# Meeting Held Electronically 

## COMMITTEE OF THE WHOLE MEETING

MONDAY, APRIL 4, 2022
(Immediately following the Village Board Meeting)

## AGENDA

## CALL TO ORDER

ROLL CALL

## AUDIENCE COMMENTS

## TRUSTEE COMMENTS

## DISCUSSION

1. Petition \#22-02: Seasons of North Aurora Apartment Complex
2. FY 2022-23 Draft Budget Presentation

## EXECUTIVE SESSION

## ADJOURN

Initials:


# VILLAGE OF NORTH AURORA BOARD REPORT 

TO: VILLAGE PRESIDENT \& BOARD OF TRUSTEES CC: STEVE BOSCO, VILLAGE ADMINISTRATOR<br>FROM: MIKE TOTH, COMMUNITY \& ECONOMIC DEVELOPMENT DIRECTOR<br>SUBJECT: PETITION 22-02: SEASONS AT NORTH AURORA APARTMENTS<br>AGENDA: APRIL 4, 2022 COMMITTEE OF THE WHOLE MEETING

## DISCUSSION

The subject property is a 21.7 -acre vacant tract situated west of Orchard Road, south of West Mooseheart Road, and east of Deerpath Road. The petitioner has submitted plans for a multi-family residential development to be located on the subject property in the B-2 General Business District/R-4 General Residence District Mixed Use Planned Unit Development. The submitted development plans include thirteen (13) two-story residential buildings consisting of 20 units per building and providing a total of 260 residential units - 26 studio units, 104 one-bedroom units, 104 two-bedroom units and 26 three-bedroom units. A clubhouse, pool and other ancillary amenities would also be included.

A public hearing was conducted on this item before the Plan Commission at their March 1, 2022 meeting. The Plan Commission unanimously recommended approval of Petition \#22-02, subject to staff's eight conditions and three added conditions - evaluate alternative locations for the clubhouse, provide additional traffic information and to the greatest extent possible protect the trees on the residential properties located directly to the west.

Staff solicited feedback from the Village Board on the proposed development at the March 7, 2022 Committee of the Whole meeting. At that time, the developer presented an alternative clubhouse location, which moves the clubhouse to the south of its previously-proposed location (away from the homes to the west of the development). As the site plan standards included in the Annexation Agreement require sidewalk to be constructed on both sides of all internal public streets and on the adjacent public road frontages, staff also solicited feedback on the proposed pedestrian plan.

The Village Board was supportive of the overall development and the new clubhouse location. They did convey their desire to create a public pedestrian network and asked the developer to either install public sidewalks within the right of way or place an access easement over the proposed perimeter walkways to allow for public access. The developer agreed to place an access easement over the existing perimeter walkways and allow for public access.

The developer has submitted the full Traffic Impact Study, prepared by KLOA, Inc., dated March 24, 2022. While the Traffic Impact Study contains a multitude of traffic data and information, pages 24 28 provide the recommendations and conclusions of the study including KLOA's findings for each of the intersections adjacent to the proposed development.

The Board will be asked to consider approval of an ordinance amending the PUD and an amendment to the Annexation Agreement. Initial drafts have been prepared and included for Board review. The documents would cover the zoning and site development requests being made: Special Use Planned Unit Development amendment with deviations to the Planned Unit Development and Zoning Ordinance; preliminary final plat of subdivision; and site plan approval. A public hearing to amend the Annexation Agreement is required and has been scheduled for the April, 18, 2022 Village Board meeting.


## 

MULTIFAMILY
TWO STORY WALKUP BUILDINGS WITH
20 UNIT CONFIGURATIONS 20 UNIT CONFIGURATIONS
ALONG WITH A CLUBHOUSE AND POOL ClUbhouse -4,942 SF
20 UNIT BULLDING - 25,797 SF (1,072 SF/UNIT*)
SF/UNIT DOES NOT INCLUDE GARAGE STUDIO ONE BEDROO TWO BERROOM
THREE BEDROOM
overall
SITE AREA : 21.7 ACRES ( 12 UNITSS/ACRE) parking
$\begin{array}{ll}\text { ON SITE STALLS } \\ \text { ENCLOSED STALLS } & 391 \text { ( } 1.5 \text { STALLS/UNIT) } \\ 172(0.66 \text { STALIS/UNIT) }\end{array}$ total stalls $\quad 563$ (2.16 StALLS/UNIT)
typical parking stall dimensions: $9^{\prime} \times 18.5^{\circ}$

| LOT COVERAGE |  |
| :--- | :--- |
| SITE AREA | 945,303 SQFT (21.7ACRES |
| BUILDINGS AND <br> SITE STRUCTURES | 198,416 SQFT (21\%) |

SETBACKS

| Yard regulations |  | CURRENT SETbACK |
| :---: | :---: | :---: |
| FRONT YARD | 25 Ft | 25 FT |
| REAR YARD | 30 FT | 30 Ft |
| INTERIOR SIDE YARD | 10 FT 30 FT | ${ }^{25} \mathbf{3 5}$ |
|  | 35 FT | 35 FT |
| LANDSCAPE BUFFER | 35 FT | 35 FT |
| DEDICATION TO | 15FT | 15 FT |
| mooseheart rd |  |  |
| LANDSCAPE BUFFER | 50 Ft | 50 ft |

## SCALE 1"=60'

# Fiduciary <br> Seasons at North Aurora MULTIFAMILY DEVELOPMENT <br> North Aurora, Illinois 

## Traffic Impact Study <br> Proposed Residential Development

North Aurora, Illinois


Prepared For:


Kenig, Lindgren, O'Hara, Aboona, Inc.
March 24, 2022

## 1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O’Hara, Aboona, Inc. (KLOA, Inc.) for the proposed apartment development to be located in North Aurora, Illinois.

This site, which is currently vacant, is located on the west side of Orchard Road north of Tanner Road. As proposed, the site will be developed with an apartment development containing approximately 260 units and 598 parking spaces. As part of the proposed development, a proposed roadway will be developed along the south side of the site connecting Orchard Road to Deerpath Road. Access to the site will be provided via a full-movement access drive and a right-in/right-out access drive off the proposed roadway.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed development.

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

The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and weekday evening peak hours
- Recommendations with respect to adequacy of the 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. Base Conditions - Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area adjusted to reflect normal conditions.
2. Future Conditions - Analyzes the projected traffic volumes which includes the base traffic volumes increased by an ambient area growth factor (growth not attributable to any particular development) and the traffic estimated to be generated by the proposed subject development.


Figure 1


## Aerial View of Site

Figure 2

## 2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices and existing peak hour traffic volumes.

## Site Location

This site, which is currently vacant, is located on the west side of Orchard Road north of Tanner Road and is bounded by Deerpath Road on the west and Mooseheart Road on the north. Land uses in the vicinity of the site are primarily residential in all directions and include Hardware Sustainable Gastropub and Brewery, the Springs at Orchard Road residential development, and the Waterford Oaks residential development to the south; Fearn Elementary School, Jewel Middle School, the Orchard Crossing subdivision, and the Orchard Estates subdivision to the east; the Mirador subdivision to the north; and The Reserves at Tanner Trails to the west.

## Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below. Figure 3 illustrates the existing roadway characteristics.

Orchard Road (Kane County Highway 83) is a north-south, major arterial roadway that has a fourlane undivided cross-section along the site frontage. At its signalized intersection with Oak Street, Orchard Road provides dual left-turn lanes, two through lanes, and an exclusive right-turn lane on the northbound and southbound approaches. At its signalized intersection with White Oak Drive, Orchard Road provides an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane on the eastbound and westbound approaches. The west leg of this intersection provides a high visibility crosswalk and pedestrian countdown signals. At its unsignalized intersection with Tanner Road, Orchard Road provides two through lanes and an exclusive right-turn lane on the southbound approach and two through lanes on the northbound approach. Orchard Road is under the jurisdiction of the Kane County Division of Transportation (KDOT), is classified as a Strategic Regional Arterial (SRA) Route, carries an Annual Average Daily Traffic (AADT) volume of 12,400 vehicles north of Oak Street and 27,800 vehicles south of Oak Street (Illinois Department of Transportation [IDOT] 2018), and has a posted speed limit of 50 miles per hour.

Deerpath Road is a north-south major collector roadway that provides one travel lane in each direction and is widened between Tanner Road and Oak Street to provide a striped median. At its all-way stop sign-controlled intersection with Tanner Road, Deerpath Road provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on the northbound approach and an exclusive left-turn lane and a shared through/right-turn lane on the southbound approach. At its unsignalized intersection with Oak Street, Deerpath Road provides a shared through/right-turn lane on the northbound approach and an exclusive left-turn lane and a through lane on the southbound approach.


At its unsignalized intersection with Mooseheart Road, Deerpath Road provides a shared through/right-turn lane on the northbound approach and a shared left-turn/through lane on the southbound approach. North of Tanner Road, Deerpath Road is under the jurisdiction of the Village of North Aurora, carries an AADT volume of 7,450 vehicles, and has a posted speed limit of 45 miles per hour. Between Tanner Road and Oak Street, Deerpath Road is under the jurisdiction of KDOT and carries an AADT volume of 10,100 vehicles (IDOT 2018). South of Oak Street, Deerpath Road carries an AADT volume of 6,950 vehicles (IDOT 2018).

Oak Street is an east-west major collector roadway that generally provides a single travel lane in each direction. At its signalized intersection with Orchard Road, Oak Street provides dual left-turn lane, a through lane, and an exclusive right-turn lane on the eastbound and westbound approaches. At its unsignalized intersection with Deerpath Road, Oak Street provides an exclusive left-turn lane and an exclusive right-turn lane that are under stop-sign control. Between Deerpath Road and Orchard Road, Oak Street is under the jurisdiction of KDOT and carries an AADT volume of 3,900 vehicles (IDOT 2018). East of Orchard Road, Oak Street is under the jurisdiction of the Village of North Aurora, carries an AADT volume of 6,600 vehicles (IDOT 2018), and has a posted speed limit of 45 miles per hour.

Tanner Road (Kane County Highway 15) is an east-west major collector roadway that provides a single travel lane in each direction separated by a striped median. At its all-way stop signcontrolled intersection with Deerpath Road, Tanner Road provides a shared left-turn/through/right-turn lane on the eastbound approach and an exclusive left-turn lane and a shared through/right-turn lane on the westbound approach. At its unsignalized intersection with Orchard Road, Tanner Road provides a single lane that is under stop sign control and is restricted to rightturn movements only via a channelizing island and the existing landscaped median along Orchard Road. West of Deerpath Road, Tanner Road is under the jurisdiction of KDOT, carries an AADT volume of 2,650 vehicles (IDOT 2018), and has a posted speed limit of 50 miles per hour. Between Deerpath Road and Orchard Road, Tanner Road is under local jurisdiction and has a posted speed limit of 30 miles per hour.

Mooseheart Road is an east-west local roadway that provides a single travel lane in each direction and extends from Deerpath Road to White Oak Drive. At its unsignalized intersection with Deerpath Road, Mooseheart Road provides a shared left-turn/right-turn lane that is under stop sign control. Mooseheart Road is under the jurisdiction of the Village of North Aurora and has a posted speed limit of 25 miles per hour.

## Existing Traffic Volumes

In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. utilized peak period traffic counts that were conducted on Tuesday, March 15, 2022, during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods at the following intersections:

- Orchard Road with Oak Street
- Orchard Road with Tanner Road
- Orchard Road with White Oak Drive
- Deerpath Road with Tanner Road
- Deerpath Road with Mooseheart Road

The results of the traffic counts showed that the weekday morning peak hour of traffic occurs from 7:15 A.M. to 8:15 A.M. and the weekday evening peak hour of traffic occurs from 4:45 P.M. to 5:45 P.M.

However, due to the COVID-19 pandemic, it is anticipated that the Year 2022 traffic volumes may not be representative of typical conditions. As such, the Year 2022 peak hour traffic volumes were compared to two-way traffic volumes along the study area roadway segments from 2018, which were increased by a regional growth factor (as discussed later) to reflect Year 2022 conditions. These traffic volumes were obtained from the IDOT Traffic Count Database System (TCDS) website.

The results of the comparison indicated that the weekday morning peak hour traffic volumes at the study area intersections were generally consistent or higher than the Year 2018 traffic volumes increased by a regional growth factor. Additionally, the traffic volumes during the weekday evening peak hour were generally consistent or higher except for the traffic volumes along Deerpath Road which were approximately 25 percent lower, the traffic volumes along Orchard Road which were approximately 14 percent lower, and the traffic volumes along Oak Street which were approximately 18 percent lower than the Year 2018 traffic volumes increased by a regional growth factor.

As such, the Year 2022 traffic counts were utilized as-is, except during the weekday evening peak hour where the through traffic volumes along Orchard Road were increased by approximately 14 percent, the through traffic volumes along Deerpath Road were increased by approximately 25 percent, and the turning movements to/from Oak Street were increased by approximately 18 percent.

Figure 4 illustrates the Year 2022 base traffic volumes. Copies of the traffic count summary sheets are included in the Appendix.


## Crash Analysis

KLOA, Inc. obtained crash data ${ }^{1}$ from IDOT for the most recent available five years (2016 to 2020) for the study area intersections. The crash data for the intersections of Orchard Road with Oak Street, Orchard Road with White Oak Drive, and Deerpath Road with Tanner Road are summarized in Tables 1 through 3, respectively. A review of the crash data indicated the following:

- The intersection of Orchard Road with Tanner Road experienced zero crashes in 2016, 2017, 2018, and 2019 and one crash in 2020
- The intersection of Deerpath Road with Mooseheart Road experienced zero crashes in 2016, 2018, and 2020 and one crash in 2017 and 2019.
- No fatalities were reported at the study area intersections between 2016 and 2020.

Table 1
ORCHARD ROAD WITH OAK STREET - CRASH SUMMARY

| Year | Type of Crash Frequency |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Angle | Pedestrian | Object | Rear <br> End | Sideswipe | Turning | Other | Total |  |
| 2016 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |  |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| 2018 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 |  |
| 2019 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 5 |  |
| 2020 | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{1}$ | $\underline{1}$ | $\underline{0}$ | $\underline{2}$ |  |
| Total | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{8}$ | $\mathbf{1}$ | $\mathbf{3}$ | $\mathbf{1}$ | $\mathbf{1 3}$ |  |
| Average | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{1 . 6}$ | $<\mathbf{1}$ | $<\mathbf{1}$ | $<\mathbf{1}$ | $\mathbf{2} .6$ |  |

[^0]Table 2
ORCHARD ROAD WITH WHITE OAK DRIVE - CRASH SUMMARY

| Year | Type of Crash Frequency |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Angle | Pedestrian | Object | Rear <br> End | Sideswipe | Turning | Other | Total |  |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| 2019 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 3 |  |
| 2020 | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{1}$ | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{1}$ |  |
| Total | $\mathbf{1}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{2}$ | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{0}$ | $\mathbf{4}$ |  |
| Average | $<\mathbf{1}$ | $\mathbf{0}$ | $\mathbf{0}$ | $<\mathbf{1}$ | $\mathbf{0}$ | $<\mathbf{1}$ | $\mathbf{0}$ | $<\mathbf{1}$ |  |

Table 3
DEERPATH ROAD WITH TANNER ROAD - CRASH SUMMARY

| Year | Type of Crash Frequency |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Angle | Pedestrian | Object | Rear <br> End | Sideswipe | Turning | Other | Total |  |
| 2016 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |  |
| 2017 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |  |
| 2018 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| 2020 | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{1}$ | $\underline{0}$ | $\underline{1}$ |  |
| Total | $\mathbf{2}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{0}$ | $\mathbf{2}$ | $\mathbf{0}$ | $\mathbf{5}$ |  |
| Average | $<\mathbf{1}$ | $\mathbf{0}$ | $\mathbf{0}$ | $<\mathbf{1}$ | $\mathbf{0}$ | $<\mathbf{1}$ | $\mathbf{0}$ | $\mathbf{1}$ |  |

## 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 Development Plan

As proposed, the plans call for developing the site with 260 apartment units among 13 buildings. A total of 598 parking spaces will be provided of which 172 spaces will be enclosed. As part of the proposed development, a proposed public roadway will be developed along the south side of the site that will connect Orchard Road to Deerpath Road. The proposed roadway will provide exclusive left- and right-turn lanes and will be under stop sign control at its respective intersections with Orchard Road and Deerpath Road. Furthermore, Orchard Road at the proposed roadway will be widened to provide an exclusive northbound left-turn lane and an exclusive southbound rightturn lane. Based on the Illinois Department of Transportation Bureau of Design and Environment (BDE) Manual, these turn lanes should provide 240 feet of storage and 240 feet of taper. Access to the proposed apartment units will be provided via a full-movement access drive and a right-in/right-out access drive off the proposed roadway. Outbound movements from the proposed access drives onto the proposed roadway should be under stop sign control. A copy of the site plan is included in the Appendix.

## Directional Distribution

The directions from which residents of the proposed development will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. Figure 5 illustrates the directional distribution of the development-generated traffic.

## Estimated Site Traffic Generation

The number of peak hour vehicle trips estimated to be generated by the proposed development was based on vehicle trip generation rates contained in Trip Generation Manual, $11^{\text {th }}$ Edition, published by the Institute of Transportation Engineers (ITE). Land-Use Code 220 (Multi-Family Housing) was utilized. Copies of the ITE trip generation sheets are included in the Appendix. Table 4 shows the estimated vehicle trip generation for the weekday morning and weekday evening peak hours.

Table 4
ESTIMATED SITE-GENERATED TRAFFIC VOLUMES

| $\begin{gathered} \text { ITE } \\ \text { Land-Use } \end{gathered}$ | Type/Size | Weekday Morning Peak Hour |  |  | Weekday Evening Peak Hour |  |  | Weekday Daily Traffic |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code |  | In | Out | Total | In | Out | Total |  |
| 220 | Multifamily Housing (Low-Rise) - 260 units | 24 | 79 | 103 | 83 | 49 | 132 | 1,742 |



## 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 subject development.

## Development Traffic Assignment

The estimated weekday morning and 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). The total new traffic assignment for the residential development is illustrated in Figure 6. As previously indicated, the proposed development will provide a public roadway that will connect Orchard Road to Deerpath Road. As such, some of the existing traffic that currently traverses the intersections of Deerpath Road with Tanner Road and Oak Street will be diverted to the proposed public roadway. Figure 7 illustrates the reassignment of existing traffic volumes that will traverse the proposed roadway.

## Background (No-Build) Traffic Conditions

The base traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on 2050 Average Daily Traffic (ADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP) in a letter dated March 17, 2022, the base traffic volumes were increased by an annually compounded growth rate for eight years (one-year buildout plus seven years) totaling nine and a half percent to represent Year 2030 no-build conditions. A copy of the CMAP 2050 projections letter is included in the Appendix. Figure 8 illustrates the Year 2030 no-build traffic volumes.

## Total Projected Traffic Volumes

The development-generated traffic (Figure 6) was added to the base traffic volumes increased by a regional growth factor to determine the Year 2030 total projected traffic volumes, as illustrated in Figure 9.





## 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

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for the base (Year 2022), Year 2030 no-build, and future projected (Year 2030) traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's Highway Capacity Manual (HCM), $6^{\text {th }}$ Edition and analyzed using Synchro/SimTraffic 11 computer software. The analysis for the traffic-signal controlled intersections of Orchard Road with Oak Street and White Oak Drive were accomplished utilizing actual cycle lengths, phasings, and offsets.

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 and overall intersection delay (measured in seconds) for the Year 2022 base, Year 2030 no-build, and Year 2030 total projected conditions are presented in Tables 5 through 9. A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 5
CAPACITY ANALYSIS RESULTS - ORCHARD ROAD WITH OAK STREET - SIGNALIZED

|  | Peak <br> Hour | Eastbound |  |  | Westbound |  |  | Northbound |  |  | Southbound |  |  | Overall |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | L | T | R | L | T | R | L | T | R | L | T | R |  |
|  | Weekday Morning | $\begin{gathered} \mathrm{E} \\ 62.1 \end{gathered}$ | $\begin{gathered} \text { E } \\ 66.1 \end{gathered}$ | $\begin{gathered} \text { A } \\ 8.3 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 64.4 \end{gathered}$ | $\begin{gathered} \hline \mathrm{D} \\ 46.8 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | $\begin{gathered} \hline \mathrm{E} \\ 63.1 \end{gathered}$ | $\begin{gathered} \text { B } \\ 13.4 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 1.4 \\ \hline \end{gathered}$ | $\begin{gathered} \hline \mathrm{E} \\ 59.0 \end{gathered}$ | $\begin{gathered} \hline \mathrm{B} \\ 13.0 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ \hline 0.4 \end{gathered}$ | C-25.7 |
|  | Hour | D - 46.4 |  |  | D - 54.8 |  |  | B - 15.2 |  |  | B - 16.5 |  |  |  |
|  | Weekday Evening | $\begin{gathered} \mathrm{E} \\ 61.2 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 65.8 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.8 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 64.4 \end{gathered}$ | $\begin{gathered} \mathrm{D} \\ 50.4 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | $\begin{gathered} E \\ 64.3 \end{gathered}$ | $\begin{gathered} \text { B } \\ 13.6 \end{gathered}$ | $\begin{gathered} \text { A } \\ 1.1 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 57.0 \end{gathered}$ | $\begin{gathered} \text { B } \\ 13.0 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | C-26.0 |
|  | Hour | D-49.2 |  |  | D - 54.8 |  |  | B - 19.2 |  |  | B - 17.7 |  |  |  |
|  | Weekday <br> Morning | $\begin{gathered} \mathrm{E} \\ 62.3 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 66.2 \end{gathered}$ | $\begin{gathered} \text { A } \\ 7.8 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 64.5 \end{gathered}$ | $\begin{gathered} \mathrm{D} \\ 47.1 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 63.3 \end{gathered}$ | $\begin{gathered} \text { B } \\ 14.7 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 1.4 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 61.1 \end{gathered}$ | $\begin{gathered} \text { B } \\ 14.3 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.4 \end{gathered}$ | C-26.6 |
|  | Hour | D - 46.5 |  |  | E-55.0 |  |  | B - 16.2 |  |  | B - 17.9 |  |  |  |
|  | Weekday Evening | $\begin{gathered} \hline \mathrm{E} \\ 61.2 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 65.8 \end{gathered}$ | $\begin{gathered} \hline \mathrm{A} \\ 1.6 \end{gathered}$ | $\begin{gathered} \hline \mathrm{A} \\ 64.3 \end{gathered}$ | $\begin{gathered} \hline \mathrm{D} \\ 49.4 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 0.2 \end{gathered}$ | $\begin{gathered} \hline E \\ 64.3 \end{gathered}$ | $\begin{gathered} \hline \text { B } \\ 14.9 \end{gathered}$ | $\begin{gathered} \hline \mathrm{A} \\ 1.2 \end{gathered}$ | $\begin{gathered} \hline E \\ 58.2 \end{gathered}$ | $\begin{gathered} \hline \text { B } \\ 14.7 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 0.1 \end{gathered}$ | C-26.9 |
|  | Hour | D - 49.5 |  |  | D - 54.4 |  |  | B - 20.0 |  |  | B - 19.4 |  |  |  |
|  | Weekday Morning | $\begin{gathered} \mathrm{E} \\ 62.3 \end{gathered}$ | $\begin{gathered} \text { E } \\ 66.2 \end{gathered}$ | $\begin{gathered} \text { A } \\ 8.7 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 64.5 \end{gathered}$ | $\begin{gathered} \mathrm{D} \\ 47.1 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 0.2 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 62.4 \end{gathered}$ | $\begin{gathered} \text { B } \\ 15.1 \end{gathered}$ | $\begin{gathered} \text { A } \\ 1.5 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 62.0 \end{gathered}$ | $\begin{gathered} \text { B } \\ 13.9 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.2 \end{gathered}$ | C-26.2 |
|  | Hour | D - 50.3 |  |  | D - 54.0 |  |  | B - 15.5 |  |  | B - 18.1 |  |  |  |
|  | Weekday Evening | $\begin{gathered} \mathrm{E} \\ 61.2 \end{gathered}$ | $\begin{gathered} \mathrm{D} \\ 65.8 \end{gathered}$ | $\begin{gathered} \hline \mathrm{A} \\ 0.3 \end{gathered}$ | $\begin{gathered} \text { E } \\ 64.3 \end{gathered}$ | $\begin{gathered} \text { D } \\ 49.4 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 0.3 \end{gathered}$ | $\begin{gathered} \mathrm{E} \\ 64.2 \end{gathered}$ | $\begin{gathered} \hline \text { B } \\ 15.5 \\ \hline \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 1.2 \end{gathered}$ | $\begin{gathered} \hline \mathrm{E} \\ 59.3 \\ \hline \end{gathered}$ | $\begin{gathered} \hline \text { B } \\ 14.2 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 0.1 \end{gathered}$ | C-25.7 |
|  |  | D - 53.8 |  |  | D - 52.6 |  |  | B - 18.0 |  |  | B - 19.3 |  |  |  |

[^1]Delay is measured in seconds.

Table 6
CAPACITY ANALYSIS RESULTS - ORCHARD ROAD WITH WHITE OAK DRIVE - SIGNALIZED

|  | Peak Hour | Eastbound |  |  | Westbound |  |  | Northbound |  | Southbound |  | Overall |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | L | T | R | L | T | R | L | T | L | T |  |
|  | Weekday Morning Peak Hour | $\begin{gathered} \mathrm{A} \\ 5.8 \end{gathered}$ | $\begin{gathered} \text { B } \\ 10.3 \end{gathered}$ | $\begin{gathered} \text { A } \\ 3.6 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 3.8 \end{gathered}$ | $\begin{gathered} \text { A } \\ 6.0 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | $\begin{gathered} \hline \mathrm{C} \\ 30.0 \end{gathered}$ | $\begin{gathered} \hline \text { B } \\ 13.5 \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ 27.4 \end{gathered}$ | $\begin{gathered} \hline \hline \mathrm{C} \\ 21.9 \end{gathered}$ | B - 10.6 |
|  |  | A - 9.8 |  |  | A - 5.5 |  |  | B - 19.9 |  | C-24.2 |  |  |
|  | Weekday Evening Peak Hour | $\begin{gathered} \mathrm{A} \\ 4.2 \end{gathered}$ | $\begin{gathered} \text { A } \\ 8.9 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.9 \end{gathered}$ | $\begin{gathered} \text { A } \\ 3.0 \\ \hline \end{gathered}$ | $\begin{gathered} \text { A } \\ 6.4 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ 25.8 \end{gathered}$ | $\begin{gathered} \text { B } \\ 15.6 \\ \hline \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ 28.1 \end{gathered}$ | $\begin{gathered} \hline \mathrm{C} \\ 21.8 \end{gathered}$ | A-8.1 |
|  |  | A-8.5 |  |  | A - 5.9 |  |  | B - 18.3 |  | C-25.5 |  |  |
|  | Weekday <br> Morning Peak Hour | $\begin{gathered} \mathrm{A} \\ 5.0 \\ \hline \end{gathered}$ | $\begin{gathered} \text { B } \\ 11.8 \\ \hline \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 4.0 \\ \hline \end{gathered}$ | $\begin{gathered} \text { A } \\ 3.9 \\ \hline \end{gathered}$ | $\begin{gathered} \text { A } \\ 6.1 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \\ \hline \end{gathered}$ | $\begin{gathered} \hline \mathrm{C} \\ 30.3 \\ \hline \end{gathered}$ | $\begin{gathered} \text { B } \\ 13.3 \end{gathered}$ | $\begin{gathered} \text { C } \\ 27.7 \\ \hline \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ 22.0 \end{gathered}$ | $\text { B - } 11.4$ |
|  |  | B - 11.2 |  |  | A-5.7 |  |  | B - 19.9 |  | C-24.4 |  |  |
|  | Weekday Evening Peak Hour | $\begin{gathered} \text { A } \\ 3.8 \end{gathered}$ | $\begin{gathered} \hline \text { B } \\ 10.7 \\ \hline \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 0.8 \end{gathered}$ | $\begin{gathered} \text { A } \\ 3.1 \end{gathered}$ | $\begin{gathered} \text { A } \\ 6.6 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 0.1 \end{gathered}$ | $\begin{gathered} \hline \mathrm{C} \\ 25.8 \end{gathered}$ | $\begin{gathered} \text { B } \\ 15.2 \end{gathered}$ | $\begin{gathered} \hline \text { C } \\ 28.4 \end{gathered}$ | $\begin{gathered} \hline \mathrm{C} \\ 21.3 \end{gathered}$ | $\text { A - } 8.9$ |
|  |  | B - 10.1 |  |  | A-6.1 |  |  | B - 17.9 |  | C - 25.4 |  |  |
|  | Weekday <br> Morning Peak Hour | $\begin{gathered} \mathrm{A} \\ 5.0 \end{gathered}$ | $\begin{gathered} \text { B } \\ 12.2 \end{gathered}$ | $\begin{gathered} \text { A } \\ 3.7 \end{gathered}$ | $\begin{gathered} \text { A } \\ 3.9 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 6.2 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | $\begin{gathered} \text { C } \\ 30.3 \end{gathered}$ | $\begin{gathered} \text { B } \\ 13.3 \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ 27.7 \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ 22.0 \end{gathered}$ | B - 11.5 |
|  |  | B - 11.5 |  |  | A - 5.7 |  |  | B - 19.9 |  | C-24.4 |  |  |
|  | Weekday Evening | $\begin{gathered} \mathrm{A} \\ 3.8 \end{gathered}$ | $\begin{gathered} \text { B } \\ 11.0 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.3 \end{gathered}$ | $\begin{gathered} \mathrm{A} \\ 3.1 \end{gathered}$ | $\begin{gathered} \text { A } \\ 6.7 \end{gathered}$ | $\begin{gathered} \text { A } \\ 0.1 \end{gathered}$ | $\begin{gathered} \hline \mathrm{C} \\ 25.8 \end{gathered}$ | $\begin{gathered} \text { B } \\ 15.2 \end{gathered}$ | $\begin{gathered} \text { C } \\ 28.4 \\ \hline \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ 21.3 \end{gathered}$ | A - 9.1 |
|  | Hour | B - 10.4 |  |  | A-6.2 |  |  | B - 17.9 |  | C-25.4 |  |  |

[^2]Delay is measured in seconds.

Table 7
CAPACITY ANALYSIS RESULTS
YEAR 2022 BASE CONDITIONS - UNSIGNALIZED

| Intersection | Weekday Morning Peak Hour |  | Weekday Evening Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: |
|  | LOS | Delay | LOS | Delay |
| Deerpath Road with Tanner Road ${ }^{1}$ |  |  |  |  |
| - Overall | D | 25.3 | C | 20.8 |
| - Eastbound Approach | D | 28.3 | B | 13.9 |
| - Westbound Approach | B | 12.4 | B | 12.0 |
| - Northbound Approach | C | 15.8 | C | 24.0 |
| - Southbound Approach | D | 31.0 | C | 18.7 |
| Orchard Road with Tanner Road ${ }^{2}$ |  |  |  |  |
| - Eastbound Approach | A | 9.8 | B | 10.8 |
| Deerpath Road with Mooseheart Road ${ }^{\mathbf{2}}$ |  |  |  |  |
| - Westbound Approach | B | 12.1 | B | 12.7 |
| - Southbound Left Turn | A | 7.9 | A | 8.3 |
| LOS $=$ Level of Service 1 - All-way stop sign control <br> Delay is measured in seconds $2-$ Two-way stop sign control |  |  |  |  |

Table 8
CAPACITY ANALYSIS RESULTS
YEAR 2030 NO-BUILD CONDITIONS - UNSIGNALIZED

| Intersection | Weekday Morning Peak Hour |  | Weekday Evening Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: |
|  | LOS | Delay | LOS | Delay |
| Deerpath Road with Tanner Road ${ }^{1}$ |  |  |  |  |
| - Overall | E | 37.2 | D | 27.4 |
| - Eastbound Approach | E | 42.5 | C | 15.4 |
| - Westbound Approach | B | 13.2 | B | 12.8 |
| - Northbound Approach | C | 18.4 | D | 33.1 |
| - Southbound Approach | E | 48.7 | C | 23.0 |
| Orchard Road with Tanner Road ${ }^{2}$ |  |  |  |  |
| - Eastbound Approach | B | 10.0 | B | 11.2 |
| Deerpath Road with Mooseheart Road ${ }^{\mathbf{2}}$ |  |  |  |  |
| - Westbound Approach | B | 12.9 | B | 13.4 |
| - Southbound Left Turn | A | 8.0 | A | 8.4 |
| LOS $=$ Level of Service $1-$ All-way stop sign control <br> Delay is measured in seconds $2-$ Two-way stop sign control |  |  |  |  |

Table 9
CAPACITY ANALYSIS RESULTS
YEAR 2030 PROJECTED CONDITIONS - UNSIGNALIZED

| Intersection | Weekday Morning <br> Peak Hour |  | Weekday Evening <br> Peak Hour |  |
| :---: | :---: | :---: | :---: | :---: |
|  | LOS | Delay | LOS | Delay |


| Deerpath Road with Tanner Road ${ }^{\mathbf{1}}$ |
| :--- |
| • Overall |
| - $\quad$ Eastbound Approach |
| - $\quad$ Westbound Approach |
| - $\quad$ Northbound Approach |
| - $\quad$ Southbound Approach |
| Orchard Road with Tanner Road ${ }^{\mathbf{2}}$ |

- Eastbound Approach | B | 10.2 | B | 11.3 |
| :--- | :--- | :--- | :--- | :--- |

Deerpath Road with Mooseheart Road ${ }^{2}$

| - Westbound Approach | B | 13.0 | B | 13.5 |
| :--- | :---: | :---: | :---: | :---: |
| - Southbound Left Turn | A | 8.1 | A | 8.4 |

Orchard Road with Proposed Roadway ${ }^{2}$

| - Eastbound Approach | B | 12.2 | C | 18.7 |
| :--- | :---: | :---: | :---: | :---: |
| - Northbound Left Turn | A | 8.4 | B | 10.3 |

Deerpath Road with Proposed Roadway ${ }^{2}$

| - Westbound Approach | B | 10.3 | B | 11.9 |
| :--- | :---: | :---: | :---: | :---: |
| - Southbound Left Turn | A | 7.8 | A | 8.4 |


| Proposed Roadway with Full Access Drive $^{\mathbf{2}}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| • $\quad$ Southbound Approach | A | 9.2 | A | 9.4 |
| - Eastbound Left Turn | A | 7.3 | A | 7.4 |


| Proposed Roadway with Right-In/Right-Out Access Drive ${ }^{\mathbf{2}}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| - Southbound Approach |  | A | 8.5 | A | 8.8 |
| LOS = Level of Service 1 <br> Delay is measured in seconds 2 | 1 - All-way stop sign control 2 - Two-way stop sign control |  |  |  |  |

## 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 development traffic.

## Orchard Road with Oak Street

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. It should be noted that all of the approaches currently operate at LOS D or better during the peak hours and that all of the left-turn movements currently operate at LOS E during the peak hours. However, this level of service for the left-turn movements is expected given the operation of these movements under a protected phase only. Under Year 2030 no-build conditions, this intersection overall is projected to continue operating at LOS C during the weekday morning and weekday evening peak hours with increases in delay of less than one second over existing conditions.

Under Year 2030 total projected conditions, taking into consideration the reassignment of existing traffic to the proposed roadway connecting Orchard Road to Deerpath Road, this intersection overall is projected to continue operating at LOS C during the weekday morning and weekday evening peak hours with increases in delay of less than one second or less over existing conditions. Furthermore, all of the approaches are projected to continue operating at LOS D or better during the peak hours and left-turn movements are projected to continue operating at LOS E during the peak hours.

As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development and no roadway improvements or signal modifications will be required. Overall, the proposed development is only projected to increase the volume of traffic traversing this intersection by approximately three percent during the peak hours.

## Orchard Road with White Oak Drive

The results of the capacity analysis indicate that overall, this intersection currently operates at LOS B during the weekday morning peak hour and LOS A during the weekday evening peak hour. Furthermore, all of the approaches currently operate at LOS C or better during the peak hours.

Under Year 2030 no-build and total projected conditions, this intersection overall is projected to continue operating at LOS B during the weekday morning peak hour and LOS A during the weekday morning peak hour with increases in delay of approximately one second or less. All of the approaches are projected to continue operating at LOS C or better during the peak hours with increases in delay of approximately two seconds or less over existing conditions.

As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development and no roadway improvements or signal modifications will be required. Overall, the proposed development is only projected to increase the volume of traffic traversing this intersection by approximately two percent during the peak hours.

## Deerpath Road with Tanner Road

The results of the capacity analysis indicate that overall, this intersection currently operates at LOS D during the weekday morning peak hour and LOS C during the weekday evening peak hour. Furthermore, all of the approaches currently operate at LOS D or better during the peak hours. Under Year 2030 no-build conditions, this intersection overall is projected to operate at LOS E during the weekday morning peak hour and LOS D during the weekday evening peak hour. The resulting levels of service during the weekday morning peak hour are the result of the existing high volume of eastbound left-turn and southbound through movements that are increased by the 9.5 percent regional growth factor which are projected to operate at LOS E.

Under Year 2030 total projected conditions, taking into consideration the reassignment of existing traffic to the proposed roadway connecting Orchard Road to Deerpath Road which will reduce the volume of northbound and southbound through movements, this intersection overall is projected to operate at LOS D during the weekday morning peak hour and at LOS C during the weekday evening peak hour. While the eastbound and southbound approaches are projected to continue operating at LOS E during the weekday morning peak hour, they are projected to experience a decrease in delay of approximately four and nine seconds, respectively, over no-build conditions.

Overall, the proposed development (with the provision of the public roadway connecting Orchard Road with Deerpath Road) will reduce the total volume of traffic traversing this intersection by approximately five percent during the peak hours. As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development and no roadway or traffic control improvements will be required.

## Orchard Road with Tanner Road

The results of the capacity analysis indicate that right-turn movements from Tanner Road onto Orchard Road currently operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour. Under Year 2030 no-build conditions, right-turn movements from Tanner Road onto Orchard Road are projected to operate at LOS B during the weekday morning and weekday evening peak hour with increases in delay of less than one second over existing conditions.

Under Year 2030 total projected conditions, taking into consideration the reassignment of existing traffic to the proposed roadway connecting Orchard Road to Deerpath Road, right-turn movements from Tanner Road onto Orchard Road are projected to continue operating at LOS B during the peak hours with increases in delay of less than one second over no-build conditions. As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development and no roadway or traffic control improvements will be required.

## Deerpath Road with Mooseheart Road

The results of the capacity analysis indicate that the westbound approach currently operates at LOS B during the weekday morning and weekday evening peak hours. Furthermore, southbound leftturn movements from Deerpath Road onto Mooseheart Road currently operate at LOS A during the weekday morning and weekday evening peak hours.

Under Year 2030 no-build conditions, the westbound approach is projected to continue operating at LOS B during the peak hours with increase in delay of less than one second over existing conditions.

Under Year 2030 total projected conditions, the westbound approach is projected to continue operating at LOS B during the peak hours with increases in delay of approximately one second over existing conditions. Furthermore, southbound left-turn movements are projected to continue operating at LOS A during the peak hours with increases in delay of less than one second.

As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development and no roadway or traffic control improvements will be required.

## Proposed Public Roadway Intersections

As previously indicated, as part of the proposed development, a proposed public roadway will be developed along the south side of the site that will connect Orchard Road to Deerpath Road. The proposed roadway will provide exclusive left- and right-turn lanes and will be under stop sign control at its respective intersections with Orchard Road and Deerpath Road.

The results of the capacity analysis indicate that the eastbound approach of the public roadway at Orchard Road is projected to operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour with $95^{\text {th }}$ percentile queues of one to two vehicles. The westbound approach of the public roadway at Deerpath Road is projected to operate at LOS B during the weekday morning and weekday evening peak hours with $95^{\text {th }}$ percentile queues of one to two vehicles. Northbound left turns from Orchard Road onto the public roadway are projected to operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour with $95^{\text {th }}$ percentile queues of one to two vehicles, which can be accommodated within the proposed left-turn lane storage. Southbound left turns from Deerpath Road onto the public roadway are projected to operate at LOS A during both peak hours with $95^{\text {th }}$ percentile queues of one to two vehicles.

It should be noted that the results of the capacity analyses take into consideration the provision of exclusive left- and right-turn lanes for the approaches of the proposed roadway at Orchard Road and Deerpath Road and the inclusion of the exclusive turn lanes on Orchard Road.

When the projected traffic volumes along Orchard Road are compared to the turn lane warrant guidelines published in Section 2 of the Kane County Division of Transportation Permit Regulations and Access Control Regulations, an exclusive southbound right-turn lane is warranted at the intersection of Orchard Road with the proposed public roadway during the weekday evening peak hour and an exclusive northbound left-turn lane is warranted at the intersection of Orchard Road with the proposed public roadway during the weekday morning and weekday evening peak hours. The left-turn lane warrant figures are included in the Appendix.

Based on information published in Chapter 36 of the IDOT Bureau of Design and Environment (BDE) Manual, the warranted turn lanes on Orchard Road should provide 240 feet of storage and 240 feet of taper based on a 55 mile per hour design speed.

Overall, the proposed access roadway with the provision of exclusive left- and right-turn lanes on Orchard Road will be adequate in accommodating the traffic generated by the proposed development and the reassignment of area traffic volumes, will have sufficient reserve capacity at its intersections with Orchard Road and Deerpath Road, and will enhance the connectivity of the roadway network within the study area.

## Proposed Development Access Drives

The results of the capacity analysis indicate that outbound movements from the access drives onto the proposed public roadway are projected to operate at LOS A during the weekday morning and weekday evening peak hours. Furthermore, eastbound left-turn movements from the proposed public roadway onto the full movement access drive are projected to operate at LOS A during both peak hours with $95^{\text {th }}$ percentile queues of one to two vehicles. As such, the proposed access system will be adequate in accommodating the traffic estimated to be generated by the proposed development and will ensure efficient and flexible access is provided.

## Orchard Road with Proposed Public Road - Signal Evaluation

The installation of a traffic signal requires that one or more of the nine signal warrants outlined in the Manual on Uniform Traffic Control Devices (MUTCD 2009) is met. However, Orchard Road is classified as an SRA route and, as such, IDOT SRA signal warrant requirements (which only take into consideration Warrant 1, Eight-Hour Vehicular Volume) were utilized.

Warrant 1, Eight-Hour Vehicular Volume states that the Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volumes on a major street are so heavy that traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. Given that Orchard Road provides two through lanes, the required vehicles per hour on the major street is 600 (total of both approaches) and the required vehicles per hour on the minor street (one direction only) is 200 for Condition A. For Condition B, the required number of vehicles per hour on the major street is 900 (total of both approaches) and the required number of vehicles per hour on the minor street (one direction only) is 100 . However, for SRA routes, the requirements on the minor street for Condition B shall be increased from 100 vehicles per hour to 150 for a two or more-lane minor approaches. Furthermore, based on IDOT's guidelines, the right-turn volume from the minor approach will be reduced by 75 percent during the weekday morning peak hour and by 70 percent during the weekday evening peak hour to take into consideration the right-turn on red reduction and mainline congestion factors.

Based on the above, the weekday morning peak hour has a minor approach volume of 47 vehicles and the weekday evening peak hour has a minor approach volume of 31 vehicles, which is less than the 150 -vehicle minor approach volume threshold. Therefore, it is anticipated that the other hours of the day will not meet the eight-hour traffic signal warrant and thus, a traffic signal will not be warranted at this intersection.

## 6. Conclusion

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

- The traffic that will be generated by the proposed residential development can be accommodated by the existing area roadway system.
- All of the signalized intersections within the study area have sufficient reserve capacity to accommodate the background growth and the traffic estimated to be generated by the proposed development.
- The proposed public roadway connections to Orchard Road and Deerpath Road are projected to operate at acceptable levels of service with limited delays and minimal queueing.
- When the projected traffic volumes along Orchard Road are compared to the turn lane warrant guidelines published in Section 2 of the Kane County Division of Transportation Permit Regulations and Access Control Regulations, the following was determined:
- An exclusive southbound right-turn lane is warranted at the intersection of Orchard Road with the proposed public roadway during the weekday evening peak hour.
- An exclusive northbound left-turn lane is warranted at the intersection of Orchard Road with the proposed public roadway during the weekday morning and weekday evening peak hours.
- Based on information published in Chapter 36 of the IDOT Bureau of Design and Environment (BDE) Manual, the warranted turn lanes on Orchard Road should provide 240 feet of storage and 240 feet of taper based on a 55 mile per hour design speed.
- A traffic signal will not be warranted at the intersection of Orchard Road with the proposed public roadway.


## Appendix

Traffic Count Summary Sheets Site Plan CMAP 2050 Projections Letter Level of Service Criteria Capacity Analysis Summary Sheets Left Turn Lane Warrant Diagrams

## Traffic Count Summary Sheets

Turning Movement Data

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| 0 |
| 0 |


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5
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0
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Buses




| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \end{gathered}$ | - | 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 | - | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pedestrians | . | . | . | . | 0 | . | . | - | - | . | 0 | . | . | - | . | - | 0 | . | - | - | - | - | 0 | - | - |
| \% Pedestrians | . | . | . | . | . | - | - | - | . | . | . | . | - | - | - | - | - | - | - | - | - | - | - | - | - |

Count Name: Orchard Rd with Oak St
Site Code:
Start Date: $03 / 15 / 2022$
Page No: 3

| Start Time | Turning Movement Peak Hour Data (7:15 AM) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Oak St <br> Eastbound |  |  |  |  |  | Oak St <br> Westbound |  |  |  |  |  | Orchard Rd <br> Northbound |  |  |  |  |  | Orchard Rd Southbound |  |  |  |  |  | Int. Total |
|  | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total |  |
| 7:15 AM | 0 | 8 | 38 | 22 | 0 | 68 | 0 | 36 | 14 | 5 | 0 | 55 | 0 | 13 | 127 | 17 | 0 | 157 | 0 | 8 | 97 | 1 | 0 | 106 | 386 |
| 7:30 AM | 0 | 8 | 41 | 29 | 0 | 78 | 0 | 38 | 19 | 3 | 0 | 60 | 0 | 15 | 146 | 27 | 0 | 188 | 0 | 8 | 106 | 0 | 0 | 114 | 440 |
| 7:45 AM | 0 | 10 | 34 | 19 | 0 | 63 | 0 | 38 | 18 | 3 | 0 | 59 | 0 | 9 | 143 | 28 | 0 | 180 | 0 | 10 | 105 | 4 | 0 | 119 | 421 |
| 8:00 AM | 0 | 5 | 30 | 16 | 0 | 51 | 0 | 24 | 18 | 3 | 0 | 45 | 0 | 14 | 119 | 30 | 0 | 163 | 1 | 6 | 81 | 0 | 0 | 88 | 347 |
| Total | 0 | 31 | 143 | 86 | 0 | 260 | 0 | 136 | 69 | 14 | 0 | 219 | 0 | 51 | 535 | 102 | 0 | 688 | 1 | 32 | 389 | 5 | 0 | 427 | 1594 |
| Approach \% | 0.0 | 11.9 | 55.0 | 33.1 | - | - | 0.0 | 62.1 | 31.5 | 6.4 | - | - | 0.0 | 7.4 | 77.8 | 14.8 | - | - | 0.2 | 7.5 | 91.1 | 1.2 | - | - | - |
| Total \% | 0.0 | 1.9 | 9.0 | 5.4 | - | 16.3 | 0.0 | 8.5 | 4.3 | 0.9 | - | 13.7 | 0.0 | 3.2 | 33.6 | 6.4 | - | 43.2 | 0.1 | 2.0 | 24.4 | 0.3 | - | 26.8 | - |
| PHF | 0.000 | 0.775 | 0.872 | 0.741 | - | 0.833 | 0.000 | 0.895 | 0.908 | 0.700 | - | 0.913 | 0.000 | 0.850 | 0.916 | 0.850 | - | 0.915 | 0.250 | 0.800 | 0.917 | 0.313 | - | 0.897 | 0.906 |
| Lights | 0 | 29 | 141 | 82 | - | 252 | 0 | 132 | 64 | 14 | - | 210 | 0 | 48 | 523 | 94 | - | 665 | 1 | 31 | 371 | 0 | - | 403 | 1530 |
| \% Lights | - | 93.5 | 98.6 | 95.3 | - | 96.9 | - | 97.1 | 92.8 | 100.0 | - | 95.9 | - | 94.1 | 97.8 | 92.2 | - | 96.7 | 100.0 | 96.9 | 95.4 | 0.0 | - | 94.4 | 96.0 |
| Buses | 0 | 2 | 1 | 1 | - | 4 | 0 | 1 | 4 | 0 | - | 5 | 0 | 1 | 1 | 3 | - | 5 | 0 | 0 | 3 | 1 | - | 4 | 18 |
| \% Buses | - | 6.5 | 0.7 | 1.2 | - | 1.5 | - | 0.7 | 5.8 | 0.0 | - | 2.3 | - | 2.0 | 0.2 | 2.9 | - | 0.7 | 0.0 | 0.0 | 0.8 | 20.0 | - | 0.9 | 1.1 |
| Single-Unit Trucks | 0 | 0 | 1 | 1 | - | 2 | 0 | 1 | 0 | 0 | - | 1 | 0 | 1 | 5 | 1 | - | 7 | 0 | 1 | 6 | 3 | - | 10 | 20 |
| \% Single-Unit Trucks | . | 0.0 | 0.7 | 1.2 | . | 0.8 | - | 0.7 | 0.0 | 0.0 | - | 0.5 | - | 2.0 | 0.9 | 1.0 | - | 1.0 | 0.0 | 3.1 | 1.5 | 60.0 | - | 2.3 | 1.3 |
| Articulated Trucks | 0 | 0 | 0 | 2 | - | 2 | 0 | 2 | 1 | 0 | - | 3 | 0 | 1 | 6 | 4 | - | 11 | 0 | 0 | 9 | 1 | - | 10 | 26 |
| \% Articulated Trucks | . | 0.0 | 0.0 | 2.3 | - | 0.8 | . | 1.5 | 1.4 | 0.0 | - | 1.4 | . | 2.0 | 1.1 | 3.9 | - | 1.6 | 0.0 | 0.0 | 2.3 | 20.0 | - | 2.3 | 1.6 |
| 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 |
| Pedestrians | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| \% Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Count Name: Orchard Rd with Oak St
Site Code:
Start Date: $03 / 15 / 2022$
Page No: 4

| Start Time | Turning Movement Peak Hour Data (4:45 PM) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Oak St <br> Eastbound |  |  |  |  |  | Oak StWestbound |  |  |  |  |  | Orchard Rd <br> Northbound |  |  |  |  |  | Orchard Rd <br> Southbound |  |  |  |  |  | Int. Total |
|  | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total |  |
| 4:45 PM | 0 | 4 | 28 | 16 | 0 | 48 | 0 | 23 | 25 | 2 | 0 | 50 | 1 | 45 | 134 | 48 | 0 | 228 | 0 | 21 | 155 | 2 | 0 | 178 | 504 |
| 5:00 PM | 0 | 3 | 19 | 8 | 0 | 30 | 0 | 40 | 23 | 5 | 0 | 68 | 0 | 38 | 142 | 44 | 0 | 224 | 0 | 13 | 139 | 1 | 0 | 153 | 475 |
| 5:15 PM | 0 | 7 | 28 | 6 | 0 | 41 | 0 | 43 | 30 | 7 | 0 | 80 | 0 | 40 | 141 | 47 | 0 | 228 | 0 | 17 | 123 | 0 | 0 | 140 | 489 |
| 5:30 PM | 0 | 4 | 30 | 10 | 0 | 44 | 0 | 39 | 33 | 4 | 0 | 76 | 0 | 33 | 125 | 32 | 0 | 190 | 0 | 16 | 139 | 2 | 0 | 157 | 467 |
| Total | 0 | 18 | 105 | 40 | 0 | 163 | 0 | 145 | 111 | 18 | 0 | 274 | 1 | 156 | 542 | 171 | 0 | 870 | 0 | 67 | 556 | 5 | 0 | 628 | 1935 |
| Approach \% | 0.0 | 11.0 | 64.4 | 24.5 | - | - | 0.0 | 52.9 | 40.5 | 6.6 | - | - | 0.1 | 17.9 | 62.3 | 19.7 | - | - | 0.0 | 10.7 | 88.5 | 0.8 | - | - | - |
| Total \% | 0.0 | 0.9 | 5.4 | 2.1 | - | 8.4 | 0.0 | 7.5 | 5.7 | 0.9 | - | 14.2 | 0.1 | 8.1 | 28.0 | 8.8 | - | 45.0 | 0.0 | 3.5 | 28.7 | 0.3 | - | 32.5 | - |
| PHF | 0.000 | 0.643 | 0.875 | 0.625 | - | 0.849 | 0.000 | 0.843 | 0.841 | 0.643 | - | 0.856 | 0.250 | 0.867 | 0.954 | 0.891 | - | 0.954 | 0.000 | 0.798 | 0.897 | 0.625 | - | 0.882 | 0.960 |
| Lights | 0 | 18 | 105 | 39 | - | 162 | 0 | 142 | 110 | 18 | $\checkmark$ | 270 | 1 | 155 | 532 | 170 | - | 858 | 0 | 67 | 542 | 5 | - | 614 | 1904 |
| \% Lights | - | 100.0 | 100.0 | 97.5 | - | 99.4 | - | 97.9 | 99.1 | 100.0 | - | 98.5 | 100.0 | 99.4 | 98.2 | 99.4 | - | 98.6 | - | 100.0 | 97.5 | 100.0 | - | 97.8 | 98.4 |
| Buses | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | 0 | - | 1 | 1 |
| \% Buses | - | 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 | 0.2 | 0.0 | - | 0.2 | 0.1 |
| Single-Unit Trucks | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | 1 | 0 | - | 1 | 0 | 1 | 4 | 1 | - | 6 | 0 | 0 | 4 | 0 | - | 4 | 12 |
| $\begin{aligned} & \hline \text { \% Single-Unit } \\ & \text { Trucks } \\ & \hline \end{aligned}$ | - | 0.0 | 0.0 | 2.5 | - | 0.6 | - | 0.0 | 0.9 | 0.0 | - | 0.4 | 0.0 | 0.6 | 0.7 | 0.6 | - | 0.7 | - | 0.0 | 0.7 | 0.0 | - | 0.6 | 0.6 |
| Articulated Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 3 | 0 | 0 | - | 3 | 0 | 0 | 6 | 0 | - | 6 | 0 | 0 | 9 | 0 | $\checkmark$ | 9 | 18 |
| \% Articulated Trucks | . | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 2.1 | 0.0 | 0.0 | - | 1.1 | 0.0 | 0.0 | 1.1 | 0.0 | - | 0.7 | - | 0.0 | 1.6 | 0.0 | - | 1.4 | 0.9 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \\ \hline \end{gathered}$ | - | 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 |
| Pedestrians | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| \% Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |


|  | $\begin{aligned} & \overline{\bar{\circ}} \\ & \stackrel{1}{\circ} \\ & \underline{\underline{I}} \end{aligned}$ | ® | \％ | － | $\stackrel{\stackrel{\rightharpoonup}{e}}{ }$ | N | 웃 | $\stackrel{\infty}{\sim}$ | $\stackrel{\sim}{\sim}$ | $\stackrel{\circ}{\sim}$ | $\stackrel{\infty}{\infty}$ | ल | ¢－ | － | ¢ | \％ |  | 00 | $\stackrel{\bullet}{\circ}$ | $\stackrel{\sim}{0}$ | ¢ | $\stackrel{\sim}{\mathrm{m}}$ |  |  |  | $\begin{aligned} & \bullet \\ & \hline 0 \\ & \hline \end{aligned}$ | $\dot{o}$ | N | ¢ ${ }_{\circ}^{\circ}$ |  | 寺 | $\stackrel{\bullet}{+}$ | $\stackrel{\sim}{\sim}$ | 응 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 훈퓽 | $\wedge$ | $\approx$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | \％ |  |  | ¢ | 等 | $\stackrel{\bullet}{\circ}$ |  |  |  |  |  |  |  |  |
| 흘 | $\frac{\stackrel{\rightharpoonup}{0}}{\stackrel{\rightharpoonup}{x}}$ | ぃ |  |  | － | $\stackrel{\sim}{\circ}$ | ल | $\sim$ | $\bigcirc$ | $\checkmark$ | $\pm$ | ¢ | m | $\infty$ | － | $\sim$ | の | － | $\bigcirc$ | ल | $\bullet$ |  |  |  | $\bigcirc$ | 勺 | $\stackrel{a}{\grave{a}}$ | $-$ |  |  |  |  | $\bigcirc$ | 응 |  |
| 范 | $\underset{\sim}{\stackrel{2}{F}}$ |  | $\bullet$ | F | ～ | \％ | ～ | $\infty$ | $\checkmark$ | $\checkmark$ | $\stackrel{\sim}{\square}$ | L | $\sim$ |  | $\sim$ | － | ） | $\sim$ | $\infty$ | － | ～ | $\pm$ | N | $\stackrel{N}{ल}$ | － | ® | $\stackrel{\llcorner }{\dot{\sigma}} \mid$ | $\infty$ |  | $0$ | O | $0$ |  | $\stackrel{\text { N }}{\sim}$ |  |
|  | $\stackrel{ \pm}{ \pm}$ | $F$ | F | $\pm$ | $\infty$ | ใ | － | F | ＊ | $\sim$ | $\stackrel{\sim}{\sim}$ | － |  | $\infty$ | の | $=$ |  | － | $\infty$ | $\infty$ | $\wedge$ | ¢ |  | $\begin{aligned} & \circ \\ & \stackrel{\circ}{\circ} \end{aligned}$ | $\stackrel{\infty}{\sim}$ | ～ | ¢ |  | $\bigcirc$ | O | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | 응 |  |
|  | － | $\stackrel{1}{2}$ | $\stackrel{\sim}{\sim}$ | ๙ | § | $\stackrel{ \pm}{\square}$ | ल | F | $\stackrel{1}{2}$ | $\sigma$ | N | $\bigcirc$ |  |  | $=$ |  |  | $\pm$ | $\stackrel{\sim}{\square}$ | N | $\cong$ | is |  |  | － | N | $\stackrel{9}{\circ}$ | ＋ |  | No | So | $\bigcirc$ | － | － |  |

Turning Movement Data White Oak Dr
Northbound

营 | $\circ$ |
| :--- |
| 0 |
| 0 |
| 0 | 0000000000 $0-00-00000-1$




Count Name: Orchard Rd with White Oak Dr
Site Code:
Start Date: $03 / 15 / 2022$
Page No: 3

|  | $\begin{aligned} & \bar{\Pi} \\ & \stackrel{\circ}{\circ} \\ & \stackrel{.}{5} \end{aligned}$ | $\stackrel{\text { ¢ }}{\sim}$ | ®-ले | $\stackrel{9}{9}$ | 웅 | ~ N |  |  | $\left\|\begin{array}{c} o \\ \infty \\ \underset{\infty}{0} \end{array}\right\|$ | $\stackrel{\underset{\sim}{\sim}}{\stackrel{N}{7}}$ |  |  |  | $\xrightarrow{\text { N }}$ | $\bigcirc$ | $\stackrel{\text { N}}{\sim}$ |  |  | - | $\bigcirc$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | N | ํㅗㄴ | ल |  |  |  |  | $\left.\begin{gathered} \underset{\sim}{\mathrm{N}} \\ \underset{o}{0} \end{gathered} \right\rvert\,$ |  | \% |  |  | ¢ | - | $\bigcirc$ | - | $\bigcirc$ | - | $\bigcirc$ |  |
| 믈 | $\begin{aligned} & \stackrel{\rightharpoonup}{\square} \\ & \stackrel{\rightharpoonup}{x} \end{aligned}$ | ¢ | $\checkmark$ | - | m | $\stackrel{\sim}{2}$ | $\begin{aligned} & \infty \\ & \stackrel{\sim}{9} \end{aligned}$ | $\stackrel{O}{-}$ | $\begin{aligned} & \stackrel{\circ}{0} \\ & \stackrel{\circ}{\circ} \end{aligned}$ | ~ | $v \underset{\sim}{\mathrm{~g}}$ | $\stackrel{\rightharpoonup}{c}$ |  | $\hat{N}$ | - | $\bigcirc$ | - | $\bigcirc$ | 0 | $\bigcirc$ |  |
| 華 |  | $\bullet$ | F | N | $\sim$ | 戸 | $\begin{array}{\|c} \circ \\ \stackrel{\text { q}}{ } \end{array}$ | $\stackrel{m}{\infty}$ | $\left\|\begin{array}{l} 0 \\ \vdots \\ \vdots \\ 0 \end{array}\right\|$ | ले | $0$ | ¢ | + | $\stackrel{\sim}{\circ}$ | - | $0$ | - | $0$ | - | $\bigcirc$ |  |
|  | $\stackrel{ \pm}{ \pm}$ | F | $\pm$ | o | $\bullet$ | \% | $\underset{\sim}{\circ}$ | $\stackrel{\sim}{\infty}$ | $\left\|\begin{array}{c} t \\ \underset{i}{\lambda} \end{array}\right\|$ | \% | 웅 | + |  | $\bigcirc$ | - | $\bigcirc$ | - | $\bigcirc$ | - | $\bigcirc$ |  |
|  | - | $\stackrel{\sim}{\sim}$ | $\stackrel{\sim}{\sim}$ | ¢ | ल | - |  |  | $\left\|\begin{array}{c} \circ \\ \\ \underset{\sim}{2} \end{array}\right\|$ | $\stackrel{\circ}{\sim}$ | $\underset{\sim}{8}$ |  |  | $\bar{m}$ |  | $\stackrel{\infty}{\circ}$ |  | $\bigcirc$ | - | $\bigcirc$ |  |

[^3] Turning Movement Peak Hour Data (7:15 AM)


응 이응

$\qquad$
0.



| Start Time | Orchard Rd Eastbound |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U-Turn | Left | Thru | Right | Peds | App. Total |
| 7:15 AM | 0 | 2 | 148 | 5 | 0 | 155 |
| 7:30 AM | 0 | 0 | 152 | 14 | 0 | 166 |
| 7:45 AM | 0 | 4 | 155 | 21 | 0 | 180 |
| 8:00 AM | 0 | 2 | 125 | 2 | 1 | 129 |
| Total | 0 | 8 | 580 | 42 | 1 | 630 |
| Approach \% | 0.0 | 1.3 | 92.1 | 6.7 | - | - |
| Total \% | 0.0 | 0.6 | 46.7 | 3.4 | - | 50.7 |
| PHF | 0.000 | 0.500 | 0.935 | 0.500 | - | 0.875 |
| Lights | 0 | 8 | 562 | 39 | - | 609 |
| \% Lights | - | 100.0 | 96.9 | 92.9 | - | 96.7 |
| Buses | 0 | 0 | 1 | 3 | - | 4 |
| \% Buses | - | 0.0 | 0.2 | 7.1 | - | 0.6 |
| Single-Unit Trucks | 0 | 0 | 9 | 0 | - | 9 |
| \% Single-Unit Trucks | - | 0.0 | 1.6 | 0.0 | - | 1.4 |
| Articulated Trucks | 0 | 0 | 8 | 0 | - | 8 |
| \% Articulated Trucks | - | 0.0 | 1.4 | 0.0 | - | 1.3 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 |
| \% Bicycles on Road | - | 0.0 | 0.0 | 0.0 | - | 0.0 |
| Pedestrians | - | - | - | - | 1 | - |
| \% Pedestrians | - | - | - | - | 100.0 | - |

Count Name：Orchard Rd with White Oak Dr
Site Code：
Start Date： $03 / 15 / 2022$
Page No： 4

|  | $\begin{aligned} & \overline{\overline{0}} \\ & \stackrel{0}{\circ} \\ & \stackrel{I}{5} \end{aligned}$ | $\bar{\sim}$ | － | ¢ | 2 | $\stackrel{\sim}{\sim}$ |  |  | $\begin{aligned} & \infty \\ & \vdots \\ & \vdots \\ & \vdots \end{aligned}$ | $\begin{aligned} & \circ \\ & \stackrel{\circ}{\circ} \end{aligned}$ | $\stackrel{\infty}{\infty}$ | ¢ | $\stackrel{-}{-1}$ | の | 人 | $\pm$ | $\bigcirc$ | － |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 운휸 | $\bigcirc$ |  |  |  | $\infty$ |  | $\stackrel{\sim}{\sim}$ |  | $\infty$ |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | － | ¢ | $\bullet$ | $\left\|\begin{array}{c} m \\ \stackrel{0}{0} \end{array}\right\|$ | $\stackrel{\square}{\circ}$ |  | $\bullet$ |  |  | $0$ | $0$ | $0$ | $0$ | $0 .$ | － |  |  |
| $\frac{{ }_{5}^{4}}{3} \text { ö }$ | $\underset{\underset{F}{2}}{\substack{2}}$ | $\bullet$ | ぃ |  | $\checkmark$ | $\stackrel{\infty}{\sim}$ | $\begin{array}{\|c\|} \hline \\ \hline \mathbf{m} \end{array}$ | $\stackrel{\varrho}{\stackrel{m}{2}}$ |  | $\stackrel{\infty}{\sim}$ | $0$ |  | $0$ |  | $0$ |  | $\bigcirc$ | － |  |  |
|  | ¢ |  | $\wedge$ | $\infty$ | $\infty$ | ¢ | $\left\lvert\, \begin{gathered} \infty \\ \infty \\ \infty \end{gathered}\right.$ | $\stackrel{\sim}{\mathrm{N}}$ | $\begin{gathered} n \\ \underset{~ N}{\prime} \end{gathered}$ | \％ | $\begin{aligned} & 0 \\ & 0 \\ & \hline- \end{aligned}$ |  | $\bigcirc$ | － | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | － | O |  |
|  |  | $\stackrel{1}{\sim}$ | $\pm$ | $\stackrel{m}{\square}$ | $\sim$ | L |  | $\stackrel{\square}{\text { en }}$ | － | \％ | ¢ | \％ | $\bigcirc$ | － | $\bigcirc$ | － | $\bigcirc$ | － | $\bigcirc$ |  |

9575 W．Higgins Rd．，Suite 400
Rosemont，Illinois，United States 60018
（847）518－9990 bmay＠kloainc．com
Turning Movement Peak Hour Data（4：45 PM）

| Start Time | Orchard Rd <br> Eastbound |  |  |  |  |  | Turning Movement Peak Hour Data（4：45 PM） |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Orchard Rd <br> Westbound |  |  |  |  |  | White Oak Dr Northbound |  |  |  |
|  | U－Turn | Left | Thru | Right | Peds | App． Total | U－Turn | Left | Thru | Right | Peds | App． Total | U－Turn | Left | Thru | Right |
| 4：45 PM | 0 | 5 | 129 | 4 | 0 | 138 | 0 | 9 | 167 | 13 | 0 | 189 | 0 | 4 | 3 | 8 |
| 5：00 PM | 0 | 9 | 125 | 2 | 2 | 136 | 0 | 9 | 157 | 9 | 0 | 175 | 0 | 6 | 1 | 7 |
| 5：15 PM | 0 | 6 | 156 | 2 | 2 | 164 | 0 | 15 | 151 | 11 | 0 | 177 | 0 | 0 | 5 | 8 |
| 5：30 PM | 0 | 11 | 108 | 4 | 2 | 123 | 1 | 13 | 150 | 6 | 0 | 170 | 0 | 4 | 4 | 4 |
| Total | 0 | 31 | 518 | 12 | 6 | 561 | 1 | 46 | 625 | 39 | 0 | 711 | 0 | 14 | 13 | 27 |
| Approach \％ | 0.0 | 5.5 | 92.3 | 2.1 | － | － | 0.1 | 6.5 | 87.9 | 5.5 | － | － | 0.0 | 25.9 | 24.1 | 50.0 |
| Total \％ | 0.0 | 2.2 | 37.4 | 0.9 | － | 40.5 | 0.1 | 3.3 | 45.2 | 2.8 | － | 51.4 | 0.0 | 1.0 | 0.9 | 2.0 |
| PHF | 0.000 | 0.705 | 0.830 | 0.750 | － | 0.855 | 0.250 | 0.767 | 0.936 | 0.750 | － | 0.940 | 0.000 | 0.583 | 0.650 | 0.844 |
| Lights | 0 | 31 | 506 | 12 | － | 549 | 1 | 46 | 614 | 39 | － | 700 | 0 | 13 | 13 | 27 |
| \％Lights | － | 100.0 | 97.7 | 100.0 | － | 97.9 | 100.0 | 100.0 | 98.2 | 100.0 | － | 98.5 | － | 92.9 | 100.0 | 100.0 |
| Buses | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 1 | 0 | － | 1 | 0 | 0 | 0 | 0 |
| \％Buses | － | 0.0 | 0.0 | 0.0 | － | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | － | 0.1 | － | 0.0 | 0.0 | 0.0 |
| Single－Unit Trucks | 0 | 0 | 6 | 0 | － | 6 | 0 | 0 | 2 | 0 | － | 2 | 0 | 1 | 0 | 0 |
| \％Single－Unit Trucks | － | 0.0 | 1.2 | 0.0 | － | 1.1 | 0.0 | 0.0 | 0.3 | 0.0 | － | 0.3 | － | 7.1 | 0.0 | 0.0 |
| Articulated Trucks | 0 | 0 | 6 | 0 | － | 6 | 0 | 0 | 8 | 0 | － | 8 | 0 | 0 | 0 | 0 |
| \％Articulated Trucks | － | 0.0 | 1.2 | 0.0 | － | 1.1 | 0.0 | 0.0 | 1.3 | 0.0 | － | 1.1 | － | 0.0 | 0.0 | 0.0 |
| Bicycles on Road | 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 |
| Pedestrians | － | － | － | － | 6 | － | － | － | － | － | 0 | － | － | － | － | － |
| \％Pedestrians | － | － | － | － | 100.0 | － | － | － | － | － | － | － | － | － | － | － |


Turning Movement Data
 Westbound

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| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \end{gathered}$ | - | - | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | - | 0.0 | - | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pedestrians | . | . | . | . | 0 | . | - | - | - | - | 0 | - | - | - | . | - | 0 | - | - | - | - | - | 0 | - | - |
| \% Pedestrians | - | . | - | . | - | - | - | - | - | - | . | . | - | . | - | - | - | - | - | - | - | - | - | - | - |

Count Name: Orchard Rd with Tanner Rd
Site Code:
Start Date: $03 / 15 / 2022$
Page No: 3

| Start Time |   <br> $\begin{array}{l}\text { Tanner Rd } \\ \text { Eastbound }\end{array}$ Turning Movement Peak <br> Closed Circle  <br> Westbound  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Orchard Rd <br> Southbound |  |  |  |  |  | Int. Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total |  |
| 7:15 AM | 0 | 0 | 0 | 19 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 161 | 0 |  | 161 | 0 | 0 | 98 | 1 | 0 | 99 | 279 |
| 7:30 AM | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 164 | 0 | 0 | 164 | 0 | 0 | 94 | 7 | 0 | 101 | 274 |
| 7:45 AM | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 | 0 | 0 | 152 | 0 | 0 | 101 | 10 | 0 | 111 | 276 |
| 8:00 AM | 0 | 0 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 126 | 0 | 0 | 126 | 0 | 0 | 81 | 11 | 0 | 92 | 229 |
| Total | 0 | 0 | 0 | 52 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 603 | 0 | 0 | 603 | 0 | 0 | 374 | 29 | 0 | 403 | 1058 |
| Approach \% | 0.0 | 0.0 | 0.0 | 100.0 | - | - | 0.0 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 100.0 | 0.0 | - | - | 0.0 | 0.0 | 92.8 | 7.2 | - | - | - |
| Total \% | 0.0 | 0.0 | 0.0 | 4.9 | - | 4.9 | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 57.0 | 0.0 | - | 57.0 | 0.0 | 0.0 | 35.3 | 2.7 | - | 38.1 | - |
| PHF | 0.000 | 0.000 | 0.000 | 0.684 | - | 0.684 | 0.000 | 0.000 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.919 | 0.000 | - | 0.919 | 0.000 | 0.000 | 0.926 | 0.659 | - | 0.908 | 0.948 |
| Lights | 0 | 0 | 0 | 51 | - | 51 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 585 | 0 | - | 585 | 0 | 0 | 355 | 29 | - | 384 | 1020 |
| \% Lights | - | - | - | 98.1 | - | 98.1 | - | - | - | - | - | - | - | - | 97.0 | - | - | 97.0 | - | - | 94.9 | 100.0 | - | 95.3 | 96.4 |
| Buses | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 4 | 0 | - | 4 | 0 | 0 | 4 | 0 | - | 4 | 8 |
| \% Buses | - | - | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | - | 0.7 | - | - | 0.7 | - | - | 1.1 | 0.0 | - | 1.0 | 0.8 |
| Single-Unit Trucks | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 8 | 0 | - | 8 | 0 | 0 | 4 | 0 | - | 4 | 13 |
| $\begin{gathered} \text { \% Single-Unit } \\ \text { Trucks } \\ \hline \end{gathered}$ | - | - | - | 1.9 | - | 1.9 | - | - | - | - | - | - | - | - | 1.3 | - | - | 1.3 | - | - | 1.1 | 0.0 | - | 1.0 | 1.2 |
| Articulated Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 6 | 0 | - | 6 | 0 | 0 | 11 | 0 | - | 11 | 17 |
| \% Articulated Trucks | - | - | . | 0.0 | - | 0.0 | - | - | - | - | - | . | . | - | 1.0 | . | - | 1.0 | . | - | 2.9 | 0.0 | - | 2.7 | 1.6 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \\ \hline \end{gathered}$ | - | - | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | - | 0.0 | - | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| \% Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Count Name: Orchard Rd with Tanner Rd
Site Code:
Start Date: $03 / 15 / 2022$
Page No: 4

| Start Time | Tanner Rd <br> Eastbound |  |  |  |  |  | Closed Circle <br> Westbound |  |  |  |  |  | Orchard Rd <br> Northbound |  |  |  |  |  | Orchard Rd <br> Southbound |  |  |  |  |  | Int. Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total |  |
| 4:45 PM | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 141 | 0 | 0 | 141 | 0 | 0 | 159 | 10 | 0 | 169 | 318 |
| 5:00 PM | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 0 | 0 | 146 | 0 | 0 | 149 | 18 | 0 | 167 | 318 |
| 5:15 PM | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 | 0 | 0 | 152 | 0 | 0 | 138 | 11 | 0 | 149 | 307 |
| 5:30 PM | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 0 | 0 | 125 | 0 | 0 | 153 | 10 | 0 | 163 | 298 |
| Total | 0 | 0 | 0 | 29 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 564 | 0 | 0 | 564 | 0 | 0 | 599 | 49 | 0 | 648 | 1241 |
| Approach \% | 0.0 | 0.0 | 0.0 | 100.0 | - | - | 0.0 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 100.0 | 0.0 | - | - | 0.0 | 0.0 | 92.4 | 7.6 | - | - | - |
| Total \% | 0.0 | 0.0 | 0.0 | 2.3 | - | 2.3 | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 45.4 | 0.0 | - | 45.4 | 0.0 | 0.0 | 48.3 | 3.9 | - | 52.2 | - |
| PHF | 0.000 | 0.000 | 0.000 | 0.725 | - | 0.725 | 0.000 | 0.000 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.000 | 0.928 | 0.000 | $-$ | 0.928 | 0.000 | 0.000 | 0.942 | 0.681 | - | 0.959 | 0.976 |
| Lights | 0 | 0 | 0 | 29 | - | 29 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 554 | 0 | - | 554 | 0 | 0 | 588 | 49 | - | 637 | 1220 |
| \% Lights | - | - | - | 100.0 | - | 100.0 | - | - | - | - | - | - | - | - | 98.2 | - | - | 98.2 | - | - | 98.2 | 100.0 | - | 98.3 | 98.3 |
| Buses | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| \% Buses | - | - | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | - | 0.0 | - | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Single-Unit Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 4 | 0 | - | 4 | 0 | 0 | 2 | 0 | - | 2 | 6 |
| \% Single-Unit Trucks | - | - | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | - | 0.7 | - | - | 0.7 | - | - | 0.3 | 0.0 | - | 0.3 | 0.5 |
| Articulated Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 6 | 0 | - | 6 | 0 | 0 | 9 | 0 | - | 9 | 15 |
| \% Articulated Trucks | - | - | . | 0.0 | - | 0.0 | - | . | - | - | - | . | . | - | 1.1 | . | - | 1.1 | . | . | 1.5 | 0.0 | - | 1.4 | 1.2 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | $\checkmark$ | 0 | 0 |
| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \\ \hline \end{gathered}$ | - | - | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | - | 0.0 | - | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| \% Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \end{gathered}$ | - | 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 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pedestrians | . | . | . | . | 1 | . | - | - | - | . | 0 | . | - | - | - | - | 0 | . | - | - | - | - | 0 | - | - |
| \% Pedestrians | . | . | . | . | 100.0 | - | - | - | . | . | . | . | - | - | - | - | - | - | - | - | - | - | - | - | - |

Count Name: Deerpath Rd with Tanner Rd
Site Code:
Start Date: $03 / 15 / 2022$
Page No: 3

|  |  | $\stackrel{\sim}{\sim}$ | - | $\stackrel{\text { ® }}{\sim}$ | $\stackrel{\sim}{\sim}$ | 응 |  |  |  |  |  | $\hat{\AA}$ | $\bigcirc$ | $\stackrel{\sim}{\sim}$ | $\checkmark$ | $\stackrel{\square}{\circ}$ | - | $\stackrel{\square}{\circ}$ | $\bigcirc$ | $\bigcirc$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\stackrel{\AA}{\circ}$ | $\stackrel{\circ}{7}$ | $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{\circ}$ |  |  |  |  | O | - | $\stackrel{\sim}{\circ}$ | $\sim$ | $\stackrel{\sim}{\circ}$ | $\sim$ | $\stackrel{\circ}{\circ}$ | - | $\stackrel{\infty}{\circ}$ | - | $\bigcirc$ |  |
|  | $\begin{aligned} & \frac{8}{8} \\ & 0 . \end{aligned}$ | $\bigcirc$ | $\bigcirc$ | - | $\bigcirc$ | - |  |  |  |  |  |  | , |  |  |  | ' |  |  | , |  |
|  | $\begin{aligned} & \stackrel{\rightharpoonup}{0} \\ & \stackrel{\rightharpoonup}{x} \end{aligned}$ | ๓ | - | m | - | $\infty$ |  |  | $\infty$ |  | $\infty$ | $\stackrel{\circ}{\circ}$ | - | $0 .$ | - | $\bigcirc$ | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  |
|  | $\underset{\substack{2 \\ 卜}}{ }$ | N | 웅 | ® | $\stackrel{\circ}{\circ}$ | $\stackrel{9}{\text { M }}$ | $\underset{\sim}{f} \mid \underset{\infty}{n}$ | $\stackrel{\sim}{\infty}$ | ~ㄷ․ |  |  | $\begin{aligned} & \infty \\ & \infty \\ & \infty \end{aligned}$ | $\sim$ | $\stackrel{-}{\circ}$ | - | $\stackrel{\varrho}{\circ}$ | - | $\stackrel{\varrho}{\circ}$ | 0 | $\bigcirc$ |  |
|  | $\stackrel{ \pm}{ \pm}$ | $\stackrel{\sim}{\sim}$ | $\bullet$ | $\stackrel{m}{\square}$ | $\wedge$ | F |  |  |  | $\stackrel{\infty}{\infty}$ | $q$ | $\begin{aligned} & \circ \\ & \stackrel{\circ}{\circ} \end{aligned}$ | - | $0 .$ | - | $\underset{\sim}{\text { Ji }}$ | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ |  |
|  |  | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | - | - |  |  |  | $8$ | - | , | $\bigcirc$ |  | $\bigcirc$ |  | - | , | $\bigcirc$ | ' |  |

Kenig Lindgren O'Hara Aboona, Inc.
9575 W . Higgins Rd., Suite 400 Rosemont, Illinois, United States 60018
(847)518-9990 bmay@kloainc.com
Turning Movement Peak Hour Data (7:15 AM)

| Start Time | Tanner Rd Eastbound |  |  |  |  |  | Tanner Rd <br> Westbound |  |  |  |  |  | Deerpath Rd <br> Northbound |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. <br> Total |  |
| 7:15 AM | 0 | 5 | 4 | 83 | 0 | 92 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | 20 | 32 | 0 | 0 | 52 |  |
| 7:30 AM | 0 | 18 | 4 | 86 | 0 | 108 | 0 | 1 | 6 | 2 | 0 | 9 | 0 | 22 | 46 | 0 | 0 | 68 |  |
| 7:45 AM | 0 | 12 | 0 | 74 | 0 | 86 | 0 | 1 | 8 | 0 | 0 | 9 | 0 | 35 | 57 | 1 | 0 | 93 |  |
| 8:00 AM | 0 | 4 | 5 | 54 | 0 | 63 | 0 | 3 | 7 | 1 | 0 | 11 | 0 | 24 | 54 | 0 | 0 | 78 |  |
| Total | 0 | 39 | 13 | 297 | 0 | 349 | 0 | 5 | 25 | 3 | 0 | 33 | 0 | 101 | 189 | 1 | 0 | 291 |  |
| Approach \% | 0.0 | 11.2 | 3.7 | 85.1 | - | - | 0.0 | 15.2 | 75.8 | 9.1 | - | - | 0.0 | 34.7 | 64.9 | 0.3 | - | - |  |
| Total \% | 0.0 | 3.7 | 1.2 | 27.9 | - | 32.8 | 0.0 | 0.5 | 2.3 | 0.3 | - | 3.1 | 0.0 | 9.5 | 17.7 | 0.1 | - | 27.3 |  |
| PHF | 0.000 | 0.542 | 0.650 | 0.863 | - | 0.808 | 0.000 | 0.417 | 0.781 | 0.375 | - | 0.750 | 0.000 | 0.721 | 0.829 | 0.250 | - | 0.782 |  |
| Lights | 0 | 38 | 13 | 292 | - | 343 | 0 | 5 | 21 | 3 | - | 29 | 0 | 95 | 186 | 1 | $\checkmark$ | 282 |  |
| \% Lights | - | 97.4 | 100.0 | 98.3 | - | 98.3 | - | 100.0 | 84.0 | 100.0 | - | 87.9 | - | 94.1 | 98.4 | 100.0 | - | 96.9 |  |
| Buses | 0 | 1 | 0 | 4 | - | 5 | 0 | 0 | 4 | 0 | - | 4 | 0 | 3 | 2 | 0 | - | 5 |  |
| \% Buses | - | 2.6 | 0.0 | 1.3 | - | 1.4 | - | 0.0 | 16.0 | 0.0 | - | 12.1 | - | 3.0 | 1.1 | 0.0 | - | 1.7 |  |
| Single-Unit Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | 1 | 0 | - | 2 |  |
| $\begin{gathered} \text { \% Single-Unit } \\ \text { Trucks } \\ \hline \end{gathered}$ | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 1.0 | 0.5 | 0.0 | - | 0.7 |  |
| Articulated Trucks | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | 0 | - | 2 |  |
| \% Articulated Trucks | - | 0.0 | 0.0 | 0.3 | - | 0.3 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 2.0 | 0.0 | 0.0 | - | 0.7 |  |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 |  |
| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \\ \hline \end{gathered}$ | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 |  |
| Pedestrians | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - |  |
| \% Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | $\stackrel{\circ}{\circ}$



|  | $\begin{aligned} & \overline{\mathrm{I}} \\ & \stackrel{\text { In }}{~} \end{aligned}$ | $\stackrel{N}{N}$ | $\stackrel{\circ}{\circ}$ | $\stackrel{\sim}{\text { a }}$ | $\stackrel{\circ}{\circ}$ | $\begin{gathered} \stackrel{\sim}{\infty} \\ \stackrel{\sim}{\circ} \end{gathered}$ |  |  |  |  | 8 | $\bigcirc$ | $\sim$ | Ơ | $\bigcirc$ | 응 | $\bigcirc$ | $\bigcirc$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 言衰产 | ¢ | ก็ |  |  |  |  |  |  |  | $\stackrel{\circ}{\circ} \bigcirc$ |  |  | $\stackrel{\square}{\circ}$ | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ |  |
|  | $\begin{aligned} & \text { n } \\ & 0 \\ & 0 \end{aligned}$ | $\bigcirc$ | － |  | － | － |  |  |  |  |  |  |  |  |  | ， |  |  |  |
|  |  | ＊ | $\bullet$ | － | $\infty$ |  |  | $\stackrel{\infty}{\sim} \stackrel{+}{\circ}$ | － | $\therefore \underset{\sim}{\circ}$ | $\bigcirc$ | $00$ | － | $\bigcirc$ | － | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |  |
|  | $\underset{\underset{\Sigma}{2}}{\stackrel{2}{\gtrless}}$ | ¢ | \％ | 岕 | 안 | $\stackrel{\circ}{\sim}$ | $\stackrel{\dot{\infty}}{\infty}$ | $\begin{array}{l\|l} \infty \\ \stackrel{\circ}{\circ} \\ \stackrel{\circ}{\circ} & \stackrel{0}{\circ} \\ \hline \end{array}$ | $\stackrel{8}{8}$ | $\stackrel{\sim}{\sim}$ | $\stackrel{L}{8}$ | $00$ | － | $\stackrel{n}{0}$ | 0 | $\bigcirc$ | 0 | $\bigcirc$ |  |
|  | $\stackrel{ \pm}{ \pm}$ | ＊ | － | $\sim$ | N | 이 |  |  | $\stackrel{\text { S }}{*}$ | $\bigcirc$ |  | $000$ | － | $\bigcirc$ | 0 | $\bigcirc$ | 0 | $\bigcirc$ |  |
|  | $\stackrel{y}{5}$ | 0 | $\bigcirc$ | － | 0 | $\bigcirc$ |  | $0$ | $\bigcirc$ | － | － |  | － |  | 0 | ， | $\bigcirc$ |  |  |

Turning Movement Peak Hour Data（4：45 PM） | $\begin{array}{c}\text { Deerpath Rd } \\ \text { Northbound } \\ \text { Thru } \\ \text { Right }\end{array}$ |
| :---: |

| Start Time | Tanner Rd Eastbound |  |  |  |  |  | Tanner Rd Westbound |  |  |  |  |  | Deerpath Rd <br> Northbound |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U－Turn | Left | Thru | Right | Peds | App． <br> Total | U－Turn | Left | Thru | Right | Peds | App． <br> Total | U－Turn | Left | Thru | Right | Peds | App． <br> Total |
| 4：45 PM | 0 | 6 | 3 | 34 | 0 | 43 | 0 | 0 | 8 | 7 | 0 | 15 | 0 | 77 | 76 | 0 | 0 | 153 |
| 5：00 PM | 0 | 5 | 4 | 32 | 0 | 41 | 0 | 0 | 14 | 0 | 0 | 14 | 0 | 75 | 77 | 0 | 0 | 152 |
| 5：15 PM | 0 | 5 | 0 | 30 | 0 | 35 | 0 | 2 | 12 | 1 | 0 | 15 | 0 | 78 | 91 | 0 | 0 | 169 |
| 5：30 PM | 0 | 6 | 4 | 33 | 0 | 43 | 0 | 0 | 8 | 2 | 0 | 10 | 0 | 65 | 84 | 1 | 0 | 150 |
| Total | 0 | 22 | 11 | 129 | 0 | 162 | 0 | 2 | 42 | 10 | 0 | 54 | 0 | 295 | 328 | 1 | 0 | 624 |
| Approach \％ | 0.0 | 13.6 | 6.8 | 79.6 | － | － | 0.0 | 3.7 | 77.8 | 18.5 | － | － | 0.0 | 47.3 | 52.6 | 0.2 | － | － |
| Total \％ | 0.0 | 2.0 | 1.0 | 11.9 | － | 15.0 | 0.0 | 0.2 | 3.9 | 0.9 | － | 5.0 | 0.0 | 27.3 | 30.3 | 0.1 | － | 57.7 |
| PHF | 0.000 | 0.917 | 0.688 | 0.949 | － | 0.942 | 0.000 | 0.250 | 0.750 | 0.357 | － | 0.900 | 0.000 | 0.946 | 0.901 | 0.250 | － | 0.923 |
| Lights | 0 | 22 | 11 | 129 | － | 162 | 0 | 2 | 42 | 10 | － | 54 | 0 | 295 | 327 | 1 | － | 623 |
| \％Lights | － | 100.0 | 100.0 | 100.0 | － | 100.0 | － | 100.0 | 100.0 | 100.0 | － | 100.0 | － | 100.0 | 99.7 | 100.0 | － | 99.8 |
| Buses | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | － | 0 |
| \％Buses | － | 0.0 | 0.0 | 0.0 | － | 0.0 | － | 0.0 | 0.0 | 0.0 | － | 0.0 | － | 0.0 | 0.0 | 0.0 | － | 0.0 |
| Single－Unit Trucks | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 1 | 0 | － | 1 |
| Trucks <br> \％Single－Unit | － | 0.0 | 0.0 | 0.0 | － | 0.0 | － | 0.0 | 0.0 | 0.0 | － | 0.0 | － | 0.0 | 0.3 | 0.0 | － | 0.2 |
| Articulated Trucks | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | $-$ | 0 |
| Trucks <br> \％Articulated Trucks | － | 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 Road | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | － | 0 | 0 | 0 | 0 | 0 | － | 0 |
| $\begin{gathered} \text { \% Bicycles on } \\ \text { Road } \end{gathered}$ | ． | 0.0 | 0.0 | 0.0 | － | 0.0 | － | 0.0 | 0.0 | 0.0 | － | 0.0 | － | 0.0 | 0.0 | 0.0 | － | 0.0 |
| Pedestrians | － | － | － | － | 0 | － | － | － | － | － | 0 | － | － | － | － | － | 0 | － |
| \％Pedestrians | － | ． | － | － |  | － | － | － | － | － | － | － | － | － | － | － |  | ． |

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Count Name: Deerpath Rd with W Mooseheart
Rd
Site Code:
Start Date: 03/15/2022
Page No: 2

Turning Movement Peak Hour Data (7:15 AM)


| Start Time | W Mooseheart Rd |  |  |  | Turning Movement Peak Hour Data (7:15 AM) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | App. Total | U-Turn |  | eerpath R <br> Northbound <br> Right | Peds | App. Total |
|  | U-Turn | Left | Westboun Right | Peds |  |  | Thru |  |  |  |
| 7:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 40 | 3 | 0 | 43 |
| 7:30 AM | 0 | 2 | 3 | 0 | 5 | 0 | 65 | 9 | 0 | 74 |
| 7:45 AM | 0 | 3 | 12 | 0 | 15 | 0 | 61 | 8 | 0 | 69 |
| 8:00 AM | 0 | 1 | 0 | 0 | 1 | 0 | 49 | 0 | 0 | 49 |
| Total | 0 | 7 | 15 | 0 | 22 | 0 | 215 | 20 | 0 | 235 |
| Approach \% | 0.0 | 31.8 | 68.2 | - | - | 0.0 | 91.5 | 8.5 | - | - |
| Total \% | 0.0 | 1.1 | 2.3 | - | 3.4 | 0.0 | 32.9 | 3.1 | - | 36.0 |
| PHF | 0.000 | 0.583 | 0.313 | - | 0.367 | 0.000 | 0.827 | 0.556 | - | 0.794 |
| Lights | 0 | 7 | 14 | - | 21 | 0 | 213 | 19 | - | 232 |
| \% Lights | - | 100.0 | 93.3 | - | 95.5 | - | 99.1 | 95.0 | - | 98.7 |
| Buses | 0 | 0 | 1 | - | 1 | 0 | 2 | 1 | - | 3 |
| \% Buses | - | 0.0 | 6.7 | - | 4.5 | - | 0.9 | 5.0 | - | 1.3 |
| Single-Unit Trucks | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 |
| \% Single-Unit Trucks | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | $\checkmark$ | 0.0 |
| Articulated Trucks | 0 | 0 | 0 | $\checkmark$ | 0 | 0 | 0 | 0 | - | 0 |
| \% Articulated Trucks | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | $-$ | 0.0 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | $\checkmark$ | 0 |
| \% Bicycles on Road | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| Pedestrians | - | - | - | 0 | - | - | - | - | 0 | - |
| \% Pedestrians | - | - | - | - | - | - | - | - | - | - |

Count Name: Deerpath Rd with W Mooseheart
Site Code:
Start Date: 03/15/2022
Page No: 3

| Turning Movement Peak Hour Data (4:45 PM) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | W Mooseheart Rd Westbound |  |  |  |  | Deerpath Rd <br> Northbound |  |  |  |  | Deerpath Rd Southbound |  |  |  |  |  |
| Start Time |  |  |  |  |  | U-Turn | Thru | Northbou | Peds | App. Total |  |  |  |  |  |  |
| 4:45 PM | 0 | 1 | 8 | 0 | 9 | 0 | 84 | 4 | 0 | 88 | 0 | 3 | 53 | 0 | 56 | 153 |
| 5:00 PM | 0 | 4 | 3 | 0 | 7 |  | 86 | 1 | 0 | 87 | 0 | 2 | 67 | 0 | 69 | 163 |
| 5:15 PM | 0 | 0 | 4 | 0 | 4 | 0 | 94 | 2 | 0 | 96 | 0 | 6 | 58 | 0 | 64 | 164 |
| 5:30 PM | 0 | 3 | 3 | 0 | 6 | 0 | 88 | 2 | 0 | 90 | 0 | 5 | 57 | 0 | 62 | 158 |
| Total | 0 | 8 | 18 | 0 | 26 | 0 | 352 | 9 | 0 | 361 | 0 | 16 | 235 | 0 | 251 | 638 |
| Approach \% | 0.0 | 30.8 | 69.2 | - | . | 0.0 | 97.5 | 2.5 | - | - | 0.0 | 6.4 | 93.6 | - | . | - |
| Total \% | 0.0 | 1.3 | 2.8 | - | 4.1 | 0.0 | 55.2 | 1.4 | - | 56.6 | 0.0 | 2.5 | 36.8 | - | 39.3 | - |
| PHF | 0.000 | 0.500 | 0.563 | - | 0.722 | 0.000 | 0.936 | 0.563 | - | 0.940 | 0.000 | 0.667 | 0.877 | - | 0.909 | 0.973 |
| Lights | 0 | 8 | 18 | - | 26 | 0 | 351 | 9 | - | 360 | 0 | 16 | 233 | - | 249 | 635 |
| \% Lights | - | 100.0 | 100.0 | - | 100.0 | - | 99.7 | 100.0 | - | 99.7 | - | 100.0 | 99.1 | - | 99.2 | 99.5 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| \% Buses | . | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | - | 0.0 | . | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Single-Unit Trucks | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 1 | - | 1 | 2 |
| \% Single-Unit Trucks | - | 0.0 | 0.0 | - | 0.0 | - | 0.3 | 0.0 | - | 0.3 | - | 0.0 | 0.4 | - | 0.4 | 0.3 |
| Articulated Trucks | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| \% Articulated Trucks | - | 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 | 1 | - | 1 | 1 |
| \% Bicycles on Road | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.4 | - | 0.4 | 0.2 |
| Pedestrians | - | - | - | 0 | . | - | . | - | 0 | - | . | - | . | 0 | . | - |
| \% Pedestrians | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Site Plan


## CMAP 2050 Projections Letter

Brendan S. May
Senior Consultant
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

## Subject: Orchard Road-Mooseheart Road-Deerpath Road IDOT

Dear Mr. May:
In response to a request made on your behalf and dated March 16, 2022, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

| ROAD SEGMENT | Current ADT | Year 2050 ADT |
| :--- | :---: | :---: |
| Orchard Rd north of Oak St | 12,400 | 17,600 |
| Orchard Rd south of Oak St | 27,800 | 33,700 |
| Oak St west of Orchard Rd | 3,900 | 6,200 |
| Oak St east of Orchard Rd | 6,600 | 8,200 |
| Tanner Rd west of Orchard Rd | 2,650 | 4,200 |
| Deerpath Rd north of Tanner Rd | 7,450 | 11,800 |
| Deerpath Rd between Tanner Rd and Oak St | 10,100 | 13,300 |
| Deerpath Rd south of Oak St | 6,950 | 11,000 |

Traffic projections are developed using existing ADT data provided in the request letter and the results from the December 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.
Sincerely,
22
Jose Rodriguez, PTP, AICP
Senior Planner, Research \& Analysis
$\mathrm{cc}:$ Rios (IDOT)
S:\AdminGroups\ResearchAnalysis\2022_ForecastTraffic\NorthAuroralka-11-22\ka-11-22.docx

## 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 D |  | ay (SEC/VEH) |
| A 0-10 |  |  |
| B $\quad>10-15$ |  |  |
| C $\quad>15-25$ |  |  |
| D $\quad>25-35$ |  |  |
|  | E $\quad>35-50$ |  |
|  | F > |  |

## Capacity Analysis Summary Sheets

|  | 4 |  |  | 7 |  |  | 4 | $\dagger$ | $p$ | （ | $\dagger$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ＊ | 4 | 「 | \％ | 4 | 「 | $\cdots$ | 44 | 「 | 4 | 44 | 「 |
| Traffic Volume（vph） | 31 | 143 | 86 | 136 | 69 | 14 | 51 | 585 | 102 | 33 | 389 | 5 |
| Future Volume（vph） | 31 | 143 | 86 | 136 | 69 | 14 | 51 | 585 | 102 | 33 | 389 | 5 |
| Ideal Flow（vphpl） | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade（\％） |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |
| Storage Length（ft） | 200 |  | 0 | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Storage Lanes | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 |
| Taper Length（ft） | 185 |  |  | 235 |  |  | 235 |  |  | 240 |  |  |
| Lane Util．Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 3273 | 1980 | 1538 | 3400 | 1869 | 1615 | 3303 | 3725 | 1495 | 3400 | 3619 | 808 |
| Flt Permitted | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（perm） | 3273 | 1980 | 1538 | 3400 | 1869 | 1615 | 3303 | 3725 | 1495 | 3400 | 3619 | 808 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 95 |  |  | 55 |  |  | 112 |  |  | 55 |
| Link Speed（mph） |  | 45 |  |  | 45 |  |  | 50 |  |  | 50 |  |
| Link Distance（ft） |  | 597 |  |  | 2321 |  |  | 1682 |  |  | 1100 |  |
| Travel Time（s） |  | 9.0 |  |  | 35.2 |  |  | 22.9 |  |  | 15.0 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl．Bikes（\＃／hr） |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Growth Factor | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ |
| Heavy Vehicles（\％） | 7\％ | 1\％ | 5\％ | 3\％ | 7\％ | 0\％ | 6\％ | 2\％ | 8\％ | 3\％ | 5\％ | 100\％ |
| 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） | 34 | 157 | 95 | 149 | 76 | 15 | 56 | 643 | 112 | 36 | 427 | 5 |
| Turn Type | Prot | NA | pm＋ov | Prot | NA | $\mathrm{pm}+\mathrm{ov}$ | Prot | NA | pm＋ov | Prot | NA | $\mathrm{pm}+\mathrm{ov}$ |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases |  |  | 4 |  |  | 8 |  |  | 2 |  |  | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial（s） | 3.0 | 8.0 | 3.0 | 3.0 | 8.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 |
| Minimum Split（s） | 7.5 | 14.0 | 7.5 | 7.5 | 14.0 | 7.5 | 7.5 | 21.0 | 7.5 | 7.5 | 21.0 | 7.5 |
| Total Split（s） | 18.0 | 26.0 | 20.0 | 18.0 | 26.0 | 17.0 | 20.0 | 69.0 | 18.0 | 17.0 | 66.0 | 18.0 |
| Total Split（\％） | 13．8\％ | 20．0\％ | 15．4\％ | 13．8\％ | 20．0\％ | 13．1\％ | 15．4\％ | 53．1\％ | 13．8\％ | 13．1\％ | 50．8\％ | 13．8\％ |
| Yellow Time（s） | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 |
| All－Red Time（s） | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 |
| Lost Time Adjust（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time（s） | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 |
| Lead／Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead |
| Lead－Lag Optimize？ | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C－Min | None | None | C－Min | None |
| Act Effct Green（s） | 6.3 | 16.0 | 29.1 | 10.5 | 23.7 | 36.1 | 7.1 | 79.8 | 96.4 | 6.3 | 77.3 | 89.7 |
| Actuated g／C Ratio | 0.05 | 0.12 | 0.22 | 0.08 | 0.18 | 0.28 | 0.05 | 0.61 | 0.74 | 0.05 | 0.59 | 0.69 |


|  | $\rangle$ |  |  | 7 |  | 4 | 4 | $\uparrow$ | 1 | b | $\downarrow$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.21 | 0.65 | 0.23 | 0.54 | 0.22 | 0.03 | 0.31 | 0.28 | 0.10 | 0.22 | 0.20 | 0.01 |
| Control Delay | 62.1 | 66.1 | 8.3 | 64.4 | 46.8 | 0.1 | 63.1 | 13.4 | 1.4 | 59.0 | 13.0 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 62.1 | 66.1 | 8.3 | 64.4 | 46.8 | 0.1 | 63.1 | 13.4 | 1.4 | 59.0 | 13.0 | 0.4 |
| LOS | E | E | A | E | D | A | E | B | A | E | B | A |
| Approach Delay |  | 46.4 |  |  | 54.8 |  |  | 15.2 |  |  | 16.5 |  |
| Approach LOS |  | D |  |  | D |  |  | B |  |  | B |  |
| Queue Length 50th (ft) | 14 | 128 | 0 | 63 | 57 | 0 | 23 | 130 | 0 | 15 | 85 | 0 |
| Queue Length 95th (ft) | 32 | 194 | 42 | 97 | 99 | 0 | 46 | 200 | 19 | 33 | 130 | m0 |
| Internal Link Dist (t) |  | 517 |  |  | 2241 |  |  | 1602 |  |  | 1020 |  |
| Turn Bay Length (ft) | 200 |  |  | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Base Capacity (vph) | 365 | 308 | 522 | 379 | 341 | 574 | 419 | 2287 | 1179 | 353 | 2152 | 621 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.09 | 0.51 | 0.18 | 0.39 | 0.22 | 0.03 | 0.13 | 0.28 | 0.09 | 0.10 | 0.20 | 0.01 |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: $55(42 \%)$, Referenced to phase 2:NBT and 6:SBT, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 50 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 25.7 |  |  |  | Intersection LOS: C |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 46.2\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |
| m Volume for 95th per | queue is | metere | by upstr | am signal. |  |  |  |  |  |  |  |  |

Splits and Phases: 1: Orchard Road \& Oak Street


|  | 4 | $\rightarrow$ |  | $\checkmark$ |  |  | 4 | $\dagger$ |  | * | $\frac{1}{1}$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{1}$ | 44 | F | ${ }^{1}$ | 44 | F | ${ }^{7}$ | $\hat{\beta}$ |  | ${ }^{*}$ | $\uparrow$ |  |
| Traffic Volume (vph) | 8 | 580 | 42 | 24 | 340 | 23 | 51 | 24 | 56 | 40 | 41 | 13 |
| Future Volume (vph) | 8 | 580 | 42 | 24 | 340 | 23 | 51 | 24 | 56 | 40 | 41 | 13 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 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) | 125 |  | 125 | 125 |  | 125 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 200 |  |  | 200 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  | 0.895 |  |  | 0.964 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd. Flow (prot) | 1805 | 3689 | 1509 | 1805 | 3619 | 1482 | 1671 | 1680 | 0 | 1805 | 1672 | 0 |
| Flt Permitted | 0.509 |  |  | 0.365 |  |  | 0.714 |  |  | 0.694 |  |  |
| Satd. Flow (perm) | 967 | 3689 | 1509 | 694 | 3619 | 1482 | 1256 | 1680 | 0 | 1319 | 1672 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  |  | 117 |  |  | 117 |  | 68 |  |  | 16 |  |
| Link Speed (mph) |  | 50 |  |  | 50 |  |  | 25 |  |  | 25 |  |
| Link Distance (ft) |  | 2475 |  |  | 2166 |  |  | 268 |  |  | 249 |  |
| Travel Time (s) |  | 33.8 |  |  | 29.5 |  |  | 7.3 |  |  | 6.8 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl. Bikes (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Growth Factor | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Heavy Vehicles (\%) | 0\% | 3\% | 7\% | 0\% | 5\% | 9\% | 8\% | 4\% | 0\% | 0\% | 10\% | 8\% |
| 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) | 10 | 707 | 51 | 29 | 415 | 28 | 62 | 97 | 0 | 49 | 66 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA |  | Perm | NA |  |
| Protected Phases | 5 | 2 |  | 1 | 6 |  |  | 8 |  |  | 4 |  |
| Permitted Phases | 2 |  | 2 | 6 |  | 6 | 8 |  |  | 4 |  |  |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 |  | 4 | 4 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 3.0 | 15.0 | 15.0 | 3.0 | 15.0 | 15.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 7.0 | 21.5 | 21.5 | 7.0 | 21.5 | 21.5 | 14.0 | 14.0 |  | 14.0 | 14.0 |  |
| Total Split (s) | 11.0 | 35.0 | 35.0 | 11.0 | 35.0 | 35.0 | 19.0 | 19.0 |  | 19.0 | 19.0 |  |
| Total Split (\%) | 16.9\% | 53.8\% | 53.8\% | 16.9\% | 53.8\% | 53.8\% | 29.2\% | 29.2\% |  | 29.2\% | 29.2\% |  |
| Yellow Time (s) | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.5 | 4.5 |  | 4.5 | 4.5 |  |
| All-Red Time (s) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.5 | 1.5 |  | 1.5 | 1.5 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 4.0 | 6.5 | 6.5 | 4.0 | 6.5 | 6.5 | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag |  |  |  |  |  |  |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes |  |  |  |  |  |  |
| Recall Mode | None | C-Min | C-Min | None | C-Min | C-Min | None | None |  | None | None |  |
| Act Effct Green (s) | 46.5 | 43.0 | 43.0 | 47.6 | 45.1 | 45.1 | 9.1 | 9.1 |  | 9.1 | 9.1 |  |
| Actuated g/C Ratio | 0.72 | 0.66 | 0.66 | 0.73 | 0.69 | 0.69 | 0.14 | 0.14 |  | 0.14 | 0.14 |  |


|  | $\psi$ | $\rightarrow$ |  | 7 |  |  | 4 | 4 | $p$ | , | $\dagger$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.01 | 0.29 | 0.05 | 0.05 | 0.17 | 0.03 | 0.35 | 0.33 |  | 0.26 | 0.27 |  |
| Control Delay | 5.8 | 10.3 | 3.6 | 3.8 | 6.0 | 0.0 | 30.0 | 13.5 |  | 27.4 | 21.9 |  |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay | 5.8 | 10.3 | 3.6 | 3.8 | 6.0 | 0.0 | 30.0 | 13.5 |  | 27.4 | 21.9 |  |
| LOS | A | B | A | A | A | A | C | B |  | C | C |  |
| Approach Delay |  | 9.8 |  |  | 5.5 |  |  | 19.9 |  |  | 24.2 |  |
| Approach LOS |  | A |  |  | A |  |  | B |  |  | C |  |
| Queue Length 50th (ft) | 1 | 81 | 1 | 3 | 26 | 0 | 23 | 10 |  | 18 | 18 |  |
| Queue Length 95th (ft) | 12 | 258 | 23 | 10 | 68 | 0 | 47 | 38 |  | 39 | 41 |  |
| Internal Link Dist (ft) |  | 2395 |  |  | 2086 |  |  | 188 |  |  | 169 |  |
| Turn Bay Length (ft) | 125 |  | 125 | 125 |  | 125 |  |  |  |  |  |  |
| Base Capacity (vph) | 788 | 2438 | 1037 | 628 | 2508 | 1063 | 251 | 390 |  | 263 | 347 |  |
| 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 | 0.01 | 0.29 | 0.05 | 0.05 | 0.17 | 0.03 | 0.25 | 0.25 |  | 0.19 | 0.19 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 56 (86\%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 45 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.35 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 10.6 |  |  |  | Intersection LOS: B |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 39.9\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 2: White Oak Drive \& Orchard Road


|  | 4 |  |  | 7 |  |  | 4 |  | 7 | （ | $\frac{1}{1}$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | \％ | 4 | 「 | \％ | 4 | 「 | 4 | 44 | 「＇ | ${ }^{* 17}$ | 44 | F＇ |
| Traffic Volume（vph） | 18 | 105 | 40 | 171 | 111 | 21 | 157 | 618 | 202 | 79 | 635 | 5 |
| Future Volume（vph） | 18 | 105 | 40 | 171 | 111 | 21 | 157 | 618 | 202 | 79 | 635 | 5 |
| Ideal Flow（vphpl） | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade（\％） |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |
| Storage Length（ft） | 200 |  | 0 | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Storage Lanes | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 |
| Taper Length（ft） | 185 |  |  | 235 |  |  | 235 |  |  | 240 |  |  |
| Lane Util．Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 3502 | 2000 | 1568 | 3433 | 1980 | 1615 | 3467 | 3725 | 1599 | 3502 | 3725 | 1615 |
| Flt Permitted | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（perm） | 3502 | 2000 | 1568 | 3433 | 1980 | 1615 | 3467 | 3725 | 1599 | 3502 | 3725 | 1615 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 84 |  |  | 84 |  |  | 210 |  |  | 113 |
| Link Speed（mph） |  | 45 |  |  | 45 |  |  | 50 |  |  | 50 |  |
| Link Distance（ft） |  | 597 |  |  | 2321 |  |  | 1682 |  |  | 1100 |  |
| Travel Time（s） |  | 9.0 |  |  | 35.2 |  |  | 22.9 |  |  | 15.0 |  |
| 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（\％） | 0\％ | 0\％ | 3\％ | 2\％ | 1\％ | 0\％ | 1\％ | 2\％ | 1\％ | 0\％ | 2\％ | 0\％ |
| 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） | 19 | 109 | 42 | 178 | 116 | 22 | 164 | 644 | 210 | 82 | 661 | 5 |
| Turn Type | Prot | NA | pm＋ov | Prot | NA | $\mathrm{pm}+\mathrm{ov}$ | Prot | NA | $\mathrm{pm}+0 \mathrm{v}$ | Prot | NA | $\mathrm{pm}+0 \mathrm{v}$ |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases |  |  | 4 |  |  | 8 |  |  | 2 |  |  | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial（s） | 3.0 | 8.0 | 3.0 | 3.0 | 8.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 |
| Minimum Split（s） | 7.5 | 14.0 | 7.5 | 7.5 | 14.0 | 7.5 | 7.5 | 21.0 | 7.5 | 7.5 | 21.0 | 7.5 |
| Total Split（s） | 17.0 | 23.0 | 23.0 | 21.0 | 27.0 | 18.0 | 23.0 | 68.0 | 21.0 | 18.0 | 63.0 | 17.0 |
| Total Split（\％） | 13．1\％ | 17．7\％ | 17．7\％ | 16．2\％ | 20．8\％ | 13．8\％ | 17．7\％ | 52．3\％ | 16．2\％ | 13．8\％ | 48．5\％ | 13．1\％ |
| Yellow Time（s） | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 |
| All－Red Time（s） | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 |
| Lost Time Adjust（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time（s） | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 |
| Lead／Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead |
| Lead－Lag Optimize？ | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C－Min | None | None | C－Min | None |
| Act Effct Green（s） | 5.7 | 12.9 | 29.9 | 11.6 | 22.2 | 36.1 | 11.0 | 78.6 | 96.2 | 7.9 | 75.6 | 87.3 |
| Actuated g／C Ratio | 0.04 | 0.10 | 0.23 | 0.09 | 0.17 | 0.28 | 0.08 | 0.60 | 0.74 | 0.06 | 0.58 | 0.67 |


|  | $\stackrel{ }{*}$ |  |  |  |  |  | - | $\uparrow$ | 7 | $\checkmark$ | $\downarrow$ | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.12 | 0.55 | 0.10 | 0.58 | 0.34 | 0.04 | 0.56 | 0.29 | 0.17 | 0.38 | 0.31 | 0.00 |
| Control Delay | 61.2 | 65.8 | 0.8 | 64.4 | 50.4 | 0.1 | 64.3 | 13.6 | 1.1 | 57.0 | 13.0 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 61.2 | 65.8 | 0.8 | 64.4 | 50.4 | 0.1 | 64.3 | 13.6 | 1.1 | 57.0 | 13.0 | 0.0 |
| LOS | E | E | A | E | D | A | E | B | A | E | B | A |
| Approach Delay |  | 49.2 |  |  | 54.8 |  |  | 19.2 |  |  | 17.7 |  |
| Approach LOS |  | D |  |  | D |  |  | B |  |  | B |  |
| Queue Length 50th (tt) | 8 | 89 | 0 | 75 | 90 | 0 | 69 | 129 | 0 | 35 | 143 | 0 |
| Queue Length 95th (tt) | 21 | 146 | 2 | 111 | 142 | 0 | 105 | 198 | 23 | 61 | 194 | m0 |
| Internal Link Dist (t) |  | 517 |  |  | 2241 |  |  | 1602 |  |  | 1020 |  |
| Turn Bay Length (tt) | 200 |  |  | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Base Capacity (vph) | 363 | 262 | 521 | 462 | 346 | 586 | 520 | 2252 | 1301 | 390 | 2165 | 1211 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.42 | 0.08 | 0.39 | 0.34 | 0.04 | 0.32 | 0.29 | 0.16 | 0.21 | 0.31 | 0.00 |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 125 (96\%), Referenced to phase 2:NBT and 6:SBT, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 50 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.58 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 26.0 |  |  |  | Intersection LOS: C |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 46.0\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 1: Orchard Road \& Oak Street


|  | 4 | $\rightarrow$ |  | $\checkmark$ |  |  | 4 | $\dagger$ |  | * | $\frac{1}{1}$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{7}$ | 44 | F | ${ }^{7}$ | 44 | F | ${ }^{7}$ | $\hat{\beta}$ |  | ${ }^{*}$ | $\uparrow$ |  |
| Traffic Volume (vph) | 31 | 614 | 12 | 47 | 719 | 39 | 14 | 13 | 27 | 34 | 18 | 6 |
| Future Volume (vph) | 31 | 614 | 12 | 47 | 719 | 39 | 14 | 13 | 27 | 34 | 18 | 6 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 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) | 125 |  | 125 | 125 |  | 125 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 200 |  |  | 200 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  | 0.900 |  |  | 0.964 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd. Flow (prot) | 1805 | 3725 | 1615 | 1805 | 3725 | 1615 | 1687 | 1710 | 0 | 1805 | 1832 | 0 |
| Flt Permitted | 0.364 |  |  | 0.393 |  |  | 0.755 |  |  | 0.755 |  |  |
| Satd. Flow (perm) | 692 | 3725 | 1615 | 747 | 3725 | 1615 | 1341 | 1710 | 0 | 1434 | 1832 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  |  | 117 |  |  | 117 |  | 28 |  |  | 6 |  |
| Link Speed (mph) |  | 50 |  |  | 50 |  |  | 25 |  |  | 25 |  |
| Link Distance (ft) |  | 2475 |  |  | 2166 |  |  | 268 |  |  | 249 |  |
| Travel Time (s) |  | 33.8 |  |  | 29.5 |  |  | 7.3 |  |  | 6.8 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl. Bikes (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Growth Factor | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Heavy Vehicles (\%) | 0\% | 2\% | 0\% | 0\% | 2\% | 0\% | 7\% | 0\% | 0\% | 0\% | 0\% | 0\% |
| 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) | 33 | 646 | 13 | 49 | 757 | 41 | 15 | 42 | 0 | 36 | 25 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA |  | Perm | NA |  |
| Protected Phases | 5 | 2 |  | 1 | 6 |  |  | 8 |  |  | 4 |  |
| Permitted Phases | 2 |  | 2 | 6 |  | 6 | 8 |  |  | 4 |  |  |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 |  | 4 | 4 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 3.0 | 15.0 | 15.0 | 3.0 | 15.0 | 15.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 7.0 | 21.5 | 21.5 | 7.0 | 21.5 | 21.5 | 14.0 | 14.0 |  | 14.0 | 14.0 |  |
| Total Split (s) | 11.0 | 35.0 | 35.0 | 11.0 | 35.0 | 35.0 | 19.0 | 19.0 |  | 19.0 | 19.0 |  |
| Total Split (\%) | 16.9\% | 53.8\% | 53.8\% | 16.9\% | 53.8\% | 53.8\% | 29.2\% | 29.2\% |  | 29.2\% | 29.2\% |  |
| Yellow Time (s) | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.5 | 4.5 |  | 4.5 | 4.5 |  |
| All-Red Time (s) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.5 | 1.5 |  | 1.5 | 1.5 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 4.0 | 6.5 | 6.5 | 4.0 | 6.5 | 6.5 | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag |  |  |  |  |  |  |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes |  |  |  |  |  |  |
| Recall Mode | None | C-Min | C-Min | None | C-Min | C-Min | None | None |  | None | None |  |
| Act Effct Green (s) | 49.6 | 46.0 | 46.0 | 50.7 | 48.1 | 48.1 | 7.7 | 7.7 |  | 7.8 | 7.8 |  |
| Actuated g/C Ratio | 0.76 | 0.71 | 0.71 | 0.78 | 0.74 | 0.74 | 0.12 | 0.12 |  | 0.12 | 0.12 |  |


|  | 4 |  |  | \% |  |  | 4 | $\dagger$ | \% |  | $\dagger$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.05 | 0.24 | 0.01 | 0.07 | 0.27 | 0.03 | 0.10 | 0.19 |  | 0.21 | 0.11 |  |
| Control Delay | 4.2 | 8.9 | 0.9 | 3.0 | 6.4 | 0.1 | 25.8 | 15.6 |  | 28.1 | 21.8 |  |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay | 4.2 | 8.9 | 0.9 | 3.0 | 6.4 | 0.1 | 25.8 | 15.6 |  | 28.1 | 21.8 |  |
| LOS | A | A | A | A | A | A | C | B |  | C | C |  |
| Approach Delay |  | 8.5 |  |  | 5.9 |  |  | 18.3 |  |  | 25.5 |  |
| Approach LOS |  | A |  |  | A |  |  | B |  |  | C |  |
| Queue Length 50th (ft) | 3 | 66 | 0 | 4 | 48 | 0 | 5 | 5 |  | 13 | 7 |  |
| Queue Length 95th (ft) | 33 | 281 | 4 | 13 | 132 | 0 | 20 | 29 |  | 36 | 25 |  |
| Internal Link Dist (ft) |  | 2395 |  |  | 2086 |  |  | 188 |  |  | 169 |  |
| Turn Bay Length (ft) | 125 |  | 125 | 125 |  | 125 |  |  |  |  |  |  |
| Base Capacity (vph) | 653 | 2638 | 1178 | 697 | 2759 | 1226 | 268 | 364 |  | 286 | 371 |  |
| 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 | 0.05 | 0.24 | 0.01 | 0.07 | 0.27 | 0.03 | 0.06 | 0.12 |  | 0.13 | 0.07 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 2 (3\%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 45 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.27 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 8.1 |  |  |  | Intersection LOS: A |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 44.5\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 2: White Oak Drive \& Orchard Road


|  | 4 |  | 7 | 7 |  |  | 4 | 4 | \％ | $1$ | $\ddagger$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | 4 | 4 | 「 | 4 | 4 | 「 | ${ }^{7} 1$ | 44 | 「 | 4 | 44 | 7 |
| Traffic Volume（vph） | 34 | 157 | 94 | 149 | 76 | 15 | 56 | 641 | 112 | 36 | 426 | 5 |
| Future Volume（vph） | 34 | 157 | 94 | 149 | 76 | 15 | 56 | 641 | 112 | 36 | 426 | 5 |
| Ideal Flow（vphpl） | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade（\％） |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |
| Storage Length（ft） | 200 |  | 0 | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Storage Lanes | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 |
| Taper Length（ft） | 185 |  |  | 235 |  |  | 235 |  |  | 240 |  |  |
| Lane Util．Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 3273 | 1980 | 1538 | 3400 | 1869 | 1615 | 3303 | 3725 | 1495 | 3400 | 3619 | 808 |
| Flt Permitted | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（perm） | 3273 | 1980 | 1538 | 3400 | 1869 | 1615 | 3303 | 3725 | 1495 | 3400 | 3619 | 808 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 103 |  |  | 55 |  |  | 123 |  |  | 55 |
| Link Speed（mph） |  | 45 |  |  | 45 |  |  | 50 |  |  | 50 |  |
| Link Distance（ft） |  | 597 |  |  | 2321 |  |  | 1682 |  |  | 1100 |  |
| Travel Time（s） |  | 9.0 |  |  | 35.2 |  |  | 22.9 |  |  | 15.0 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl．Bikes（\＃／hr） |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Growth Factor | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ |
| Heavy Vehicles（\％） | 7\％ | 1\％ | 5\％ | 3\％ | 7\％ | 0\％ | 6\％ | 2\％ | 8\％ | 3\％ | 5\％ | 100\％ |
| 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） | 37 | 173 | 103 | 164 | 84 | 16 | 62 | 704 | 123 | 40 | 468 | 5 |
| Turn Type | Prot | NA | pm＋ov | Prot | NA | pm＋ov | Prot | NA | pm＋ov | Prot | NA | pm＋ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases |  |  | 4 |  |  | 8 |  |  | 2 |  |  | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial（s） | 3.0 | 8.0 | 3.0 | 3.0 | 8.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 |
| Minimum Split（s） | 7.5 | 14.0 | 7.5 | 7.5 | 14.0 | 7.5 | 7.5 | 21.0 | 7.5 | 7.5 | 21.0 | 7.5 |
| Total Split（s） | 18.0 | 26.0 | 20.0 | 18.0 | 26.0 | 17.0 | 20.0 | 69.0 | 18.0 | 17.0 | 66.0 | 18.0 |
| Total Split（\％） | 13．8\％ | 20．0\％ | 15．4\％ | 13．8\％ | 20．0\％ | 13．1\％ | 15．4\％ | 53．1\％ | 13．8\％ | 13．1\％ | 50．8\％ | 13．8\％ |
| Yellow Time（s） | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 |
| All－Red Time（s） | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 |
| Lost Time Adjust（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time（s） | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 |
| Lead／Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead |
| Lead－Lag Optimize？ | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C－Min | None | None | C－Min | None |
| Act Effct Green（s） | 6.4 | 17.0 | 30.3 | 11.1 | 23.3 | 35.8 | 7.3 | 78.1 | 95.2 | 6.5 | 75.6 | 88.0 |
| Actuated g／C Ratio | 0.05 | 0.13 | 0.23 | 0.09 | 0.18 | 0.28 | 0.06 | 0.60 | 0.73 | 0.05 | 0.58 | 0.68 |


|  | $\stackrel{ }{*}$ |  |  |  |  |  | - | $\uparrow$ | 7 | $\checkmark$ | $\downarrow$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.23 | 0.67 | 0.24 | 0.57 | 0.25 | 0.03 | 0.33 | 0.31 | 0.11 | 0.24 | 0.22 | 0.01 |
| Control Delay | 62.3 | 66.2 | 7.8 | 64.5 | 47.1 | 0.1 | 63.3 | 14.7 | 1.4 | 61.1 | 14.3 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 62.3 | 66.2 | 7.8 | 64.5 | 47.1 | 0.1 | 63.3 | 14.7 | 1.4 | 61.1 | 14.3 | 0.4 |
| LOS | E | E | A | E | D | A | E | B | A | E | B | A |
| Approach Delay |  | 46.5 |  |  | 55.0 |  |  | 16.2 |  |  | 17.9 |  |
| Approach LOS |  | D |  |  | E |  |  | B |  |  | B |  |
| Queue Length 50th (tt) | 15 | 141 | 0 | 69 | 62 | 0 | 26 | 151 | 0 | 17 | 97 | 0 |
| Queue Length 95th (tt) | 34 | 209 | 43 | 105 | 105 | 0 | 50 | 230 | 20 | 38 | 152 | m1 |
| Internal Link Dist (t) |  | 517 |  |  | 2241 |  |  | 1602 |  |  | 1020 |  |
| Turn Bay Length (tt) | 200 |  |  | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Base Capacity (vph) | 365 | 312 | 538 | 379 | 338 | 569 | 419 | 2238 | 1163 | 353 | 2104 | 611 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.10 | 0.55 | 0.19 | 0.43 | 0.25 | 0.03 | 0.15 | 0.31 | 0.11 | 0.11 | 0.22 | 0.01 |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 55 (42\%), Referenced to phase 2:NBT and 6:SBT, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 50 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.67 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 26.6 |  |  |  | Intersection LOS: C |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 48.9\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 1: Orchard Road \& Oak Street


|  | 4 | $\rightarrow$ |  | 7 |  |  | 4 | $\dagger$ | 7 | ( | $\frac{1}{\dagger}$ | $\pm$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{1}$ | 中4 | F | ${ }^{*}$ | 中4 | F' | ${ }^{7}$ | $\hat{\beta}$ |  | ${ }^{*}$ | $\uparrow$ |  |
| Traffic Volume (vph) | 9 | 635 | 46 | 26 | 372 | 25 | 55 | 26 | 61 | 44 | 45 | 14 |
| Future Volume (vph) | 9 | 635 | 46 | 26 | 372 | 25 | 55 | 26 | 61 | 44 | 45 | 14 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 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) | 125 |  | 125 | 125 |  | 125 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 200 |  |  | 200 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  | 0.895 |  |  | 0.965 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd. Flow (prot) | 1805 | 3689 | 1509 | 1805 | 3619 | 1482 | 1671 | 1680 | 0 | 1805 | 1674 | 0 |
| Flt Permitted | 0.490 |  |  | 0.333 |  |  | 0.710 |  |  | 0.689 |  |  |
| Satd. Flow (perm) | 931 | 3689 | 1509 | 633 | 3619 | 1482 | 1249 | 1680 | 0 | 1309 | 1674 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  |  | 117 |  |  | 117 |  | 74 |  |  | 17 |  |
| Link Speed (mph) |  | 50 |  |  | 50 |  |  | 25 |  |  | 25 |  |
| Link Distance (ft) |  | 2475 |  |  | 2166 |  |  | 268 |  |  | 249 |  |
| Travel Time (s) |  | 33.8 |  |  | 29.5 |  |  | 7.3 |  |  | 6.8 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl. Bikes (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Growth Factor | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Heavy Vehicles (\%) | 0\% | 3\% | 7\% | 0\% | 5\% | 9\% | 8\% | 4\% | 0\% | 0\% | 10\% | 8\% |
| 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) | 11 | 774 | 56 | 32 | 454 | 30 | 67 | 106 | 0 | 54 | 72 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA |  | Perm | NA |  |
| Protected Phases | 5 | 2 |  | 1 | 6 |  |  | 8 |  |  | 4 |  |
| Permitted Phases | 2 |  | 2 | 6 |  | 6 | 8 |  |  | 4 |  |  |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 |  | 4 | 4 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 3.0 | 15.0 | 15.0 | 3.0 | 15.0 | 15.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 7.0 | 21.5 | 21.5 | 7.0 | 21.5 | 21.5 | 14.0 | 14.0 |  | 14.0 | 14.0 |  |
| Total Split (s) | 11.0 | 35.0 | 35.0 | 11.0 | 35.0 | 35.0 | 19.0 | 19.0 |  | 19.0 | 19.0 |  |
| Total Split (\%) | 16.9\% | 53.8\% | 53.8\% | 16.9\% | 53.8\% | 53.8\% | 29.2\% | 29.2\% |  | 29.2\% | 29.2\% |  |
| Yellow Time (s) | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.5 | 4.5 |  | 4.5 | 4.5 |  |
| All-Red Time (s) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.5 | 1.5 |  | 1.5 | 1.5 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 4.0 | 6.5 | 6.5 | 4.0 | 6.5 | 6.5 | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag |  |  |  |  |  |  |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes |  |  |  |  |  |  |
| Recall Mode | None | C-Min | C-Min | None | C-Min | C-Min | None | None |  | None | None |  |
| Act Effct Green (s) | 46.2 | 42.7 | 42.7 | 47.4 | 44.8 | 44.8 | 9.4 | 9.4 |  | 9.4 | 9.4 |  |
| Actuated g/C Ratio | 0.71 | 0.66 | 0.66 | 0.73 | 0.69 | 0.69 | 0.14 | 0.14 |  | 0.14 | 0.14 |  |



Splits and Phases: 2: White Oak Drive \& Orchard Road


|  | 4 |  |  | $\%$ |  | 4 |  | $\dagger$ | 7 | （ | $\ddagger$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | \％ | 4 | 「 | ${ }^{*} 1$ | 4 | 「 | \％ 1 | 44 | 「 | 4 | 中4 | 「 |
| Traffic Volume（vph） | 20 | 115 | 44 | 187 | 122 | 23 | 172 | 677 | 221 | 87 | 695 | 5 |
| Future Volume（vph） | 20 | 115 | 44 | 187 | 122 | 23 | 172 | 677 | 221 | 87 | 695 | 5 |
| Ideal Flow（vphpl） | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade（\％） |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |
| Storage Length（ft） | 200 |  | 0 | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Storage Lanes | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 |
| Taper Length（ft） | 185 |  |  | 235 |  |  | 235 |  |  | 240 |  |  |
| Lane Util．Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 3502 | 2000 | 1568 | 3433 | 1980 | 1615 | 3467 | 3725 | 1599 | 3502 | 3725 | 1615 |
| Flt Permitted | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（perm） | 3502 | 2000 | 1568 | 3433 | 1980 | 1615 | 3467 | 3725 | 1599 | 3502 | 3725 | 1615 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 84 |  |  | 84 |  |  | 230 |  |  | 113 |
| Link Speed（mph） |  | 45 |  |  | 45 |  |  | 50 |  |  | 50 |  |
| Link Distance（ft） |  | 597 |  |  | 2321 |  |  | 1682 |  |  | 1100 |  |
| Travel Time（s） |  | 9.0 |  |  | 35.2 |  |  | 22.9 |  |  | 15.0 |  |
| 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（\％） | 0\％ | 0\％ | 3\％ | 2\％ | 1\％ | 0\％ | 1\％ | 2\％ | 1\％ | 0\％ | 2\％ | 0\％ |
| 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） | 21 | 120 | 46 | 195 | 127 | 24 | 179 | 705 | 230 | 91 | 724 | 5 |
| Turn Type | Prot | NA | pm＋ov | Prot | NA | pm＋ov | Prot | NA | pm＋ov | Prot | NA | pm＋ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases |  |  | 4 |  |  | 8 |  |  | 2 |  |  | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial（s） | 3.0 | 8.0 | 3.0 | 3.0 | 8.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 |
| Minimum Split（s） | 7.5 | 14.0 | 7.5 | 7.5 | 14.0 | 7.5 | 7.5 | 21.0 | 7.5 | 7.5 | 21.0 | 7.5 |
| Total Split（s） | 17.0 | 23.0 | 23.0 | 21.0 | 27.0 | 18.0 | 23.0 | 68.0 | 21.0 | 18.0 | 63.0 | 17.0 |
| Total Split（\％） | 13．1\％ | 17．7\％ | 17．7\％ | 16．2\％ | 20．8\％ | 13．8\％ | 17．7\％ | 52．3\％ | 16．2\％ | 13．8\％ | 48．5\％ | 13．1\％ |
| Yellow Time（s） | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 |
| All－Red Time（s） | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 |
| Lost Time Adjust（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time（s） | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 |
| Lead／Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead |
| Lead－Lag Optimize？ | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C－Min | None | None | C－Min | None |
| Act Effct Green（s） | 5.8 | 13.6 | 31.1 | 12.2 | 23.5 | 37.7 | 11.6 | 76.9 | 95.2 | 8.3 | 73.6 | 85.4 |
| Actuated g／C Ratio | 0.04 | 0.10 | 0.24 | 0.09 | 0.18 | 0.29 | 0.09 | 0.59 | 0.73 | 0.06 | 0.57 | 0.66 |


|  | $\stackrel{ }{*}$ |  |  |  |  |  | , | $\uparrow$ | 7 | $\checkmark$ | $\downarrow$ | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.14 | 0.57 | 0.10 | 0.61 | 0.36 | 0.05 | 0.58 | 0.32 | 0.19 | 0.41 | 0.34 | 0.00 |
| Control Delay | 61.2 | 65.8 | 1.6 | 64.3 | 49.4 | 0.2 | 64.3 | 14.9 | 1.2 | 58.2 | 14.7 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 61.2 | 65.8 | 1.6 | 64.3 | 49.4 | 0.2 | 64.3 | 14.9 | 1.2 | 58.2 | 14.7 | 0.0 |
| LOS | E | E | A | E | D | A | E | B | A | E | B | A |
| Approach Delay |  | 49.5 |  |  | 54.4 |  |  | 20.0 |  |  | 19.4 |  |
| Approach LOS |  | D |  |  | D |  |  | B |  |  | B |  |
| Queue Length 50th (tt) | 8 | 98 | 0 | 82 | 98 | 0 | 75 | 149 | 0 | 38 | 166 | 0 |
| Queue Length 95th (tt) | 23 | 158 | 7 | 120 | 152 | 0 | 112 | 228 | 25 | 69 | 207 | m0 |
| Internal Link Dist (t) |  | 517 |  |  | 2241 |  |  | 1602 |  |  | 1020 |  |
| Turn Bay Length (tt) | 200 |  |  | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Base Capacity (vph) | 363 | 265 | 530 | 462 | 360 | 601 | 520 | 2204 | 1287 | 390 | 2110 | 1188 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.06 | 0.45 | 0.09 | 0.42 | 0.35 | 0.04 | 0.34 | 0.32 | 0.18 | 0.23 | 0.34 | 0.00 |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 125 (96\%), Referenced to phase 2:NBT and 6:SBT, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 55 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.61 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 26.9 |  |  |  | Intersection LOS: C |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 48.5\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 1: Orchard Road \& Oak Street


|  | 4 |  | $\square$ | 7 |  |  |  | $\dagger$ | 7 | $1$ | $\frac{1}{7}$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{1}$ | 中4 | F' | ${ }^{1 /}$ | 44 | 「' | ${ }^{7}$ | $\hat{\beta}$ |  | ${ }^{1}$ | $\uparrow$ |  |
| Traffic Volume (vph) | 34 | 672 | 13 | 51 | 787 | 43 | 15 | 14 | 30 | 37 | 20 | 7 |
| Future Volume (vph) | 34 | 672 | 13 | 51 | 787 | 43 | 15 | 14 | 30 | 37 | 20 | 7 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 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) | 125 |  | 125 | 125 |  | 125 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 200 |  |  | 200 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  | 0.898 |  |  | 0.962 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd. Flow (prot) | 1805 | 3725 | 1615 | 1805 | 3725 | 1615 | 1687 | 1706 | 0 | 1805 | 1828 | 0 |
| Flt Permitted | 0.340 |  |  | 0.368 |  |  | 0.741 |  |  | 0.741 |  |  |
| Satd. Flow (perm) | 646 | 3725 | 1615 | 699 | 3725 | 1615 | 1316 | 1706 | 0 | 1408 | 1828 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  |  | 117 |  |  | 117 |  | 32 |  |  | 7 |  |
| Link Speed (mph) |  | 50 |  |  | 50 |  |  | 25 |  |  | 25 |  |
| Link Distance (ft) |  | 2475 |  |  | 2166 |  |  | 268 |  |  | 249 |  |
| Travel Time (s) |  | 33.8 |  |  | 29.5 |  |  | 7.3 |  |  | 6.8 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl. Bikes (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Growth Factor | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Heavy Vehicles (\%) | 0\% | 2\% | 0\% | 0\% | 2\% | 0\% | 7\% | 0\% | 0\% | 0\% | 0\% | 0\% |
| 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) | 36 | 707 | 14 | 54 | 828 | 45 | 16 | 47 | 0 | 39 | 28 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA |  | Perm | NA |  |
| Protected Phases | 5 | 2 |  | 1 | 6 |  |  | 8 |  |  | 4 |  |
| Permitted Phases | 2 |  | 2 | 6 |  | 6 | 8 |  |  | 4 |  |  |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 |  | 4 | 4 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 3.0 | 15.0 | 15.0 | 3.0 | 15.0 | 15.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 7.0 | 21.5 | 21.5 | 7.0 | 21.5 | 21.5 | 14.0 | 14.0 |  | 14.0 | 14.0 |  |
| Total Split (s) | 11.0 | 35.0 | 35.0 | 11.0 | 35.0 | 35.0 | 19.0 | 19.0 |  | 19.0 | 19.0 |  |
| Total Split (\%) | 16.9\% | 53.8\% | 53.8\% | 16.9\% | 53.8\% | 53.8\% | 29.2\% | 29.2\% |  | 29.2\% | 29.2\% |  |
| Yellow Time (s) | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.5 | 4.5 |  | 4.5 | 4.5 |  |
| All-Red Time (s) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.5 | 1.5 |  | 1.5 | 1.5 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 4.0 | 6.5 | 6.5 | 4.0 | 6.5 | 6.5 | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag |  |  |  |  |  |  |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes |  |  |  |  |  |  |
| Recall Mode | None | C-Min | C-Min | None | C-Min | C-Min | None | None |  | None | None |  |
| Act Effct Green (s) | 49.4 | 45.8 | 45.8 | 50.6 | 48.0 | 48.0 | 7.8 | 7.8 |  | 7.9 | 7.9 |  |
| Actuated g/C Ratio | 0.76 | 0.70 | 0.70 | 0.78 | 0.74 | 0.74 | 0.12 | 0.12 |  | 0.12 | 0.12 |  |



Splits and Phases: 2: White Oak Drive \& Orchard Road


|  | 4 |  |  | 7 |  |  | 4 | 4 | $p$ |  | $\downarrow$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | \％${ }^{1+1}$ | $\uparrow$ | 7 | \％${ }^{1 / 1}$ | $\uparrow$ | F | \％${ }^{1+1}$ | 个个 | F | \％${ }^{*}$ | 个中 | 「 |
| Traffic Volume（vph） | 34 | 157 | 70 | 149 | 76 | 19 | 38 | 668 | 112 | 48 | 482 | 5 |
| Future Volume（vph） | 34 | 157 | 70 | 149 | 76 | 19 | 38 | 668 | 112 | 48 | 482 | 5 |
| Ideal Flow（vphpl） | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 |
| Lane Width（tt） | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade（\％） |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |
| Storage Length（tt） | 200 |  | 0 | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Storage Lanes | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 |
| Taper Length（tt） | 185 |  |  | 235 |  |  | 235 |  |  | 240 |  |  |
| Lane Util．Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 3273 | 1980 | 1538 | 3400 | 1869 | 1615 | 3303 | 3725 | 1495 | 3400 | 3619 | 808 |
| Flt Permitted | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（perm） | 3273 | 1980 | 1538 | 3400 | 1869 | 1615 | 3303 | 3725 | 1495 | 3400 | 3619 | 808 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 77 |  |  | 55 |  |  | 123 |  |  | 55 |
| Link Speed（mph） |  | 45 |  |  | 45 |  |  | 50 |  |  | 50 |  |
| Link Distance（t） |  | 597 |  |  | 2321 |  |  | 1682 |  |  | 1100 |  |
| Travel Time（s） |  | 9.0 |  |  | 35.2 |  |  | 22.9 |  |  | 15.0 |  |
| Confl．Peds．（\＃／hr） |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl．Bikes（\＃hr） |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Growth Factor | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ | 100\％ |
| Heavy Vehicles（\％） | 7\％ | 1\％ | 5\％ | 3\％ | 7\％ | 0\％ | 6\％ | 2\％ | 8\％ | 3\％ | 5\％ | 100\％ |
| 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） | 37 | 173 | 77 | 164 | 84 | 21 | 42 | 734 | 123 | 53 | 530 | 5 |
| Turn Type | Prot | NA | pm＋ov | Prot | NA | pm＋ov | Prot | NA | pm＋ov | Prot | NA | $\mathrm{pm}+\mathrm{ov}$ |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases |  |  | 4 |  |  | 8 |  |  | 2 |  |  | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial（s） | 3.0 | 8.0 | 3.0 | 3.0 | 8.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 |
| Minimum Split（s） | 7.5 | 14.0 | 7.5 | 7.5 | 14.0 | 7.5 | 7.5 | 21.0 | 7.5 | 7.5 | 21.0 | 7.5 |
| Total Split（s） | 18.0 | 26.0 | 20.0 | 18.0 | 26.0 | 17.0 | 20.0 | 69.0 | 18.0 | 17.0 | 66.0 | 18.0 |
| Total Split（\％） | 13．8\％ | 20．0\％ | 15．4\％ | 13．8\％ | 20．0\％ | 13．1\％ | 15．4\％ | 53．1\％ | 13．8\％ | 13．1\％ | 50．8\％ | 13．8\％ |
| Yellow Time（s） | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 |
| All－Red Time（s） | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 |
| Lost Time Adjust（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time（s） | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 |
| Lead／Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead |
| Lead－Lag Optimize？ | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C－Min | None | None | C－Min | None |
| Act Efft Green（s） | 6.4 | 17.0 | 29.6 | 11.1 | 23.3 | 36.3 | 6.6 | 77.7 | 94.8 | 6.9 | 78.0 | 90.4 |
| Actuated g／C Ratio | 0.05 | 0.13 | 0.23 | 0.09 | 0.18 | 0.28 | 0.05 | 0.60 | 0.73 | 0.05 | 0.60 | 0.70 |


|  | 4 |  |  |  |  | 4 | 4 | $\uparrow$ | / | - | $\downarrow$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.23 | 0.67 | 0.19 | 0.57 | 0.25 | 0.04 | 0.25 | 0.33 | 0.11 | 0.29 | 0.24 | 0.01 |
| Control Delay | 62.3 | 66.2 | 8.7 | 64.5 | 47.1 | 0.2 | 62.4 | 15.1 | 1.5 | 62.0 | 13.9 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 62.3 | 66.2 | 8.7 | 64.5 | 47.1 | 0.2 | 62.4 | 15.1 | 1.5 | 62.0 | 13.9 | 0.2 |
| LOS | E | E | A | E | D | A | E | B | A | E | B | A |
| Approach Delay |  | 50.3 |  |  | 54.0 |  |  | 15.5 |  |  | 18.1 |  |
| Approach LOS |  | D |  |  | D |  |  | B |  |  | B |  |
| Queue Length 50th (tt) | 15 | 141 | 0 | 69 | 62 | 0 | 18 | 160 | 0 | 22 | 111 | 0 |
| Queue Length 95th (tt) | 34 | 209 | 38 | 105 | 105 | 0 | 37 | 244 | 21 | 45 | 164 | m0 |
| Internal Link Dist (ft) |  | 517 |  |  | 2241 |  |  | 1602 |  |  | 1020 |  |
| Turn Bay Length (tt) | 200 |  |  | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Base Capacity (vph) | 365 | 312 | 520 | 379 | 338 | 569 | 419 | 2226 | 1159 | 353 | 2171 | 625 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.10 | 0.55 | 0.15 | 0.43 | 0.25 | 0.04 | 0.10 | 0.33 | 0.11 | 0.15 | 0.24 | 0.01 |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 55 (42\%), Referenced to phase 2:NBT and 6:SBT, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 55 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.67 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 26.2 |  |  |  | Intersection LOS: C |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 46.0\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 1: Orchard Road \& Oak Street


|  | 4 | $\rightarrow$ |  | 7 |  |  | 4 | $\dagger$ | 7 | ( | $\frac{1}{\dagger}$ | $\pm$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{1}$ | 中4 | F | ${ }^{*}$ | 中4 | F' | ${ }^{7}$ | $\hat{\beta}$ |  | ${ }^{*}$ | $\hat{\beta}$ |  |
| Traffic Volume (vph) | 9 | 659 | 46 | 26 | 379 | 25 | 55 | 26 | 61 | 44 | 45 | 14 |
| Future Volume (vph) | 9 | 659 | 46 | 26 | 379 | 25 | 55 | 26 | 61 | 44 | 45 | 14 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 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) | 125 |  | 125 | 125 |  | 125 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 200 |  |  | 200 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  | 0.895 |  |  | 0.965 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd. Flow (prot) | 1805 | 3689 | 1509 | 1805 | 3619 | 1482 | 1671 | 1680 | 0 | 1805 | 1674 | 0 |
| Flt Permitted | 0.486 |  |  | 0.320 |  |  | 0.710 |  |  | 0.689 |  |  |
| Satd. Flow (perm) | 923 | 3689 | 1509 | 608 | 3619 | 1482 | 1249 | 1680 | 0 | 1309 | 1674 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  |  | 117 |  |  | 117 |  | 74 |  |  | 17 |  |
| Link Speed (mph) |  | 50 |  |  | 50 |  |  | 25 |  |  | 25 |  |
| Link Distance (ft) |  | 2475 |  |  | 2166 |  |  | 268 |  |  | 249 |  |
| Travel Time (s) |  | 33.8 |  |  | 29.5 |  |  | 7.3 |  |  | 6.8 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl. Bikes (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Growth Factor | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Heavy Vehicles (\%) | 0\% | 3\% | 7\% | 0\% | 5\% | 9\% | 8\% | 4\% | 0\% | 0\% | 10\% | 8\% |
| 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) | 11 | 804 | 56 | 32 | 462 | 30 | 67 | 106 | 0 | 54 | 72 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA |  | Perm | NA |  |
| Protected Phases | 5 | 2 |  | 1 | 6 |  |  | 8 |  |  | 4 |  |
| Permitted Phases | 2 |  | 2 | 6 |  | 6 | 8 |  |  | 4 |  |  |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 |  | 4 | 4 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 3.0 | 15.0 | 15.0 | 3.0 | 15.0 | 15.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 7.0 | 21.5 | 21.5 | 7.0 | 21.5 | 21.5 | 14.0 | 14.0 |  | 14.0 | 14.0 |  |
| Total Split (s) | 11.0 | 35.0 | 35.0 | 11.0 | 35.0 | 35.0 | 19.0 | 19.0 |  | 19.0 | 19.0 |  |
| Total Split (\%) | 16.9\% | 53.8\% | 53.8\% | 16.9\% | 53.8\% | 53.8\% | 29.2\% | 29.2\% |  | 29.2\% | 29.2\% |  |
| Yellow Time (s) | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.5 | 4.5 |  | 4.5 | 4.5 |  |
| All-Red Time (s) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.5 | 1.5 |  | 1.5 | 1.5 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 4.0 | 6.5 | 6.5 | 4.0 | 6.5 | 6.5 | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag |  |  |  |  |  |  |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes |  |  |  |  |  |  |
| Recall Mode | None | C-Min | C-Min | None | C-Min | C-Min | None | None |  | None | None |  |
| Act Effct Green (s) | 46.2 | 42.7 | 42.7 | 47.4 | 44.8 | 44.8 | 9.4 | 9.4 |  | 9.4 | 9.4 |  |
| Actuated g/C Ratio | 0.71 | 0.66 | 0.66 | 0.73 | 0.69 | 0.69 | 0.14 | 0.14 |  | 0.14 | 0.14 |  |



Splits and Phases: 2: White Oak Drive \& Orchard Road


|  | 4 |  |  | 7 |  |  | 4 |  | 7 | （ | $\frac{1}{1}$ | $\downarrow$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | \％ | 4 | 「 | \％ | 4 | 「 | 4 | 44 | 「＇ | ${ }^{*} 1$ | 44 | F＇ |
| Traffic Volume（vph） | 20 | 115 | 29 | 187 | 122 | 35 | 122 | 760 | 221 | 94 | 729 | 5 |
| Future Volume（vph） | 20 | 115 | 29 | 187 | 122 | 35 | 122 | 760 | 221 | 94 | 729 | 5 |
| Ideal Flow（vphpl） | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 |
| Lane Width（ft） | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade（\％） |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |  | 0\％ |  |
| Storage Length（ft） | 200 |  | 0 | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Storage Lanes | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 | 2 |  | 1 |
| Taper Length（ft） | 185 |  |  | 235 |  |  | 235 |  |  | 240 |  |  |
| Lane Util．Factor | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |  |  | 0.850 |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（prot） | 3502 | 2000 | 1568 | 3433 | 1980 | 1615 | 3467 | 3725 | 1599 | 3502 | 3725 | 1615 |
| Flt Permitted | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd．Flow（perm） | 3502 | 2000 | 1568 | 3433 | 1980 | 1615 | 3467 | 3725 | 1599 | 3502 | 3725 | 1615 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd．Flow（RTOR） |  |  | 84 |  |  | 84 |  |  | 230 |  |  | 113 |
| Link Speed（mph） |  | 45 |  |  | 45 |  |  | 50 |  |  | 50 |  |
| Link Distance（ft） |  | 597 |  |  | 2321 |  |  | 1682 |  |  | 1100 |  |
| Travel Time（s） |  | 9.0 |  |  | 35.2 |  |  | 22.9 |  |  | 15.0 |  |
| 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（\％） | 0\％ | 0\％ | 3\％ | 2\％ | 1\％ | 0\％ | 1\％ | 2\％ | 1\％ | 0\％ | 2\％ | 0\％ |
| 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） | 21 | 120 | 30 | 195 | 127 | 36 | 127 | 792 | 230 | 98 | 759 | 5 |
| Turn Type | Prot | NA | pm＋ov | Prot | NA | $\mathrm{pm}+\mathrm{ov}$ | Prot | NA | $\mathrm{pm}+0 \mathrm{v}$ | Prot | NA | $\mathrm{pm}+0 \mathrm{v}$ |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases |  |  | 4 |  |  | 8 |  |  | 2 |  |  | 6 |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial（s） | 3.0 | 8.0 | 3.0 | 3.0 | 8.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 |
| Minimum Split（s） | 7.5 | 14.0 | 7.5 | 7.5 | 14.0 | 7.5 | 7.5 | 21.0 | 7.5 | 7.5 | 21.0 | 7.5 |
| Total Split（s） | 17.0 | 23.0 | 23.0 | 21.0 | 27.0 | 18.0 | 23.0 | 68.0 | 21.0 | 18.0 | 63.0 | 17.0 |
| Total Split（\％） | 13．1\％ | 17．7\％ | 17．7\％ | 16．2\％ | 20．8\％ | 13．8\％ | 17．7\％ | 52．3\％ | 16．2\％ | 13．8\％ | 48．5\％ | 13．1\％ |
| Yellow Time（s） | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 | 3.0 | 4.5 | 3.0 |
| All－Red Time（s） | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 | 0.5 | 1.5 | 0.5 |
| Lost Time Adjust（s） | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time（s） | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 | 3.5 | 6.0 | 3.5 |
| Lead／Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | Lead |
| Lead－Lag Optimize？ | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C－Min | None | None | C－Min | None |
| Act Effct Green（s） | 5.8 | 13.6 | 29.2 | 12.2 | 23.5 | 38.0 | 9.6 | 76.7 | 94.9 | 8.5 | 75.6 | 87.4 |
| Actuated g／C Ratio | 0.04 | 0.10 | 0.22 | 0.09 | 0.18 | 0.29 | 0.07 | 0.59 | 0.73 | 0.07 | 0.58 | 0.67 |


|  | $\stackrel{ }{*}$ |  |  |  |  |  | , | $\uparrow$ | 7 | $\checkmark$ | $\downarrow$ | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| v/c Ratio | 0.14 | 0.57 | 0.07 | 0.61 | 0.36 | 0.07 | 0.50 | 0.36 | 0.19 | 0.43 | 0.35 | 0.00 |
| Control Delay | 61.2 | 65.8 | 0.3 | 64.3 | 49.4 | 0.3 | 64.2 | 15.5 | 1.2 | 59.3 | 14.2 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 61.2 | 65.8 | 0.3 | 64.3 | 49.4 | 0.3 | 64.2 | 15.5 | 1.2 | 59.3 | 14.2 | 0.0 |
| LOS | E | E | A | E | D | A | E | B | A | E | B | A |
| Approach Delay |  | 53.8 |  |  | 52.6 |  |  | 18.0 |  |  | 19.3 |  |
| Approach LOS |  | D |  |  | D |  |  | B |  |  | B |  |
| Queue Length 50th (tt) | 8 | 98 | 0 | 82 | 98 | 0 | 54 | 173 | 0 | 42 | 168 | 0 |
| Queue Length 95th (tt) | 23 | 158 | 0 | 120 | 152 | 0 | 86 | 263 | 25 | 74 | 217 | m0 |
| Internal Link Dist (t) |  | 517 |  |  | 2241 |  |  | 1602 |  |  | 1020 |  |
| Turn Bay Length (tt) | 200 |  |  | 265 |  | 200 | 240 |  | 245 | 250 |  | 250 |
| Base Capacity (vph) | 363 | 265 | 530 | 462 | 360 | 601 | 520 | 2197 | 1284 | 390 | 2165 | 1211 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.06 | 0.45 | 0.06 | 0.42 | 0.35 | 0.06 | 0.24 | 0.36 | 0.18 | 0.25 | 0.35 | 0.00 |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 130 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: 125 (96\%), Referenced to phase 2:NBT and 6:SBT, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 55 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.61 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 25.7 |  |  |  | Intersection LOS: C |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 48.6\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 1: Orchard Road \& Oak Street


|  | 4 |  | $\square$ | 7 |  |  |  | $\dagger$ | 7 | $1$ | $\frac{1}{7}$ | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ${ }^{1}$ | 中4 | F' | ${ }^{1 /}$ | 44 | 「' | ${ }^{7}$ | $\hat{\beta}$ |  | ${ }^{1}$ | $\uparrow$ |  |
| Traffic Volume (vph) | 34 | 687 | 13 | 51 | 812 | 43 | 15 | 14 | 30 | 37 | 20 | 7 |
| Future Volume (vph) | 34 | 687 | 13 | 51 | 812 | 43 | 15 | 14 | 30 | 37 | 20 | 7 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 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) | 125 |  | 125 | 125 |  | 125 | 0 |  | 0 | 0 |  | 0 |
| Storage Lanes | 1 |  | 1 | 1 |  | 1 | 1 |  | 0 | 1 |  | 0 |
| Taper Length (ft) | 200 |  |  | 200 |  |  | 25 |  |  | 25 |  |  |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor |  |  |  |  |  |  |  |  |  |  |  |  |
| Frt |  |  | 0.850 |  |  | 0.850 |  | 0.898 |  |  | 0.962 |  |
| Flt Protected | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  | 0.950 |  |  |
| Satd. Flow (prot) | 1805 | 3725 | 1615 | 1805 | 3725 | 1615 | 1687 | 1706 | 0 | 1805 | 1828 | 0 |
| Flt Permitted | 0.329 |  |  | 0.360 |  |  | 0.741 |  |  | 0.741 |  |  |
| Satd. Flow (perm) | 625 | 3725 | 1615 | 684 | 3725 | 1615 | 1316 | 1706 | 0 | 1408 | 1828 | 0 |
| Right Turn on Red |  |  | Yes |  |  | Yes |  |  | Yes |  |  | Yes |
| Satd. Flow (RTOR) |  |  | 117 |  |  | 117 |  | 32 |  |  | 7 |  |
| Link Speed (mph) |  | 50 |  |  | 50 |  |  | 25 |  |  | 25 |  |
| Link Distance (ft) |  | 2475 |  |  | 2166 |  |  | 268 |  |  | 249 |  |
| Travel Time (s) |  | 33.8 |  |  | 29.5 |  |  | 7.3 |  |  | 6.8 |  |
| Confl. Peds. (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Confl. Bikes (\#/hr) |  |  |  |  |  |  |  |  |  |  |  |  |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Growth Factor | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Heavy Vehicles (\%) | 0\% | 2\% | 0\% | 0\% | 2\% | 0\% | 7\% | 0\% | 0\% | 0\% | 0\% | 0\% |
| 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) | 36 | 723 | 14 | 54 | 855 | 45 | 16 | 47 | 0 | 39 | 28 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA |  | Perm | NA |  |
| Protected Phases | 5 | 2 |  | 1 | 6 |  |  | 8 |  |  | 4 |  |
| Permitted Phases | 2 |  | 2 | 6 |  | 6 | 8 |  |  | 4 |  |  |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 |  | 4 | 4 |  |
| Switch Phase |  |  |  |  |  |  |  |  |  |  |  |  |
| Minimum Initial (s) | 3.0 | 15.0 | 15.0 | 3.0 | 15.0 | 15.0 | 5.0 | 5.0 |  | 5.0 | 5.0 |  |
| Minimum Split (s) | 7.0 | 21.5 | 21.5 | 7.0 | 21.5 | 21.5 | 14.0 | 14.0 |  | 14.0 | 14.0 |  |
| Total Split (s) | 11.0 | 35.0 | 35.0 | 11.0 | 35.0 | 35.0 | 19.0 | 19.0 |  | 19.0 | 19.0 |  |
| Total Split (\%) | 16.9\% | 53.8\% | 53.8\% | 16.9\% | 53.8\% | 53.8\% | 29.2\% | 29.2\% |  | 29.2\% | 29.2\% |  |
| Yellow Time (s) | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | 4.5 | 4.5 | 4.5 |  | 4.5 | 4.5 |  |
| All-Red Time (s) | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 1.5 | 1.5 |  | 1.5 | 1.5 |  |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Lost Time (s) | 4.0 | 6.5 | 6.5 | 4.0 | 6.5 | 6.5 | 6.0 | 6.0 |  | 6.0 | 6.0 |  |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag |  |  |  |  |  |  |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes |  |  |  |  |  |  |
| Recall Mode | None | C-Min | C-Min | None | C-Min | C-Min | None | None |  | None | None |  |
| Act Effct Green (s) | 49.4 | 45.8 | 45.8 | 50.6 | 48.0 | 48.0 | 7.8 | 7.8 |  | 7.9 | 7.9 |  |
| Actuated g/C Ratio | 0.76 | 0.70 | 0.70 | 0.78 | 0.74 | 0.74 | 0.12 | 0.12 |  | 0.12 | 0.12 |  |


|  | $\stackrel{ }{*}$ |  |  | 7 |  |  | 4 | $\dagger$ |  | * |  | $\checkmark$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| V/C Ratio | 0.06 | 0.28 | 0.01 | 0.08 | 0.31 | 0.04 | 0.10 | 0.20 |  | 0.23 | 0.12 |  |
| Control Delay | 3.8 | 11.0 | 0.3 | 3.1 | 6.7 | 0.0 | 25.8 | 15.2 |  | 28.4 | 21.3 |  |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |  | 0.0 | 0.0 |  |
| Total Delay | 3.8 | 11.0 | 0.3 | 3.1 | 6.7 | 0.0 | 25.8 | 15.2 |  | 28.4 | 21.3 |  |
| LOS | A | B | A | A | A | A | C | B |  | C | C |  |
| Approach Delay |  | 10.4 |  |  | 6.2 |  |  | 17.9 |  |  | 25.4 |  |
| Approach LOS |  | B |  |  | A |  |  | B |  |  | C |  |
| Queue Length 50th (tt) | 6 | 139 | 0 | 5 | 57 | 0 | 6 | 5 |  | 14 | 8 |  |
| Queue Length 95th (tt) | 8 | 284 | m2 | 14 | 155 | 0 | 21 | 31 |  | 38 | 27 |  |
| Internal Link Dist (tt) |  | 2395 |  |  | 2086 |  |  | 188 |  |  | 169 |  |
| Turn Bay Length ( t ) | 125 |  | 125 | 125 |  | 125 |  |  |  |  |  |  |
| Base Capacity (vph) | 607 | 2627 | 1173 | 654 | 2749 | 1222 | 263 | 366 |  | 281 | 371 |  |
| 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 | 0.06 | 0.28 | 0.01 | 0.08 | 0.31 | 0.04 | 0.06 | 0.13 |  | 0.14 | 0.08 |  |
| Intersection Summary |  |  |  |  |  |  |  |  |  |  |  |  |
| Area Type: Other |  |  |  |  |  |  |  |  |  |  |  |  |
| Cycle Length: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Actuated Cycle Length: 65 |  |  |  |  |  |  |  |  |  |  |  |  |
| Offset: $2(3 \%)$, Referenced to phase 2:EBTL and 6:WBTL, Start of Green |  |  |  |  |  |  |  |  |  |  |  |  |
| Natural Cycle: 45 |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Type: Actuated-Coordinated |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum v/c Ratio: 0.31 |  |  |  |  |  |  |  |  |  |  |  |  |
| Intersection Signal Delay: 9.1 |  |  |  | Intersection LOS: A |  |  |  |  |  |  |  |  |
| Intersection Capacity Utilization 47.1\% |  |  |  | ICU Level of Service A |  |  |  |  |  |  |  |  |
| Analysis Period (min) 15 |  |  |  |  |  |  |  |  |  |  |  |  |

Splits and Phases: 2: White Oak Drive \& Orchard Road


| Intersection |  |
| :--- | ---: | :--- |
| Intersection Delay, s/veh | 25.3 |
| Intersection LOS | D |


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations |  | $\uparrow$ |  | ${ }^{1}$ | $\uparrow$ |  | ${ }^{7}$ | 4 | 「 | ${ }^{1}$ | $\uparrow$ |  |
| Traffic Vol, veh/h | 39 | 13 | 297 | 5 | 25 | 3 | 101 | 193 | 1 | 41 | 343 | 8 |
| Future Vol, veh/h | 39 | 13 | 297 | 5 | 25 | 3 | 101 | 193 | 1 | 41 | 343 | 8 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles, \% | 3 | 0 | 2 | 0 | 16 | 0 | 6 | 2 | 0 | 2 | 1 | 0 |
| Mvmt Flow | 44 | 15 | 334 | 6 | 28 | 3 | 113 | 217 | 1 | 46 | 385 | 9 |
| Number of Lanes | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Approach | EB |  |  | WB |  |  | NB |  |  | SB |  |  |
| Opposing Approach | WB |  |  | EB |  |  | SB |  |  | NB |  |  |
| Opposing Lanes | 2 |  |  | 1 |  |  | 2 |  |  | 3 |  |  |
| Conflicting Approach Left | SB |  |  | NB |  |  | EB |  |  | WB |  |  |
| Conflicting Lanes Left | 2 |  |  | 3 |  |  | 1 |  |  | 2 |  |  |
| Conflicting Approach Right | NB |  |  | SB |  |  | WB |  |  | EB |  |  |
| Conflicting Lanes Right | 3 |  |  | 2 |  |  | 2 |  |  | 1 |  |  |
| HCM Control Delay | 28.3 |  |  | 12.4 |  |  | 15.8 |  |  | 31 |  |  |
| HCM LOS | D |  |  | B |  |  | C |  |  | D |  |  |


| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Vol Left, \% | $100 \%$ | $0 \%$ | $0 \%$ | $11 \%$ | $100 \%$ | $0 \%$ | $100 \%$ | $0 \%$ |
| Vol Thru, \% | $0 \%$ | $100 \%$ | $0 \%$ | $4 \%$ | $0 \%$ | $89 \%$ | $0 \%$ | $98 \%$ |
| Vol Right, \% | $0 \%$ | $0 \%$ | $100 \%$ | $85 \%$ | $0 \%$ | $11 \%$ | $0 \%$ | $2 \%$ |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 101 | 193 | 1 | 349 | 5 | 28 | 41 | 351 |
| LT Vol | 101 | 0 | 0 | 39 | 5 | 0 | 41 | 0 |
| Through Vol | 0 | 193 | 0 | 13 | 0 | 25 | 0 | 343 |
| RT Vol | 0 | 0 | 1 | 297 | 0 | 3 | 0 | 8 |
| Lane Flow Rate | 113 | 217 | 1 | 392 | 6 | 31 | 46 | 394 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.259 | 0.46 | 0.002 | 0.757 | 0.014 | 0.078 | 0.1 | 0.799 |
| Departure Headway (Hd) | 8.216 | 7.633 | 6.879 | 6.946 | 9.2 | 8.887 | 7.844 | 7.297 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 436 | 471 | 518 | 522 | 388 | 401 | 456 | 497 |
| Service Time | 5.984 | 5.4 | 4.646 | 4.7 | 6.992 | 6.679 | 5.607 | 5.06 |
| HCM Lane VIC Ratio | 0.259 | 0.461 | 0.002 | 0.751 | 0.015 | 0.077 | 0.101 | 0.793 |
| HCM Control Delay | 13.9 | 16.8 | 9.7 | 28.3 | 12.1 | 12.4 | 11.5 | 33.3 |
| HCM Lane LOS | B | C | A | $D$ | $B$ | $B$ | B | D |
| HCM 95th-tile Q | 1 | 2.4 | 0 | 6.6 | 0 | 0.3 | 0.3 | 7.4 |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.6 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | $\mathbf{4}$ |  | $\mathbf{F}$ |  |  | $\mathbf{\uparrow}$ |
| Traffic Vol, veh/h | 7 | 15 | 215 | 20 | 23 | 385 |
| Future Vol, veh/h | 7 | 15 | 215 | 20 | 23 | 385 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, \# | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 79 | 79 | 79 | 79 | 79 | 79 |
| Heavy Vehicles, \% | 0 | 7 | 1 | 5 | 4 | 1 |
| Mvmt Flow | 9 | 19 | 272 | 25 | 29 | 487 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 830 | 285 | 0 | 0 | 297 | 0 |
| Stage 1 | 285 | - | - | - | - | - |
| Stage 2 | 545 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.27 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.363 | - | - | 2.236 | - |
| Pot Cap-1 Maneuver | 343 | 742 | - | - | 1253 | - |
| Stage 1 | 768 | - | - | - | - | - |
| Stage 2 | 585 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 332 | 742 | - | - | 1253 | - |
| Mov Cap-2 Maneuver | 332 | - | - | - | - | - |
| Stage 1 | 768 | - | - | - | - | - |
| Stage 2 | 566 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 12.1 |  | 0 |  | 0.4 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 533 | 1253 | - |
| HCM Lane V/C Ratio |  | - | - | 0.052 | 0.023 | - |
| HCM Control Delay (s) |  | - | - | 12.1 | 7.9 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.2 | 0.1 | - |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |


| Major/Minor | Minor2 |  | Major1 |  | Major2 |  |
| :--- | ---: | ---: | ---: | :--- | :--- | :--- |
| Conflicting Flow All | - | 198 | - | 0 | - | 0 |
| $\quad$ Stage 1 | - | - | - | - | - | - |
| $\quad$ Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.94 | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.32 | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 810 | 0 | - | - | 0 |
| $\quad$ Stage 1 | 0 | - | 0 | - | - | 0 |
| $\quad$ Stage 2 | 0 | - | 0 | - | - | 0 |
| Platoon blocked, \% |  |  |  | - | - |  |
| Mov Cap-1 Maneuver | - | 810 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |


| Approach | EB | NB | SB |
| :--- | :---: | :---: | :---: |
| HCM Control Delay, s | 9.8 | 0 | 0 |
| HCM LOS | A |  |  |


| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
| :--- | ---: | ---: |
| Capacity (veh/h) | -810 | - |
| HCM Lane V/C Ratio | -0.068 | - |
| HCM Control Delay (s) | -9.8 | - |
| HCM Lane LOS | - | A |
| HCM 95th \%tile Q(veh) | - | - |


| Intersection |  |
| :--- | ---: | :--- |
| Intersection Delay, s/veh | 20.8 |
| Intersection LOS | C |


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations |  | \$ |  | ${ }^{*}$ | F |  | ${ }^{1}$ | 4 | 「' | ${ }^{*}$ | F |  |
| Traffic Vol, veh/h | 22 | 11 | 129 | 2 | 42 | 10 | 295 | 417 | 1 | 20 | 263 | 19 |
| Future Vol, veh/h | 22 | 11 | 129 | 2 | 42 | 10 | 295 | 417 | 1 | 20 | 263 | 19 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, \% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 23 | 11 | 133 | 2 | 43 | 10 | 304 | 430 | 1 | 21 | 271 | 20 |
| Number of Lanes | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Approach | EB |  |  | WB |  |  | NB |  |  | SB |  |  |
| Opposing Approach | WB |  |  | EB |  |  | SB |  |  | NB |  |  |
| Opposing Lanes | 2 |  |  | 1 |  |  | 2 |  |  | 3 |  |  |
| Conflicting Approach Left | SB |  |  | NB |  |  | EB |  |  | WB |  |  |
| Conflicting Lanes Left | 2 |  |  | 3 |  |  | 1 |  |  | 2 |  |  |
| Conflicting Approach Right | NB |  |  | SB |  |  | WB |  |  | EB |  |  |
| Conflicting Lanes Right | 3 |  |  | 2 |  |  | 2 |  |  | 1 |  |  |
| HCM Control Delay | 13.9 |  |  | 12 |  |  | 24 |  |  | 18.7 |  |  |
| HCM LOS | B |  |  | B |  |  | C |  |  | C |  |  |


| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Vol Left, \% | $100 \%$ | $0 \%$ | $0 \%$ | $14 \%$ | $100 \%$ | $0 \%$ | $100 \%$ | $0 \%$ |
| Vol Thru, \% | $0 \%$ | $100 \%$ | $0 \%$ | $7 \%$ | $0 \%$ | $81 \%$ | $0 \%$ | $93 \%$ |
| Vol Right, \% | $0 \%$ | $0 \%$ | $100 \%$ | $80 \%$ | $0 \%$ | $19 \%$ | $0 \%$ | $7 \%$ |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 295 | 417 | 1 | 162 | 2 | 52 | 20 | 282 |
| LT Vol | 295 | 0 | 0 | 22 | 2 | 0 | 20 | 0 |
| Through Vol | 0 | 417 | 0 | 11 | 0 | 42 | 0 | 263 |
| RT Vol | 0 | 0 | 1 | 129 | 0 | 10 | 0 | 19 |
| Lane Flow Rate | 304 | 430 | 1 | 167 | 2 | 54 | 21 | 291 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.587 | 0.771 | 0.002 | 0.341 | 0.005 | 0.121 | 0.044 | 0.578 |
| Departure Headway (Hd) | 6.946 | 6.456 | 5.729 | 7.358 | 8.803 | 8.154 | 7.7 | 7.16 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 523 | 563 | 628 | 489 | 407 | 440 | 466 | 503 |
| Service Time | 4.646 | 4.156 | 3.429 | 5.101 | 6.556 | 5.906 | 5.439 | 4.9 |
| HCM Lane V/C Ratio | 0.581 | 0.764 | 0.002 | 0.342 | 0.005 | 0.123 | 0.045 | 0.579 |
| HCM Control Delay | 19 | 27.6 | 8.4 | 13.9 | 11.6 | 12 | 10.8 | 19.3 |
| HCM Lane LOS | C | D | A | B | B | B | B | C |
| HCM 95th-tile Q | 3.7 | 7 | 0 | 1.5 | 0 | 0.4 | 0.1 | 3.6 |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.6 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 8 | 18 | 440 | 9 | 16 | 294 |
| Future Vol, veh/h | 8 | 18 | 440 | 9 | 16 | 294 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, \# | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, $\%$ | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 8 | 19 | 454 | 9 | 16 | 303 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Approach | EB | NB | SB |
| :--- | ---: | ---: | ---: |
| HCM Control Delay, $s$ | 10.8 | 0 | 0 |
| HCM LOS | B |  |  |


| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
| :--- | ---: | ---: |
| Capacity (veh/h) | -650 | - |
| HCM Lane V/C Ratio | -0.046 | - |
| HCM Control Delay (s) | -10.8 | - |
| HCM Lane LOS | - | $B$ |
| HCM 95th \%tile Q(veh) | - | - |


| Intersection |  |
| :--- | ---: | :--- |
| Intersection Delay, s/veh | 37.2 |
| Intersection LOS | E |


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations |  | \$ |  | ${ }^{*}$ | F |  | ${ }^{1}$ | 4 | 「' | ${ }^{*}$ | F |  |
| Traffic Vol, veh/h | 43 | 14 | 325 | 5 | 27 | 3 | 111 | 211 | 1 | 45 | 376 | 9 |
| Future Vol, veh/h | 43 | 14 | 325 | 5 | 27 | 3 | 111 | 211 | 1 | 45 | 376 | 9 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles, \% | 3 | 0 | 2 | 0 | 16 | 0 | 6 | 2 | 0 | 2 | 1 | 0 |
| Mvmt Flow | 48 | 16 | 365 | 6 | 30 | 3 | 125 | 237 | 1 | 51 | 422 | 10 |
| Number of Lanes | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Approach | EB |  |  | WB |  |  | NB |  |  | SB |  |  |
| Opposing Approach | WB |  |  | EB |  |  | SB |  |  | NB |  |  |
| Opposing Lanes | 2 |  |  | 1 |  |  | 2 |  |  | 3 |  |  |
| Conflicting Approach Left | SB |  |  | NB |  |  | EB |  |  | WB |  |  |
| Conflicting Lanes Left | 2 |  |  | 3 |  |  | 1 |  |  | 2 |  |  |
| Conflicting Approach Right | NB |  |  | SB |  |  | WB |  |  | EB |  |  |
| Conflicting Lanes Right | 3 |  |  | 2 |  |  | 2 |  |  | 1 |  |  |
| HCM Control Delay | 42.5 |  |  | 13.2 |  |  | 18.4 |  |  | 48.7 |  |  |
| HCM LOS | E |  |  | B |  |  | C |  |  | E |  |  |


| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Vol Left, \% | $100 \%$ | $0 \%$ | $0 \%$ | $11 \%$ | $100 \%$ | $0 \%$ | $100 \%$ | $0 \%$ |
| Vol Thru, \% | $0 \%$ | $100 \%$ | $0 \%$ | $4 \%$ | $0 \%$ | $90 \%$ | $0 \%$ | $98 \%$ |
| Vol Right, \% | $0 \%$ | $0 \%$ | $100 \%$ | $85 \%$ | $0 \%$ | $10 \%$ | $0 \%$ | $2 \%$ |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 111 | 211 | 1 | 382 | 5 | 30 | 45 | 385 |
| LT Vol | 111 | 0 | 0 | 43 | 5 | 0 | 45 | 0 |
| Through Vol | 0 | 211 | 0 | 14 | 0 | 27 | 0 | 376 |
| RT Vol | 0 | 0 | 1 | 325 | 0 | 3 | 0 | 9 |
| Lane Flow Rate | 125 | 237 | 1 | 429 | 6 | 34 | 51 | 433 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.304 | 0.539 | 0.002 | 0.872 | 0.016 | 0.09 | 0.116 | 0.925 |
| Departure Headway (Hd) | 8.771 | 8.185 | 7.327 | 7.316 | 9.966 | 9.656 | 8.349 | 7.798 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 413 | 443 | 485 | 494 | 361 | 372 | 432 | 467 |
| Service Time | 6.471 | 5.885 | 5.127 | 5.112 | 7.684 | 7.374 | 6.049 | 5.498 |
| HCM Lane V/C Ratio | 0.303 | 0.535 | 0.002 | 0.868 | 0.017 | 0.091 | 0.118 | 0.927 |
| HCM Control Delay | 15.3 | 20 | 10.1 | 42.5 | 12.8 | 13.3 | 12.1 | 53 |
| HCM Lane LOS | C | C | B | E | B | B | B | F |
| HCM 95th-tile Q | 1.3 | 3.1 | 0 | 9.3 | 0 | 0.3 | 0.4 | 10.7 |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.7 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\boldsymbol{\beta}$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 8 | 16 | 235 | 22 | 25 | 421 |
| Future Vol, veh/h | 8 | 16 | 235 | 22 | 25 | 421 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, \# | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 79 | 79 | 79 | 79 | 79 | 79 |
| Heavy Vehicles, $\%$ | 0 | 7 | 1 | 5 | 4 | 1 |
| Mvmt Flow | 10 | 20 | 297 | 28 | 32 | 533 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 908 | 311 | 0 | 0 | 325 | 0 |
| Stage 1 | 311 | - | - | - | - | - |
| Stage 2 | 597 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.27 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.363 | - | - | 2.236 | - |
| Pot Cap-1 Maneuver | 308 | 718 | - | - | 1224 | - |
| Stage 1 | 748 | - | - | - | - | - |
| Stage 2 | 554 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 297 | 718 | - | - | 1224 | - |
| Mov Cap-2 Maneuver | 297 | - | - | - | - | - |
| Stage 1 | 748 | - | - | - | - | - |
| Stage 2 | 534 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 12.9 |  | 0 |  | 0.4 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - |  | 488 | 1224 | - |
| HCM Lane V/C Ratio |  | - | - | 0.062 | 0.026 | - |
| HCM Control Delay (s) |  | - | - | 12.9 | 8 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.2 | 0.1 | - |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Approach | EB | NB | SB |
| :--- | ---: | ---: | ---: |
| HCM Control Delay, $s$ | 10 | 0 | 0 |
| HCM LOS | B |  |  |


| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
| :--- | ---: | ---: |
| Capacity (veh/h) | -787 | - |
| HCM Lane V/C Ratio | -0.076 | - |
| HCM Control Delay (s) | -10 | - |
| HCM Lane LOS | - | $B$ |
| HCM 95th \%tile Q(veh) | - | - |


| Intersection |  |
| :--- | ---: | :--- |
| Intersection Delay, s/veh | 27.4 |
| Intersection LOS | D |


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations |  | \$ |  | ${ }^{*}$ | F |  | ${ }^{1}$ | 4 | 「' | ${ }^{*}$ | F |  |
| Traffic Vol, veh/h | 24 | 12 | 141 | 2 | 46 | 11 | 323 | 457 | 1 | 22 | 288 | 21 |
| Future Vol, veh/h | 24 | 12 | 141 | 2 | 46 | 11 | 323 | 457 | 1 | 22 | 288 | 21 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, \% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 25 | 12 | 145 | 2 | 47 | 11 | 333 | 471 | 1 | 23 | 297 | 22 |
| Number of Lanes | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Approach | EB |  |  | WB |  |  | NB |  |  | SB |  |  |
| Opposing Approach | WB |  |  | EB |  |  | SB |  |  | NB |  |  |
| Opposing Lanes | 2 |  |  | 1 |  |  | 2 |  |  | 3 |  |  |
| Conflicting Approach Left | SB |  |  | NB |  |  | EB |  |  | WB |  |  |
| Conflicting Lanes Left | 2 |  |  | 3 |  |  | 1 |  |  | 2 |  |  |
| Conflicting Approach Right | NB |  |  | SB |  |  | WB |  |  | EB |  |  |
| Conflicting Lanes Right | 3 |  |  | 2 |  |  | 2 |  |  | 1 |  |  |
| HCM Control Delay | 15.4 |  |  | 12.8 |  |  | 33.1 |  |  | 23 |  |  |
| HCM LOS | C |  |  | B |  |  | D |  |  | C |  |  |


| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Vol Left, \% | $100 \%$ | $0 \%$ | $0 \%$ | $14 \%$ | $100 \%$ | $0 \%$ | $100 \%$ | $0 \%$ |
| Vol Thru, \% | $0 \%$ | $100 \%$ | $0 \%$ | $7 \%$ | $0 \%$ | $81 \%$ | $0 \%$ | $93 \%$ |
| Vol Right, \% | $0 \%$ | $0 \%$ | $100 \%$ | $80 \%$ | $0 \%$ | $19 \%$ | $0 \%$ | $7 \%$ |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 323 | 457 | 1 | 177 | 2 | 57 | 22 | 309 |
| LT Vol | 323 | 0 | 0 | 24 | 2 | 0 | 22 | 0 |
| Through Vol | 0 | 457 | 0 | 12 | 0 | 46 | 0 | 288 |
| RT Vol | 0 | 0 | 1 | 141 | 0 | 11 | 0 | 21 |
| Lane Flow Rate | 333 | 471 | 1 | 182 | 2 | 59 | 23 | 319 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.665 | 0.877 | 0.002 | 0.391 | 0.005 | 0.14 | 0.051 | 0.662 |
| Departure Headway (Hd) | 7.19 | 6.699 | 5.97 | 7.716 | 9.255 | 8.603 | 8.026 | 7.485 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 503 | 542 | 599 | 467 | 386 | 416 | 446 | 484 |
| Service Time | 4.931 | 4.44 | 3.711 | 5.466 | 7.019 | 6.366 | 5.772 | 5.23 |
| HCM Lane VIC Ratio | 0.662 | 0.869 | 0.002 | 0.39 | 0.005 | 0.142 | 0.052 | 0.659 |
| HCM Control Delay | 23.1 | 40.3 | 8.7 | 15.4 | 12.1 | 12.8 | 11.2 | 23.8 |
| HCM Lane LOS | C | E | A | C | B | B | B | C |
| HCM 95th-tile Q | 4.8 | 9.8 | 0 | 1.8 | 0 | 0.5 | 0.2 | 4.8 |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.6 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 9 | 20 | 482 | 10 | 18 | 322 |
| Future Vol, veh/h | 9 | 20 | 482 | 10 | 18 | 322 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, \# | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, $\%$ | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 9 | 21 | 497 | 10 | 19 | 332 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 872 | 502 | 0 | 0 | 507 | 0 |
| Stage 1 | 502 | - | - | - | - | - |
| Stage 2 | 370 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | - | - | 4.1 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 | - |
| Pot Cap-1 Maneuver | 324 | 573 | - | - | 1068 | - |
| Stage 1 | 612 | - | - | - | - | - |
| Stage 2 | 703 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 317 | 573 | - | - | 1068 | - |
| Mov Cap-2 Maneuver | 317 | - | - | - | - | - |
| Stage 1 | 612 | - | - | - | - | - |
| Stage 2 | 688 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 13.4 |  | 0 |  | 0.4 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 458 | 1068 | - |
| HCM Lane V/C Ratio |  | - | - | 0.065 | 0.017 | - |
| HCM Control Delay (s) |  | - | - | 13.4 | 8.4 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.2 | 0.1 | - |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Approach | EB | NB | SB |
| :--- | ---: | ---: | ---: |
| HCM Control Delay, $s$ | 11.2 | 0 | 0 |
| HCM LOS | B |  |  |


| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
| :--- | ---: | ---: |
| Capacity (veh/h) | -618 | - |
| HCM Lane V/C Ratio | -0.053 | - |
| HCM Control Delay (s) | -11.2 | - |
| HCM Lane LOS | - | $B$ |
| HCM 95th \%tile Q(veh) | - | - |


| Intersection |  |
| :--- | ---: |
| Intersection Delay, s/veh | 32 |
| Intersection LOS | D |


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations |  | $\uparrow$ |  | ${ }^{7}$ | $\hat{F}$ |  | \% | $\uparrow$ | F' | ${ }^{7}$ | $\uparrow$ |  |
| Traffic Vol, veh/h | 45 | 14 | 325 | 5 | 27 | 3 | 111 | 193 | 1 | 23 | 352 | 12 |
| Future Vol, veh/h | 45 | 14 | 325 | 5 | 27 | 3 | 111 | 193 | 1 | 23 | 352 | 12 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Heavy Vehicles, \% | 3 | 0 | 2 | 0 | 16 | 0 | 6 | 2 | 0 | 2 | 1 | 0 |
| Mvmt Flow | 51 | 16 | 365 | 6 | 30 | 3 | 125 | 217 | 1 | 26 | 396 | 13 |
| Number of Lanes | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Approach | EB |  |  | WB |  |  | NB |  |  | SB |  |  |
| Opposing Approach | WB |  |  | EB |  |  | SB |  |  | NB |  |  |
| Opposing Lanes | 2 |  |  | 1 |  |  | 2 |  |  | 3 |  |  |
| Conflicting Approach Left | SB |  |  | NB |  |  | EB |  |  | WB |  |  |
| Conflicting Lanes Left | 2 |  |  | 3 |  |  | 1 |  |  | 2 |  |  |
| Conflicting Approach Right | NB |  |  | SB |  |  | WB |  |  | EB |  |  |
| Conflicting Lanes Right | 3 |  |  | 2 |  |  | 2 |  |  | 1 |  |  |
| HCM Control Delay | 38.2 |  |  | 12.8 |  |  | 16.6 |  |  | 39.6 |  |  |
| HCM LOS | E |  |  | B |  |  | C |  |  | E |  |  |


| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Vol Left, \% | $100 \%$ | $0 \%$ | $0 \%$ | $12 \%$ | $100 \%$ | $0 \%$ | $100 \%$ | $0 \%$ |
| Vol Thu, \% | $0 \%$ | $100 \%$ | $0 \%$ | $4 \%$ | $0 \%$ | $90 \%$ | $0 \%$ | $97 \%$ |
| Vol Right, \% | $0 \%$ | $0 \%$ | $100 \%$ | $85 \%$ | $0 \%$ | $10 \%$ | $0 \%$ | $3 \%$ |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 111 | 193 | 1 | 384 | 5 | 30 | 23 | 364 |
| LT Vol | 111 | 0 | 0 | 45 | 5 | 0 | 23 | 0 |
| Through Vol | 0 | 193 | 0 | 14 | 0 | 27 | 0 | 352 |
| RT Vol | 0 | 0 | 1 | 325 | 0 | 3 | 0 | 12 |
| Lane Flow Rate | 125 | 217 | 1 | 431 | 6 | 34 | 26 | 409 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.294 | 0.475 | 0.002 | 0.849 | 0.015 | 0.087 | 0.058 | 0.858 |
| Departure Headway (Hd) | 8.477 | 7.892 | 7.136 | 7.083 | 9.624 | 9.315 | 8.113 | 7.556 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 423 | 455 | 499 | 509 | 374 | 387 | 440 | 479 |
| Service Time | 6.263 | 5.678 | 4.921 | 4.852 | 7.324 | 7.015 | 5.893 | 5.336 |
| HCM Lane V/C Ratio | 0.296 | 0.477 | 0.002 | 0.847 | 0.016 | 0.088 | 0.059 | 0.854 |
| HCM Control Delay | 14.8 | 17.7 | 9.9 | 38.2 | 12.5 | 12.9 | 11.4 | 41.4 |
| HCM Lane LOS | B | C | A | E | B | B | B | E |
| HCM 95th-tile Q | 1.2 | 2.5 | 0 | 8.8 | 0 | 0.3 | 0.2 | 8.8 |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.7 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\mathbf{F}$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 8 | 16 | 243 | 22 | 25 | 423 |
| Future Vol, veh/h | 8 | 16 | 243 | 22 | 25 | 423 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, \# | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 79 | 79 | 79 | 79 | 79 | 79 |
| Heavy Vehicles, \% | 0 | 7 | 1 | 5 | 4 | 1 |
| Mvmt Flow | 10 | 20 | 308 | 28 | 32 | 535 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 921 | 322 | 0 | 0 | 336 | 0 |
| Stage 1 | 322 | - | - | - | - | - |
| Stage 2 | 599 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.27 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.363 | - | - | 2.236 | - |
| Pot Cap-1 Maneuver | 303 | 707 | - | - | 1212 | - |
| Stage 1 | 739 | - | - | - | - | - |
| Stage 2 | 553 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 291 | 707 | - | - | 1212 | - |
| Mov Cap-2 Maneuver | 291 | - | - | - | - | - |
| Stage 1 | 739 | - | - | - | - | - |
| Stage 2 | 532 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 13 |  | 0 |  | 0.4 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 479 | 1212 | - |
| HCM Lane V/C Ratio |  | - | - | 0.063 | 0.026 | - |
| HCM Control Delay (s) |  | - | - | 13 | 8.1 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.2 | 0.1 | - |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Approach | EB | NB | SB |
| :--- | ---: | ---: | ---: |
| HCM Control Delay, s | 10.2 | 0 | 0 |
| HCM LOS | B |  |  |


| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
| :--- | ---: | ---: |
| Capacity (veh/h) | -734 | - |
| HCM Lane V/C Ratio | - | 0.05 |
| HCM Control Delay (s) | - | - |
| HCM Lane LOS | - | - |
| HCM 95th \%tile Q(veh) | - | - |




| Intersection |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 1 |  |  |  |  |  |
| Movement W | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ${ }^{*}$ | 「 | $\uparrow$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 3 | 26 | 239 | 2 | 48 | 383 |
| Future Vol, veh/h | 3 | 26 | 239 | 2 | 48 | 383 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control S | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 75 | 0 | - | - | - | - |
| Veh in Median Storage, \# | \# 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, \% | 0 | 0 | 2 | 0 | 0 | 2 |
| Mvmt Flow | 3 | 27 | 252 | 2 | 51 | 403 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 4.5 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | 7 | 4 | $\mathbf{F}$ |  | M |  |
| Traffic Vol, veh/h | 4 | 46 | 23 | 10 | 68 | 6 |
| Future Vol, veh/h | 4 | 46 | 23 | 10 | 68 | 6 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 75 | - | - | - | 0 | - |
| Veh in Median Storage, $\#$ | - | 0 | 0 | - | 0 | - |
| Grade, \% | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, \% | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 4 | 48 | 24 | 11 | 72 | 6 |


| Major/Minor M | Major1 |  | Major2 |  | Minor2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 35 | 0 | 0 | 0 | 86 | 30 |
| Stage 1 | - |  | - | - | 30 | - |
| Stage 2 | - | - | - - | - | 56 | - |
| Critical Hdwy | 4.1 |  | - - | - | 6.4 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.4 | - |
| Critical Hdwy Stg 2 | - |  | - - | - | 5.4 | - |
| Follow-up Hdwy | 2.2 | - | - | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | 1589 | - | - | - | 920 | 1050 |
| Stage 1 | - | - | - - | - | 998 | - |
| Stage 2 | - | - | - - | - | 972 | - |
| Platoon blocked, \% |  | - | - | - |  |  |
| Mov Cap-1 Maneuver | 1589 | - | - | - | 917 | 1050 |
| Mov Cap-2 Maneuver | - | - | - | - | 917 | - |
| Stage 1 | - | - | - - | - | 995 | - |
| Stage 2 | - | - | - - | - | 972 | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | WB |  | SB |  |
| HCM Control Delay, s | 0.6 |  | 0 |  | 9.2 |  |
| HCM LOS |  |  |  |  | A |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | EBL | EBT | WBT | WBR SBLn1 |  |
| Capacity (veh/h) |  | 1589 | 9 | - | - | 927 |
| HCM Lane V/C Ratio |  | 0.003 | 3 | - | - | 0.084 |
| HCM Control Delay (s) |  | 7.3 | A | - | - | 9.2 |
| HCM Lane LOS |  | A | A | - | - | A |
| HCM 95th \%tile Q(veh) |  | 0 | 0 | - | - | 0.3 |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.3 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  | A | $\boldsymbol{F}$ |  |  | $\mathbf{T}$ |
| Traffic Vol, veh/h | 0 | 114 | 28 | 10 | 0 | 5 |
| Future Vol, veh/h | 0 | 114 | 28 | 10 | 0 | 5 |
| 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, $\%$ | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 120 | 29 | 11 | 0 | 5 |



| Intersection |  |
| :--- | ---: |
| Intersection Delay, s/veh | 22.5 |
| Intersection LOS | C |


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lane Configurations |  | $\uparrow$ |  | ${ }_{1}$ | $\hat{\beta}$ |  | \% | $\uparrow$ | F' | ${ }^{1}$ | $\uparrow$ |  |
| Traffic Vol, veh/h | 29 | 12 | 141 | 2 | 46 | 11 | 323 | 407 | 1 | 11 | 273 | 24 |
| Future Vol, veh/h | 29 | 12 | 141 | 2 | 46 | 11 | 323 | 407 | 1 | 11 | 273 | 24 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, \% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Mvmt Flow | 30 | 12 | 145 | 2 | 47 | 11 | 333 | 420 | 1 | 11 | 281 | 25 |
| Number of Lanes | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Approach | EB |  |  | WB |  |  | NB |  |  | SB |  |  |
| Opposing Approach | WB |  |  | EB |  |  | SB |  |  | NB |  |  |
| Opposing Lanes | 2 |  |  | 1 |  |  | 2 |  |  | 3 |  |  |
| Conflicting Approach Left | SB |  |  | NB |  |  | EB |  |  | WB |  |  |
| Conflicting Lanes Left | 2 |  |  | 3 |  |  | 1 |  |  | 2 |  |  |
| Conflicting Approach Right | NB |  |  | SB |  |  | WB |  |  | EB |  |  |
| Conflicting Lanes Right | 3 |  |  | 2 |  |  | 2 |  |  | 1 |  |  |
| HCM Control Delay | 15.1 |  |  | 12.5 |  |  | 25.7 |  |  | 21.3 |  |  |
| HCM LOS | C |  |  | B |  |  | D |  |  | C |  |  |


| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Vol Left, \% | $100 \%$ | $0 \%$ | $0 \%$ | $16 \%$ | $100 \%$ | $0 \%$ | $100 \%$ | $0 \%$ |
| Vol Thu, \% | $0 \%$ | $100 \%$ | $0 \%$ | $7 \%$ | $0 \%$ | $81 \%$ | $0 \%$ | $92 \%$ |
| Vol Right, \% | $0 \%$ | $0 \%$ | $100 \%$ | $77 \%$ | $0 \%$ | $19 \%$ | $0 \%$ | $8 \%$ |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 323 | 407 | 1 | 182 | 2 | 57 | 11 | 297 |
| LT Vol | 323 | 0 | 0 | 29 | 2 | 0 | 11 | 0 |
| Through Vol | 0 | 407 | 0 | 12 | 0 | 46 | 0 | 273 |
| RT Vol | 0 | 0 | 1 | 141 | 0 | 11 | 0 | 24 |
| Lane Flow Rate | 333 | 420 | 1 | 188 | 2 | 59 | 11 | 306 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.657 | 0.771 | 0.002 | 0.393 | 0.005 | 0.137 | 0.025 | 0.626 |
| Departure Headway (Hd) | 7.108 | 6.617 | 5.888 | 7.537 | 9.04 | 8.388 | 7.912 | 7.362 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 509 | 545 | 608 | 478 | 396 | 427 | 453 | 490 |
| Service Time | 4.846 | 4.355 | 3.626 | 5.283 | 6.798 | 6.146 | 5.655 | 5.105 |
| HCM Lane V/C Ratio | 0.654 | 0.771 | 0.002 | 0.393 | 0.005 | 0.138 | 0.024 | 0.624 |
| HCM Control Delay | 22.5 | 28.3 | 8.6 | 15.1 | 11.8 | 12.5 | 10.9 | 21.7 |
| HCM Lane LOS | C | D | A | C | B | B | B | C |
| HCM 95th-tile Q | 4.7 | 7 | 0 | 1.8 | 0 | 0.5 | 0.1 | 4.2 |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.6 |  |  |  |  |  |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | Mr |  | $\mathbf{F}$ |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 9 | 20 | 487 | 10 | 18 | 330 |
| Future Vol, veh/h | 9 | 20 | 487 | 10 | 18 | 330 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, \# | 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, \% | 0 | 0 | 1 | 0 | 0 | 1 |
| Mvmt Flow | 9 | 21 | 502 | 10 | 19 | 340 |


| Major/Minor M | Minor1 |  | Major1 |  | Major2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 885 | 507 | 0 | 0 | 512 | 0 |
| Stage 1 | 507 | - | - | - | - | - |
| Stage 2 | 378 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | - | - | 4.1 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.2 | - |
| Pot Cap-1 Maneuver | 318 | 570 | - | - | 1064 | - |
| Stage 1 | 609 | - | - | - | - | - |
| Stage 2 | 697 | - | - | - | - | - |
| Platoon blocked, \% |  |  | - | - |  | - |
| Mov Cap-1 Maneuver | 311 | 570 | - | - | 1064 | - |
| Mov Cap-2 Maneuver | 311 | - | - | - | - | - |
| Stage 1 | 609 | - | - | - | - | - |
| Stage 2 | 682 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | WB |  | NB |  | SB |  |
| HCM Control Delay, s | 13.5 |  | 0 |  | 0.4 |  |
| HCM LOS | B |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBT | NBRWBLn1 |  | SBL | SBT |
| Capacity (veh/h) |  | - | - | 453 | 1064 | - |
| HCM Lane V/C Ratio |  | - | - | 0.066 | 0.017 | - |
| HCM Control Delay (s) |  | - | - | 13.5 | 8.4 | 0 |
| HCM Lane LOS |  | - | - | B | A | A |
| HCM 95th \%tile Q(veh) |  | - | - | 0.2 | 0.1 | - |




| Approach | EB | NB | SB |
| :--- | ---: | ---: | ---: |
| HCM Control Delay, $s$ | 11.3 | 0 | 0 |
| HCM LOS | B |  |  |


| Minor Lane/Major Mvmt | NBT EBLn1 | SBT |
| :--- | ---: | ---: |
| Capacity (veh/h) | -595 | - |
| HCM Lane V/C Ratio | -0.036 | - |
| HCM Control Delay (s) | -11.3 | - |
| HCM Lane LOS | - | $B$ |
| HCM 95th \%tile Q(veh) | - | - |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



|  | Intersection |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 1.1 |  |  |  |  |  |
| Movement W | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | ${ }^{7}$ | 「 | F |  |  | $\uparrow$ |
| Traffic Vol, veh/h | 3 | 55 | 442 | 5 | 34 | 305 |
| Future Vol, veh/h | 3 | 55 | 442 | 5 | 34 | 305 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control Stop | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 75 | 0 | - | - | - | - |
| Veh in Median Storage, \# | \# 0 | - | 0 | - | - | 0 |
| Grade, \% | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, \% | 0 | 0 | 2 | 0 | 0 | 2 |
| Mvmt Flow | 3 | 58 | 465 | 5 | 36 | 321 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 3 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | 1 | 4 | $\uparrow$ |  | r |  |
| Traffic Vol, veh/h | 13 | 26 | 54 | 35 | 41 | 4 |
| Future Vol, veh/h | 13 | 26 | 54 | 35 | 41 | 4 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 75 | - | - | - | 0 | - |
| Veh in Median Storage, $\#$ | - | 0 | 0 | - | 0 | - |
| Grade, \% | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, $\%$ | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 14 | 27 | 57 | 37 | 43 | 4 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0.2 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  | 个 | $\mathbf{T}$ |  |  | $\mathbf{7}$ |
| Traffic Vol, veh/h | 0 | 67 | 85 | 35 | 0 | 4 |
| Future Vol, veh/h | 0 | 67 | 85 | 35 | 0 | 4 |
| 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, \% | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 71 | 89 | 37 | 0 | 4 |


| Major/Minor | Major1 | Major2 |  | Minor2 |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | - | 0 | - | 0 | - | 108 |
| $\quad$ Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 951 |
| $\quad$ Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, \% |  | - | - | - |  |  |
| Mov Cap-1 Maneuver | - | - | - | - | - | 951 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
|  |  |  |  |  |  |  |


| Approach | EB | WB | SB |
| :--- | ---: | ---: | ---: |
| HCM Control Delay, s | 0 | 0 | 8.8 |
| HCM LOS |  | A |  |


| Minor Lane/Major Mvmt | EBT | WBT | WBR SBLn1 |
| :--- | :---: | ---: | ---: |
| Capacity (veh/h) | - | - | -951 |
| HCM Lane V/C Ratio | - | - | -0.004 |
| HCM Control Delay (s) | - | - | - |
| HCM Lane LOS | - | - | - |
| HCM 95th \%tile Q(veh) | - | - | - |

## Left-Turn Lane Warrant Diagram



Orchard Road Left-Turn Lane Warrant at the Proposed Public Roadway



FIRST AMENDMENT TO THE ANNEXATION AGREEMENT BETWEEN<br>VILLAGE OF NORTH AURORA AND STANLEY L. ZEPELAK TRUST

THIS AMENDMENT to the Annexation Agreement by and between the Village of North Aurora and the Stanley L. Zepelak Trust approved by Ordinance No. 12-11-19-01 dated November 19, 2012 (the "Annexation Agreement"), is hereby entered into by the Village of North Aurora, an Illinois Municipal corporation (the "Village"), the Stanley L. Zepelak Trust under a certain agreement dated April 26, 1989, (the "Owners") and Fiduciary Real Estate Development, Inc., a Wisconsin business corporation (the "Developer").

## WI T N ESSETH:

WHEREAS, Owners are the Owners of Record of the Property legally described in Exhibit "A", which is attached hereto and made a part hereof (hereinafter sometimes referred to as "Property"); and

WHEREAS, the Property is located in the Village of North Aurora, Kane County, Illinois (hereinafter sometimes referred to as the "County"), and was annexed pursuant to the Annexation Agreement by Ordinance No. 12-11-19-02, dated November 19, 2012, and Zoned R4 General Residential District subject as part of a Planned Unit Development by Ordinance No. 12-11-19-03; and

WHEREAS, the Property is further subject to Ordinance No. 13-01-07-02, Being an Ordinance Annexing the Stanley L. Zepelak Trust Property located West of Orchard Road, North of Tanner road and East of Deerpath Road to the Village of North Aurora on January 7, 2013, and zoned pursuant to Ordinance No 13-01-07-03, Being an Ordinance Zoning and Granting a Special Use Planned Unit Development for Commercial and Multi-Family Use for the Property located West of Orchard Road, North of Tanner road and East of Deerpath Road to the Village of North Aurora (the "PUD Ordinance") on the same date; and

WHEREAS, a Petition for amendment to the Annexation Agreement and PUD Ordinance has been or will be filed in accordance with law; and

WHEREAS, the Owners and Developer desire to amend the Annexation Agreement and PUD Ordinance upon the terms and conditions hereinafter set forth; and

WHEREAS, Owners and Developer have signed this Amendment and represent that no other parties have any right, title, interest or claim in the Property at the time of execution of this Amendment; and

WHEREAS, this Amendment is made pursuant to the provisions of 65 ILCS 5/11-15.1-1 through 11-15.1-5; and

WHEREAS, all notices, publications, procedures, public hearings, and other matters required for the consideration, approval, and execution of this Amendment have been given, made, held and performed as required by the Illinois Municipal Code and all other applicable statutes of the State of Illinois and Ordinances of the Village; and

WHEREAS, the annexation and development of the Property for the use and purposes provided herein will promote sound planning, will aid in developing the Village as a balanced community and will assist the Village in realizing the purpose of the Comprehensive Plan of the Village of North Aurora; and

WHEREAS, the President and Board of Trustees of the Village have, by a vote of twothirds $(2 / 3)$ of the Corporate Authorities currently holding office, directed the President to execute and the Village Clerk to attest this Amendment on behalf of the Village;

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and agreements herein contained, it is hereby agreed by and between the Village and Owners/Developer and shall be applicable only as to the Property specifically identified herein as follows:
A. RECITALS. The representations and recitations set forth in the foregoing Recitals are material to this Agreement and are hereby incorporated into and become a part of this Agreement as though they were fully set forth in this Paragraph 1.
B. AMENDMENT TO THE ANNEXATION AGREEMENT. Section 2 of the Annexation is clarified and amended for the Property as follows:

Owners/Developer have made proper application to the Village for Amendment to the Annexation Agreement affecting the Property. The Property is already annexed to the Village of North Aurora subject to applicable statutes, local ordinances and codes and the terms and conditions of Annexation Agreement as amended herein. This Amendment to the Annexation Agreement shall modify the Annexation only to the extent that this Amendment deviates explicitly from the Annexation Agreement or as necessarily implied from the explicit deviations from the Annexation Agreement in this Amendment. If any provisions of the Annexation Agreement cannot be reconciled and harmonized with this Amendment, this Amendment shall control.
C. ZONING. Section 3 of the Annexation is clarified and amended for the Property as follows:

1. Owners/Developer have made proper application to the Village for Amendment to PUD Ordinance. Immediately upon approval of the Amendment to the Annexation Agreement, without the need for additional public hearing, the Amended PUD Ordinance affecting the R-4 General Residential District area north of the access road to be provided onto Orchard Road, may be approved.
2. It is the intention of the Parties that the Owners/Developer shall enjoy and shall be subject to all of the provisions of R-4 Residential District regulations on the Property, consistent with the provisions of the Planned Unit Development section of the Village's Zoning Ordinance except as otherwise specifically provided and consistent with the terms of this Amendment to the Annexation Agreement and the Amendment to the PUD Ordinance in the form attached hereto and incorporated herein by reference as Exhibit "B". The final site plans and engineering plans shall be processed administratively without further public hearing or Board approval, provided that there is no material deviation from the provisions of this amendment to the Annexation Agreement and Amendment to the PUD Ordinance attached as Exhibit B.
D. SITE PLAN APPROVAL PROCESS: Section 5 of the Annexation is clarified and amended for the Property only as follows:

The preliminary development plans and plat attached hereto and incorporated herein by reference as Exhibit "C" (the "Preliminary Development Plans") and the site plan attached hereto and incorporated herein by reference as Exhibit "D" (the "Preliminary Site Plan") (together the "Preliminary Plans") are hereby approved for the Property. The development plans and final site plan may be submitted to the Community Development Director for review and may be approved as the Final Development Plans and Final Site Plan (together the "Final Plans") without the need for more formal approval if the revisions, if any, ore substantially consistent with the Preliminary Plans. If the Final Plans are not substantially consistent with the Preliminary Plans, they must be approved after review by the Planning Commission and Board of Trustees (but without the need for a public hearing) which review shall be based on the zoning and subdivision control requirements in place at the time and limited to and based only on the following standards. The standards for review and approval of Final Plans shall be consistent with the Annexation Agreement as revised by this Amendment and the Amended PUD Ordinance consistent with the Preliminary Plans approved and incorporated herein, subject to the changes in this Paragraph D, including the following:

1 Circulation. Section 5.B of the Annexation Agreement is revised by adding the following:

Any revisions to the Preliminary Plans to accommodate any required Kane County traffic improvements or easement restrictions adjacent to Orchard Road shall be deemed be a technical change to the development plans and may be approved administratively by the Community Development Director.
2. Pedestrian Pathways. Section 5.C of the Annexation Agreement is revised by incorporating the terms and conditions of the Amended PUD Ordinance consistent with the Preliminary Plans approved and incorporated herein.
3. Site Plan Engineering: Section 5.D of the Annexation Agreement is revised by adding the following:
a. The final engineering for the Property shall be in substantial compliance with the Final Subdivision Engineering as approved by the Village Engineer.
b. If the petitioner is required to make any minor changes to the plat to accommodate engineering comments, such changes shall be deemed a "Technical Change" to the plat that can be approved administratively by the Community Development Director.
4. Site Plan Landscaping. Section 5.E of the Annexation Agreement is revised by incorporating the terms and conditions of the Amended PUD Ordinance consistent with the Preliminary Plans approved and incorporated herein.
5. Architecture. The building elevations, materials, and design elements for the Development shall be consistent with the Preliminary Plans approved with this Amendment and the Amended PUD Ordinance consistent with the Preliminary Plans approved and incorporated herein.
E. REQUIRED IMPROVEMENTS. Section 7 of the Annexation Amendment clarified and amended for the Property only as follows:

1. Required Improvements. Section 7.A of the Annexation Agreement is clarified and amended only as follows as follows:

Required improvements shall be constructed as provided in the Annexation Agreement except as specifically revised by this Amendment incorporating the terms of the Amended PUD Ordinance consistent with the Preliminary Plans approved and incorporated herein.
2. Recapture. Section 7.E of the Annexation Agreement is clarified and amended only as follows:
a. Section 7.E1 of the Annexation Agreement is clarified and amended only as follows:

There are no off-site public improvements required specifically by the Village to be constructed by Developer to serve the Property that will also benefit other property, except for any road improvements required by Kane County that may benefit other properties. The burden is on the Developer whether to seek recapture of the proportionate cost of those improvements from properties that will benefit from them through the Village, by initiating the process to establish a recapture agreement with the Village or pursuing other methods of allocating the cost directly with the benefitting property owners as provided in Section 7.H of the Annexation Agreement, as modified herein. The Village will not initiate the process. The determination of the benefitting properties and the allocable costs to be recaptured shall be determined by the Village Engineer in cooperation with the Developer, and must be reduced to writing in a recapture agreement mutually agreed and signed by both parties substantially consistent with the Annexation Agreement.
b. Sanitary Sewer and Orchard Road Recapture. Section 7.E. 2 of the Annexation Agreement is clarified and amended only as follows:

Owners and/or Developer hereby acknowledge their obligation to pay their proportionate share of the following costs:
(1) The recapture requirements for sanitary sewer extension improvements owed to Richmar Realty have been satisfied, and no further obligations exist regarding the recapture requirements for sanitary sewer extension improvements owed to Richmar Realty.
(2) The sanitary sewer extension provided to the Property by Fox Valley West Properties, the developer of the Auto Mall property, still apply and shall be paid as provided in the Annexation Agreement.
3. Access to the Property from Orchard Road. Section 7.H of the Annexation Agreement is clarified and amended only as follows:

The Owner shall dedicate up to eighty feet ( $80^{\prime}$ ) of right of way to the Village and construct the extension of the Deerpath Connector Road as generally illustrated in Exhibit I to the Annexation Agreement. The Village hereby agrees that it shall only require an eightyfoot ( $80^{\prime}$ ) right-of-way, with ten-foot ( $10^{\prime}$ ) roadway and public utility easements on each side, unless greater right-of-way is required by Kane County. The Owner/Developer shall be entitled to reimbursement through a sales tax rebate agreement as provided in Section 8 of the Annexation Agreement if Kane County requires the dedication of the Deerpath Connector Road to be oversized.

Full access to Orchard Road shall be deferred until Kane County confirms full access and signalization is warranted

If the County requires off-site improvements in connection with development of the Property, the Developer shall perform those improvements and may enter into a recapture agreement with the Village to recapture the allocable cost of such improvements from properties that directly benefit thereby, including the Mango Creek Property, as provided in Section E. 1 of the Annexation Agreement.
F. DEVELOPMENT OF THE PROPERTY. Section 9 of the Annexation Agreement is clarified and amended only as follows as follows:

Development of the Property shall be undertaken consistent with the Annexation Agreement, as amended by this Amendment, the PUD Ordinance, as amended by Amended PUD Ordinance consistent with the Preliminary Plans approved and incorporated herein, and all the ordinances, codes and regulations of the Village of North Aurora.
G. DEDICATION OF COMMON FACILITIES. Section 11 of the Annexation Agreement is clarified and amended for the Property as follows:

The Owner/Developer shall construct, repair, restore and maintain all streets and drives, parking lots, retention and detention basins, water mains, sanitary sewer lines, storm sewer lines, surface drainage facilities, electric facilities and any other Common Improvements, common areas or common facilities for the Property consistent with the Preliminary Plans that are not conveyed to and accepted by the Village. Those Common Facilities are public improvements as defined and required by the Subdivision Control Ordinance, but they are intended for the special benefit of the Property and the development on the Property alone or in conjunction with the property to be developed to the South of the Deerpath Connector Road. The Common Facilities may be conveyed or transferred to an owners'/tenants' association on condition that, any such dedication, conveyance or transfer may only be after the establishment of an association and covenants created for the purpose of providing for and funding the maintenance of the Common Facilities that will constitute a covenant running with the land and shall be binding upon successors in title and/or possession. Upon each separate conveyance the then current owners of record of the property being so conveyed shall be released from all obligations under this Agreement arising after the date of such conveyance, as to the portion of the Property conveyed for which such an association and covenants have been created.
H. MAINTENANCE OF COMMON FACILITIES. Section 12 of the Annexation Agreement is clarified and amended for the Property as follows:

The Common Facilities shall be maintained by an association of owners and/or tenants created for that purpose and pursuant to covenants that are recorded and run with the land. The Owner/Developer shall create at least one association for the Property covering the entire Property for purposes of the maintenance of Common Facilities. These Common Facilities include, but may not be limited to: the stormwater control areas and related landscaping and any landscaping and any monument signage and other improvements that Owners/Developer designate to be for the common benefit of all of the properties in the development. The association shall be responsible for the cost of constructing, reconstructing, repairing, restoring, or maintaining such Common Facilities from financing generated by association assessments. The Village will establish a backup Special Service Area as the Village deems advisable covering the Common Facilities that specially serve the Property. In the event the Village determines that the Common Facilities are not being reasonably and adequately maintained, the Village may repair, restore, and maintain the Common Facilities and be reimbursed the cost for that maintenance by levying taxes within the Special Service Area to pay for such costs, together with the costs to establish the Special Service area and for administration of those services. In no event shall any occupancy permits by issued for any building constructed on the Property until the covenants are recorded, an association is incorporated and in good standing, and the Special Service Area is established for the Property as required herein.
I. INCORPORATION OF ANNEXATION AGREEMENT TERMS. All of the terms and conditions and provisions of the Annexation Agreement, except as modified or inconsistent with the terms of this Amendment, shall remain in full force and effect.
J. BINDING EFFECT AND TERM. This Amendment to the Annexation Agreement shall be binding upon and inure to the benefit of the parties hereto, successors in
interest, assignees, lessees, and upon any successor municipal authorities of the Village and successor municipalities for the period of twenty (20) years from the date hereof.
K. COVENANT RUNNING WITH THE LAND. This Amendment to the Annexation Agreement constitutes a covenant running with the land and is binding upon the parties hereto, all grantees, successors in interest, assigns and lessees, and successor Village Board.
L. HOLD HARMLESS AND INDEMNIFICATION. In the event a claim is made against the Village, by a party other than the Owners and Developer, or if the Village is made a party-defendant in any legal proceeding arising out of or in connection with the annexation, zoning, or the development of the Property, the then Owners and /or Developer shall defend the Village and hold the Village harmless from all claims, liabilities, losses, taxes, judgments, costs and fees, including expenses and reasonable attorney fees, in connection therewith. The Village shall reasonably cooperate in the defense of such proceedings.
M. AMENDMENT. This Amendment to the Annexation Agreement may be further amended by the procedures established by law, in force from time to time, such as permit its initial approval. Village and the owners of record of any portion of the Property, even if not the Owners or Developer named herein, may agree to modify this Agreement with respect to such portion of the Property.
N. SEPARABILITY. The provisions hereof shall be deemed to be separable; and if any section, paragraph, clause, provisions or item herein shall be held invalid, the invalidity of such section, paragraph, clause, provision, or item shall not affect any other provision of this Amendment to the Annexation Agreement.
O. COOPERATION. Village, Owner, and Developer shall do all things necessary or appropriate to carry out the terms and provisions of this Amendment to the Annexation Agreement and to aid and assist each other in carrying out the terms and objectives of this Amendment to the Annexation Agreement and the intentions of the parties as reflected by said terms.
P. NOTICE. Unless otherwise notified in writing, all notices, requests and demands shall be in writing and shall be delivered personally or be mailed by certified mail, return receipt requested, postage prepaid, addressed as follows:

If to Village: $\quad$ Village Community Development Director
VILLAGE OF NORTH AURORA
25 East State Street
North Aurora, IL 60542
With a copy to: Kevin G. Drendel
Drendel \& Jansons Law Group
111 Flinn Street
Batavia, IL 60510

If to Owners: $\quad$ Stanley L. Zepelak Trust
c/o Stanley L. Zepelak, Lucaya Asset Management, LLC
17753 Lucaya Drive
Lakewood Ranch, FL 34202
With a copy to: John F. Philipchuck
Dommermuth, Cobine, West, Gensler, Philipchuck, Corrigan and Bernhard, Ltd.
123 Water Street
Naperville, IL 60540
If to Developer: Anthony DeRosa
Fiduciary Real Estate Development, Inc.
789 North Water Street, Suite 200
Milwaukee, WI 53202
With a copy to:
Q. RECORDING. This Amendment to the Annexation Agreement may be recorded in the Kane County Recorder of Deeds Office by either party.
R. ENTIRE AGREEMENT. This Amendment to the Annexation Agreement sets forth all the promises, inducements, agreements, conditions and understandings between Owners, Developer and the Village relative to the Property and the subject matter thereof, and there are no promises, agreements, conditions or understandings, either oral or written, express or implied, between them, other than are herein set forth.

IN WITNESS WHEREOF, the parties have set their hands and seals on the date first above written.

# VILLAGE OF NORTH AURORA, ILLINOIS an Illinois Municipal Corporation 

By: $\qquad$
ATTEST:
Village President

Village Clerk
OWNER: STANLEY L. ZEPELAK TRUST
Under a certain Agreement dated April 26, 1989

By:
Stanley l. Zepelak, Trustee

# DEVELOPER: FIDUCIARY REAL ESTATE DEVELOPMENT, INC. 

By:
Anthony DeRosa, its $\qquad$

STATE OF ILLINOIS

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)
) SS
COUNTY OF
\(\qquad\)
I, )
aforesaid, DO HEREBY CERTIFY, that \(\qquad\) , \(\qquad\) , an Illinois \(\qquad\) , who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed and delivered the said instrument as his own free and voluntary act as said \(\qquad\) and as the free and voluntary act of said limited liability company for the uses and purposes therein set forth.

GIVEN under my hand and Notarial Seal this \(\qquad\) day of \(\qquad\) , 2012.

\section*{Notary Public}

My commission expires \(\qquad\) .

\section*{EXHIBITS}

\section*{A Legal Description}

B Amendment to Zoning/PUD Ordinance
C. Preliminary Plans
D. Preliminary Site Plan

\section*{Exhibit A - Legal Description}

THAT PART OF THE SOUTHWEST FRACTIONAL QUARTER AND THE SOUTHEAST QUARTER OF SECTION 31, TOWNSHIP 38 NORTH, RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF DEER OAKS SUBDIVISION; THENCE NORTHEASTERLY ALONG THE EASTERLY LINE OF SAID SUBDIVISION, BEING THE CENTERLINE OF DEERPATH ROAD, 105.60 FEET; THENCE NORTHEASTERLY, 255.30 FEET ALONG SAID CENTERLINE, ON THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 758.54 FEET, SAID ARC FORMING A CHORD THAT MEASURES 170 DEGREES 21' 29 " COUNTERCLOCKWISE FROM THE LAST DESCRIBED COURSE AND MEASURES 254.10 FEET; THENCE NORTHEASTERLY, ALONG SAID CENTERLINE, AT AN ANGLE OF 170 DEGREES 21' 29", MEASURED COUNTERCLOCKWISE FROM SAID CHORD, 1051.31 FEET; THENCE NORTHEASTERLY, ALONG SAID CENTERLINE, 145.30 FEET, ON THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 557.15 FEET, SAID ARC FORMING A CHORD THAT MEASURES 172 DEGREES 31' 44' CLOCKWISE FROM THE LAST DESCRIBED COURSE AND MEASURES 144.89 FEET; THENCE EASTERLY AT AN ANGLE OF 110 DEGREES 21’ 49", MEASURED COUNTERCLOCKWISE FROM SAID CHORD, 40.95 FEET TO THE EASTERLY RIGHT OF WAY LINE OF DEERPATH ROAD FOR THE POINT OF BEGINNING; THENCE SOUTHEASTERLY, AT AN ANGLE OF 159 DEGREES 40 ' 44 " MEASURED CLOCKWISE FROM THE CHORD FORMED BY THE LAST DESCRIBED ARC, 78.24 FEET; THENCE SOUTHEASTERLY, 77.49 FEET, ON THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 300.00 FEET, SAID ARC FORMING A CHORD THAT MEASURES 172 DEGREES 36' CLOCKWISE FROM THE LAST DESCRIBED COURSE AND MEASURES 77.28 FEET; THENCE SOUTHEASTERLY AT AN ANGLE OF 172 DEGREES 36', MEASURED CLOCKWISE FROM SAID CHORD, 228.86 FEET; THENCE SOUTHEASTERLY, 235.14 FEET, ON A CURVE TO THE RIGHT, HAVING A RADIUS OF 366.0 FEET, SAID ARC FORMING A CHORD THAT MEASURES 161 DEGREES 35' 42" COUNTERCLOCKWISE FROM THE LAST DESCRIBED COURSE AND MEASURES 231.11 FEET; THENCE SOUTHEASTERLY AT AN ANGLE OF 161 DEGREES 35' 42", MEASURED COUNTERCLOCKWISE FROM THE LAST DESCRIBED CHORD, 117.91 FEET; THENCE EASTERLY AT AN ANGLE OF 135 DEGREES \(25^{\prime} 11^{\prime \prime}\) MEASURED CLOCKWISE FROM THE LAST DESCRIBED COURSE, 45.78 FEET TO THE WESTERLY RIGHT OF WAY LINE OF ORCHARD ROAD; THENCE NORTHEASTERLY ALONG SAID RIGHT OF WAY LINE, 1356.64 FEET, ON A CURVE TO THE RIGHT HAVING A RADIUS OF 3889.80 FEET, SAID ARC FORMING A CHORD THAT MEASURES 145 DEGREES 31' 56" COUNTERCLOCKWISE FROM THE LAST DESCRIBED COURSE AND MEASURES 1349.77 FEET, TO AN OLD CLAIM LINE THENCE NORTHERLY, AT AN ANGLE OF 126 DEGREES 26' DEGREES 26' \(48^{\prime \prime}\) MEASURED CLOCKWISE FROM SAID CHORD, ALONG SAID OLD CLAIM LINE, 235.00 FEET TO THE CENTERLINE OF MOOSEHEART ROAD; THENCE WESTERLY AT AN ANGLE OF 82 DEGREES 10 ' 56 " MEASURED CLOCKWISE FROM SAID OLD CLAIM LINE ALONG SAID CENTERLINE, 1644.08 FEET; THENCE SOUTHERLY, AT AN ANGLE OF 96 DEGREES 38", MEASURED CLOCKWISE FROM SAID CENTERLINE, 380.48 FEET; THENCE SOUTHERLY AT AN ANGLE OF 178 DEGREES OF 38', MEASURED COUNTERCLOCKWISE FROM THE LAST DESCRIBED COURSE, 195.0 FEET; THENCE WESTERLY AT RIGHT ANGLE TO THE LAST DESCRIBED COURSE, 182.46 FEET TO THE POINT OF BEGINNING, ALL IN BATAVIA TOWNSHIP, KANE COUNTY, ILLINOIS.

Commonly known as: Vacant Land Orchard Road Farm - West of Orchard Road, North of Tanner Road, Kane County, Illinois

Exhibit B - AMENDMENT TO ZONINIG/PUD ORDINANCE

\section*{EXHIBIT C - PRELIMINARY PLANS}

\section*{EXHIBIT D - PRELIMINARY SITE PLAN}

\section*{ORDINANCE NO.}

\section*{AN ORDINANCE AMENDING ORDINANCE NO. 13-01-07-03 ZONING AND GRANTING A SPECIAL USE AS PLANNED UNIT DEVELOPMENT FOR COMMERCIAL AND MULTI-FAMILY USE FOR THE PROPERTY LOCATED \\ WEST OF ORCHARD ROAD, NORTH OF TANNER ROAD AND EAST OF DEERPATH ROAD IN THE VILLAGE OF NORTH AURORA}

WHEREAS, the Trustee of the Stanley L. Zepelak Trust under a certain agreement dated April 26, 1989, hereinafter called "Owners" and/or "Petitioners" has filed an application to amend the Annexation Agreement by and between the Village of North Aurora and the Stanley L. Zepelak Trust approved by Ordinance No. 12-11-19-01 dated November 19, 2012 (the "Annexation Agreement") for certain property legally described in Exhibit "A" attached to the Amendment to the Annexation Agreement (hereinafter referred to as the "Property") entered into by the Village of North Aurora, an Illinois Municipal corporation (the "Village"), the Stanley L. Zepelak Trust under a certain agreement dated April 26, 1989, (the "Owners") and Fiduciary Real Estate Development, Inc., a Wisconsin business corporation (the "Developer") (hereinafter referred to as the "Annexation Agreement Amendment")"

WHEREAS, a petition requesting an amendment to the B-2 General Commercial, R-4 General Residential District and Mixed Use PUD Development approved by Ordinance No. 12-11-19-03 as modified by Ordinance No. 13-01-07-02 for just the Property has been filed with the Village, by the Owners and Developer; and

WHEREAS, the petitioners desire to develop the Property as a planned unit development in the R-4 General Residential District for the area north of the access road to be provided onto Orchard Road identified in the Annexation Agreement Amendment; and

WHEREAS, a public hearing was held on the application before the Plan Commission of the Village of North Aurora (hereinafter referred to as the "Plan Commission"), on March 1, 2022, pursuant to the requirements of the North Aurora Municipal Code and the Illinois Municipal Code; and

WHEREAS, the Plan Commission has recommended approval of the application with certain flexibility and subject to certain conditions, as indicated in the Plan Commission Minutes of the same date as the hearing (hereinafter referred to as the "Plan Commission Minutes"); and

WHEREAS, the President and Board of Trustees of the Village have concluded that the reasons set forth in the Plan Commission Report for the recommendation of approval are well founded and are consistent with the Zoning Ordinance and other Ordinances of the Village; and

WHEREAS, the Petitioners have submitted all documentation required by the Village for its review of the proposed development; and

WHEREAS, the Annexation Agreement Amendment sets forth an orderly process for the Village's administration of the development of the Property pursuant to the Development Plans identified in and approved by the Annexation Agreement Amendment; and

WHEREAS, the President and the Board of Trustees of the Village of North Aurora have determined that the best interests of the Village will be attained by granting to the Property the special use for a planned development pursuant to the Development Plans identified in and approved by the Annexation Agreement Amendment.

NOW, THEREFORE, BE IT ORDAINED BY THE VILLAGE BOARD OF THE VILLAGE OF NORTH AURORA, KANE COUNTY, ILLINOIS, as follows:

\section*{1. RECITALS}

The representations and recitations set forth in the foregoing Recitals are material to this Ordinance and are hereby incorporated into and become a part of this Ordinance as though they were fully set forth in this Section 1

\section*{2. LAND USE REQUIREMENT.}

The Property shall be developed subject to the following deviations from the North Aurora Municipal Code and operated in compliance with this Ordinance and all applicable ordinances of the Village that are not in conflict with this Ordinance, except as provided for in the Annexation Agreement, as amended:
2.1 The Property shall be developed substantially consistent with the Development Plans attached to and approved by the Annexation Agreement Amendment.
2.2 It is understood between the parties that office uses are generally permitted within the R-4 General Residential District.
2.3 The Property shall be developed consistent with the Preliminary Development Plans and Preliminary Site Plan approved by and attached to the Annexation Agreement Amendment for the Property as finalized pursuant to the process identified in the Annexation Agreement Amendment.
2.4 The following deviations from the general requirements of the R-4 General Residential District and subdivision control provisions of the North Aurora Municipal Code and conditions are hereby approved for the Property:.

\subsection*{2.4.1 Parking.}
2.4.3.1 Parking shall be provided consistent with the Preliminary Plans
approved by and attached to the Annexation Agreement Amendment and this Amendment to the PUD Ordinance;
2.4.1.2 Within the off-street parking facilities two-way traffic aisles shall be at least twenty-four (24) feet in width; and
2.4.1.3 One parking lot island shall be provided between every ten (10) parking spaces.
2.4.14 A total of 172 enclosed parking spaces shall be provided representing \(66 \%\) of the total number of residential units (260), provided that some units have more than one enclosed parking space.

\subsection*{2.4.2 Landscaping.}
2.4.2.1 If Kane County prohibits the planting of parkway trees along Orchard Road, the petitioner shall plant additional trees within the landscaped buffer along Orchard Road at a ratio of one (1) tree for every two (2) parkway trees. Such changes shall also be deemed to be a "Technical Change" to the development plans;
2.4.2.2 The petitioner shall accommodate to the greatest extent possible the health of the existing trees, including their canopy and root systems, on the residential properties located directly to the west;
2.4.2.3 All planted parkway trees shall be the species and sizes specifically identified in Chapter 16.12.190.C. 8 of the Subdivision Ordinance;
2.4.2.4 The required 50 ' landscaped buffer on Orchard Road may be reduced to 35 ' to accommodate the additional 15 ' right-of-way required by Kane County the terms of which right-of-way dedication are included in the Intergovernmental Agreement between the Village and Kane County.

\subsection*{2.4.3 Pedestrian Pathways}
2.4.3.1 Pedestrian pathways shall be constructed consistent with the Preliminary Plans approved by and attached to the Annexation Agreement Amendment and Amendment to the PUD Ordinance;
2.4.3.2 The pedestrian walkway along Orchard Road shall either become a public sidewalk (public access easement) or be moved into the

> adjacent right-of-way.
2.4.4 Dumpsters. All dumpsters located on the subject property shall be enclosed per Section 14.11.A of the Zoning Ordinance.
2.4.5 Photometrics. A photometric plan shall be submitted and approved by the Village Community Development Director in keeping with Village ordinances and codes the prior to building permit issuance.
2.4.6 Architecture: The building elevations, materials, and design elements shall be consistent with the Preliminary Plans approved by and attached to the Annexation Agreement Amendment.

\section*{3. SITE DEVELOPMENT STANDARDS:}

All site development standards of the North Aurora Code for planned unit developments shall be applied to the Property, except as modified by the provisions of this Amendment to the PUD Ordinance and of the Annexation Agreement Amendment.
4. FINAL PLAN APPROVAL, DEVELOPMENT PROCESS.

The final plan approval shall be handled pursuant to the Annexation Agreement Amendment, and the development process shall be handled per the Annexation Agreement Amendment and this Ordinance in keeping with the Village ordnances and codes.

\section*{5. INCORPORATION OF PROVISIONS OF ANNEXATION AGREEMENT.}

The applicable provisions of the Annexation Agreement Amendment are hereby incorporated herein as if fully set forth herein, and shall be construed as a part of the substance of this Ordinance. In the event of a conflict between this Ordinance and the Annexation Agreement, the terms of the Annexation Agreement Amendment shall supersede and prevail over the terms of this Ordinance.

\section*{6. INCORPORATION OF THE PROVISIONS OF THE PUD ORDINANCE.}

All the terms and provisions of the PUD Ordinance and the general provisions of the North Aurora Zoning Code, Subdivision Code and other codes and ordinances not amended by this Ordinance or Annexation Agreement Amendment shall remain in force and effect.

\section*{7. COMPLIANCE WITH STATE STATUTES.}

In the event that any one or more provisions of this Ordinance do not comply with any one or more provisions of the Illinois Compiled Statute and the governing rules of the Water

\section*{Page 5 of 7}

Pollution Control Board or the Federal or State Environmental Protection Agencies, then the Village, Owner, and all of their respective successors and assigns, agree to cooperate to comply with said provisions which shall include, but not be limited to, the passage of resolutions and ordinances to accomplish such compliance.

\section*{9. CONFLICT IN REGULATIONS AND ORDINANCES.}

The provisions of this Ordinance shall supersede the provisions of any ordinance, code, or regulation of the Village which may be in conflict with the provisions of this Ordinance.

\section*{10. INCORPORATION OF EXHIBITS.}

All exhibits attached to this Ordinance and attached to the Annexation Agreement and Annexation Agreement Amendment are hereby incorporated herein and made a part of the substance hereof.

The special use granted under this Ordinance shall remain in effect until amended in the manner provided by law or extinguished under the terms of this Ordinance.

\section*{11. EFFECTIVE DATE.}

That this Ordinance shall become effective from and after its passage and approval in accordance with law and upon the approval of the Annexation Agreement at the same meeting.

PRESENTED to the Board of Trustees of the Village of North Aurora, Kane County, Illinois, this \(\qquad\) day of \(\qquad\) 2022.

PASSED by the Board of Trustees of the Village of North Aurora, Kane County, Illinois, this ___ day of \(\qquad\) 2022.

Mark Carroll
Mark Gaffino
Michael Lowery

\begin{tabular}{ll} 
Laura Curtis & \\
Mark Guethle & - \\
Carolyn Salazar &
\end{tabular}

APPROVED and signed by me as the President of the Board of Trustees of the Village of North Aurora, Kane County, Illinois, this \(\qquad\) day of \(\qquad\) , 2022.

Village President
ATTEST:

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Village Clerk

R:\Secretary\Clients - Municipal\Village of North Aurora\Zepelak - NW Orchard Rd. \& Tanner Rd\Ordinances\12-12-17 Ord Approving Zoning and PUD Final.doc

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\section*{EXHIBIT 1}

Plan Commission Meeting Minutes, Findings \& Recommendation

\title{
VILLAGE OF NORTH AURORA PLAN COMMISSION MEETING MINUTES \\ MARCH 1, 2022
}

\section*{CALL TO ORDER}

Chairman Mike Brackett called the meeting to order.

\section*{ROLL CALL}

In attendance: Chairman Mike Brackett, Commissioners, Anna Tuohy, Aaron Anderson, Scott Branson, Alexander Negro, Richard Newell, and Doug Botkin

Not in attendance: Mark Bozik and Tom Lenkart

Staff in attendance: Village Administrator Steve Bosco, Community \& Economic Development Director Mike Toth and Planner David Hansen

Also in attendance: Kevin Drendel, Village Attorney

\section*{APPROVAL OF MINUTES}
1. Approval of Plan Commission Minutes dated February 1, 2022

Motion for approval made by Commissioner Newell and seconded by Commissioner Branson. All in favor. Motion approved.

\section*{PUBLIC HEARING}
1. Petition \#22-02: The petitioner, Fiduciary Real Estate Development, Inc., requests the following actions in the R-4 General Residence District, Planned Unit Development for the vacant tract of land situated west of Orchard Road, south of West Mooseheart Road and east of Deerpath Road:
a) Special Use - Planned Unit Development Amendment with deviations to the Planned Unit Development and Zoning Ordinance
b) Preliminary Final Plat of Subdivision
c) Site Plan Approval

Chairman Mike Brackett called the public hearing to order.
Chairman Brackett explained Mike Toth will introduce the petition, which will be followed by the petitioner's presentation and public comments. The Plan Commission will then close the public hearing and discuss the petition amongst Commissioner's and ask any questions they may have.

Mike Toth introduced Petition \#22-02, which is a 21.7 acre tract of land located east of Deerpath Rd, south of West Mooseheart Rd, and north of Orchard Rd. The developer will give a presentation and provide background on the project itself and then the Village will give their presentation and explain the developer's request in more detail.

The petitioner, Tony DeRosa (Vice President for Fiduciary Real Estate Development, Inc.) presented their Seasons at North Aurora project. DeRosa gave a brief overview on the company, which is based out of Milwaukee, Wisconsin. DeRosa mentioned mixed-use and luxury multifamily products are their specialty and have developed and owned up to 11,000 apartments in their history. DeRosa shared some completed projects that are similar to the Seasons at North Aurora concept, which included their first Seasons development, Seasons at Randall Road in West Dundee, which was completed a few years ago. That development was two phases, which consisted of 380 total apartments. DeRosa showed pictures of the completed project's clubhouse, interior finishes, and overall site. DeRosa mentioned his other team members are here tonight include David Ferrell and Ashley Poull. AG Architecture is their design company and Manhard Consulting Engineering is their civil engineering firm.

DeRosa presented their Seasons at North Aurora concept in greater detail, which includes 260 apartment units ( 26 studio, 104 one bedroom, 104 two bedroom, and 26 three bedroom units). DeRosa mentioned it was a 21.7 acre site and the current zoning is R-4 General Residence District and the proposed multi-family development is a permitted use with a density of about 12 units per acre. DeRosa mentioned there is Connector Road that divides the two sites and the road is about \(\$ 1\) million to build and Fiduciary will be building it as part of the site development. Parcels to the south of the connector road are zoned B-2 General Business District for future commercial, but are not part of this development. DeRosa stated the area's apartment occupancy is around 95\% and there is a lack of newer multi-family housing in North Aurora. DeRosa added North Aurora has older rental housing stock, lack modern amenities and this development will target all age groups. Apartment prices would be \(\$ 1,400\) (studio) to \(\$ 2,700\) ( 3 bedroom). The development will have a condo and townhome type feel with garages and private entry's, maintenance free living with attached/detached garages, oversized windows, balconies, open concept floor plans, walk in closets, in unit washer/dryer and stainless steel appliances. It will also have a clubhouse, walkability connections throughout the site and on-site management team. DeRosa showed images of the proposed development, which included the clubhouse, outdoor areas, interior gathering areas, and exterior elevations. DeRosa mentioned the east-west connector road would divide the 40 acres of parcels with multi-family permitted on north side and commercial on both ends and the first developer to build on site must build the connector road. DeRosa added the parking screened to interior of development, there is a landscape buffer around perimeter, stormwater features on north side of development, trail/sidewalk connections throughout the site. Parking will be assigned by unit for both garages and exterior parking spaces. DeRosa showed a two-minute fly through 3-D presentation of what the site would look like.

DeRosa outlined the PUD Ordinance development standards for apartment uses for the site, which included the following: building height be limited to three stories (development is two stories), apartments unit have individual access from exterior (each unit will have individual access from the exterior of the building), one parking space provided for each dwelling unit in an interior enclosed area ( \(66 \%\) enclosed parking spaces per unit a total of 172 spaces); at least \(25 \%\) of each apartment building covered in masonry ( \(25.8 \%\) will be covered), and architectural monotony standards must be met (DeRosa mentioned cement siding, big windows, and lots of design to avoid monotony on the exterior). DeRosa shared some conclusions from preliminary traffic study, which included the development would not have a detrimental impact. Some traffic study details included Orchard Rd is estimated to increase \(8 \%\) per day ( \(60 \%\) of it would use Orchard to the south
via the connector road that comes out to .73 trips per minute). Deerpath Rd traffic would increase \(3 \%\) trips increase per day ( \(15 \%\) of the traffic is estimated to go south on Deerpath Rd, which is about .18 trips per minute). DeRosa added current conditions as well as improvements as part of the development will help mitigate congestion and commercial development would have more traffic impact than residential one. DeRosa said Fiduciary is working with Kane County Department of Transportation on traffic improvements for Orchard Rd, which would include a southbound deceleration lane on Orchard Rd into the connector road and a dedicated northbound left turn lane into the connector road DeRosa showed the elevations for the clubhouse, floorplans and building exterior contrast. DeRosa added the current tax bill is around \(\$ 600\) tax bill, but would increase to about \(\$ 800,000\) a year after the development is completed. DeRosa continued and said this would help retailers in area that are struggling, that the development will hopefully be a catalyst to help commercial develop to the south in the future and that the development is highest and best use of property according to our research.

Mike Toth presented slides regarding the Village's codes, zoning designation, the current PUD, and the Annexation Agreement for the property. In 2012, the property was annexed and a PUD ordinance was approved, which established the B-2 General Business District for the properties north and south of the connector road area with area north of connector road having an R-4 General Residence District zoning designation which allows multi-family as a permitted use. The PUD established standards in 2012 and was amended in 2013 which had a few changes. One change was, in the 2012 PUD, both interior and exterior access was required, but the 2013 PUD only requires exterior access which the development is providing. Another change is that the 2012 PUD ordinance required \(20 \%\) of the total units must include an interior enclosed parking space, while 2013 PUD ordinance requires \(100 \%\) of parking spaces ( 260 spaces) would need to be provided interior enclosed parking.

Toth stated, if the site plan met all requirements of the PUD and Annexation Agreement, the site plan would only need to be submitted to the Plan Commission for review and could have been forwarded to the Village Board for approval without a need for a public hearing. Toth elaborated and said site plan reviews are required for any development to go to the Plan Commission for review and Village Board for approval. However in this PUD ordinance, once anyone submitted a site plan for the property it would come to the Plan Commission for review and developer would only be required to send notice to the adjacent property owners. No signs or newspaper listings would have been required if this would have happened. Site plan approval standards are included in the annexation agreement instead of the PUD, which means Village Board has final say over the site development standards. He added they are included in staff report for guidance tonight on Page 5. Another approval to be considered is the establishment of Lot 1 of Seasons at North Aurora subdivision and preliminary plat that has been submitted.

Toth explained the reason why the public hearing was triggered, signs on the property and letters sent to property owners, etc. were because of Planned Unit Development and Zoning Ordinance amendments. First, the enclosed parking spaces deviation. They are providing 172 enclosed parking spaces, but they need 260 enclosed spaces to avoid it. More garages on property could be a negative due to storage component. Second, is the plan submittal process deviation. As long as the plan being submitted for permit review matches the plans approved by the Village Board they do not need to go through the final review process. Third, the landscape buffer along Orchard

Road. Kane County requires 170 feet of ROW and has jurisdiction for the Road. Upon review, Kane County requires another 15 feet into the buffer yard so the landscape buffer has been reduced to 35 feet instead of 50 feet allowable by code. This has been customary since the Orchard Acres development to the south of this proposed development, on northwest part of Oak St and Orchard Rd., also had same thing happen - the 50 foot buffer was reduced to a 35 feet setback. Given those deviations, staff has reviewed the site plan and is recommending approval with eight conditions upon approval, which are listed on the last page of the staff report.

Chairman Mike Brackett opened the public hearing for public comment. Chairman Brackett mentioned no one signed up on the sheet, but anyone who would like to speak is free to do so in an orderly manner.

Ann Snodgrass (1525 W. Mooseheart Rd.) had a few questions regarding how long the plan been under consideration, what is the time frame for the development, any traffic studies on Mooseheart Rd towards White Oak Dr, how will this impact the schools, and will a left turn be allowed on Orchard Rd. Toth mentioned the Village has been in contact with the Village for months and have a had a few meetings about the project both internal and external and the plan tonight was first seen about a month ago. Toth said the next step is to send it to the Village Board for further discussion with final consideration coming in April or May. It would then have to go through permitting process if approved before site work could begin. DeRosa said the construction target date is mid to late summer with 20 months start to finish with the first building completed in 10 months and one building finished every 30 days after commencement of construction. DeRosa said roughly 10 school age kids per 100 units is about the average they see so they would expect 25-30 school age kids at the development. KOLA traffic consultant, Luay Aboona, said the intersection for Orchard Rd/White Oak and White Oak/W Mooseheart will be looked at as the traffic is further studied and the new access road will be a full intersection with a left and right turn out onto Orchard with stop sign control. DeRosa mentioned they are working with KDOT and that the development will not warrant a need for a traffic signal. Snodgrass asked if there will be any more meetings for residents to speak and asked about how the construction traffic routes will enter and exit during construction. DeRosa said they will work with the Village regarding access for the site. Steve Bosco mentioned tonight the Plan Commission will make a recommendation to the Village Board and next the Village Board would look at it at a Committee of a Whole (COW) meeting which is a public meeting where people can attend again. Bosco said there will be at least two COW meetings then will be a third meeting for approval is the likely route and residents can speak at each meeting. Meetings are held here at Village Hall and packets will be posted online. Public hearing notices are only for Plan Commission meeting and will not be updated on site. Toth added Village Board meetings are held \(1^{\text {st }}\) and \(3^{\text {rd }}\) Monday of the month and packets are posted online typically by Thursday afternoon prior to that meeting.

Michelle Pitts (2041 Westover Rd.) has lived near Deerpath Rd for 42 years and had questions about the need for the multi-family housing in the area and didn't want to bring certain type of people to town. She was also concerned about the environmental impact of marshland in Mirador since it floods every year and has a good amount of wildlife in that area. Toth mentioned there are IDNR reports that are submitted as part of the process. Bosco mentioned governments speak with acronyms a lot and explained what each of the following were: IGA stands for "intergovernmental agreement", the IDNR is the "Illinois Department of Natural Resources" and PUD is a "Planned

Unit Development". The petitioner questioned what type of people or demographics she was referring to. DeRosa mentioned demand for this type of development is stronger than 20 years ago and many people want to rent now due to maintenance free living. Retirees, young professional, and snowbirds will be attracted to this development. High quality of housing is as nice or nicer than brand new than single family home and average income \(10-15 \%\) higher than income in the community as a whole. Rooftops drive retail and should help bring more retail to area and help maintain existing retail.

Jared Placek, Engineer with Manhard Engineering, addressed stormwater concerns and explained there are two stormwater management ponds proposed on the development and the current conditions of the stormwater drain north into the Mirador pond. Currently the site is uncontained and unrestricted north into the area, which has been mentioned as a flooding concern. Part of the development stormwater detention basin would hold water for an extended period of time and allows water to slow down. As a result, it will increase amount of time the water heads north. As required by law, the development will improve the current conditions and in regards to IDNR species endangered in the area, not on the site, but in the area, include herons, but the development doesn't show to have a negative impact on that and will continue to work with IDNR and other governmental agencies. Toth mentioned Village Engineer will review stormwater as well as need to follow the Kane County Stormwater Ordinance.

Dan Carter (1516 W Mooseheart Rd.) had questions about the construction access points, village curfews in regards to the social aspects of the development, dumpster locations and wondered if there would be streetlights at connector road and Deerpath Rd. Toth shared there appears to be eight dumpsters on site and the two access points for the property are on the connector road. Dumpsters would have to follow code of \(6-8 \mathrm{ft}\) of solid wall or fence with a gate and 6 foot concrete pad. Toth added construction access points will be determined as part of the engineering review and erosion control plan. Bosco stated that curfews generally apply to certain activities after a certain time, but the development would most likely be noise control complaints where a resident can call the police if there is excessive noise. DeRosa mentioned loud parties are not allowed on the weekend; clubhouse gatherings are mostly with family; speakers and pool-related activities are kept at a minimum as well. Carter asked if W Mooseheart Rd will be overflow parking and there will be no access to W Mooseheart Rd from the development. DeRosa said Fiduciary looked into going to W. Mooseheart Rd for access, but after review, traffic going to the connector road made the most sense for the area and creates more buffer green space for the site and the connector road would only have access to the site. DeRosa said the management company controls noise for the clubhouse activities and if residents are loud they can be cited. It could lead to a break in their lease if continued. DeRosa added that no parking is needed on W. Mooseheart Rd since the site has adequate amount of parking. Toth added two parking spaces per unit are required and the developer is providing 2.3 parking spaces per unit. Toth said he spoke with the Police Department regarding W. Mooseheart Rd and the road isn't supposed to be parked on and cars would be towed if parked there. If it became an issue the Village can enact more specific prohibited parking, if needed.

Steve Poss (832 Benson Ct.) asked what the benefit to the community is since it will add additional people and traffic to the surrounding areas. Kevin Drendel shared the Village does not own the property and must accept the proposal and process it accordingly. Drendel said the Village doesn't
have the ability to just say no if it meets the requirements and outlined how the property owner has private property rights, which gives them opportunity to pursue a development how they see fit. The municipality has zoning controls the developer must follow, but the Village cannot deny a property outright because people don't like it. Poss asked if this will impact property values. DeRosa added empirical research suggests multi-family adjacent to the single family homes does have a positive impact on property values. Multi-family tends to drive new businesses to the area as well. Toth added business owners tend to look for demographic details, including area income, as part of their research. Toth also added the Comprehensive Plan suggests a transition from singlefamily to multi-family to commercial rather than a straight jump from commercial to single-family zoning. DeRosa added typically a desirable community has vibrant retail and business because of the people who spend money in that area. The more people spending more money, the more businesses stay open and property values tend to rise.

Max S. (unknown address) asked if the public hearing process results in a vote or just lets residents know what is happening. Bosco explained this meeting takes input by the Plan Commission who is appointed by the Mayor and Village Board. The Plan Commission role is to hear the public input, staff report, developer presentation, and add any conditions they see fit. The Plan Commission then votes to approve or deny the project, but the vote is a recommendation not a final act. Bosco continued it will then go to the Mayor and Village Board, who are elected and they make the final decision to approve it or not. Max S. was concerned about the impact on nature and the number of kids it may add to the schools. He asked if the Village plans to expand the elementary and middle schools. Bosco said the school district is a different taxing body and would make that decision. Bosco mentioned the percentage of property taxes that go to the Village is \(5 \%-6 \%\) which would be around \(\$ 50,000\) while the schools would receive \(60-70 \%\) of the property tax bill. Toth stated a land cash fee and school district impact fee is required for developments and it is paid at the time of the permit. Max S. asked if the east side of Orchard Rd. is part of the development. Toth said not at this time and not a lot of concepts have been submitted for that site. That property is zoned similar to these parcels where it's mostly commercial property, but allows \(30-40 \%\) residential should a developer request it. Max S. mentioned more senior living in the area would be nice addition if possible.

Dan Carter asked if the only reason we are here today is for the public hearing regarding the garage situation. Toth stated yes, mostly since the PUD deviation triggered the public notice and once that was opened then landscape buffer was added as a KDOT requirement upon their review. Toth said the developer could meet that code if they do \(100 \%\) garages, but as mentioned before having too many garages could lead to parking spillover since the garages tend to be used for storage instead of parking. Drendel added in 2012 there was a public hearing for the zoning, annexation agreement and PUD and amended again in 2013, which also went through a hearing process so this is technically the third hearing process this property has gone through. Bosco explained properties are zoned throughout the community and each district has different standards of what can go in where. Staff works with the developer for a few months to get through what they are asking for so they can have all the details lined up for a meeting like this. We can't notice a public hearing until we find what the change is about and a developer has submitted all the required information.

Jacqueline S. (resident of Tanner Trails) had a few questions regarding ADA units on the property, minimum lease terms, how many three bedroom units there will be, what the maximum people is
allowed for gathering area in the clubhouse, environmental concerns for detention regarding pipe size and the depth of the pond. DeRosa mentioned ADA units will be available due to law and \(2 \%\) of the units typically need to comply. Minimum lease terms are 6 , but most leases are usually \(12-\) 18 month leases. Toth stated occupancy limits are determine by the local code, which would be the North Aurora Fire Protection District. Jared Placek, Engineer from Manhard Engineering, shared the existing pipe on the south end of W Mooseheart Rd is 12 inches in diameter widens to 21 inches as it travels north to the marsh area. The development would install a smaller pipe to keep the water in the detention basin as long as possible with the water levels in the ponds for two-year storm event reaching 2-3 feet and 100 year flood event reaching 5-6 feet with the capacity to handle 100 years storm events. Toth added there are 26 three-bedroom units on the plan.

Ann Snodgrass had a few more questions regarding occupancy requirements and asked if the site could be voted down if there are enough residents that oppose it. DeRosa stated anyone who lives in the apartment is required to be on the lease and they track everyone who lives there including tenant vehicles. Toth stated again the fire district determines the number of occupants in a building. Drendel added that there are laws regarding defining a family and a municipality cannot make such determination in regards to those terms. Bosco said the Village can vote it down, but there is underlining zoning in place already so the developer could resubmit a site plan and it could be approved by the Village Board. Snodgrass mentioned she didn't think a \(\$ 1,400\) monthly rent is luxury for a studio. She moved to North Aurora recently from a local community where projects like these have been turned down and developers don't always follow through on what they offer. She prefers condo ownership instead of rental apartment units. Snodgrass asked about the development by Woodman's and what is the rental rate and occupancy rate. Toth said The Springs are usually at \(95 \%\) occupancy, which has 300 units over 18 acres.

Hugo Cardenas (3S701 Deerpath Rd) mentioned he has Oak Trees on his property and believes some are 300 years old. He was wondering if developer could look into preserving the root structure. Cardenas was also concerned about the condition of the rental community after five years. He added there is a potential for residents breaking into his vehicles. Cardenas also shared that the Spring Apartments are not his neighbors, but he can hear the music from his backyard so he was concerned how close the clubhouse was to his house. He also concern about the connector road being too close to the Oak Trees on his property. Cardenas mentioned when most people drink they get loud and happy and could cause noise issues. Cardenas said he would like the developer to look into the Oak Trees which are supposedly 300 years old as they are a key component of why he moved to the property in the first place.

Matt Berger, (resident of Mirador) had a question regarding who is the property owner of this site and have there been any proposals in the past regarding single family homes on this site. Toth mentioned Stan Zepelak is the original property owner of site, but is unsure if developer has officially bought it. Toth stated the village has only a few phone calls for multi-family or commercial on this site, but nothing for single family homes since he started with the Village in 2013.

Chairman Mike Brackett closed the public hearing.

\section*{NEW BUSINESS}
1. Petition \#22-02: The petitioner, Fiduciary Real Estate Development, Inc., requests the following actions in the R-4 General Residence District, Planned Unit Development for the vacant tract of land situated west of Orchard Road, south of West Mooseheart Road and east of Deerpath Road:
a) Special Use - Planned Unit Development Amendment with deviations to the Planned Unit Development and Zoning Ordinance
b) Preliminary Final Plat of Subdivision
c) Site Plan Approval

Commissioner Doug Botkin thanked the staff and developer for providing a detailed presentation. Botkin mentioned the Comprehensive Plan calls for single-family housing in that location so the project complies with the zoning, but not necessarily the Comprehensive Plan. Deviating from the Comprehensive Plan is always a thing to look out for, but the plan tonight is legal and should be considered since the property is zoned that certain way. The main question is do we like the development and developer and so far I do and would vote yes.

Commissioner Aaron Anderson thanked the residents for engaging in the process and asked if the renderings and fly through is what the plan is going to be and the impact on surrounding infrastructure. Commissioner Anderson mentioned multifamily developments are newer to North Aurora, but has been written on the wall for 15 years and has now made its way here. Commissioner Anderson questioned how the 20-30 school kid information was determined. DeRosa said 10 school age kids per 100 units is the average and that's how they got that estimate. DeRosa encouraged staff and members to reach out to other communities about their other properties to get feedback how well those communities are doing and how their standards are being held up. DeRosa said he can provide tours of those communities if anyone was interested. DeRosa added the age range for the development is pretty much any age from 22 to 82 . Commissioner Anderson asked how it was determined to locate the clubhouse adjacent to the single family residential housing. DeRosa said the landscape buffer makes it difficult to have the clubhouse anywhere else on site due to pavement and other accessory structures not allowed in the buffer area. DeRosa mentioned if they were allowed to encroach in the landscape setback it would be easier to move the clubhouse more east off the property line. DeRosa said they looked into having all three story buildings and adding 100 more apartments to the site to make it work, but prefer the less dense two-story plan you see here tonight. DeRosa added the site scale fits two-story more, but it appears to come down to the 1:1 garage unit's provision.

Chairman Brackett also agreed the clubhouse location pushed up next to the private property concerned him. Toth added the site's primary access is pushed back 400-500 feet due to KDOT provisions, which is why the clubhouse is located where it is. The landscape plan shows adding fencing and evergreens along the adjacent property owner to the west, which allows more buffering and screening for both parties. Chairman Brackett mentioned he thought the clubhouse location is odd since it's not centralized in the development to all the units.

Commissioner Scott Branson shared there were homes here before Mirador and Tanner Trails were built so development does happen and changes the landscape. Commissioner Branson shared that
the three-bedroom apartments will probably be filled with more kids the developer is projecting, but rooftops drive retail and there are lots of new retail opportunities for the Village. Commissioner Branson mentioned he liked the residential plan for that area compared to having an industrial or commercial development next to the existing single family homes. Commissioner Branson also shared concerns regarding the clubhouse location and for the Oak Trees adjacent to the clubhouse area.

Commissioner Anna Tuohy thanked the residents for coming out and sharing their perspectives, views and concerns. Commissioner Tuohy mentioned she lives in Tanner Trails and understands the traffic concerns for the development. She asked if there was only a fence/gate along the west side perimeter of the development or was it for the entire development. DeRosa said the only fencing on the site is along the west side of the clubhouse, which is anticipated to be a six foot wood board-on-board fence. Commissioner Tuohy asked how many residents would be on site if it was at \(100 \%\) capacity. DeRosa shared it would be around 420 residents on site if occupancy was \(100 \%\). Commissioner Tuohy also shared the concern about the clubhouse proximity to the property owner to the west. DeRosa said that concern is noted and will be looked into. Toth said looking into an alternative clubhouse locations can be added as a condition to the list of staff conditions, should the Plan Commission want to recommend approval.

Multiple Commissioners asked about why the buffer dictates the location of the clubhouse and pool and why the clubhouse is so far away from other buildings. Toth shared KDOT requires a full access road to the connector road be 500 feet back from Orchard Road and the clubhouse likes to be the primary access point in most developments so possible tenants don't need to drive through the entire site to get to the clubhouse. DeRosa shared many complexes don't have the clubhouse centralized, but is the point closest to the main access point of the site. Commissioner Tuohy said the demand is here since apartments are full occupancy in most parts of the Village and people who want to move here can't do that do to lack of inventory. Commissioner Tuohy also asked if there have been any crime increase in The Springs since this proposed development is a similar, but less dense apartment community. Bosco stated the Police Department pulled police calls to the Springs and are currently reviewing it. Chairman Brackett shared more density makes it appear there are more calls, but should be viewed propositionally compared to subdivisions with same amount of residents. DeRosa shared after five years, we do not lower our standards and have detailed credit, landlord references and criminal background checks.

Commissioner Tuohy asked how much the average income may be for each unit type. DeRosa mentioned median income for the area is about \(\$ 85,000\) and with \(30 \%\) going to rent on average you are looking between \(\$ 50,000\) incomes for studios to \(\$ 90,000\) for the three-bedroom units if not higher. Commissioner Tuohy also asked about the traffic concern and would like more information on intersections for Deerpath Rd/Oak St., W. Mooseheart Rd./Deerpath Rd., Tanner Rd./Deerpath Rd., W. Mooseheart Rd./ White Oak Dr., and Orchard Rd./White Oak Dr. as well as Orchard Rd. and Deerpath Rd. in regards to the connector road. DeRosa shared KDOT has jurisdiction of Orchard Rd., but it appears the Village will maintain the connector road once built. DeRosa shared stop light is not warranted at this point, but if Mango Creek (land to the east) is developed it would trigger the signalized intersection. Toth said the connector road was also added to relieve traffic on Deerpath Rd. to Orchard Rd. and vision triangle provisions will be taken into consideration at the time the intersections are developed.

Commissioner Alexander Negro mentioned he was also concerned with location of the clubhouse and asked who is responsible for paying for the stoplight. Toth shared he believes there is a shared cost between Village and Developer, but will check the Annexation Agreement.

Commissioner Richard Newell thanked the residents for the community interest and taking time to be there. Commissioner Newell shared that current demographic trends in the United States show younger groups aren't buying regardless of economic status and prefer to rent on many occasions. Commissioner Newell also mentioned the clubhouse location seemed weird, but understands why it was placed there. Commissioner Newell asked where the stormwater management goes. Jared Placek mentioned best management practices according to law will be utilized and make it naturalized way to make sure it doesn't pollute anything downstream. Commissioner Newell also mentioned he had concerns about the traffic study as noted by Commissioner Tuohy. Commissioner Botkin mentioned although the clubhouse is close to property owner to the west, but if the developer moved it to the center, an apartment building with a balcony would most likely be next to the property owner and may be harder to screen and reduce noise.

Chairman Brackett shared the main concerns he's heard: traffic in regards to the signalization/stop sign on the connector road, the intersections for Deerpath Rd. and Orchard Rd., stormwater management and the location of the clubhouse area. Commissioner Tuohy would like the traffic study to be looked into more going forward. Toth stated clubhouse could be put in as a condition, stormwater would be addressed through permitting and engineering review and the traffic study would be reviewed by the Village engineer going forward and more detailed analysis will be done.

Bosco mentioned there are several options to consider. One option would be to ask the developer to gather more information and come back, if that would help the Plan Commission make a recommendation. Another option would be to vote as-is or add conditions to forward this project onto the Village Board for review. DeRosa mentioned KDOT still has jurisdiction on some roads so they may require certain traffic criteria and will make the ultimate decision on those intersection improvements. Commissioner Tuohy said she was good with the eight conditions in the report as well as adding a traffic and clubhouse location condition to it. Commissioner Anderson said he was in favor to send it on to the Village Board if there is community interest in it. Toth said that he can work with the Village Attorney to draft the Plan Commission conditions in more detail. Toth said staff will provide draft minutes to Village Board for the upcoming COW meeting and outline the main comments and concerns mentioned tonight. Commissioner Botkin asked the clubhouse condition to state that the developer should examine alternate clubhouse locations and not state it is required to be moved. Bosco asked for clarification on the conditions regarding to traffic. Chairman Brackett said the condition was to turn left onto Orchard Rd. from the connector road and to further examine the site in regards to traffic flow on Deerpath Rd., W Mooseheart Rd., and White Oak Dr. Commissioner Negro asked if stop light language is needed to be included in the conditions and how fast the developer would be able to look into alternate options for the clubhouse location. Chairman Brackett mentioned the stoplight would be determined by Kane County as part as their review so it does not need to be included. Bosco said there is a formula they use to determine a stop sign vs. a signalized intersection. Toth shared the annexation agreement appears to indicate the stoplight cost on Orchard Rd. and connector road is tied to cost
sharing between the two development sites. DeRosa stated it would take about a week to modify the clubhouse location, but it would be ready in time for the Village Board meeting. Commissioner Anderson asked to add a condition looking into protecting the root structure for the Oak Trees on the property west of the development. Commissioner Tuohy said the IDNR requirement would apply to the site for wildlife so that would not need to be added as a condition.

Motion for approval of Petition \#22-02 with the following conditions approved above regarding clubhouse placement, root structures of the Oak Trees on the western perimeter of the development and look into the traffic study in greater detail with staff's eight conditions was made by Commissioner Tuohy and seconded by Commissioner Newell. Vote: Botkin - Yes, Newell - Yes, Negro - Yes, Anderson - Yes, Tuohy - Yes, Branson - Yes, Brackett - Yes. Motion approved.

Bosco mentioned there will be two to three more public meetings for public comment discuss the topic before it would be considered for approval by the Village Board. If anyone has any questions they can reach out to Village and more specifically myself and the Community Development Department.

\section*{OLD BUSINESS - None}


\section*{PLAN COMMISSIONER COMMENTS AND PROJECT UPDATES}

Toth mentioned the recreational vehicles item went to the Committee of the Whole meeting on February 21, 2022 and staff is working on finalizing the new ordinance to bring to the Village Board. Staff provided the Village Board with all the Plan Commission's comments and decided to keep the time as Thursday 6 pm to Monday noon and change the two week periods to April 1-15 and October 15-30.

Toth shared that in 2020 Aurora Pack brought forward their full expansion plan and recently submitted building plans that were different than what was approved. This resulted in a minor change that needed to be approved by the Village Board. It was deemed a minor change since it met all the criteria for the PUD for the I-3 District, but changes were significant enough that Village Board needed to approve the altered site plan. Toth also shared permits are getting ready for the Orchard Acres development, which includes Starbucks and Taco Bell.

\section*{ADJOURNMENT}

Motion to adjourn made by Commissioner Anderson and seconded by Commissioner Botkin. All in favor. Motion approved.

Respectfully Submitted,
Jessica Watkins
Village Clerk

\section*{GENERAL INFORMATION}

Meeting Date: March 1, 2022
Petition Number: 22-02
Petitioner: Fiduciary Real Estate Development, Inc.

Requests: 1) Special Use - Planned Unit Development Amendment with deviations to the Planned Unit Development and Zoning Ordinance 2) Preliminary Final Plat of
 Subdivision 3) Site Plan Approval

Parcel Number(s): 12-31-300-017 \& 12-31-400-026
Size: 21.7 acres
Current Zoning: B-2 General Business District/R-4 General Residence District Mixed Use PUD
Current Land Use: Vacant Land
Proposed Land Use: Multi-Family
Dwellings
Proposed Use Classification: Permitted Use
Contiguous Land Use: North: R-1 Single Family District and Open Space; South: Vacant Land; East: R-1 Single Family
 Residence District; West: F - Farming (Unincorporated Kane County)

\section*{PROPOSAL}

The subject property is a 21.7 -acre vacant tract situated west of Orchard Road, south of West Mooseheart Road, and east of Deerpath Road. The petitioner has submitted plans for a multifamily residential development to be located on the subject property in the B-2 General Business District/R-4 General Residence District Mixed Use Planned Unit Development. The submitted development plans include thirteen (13) two-story residential buildings, consisting of 20 units per building, providing a total of 260 residential units - 26 studio units, 104 one-bedroom units, 104 two-bedroom units and 26 three-bedroom units. A clubhouse, pool and other ancillary amenities would also be included.

\section*{BACKGROUND}

On August 7, 2012 a public hearing was held before the Plan Commission at such time the property owner requested the property be annexed into the Village and change the E-R Estate Rural District zoning designation to a B-2 General Business District/R-4 General Residence District flex zoning, similar to that of the Mango Creek development located across Orchard Road. As part of the request, the property would be split by a connector road located between Deerpath Road and Orchard Road with the ability to allow multi-family residential use on the north side of the connector road and a commercial option on both sides of the connector road. The multi-family residential use would only be permitted north of the connector road. Surrounding property owners had concerns regarding higher density, traffic congestion and that the notification time frame did not give them enough time to review the request. A few Commissioner's had concerns regarding the potential of high density residential and/or a business district adjacent to single family homes. The Plan Commission concluded by recommending approval of the petition.

On November 19, 2012, the Village Board approved an Annexation Agreement between the Village of North Aurora and the Stanley L. Zepelak Trust (Ordinance 12-11-19-01) governing the development of the entire vacant tract of farm land located north of Tanner Road, south of West Mooseheart Road, west of Orchard Road and east of Deerpath Road, known as the Zepelak Property. Approval of a Special Use for a Commercial and Multi-Family Use Planned Unit Development for the Zepelak property was also approved at that time (Ordinance 12-11-19-03).

On January 7, 2013, the Village Board reapproved a special use Ordinance (Ordinance 13-01-07-03). The PUD Ordinance changed the originally-approved PUD provisions regarding the access to each apartment unit and the number of required enclosed parking spaces. The updated PUD Ordinance requires only exterior access to each apartment while the original Ordinance required both interior and exterior access. The updated Ordinance requires at least one parking space to be provided for each dwelling unit in an enclosed space while the original Ordinance only required a total of \(20 \%\) of the units to have at least one parking space provided for each dwelling unit in an enclosed space. The annexation agreement was not altered at the meeting, but an ordinance clarifying the Village annexing the land (Ordinance 13-01-07-02) was approved. As part of the Annexation Agreement, it provided the process of establishing a connector road from Deerpath Road to Orchard Road should a development be built. On February 4, 2013 the Village Board approved the Plat of Dedication for the Deerpath Connector Road.

The approved PUD established rights to the B-2 General Business District zoning south of the aforementioned connector road and the flexibility of either commercial use through the B-2 General Business District or residential use through the R-4 General Residential District zoning for the area north of the connector road. The 'Dwelling, Multi-Family' (multi-family residential) use is classified as a permitted use in the R-4 General Residential District.

Section 3.2 of the PUD Ordinance provides development standards for apartment uses, which are outlined below. Staff has provided a response pertaining to the proposed development's applicability to each standard.
- Building height shall be limited to three (3) stories;
- The proposed apartment buildings will be two (2) stories in height.
- Each apartment unit shall have individual access from the exterior;
- Each unit will have individual access from the exterior of the building.
- At least one parking space shall be provided for each dwelling unit in an interior, enclosed area;
\(66 \%\) of the total number of units will have an enclosed parking space (see deviation information below).
- At least twenty five percent ( \(25 \%\) ) of each apartment building shall be covered with masonry or brick material;
- \(25.8 \%\) of each apartment building will be covered with masonry.
- The architectural elements, including anti-monotony standards, must be approved as part of the site plan review.
- Site plan approval is being requested as part of the petitioner's request. The Plan Commission's motion on the site plan would include the architectural building elements.

\section*{REQUESTED ACTIONS}

\section*{Special Use - Planned Unit Development Amendment with deviations to the Planned Unit Development and Zoning Ordinance}

The PUD Ordinance was approved through the special use process; as such, any amendments to the PUD must be subsequently approved through the special use process.

Rights have already been granted to develop the subject property with multi-family residential through the establishment of the R-4 General Residential District zoning classification. The PUD Ordinance sets forth public notification requirements that specified only adjacent property owners (properties directly bordering of the subject property) are required to receive a letter when a site plan was submitted to the Village for review. The public notification process did not require signs to be posted, newspaper publication or letters to be sent to property owners within \(\mathbf{2 5 0}\) ' of the subject property. Said notification requirements are only being triggered due to the following PUD and Zoning Ordinance deviations:

PUD Amendment - Enclosed Parking Spaces
As previously referenced, the PUD Ordinance requires at least one parking space to be provided for each dwelling unit in an enclosed space. The proposed plans include a total of 172 enclosed parking spaces, which represents \(66 \%\) of the total number of residential units (260). The original Ordinance (approved in 2012) only required a total of \(20 \%\) of the units to have at least one parking space provided for each dwelling unit in an enclosed space.

\section*{PUD Amendment - Development Plan Processing}

The petitioner is requesting the ability to establish a schedule that would allow the preliminary development plans to constitute the final development plans. Per this request, the preliminary plans would constitute the final plans as long as the final plans are consistent with the approved preliminary plans. If the petitioner were to make any plan revisions after approval of the preliminary plans, staff would review the final plans to determine if any further approval by the Plan Commission or Village

Board would be required. Staff notes this has been common practice with many of the recent development projects.

Orchard Road is under the jurisdiction of Kane County. If the petitioner is required to amend the site plan to accommodate any required Kane County traffic improvements or easement restrictions adjacent to Orchard Road, such changes shall be deemed to be a "Technical Change" to the development plans.

\section*{Zoning Ordinance Amendment - Orchard Road Landscape Buffer \& Parkway Trees}

Per Chapter 14.10.C.3.a of the Zoning Ordinance, a \(50^{\prime}\) landscaped buffer shall be provided and maintained on all properties adjoining the following streets: Airport Road, Deerpath Road, Illinois Route 25, Illinois Route 31, Illinois Route 56, Mooseheart Road, Oak Street, Orchard Road, Randall Road. The original development plans submitted by the petitioner included a 50' landscaped buffer adjacent to Deerpath Road, West Mooseheart Road and Orchard Road. Kane County is requiring an additional \(15^{\prime}\), of the subject property for right-of-way purposes; as such, the landscaped buffer adjacent to Orchard Road was reduced to \(35^{\prime}\). The terms of right-of-way dedication are included in the Intergovernmental Agreement between the Village and Kane County, which designates \(170^{\prime}\) of right-of-way along Orchard Road to Kane County. Staff notes the Orchard Commons development located directly to the south also has a reduced landscaped buffer of \(35^{\prime}\) as a result of said right-of-way dedication.

The Zoning Ordinance requires parkway trees to be planted in any parkway at the equivalent of one tree at an average interval of every forty (40) linear feet. The development plans include parkway trees plantings along West Mooseheart Road and Orchard Road. It is likely Kane County will prohibit the planting of the parkway trees along Orchard Road if deemed be a hazard. If Kane County prohibits the planting of parkway trees along Orchard Road, the petitioner would be required to plant additional trees within the landscaped buffer along Orchard Road at a ratio of one tree for every two parkway trees. Such changes shall also be deemed to be a "Technical Change" to the development plans.

\section*{Preliminary Final Plat of Subdivision}

The subject property is currently comprised of two separate parcels located north of the dedicated connector road. The petitioner intends to consolidate the two parcels north of the connector road into one lot and create Lot 1 of the Seasons at North Aurora Subdivision. A final plat of subdivision will be provided at final engineering. As part of this request, preliminary final plat consideration is being requested. As such, the preliminary plat would constitute the final plat. As long as the final plat is consistent with the preliminary plat, no further or approval by the Plan Commission and/or Village Board would be required. If the petitioner is required to make any minor changes to the plat to accommodate any engineering comments, such changes shall be deemed to be a "Technical Change" to the plat.

\section*{Site Plan Approval}

Per the approved Annexation Agreement, site plan approval is required by the Village prior to development of any one or more lots, without the need for a public hearing. Standards for site plan review are established in Chapter 4.4 - Site Plan Review of the North Aurora Zoning Ordinance; however, the governing Annexation Agreement establishes a set of site development standards as outlined below. Staff notes only the Village Board has discretion over changes to the Annexation

Agreement and staff is providing the applicable site plan standards for informational purposes as these standards are typically included in a PUD Ordinance.

Compliance: The Final Site Plan is in compliance with the terms of this Ordinance and the Annexation Agreement.

Circulation: The traffic circulation for the one or more lots is deemed adequate for the use contemplated for such one or more lots and is in harmony with the traffic circulation needs for the larger development.

Pedestrian Pathways: Pedestrian pathways within such lots are approved as adequate for the use contemplated for such one or more lots and are in harmony with the pedestrian needs for the larger development. Sidewalks shall be constructed on both sides of all internal public streets. Sidewalks shall also be constructed on the adjacent frontages of Orchard Road, Deerpath Road, Tanner Road, and Mooseheart Road.

Site Plan Engineering: The final engineering for the area to be developed is substantial compliance with the Final Subdivision Engineering and is approved by the Village Engineer.

Site Plan Landscaping: The parking lot and foundation landscaping proposed for the area within the Final Site Plan shall be in compliance with the Village Ordinances existing as of the date hereof and must be approved by the Village Community Development Director, Plan Commission, and Board of Trustees along with the Final Site Plan.

Signage: Any signage other than signage on buildings as permitted by Village ordinance shall require approval as part of the Final Site Plan.

Architecture: The building elevations, materials, and design elements shall be reviewed and approved by the Village. The Village will allow the types of materials, elevations, and design comparable to similar projects already approved in the Village as of the date of this Agreement.

\section*{COMPREHENSIVE PLAN}

The 2015 Comprehensive Plan recommends 'Single Family-Detached' (single-family homes) use for the subject property. Rights to multi-family residential zoning were approved for the subject property prior to the Comprehensive Plan 2015 update and the inconsistency between the zoning and the Comprehensive Plan designations may be the result of an error or oversight. The subject property is located in the Comprehensive Plan's West Gateway Subarea Plan, which includes the properties along Orchard Road stretching from Interstate 88 to [the south of] White Oak Drive. A recommendation of the West Gateway Subarea Plan applies to the proposed development as a transitional land use: higher density residential uses should separate active commercial areas from the Village's quiet single-family neighborhoods and provide dense population to support planned commercial uses.

\section*{FINDINGS \& RECOMMENDATION}

The Community Development Department finds that the information presented meets the Standards for Specials Uses as submitted by the petitioner, made part of this petition and as set forth in the Zoning Ordinance. The proposed site plan meets site plan review standards of the North Aurora Zoning Ordinance and the Stanley L. Zepelak Trust PUD and Annexation Agreement. Based on the above considerations, staff recommends that the Plan Commission make the following motion recommending approval of Petition \#22-02, subject to the following conditions:
1. All dumpsters located on the subject property shall be enclosed per Section 14.11.A of the Zoning Ordinance.
2. One parking lot island shall be provided between every ten (10) parking spaces.
3. All planted parkway trees shall be the species and sizes specifically identified in Chapter 16.12.190.C. 8 of the Subdivision Ordinance.
4. Within the off-street parking facilities two-way traffic aisles shall be at least twenty-four (24) feet in width.
5. A photometric plan shall be submitted and approved by the Village prior to building permit issuance.
6. If the petitioner is required to make any minor changes to the plat to accommodate any engineering comments, such changes shall be deemed to be a "Technical Change" to the plat.
7. If the petitioner is required to amend the site plan to accommodate any Kane County traffic improvements, such changes shall be deemed to be a "Technical Change" to the development plans.
8. If Kane County prohibits the planting of parkway trees along Orchard Road, the petitioner shall plant additional trees within the landscaped buffer along Orchard Road at a ratio of one tree for every two parkway trees. Such changes shall also be deemed to be a "Technical Change" to the development plans.

\section*{APPLICATION FOR SPECIAL USE}

VILLAGE OF NORTH AURORA
Board of Trustees
25 East State Street
North Aurora, IL 60542

PETITION NO. 22-02
FILE NAME SEmons M NORTM AULORA
DATE STAMP

\section*{I. APPLICANT AND OWNER DATA}
\begin{tabular}{ll} 
Name of Applicant & Fiduciary Real Estate Development Inc. - Anthony DeRosa \\
\cline { 2 - 3 } Applicant Address 789 North Water Street, Suite 200, Milwaukee, WI 53202 \\
Applicant Telephone \# 414-246-8402 \\
Email Address tderosa@fred-inc.com
\end{tabular}

Property Owner(s) Lucaya Asset Management LLC - Stanley Zepelak
Owner Address 17753 Lucaya Drive, Lakewood Ranch, FL 34202
Owner Telephone \# 630-253-6721

\section*{II. ADDRESS, USE AND ZONING OF PROPERTY}

Address of Property West side of Orchard Road and south of Mooseheart Road
(indicate location if no common address)
Legal Description: \(\qquad\)
\(\qquad\)

Parcel Size 21.7 acress

Present Use Vacant Farmland

> (business, manufacturing, residential, etc.)

Present Zoning District R-4 General Residence District
(Zoning Ordinance Classification)

\section*{III. PROPOSED SPECIAL USE}

Proposed Special Use Multifamily/Amending existing PUD
(Zoning Ordinance Classification)
Code Section that authorizes Special Use See PUD
Has the present applicant previously sought to rezone or request a special use for the property or any part thereof? No

If so, when? \(\qquad\) to what district?

Describe briefly the type of use and improvement proposed \(\qquad\) See project narrative
\(\qquad\)
\(\qquad\)

What are the existing uses of property within the general area of the Property in question? \(\qquad\)
See project narrative
\(\qquad\)

To the best of your knowledge, can you affirm that there is a need for the special use at the particular location? (Explain) Yes, see project narrative.
\(\qquad\)
\(\qquad\)
\(\qquad\)

\section*{Attach hereto a statement with supporting data that the proposed special use will conform to the following standards:}
1. The proposed special use is, in fact, a special use authorized in the zoning district in which the property is located.
2. The proposed special use is deemed necessary for the public convenience at that location.
3. The proposed special use does not create excessive additional impacts at public expense for public facilities and services, and will be beneficial to the economic welfare of the community.
4. The proposed use is in conformance with the goals and policies of the Comprehensive Plan, and all Village codes and regulations.
5. The proposed special use will be designed, located, operated, and maintained so as to be harmonious and compatible in use and appearance with the existing or intended character of the general vicinity.
6. The proposed special use will not significantly diminish the safety, use, enjoyment, and value of other property in the neighborhood in which it is located.
7. The proposed special use is compatible with development on adjacent or neighboring property.
8. The proposed special use minimizes potentially dangerous traffic movements, and provides adequate and safe access to the site.
9. The proposed special use provides the required number of parking spaces and maintains parking areas, in accordance with the requirements of this Ordinance.
10. The proposed special use is served by adequate utilities, drainage, road access, public safety, and other necessary facilities.
11. The proposed special use conforms with the requirements of this Ordinance and other applicable regulations.

\section*{IV CHECKLIST FOR ATTACHMENTS}

The following items are attached here to and made a part hereof:
1. Introduction Letter. Please include information relevant to the proposed use of the property and business operations (hours of operation, number of employees, etc.).
2. Legal Description of the subject property(s).
3. Illinois Land Surveyor's plat of survey.
4. Site Plan illustrating all existing and proposed improvements.
5. Statement and supporting data regarding Standards for Special Uses (above).
6. Filing fee in the amount of \(\$ 300.00\), if paid by check make payable to the Village of North Aurora.
7. Specified escrow deposit ( \(\$ 4,000\) minimum). May be included with filing fee. Remaining funds refundable upon project completion.
8. Visit the Illinois Department of Natural Resources' website www.dnr.state.il.us and initiate a consultation using DNR's EcoCat online application.
9. Visit the Kane DuPage Soil and Water Conservation District's website www.kanedupageswcd.org for a Land Use Opinion Application

The Applicant authorizes the Village of North Aurora representatives to enter on to the property to make inspection during the hearing process.

The Applicant is responsible for publishing a legal notice in the newspaper, sending United States mail notices to properties within 250 feet, and posting a sign on the property advertising the public hearing. These shall be in accordance with village Ordinances at the times decided by the Village of North Aurora.

The undersigned hereby agrees to reimburse the Village for all costs of court reporter fees for attendance at and transcript of hearings) and other professional service fees for services rendered in connection with this application as defined in Appendix B of the North Aurora Zoning Ordinance. Such reimbursement shall be made promptly upon receipt of invoices from the Village, whether or not this application for special use is approved.

1 (we) certify that all of the above statements and the statements contained in any documents submitted herewith are true to the best of my (our) knowledge and belief.


Applicant or Authorized Agent
\(1 / 31,2022\)


Date
\[
|-3|-2022
\]

Date


Following are the names and addresses of all property owners within 250 feet of the property in questions for which the special use being is being requested.

TAX PARCEL NO. PROPERTY OWNER MAILING ADDRESS
See atached Excel spreadsheet
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I, fish by Poult , being first duly sworn on oath certifies that all of the above statements and the statements contained in any papers or plans submitted herewith are true and correct.

\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{Situs Addresses (physical locations)} \\
\hline Parcel & & Address & City & State & Zip \\
\hline 1231400026 & & & NORTH AURORA & IL & \\
\hline 1231300017 & & & NORTH AURORA & IL & 60542 \\
\hline 1231300011 & Donald \& Jadwiga Kozloski & 38W537 MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231300012 & Hugo \& Anastasia Cardenas & 035701 DEERPATH RD & NORTH AURORA & IL & 60542 \\
\hline 1231300014 & MANGO CREEK DEERPATH LLC & \[
\begin{aligned}
& 13101 \text { W MISSISSIPPI CT } \\
& \text { APT } 408
\end{aligned}
\] & LAKEWOOD & CO & 80228 \\
\hline 1231300017 & LUCAYA ASSET MANAGEMENT LLC STANLEY L ZEPELAK, MANAGER & 17753 LUCAYA DR & LAKEWOOD RANCH & FL & 34202 \\
\hline 1231327003 & JOSE M GUZMAN \& ROSA CORONA & 801 N DEERPATH RD & NORTH AURORA & IL & 60542 \\
\hline 1231400018 & ELIZABETH DUEWEL & 38W194 MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231400020 & JERRY L JONES & 38W195 MOOSEHEART RD & NORTH AURORA & IL. & 60542 \\
\hline 1231400024 & MANGO CREEK DEERPATH LLC & \[
\begin{aligned}
& \text { 13101 W MISSISSIPPI CT } \\
& \text { APT } 408
\end{aligned}
\] & LAKEWOOD & CO & 80228 \\
\hline 1231402001 & BATAVIA PARK DISTRICT & 327 W WILSON ST & BATAVIA & IL & 60510 \\
\hline 1231402002 & MIRADOR COMMUNITY ASSOCIATION & PO BOX 413 & NORTH AURORA & IL. & 60542 \\
\hline 1231402003 & MIRADOR COMMUNITY ASSOCIATION & PO BOX 413 & NORTH AURORA & IL & 60542 \\
\hline 1231403007 & ARMANDO C \& JOCELYN G DURAN & 826 HATHAWAY CT & NORTH AURORA & IL & 60542 \\
\hline 1231403008 & SOCORRO MONJARAZ & 818 Hathaway Court & AURORA & IL & 60505 \\
\hline 1231403009 & MAGDALENO CAMPOS \& SUGEY RODRIGUEZ MORALES & 810 HATHAWAY CT & NORTH AURORA & IL & 60542 \\
\hline 1231403010 & SAMI LORENE \& KYLIE HALL & 1641 W MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231403011 & VOELKNER LIVING TRUST SCOTT M \& JESSICA VOELKNER, TRUSTEES & 1633 W MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231403012 & STEPHON \& LUCIA BUTLER & 1625 W MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231403013 & CATHERINE MARY \& KUCHA, MARTIN R DILLON & 1617 W MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231403014 & JERECKI M \& TOTTENGARNER, CHEVEONNE M GARNER & 1609 W MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231403015 & RANDALL G \& NETTIE K WILLIAMS & 802 HATHAWAY CT & NORTH AURORA & IL & 60542 \\
\hline 1231422005 & SYLVIA WILLIAMS & 819 HATHAWAY CT & NORTH AURORA & IL & 60542 \\
\hline 1231422006 & JIA, JIANHUA \& WANG, HAIYAN & 811 HATHAWAY CT & NORTH AURORA & IL & 60542 \\
\hline 1231422007 & FLINCHUM, CATHERINE \& KENNEY, DEBORAH A & 803 HATHAWAY CT & NORTH AURORA & IL & 60542 \\
\hline 1231425007 & RYAN \& NANCY DIETLIN & 816 BENSON CT & NORTH AURORA & IL & 60542 \\
\hline 1231425008 & MICHAEL \& MONICA L RITTER & 808 BENSON CT & NORTH AURORA & IL & 60542 \\
\hline 1231425009 & TURCIOS, MAX E \& SPENCER-TURCIOS, FLORA & 800 BENSON CT & NORTH AURORA & IL & 60542 \\
\hline 1231426001 & ROBERT MICHAEL ZWOLINSKI & 1613 HARTSBURG LN & NORTH AURORA & IL & 60542 \\
\hline 1231426002 & SCARPITTI, KRISTINA NICOLE \& EKSTROM, CODY STEPHEN & 1605 HARTSBURG LN & NORTH AURORA & IL & 60542 \\
\hline 1231426003 & MARLA KRAMER & 1597 HARTSBURG LN & NORTH AURORA & IL & 60542 \\
\hline 1231426004 & ADRIAN A \& CAROLYN S DUESLER & 1589 HARTSBURG LN & NORTH AURORA & IL & 60542 \\
\hline 1231426005 & MICHAEL APPS & 1581 HARTSBURG LN & NORTH AURORA & IL & 60542 \\
\hline 1231428001 & JOSEPH S \& DARLENE M EMANUEL & 1572 W MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231428002 & SUSEN H DEMARS & 1564 W MOOSEHEART RD & NORTH AURORA & IL & 60542 \\
\hline 1231351008 & LISA A QUIGLEY & 035714 DEERPATH RD & NORTH AURORA & IL & 60542 \\
\hline 1231351008 & LISA A QUIGLEY & P.O. Box 1835 & BATAVIA & IL & 60510 \\
\hline 1231300009 & LUCAYA ASSET MANAGEMENT LLC & 17753 Lucaya Dr & LAKEWOOD RANCH & FL & 34202 \\
\hline 1231300009 & LUCAYA ASSET MANAGEMENT LLC & 035652 DEERPATH RD & NORTH AURORA & IL & 60542 \\
\hline
\end{tabular}

\section*{APPLICATION FOR SPECIAL USE}

Attach hereto a statement with supporting data that the proposed special use will conform to the following standards:
1. The proposed special use is, in fact, a special use authorized in the zoning district in which the property is located.

FRED Response: Yes, multifamily is allowed within the current zoning district.
2. The proposed special use is deemed necessary for the public convenience at that location.

FRED Response: Yes, multifamily is deemed necessary for this location.
3. The proposed special use does not create excessive additional impacts at public expense for public facilities and services, and will be beneficial to the economic welfare of the community.

FRED Response: Yes, the proposed special use does not create excessive impacts to public facilities.
4. The proposed use is in conformance with the goals and policies of the Comprehensive Plan, and all Village codes and regulations.

FRED Response: Yes, the proposed use in in line with the existing zoning and Village codes.
5. The proposed special use will be designed, located, operated, and maintained so as to be harmonious and compatible in use and appearance with the existing or intended character of the general vicinity.

FRED Response: Yes, the proposed special use is designed, located, operated and maintained in a harmonious and compatible fashion to the surrounding uses.
6. The proposed special use will not significantly diminish the safety, use, enjoyment, and value of other property in the neighborhood in which it is located.

FRED Response: Yes, the special use will not diminish the safety, use, enjoyment and value of the surrounding properties.
7. The proposed special use is compatible with development on adjacent or neighboring property.

FRED Response: Yes, the proposed special use is compatible with the surrounding developments.
8. The proposed special use minimizes potentially dangerous traffic movements, and provides adequate and safe access to the site.

FRED Response: Yes, the proposed special use minimizes potentially dangerous traffic movements and provides for safe access to the site.
9. The proposed special use provides the required number of parking spaces and maintains parking areas, in accordance with the requirements of this Ordinance.

FRED Response: Yes, the proposed special se provides the required number of parking spaces and maintains parking areas in accordance with the Village Ordinance.
10. The proposed special use is served by adequate utilities, drainage, road access, public safety, and other necessary facilities.

FRED Response: Yes, the proposed special use is served by adequate utilities, drainage, road access, public safety, and other necessary facilities.
11. The proposed special use conforms with the requirements of this Ordinance and other applicable regulations.

FRED Response: Yes, the proposed special use conforms with the requirements of this Ordinance.

\section*{Seasons at North Aurora} Detailed Proposal Description


North Aurora, IL

February 2, 2022

\section*{Subject Property}

The subject property is located on the west side of Orchard Road and to the south of Mooseheart Road. The proposed site will be approximately 21.7 acres in size. The subject property is currently vacant farmland.


\section*{Proposed Development}

The Seasons at North Aurora is an institutional grade, best-in-class market rate, amenity rich multifamily development designed with the end user in mind. The development has a true suburban feel with a significant amount of green space. The community will consist of two-story walkup buildings with 20 unit configurations. The buildings have been designed in a townhouse style which feature ground level, private direct entrances as well as attached garages for select units. The apartments, which include studio, one bedroom, two bedroom, and three bedroom floor plans, are strategically placed within the buildings.


Careful attention was taken to maximize floor plan efficiency, functionality and flexibility to provide residents with a great value. Each of the 260 market rate apartment homes will feature modern finishes including open concept floor plans, designer cabinetry, expansive windows, quartz countertops, upgraded appliances, oversized balconies/patios, large walk-in closets and 9-foot ceilings. Flooring will consist of high quality grade carpet in all bedrooms and designer plank flooring throughout the balance of the apartment. All units will include a split HVAC system (similar to what is in a single family home), individual hot water heaters, energy efficient windows and a full-size washer and dryer to maximize efficiency and comfort. The building layouts and floor plan designs of this development provide a variety of housing options and price points that will cater to a broad demographic group.

In addition to the individual unit features, the 5,000 square foot clubhouse has been designed to create an unparalleled resident experience with its resort style pool, 24-hour fitness center with high end cardio equipment and club room with an entertaining style kitchen. Pedestrian walkways will also be featured throughout the site, including connections to the onsite dog park.


Building and Unit Counts: The multifamily development will include thirteen (13) freestanding buildings with 20 apartment units per building for a total of 260 apartments. The unit mix consists of 26 studios ( \(10 \%\) of total), 104 one-bedrooms ( \(40 \%\) of total), 104 two-bedrooms ( \(40 \%\) of total), and 26 three-bedrooms ( \(10 \%\) of total). The overall density is approximately 12 units/acre.


Design/Materials: The exterior finish of the buildings includes \(25 \%\) brick, oversized windows and fiber cement siding. A mix of large balconies and private patios complement the exterior elevations and the gabled roof details contribute to the suburban feel of the community.

Parking: Parking will be provided through a mix of building-attached garages containing twelve spaces throughout eight attached garages, detached garages with eight or six bays each, and surface parking. Total parking provided is 598 spaces for all 260 units, resulting in a parking ratio of 2.3 spaces per unit. The plan includes 172 enclosed garage spaces for an overall garage ratio of .66 garage spaces/unit.


Access and Circulation: Two access points will be provided off the Deerpath/Orchard Connector Road. The eastern access point will only be a right in right out.


Landscape/Buffering and Pedestrian Ways: The site plan reveals a greened-up site featuring courtyards and pedestrian walkways that flow throughout the development. Per the IGA with KDOT the Orchard Road right of way needs to be 170 feet instead of the currently platted 140 feet. The additional 15 feet will come out of the originally provided 50 ' landscape buffer, the landscape buffer will now be reduced down to 35 ' to meet the IGA and KDOT requirements.

Finishes: Apartment finishes include: upgraded stainless steel appliance package, upgraded cabinetry with 42" upper cabinets, large windows, open concept floor plans, in-unit full size washer / dryer, walk in closets, and oversized balconies/patios.


\section*{Development Details}
- Multifamily Property Size: 21.7 acres
- Current Zoning:
- R-4 General Residence District
- The Comprehensive Plan earmarks this site as Corridor Commercial.
- Residential Density: 12 units per acre

- Parking Requirements
- Code requires 2 parking spaces per dwelling unit
- Per code the multifamily project requires 520 parking spaces
- 598 parking spaces are being provided
- Significant Increment in Property Assessed Value:
- Current property assessed value: \(\$ 7,427\)

- Architecture
- Two story design that is in scale with adjacent properties
- Parcel to the North - Single family homes
- Parcel to the South - Vacant farmland
- Parcel to the East - Single family homes
- Parcel to the West - Single family homes
- Storm Water Management
- Utilizing the natural site characteristics to manage all storm water management
- No additional runoff will be created from the development

\section*{Market Demand}

There are a multitude of characteristics that help support the long-term success of a multifamily development including location, community amenities, quality of construction, and overall cost of living. The demand for additional rental housing along with the current overall strength of the local rental market provides Fiduciary an opportunity to bring this "Class A" development to the market.

Fiduciary's market research indicates pent up demand for a unique type of new, luxury apartment rentals in the Village of North Aurora. Specifically, there is a growing demand for alternatives to single family homes. Many of the multifamily housing options in the local submarket are older communities with dated finishes and amenities which cannot fulfill the current market demand.


In recent years, demand, especially from young professionals and empty nesters, has shifted away from home ownership towards multifamily housing. There is a demand for new, high-end market rate apartment homes in North Aurora from those that are looking to downsize or no longer own a home, but want to stay within the community, as well as from those professionals that work for major employers in the area. This demand is from a demographic group that will spend their money in the communities in which they live and is looking for an upscale development to call home.

Fiduciary is targeting a different demographic that is not looking to live in the typical 3 or 4 story building with common corridors, but rather a smaller scale building type with private, direct entries creating more of a condo or townhome type feel. This group wants the community they live in to feel more suburban with an abundance of green space, walkability within the development, abundant amenity package and conveniently located.

Given the site characteristics and the pent up demand for high quality multifamily housing in this area, Fiduciary has identified that the highest and best use for the subject property is a multifamily development.


\section*{About Fiduciary Real Estate Development, Inc.}

Fiduciary Real Estate Development, Inc. (FRED) is an experienced developer and investor in commercial real estate focusing on multifamily projects. Founded in 1984, FRED's proven track record of successful investment management has grown the business into one of Wisconsin's largest property management companies. The company owns and manages more than 8,000 market rate apartments, with an owned portfolio conservatively valued at over \(\$ 1.5\) billion.

FRED's mission is to develop and manage exceptional residential communities that provide a distinctive living experience through enthusiastic service and dynamic teamwork. Visionary leadership, accountability with integrity and camaraderie and passion for people guide the vision of creating communities that are vibrant and enrich residents' lives.

Below are a few of Fiduciary's most recent awards.


InNovative marketing OF THE YEAR
2020 AOMA TOBY Awards


SENIOR HOUSING OF THE YEAR
2019 AOMA TOBY Awards


SENIOR HOUSING PROPERTY OF THE YEAR 2020 AOMA TOBY Awards


MILLENNIAL PROPERTY OF THE YEAR 2019 AOMA TOBY Awards


GEN X
PROPERTY OF THE YEAR 2020 AOMA TOBY Awards


GENX
PROPERTY OF THE YEAR
2019 AOMA TOBY Awards


INNOVATIVE MARKETING OF THE YEAR 2019 AOMA TOBY Awards


PROPERTY OF THE YEAR (201-300 UNITS)
2019 AASCW


11|Fiduciary Real Estate Development, Inc.

ABOUTNS
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Fiduciary Real Estate Development，Inc．（FRED）is

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 into Wisconsin＇s largest property management company．
The company owns and manages more than 8，000 market rate apartments throughout the states of Wisconsin，Minnesota and Illinois with an owned portfolio conservatively valued at over
\＄1 Billion．
 of real estate development and in－house construction experience． The company has developed over
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\section*{FOUNDERS \\ OUR}






\section*{SEASONS AT NORTH
AURORA
North Aurora, Illinois \\ ?imulary real estate \\ }

\section*{DATE: 2 FEBRUARY 2022}
CONCEPTUAL DEVELOPMENT SUBMISSION
Architecture






Seasons



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GENERAL PLANTING SPECIFICATIONS:

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 3-03 PLANTING PROCEDURES:







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    PART 1-GENERAL
1.01 DESCRIPTION:


1-02 QUALITY ASSURANCE:




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1.03 DELLVERY, STORAGE \& HANDLING:




 1.04 PROUECT CONDITIONS:

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 1.05 PRELIMINARY ACCEPTANCE:
 1.06 WARRANTY:





\title{
Village of North Aurora Memorandum
}

To: President and Village Board of Trustees
From: Jason Paprocki, Finance Director
CC: Steven Bosco, Village Administrator
Date: April 4, 2022
RE: FY 2022-23 Draft Budget
The FY 2022-23 Draft Budget has been completed and emailed separately to the Board for discussion at the Committee of the Whole meeting. In addition, the Draft Budget has been posted on the Village's website for public viewing. An overview presentation of the Draft Budget will be given tonight, along with time for the Board to provide feedback.

The FY 2022-23 Draft Budget will also be on the Committee of the Whole agenda for the April \(18^{\text {th }}\) meeting for follow-up questions and discussion. The official Public Hearing will be on April \(18^{\text {th }}\) as well, with final approval of the Budget scheduled for the May \(2^{\text {nd }}\) Village Board meeting.```


[^0]:    ${ }^{1}$ IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law enforcement agency to locate crashes. Therefore, location data may vary in previous years since data prior to 2015 was physically located by bureau personnel.

[^1]:    LOS = Level of Service

[^2]:    LOS = Level of Service

[^3]:    Kenig Lindgren O'Hara Aboona, Inc.
    9575 W. Higgins Rd., Suite 400 Rosemont, Illinois, United States 60018
    (847)518-9990 bmay@kloainc.com

