.42                                                                                | 0.27                                                                                | 0.77                                                                                | 0.43                                                                                | 0.14                                                                                |
| Control Delay           | 106.7                                                                             | 41.2                                                                              |                                                                                   | 69.4                                                                              | 40.9                                                                              |                                                                                   | 15.7                                                                               | 223.7                                                                               | 0.4                                                                                 | 55.5                                                                                | 26.0                                                                                | 0.2                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 106.7                                                                             | 41.2                                                                              |                                                                                   | 69.4                                                                              | 40.9                                                                              |                                                                                   | 15.7                                                                               | 223.7                                                                               | 0.4                                                                                 | 55.5                                                                                | 26.0                                                                                | 0.2                                                                                 |
| LOS                     | F                                                                                 | D                                                                                 |                                                                                   | E                                                                                 | D                                                                                 |                                                                                   | B                                                                                  | F                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 76.3                                                                              |                                                                                   |                                                                                   | 48.6                                                                              |                                                                                   |                                                                                    | 186.4                                                                               |                                                                                     |                                                                                     | 24.0                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Queue Length 50th (ft)  | ~222                                                                              | 149                                                                               |                                                                                   | 77                                                                                | 155                                                                               |                                                                                   | 20                                                                                 | ~1373                                                                               | 0                                                                                   | 48                                                                                  | 213                                                                                 | 0                                                                                   |
| Queue Length 95th (ft)  | #332                                                                              | 202                                                                               |                                                                                   | 117                                                                               | 216                                                                               |                                                                                   | 41                                                                                 | #1505                                                                               | 0                                                                                   | #148                                                                                | 268                                                                                 | 0                                                                                   |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   | 260                                                                               |                                                                                   |                                                                                    | 479                                                                                 |                                                                                     |                                                                                     | 884                                                                                 |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                   | 220                                                                                |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     | 75                                                                                  |
| Base Capacity (vph)     | 457                                                                               | 887                                                                               |                                                                                   | 292                                                                               | 748                                                                               |                                                                                   | 349                                                                                | 1620                                                                                | 1553                                                                                | 149                                                                                 | 1595                                                                                | 1524                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.04                                                                              | 0.46                                                                              |                                                                                   | 0.62                                                                              | 0.65                                                                              |                                                                                   | 0.15                                                                               | 1.42                                                                                | 0.27                                                                                | 0.77                                                                                | 0.43                                                                                | 0.14                                                                                |

### Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 39 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.42

Intersection Signal Delay: 119.9

Intersection LOS: F

Intersection Capacity Utilization 109.4%

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: 98th Street & Central Avenue

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              |                                                                                     | Ø3                                                                                  | Ø4                                                                                  |
| 16 s                                                                                | 40 s                                                                                |                                                                                     | 12 s                                                                                | 62 s                                                                                |
|  |  |  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              |                                                                                     | Ø7                                                                                  | Ø8                                                                                  |
| 22 s                                                                                | 34 s                                                                                |                                                                                     | 12 s                                                                                | 62 s                                                                                |

HCM 6th TWSC  
2: Central Avenue

02/23/2024

| Intersection               |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
|----------------------------|--------|------------------------|-------|-------|----------------------------|------|------|--------|--------------------------------|------|--------|------|------|
| Int Delay, s/veh           | 3.1    |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR   | WBL                        | WBT  | WBR  | NBL    | NBT                            | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations        |        |                        | ↕↕    |       | ↕                          | ↕↕   |      | ↕      | ↕                              | ↕    |        | ↕    |      |
| Traffic Vol, veh/h         | 11     | 2                      | 817   | 35    | 32                         | 565  | 0    | 112    | 0                              | 120  | 23     | 5    | 2    |
| Future Vol, veh/h          | 11     | 2                      | 817   | 35    | 32                         | 565  | 0    | 112    | 0                              | 120  | 23     | 5    | 2    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0     | 0                          | 0    | 0    | 0      | 0                              | 0    | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free  | Free                       | Free | Free | Stop   | Stop                           | Stop | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None  | -                          | -    | None | -      | -                              | None | -      | -    | None |
| Storage Length             | -      | -                      | -     | -     | 90                         | -    | -    | 0      | -                              | 0    | -      | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 1                              | -    | -      | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 0                              | -    | -      | 0    | -    |
| Peak Hour Factor           | 91     | 91                     | 91    | 91    | 91                         | 91   | 91   | 91     | 91                             | 91   | 91     | 91   | 91   |
| Heavy Vehicles, %          | 0      | 0                      | 4     | 4     | 5                          | 7    | 0    | 2      | 0                              | 4    | 7      | 0    | 0    |
| Mvmt Flow                  | 12     | 2                      | 898   | 38    | 35                         | 621  | 0    | 123    | 0                              | 132  | 25     | 5    | 2    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Major/Minor                | Major1 |                        |       |       | Major2                     |      |      | Minor1 |                                |      | Minor2 |      |      |
| Conflicting Flow All       | 621    | 621                    | 0     | 0     | 936                        | 0    | 0    | 1328   | 1636                           | 468  | 1168   | 1655 | 311  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 945    | 945                            | -    | 691    | 691  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 383    | 691                            | -    | 477    | 964  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -     | 4.2                        | -    | -    | 7.54   | 6.5                            | 6.98 | 7.64   | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -     | 2.25                       | -    | -    | 3.52   | 4                              | 3.34 | 3.57   | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 588    | 969                    | -     | -     | 1093                       | -    | -    | ~ 113  | 102                            | *744 | *143   | 99   | 691  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 682    | 606                            | -    | *389   | 449  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 611    | 449                            | -    | *696   | 590  | -    |
| Platoon blocked, %         |        |                        | -     | -     | 1                          | -    | -    |        |                                | 1    |        |      |      |
| Mov Cap-1 Maneuver         | 624    | 624                    | -     | -     | 1093                       | -    | -    | ~ 104  | 94                             | *744 | *111   | 91   | 691  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -     | -                          | -    | -    | 324    | 264                            | -    | *245   | 259  | -    |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 650    | 578                            | -    | *371   | 435  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 582    | 435                            | -    | *546   | 562  | -    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Approach                   | EB     |                        |       |       | WB                         |      |      | NB     |                                |      | SB     |      |      |
| HCM Control Delay, s       | 0.6    |                        |       |       | 0.5                        |      |      | 16.6   |                                |      | 21     |      |      |
| HCM LOS                    |        |                        |       |       |                            |      |      | C      |                                |      | C      |      |      |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3 | EBL                        | EBT  | EBR  | WBL    | WBT                            | WBR  | SBLn1  |      |      |
| Capacity (veh/h)           | 324    |                        | -     | 744   | 624                        | -    | -    | 1093   | -                              | -    | 258    |      |      |
| HCM Lane V/C Ratio         | 0.38   |                        | -     | 0.177 | 0.004                      | -    | -    | 0.032  | -                              | -    | 0.128  |      |      |
| HCM Control Delay (s)      | 22.8   |                        | 0     | 10.9  | 10.9                       | 0.5  | -    | 8.4    | -                              | -    | 21     |      |      |
| HCM Lane LOS               | C      |                        | A     | B     | B                          | A    | -    | A      | -                              | -    | C      |      |      |
| HCM 95th %tile Q(veh)      | 1.7    |                        | -     | 0.6   | 0                          | -    | -    | 0.1    | -                              | -    | 0.4    |      |      |
| Notes                      |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |       | +: Computation Not Defined |      |      |        | *: All major volume in platoon |      |        |      |      |

Capacity Analysis Summary Sheets  
Year 2034 No-Build Weekday Evening Peak Hour

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| Lane Configurations     |  |  |                                                                                   |                                                                                   |  |  |                                                                                    |                                                                                     |  |  |  |  |
| Traffic Volume (vph)    | 301                                                                               | 323                                                                               | 114                                                                               | 3                                                                                 | 413                                                                               | 413                                                                               | 253                                                                                | 2                                                                                   | 63                                                                                  | 1235                                                                                | 288                                                                                 | 206                                                                                 |
| Future Volume (vph)     | 301                                                                               | 323                                                                               | 114                                                                               | 3                                                                                 | 413                                                                               | 413                                                                               | 253                                                                                | 2                                                                                   | 63                                                                                  | 1235                                                                                | 288                                                                                 | 206                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                 | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 |                                                                                   | 165                                                                               |                                                                                   | 0                                                                                  |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 0                                                                                  |                                                                                     | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                    |                                                                                     | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.961                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.943                                                                             |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |
| Satd. Flow (prot)       | 3433                                                                              | 3327                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3305                                                                              | 0                                                                                  | 0                                                                                   | 1576                                                                                | 3725                                                                                | 1568                                                                                | 1770                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.106                                                                               |                                                                                     |                                                                                     | 0.100                                                                               |
| Satd. Flow (perm)       | 3433                                                                              | 3327                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3305                                                                              | 0                                                                                  | 0                                                                                   | 176                                                                                 | 3725                                                                                | 1568                                                                                | 186                                                                                 |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                                |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |
| Satd. Flow (RTOR)       |                                                                                   | 42                                                                                |                                                                                   |                                                                                   |                                                                                   | 113                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 188                                                                                 |                                                                                     |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |                                                                                   | 45                                                                                |                                                                                    |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   |                                                                                   | 340                                                                               |                                                                                    |                                                                                     |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                    |                                                                                     |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                               | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 2%                                                                                | 4%                                                                                | 5%                                                                                | 0%                                                                                | 2%                                                                                | 3%                                                                                | 3%                                                                                 | 0%                                                                                  | 15%                                                                                 | 2%                                                                                  | 3%                                                                                  | 2%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 307                                                                               | 446                                                                               | 0                                                                                 | 0                                                                                 | 424                                                                               | 679                                                                               | 0                                                                                  | 0                                                                                   | 66                                                                                  | 1260                                                                                | 294                                                                                 | 210                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | Prot                                                                              | NA                                                                                |                                                                                    | pm+pt                                                                               | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 3.0                                                                               | 15.0                                                                              |                                                                                    | 3.0                                                                                 | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 9.5                                                                               | 25.0                                                                              |                                                                                    | 9.5                                                                                 | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 |
| Total Split (s)         | 20.0                                                                              | 34.0                                                                              |                                                                                   | 20.0                                                                              | 20.0                                                                              | 34.0                                                                              |                                                                                    | 13.0                                                                                | 13.0                                                                                | 43.0                                                                                |                                                                                     | 13.0                                                                                |
| Total Split (%)         | 18.2%                                                                             | 30.9%                                                                             |                                                                                   | 18.2%                                                                             | 18.2%                                                                             | 30.9%                                                                             |                                                                                    | 11.8%                                                                               | 11.8%                                                                               | 39.1%                                                                               |                                                                                     | 11.8%                                                                               |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 3.5                                                                               | 6.0                                                                               |                                                                                    | 3.5                                                                                 | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |                                                                                    | 1.0                                                                                 | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                    |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lead                                                                              | Lag                                                                               |                                                                                    | Lead                                                                                | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                    | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | None                                                                              | C-Max                                                                             |                                                                                    | None                                                                                | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                |
| Act Effect Green (s)    | 14.1                                                                              | 27.1                                                                              |                                                                                   |                                                                                   | 15.4                                                                              | 28.4                                                                              |                                                                                    |                                                                                     | 46.1                                                                                | 37.0                                                                                | 110.0                                                                               | 48.3                                                                                |
| Actuated g/C Ratio      | 0.13                                                                              | 0.25                                                                              |                                                                                   |                                                                                   | 0.14                                                                              | 0.26                                                                              |                                                                                    |                                                                                     | 0.42                                                                                | 0.34                                                                                | 1.00                                                                                | 0.44                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024



| Lane Group              | SBT   | SBR   |
|-------------------------|-------|-------|
| Lane Configurations     | ↑↑    | ↑     |
| Traffic Volume (vph)    | 1878  | 302   |
| Future Volume (vph)     | 1878  | 302   |
| Ideal Flow (vphpl)      | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    |
| Grade (%)               | 0%    |       |
| Storage Length (ft)     |       | 75    |
| Storage Lanes           |       | 1     |
| Taper Length (ft)       |       |       |
| Lane Util. Factor       | 0.95  | 1.00  |
| Ped Bike Factor         |       |       |
| Frt                     |       | 0.850 |
| Flt Protected           |       |       |
| Satd. Flow (prot)       | 3574  | 1524  |
| Flt Permitted           |       |       |
| Satd. Flow (perm)       | 3574  | 1524  |
| Right Turn on Red       |       | Yes   |
| Satd. Flow (RTOR)       |       | 188   |
| Link Speed (mph)        | 45    |       |
| Link Distance (ft)      | 964   |       |
| Travel Time (s)         | 14.6  |       |
| Confl. Peds. (#/hr)     |       |       |
| Confl. Bikes (#/hr)     |       |       |
| Peak Hour Factor        | 0.98  | 0.98  |
| Growth Factor           | 100%  | 100%  |
| Heavy Vehicles (%)      | 1%    | 6%    |
| Bus Blockages (#/hr)    | 0     | 0     |
| Parking (#/hr)          |       |       |
| Mid-Block Traffic (%)   | 0%    |       |
| Shared Lane Traffic (%) |       |       |
| Lane Group Flow (vph)   | 1916  | 308   |
| Turn Type               | NA    | Free  |
| Protected Phases        | 4     |       |
| Permitted Phases        |       | Free  |
| Detector Phase          | 4     |       |
| Switch Phase            |       |       |
| Minimum Initial (s)     | 15.0  |       |
| Minimum Split (s)       | 25.0  |       |
| Total Split (s)         | 43.0  |       |
| Total Split (%)         | 39.1% |       |
| Yellow Time (s)         | 4.5   |       |
| All-Red Time (s)        | 1.5   |       |
| Lost Time Adjust (s)    | 0.0   |       |
| Total Lost Time (s)     | 6.0   |       |
| Lead/Lag                | Lag   |       |
| Lead-Lag Optimize?      | Yes   |       |
| Recall Mode             | Max   |       |
| Act Effct Green (s)     | 40.0  | 110.0 |
| Actuated g/C Ratio      | 0.36  | 1.00  |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                 | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| v/c Ratio               | 0.70                                                                              | 0.52                                                                              |                                                                                   |                                                                                   | 0.88                                                                              | 0.72                                                                              |                                                                                     |                                                                                     | 0.39                                                                                | 1.01                                                                                | 0.19                                                                                | 1.03                                                                                |
| Control Delay           | 54.8                                                                              | 34.9                                                                              |                                                                                   |                                                                                   | 67.4                                                                              | 36.3                                                                              |                                                                                     |                                                                                     | 23.4                                                                                | 63.9                                                                                | 0.3                                                                                 | 99.3                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 54.8                                                                              | 34.9                                                                              |                                                                                   |                                                                                   | 67.4                                                                              | 36.3                                                                              |                                                                                     |                                                                                     | 23.4                                                                                | 63.9                                                                                | 0.3                                                                                 | 99.3                                                                                |
| LOS                     | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   | E                                                                                 | D                                                                                 |                                                                                     |                                                                                     | C                                                                                   | E                                                                                   | A                                                                                   | F                                                                                   |
| Approach Delay          |                                                                                   | 43.0                                                                              |                                                                                   |                                                                                   |                                                                                   | 48.2                                                                              |                                                                                     |                                                                                     |                                                                                     | 50.7                                                                                |                                                                                     |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Queue Length 50th (ft)  | 107                                                                               | 130                                                                               |                                                                                   |                                                                                   | 153                                                                               | 196                                                                               |                                                                                     |                                                                                     | 25                                                                                  | ~470                                                                                | 0                                                                                   | ~110                                                                                |
| Queue Length 95th (ft)  | 153                                                                               | 182                                                                               |                                                                                   |                                                                                   | #238                                                                              | 267                                                                               |                                                                                     |                                                                                     | 51                                                                                  | #626                                                                                | 0                                                                                   | #263                                                                                |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 260                                                                               |                                                                                     |                                                                                     |                                                                                     | 479                                                                                 |                                                                                     |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                     |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Base Capacity (vph)     | 483                                                                               | 851                                                                               |                                                                                   |                                                                                   | 483                                                                               | 937                                                                               |                                                                                     |                                                                                     | 183                                                                                 | 1252                                                                                | 1568                                                                                | 203                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.64                                                                              | 0.52                                                                              |                                                                                   |                                                                                   | 0.88                                                                              | 0.72                                                                              |                                                                                     |                                                                                     | 0.36                                                                                | 1.01                                                                                | 0.19                                                                                | 1.03                                                                                |

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

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

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.47

Intersection Signal Delay: 112.1

Intersection LOS: F

Intersection Capacity Utilization 102.0%

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: 98th Street & Central Avenue

|                                                                                     |                                                                                     |                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø3                                                                                  | Ø4                                                                                   |
| 20 s                                                                                | 34 s                                                                                | 13 s                                                                                | 43 s                                                                                 |
|  |  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø7                                                                                  | Ø8                                                                                   |
| 20 s                                                                                | 34 s                                                                                | 13 s                                                                                | 43 s                                                                                 |



Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

02/23/2024



| Lane Group              | SBT   | SBR  |
|-------------------------|-------|------|
| v/c Ratio               | 1.47  | 0.20 |
| Control Delay           | 247.2 | 0.3  |
| Queue Delay             | 0.0   | 0.0  |
| Total Delay             | 247.2 | 0.3  |
| LOS                     | F     | A    |
| Approach Delay          | 203.2 |      |
| Approach LOS            | F     |      |
| Queue Length 50th (ft)  | ~1013 | 0    |
| Queue Length 95th (ft)  | #1157 | 0    |
| Internal Link Dist (ft) | 884   |      |
| Turn Bay Length (ft)    |       | 75   |
| Base Capacity (vph)     | 1299  | 1524 |
| Starvation Cap Reductn  | 0     | 0    |
| Spillback Cap Reductn   | 0     | 0    |
| Storage Cap Reductn     | 0     | 0    |
| Reduced v/c Ratio       | 1.47  | 0.20 |
| Intersection Summary    |       |      |

# HCM 6th TWSC

## 2: Central Avenue

02/23/2024

| Intersection               |        |                        |       |        |                            |      |        |       |                                |        |       |       |      |      |
|----------------------------|--------|------------------------|-------|--------|----------------------------|------|--------|-------|--------------------------------|--------|-------|-------|------|------|
| Int Delay, s/veh           | 3.5    |                        |       |        |                            |      |        |       |                                |        |       |       |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR    | WBU                        | WBL  | WBT    | WBR   | NBL                            | NBT    | NBR   | SBL   | SBT  | SBR  |
| Lane Configurations        |        |                        | ↔↔    |        |                            | ↔    | ↔↔     |       | ↔                              | ↑      | ↗     |       | ↕    |      |
| Traffic Vol, veh/h         | 11     | 6                      | 748   | 69     | 2                          | 63   | 886    | 12    | 29                             | 0      | 57    | 75    | 9    | 3    |
| Future Vol, veh/h          | 11     | 6                      | 748   | 69     | 2                          | 63   | 886    | 12    | 29                             | 0      | 57    | 75    | 9    | 3    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0      | 0                          | 0    | 0      | 0     | 0                              | 0      | 0     | 0     | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free   | Free                       | Free | Free   | Free  | Stop                           | Stop   | Stop  | Stop  | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None   | -                          | -    | -      | None  | -                              | -      | None  | -     | -    | None |
| Storage Length             | -      | -                      | -     | -      | -                          | 90   | -      | -     | 0                              | -      | 0     | -     | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -      | -                          | -    | 0      | -     | -                              | 1      | -     | -     | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -      | -                          | -    | 0      | -     | -                              | 0      | -     | -     | 0    | -    |
| Peak Hour Factor           | 95     | 95                     | 95    | 95     | 95                         | 95   | 95     | 95    | 95                             | 95     | 95    | 95    | 95   | 95   |
| Heavy Vehicles, %          | 0      | 0                      | 3     | 2      | 0                          | 0    | 2      | 0     | 0                              | 0      | 0     | 0     | 0    | 0    |
| Mvmt Flow                  | 12     | 6                      | 787   | 73     | 2                          | 66   | 933    | 13    | 31                             | 0      | 60    | 79    | 9    | 3    |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |       |      |      |
| Major/Minor                | Major1 |                        |       | Major2 |                            |      | Minor1 |       |                                | Minor2 |       |       |      |      |
| Conflicting Flow All       | 945    | 946                    | 0     | 0      | 860                        | 860  | 0      | 0     | 1467                           | 1942   | 430   | 1506  | 1972 | 473  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 860                            | 860    | -     | 1076  | 1076 | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 607                            | 1082   | -     | 430   | 896  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -      | 6.4                        | 4.1  | -      | -     | 7.5                            | 6.5    | 6.9   | 7.5   | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -      | -                          | -    | -      | -     | 6.5                            | 5.5    | -     | 6.5   | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -      | -                          | -    | -      | -     | 6.5                            | 5.5    | -     | 6.5   | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -      | 2.5                        | 2.2  | -      | -     | 3.5                            | 4      | 3.3   | 3.5   | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 366    | 734                    | -     | -      | 921                        | 1111 | -      | -     | 91                             | 66     | *803  | *85   | 63   | 543  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 665                            | 603    | -     | *238  | 298  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 455                            | 296    | -     | *758  | 574  | -    |
| Platoon blocked, %         |        |                        | -     | -      | 1                          | 1    | -      | -     |                                |        | 1     |       |      |      |
| Mov Cap-1 Maneuver         | 443    | 443                    | -     | -      | 1101                       | 1101 | -      | -     | 78                             | 57     | *803  | *~ 70 | 54   | 543  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -      | -                          | -    | -      | -     | 252                            | 184    | -     | *169  | 182  | -    |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 613                            | 555    | -     | *219  | 280  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 410                            | 278    | -     | *646  | 529  | -    |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |       |      |      |
| Approach                   | EB     |                        |       | WB     |                            |      | NB     |       |                                | SB     |       |       |      |      |
| HCM Control Delay, s       | 1.2    |                        |       | 0.6    |                            |      | 13.6   |       |                                | 46.6   |       |       |      |      |
| HCM LOS                    |        |                        |       |        |                            |      | B      |       |                                | E      |       |       |      |      |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |       |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3  | EBL                        | EBT  | EBR    | WBL   | WBT                            | WBR    | SBLn1 |       |      |      |
| Capacity (veh/h)           | 252    |                        | -     | 803    | 443                        | -    | -      | 1101  | -                              | -      | 174   |       |      |      |
| HCM Lane V/C Ratio         | 0.121  |                        | -     | 0.075  | 0.014                      | -    | -      | 0.062 | -                              | -      | 0.526 |       |      |      |
| HCM Control Delay (s)      | 21.2   |                        | 0     | 9.8    | 13.5                       | 1    | -      | 8.5   | -                              | -      | 46.6  |       |      |      |
| HCM Lane LOS               | C      |                        | A     | A      | B                          | A    | -      | A     | -                              | -      | E     |       |      |      |
| HCM 95th %tile Q(veh)      | 0.4    |                        | -     | 0.2    | 0                          | -    | -      | 0.2   | -                              | -      | 2.7   |       |      |      |
| Notes                      |        |                        |       |        |                            |      |        |       |                                |        |       |       |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |        | +: Computation Not Defined |      |        |       | *: All major volume in platoon |        |       |       |      |      |

Capacity Analysis Summary Sheets  
Year 2024 Total Projected Weekday Morning Peak Hour

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Configurations     |  |  |                                                                                   |                                                                                   |  |  |                                                                                    |  |  |  |  |  |
| Traffic Volume (vph)    | 312                                                                               | 232                                                                               | 42                                                                                | 7                                                                                 | 126                                                                               | 158                                                                               | 197                                                                                | 33                                                                                  | 1491                                                                                | 220                                                                                 | 87                                                                                  | 451                                                                                 |
| Future Volume (vph)     | 312                                                                               | 232                                                                               | 42                                                                                | 7                                                                                 | 126                                                                               | 158                                                                               | 197                                                                                | 33                                                                                  | 1491                                                                                | 220                                                                                 | 87                                                                                  | 451                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                 | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 |                                                                                   | 165                                                                               |                                                                                   | 0                                                                                  | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 0                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                    | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                               | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.977                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.917                                                                             |                                                                                    |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |
| Satd. Flow (prot)       | 3400                                                                              | 3391                                                                              | 0                                                                                 | 0                                                                                 | 3313                                                                              | 3169                                                                              | 0                                                                                  | 1703                                                                                | 3762                                                                                | 1553                                                                                | 1656                                                                                | 3539                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    | 0.466                                                                               |                                                                                     |                                                                                     | 0.066                                                                               |                                                                                     |
| Satd. Flow (perm)       | 3400                                                                              | 3391                                                                              | 0                                                                                 | 0                                                                                 | 3313                                                                              | 3169                                                                              | 0                                                                                  | 835                                                                                 | 3762                                                                                | 1553                                                                                | 115                                                                                 | 3539                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                                |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Satd. Flow (RTOR)       |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   | 120                                                                               |                                                                                    |                                                                                     |                                                                                     | 197                                                                                 |                                                                                     |                                                                                     |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |                                                                                   | 45                                                                                |                                                                                    |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   |                                                                                   | 340                                                                               |                                                                                    |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     | 964                                                                                 |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                    |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     | 14.6                                                                                |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                               | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 3%                                                                                | 4%                                                                                | 4%                                                                                | 0%                                                                                | 6%                                                                                | 5%                                                                                | 4%                                                                                 | 6%                                                                                  | 1%                                                                                  | 4%                                                                                  | 9%                                                                                  | 2%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 325                                                                               | 286                                                                               | 0                                                                                 | 0                                                                                 | 138                                                                               | 370                                                                               | 0                                                                                  | 34                                                                                  | 1553                                                                                | 229                                                                                 | 91                                                                                  | 470                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | Prot                                                                              | NA                                                                                |                                                                                    | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |                                                                                     |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 3.0                                                                               | 15.0                                                                              |                                                                                    | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 | 15.0                                                                                |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 9.5                                                                               | 25.0                                                                              |                                                                                    | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 | 25.0                                                                                |
| Total Split (s)         | 22.0                                                                              | 40.0                                                                              |                                                                                   | 16.0                                                                              | 16.0                                                                              | 34.0                                                                              |                                                                                    | 12.0                                                                                | 62.0                                                                                |                                                                                     | 12.0                                                                                | 62.0                                                                                |
| Total Split (%)         | 16.9%                                                                             | 30.8%                                                                             |                                                                                   | 12.3%                                                                             | 12.3%                                                                             | 26.2%                                                                             |                                                                                    | 9.2%                                                                                | 47.7%                                                                               |                                                                                     | 9.2%                                                                                | 47.7%                                                                               |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 3.5                                                                               | 6.0                                                                               |                                                                                    | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 | 4.5                                                                                 |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |                                                                                    | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                    | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lead                                                                              | Lag                                                                               |                                                                                    | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                    | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | None                                                                              | C-Max                                                                             |                                                                                    | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                | Max                                                                                 |
| Act Effect Green (s)    | 16.3                                                                              | 34.3                                                                              |                                                                                   |                                                                                   | 10.2                                                                              | 28.2                                                                              |                                                                                    | 64.3                                                                                | 56.2                                                                                | 130.0                                                                               | 67.0                                                                                | 61.0                                                                                |
| Actuated g/C Ratio      | 0.13                                                                              | 0.26                                                                              |                                                                                   |                                                                                   | 0.08                                                                              | 0.22                                                                              |                                                                                    | 0.49                                                                                | 0.43                                                                                | 1.00                                                                                | 0.52                                                                                | 0.47                                                                                |

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

05/22/2024

|                         |       |
|-------------------------|-------|
| Lane Group              | SBR   |
| Lane Configurations     |       |
| Traffic Volume (vph)    | 138   |
| Future Volume (vph)     | 138   |
| Ideal Flow (vphpl)      | 1900  |
| Lane Width (ft)         | 12    |
| Grade (%)               |       |
| Storage Length (ft)     | 75    |
| Storage Lanes           | 1     |
| Taper Length (ft)       |       |
| Lane Util. Factor       | 1.00  |
| Ped Bike Factor         |       |
| Frt                     | 0.850 |
| Flt Protected           |       |
| Satd. Flow (prot)       | 1524  |
| Flt Permitted           |       |
| Satd. Flow (perm)       | 1524  |
| Right Turn on Red       | Yes   |
| Satd. Flow (RTOR)       | 197   |
| Link Speed (mph)        |       |
| Link Distance (ft)      |       |
| Travel Time (s)         |       |
| Confl. Peds. (#/hr)     |       |
| Confl. Bikes (#/hr)     |       |
| Peak Hour Factor        | 0.96  |
| Growth Factor           | 100%  |
| Heavy Vehicles (%)      | 6%    |
| Bus Blockages (#/hr)    | 0     |
| Parking (#/hr)          |       |
| Mid-Block Traffic (%)   |       |
| Shared Lane Traffic (%) |       |
| Lane Group Flow (vph)   | 144   |
| Turn Type               | Free  |
| Protected Phases        |       |
| Permitted Phases        | Free  |
| Detector Phase          |       |
| Switch Phase            |       |
| Minimum Initial (s)     |       |
| Minimum Split (s)       |       |
| Total Split (s)         |       |
| Total Split (%)         |       |
| Yellow Time (s)         |       |
| All-Red Time (s)        |       |
| Lost Time Adjust (s)    |       |
| Total Lost Time (s)     |       |
| Lead/Lag                |       |
| Lead-Lag Optimize?      |       |
| Recall Mode             |       |
| Act Effct Green (s)     | 130.0 |
| Actuated g/C Ratio      | 1.00  |

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| v/c Ratio               | 0.76                                                                              | 0.32                                                                              |                                                                                   |                                                                                   | 0.53                                                                              | 0.47                                                                              |                                                                                     | 0.07                                                                                | 0.96                                                                                | 0.15                                                                                | 0.62                                                                                | 0.28                                                                                |
| Control Delay           | 67.4                                                                              | 37.8                                                                              |                                                                                   |                                                                                   | 65.9                                                                              | 31.4                                                                              |                                                                                     | 14.9                                                                                | 50.0                                                                                | 0.2                                                                                 | 40.1                                                                                | 22.6                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 67.4                                                                              | 37.8                                                                              |                                                                                   |                                                                                   | 65.9                                                                              | 31.4                                                                              |                                                                                     | 14.9                                                                                | 50.0                                                                                | 0.2                                                                                 | 40.1                                                                                | 22.6                                                                                |
| LOS                     | E                                                                                 | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 | C                                                                                 |                                                                                     | B                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   | C                                                                                   |
| Approach Delay          |                                                                                   | 53.5                                                                              |                                                                                   |                                                                                   |                                                                                   | 40.8                                                                              |                                                                                     |                                                                                     | 43.1                                                                                |                                                                                     |                                                                                     | 20.2                                                                                |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | C                                                                                   |
| Queue Length 50th (ft)  | 137                                                                               | 97                                                                                |                                                                                   |                                                                                   | 58                                                                                | 94                                                                                |                                                                                     | 13                                                                                  | 657                                                                                 | 0                                                                                   | 37                                                                                  | 133                                                                                 |
| Queue Length 95th (ft)  | 189                                                                               | 140                                                                               |                                                                                   |                                                                                   | 93                                                                                | 144                                                                               |                                                                                     | 30                                                                                  | #824                                                                                | 0                                                                                   | #101                                                                                | 176                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 260                                                                               |                                                                                     |                                                                                     | 479                                                                                 |                                                                                     |                                                                                     | 884                                                                                 |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     |
| Base Capacity (vph)     | 457                                                                               | 905                                                                               |                                                                                   |                                                                                   | 293                                                                               | 782                                                                               |                                                                                     | 468                                                                                 | 1625                                                                                | 1553                                                                                | 148                                                                                 | 1660                                                                                |
| 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       | 0.71                                                                              | 0.32                                                                              |                                                                                   |                                                                                   | 0.47                                                                              | 0.47                                                                              |                                                                                     | 0.07                                                                                | 0.96                                                                                | 0.15                                                                                | 0.61                                                                                | 0.28                                                                                |

### Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 39 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 40.1

Intersection LOS: D

Intersection Capacity Utilization 83.7%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

### Splits and Phases: 1: 98th Street & Central Avenue

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø3                                                                                  | Ø4                                                                                  |
| 16 s                                                                                | 40 s                                                                                | 12 s                                                                                | 62 s                                                                                |
|  |  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø7                                                                                  | Ø8                                                                                  |
| 22 s                                                                                | 34 s                                                                                | 12 s                                                                                | 62 s                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024



|                         |      |
|-------------------------|------|
| Lane Group              | SBR  |
| v/c Ratio               | 0.09 |
| Control Delay           | 0.1  |
| Queue Delay             | 0.0  |
| Total Delay             | 0.1  |
| LOS                     | A    |
| Approach Delay          |      |
| Approach LOS            |      |
| Queue Length 50th (ft)  | 0    |
| Queue Length 95th (ft)  | 0    |
| Internal Link Dist (ft) |      |
| Turn Bay Length (ft)    | 75   |
| Base Capacity (vph)     | 1524 |
| Starvation Cap Reductn  | 0    |
| Spillback Cap Reductn   | 0    |
| Storage Cap Reductn     | 0    |
| Reduced v/c Ratio       | 0.09 |
| Intersection Summary    |      |



HCM 6th TWSC  
2: Central Avenue

05/22/2024

| Intersection               |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
|----------------------------|--------|------------------------|-------|-------|----------------------------|------|------|--------|--------------------------------|------|--------|------|------|
| Int Delay, s/veh           | 2.9    |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR   | WBL                        | WBT  | WBR  | NBL    | NBT                            | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations        |        |                        | ↕↕    |       | ↕                          | ↕↕   |      | ↕      | ↕                              | ↕    |        | ↕    |      |
| Traffic Vol, veh/h         | 40     | 1                      | 571   | 24    | 22                         | 403  | 0    | 76     | 0                              | 81   | 16     | 3    | 1    |
| Future Vol, veh/h          | 40     | 1                      | 571   | 24    | 22                         | 403  | 0    | 76     | 0                              | 81   | 16     | 3    | 1    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0     | 0                          | 0    | 0    | 0      | 0                              | 0    | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free  | Free                       | Free | Free | Stop   | Stop                           | Stop | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None  | -                          | -    | None | -      | -                              | None | -      | -    | None |
| Storage Length             | -      | -                      | -     | -     | 90                         | -    | -    | 0      | -                              | 0    | -      | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 1                              | -    | -      | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 0                              | -    | -      | 0    | -    |
| Peak Hour Factor           | 91     | 91                     | 91    | 91    | 91                         | 91   | 91   | 91     | 91                             | 91   | 91     | 91   | 91   |
| Heavy Vehicles, %          | 0      | 0                      | 4     | 4     | 5                          | 7    | 0    | 2      | 0                              | 4    | 7      | 0    | 0    |
| Mvmt Flow                  | 44     | 1                      | 627   | 26    | 24                         | 443  | 0    | 84     | 0                              | 89   | 18     | 3    | 1    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Major/Minor                | Major1 |                        |       |       | Major2                     |      |      | Minor1 |                                |      | Minor2 |      |      |
| Conflicting Flow All       | 443    | 443                    | 0     | 0     | 653                        | 0    | 0    | 1001   | 1221                           | 327  | 895    | 1234 | 222  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 730    | 730                            | -    | 491    | 491  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 271    | 491                            | -    | 404    | 743  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -     | 4.2                        | -    | -    | 7.54   | 6.5                            | 6.98 | 7.64   | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -     | 2.25                       | -    | -    | 3.52   | 4                              | 3.34 | 3.57   | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 761    | 1128                   | -     | -     | 1209                       | -    | -    | 197    | 181                            | *861 | *228   | 178  | 788  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 659    | 614                            | -    | *515   | 552  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 712    | 552                            | -    | *805   | 605  | -    |
| Platoon blocked, %         |        |                        | -     | -     | 1                          | -    | -    |        |                                | 1    |        |      |      |
| Mov Cap-1 Maneuver         | 766    | 766                    | -     | -     | 1209                       | -    | -    | 179    | 161                            | *861 | *187   | 158  | 788  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -     | -                          | -    | -    | 365    | 313                            | -    | *327   | 315  | -    |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 598    | 557                            | -    | *467   | 541  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 693    | 541                            | -    | *655   | 548  | -    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Approach                   | EB     |                        |       |       | WB                         |      |      | NB     |                                |      | SB     |      |      |
| HCM Control Delay, s       | 1.5    |                        |       |       | 0.4                        |      |      | 13.6   |                                |      | 16.5   |      |      |
| HCM LOS                    |        |                        |       |       |                            |      |      | B      |                                |      | C      |      |      |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3 | EBL                        | EBT  | EBR  | WBL    | WBT                            | WBR  | SBLn1  |      |      |
| Capacity (veh/h)           | 365    |                        | -     | 861   | 766                        | -    | -    | 1209   | -                              | -    | 335    |      |      |
| HCM Lane V/C Ratio         | 0.229  |                        | -     | 0.103 | 0.001                      | -    | -    | 0.02   | -                              | -    | 0.066  |      |      |
| HCM Control Delay (s)      | 17.8   |                        | 0     | 9.7   | 10                         | 0.9  | -    | 8      | -                              | -    | 16.5   |      |      |
| HCM Lane LOS               | C      |                        | A     | A     | A                          | A    | -    | A      | -                              | -    | C      |      |      |
| HCM 95th %tile Q(veh)      | 0.9    |                        | -     | 0.3   | 0                          | -    | -    | 0.1    | -                              | -    | 0.2    |      |      |
| Notes                      |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |       | +: Computation Not Defined |      |      |        | *: All major volume in platoon |      |        |      |      |

# HCM 6th TWSC

## 3: Access Drive & Central Avenue

05/22/2024

| Intersection             |        |      |        |      |        |      |
|--------------------------|--------|------|--------|------|--------|------|
| Int Delay, s/veh         | 1.1    |      |        |      |        |      |
| Movement                 | EBT    | EBR  | WBL    | WBT  | NBL    | NBR  |
| Lane Configurations      | ↑↑↱    |      |        | ↑↑   |        | ↱    |
| Traffic Vol, veh/h       | 504    | 41   | 0      | 489  | 0      | 114  |
| Future Vol, veh/h        | 504    | 41   | 0      | 489  | 0      | 114  |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0    | 0      | 0    |
| Sign Control             | Free   | Free | Free   | Free | Stop   | Stop |
| RT Channelized           | -      | None | -      | None | -      | None |
| Storage Length           | -      | -    | -      | -    | -      | 0    |
| Veh in Median Storage, # | 0      | -    | -      | 0    | 0      | -    |
| Grade, %                 | 0      | -    | -      | 0    | 0      | -    |
| Peak Hour Factor         | 95     | 95   | 95     | 95   | 95     | 95   |
| Heavy Vehicles, %        | 4      | 0    | 0      | 7    | 0      | 0    |
| Mvmt Flow                | 531    | 43   | 0      | 515  | 0      | 120  |
|                          |        |      |        |      |        |      |
| Major/Minor              | Major1 |      | Major2 |      | Minor1 |      |
| Conflicting Flow All     | 0      | 0    | -      | -    | -      | 287  |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
| Critical Hdwy            | -      | -    | -      | -    | -      | 6.9  |
| Critical Hdwy Stg 1      | -      | -    | -      | -    | -      | -    |
| Critical Hdwy Stg 2      | -      | -    | -      | -    | -      | -    |
| Follow-up Hdwy           | -      | -    | -      | -    | -      | 3.3  |
| Pot Cap-1 Maneuver       | -      | -    | 0      | -    | 0      | 716  |
| Stage 1                  | -      | -    | 0      | -    | 0      | -    |
| Stage 2                  | -      | -    | 0      | -    | 0      | -    |
| Platoon blocked, %       | -      | -    |        | -    |        |      |
| Mov Cap-1 Maneuver       | -      | -    | -      | -    | -      | 716  |
| Mov Cap-2 Maneuver       | -      | -    | -      | -    | -      | -    |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Approach                 | EB     |      | WB     |      | NB     |      |
| HCM Control Delay, s     | 0      |      | 0      |      | 11     |      |
| HCM LOS                  |        |      |        |      | B      |      |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT  | EBR    | WBT  |        |      |
| Capacity (veh/h)         | 716    | -    | -      | -    |        |      |
| HCM Lane V/C Ratio       | 0.168  | -    | -      | -    |        |      |
| HCM Control Delay (s)    | 11     | -    | -      | -    |        |      |
| HCM Lane LOS             | B      | -    | -      | -    |        |      |
| HCM 95th %tile O(veh)    | 0.6    | -    | -      | -    |        |      |

Capacity Analysis Summary Sheets  
Year 2024 Total Projected Weekday Evening Peak Hour

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| Lane Configurations     |  |  |                                                                                   |                                                                                   |  |  |                                                                                    |                                                                                     |  |  |  |  |
| Traffic Volume (vph)    | 205                                                                               | 224                                                                               | 77                                                                                | 8                                                                                 | 295                                                                               | 285                                                                               | 190                                                                                | 1                                                                                   | 43                                                                                  | 832                                                                                 | 176                                                                                 | 170                                                                                 |
| Future Volume (vph)     | 205                                                                               | 224                                                                               | 77                                                                                | 8                                                                                 | 295                                                                               | 285                                                                               | 190                                                                                | 1                                                                                   | 43                                                                                  | 832                                                                                 | 176                                                                                 | 170                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                 | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 |                                                                                   | 165                                                                               |                                                                                   | 0                                                                                  |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 0                                                                                  |                                                                                     | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                    |                                                                                     | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.940                                                                             |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |
| Satd. Flow (prot)       | 3433                                                                              | 3331                                                                              | 0                                                                                 | 0                                                                                 | 3435                                                                              | 3295                                                                              | 0                                                                                  | 0                                                                                   | 1574                                                                                | 3725                                                                                | 1568                                                                                | 1770                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.106                                                                               |                                                                                     |                                                                                     | 0.166                                                                               |
| Satd. Flow (perm)       | 3433                                                                              | 3331                                                                              | 0                                                                                 | 0                                                                                 | 3435                                                                              | 3295                                                                              | 0                                                                                  | 0                                                                                   | 176                                                                                 | 3725                                                                                | 1568                                                                                | 309                                                                                 |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                                |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |
| Satd. Flow (RTOR)       |                                                                                   | 41                                                                                |                                                                                   |                                                                                   |                                                                                   | 138                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 188                                                                                 |                                                                                     |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |                                                                                   | 45                                                                                |                                                                                    |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   |                                                                                   | 340                                                                               |                                                                                    |                                                                                     |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                    |                                                                                     |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                               | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 2%                                                                                | 4%                                                                                | 5%                                                                                | 0%                                                                                | 2%                                                                                | 3%                                                                                | 3%                                                                                 | 0%                                                                                  | 15%                                                                                 | 2%                                                                                  | 3%                                                                                  | 2%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 209                                                                               | 308                                                                               | 0                                                                                 | 0                                                                                 | 309                                                                               | 485                                                                               | 0                                                                                  | 0                                                                                   | 45                                                                                  | 849                                                                                 | 180                                                                                 | 173                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | Prot                                                                              | NA                                                                                |                                                                                    | pm+pt                                                                               | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 3.0                                                                               | 15.0                                                                              |                                                                                    | 3.0                                                                                 | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 9.5                                                                               | 25.0                                                                              |                                                                                    | 9.5                                                                                 | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 |
| Total Split (s)         | 20.0                                                                              | 34.0                                                                              |                                                                                   | 20.0                                                                              | 20.0                                                                              | 34.0                                                                              |                                                                                    | 13.0                                                                                | 13.0                                                                                | 43.0                                                                                |                                                                                     | 13.0                                                                                |
| Total Split (%)         | 18.2%                                                                             | 30.9%                                                                             |                                                                                   | 18.2%                                                                             | 18.2%                                                                             | 30.9%                                                                             |                                                                                    | 11.8%                                                                               | 11.8%                                                                               | 39.1%                                                                               |                                                                                     | 11.8%                                                                               |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 3.5                                                                               | 6.0                                                                               |                                                                                    | 3.5                                                                                 | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |                                                                                    | 1.0                                                                                 | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                    |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lead                                                                              | Lag                                                                               |                                                                                    | Lead                                                                                | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                    | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | None                                                                              | C-Max                                                                             |                                                                                    | None                                                                                | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                |
| Act Effect Green (s)    | 12.0                                                                              | 28.4                                                                              |                                                                                   |                                                                                   | 14.1                                                                              | 30.5                                                                              |                                                                                    |                                                                                     | 45.6                                                                                | 37.0                                                                                | 110.0                                                                               | 48.7                                                                                |
| Actuated g/C Ratio      | 0.11                                                                              | 0.26                                                                              |                                                                                   |                                                                                   | 0.13                                                                              | 0.28                                                                              |                                                                                    |                                                                                     | 0.41                                                                                | 0.34                                                                                | 1.00                                                                                | 0.44                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024



| Lane Group              | SBT   | SBR   |
|-------------------------|-------|-------|
| Lane Configurations     | ↑↑    | ↑     |
| Traffic Volume (vph)    | 1276  | 208   |
| Future Volume (vph)     | 1276  | 208   |
| Ideal Flow (vphpl)      | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    |
| Grade (%)               | 0%    |       |
| Storage Length (ft)     |       | 75    |
| Storage Lanes           |       | 1     |
| Taper Length (ft)       |       |       |
| Lane Util. Factor       | 0.95  | 1.00  |
| Ped Bike Factor         |       |       |
| Frt                     |       | 0.850 |
| Flt Protected           |       |       |
| Satd. Flow (prot)       | 3574  | 1524  |
| Flt Permitted           |       |       |
| Satd. Flow (perm)       | 3574  | 1524  |
| Right Turn on Red       |       | Yes   |
| Satd. Flow (RTOR)       |       | 188   |
| Link Speed (mph)        | 45    |       |
| Link Distance (ft)      | 964   |       |
| Travel Time (s)         | 14.6  |       |
| Confl. Peds. (#/hr)     |       |       |
| Confl. Bikes (#/hr)     |       |       |
| Peak Hour Factor        | 0.98  | 0.98  |
| Growth Factor           | 100%  | 100%  |
| Heavy Vehicles (%)      | 1%    | 6%    |
| Bus Blockages (#/hr)    | 0     | 0     |
| Parking (#/hr)          |       |       |
| Mid-Block Traffic (%)   | 0%    |       |
| Shared Lane Traffic (%) |       |       |
| Lane Group Flow (vph)   | 1302  | 212   |
| Turn Type               | NA    | Free  |
| Protected Phases        | 4     |       |
| Permitted Phases        |       | Free  |
| Detector Phase          | 4     |       |
| Switch Phase            |       |       |
| Minimum Initial (s)     | 15.0  |       |
| Minimum Split (s)       | 25.0  |       |
| Total Split (s)         | 43.0  |       |
| Total Split (%)         | 39.1% |       |
| Yellow Time (s)         | 4.5   |       |
| All-Red Time (s)        | 1.5   |       |
| Lost Time Adjust (s)    | 0.0   |       |
| Total Lost Time (s)     | 6.0   |       |
| Lead/Lag                | Lag   |       |
| Lead-Lag Optimize?      | Yes   |       |
| Recall Mode             | Max   |       |
| Act Effct Green (s)     | 40.4  | 110.0 |
| Actuated g/C Ratio      | 0.37  | 1.00  |

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| v/c Ratio               | 0.56                                                                              | 0.35                                                                              |                                                                                   |                                                                                   | 0.70                                                                              | 0.48                                                                              |                                                                                    |                                                                                     | 0.28                                                                                | 0.68                                                                                | 0.11                                                                                | 0.69                                                                                |
| Control Delay           | 52.0                                                                              | 30.3                                                                              |                                                                                   |                                                                                   | 55.0                                                                              | 25.7                                                                              |                                                                                    |                                                                                     | 20.6                                                                                | 34.7                                                                                | 0.1                                                                                 | 34.1                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 52.0                                                                              | 30.3                                                                              |                                                                                   |                                                                                   | 55.0                                                                              | 25.7                                                                              |                                                                                    |                                                                                     | 20.6                                                                                | 34.7                                                                                | 0.1                                                                                 | 34.1                                                                                |
| LOS                     | D                                                                                 | C                                                                                 |                                                                                   |                                                                                   | E                                                                                 | C                                                                                 |                                                                                    |                                                                                     | C                                                                                   | C                                                                                   | A                                                                                   | C                                                                                   |
| Approach Delay          |                                                                                   | 39.1                                                                              |                                                                                   |                                                                                   |                                                                                   | 37.1                                                                              |                                                                                    |                                                                                     |                                                                                     | 28.3                                                                                |                                                                                     |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                    |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Queue Length 50th (ft)  | 73                                                                                | 81                                                                                |                                                                                   |                                                                                   | 108                                                                               | 105                                                                               |                                                                                    |                                                                                     | 17                                                                                  | 269                                                                                 | 0                                                                                   | 70                                                                                  |
| Queue Length 95th (ft)  | 108                                                                               | 123                                                                               |                                                                                   |                                                                                   | 155                                                                               | 163                                                                               |                                                                                    |                                                                                     | 38                                                                                  | 340                                                                                 | 0                                                                                   | #130                                                                                |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 260                                                                               |                                                                                    |                                                                                     |                                                                                     | 479                                                                                 |                                                                                     |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                    |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Base Capacity (vph)     | 483                                                                               | 889                                                                               |                                                                                   |                                                                                   | 484                                                                               | 1014                                                                              |                                                                                    |                                                                                     | 183                                                                                 | 1252                                                                                | 1568                                                                                | 249                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.43                                                                              | 0.35                                                                              |                                                                                   |                                                                                   | 0.64                                                                              | 0.48                                                                              |                                                                                    |                                                                                     | 0.25                                                                                | 0.68                                                                                | 0.11                                                                                | 0.69                                                                                |

### Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 40.0

Intersection LOS: D

Intersection Capacity Utilization 78.9%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

### Splits and Phases: 1: 98th Street & Central Avenue

|                                                                                        |                                                                                            |                                                                                        |                                                                                         |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 20 s                                                                                   | 34 s                                                                                       | 13 s                                                                                   | 43 s                                                                                    |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 20 s                                                                                   | 34 s                                                                                       | 13 s                                                                                   | 43 s                                                                                    |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024



| Lane Group              | SBT  | SBR  |
|-------------------------|------|------|
| v/c Ratio               | 0.99 | 0.14 |
| Control Delay           | 59.1 | 0.2  |
| Queue Delay             | 0.0  | 0.0  |
| Total Delay             | 59.1 | 0.2  |
| LOS                     | E    | A    |
| Approach Delay          | 49.2 |      |
| Approach LOS            | D    |      |
| Queue Length 50th (ft)  | ~526 | 0    |
| Queue Length 95th (ft)  | #680 | 0    |
| Internal Link Dist (ft) | 884  |      |
| Turn Bay Length (ft)    |      | 75   |
| Base Capacity (vph)     | 1312 | 1524 |
| Starvation Cap Reductn  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    |
| Reduced v/c Ratio       | 0.99 | 0.14 |
| Intersection Summary    |      |      |



# HCM 6th TWSC

## 2: Central Avenue

05/22/2024

| Intersection               |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
|----------------------------|--------|------------------------|-------|--------|----------------------------|------|--------|-------|--------------------------------|--------|-------|------|------|------|
| Int Delay, s/veh           | 2.7    |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR    | WBU                        | WBL  | WBT    | WBR   | NBL                            | NBT    | NBR   | SBL  | SBT  | SBR  |
| Lane Configurations        |        |                        | ↕↕    |        |                            | ↕    | ↕↕     |       | ↕                              | ↕      | ↕     |      | ↕    |      |
| Traffic Vol, veh/h         | 44     | 4                      | 529   | 47     | 1                          | 43   | 610    | 8     | 20                             | 0      | 38    | 51   | 6    | 2    |
| Future Vol, veh/h          | 44     | 4                      | 529   | 47     | 1                          | 43   | 610    | 8     | 20                             | 0      | 38    | 51   | 6    | 2    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0      | 0                          | 0    | 0      | 0     | 0                              | 0      | 0     | 0    | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free   | Free                       | Free | Free   | Free  | Stop                           | Stop   | Stop  | Stop | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None   | -                          | -    | -      | None  | -                              | -      | None  | -    | -    | None |
| Storage Length             | -      | -                      | -     | -      | -                          | 90   | -      | -     | 0                              | -      | 0     | -    | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -      | -                          | -    | 0      | -     | -                              | 1      | -     | -    | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -      | -                          | -    | 0      | -     | -                              | 0      | -     | -    | 0    | -    |
| Peak Hour Factor           | 95     | 95                     | 95    | 95     | 95                         | 95   | 95     | 95    | 95                             | 95     | 95    | 95   | 95   | 95   |
| Heavy Vehicles, %          | 0      | 0                      | 3     | 2      | 0                          | 0    | 2      | 0     | 0                              | 0      | 0     | 0    | 0    | 0    |
| Mvmt Flow                  | 46     | 4                      | 557   | 49     | 1                          | 45   | 642    | 8     | 21                             | 0      | 40    | 54   | 6    | 2    |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Major/Minor                | Major1 |                        |       | Major2 |                            |      | Minor1 |       |                                | Minor2 |       |      |      |      |
| Conflicting Flow All       | 651    | 650                    | 0     | 0      | 606                        | 606  | 0      | 0     | 1098                           | 1424   | 303   | 1117 | 1444 | 325  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 682                            | 682    | -     | 738  | 738  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 416                            | 742    | -     | 379  | 706  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -      | 6.4                        | 4.1  | -      | -     | 7.5                            | 6.5    | 6.9   | 7.5  | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -      | -                          | -    | -      | -     | 6.5                            | 5.5    | -     | 6.5  | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -      | -                          | -    | -      | -     | 6.5                            | 5.5    | -     | 6.5  | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -      | 2.5                        | 2.2  | -      | -     | 3.5                            | 4      | 3.3   | 3.5  | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 563    | 946                    | -     | -      | 1073                       | 1266 | -      | -     | 170                            | 137    | *887  | *165 | 133  | 677  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 682                            | 630    | -     | *380 | 427  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 590                            | 425    | -     | *837 | 612  | -    |
| Platoon blocked, %         |        |                        | -     | -      | 1                          | 1    | -      | -     |                                |        | 1     |      |      |      |
| Mov Cap-1 Maneuver         | 581    | 581                    | -     | -      | 1259                       | 1259 | -      | -     | 145                            | 114    | *887  | *137 | 111  | 677  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -      | -                          | -    | -      | -     | 315                            | 246    | -     | *252 | 253  | -    |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 591                            | 546    | -     | *329 | 411  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -     | 558                            | 409    | -     | *692 | 530  | -    |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Approach                   | EB     |                        |       | WB     |                            |      | NB     |       |                                | SB     |       |      |      |      |
| HCM Control Delay, s       | 2.3    |                        |       | 0.5    |                            |      | 12     |       |                                | 23.3   |       |      |      |      |
| HCM LOS                    |        |                        |       |        |                            |      | B      |       |                                | C      |       |      |      |      |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3  | EBL                        | EBT  | EBR    | WBL   | WBT                            | WBR    | SBLn1 |      |      |      |
| Capacity (veh/h)           | 315    |                        | -     | 887    | 581                        | -    | -      | 1259  | -                              | -      | 258   |      |      |      |
| HCM Lane V/C Ratio         | 0.067  |                        | -     | 0.045  | 0.007                      | -    | -      | 0.037 | -                              | -      | 0.241 |      |      |      |
| HCM Control Delay (s)      | 17.2   |                        | 0     | 9.3    | 11.8                       | 1.6  | -      | 8     | -                              | -      | 23.3  |      |      |      |
| HCM Lane LOS               | C      |                        | A     | A      | B                          | A    | -      | A     | -                              | -      | C     |      |      |      |
| HCM 95th %tile Q(veh)      | 0.2    |                        | -     | 0.1    | 0                          | -    | -      | 0.1   | -                              | -      | 0.9   |      |      |      |
|                            |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| Notes                      |        |                        |       |        |                            |      |        |       |                                |        |       |      |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |        | +: Computation Not Defined |      |        |       | *: All major volume in platoon |        |       |      |      |      |

# HCM 6th TWSC

## 3: Access Drive & Central Avenue

05/22/2024

| Intersection             |        |      |        |      |        |      |
|--------------------------|--------|------|--------|------|--------|------|
| Int Delay, s/veh         | 0.6    |      |        |      |        |      |
| Movement                 | EBT    | EBR  | WBL    | WBT  | NBL    | NBR  |
| Lane Configurations      | ↑↑↱    |      |        | ↑↑   |        | ↱    |
| Traffic Vol, veh/h       | 539    | 40   | 0      | 676  | 0      | 76   |
| Future Vol, veh/h        | 539    | 40   | 0      | 676  | 0      | 76   |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0    | 0      | 0    |
| Sign Control             | Free   | Free | Free   | Free | Stop   | Stop |
| RT Channelized           | -      | None | -      | None | -      | None |
| Storage Length           | -      | -    | -      | -    | -      | 0    |
| Veh in Median Storage, # | 0      | -    | -      | 0    | 0      | -    |
| Grade, %                 | 0      | -    | -      | 0    | 0      | -    |
| Peak Hour Factor         | 95     | 95   | 95     | 95   | 95     | 95   |
| Heavy Vehicles, %        | 3      | 0    | 0      | 2    | 0      | 0    |
| Mvmt Flow                | 567    | 42   | 0      | 712  | 0      | 80   |
|                          |        |      |        |      |        |      |
| Major/Minor              | Major1 |      | Major2 |      | Minor1 |      |
| Conflicting Flow All     | 0      | 0    | -      | -    | -      | 305  |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
| Critical Hdwy            | -      | -    | -      | -    | -      | 6.9  |
| Critical Hdwy Stg 1      | -      | -    | -      | -    | -      | -    |
| Critical Hdwy Stg 2      | -      | -    | -      | -    | -      | -    |
| Follow-up Hdwy           | -      | -    | -      | -    | -      | 3.3  |
| Pot Cap-1 Maneuver       | -      | -    | 0      | -    | 0      | 697  |
| Stage 1                  | -      | -    | 0      | -    | 0      | -    |
| Stage 2                  | -      | -    | 0      | -    | 0      | -    |
| Platoon blocked, %       | -      | -    |        | -    |        |      |
| Mov Cap-1 Maneuver       | -      | -    | -      | -    | -      | 697  |
| Mov Cap-2 Maneuver       | -      | -    | -      | -    | -      | -    |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Approach                 | EB     |      | WB     |      | NB     |      |
| HCM Control Delay, s     | 0      |      | 0      |      | 10.8   |      |
| HCM LOS                  |        |      |        |      | B      |      |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT  | EBR    | WBT  |        |      |
| Capacity (veh/h)         | 697    | -    | -      | -    |        |      |
| HCM Lane V/C Ratio       | 0.115  | -    | -      | -    |        |      |
| HCM Control Delay (s)    | 10.8   | -    | -      | -    |        |      |
| HCM Lane LOS             | B      | -    | -      | -    |        |      |
| HCM 95th %tile O(veh)    | 0.4    | -    | -      | -    |        |      |

Capacity Analysis Summary Sheets  
Year 2034 Total Projected Weekday Morning Peak Hour

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Configurations     |  |  |                                                                                   |                                                                                   |  |  |                                                                                     |  |  |  |  |  |
| Traffic Volume (vph)    | 456                                                                               | 340                                                                               | 62                                                                                | 7                                                                                 | 182                                                                               | 231                                                                               | 262                                                                                 | 49                                                                                  | 2200                                                                                | 349                                                                                 | 118                                                                                 | 664                                                                                 |
| Future Volume (vph)     | 456                                                                               | 340                                                                               | 62                                                                                | 7                                                                                 | 182                                                                               | 231                                                                               | 262                                                                                 | 49                                                                                  | 2200                                                                                | 349                                                                                 | 118                                                                                 | 664                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 |                                                                                   | 165                                                                               |                                                                                   | 0                                                                                   | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                     | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.977                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.920                                                                             |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |
| Satd. Flow (prot)       | 3400                                                                              | 3391                                                                              | 0                                                                                 | 0                                                                                 | 3310                                                                              | 3179                                                                              | 0                                                                                   | 1703                                                                                | 3762                                                                                | 1553                                                                                | 1656                                                                                | 3539                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                     | 0.317                                                                               |                                                                                     |                                                                                     | 0.068                                                                               |                                                                                     |
| Satd. Flow (perm)       | 3400                                                                              | 3391                                                                              | 0                                                                                 | 0                                                                                 | 3310                                                                              | 3179                                                                              | 0                                                                                   | 568                                                                                 | 3762                                                                                | 1553                                                                                | 119                                                                                 | 3539                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Satd. Flow (RTOR)       |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   | 109                                                                               |                                                                                     |                                                                                     |                                                                                     | 197                                                                                 |                                                                                     |                                                                                     |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |                                                                                   | 45                                                                                |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   |                                                                                   | 340                                                                               |                                                                                     |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     | 964                                                                                 |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                     |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     | 14.6                                                                                |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 3%                                                                                | 4%                                                                                | 4%                                                                                | 0%                                                                                | 6%                                                                                | 5%                                                                                | 4%                                                                                  | 6%                                                                                  | 1%                                                                                  | 4%                                                                                  | 9%                                                                                  | 2%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 475                                                                               | 419                                                                               | 0                                                                                 | 0                                                                                 | 197                                                                               | 514                                                                               | 0                                                                                   | 51                                                                                  | 2292                                                                                | 364                                                                                 | 123                                                                                 | 692                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | Prot                                                                              | NA                                                                                |                                                                                     | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               | NA                                                                                  |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                     | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |                                                                                     |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                     | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   | 4                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 3.0                                                                               | 15.0                                                                              |                                                                                     | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 | 15.0                                                                                |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 9.5                                                                               | 25.0                                                                              |                                                                                     | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 | 25.0                                                                                |
| Total Split (s)         | 22.0                                                                              | 40.0                                                                              |                                                                                   | 16.0                                                                              | 16.0                                                                              | 34.0                                                                              |                                                                                     | 12.0                                                                                | 62.0                                                                                |                                                                                     | 12.0                                                                                | 62.0                                                                                |
| Total Split (%)         | 16.9%                                                                             | 30.8%                                                                             |                                                                                   | 12.3%                                                                             | 12.3%                                                                             | 26.2%                                                                             |                                                                                     | 9.2%                                                                                | 47.7%                                                                               |                                                                                     | 9.2%                                                                                | 47.7%                                                                               |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 3.5                                                                               | 6.0                                                                               |                                                                                     | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 | 4.5                                                                                 |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |                                                                                     | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 | 1.5                                                                                 |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lead                                                                              | Lag                                                                               |                                                                                     | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                     | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | None                                                                              | C-Max                                                                             |                                                                                     | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                | Max                                                                                 |
| Act Effect Green (s)    | 17.5                                                                              | 33.4                                                                              |                                                                                   |                                                                                   | 11.1                                                                              | 27.0                                                                              |                                                                                     | 64.4                                                                                | 56.0                                                                                | 130.0                                                                               | 66.1                                                                                | 58.6                                                                                |
| Actuated g/C Ratio      | 0.13                                                                              | 0.26                                                                              |                                                                                   |                                                                                   | 0.09                                                                              | 0.21                                                                              |                                                                                     | 0.50                                                                                | 0.43                                                                                | 1.00                                                                                | 0.51                                                                                | 0.45                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024

|                         |       |
|-------------------------|-------|
| Lane Group              | SBR   |
| Lane Configurations     |       |
| Traffic Volume (vph)    | 203   |
| Future Volume (vph)     | 203   |
| Ideal Flow (vphpl)      | 1900  |
| Lane Width (ft)         | 12    |
| Grade (%)               |       |
| Storage Length (ft)     | 75    |
| Storage Lanes           | 1     |
| Taper Length (ft)       |       |
| Lane Util. Factor       | 1.00  |
| Ped Bike Factor         |       |
| Frt                     | 0.850 |
| Flt Protected           |       |
| Satd. Flow (prot)       | 1524  |
| Flt Permitted           |       |
| Satd. Flow (perm)       | 1524  |
| Right Turn on Red       | Yes   |
| Satd. Flow (RTOR)       | 197   |
| Link Speed (mph)        |       |
| Link Distance (ft)      |       |
| Travel Time (s)         |       |
| Confl. Peds. (#/hr)     |       |
| Confl. Bikes (#/hr)     |       |
| Peak Hour Factor        | 0.96  |
| Growth Factor           | 100%  |
| Heavy Vehicles (%)      | 6%    |
| Bus Blockages (#/hr)    | 0     |
| Parking (#/hr)          |       |
| Mid-Block Traffic (%)   |       |
| Shared Lane Traffic (%) |       |
| Lane Group Flow (vph)   | 211   |
| Turn Type               | Free  |
| Protected Phases        |       |
| Permitted Phases        | Free  |
| Detector Phase          |       |
| Switch Phase            |       |
| Minimum Initial (s)     |       |
| Minimum Split (s)       |       |
| Total Split (s)         |       |
| Total Split (%)         |       |
| Yellow Time (s)         |       |
| All-Red Time (s)        |       |
| Lost Time Adjust (s)    |       |
| Total Lost Time (s)     |       |
| Lead/Lag                |       |
| Lead-Lag Optimize?      |       |
| Recall Mode             |       |
| Act Effct Green (s)     | 130.0 |
| Actuated g/C Ratio      | 1.00  |

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| v/c Ratio               | 1.04                                                                              | 0.48                                                                              |                                                                                   |                                                                                   | 0.70                                                                              | 0.69                                                                              |                                                                                    | 0.15                                                                                | 1.41                                                                                | 0.23                                                                                | 0.83                                                                                | 0.43                                                                                |
| Control Delay           | 106.7                                                                             | 41.6                                                                              |                                                                                   |                                                                                   | 72.3                                                                              | 42.3                                                                              |                                                                                    | 15.7                                                                                | 221.3                                                                               | 0.4                                                                                 | 65.1                                                                                | 26.0                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 106.7                                                                             | 41.6                                                                              |                                                                                   |                                                                                   | 72.3                                                                              | 42.3                                                                              |                                                                                    | 15.7                                                                                | 221.3                                                                               | 0.4                                                                                 | 65.1                                                                                | 26.0                                                                                |
| LOS                     | F                                                                                 | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 | D                                                                                 |                                                                                    | B                                                                                   | F                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   |
| Approach Delay          |                                                                                   | 76.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 50.6                                                                              |                                                                                    |                                                                                     | 187.7                                                                               |                                                                                     |                                                                                     | 25.4                                                                                |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                    |                                                                                     | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |
| Queue Length 50th (ft)  | ~222                                                                              | 153                                                                               |                                                                                   |                                                                                   | 84                                                                                | 165                                                                               |                                                                                    | 20                                                                                  | ~1365                                                                               | 0                                                                                   | 56                                                                                  | 213                                                                                 |
| Queue Length 95th (ft)  | #332                                                                              | 205                                                                               |                                                                                   |                                                                                   | 126                                                                               | 228                                                                               |                                                                                    | 41                                                                                  | #1496                                                                               | 0                                                                                   | #169                                                                                | 268                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 260                                                                               |                                                                                    |                                                                                     | 479                                                                                 |                                                                                     |                                                                                     | 884                                                                                 |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                    | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |                                                                                     |
| Base Capacity (vph)     | 457                                                                               | 882                                                                               |                                                                                   |                                                                                   | 292                                                                               | 746                                                                               |                                                                                    | 349                                                                                 | 1620                                                                                | 1553                                                                                | 149                                                                                 | 1595                                                                                |
| 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       | 1.04                                                                              | 0.48                                                                              |                                                                                   |                                                                                   | 0.67                                                                              | 0.69                                                                              |                                                                                    | 0.15                                                                                | 1.41                                                                                | 0.23                                                                                | 0.83                                                                                | 0.43                                                                                |

### Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 39 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.41

Intersection Signal Delay: 119.6

Intersection LOS: F

Intersection Capacity Utilization 110.5%

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: 98th Street & Central Avenue

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø3                                                                                  | Ø4                                                                                  |
| 16 s                                                                                | 40 s                                                                                | 12 s                                                                                | 62 s                                                                                |
|  |  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø7                                                                                  | Ø8                                                                                  |
| 22 s                                                                                | 34 s                                                                                | 12 s                                                                                | 62 s                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024



|                         |      |
|-------------------------|------|
| Lane Group              | SBR  |
| v/c Ratio               | 0.14 |
| Control Delay           | 0.2  |
| Queue Delay             | 0.0  |
| Total Delay             | 0.2  |
| LOS                     | A    |
| Approach Delay          |      |
| Approach LOS            |      |
| Queue Length 50th (ft)  | 0    |
| Queue Length 95th (ft)  | 0    |
| Internal Link Dist (ft) |      |
| Turn Bay Length (ft)    | 75   |
| Base Capacity (vph)     | 1524 |
| Starvation Cap Reductn  | 0    |
| Spillback Cap Reductn   | 0    |
| Storage Cap Reductn     | 0    |
| Reduced v/c Ratio       | 0.14 |
| Intersection Summary    |      |

HCM 6th TWSC  
2: Central Avenue

05/22/2024

| Intersection               |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
|----------------------------|--------|------------------------|-------|-------|----------------------------|------|------|--------|--------------------------------|------|--------|------|------|
| Int Delay, s/veh           | 4.5    |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR   | WBL                        | WBT  | WBR  | NBL    | NBT                            | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations        |        |                        | ↔↔    |       | ↔                          | ↔↔   |      | ↔      | ↑                              | ↗    |        | ↕    |      |
| Traffic Vol, veh/h         | 44     | 2                      | 832   | 35    | 32                         | 572  | 0    | 112    | 0                              | 120  | 23     | 5    | 2    |
| Future Vol, veh/h          | 44     | 2                      | 832   | 35    | 32                         | 572  | 0    | 112    | 0                              | 120  | 23     | 5    | 2    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0     | 0                          | 0    | 0    | 0      | 0                              | 0    | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free  | Free                       | Free | Free | Stop   | Stop                           | Stop | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None  | -                          | -    | None | -      | -                              | None | -      | -    | None |
| Storage Length             | -      | -                      | -     | -     | 90                         | -    | -    | 0      | -                              | 0    | -      | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 1                              | -    | -      | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -     | -                          | 0    | -    | -      | 0                              | -    | -      | 0    | -    |
| Peak Hour Factor           | 91     | 91                     | 91    | 91    | 91                         | 91   | 91   | 91     | 91                             | 91   | 91     | 91   | 91   |
| Heavy Vehicles, %          | 0      | 0                      | 4     | 4     | 5                          | 7    | 0    | 2      | 0                              | 4    | 7      | 0    | 0    |
| Mvmt Flow                  | 48     | 2                      | 914   | 38    | 35                         | 629  | 0    | 123    | 0                              | 132  | 25     | 5    | 2    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Major/Minor                | Major1 |                        |       |       | Major2                     |      |      | Minor1 |                                |      | Minor2 |      |      |
| Conflicting Flow All       | 629    | 629                    | 0     | 0     | 952                        | 0    | 0    | 1420   | 1732                           | 476  | 1256   | 1751 | 315  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 1033   | 1033                           | -    | 699    | 699  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 387    | 699                            | -    | 557    | 1052 | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -     | 4.2                        | -    | -    | 7.54   | 6.5                            | 6.98 | 7.64   | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -     | -                          | -    | -    | 6.54   | 5.5                            | -    | 6.64   | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -     | 2.25                       | -    | -    | 3.52   | 4                              | 3.34 | 3.57   | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 581    | 963                    | -     | -     | 1072                       | -    | -    | ~ 97   | 89                             | *744 | *123   | 87   | 687  |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 576    | 535                            | -    | *385   | 445  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 608    | 445                            | -    | *696   | 520  | -    |
| Platoon blocked, %         |        |                        | -     | -     | 1                          | -    | -    |        |                                | 1    |        |      |      |
| Mov Cap-1 Maneuver         | 589    | 589                    | -     | -     | 1072                       | -    | -    | ~ 79   | 70                             | *744 | *85    | 68   | 687  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -     | -                          | -    | -    | 263    | 217                            | -    | *203   | 217  | -    |
| Stage 1                    | -      | -                      | -     | -     | -                          | -    | -    | 469    | 435                            | -    | *313   | 430  | -    |
| Stage 2                    | -      | -                      | -     | -     | -                          | -    | -    | 579    | 430                            | -    | *466   | 424  | -    |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Approach                   | EB     |                        |       |       | WB                         |      |      | NB     |                                |      | SB     |      |      |
| HCM Control Delay, s       | 2.6    |                        |       |       | 0.4                        |      |      | 20.2   |                                |      | 24.8   |      |      |
| HCM LOS                    |        |                        |       |       |                            |      |      | C      |                                |      | C      |      |      |
|                            |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3 | EBL                        | EBT  | EBR  | WBL    | WBT                            | WBR  | SBLn1  |      |      |
| Capacity (veh/h)           | 263    |                        | -     | 744   | 589                        | -    | -    | 1072   | -                              | -    | 215    |      |      |
| HCM Lane V/C Ratio         | 0.468  |                        | -     | 0.177 | 0.004                      | -    | -    | 0.033  | -                              | -    | 0.153  |      |      |
| HCM Control Delay (s)      | 30.2   |                        | 0     | 10.9  | 11.7                       | 2.2  | -    | 8.5    | -                              | -    | 24.8   |      |      |
| HCM Lane LOS               | D      |                        | A     | B     | B                          | A    | -    | A      | -                              | -    | C      |      |      |
| HCM 95th %tile Q(veh)      | 2.3    |                        | -     | 0.6   | 0                          | -    | -    | 0.1    | -                              | -    | 0.5    |      |      |
| Notes                      |        |                        |       |       |                            |      |      |        |                                |      |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |       | +: Computation Not Defined |      |      |        | *: All major volume in platoon |      |        |      |      |



# HCM 6th TWSC

## 3: Access Drive & Central Avenue

05/22/2024

| Intersection             |        |      |        |      |        |      |
|--------------------------|--------|------|--------|------|--------|------|
| Int Delay, s/veh         | 0.9    |      |        |      |        |      |
| Movement                 | EBT    | EBR  | WBL    | WBT  | NBL    | NBR  |
| Lane Configurations      | ↑↑↱    |      |        | ↑↑   |        | ↱    |
| Traffic Vol, veh/h       | 773    | 41   | 0      | 683  | 0      | 114  |
| Future Vol, veh/h        | 773    | 41   | 0      | 683  | 0      | 114  |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0    | 0      | 0    |
| Sign Control             | Free   | Free | Free   | Free | Stop   | Stop |
| RT Channelized           | -      | None | -      | None | -      | None |
| Storage Length           | -      | -    | -      | -    | -      | 0    |
| Veh in Median Storage, # | 0      | -    | -      | 0    | 0      | -    |
| Grade, %                 | 0      | -    | -      | 0    | 0      | -    |
| Peak Hour Factor         | 95     | 95   | 95     | 95   | 95     | 95   |
| Heavy Vehicles, %        | 4      | 0    | 0      | 7    | 0      | 0    |
| Mvmt Flow                | 814    | 43   | 0      | 719  | 0      | 120  |
|                          |        |      |        |      |        |      |
| Major/Minor              | Major1 |      | Major2 |      | Minor1 |      |
| Conflicting Flow All     | 0      | 0    | -      | -    | -      | 429  |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
| Critical Hdwy            | -      | -    | -      | -    | -      | 6.9  |
| Critical Hdwy Stg 1      | -      | -    | -      | -    | -      | -    |
| Critical Hdwy Stg 2      | -      | -    | -      | -    | -      | -    |
| Follow-up Hdwy           | -      | -    | -      | -    | -      | 3.3  |
| Pot Cap-1 Maneuver       | -      | -    | 0      | -    | 0      | 580  |
| Stage 1                  | -      | -    | 0      | -    | 0      | -    |
| Stage 2                  | -      | -    | 0      | -    | 0      | -    |
| Platoon blocked, %       | -      | -    |        | -    |        |      |
| Mov Cap-1 Maneuver       | -      | -    | -      | -    | -      | 580  |
| Mov Cap-2 Maneuver       | -      | -    | -      | -    | -      | -    |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Approach                 | EB     |      | WB     |      | NB     |      |
| HCM Control Delay, s     | 0      |      | 0      |      | 12.8   |      |
| HCM LOS                  |        |      |        |      | B      |      |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT  | EBR    | WBT  |        |      |
| Capacity (veh/h)         | 580    | -    | -      | -    |        |      |
| HCM Lane V/C Ratio       | 0.207  | -    | -      | -    |        |      |
| HCM Control Delay (s)    | 12.8   | -    | -      | -    |        |      |
| HCM Lane LOS             | B      | -    | -      | -    |        |      |
| HCM 95th %tile O(veh)    | 0.8    | -    | -      | -    |        |      |

Capacity Analysis Summary Sheets  
Year 2034 Total Projected Weekday Evening Peak Hour

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| Lane Configurations     |  |  |                                                                                   |                                                                                   |  |  |                                                                                    |                                                                                     |  |  |  |  |
| Traffic Volume (vph)    | 301                                                                               | 329                                                                               | 114                                                                               | 9                                                                                 | 429                                                                               | 419                                                                               | 267                                                                                | 2                                                                                   | 63                                                                                  | 1230                                                                                | 270                                                                                 | 223                                                                                 |
| Future Volume (vph)     | 301                                                                               | 329                                                                               | 114                                                                               | 9                                                                                 | 429                                                                               | 419                                                                               | 267                                                                                | 2                                                                                   | 63                                                                                  | 1230                                                                                | 270                                                                                 | 223                                                                                 |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 2000                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                | 12                                                                                 | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Storage Length (ft)     | 165                                                                               |                                                                                   | 0                                                                                 |                                                                                   | 165                                                                               |                                                                                   | 0                                                                                  |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Storage Lanes           | 2                                                                                 |                                                                                   | 0                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 0                                                                                  |                                                                                     | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |
| Taper Length (ft)       | 125                                                                               |                                                                                   |                                                                                   |                                                                                   | 135                                                                               |                                                                                   |                                                                                    |                                                                                     | 180                                                                                 |                                                                                     |                                                                                     | 185                                                                                 |
| Lane Util. Factor       | 0.97                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.97                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped Bike Factor         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                     |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.942                                                                             |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |
| Satd. Flow (prot)       | 3433                                                                              | 3331                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3302                                                                              | 0                                                                                  | 0                                                                                   | 1576                                                                                | 3725                                                                                | 1568                                                                                | 1770                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                    |                                                                                     | 0.106                                                                               |                                                                                     |                                                                                     | 0.100                                                                               |
| Satd. Flow (perm)       | 3433                                                                              | 3331                                                                              | 0                                                                                 | 0                                                                                 | 3434                                                                              | 3302                                                                              | 0                                                                                  | 0                                                                                   | 176                                                                                 | 3725                                                                                | 1568                                                                                | 186                                                                                 |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                                |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |
| Satd. Flow (RTOR)       |                                                                                   | 41                                                                                |                                                                                   |                                                                                   |                                                                                   | 123                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 188                                                                                 |                                                                                     |
| Link Speed (mph)        |                                                                                   | 45                                                                                |                                                                                   |                                                                                   |                                                                                   | 45                                                                                |                                                                                    |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     |
| Link Distance (ft)      |                                                                                   | 965                                                                               |                                                                                   |                                                                                   |                                                                                   | 340                                                                               |                                                                                    |                                                                                     |                                                                                     | 559                                                                                 |                                                                                     |                                                                                     |
| Travel Time (s)         |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                    |                                                                                     |                                                                                     | 8.5                                                                                 |                                                                                     |                                                                                     |
| Confl. Peds. (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Confl. Bikes (#/hr)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                |
| Growth Factor           | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                              | 100%                                                                               | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                | 100%                                                                                |
| Heavy Vehicles (%)      | 2%                                                                                | 4%                                                                                | 5%                                                                                | 0%                                                                                | 2%                                                                                | 3%                                                                                | 3%                                                                                 | 0%                                                                                  | 15%                                                                                 | 2%                                                                                  | 3%                                                                                  | 2%                                                                                  |
| Bus Blockages (#/hr)    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Parking (#/hr)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Mid-Block Traffic (%)   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                    |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 307                                                                               | 452                                                                               | 0                                                                                 | 0                                                                                 | 447                                                                               | 700                                                                               | 0                                                                                  | 0                                                                                   | 66                                                                                  | 1255                                                                                | 276                                                                                 | 228                                                                                 |
| Turn Type               | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                              | Prot                                                                              | NA                                                                                |                                                                                    | pm+pt                                                                               | pm+pt                                                                               | NA                                                                                  | Free                                                                                | pm+pt                                                                               |
| Protected Phases        | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     | Free                                                                                | 4                                                                                   |
| Detector Phase          | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 3                                                                                   | 3                                                                                   | 8                                                                                   |                                                                                     | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 16.0                                                                              |                                                                                   | 3.0                                                                               | 3.0                                                                               | 15.0                                                                              |                                                                                    | 3.0                                                                                 | 3.0                                                                                 | 15.0                                                                                |                                                                                     | 3.0                                                                                 |
| Minimum Split (s)       | 9.5                                                                               | 25.0                                                                              |                                                                                   | 9.5                                                                               | 9.5                                                                               | 25.0                                                                              |                                                                                    | 9.5                                                                                 | 9.5                                                                                 | 24.0                                                                                |                                                                                     | 9.5                                                                                 |
| Total Split (s)         | 20.0                                                                              | 34.0                                                                              |                                                                                   | 20.0                                                                              | 20.0                                                                              | 34.0                                                                              |                                                                                    | 13.0                                                                                | 13.0                                                                                | 43.0                                                                                |                                                                                     | 13.0                                                                                |
| Total Split (%)         | 18.2%                                                                             | 30.9%                                                                             |                                                                                   | 18.2%                                                                             | 18.2%                                                                             | 30.9%                                                                             |                                                                                    | 11.8%                                                                               | 11.8%                                                                               | 39.1%                                                                               |                                                                                     | 11.8%                                                                               |
| Yellow Time (s)         | 3.5                                                                               | 6.0                                                                               |                                                                                   | 3.5                                                                               | 3.5                                                                               | 6.0                                                                               |                                                                                    | 3.5                                                                                 | 3.5                                                                                 | 4.5                                                                                 |                                                                                     | 3.5                                                                                 |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               |                                                                                    | 1.0                                                                                 | 1.0                                                                                 | 1.5                                                                                 |                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s)    | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)     | 4.5                                                                               | 7.0                                                                               |                                                                                   |                                                                                   | 4.5                                                                               | 7.0                                                                               |                                                                                    |                                                                                     | 4.5                                                                                 | 6.0                                                                                 |                                                                                     | 4.5                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lead                                                                              | Lag                                                                               |                                                                                    | Lead                                                                                | Lead                                                                                | Lag                                                                                 |                                                                                     | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                    | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |                                                                                     | Yes                                                                                 |
| Recall Mode             | None                                                                              | C-Max                                                                             |                                                                                   | None                                                                              | None                                                                              | C-Max                                                                             |                                                                                    | None                                                                                | None                                                                                | Max                                                                                 |                                                                                     | None                                                                                |
| Act Effect Green (s)    | 14.1                                                                              | 27.0                                                                              |                                                                                   |                                                                                   | 15.5                                                                              | 28.4                                                                              |                                                                                    |                                                                                     | 46.1                                                                                | 37.0                                                                                | 110.0                                                                               | 48.3                                                                                |
| Actuated g/C Ratio      | 0.13                                                                              | 0.25                                                                              |                                                                                   |                                                                                   | 0.14                                                                              | 0.26                                                                              |                                                                                    |                                                                                     | 0.42                                                                                | 0.34                                                                                | 1.00                                                                                | 0.44                                                                                |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024



| Lane Group              | SBT   | SBR   |
|-------------------------|-------|-------|
| Lane Configurations     | ↑↑    | ↑     |
| Traffic Volume (vph)    | 1878  | 302   |
| Future Volume (vph)     | 1878  | 302   |
| Ideal Flow (vphpl)      | 1900  | 1900  |
| Lane Width (ft)         | 12    | 12    |
| Grade (%)               | 0%    |       |
| Storage Length (ft)     |       | 75    |
| Storage Lanes           |       | 1     |
| Taper Length (ft)       |       |       |
| Lane Util. Factor       | 0.95  | 1.00  |
| Ped Bike Factor         |       |       |
| Frt                     |       | 0.850 |
| Flt Protected           |       |       |
| Satd. Flow (prot)       | 3574  | 1524  |
| Flt Permitted           |       |       |
| Satd. Flow (perm)       | 3574  | 1524  |
| Right Turn on Red       |       | Yes   |
| Satd. Flow (RTOR)       |       | 188   |
| Link Speed (mph)        | 45    |       |
| Link Distance (ft)      | 964   |       |
| Travel Time (s)         | 14.6  |       |
| Confl. Peds. (#/hr)     |       |       |
| Confl. Bikes (#/hr)     |       |       |
| Peak Hour Factor        | 0.98  | 0.98  |
| Growth Factor           | 100%  | 100%  |
| Heavy Vehicles (%)      | 1%    | 6%    |
| Bus Blockages (#/hr)    | 0     | 0     |
| Parking (#/hr)          |       |       |
| Mid-Block Traffic (%)   | 0%    |       |
| Shared Lane Traffic (%) |       |       |
| Lane Group Flow (vph)   | 1916  | 308   |
| Turn Type               | NA    | Free  |
| Protected Phases        | 4     |       |
| Permitted Phases        |       | Free  |
| Detector Phase          | 4     |       |
| Switch Phase            |       |       |
| Minimum Initial (s)     | 15.0  |       |
| Minimum Split (s)       | 25.0  |       |
| Total Split (s)         | 43.0  |       |
| Total Split (%)         | 39.1% |       |
| Yellow Time (s)         | 4.5   |       |
| All-Red Time (s)        | 1.5   |       |
| Lost Time Adjust (s)    | 0.0   |       |
| Total Lost Time (s)     | 6.0   |       |
| Lead/Lag                | Lag   |       |
| Lead-Lag Optimize?      | Yes   |       |
| Recall Mode             | Max   |       |
| Act Effct Green (s)     | 40.0  | 110.0 |
| Actuated g/C Ratio      | 0.36  | 1.00  |

# Lanes, Volumes, Timings

## 1: 98th Street & Central Avenue

05/22/2024

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBU                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                                 | NBU                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 |
| v/c Ratio               | 0.70                                                                              | 0.53                                                                              |                                                                                   |                                                                                   | 0.93                                                                              | 0.74                                                                              |                                                                                     |                                                                                     | 0.39                                                                                | 1.00                                                                                | 0.18                                                                                | 1.12                                                                                |
| Control Delay           | 54.8                                                                              | 35.3                                                                              |                                                                                   |                                                                                   | 73.5                                                                              | 36.8                                                                              |                                                                                     |                                                                                     | 23.4                                                                                | 63.0                                                                                | 0.2                                                                                 | 126.2                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 54.8                                                                              | 35.3                                                                              |                                                                                   |                                                                                   | 73.5                                                                              | 36.8                                                                              |                                                                                     |                                                                                     | 23.4                                                                                | 63.0                                                                                | 0.2                                                                                 | 126.2                                                                               |
| LOS                     | D                                                                                 | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 | D                                                                                 |                                                                                     |                                                                                     | C                                                                                   | E                                                                                   | A                                                                                   | F                                                                                   |
| Approach Delay          |                                                                                   | 43.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 51.1                                                                              |                                                                                     |                                                                                     |                                                                                     | 50.5                                                                                |                                                                                     |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Queue Length 50th (ft)  | 107                                                                               | 132                                                                               |                                                                                   |                                                                                   | 163                                                                               | 201                                                                               |                                                                                     |                                                                                     | 25                                                                                  | ~465                                                                                | 0                                                                                   | ~137                                                                                |
| Queue Length 95th (ft)  | 153                                                                               | 185                                                                               |                                                                                   |                                                                                   | m#257                                                                             | m272                                                                              |                                                                                     |                                                                                     | 51                                                                                  | #622                                                                                | 0                                                                                   | #296                                                                                |
| Internal Link Dist (ft) |                                                                                   | 885                                                                               |                                                                                   |                                                                                   |                                                                                   | 260                                                                               |                                                                                     |                                                                                     |                                                                                     | 479                                                                                 |                                                                                     |                                                                                     |
| Turn Bay Length (ft)    | 165                                                                               |                                                                                   |                                                                                   |                                                                                   | 165                                                                               |                                                                                   |                                                                                     |                                                                                     | 220                                                                                 |                                                                                     | 215                                                                                 | 85                                                                                  |
| Base Capacity (vph)     | 483                                                                               | 848                                                                               |                                                                                   |                                                                                   | 483                                                                               | 944                                                                               |                                                                                     |                                                                                     | 183                                                                                 | 1252                                                                                | 1568                                                                                | 203                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.64                                                                              | 0.53                                                                              |                                                                                   |                                                                                   | 0.93                                                                              | 0.74                                                                              |                                                                                     |                                                                                     | 0.36                                                                                | 1.00                                                                                | 0.18                                                                                | 1.12                                                                                |

### Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

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

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.47

Intersection Signal Delay: 113.3

Intersection LOS: F

Intersection Capacity Utilization 102.6%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: 98th Street & Central Avenue

|                                                                                     |                                                                                     |                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø3                                                                                  | Ø4                                                                                   |
| 20 s                                                                                | 34 s                                                                                | 13 s                                                                                | 43 s                                                                                 |
|  |  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø7                                                                                  | Ø8                                                                                   |
| 20 s                                                                                | 34 s                                                                                | 13 s                                                                                | 43 s                                                                                 |

Lanes, Volumes, Timings  
1: 98th Street & Central Avenue

05/22/2024



| Lane Group              | SBT   | SBR  |
|-------------------------|-------|------|
| v/c Ratio               | 1.47  | 0.20 |
| Control Delay           | 247.2 | 0.3  |
| Queue Delay             | 0.0   | 0.0  |
| Total Delay             | 247.2 | 0.3  |
| LOS                     | F     | A    |
| Approach Delay          | 204.9 |      |
| Approach LOS            | F     |      |
| Queue Length 50th (ft)  | ~1013 | 0    |
| Queue Length 95th (ft)  | #1157 | 0    |
| Internal Link Dist (ft) | 884   |      |
| Turn Bay Length (ft)    |       | 75   |
| Base Capacity (vph)     | 1299  | 1524 |
| Starvation Cap Reductn  | 0     | 0    |
| Spillback Cap Reductn   | 0     | 0    |
| Storage Cap Reductn     | 0     | 0    |
| Reduced v/c Ratio       | 1.47  | 0.20 |
| Intersection Summary    |       |      |

HCM 6th TWSC  
2: Central Avenue

05/22/2024

| Intersection               |        |                        |       |        |                            |      |        |                                |      |        |       |       |      |      |
|----------------------------|--------|------------------------|-------|--------|----------------------------|------|--------|--------------------------------|------|--------|-------|-------|------|------|
| Int Delay, s/veh           | 6.5    |                        |       |        |                            |      |        |                                |      |        |       |       |      |      |
| Movement                   | EBU    | EBL                    | EBT   | EBR    | WBU                        | WBL  | WBT    | WBR                            | NBL  | NBT    | NBR   | SBL   | SBT  | SBR  |
| Lane Configurations        |        |                        | ↕↕    |        |                            | ↕    | ↕↕     |                                | ↕    | ↕      | ↕     |       | ↕↕   |      |
| Traffic Vol, veh/h         | 48     | 6                      | 758   | 69     | 2                          | 63   | 892    | 12                             | 29   | 0      | 57    | 75    | 9    | 3    |
| Future Vol, veh/h          | 48     | 6                      | 758   | 69     | 2                          | 63   | 892    | 12                             | 29   | 0      | 57    | 75    | 9    | 3    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0     | 0      | 0                          | 0    | 0      | 0                              | 0    | 0      | 0     | 0     | 0    | 0    |
| Sign Control               | Free   | Free                   | Free  | Free   | Free                       | Free | Free   | Free                           | Stop | Stop   | Stop  | Stop  | Stop | Stop |
| RT Channelized             | -      | -                      | -     | None   | -                          | -    | -      | None                           | -    | -      | None  | -     | -    | None |
| Storage Length             | -      | -                      | -     | -      | -                          | 90   | -      | -                              | 0    | -      | 0     | -     | -    | -    |
| Veh in Median Storage, #   | -      | -                      | 0     | -      | -                          | -    | 0      | -                              | -    | 1      | -     | -     | 1    | -    |
| Grade, %                   | -      | -                      | 0     | -      | -                          | -    | 0      | -                              | -    | 0      | -     | -     | 0    | -    |
| Peak Hour Factor           | 95     | 95                     | 95    | 95     | 95                         | 95   | 95     | 95                             | 95   | 95     | 95    | 95    | 95   | 95   |
| Heavy Vehicles, %          | 0      | 0                      | 3     | 2      | 0                          | 0    | 2      | 0                              | 0    | 0      | 0     | 0     | 0    | 0    |
| Mvmt Flow                  | 51     | 6                      | 798   | 73     | 2                          | 66   | 939    | 13                             | 31   | 0      | 60    | 79    | 9    | 3    |
|                            |        |                        |       |        |                            |      |        |                                |      |        |       |       |      |      |
| Major/Minor                | Major1 |                        |       | Major2 |                            |      | Minor1 |                                |      | Minor2 |       |       |      |      |
| Conflicting Flow All       | 952    | 952                    | 0     | 0      | 871                        | 871  | 0      | 0                              | 1559 | 2037   | 436   | 1595  | 2067 | 476  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -                              | 949  | 949    | -     | 1082  | 1082 | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -                              | 610  | 1088   | -     | 513   | 985  | -    |
| Critical Hdwy              | 6.4    | 4.1                    | -     | -      | 6.4                        | 4.1  | -      | -                              | 7.5  | 6.5    | 6.9   | 7.5   | 6.5  | 6.9  |
| Critical Hdwy Stg 1        | -      | -                      | -     | -      | -                          | -    | -      | -                              | 6.5  | 5.5    | -     | 6.5   | 5.5  | -    |
| Critical Hdwy Stg 2        | -      | -                      | -     | -      | -                          | -    | -      | -                              | 6.5  | 5.5    | -     | 6.5   | 5.5  | -    |
| Follow-up Hdwy             | 2.5    | 2.2                    | -     | -      | 2.5                        | 2.2  | -      | -                              | 3.5  | 4      | 3.3   | 3.5   | 4    | 3.3  |
| Pot Cap-1 Maneuver         | 362    | 730                    | -     | -      | 902                        | 1097 | -      | -                              | 78   | 57     | *803  | *~ 73 | 55   | 541  |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -                              | 567  | 535    | -     | *236  | 296  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -                              | 453  | 294    | -     | *758  | 509  | -    |
| Platoon blocked, %         |        |                        | -     | -      | 1                          | 1    | -      | -                              |      |        | 1     |       |      |      |
| Mov Cap-1 Maneuver         | 381    | 381                    | -     | -      | 1087                       | 1087 | -      | -                              | 55   | 38     | *803  | *~ 50 | 36   | 541  |
| Mov Cap-2 Maneuver         | -      | -                      | -     | -      | -                          | -    | -      | -                              | 196  | 142    | -     | *127  | 146  | -    |
| Stage 1                    | -      | -                      | -     | -      | -                          | -    | -      | -                              | 400  | 378    | -     | *167  | 277  | -    |
| Stage 2                    | -      | -                      | -     | -      | -                          | -    | -      | -                              | 408  | 275    | -     | *495  | 359  | -    |
|                            |        |                        |       |        |                            |      |        |                                |      |        |       |       |      |      |
| Approach                   | EB     |                        |       | WB     |                            |      | NB     |                                |      | SB     |       |       |      |      |
| HCM Control Delay, s       | 5      |                        |       | 0.6    |                            |      | 15.5   |                                |      | 78.5   |       |       |      |      |
| HCM LOS                    |        |                        |       |        |                            |      | C      |                                |      | F      |       |       |      |      |
|                            |        |                        |       |        |                            |      |        |                                |      |        |       |       |      |      |
| Minor Lane/Major Mvmt      | NBLn1  |                        | NBLn2 | NBLn3  | EBL                        | EBT  | EBR    | WBL                            | WBT  | WBR    | SBLn1 |       |      |      |
| Capacity (veh/h)           | 196    |                        | -     | 803    | 381                        | -    | -      | 1087                           | -    | -      | 132   |       |      |      |
| HCM Lane V/C Ratio         | 0.156  |                        | -     | 0.075  | 0.017                      | -    | -      | 0.063                          | -    | -      | 0.694 |       |      |      |
| HCM Control Delay (s)      | 26.7   |                        | 0     | 9.8    | 16.1                       | 4.7  | -      | 8.5                            | -    | -      | 78.5  |       |      |      |
| HCM Lane LOS               | D      |                        | A     | A      | C                          | A    | -      | A                              | -    | -      | F     |       |      |      |
| HCM 95th %tile Q(veh)      | 0.5    |                        | -     | 0.2    | 0.1                        | -    | -      | 0.2                            | -    | -      | 3.9   |       |      |      |
| Notes                      |        |                        |       |        |                            |      |        |                                |      |        |       |       |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |       |        | +: Computation Not Defined |      |        | *: All major volume in platoon |      |        |       |       |      |      |

# HCM 6th TWSC

## 3: Access Drive & Central Avenue

05/22/2024

| Intersection             |        |      |        |      |        |      |
|--------------------------|--------|------|--------|------|--------|------|
| Int Delay, s/veh         | 0.5    |      |        |      |        |      |
| Movement                 | EBT    | EBR  | WBL    | WBT  | NBL    | NBR  |
| Lane Configurations      | ↑↑↱    |      |        | ↑↑   |        | ↱    |
| Traffic Vol, veh/h       | 791    | 40   | 0      | 972  | 0      | 76   |
| Future Vol, veh/h        | 791    | 40   | 0      | 972  | 0      | 76   |
| Conflicting Peds, #/hr   | 0      | 0    | 0      | 0    | 0      | 0    |
| Sign Control             | Free   | Free | Free   | Free | Stop   | Stop |
| RT Channelized           | -      | None | -      | None | -      | None |
| Storage Length           | -      | -    | -      | -    | -      | 0    |
| Veh in Median Storage, # | 0      | -    | -      | 0    | 0      | -    |
| Grade, %                 | 0      | -    | -      | 0    | 0      | -    |
| Peak Hour Factor         | 95     | 95   | 95     | 95   | 95     | 95   |
| Heavy Vehicles, %        | 3      | 0    | 0      | 2    | 0      | 0    |
| Mvmt Flow                | 833    | 42   | 0      | 1023 | 0      | 80   |
|                          |        |      |        |      |        |      |
| Major/Minor              | Major1 |      | Major2 |      | Minor1 |      |
| Conflicting Flow All     | 0      | 0    | -      | -    | -      | 438  |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
| Critical Hdwy            | -      | -    | -      | -    | -      | 6.9  |
| Critical Hdwy Stg 1      | -      | -    | -      | -    | -      | -    |
| Critical Hdwy Stg 2      | -      | -    | -      | -    | -      | -    |
| Follow-up Hdwy           | -      | -    | -      | -    | -      | 3.3  |
| Pot Cap-1 Maneuver       | -      | -    | 0      | -    | 0      | 572  |
| Stage 1                  | -      | -    | 0      | -    | 0      | -    |
| Stage 2                  | -      | -    | 0      | -    | 0      | -    |
| Platoon blocked, %       | -      | -    |        | -    |        |      |
| Mov Cap-1 Maneuver       | -      | -    | -      | -    | -      | 572  |
| Mov Cap-2 Maneuver       | -      | -    | -      | -    | -      | -    |
| Stage 1                  | -      | -    | -      | -    | -      | -    |
| Stage 2                  | -      | -    | -      | -    | -      | -    |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Approach                 | EB     |      | WB     |      | NB     |      |
| HCM Control Delay, s     | 0      |      | 0      |      | 12.3   |      |
| HCM LOS                  |        |      |        |      | B      |      |
|                          |        |      |        |      |        |      |
|                          |        |      |        |      |        |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBT  | EBR    | WBT  |        |      |
| Capacity (veh/h)         | 572    | -    | -      | -    |        |      |
| HCM Lane V/C Ratio       | 0.14   | -    | -      | -    |        |      |
| HCM Control Delay (s)    | 12.3   | -    | -      | -    |        |      |
| HCM Lane LOS             | B      | -    | -      | -    |        |      |
| HCM 95th %tile O(veh)    | 0.5    | -    | -      | -    |        |      |