All property owners, tenants, and neighborhood associations within 300 feet of this rezoning have been notified per UDO Sec. 2.2.11 *Public Notification*.

BACKGROUND INFORMATION:

Location: 2517 Kelly Road
Owner: Fahey Family Farm, LLC
Applicant: Trilandco, LLC
Authorized Agent: Matthew Carpenter, Parker Poe

PROJECT DESCRIPTION:

Acreage: ±5.8591
PIN: 0731434504
Current Zoning: Planned Unit Development-Conditional Zoning (PUD-CZ #15CZ33)
Proposed Zoning: Planned Unit Development-Conditional Zoning (PUD-CZ)
2045 Land Use Map: Mixed Use: High Density Residential/Office Employment/Commercial Services
Town Limits: ETJ

Adjacent Zoning & Land Uses:

	Zoning	Land Use
North:	Planned Unit Development-Conditional Zoning (PUD-CZ #15CZ33)	Townhomes (West Village)
South:	Residential Agricultural (RA)	Single-family
East:	Residential Agricultural (RA)	NC 540 Highway
West:	Planned Unit Development-Conditional Zoning (PUD-CZ #15CZ33); Mixed Office-Residential-Retail-Conditional Zoning (MORR-CZ #19CZ23)	Kelly Road; Single-family; Office; Future West Village Commercial

EXISTING CONDITIONS:
The subject property is located on the east side of Kelly Road and west of NC 540 Highway. The parcel includes structures and existing vegetation. The property was originally rezoned to Planned Unit Development-Conditional Zoning on July 19, 2016 as part of the West Village development. The parcel is classified as "POD 1" and is approved for non-residential uses.

NEIGHBORHOOD MEETING:
The applicant conducted the first neighborhood meeting on January 30, 2025 and the second neighborhood meeting on April 15, 2025. The neighborhood meeting reports are attached.

2045 LAND USE MAP:
The 2045 Land Use Map classifies the property subject to this rezoning as Mixed Use: High Density Residential/Office Employment/Commercial Services. The proposed amendments to the PUD-CZ zoning are consistent with that classification.

APEX TRANSPORTATION PLAN
The Apex Transportation Plan identifies a roundabout at the location of the proposed site driveway on Kelly Road across from a future major collector street west of Kelly Road. Additionally, the Transportation Plan shows widening on Kelly Road from the intersection northward to a 4-lane, median divided

thoroughfare with 6-foot bike lanes and 5-foot sidewalks, and southward as a 3-lane thoroughfare with widening with 6-foot bike lanes and 5-foot sidewalks. The proposed amendments to the PUD-CZ zoning are consistent with the Apex Transportation Plan.

WCPSS COORDINATION:
No increase in residential density is proposed as part of this rezoning and so an impact letter from WCPSS was not requested.

ENVIRONMENTAL ADVISORY BOARD RECOMMENDATIONS:
This rezoning was exempt from meeting with the Apex Environmental Advisory Board (EAB) per Unified Development Ordinance (UDO) Section 2.1.9.A.2.a. The rezoning amends zoning conditions which have no environmental impact on a site including, but not limited to, revisions to architectural standards, building height, setbacks, and uses.

BACKGROUND:
The current West Village PUD includes transportation and road improvement conditions linked to the non-residential parcels. Currently, the transportation infrastructure improvements in the non-residential district must be completed before issuance of the first certificate of occupancy for a non-residential building. As the PUD is currently written, the first parcel to develop a non-residential use(s) would need to construct all required road improvements and transportation infrastructure for the overall permitted 500,000 square feet of non-residential uses, with the exception of what is specifically tied to POD 3 (i.e. construction of the roundabout on Kelly Road and Public Street A connection from the Kelly Road roundabout to Street B roundabout).

The proposed PUD amendment would allow for POD 1 to develop and provide only those transportation improvements associated with this property with the remaining road improvements to occur with development in the remaining non-residential pods (PODS 2 and 3).

PLANNED UNIT DEVELOPMENT PLAN:
The applicant is proposing the following changes to Section 13: Public Facilities associated with POD 1 with this PUD amendment. There are no other changes proposed to the previously approved rezonings. Deletions are shown with strikethrough and additions are shown in bold.

Section 13: Public Facilities
The proposed PUD shall meet all Public Facilities requirements as set forth in UDO Section 2.3.4(F)(1)(f) and be designed according to sound engineering standards.Specifically, road and utility infrastructure shall be as follows:

- **General Roadway Infrastructure:**
  All proposed roadway infrastructure will be consistent with the Town of Apex UDO and Transportation Plan ~~(updated in 2011),~~ and the Traffic Impact Analysis approved by the Town of Apex and NCDOT. An internal road network will be provided in accordance with the Town's UDO. All road networks will promote connectivity wherever possible to adjacent neighborhoods, undeveloped property, nearby points of interest, and municipal destinations. Further, cul-de-sacs will be avoided except where environmental features make through streets unfeasible.

Roadway Phasing – Prior to time of the fifty-first certificate of occupancy associated with the residential located off of Old US HWY 1, the second point of access (southernmost portion of Street A),

necessary portion of the southernmost roundabout and Street B shown shall be constructed. As a part of the non-residential development in Pod 3, the roundabout proposed on Kelly Road shall be constructed along with the portion of Street A tying back to the southernmost roundabout. Prior to time of the first certificate of occupancy associated with ~~Pod 3~~ **POD 3**, **as part of the development of POD 3**, Street A will be complete the connection from Kelly Road and Old US HWY 1.

- **Off-Site Transportation Conditions:**

The project will also provide the following off-site transportation conditions:

All recommendations on state-maintained roadways are subject to NCDOT review and approval as part of the driveway permits and encroachment agreements. Build 2018 refers to the first plat of residential development. ~~or as otherwise determined by Apex Town Council during the review and approval of subdivision plans. Build 2020~~ **Build 2030** refers to the first plat of commercial development ~~or as otherwise determined by Apex Town Council during the review and approval of commercial stie plans~~ **for POD 2 or POD 3 and does not include the development of POD 1, also identified as Build 2028, which is subject to separate recommendations set forth below. Please note that prior analysis and the original basis for build-out recommendations was based on a Build 2020 analysis.** Internal Protected Storage Length (IPS) refers to the required minimum distance from the intersection along the proposed driveway or street before any full movement commercial driveway access or public street intersection will be allowed.

Developer shall provide right-of-way dedication along Kelly Road and Old US 1 based on a 100-foot right-of-way. Where Old US 1 abuts railroad right-of-way the developer shall be responsible for dedicating public right-of-way 70 feet from roadway centerline along the project frontage or as otherwise required to accommodate a 100-foot road right-of-way exclusive of railroad right-of-way.

Street 'A' and Street 'B' (including Kelly Road at Site Drive #4)

- Street 'A' shall be constructed as a 3-lane 38-foot curb and gutter street with 5-foot sidewalk on both sides on 62-foot public right-of-way.
- Street 'B' shall be constructed as a 2-lane 39'-foot curb and gutter street with on-street parking and 6-foot sidewalk on both sides on 53-foot public right-of-way.
- Residential driveway access shall not be permitted along Streets 'A' and 'B'.
- Prior to platting the 51st residential unit in the Residential area located adjacent to Old US 1, developer shall construct and dedicate as public Street 'A' from Site Drive #5 to the roundabout at Street 'B', roundabout serving Street 'A' at Street 'B', and Street 'B' from Site Drive #6/Pleasant Plains Road to the roundabout at Street 'A'.
- Prior to the first certificate of occupancy within POD 3, developer shall construct and dedicate as public Street 'A' from the roundabout at Street 'B' to Kelly Road at Site Drive #4 and construct a roundabout on Kelly Road at Site Drive #4. The roundabout will serve a 4-lane divided roadway to the north and 2-lane roadwayto the south ~~for Build 2020~~.
    - **POD 1: *Kelly Road Roundabout*. Developer shall prepare a preliminary design and engineer's estimate for review and approval and dedicate right of way and construction easements for the future construction of a roundabout at the intersection of the site driveway, Kelly Road, and Street A as shown on the Town of Apex Thoroughfare and Collector Street Plan (the "Roundabout"). Prior to site plan final plat for POD 1, Developer shall pay a fee in lieu for eight percent (8%) of the estimated costs to design and construct the Roundabout.**

Kelly Road at Olive Chapel Road

- Developer shall construct a 200-foot eastbound right turn lane and a 300-foot additional westbound left turn lane on Olive Chapel Road (with southbound receiving through lane on Kelly Road) for ~~Build 2020~~ **Build 2030**.
- **POD 1: Developer shall provide a preliminary plan and engineer's estimate for review and approval and pay a fee in lieu in the amount of 8% of the total estimated cost of the aforementioned improvements prior to site plan final plat in POD 1.**

Kelly Road at Apex Barbecue Road

- ~~Developer shall construct a 400-foot eastbound left turn lane, 350-foot westbound left turn lane, 350-foot northbound left turn lane, 150-foot northbound right turn lane, 350-foot southbound left turn lane, and 200-foot southbound rightturn lane for Build 2020.~~
- **Improvements have been completed by others satisfying the prior zoning requirements for a Build 2020 analysis including the following: construction of a 400-foot eastbound left turn lane, 350-foot westbound left turn lane, 350-foot northbound left turn lane, 150-foot northbound right turn lane, 350-foot southbound left turn lane, and 200-foot southbound right turn lane. No additional improvements are recommended for updated commercial build dates, Build 2028 (POD 1) and Build 2030 (PODS 2 & 3).**

Kelly Road at Southwinds Run

Developer shall construct a 100-foot northbound left turn lane on Kelly Road, an additional (second) northbound through lane through the intersection to drop as a right turn at Site Drive #1, and begin an additional (second) southbound through lane immediately south of Southwinds Run for ~~Building 2020~~ **Build 2030**.

Old US 1 at Kelly Road

- Developer shall construct a 100-foot westbound right turn lane on Old US 1 for Build 2018.
- Developer shall convert the intersection to right-in/right-out as well as construct an additional westbound through lane, beginning at the NC 540 Southbound off-ramp as a free-flow right turn exiting the ramp, along with a 200-foot westbound right turn lane on Old US 1 for ~~Build 2020~~ **Build 2030**.
- ~~Prior to platting the 300th residential unit, the developer will complete a signal warrant analysis at the intersection of Old US 1 and Kelly Road to determine if a traffic signal is warranted at the intersection. If the signal is warranted and approved for installation by NCDOT, the developer will permit and install the traffic signal. However, if Street "A" through POD 3 is under construction prior toinstallation of the signal, then the requirement for the signal shall be waived and the Kelly Road / Old US 1 intersection shall be converted to a Right-In/Right-Out as required in the improvements for the commercial development.~~

NC 540 Ramps at Old US 1

- Developer shall provide a free-flow right turn lane for the NC 540 Southbound off-ramp and additional receiving through lane continuing west to drop as a right turn at Site Drive #6 on Old US 1 for ~~Build 2020~~ **Build 2030**.

Old US 1 at Pleasant Plains Road & Site Drive #6

- Developer shall construct Site Drive #6 with a through-right lane and a 200-footleft turn lane for Build 2018.
- Developer shall construct a 200-foot eastbound left turn lane and 200-foot westbound left turn

lane on Old US 1 for Build 2018.

- ~~Developer shall install a traffic signal once warranted and approved by NCDOT and install communication with the NC 540 traffic signals for Build 2020.~~
- Developer shall construct an additional westbound through lane on Old US 1 to drop as a right turn lane at Site Drive #6 for ~~Build 2020~~ **Build 2030**.
- Developer shall construct an additional eastbound through lane on Old US 1beginning 400 feet west of Site Drive #6 for ~~Build 2020~~ **Build 2030.**

Kelly Road at Site Drive #1

- Developer shall construct Site Drive #1 as a right-in and right-out only providing 100 feet IPS and a 100-foot northbound right turn lane on Kelly Road for Build 2018.
- Developer shall construct an additional northbound through lane on Kelly Road to drop as a right turn lane at Site Drive #1 for ~~Build 2020~~ **Build 2030.**

Kelly Road at Site Drive #2

- Developer shall construct Site Drive #2 as a right-in and right-out only providing 100 feet IPS for Build 2018.
- Developer shall construct an additional northbound through lane and an additional southbound through lane on Kelly Road at Site Drive #2 for ~~Build 2020~~ **Build 2030**.

Kelly Road at Site Drive #3

- Developer shall construct Site Drive #3 with a 100-foot eastbound right turn lane and a 100-foot westbound right turn lane on the Site Drive #3 approaches adjacent to through-right lanes with 200 feet IPS for Build 2018.
- Developer shall construct 100-foot northbound and 100-foot southbound left turn lanes on Kelly Road for Build 2018.
- Developer shall construct an additional (second) southbound through lane and additional (second) northbound through lane on Kelly Road at Site Drive #3 for ~~Build 2020~~ **Build 2030**.

Old US 1 at Site Drive #5

- Developer shall ~~construct~~ **convert** Site Drive #5 ~~as a full-movement intersection~~ **from a right-in/right-out to a signalized full-movement intersection** with 200-foot dual southbound left turn lanes and a 200-foot southbound right turn lane providing 300 feet IPS providing connectivity to both the residential and commercial phases for ~~Build 2020~~ **Build 2030**.
- Developer shall construct an additional (second) westbound through lane and add a 200-foot westbound right turn lane on Old US 1 for ~~Build 2020~~ **Build 2030**.
- Developer shall construct a 300-foot eastbound left turn lane and an additional (second) eastbound through lane on Old US 1 dropping 1000 feet east of the intersection for ~~Build 2020~~ **Build 2030**.

Construction of the preceding roadway infrastructure improvements shall not be required for the development of POD 1. Fee in lieu payments and additional right of way dedication where required for POD 1 are noted in the above sections where applicable. Development of POD 1 shall include the below roadway infrastructure improvements which shall be consistent with the Traffic Impact Analysis on file with the Town of Apex prepared by DRMP dated 1/30/2025 and the Town of Apex Transportation Plan. The road improvements shall be subject to Town of Apex and North Carolina

Department of Transportation approval.

- ***Kelly Road Widening*. Developer shall dedicate right of way for the length of the property's Kelly Road frontage, measured a minimum of 55 feet from the existing centerline of Kelly Road, and widen and improve Kelly Road for the length of the property's Kelly Road frontage based on an 84-foot back-to-back curb and gutter 4-lane divided roadway with 5-foot sidewalks and 6-foot bike lanes in a 110-foot right of way.**

- ***Kelly Road and Site Driveway*. Developer shall construct:**
  - **the Site Driveway with a stop-controlled approach, one ingress lane, and one egress lane; and**
  - **a southbound left turn lane on Kelly Road with a minimum of 75 feet of storage.**

- **Electric Charging Stations:**
  Developer shall provide 2 charging stations, one within the residential and one within the non-residential for electric vehicles within the overall project. In addition to these committed stations, two additional charging stations will be installed as part of the overall project.

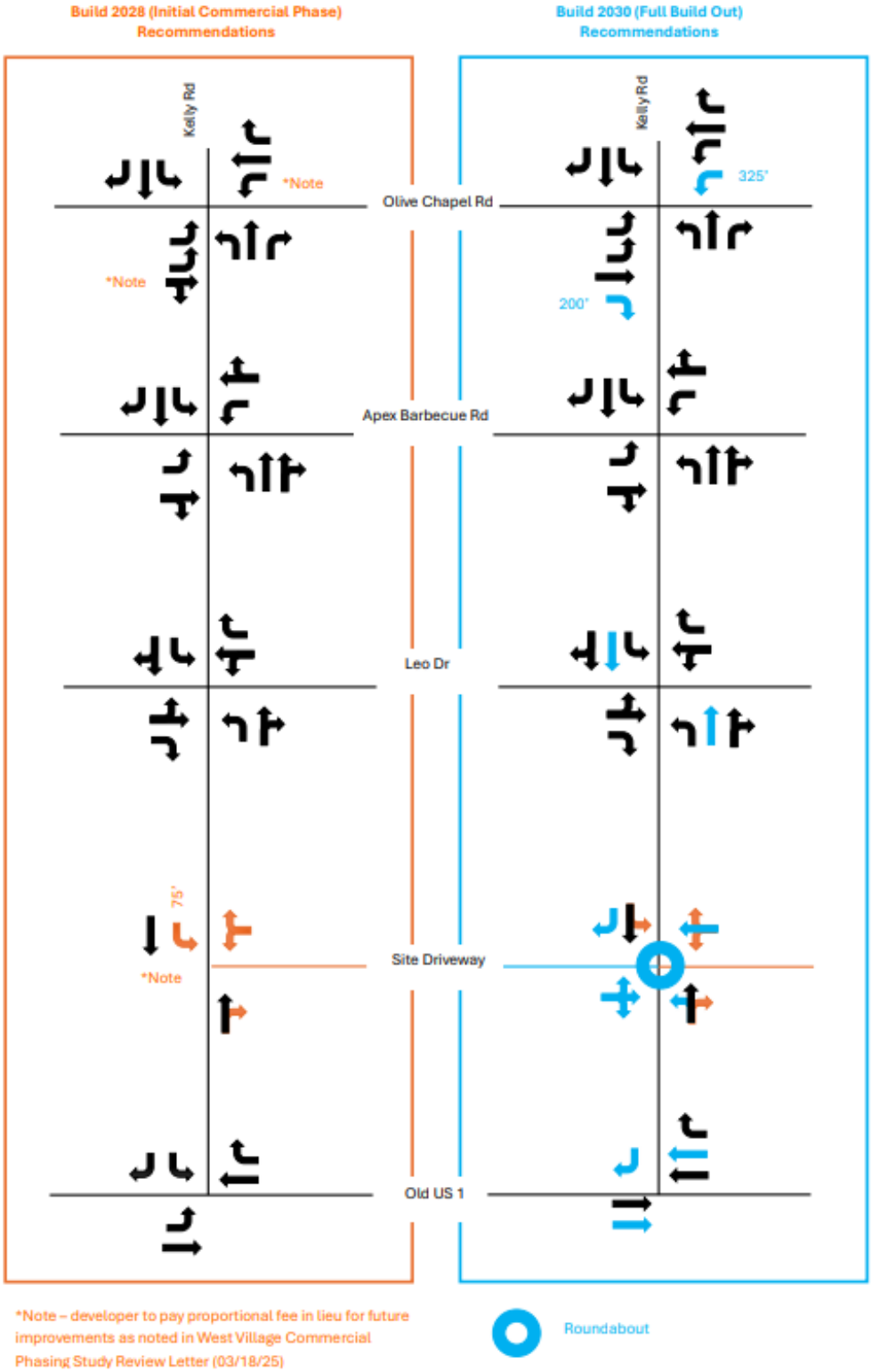
- **Water & Sewer Utilities:**
  All water and sanitary sewer service will be provided by the developer and conform to the Town of Apex Public Works and Utilities Department requirements. Preliminary location and tie in points are shown on sheet C-3 and C-4 of the PUD plans. The water extension shown along Kelly Road to Old US HWY 1, alternatively, could be located through Pod – 3 Commercial and southernmost residential accomplishing the intent of the routing shown on sheet C-3 and C-4. The ultimate routing will be dictated by timing of commercial development, roadway construction internal to the site and timing commitment related to the extension. However, this will be coordinated with the Town of Apex at time of site plan and construction documents.

  Developer to provide $75,000 in escrow for use by the Westwinds community for insurance associated with community wells, for use in drilling new wells or to extend public water into the community as a primary or secondary water source. Ultimately, the well-related use of the funds will be determined by the Westwinds community. Land owners will be required to annex into the Town ofApex prior to making any connections to public water services provided by the Town.

- **Other Utilities:**
  Electricity will be provided by Apex Electric. Phone, cable and gas will beprovided by the developer and shall meet the Town of Apex standards as outlined in the UDO.

PROPOSED TRANSPORTATION IMPROVEMENTS:

The following figure illustrates the proposed Build 2028 (Initial Commercial Phase) Recommendations and Build 2030 (Full Build Out) recommendations:



PLANNING STAFF RECOMMENDATION:
Planning staff recommends approval of Rezoning #25CZ05 West Village PUD Amendment as proposed by the applicant.

Transportation staff agree with the proposed transportation conditions proposed by the applicant and the TIA recommendations. Under Build 2028, the conditions of the site driveway are expected to operate acceptably as proposed.

PLANNING BOARD RECOMMENDATION:
The Planning Board held a public hearing on May 12, 2025 and unanimously recommended approval with the conditions offered by the applicant.

ANALYSIS STATEMENT OF THE REASONABLENESS OF THE PROPOSED REZONING:
This Statement will address consistency with the Town's comprehensive and other applicable plans, reasonableness, and effect on public interest:

> The proposed amendments to the current PUD-CZ zoning are consistent with the 2045 Land Use Map which classifies the area to be rezoned as Mixed Use: High Density Residential/Office Employment/Commercial Services.
>
> The proposed rezoning is reasonable and in the public interest as it will ensure compliance with the existing conditions of the previously approved PUDs while allowing the subject property (POD 1) to construct transportation improvements appropriate to the size of the parcel and the square footage of the non-residential use. The PUD amendment will allow the remaining road improvements from the previous rezoning to be constructed as the non-residential uses are developed in POD 2 and 3.

PLANNED UNIT DEVELOPMENT DISTRICT AND CONDITIONAL ZONING STANDARDS:
Standards
In return for greater flexibility in site design requirements, Planned Development (PD) Districts are expected to deliver exceptional quality community designs that preserve critical environmental resources; provide high quality community amenities; incorporate creative design in the layout of buildings, Resource Conservation Area and circulation; ensure compatibility with surrounding land uses and neighborhood character; provide high quality architecture; and provide greater efficiency in the layout and provision of roads, utilities, and other infrastructure. The Planned Development (PD) Districts shall not be used as a means of circumventing the Town's adopted land development regulations for routine developments.

1. Planned Unit Development (PUD-CZ) District
   In approving a Planned Development (PD) Zoning District designation for a PUD-CZ, the Town Council shall find the PUD-CZ district designation and PD Plan for PUD-CZ demonstrates compliance with the following standards:
   a) *Development parameters*
      (i) The uses proposed to be developed in the PD Plan for PUD-CZ are those uses permitted in Sec. 4.2.2 *Use Table.*
      (ii) The uses proposed in the PD Plan for PUD-CZ can be entirely residential, entirely non-residential, or a mix of residential and non-residential uses, provided a minimum percentage of non-residential land area is included in certain mixed use areas as specified on the 2045 Land Use Map. The location of uses proposed by the PUD-CZ must be shown in the PD Plan with a maximum density for each type of residential use and a maximum square footage for each type of non-residential use.

(iii) The dimensional standards in Sec. 5.1.3 *Table of Intensity and Dimensional Standards, Planned Development Districts* may be varied in the PD Plan for PUD-CZ. The PUD-CZ shall demonstrate compliance with all other dimensional standards of the UDO, North Carolina Building Code, and North Carolina Fire Code.

(iv) The development proposed in the PD Plan for PUD-CZ encourages cluster and compact development to the greatest extent possible that is interrelated and linked by pedestrian ways, bikeways and other transportation systems. At a minimum, the PD Plan must show sidewalk improvements as required by the Apex Transportation Plan and the *Town of Apex Standard Specifications and Standard Details*, and greenway improvements as required by the Town of Apex Parks, Recreation, Greenways, and Open Space Plan and the Apex Transportation Plan. In addition, sidewalks shall be provided on both sides of all streets for single-family detached homes.

(v) The design of development in the PD Plan for PUD-CZ results in land use patterns that promote and expand opportunities for walkability, connectivity, public transportation, and an efficient compact network of streets. Cul-de-sacs shall be avoided unless the design of the subdivision and the existing or proposed street system in the surrounding area indicate that a through street is not essential in the location of the proposed cul-de-sac, or where sensitive environmental areas such as streams, floodplains, and wetlands would be substantially disturbed by making road connections.

(vi) The development proposed in the PD Plan for PUD-CZ is compatible with the character of surrounding land uses and maintains and enhances the value of surrounding properties.

(vii) The development proposed in the PD Plan for PUD-CZ has architectural and design standards that are exceptional and provide higher quality than routine developments. All residential uses proposed in a PD Plan for PUD-CZ shall provide architectural elevations representative of the residential structures to be built to ensure the Standards of this Section are met.

b) *Off-street parking and loading*. The PD Plan for PUD-CZ shall demonstrate compliance with the standards of Sec. 8.3 *Off-Street Parking and Loading*, except that variations from these standards may be permitted if a comprehensive parking and loading plan for the PUD-CZ is submitted as part of the PD Plan that is determined to be suitable for the PUD-CZ, and generally consistent with the intent and purpose of the off-street parking and loading standards.

c) *RCA*. The PD Plan for PUD-CZ shall demonstrate compliance with Sec. 8.1.2 Resource Conservation Area, except that the percentage of RCA required under Sec. 8.1.2 may be reduced by the Town Council by no more than 10% provided that the PD Plan for PUD-CZ includes one or more of the following:

(i) A non-residential component;

(ii) An overall density of 7 residential units per acre or more; or

(iii) Environmental measures including but not limited to the following:

a. The installation of a solar photovoltaic (PV) system on a certain number or percentage of single-family or townhouse lots or on a certain number or percentage of multifamily, mixed-use, or nonresidential buildings. All required solar installation shall be completed or under construction prior to 90% of the building permits being issued for the approved number of lots or buildings. For single-family or townhouse installations, the lots on which these homes are

located shall be identified on the Master Subdivision Plat, which may be amended;

b. The installation of a geothermal system for a certain number or percentage of units within the development; or

c. Energy efficiency standards that exceed minimum Building Code requirements (i.e. SEER rating for HVAC).

d) *Landscaping*. The PD Plan for PUD-CZ shall demonstrate compliance with the standards of Sec. 8.2 *Landscaping, Buffering and Screening*, except that variations from these standards may be permitted where it is demonstrated that the proposed landscaping sufficiently buffers uses from each other, ensures compatibility with land uses on surrounding properties, creates attractive streetscapes and parking areas and is consistent with the character of the area. In no case shall a buffer be less than one half of the width required by Sec. 8.2 or 10 feet in width, whichever is greater.

e) *Signs.* Signage in the PD Plan for PUD-CZ shall demonstrate compliance with Sec. 8.7 *Signs*, except that the standards can be varied if a master signage plan is submitted for review and approval concurrent with the PD plan and is determined by the Town Council to be suitable for the PUD-CZ and generally consistent with the intent and purpose of the sign standards of the UDO. The master signage plan shall have design standards that are exceptional and provide for higher quality signs than those in routine developments and shall comply with Sec. 8.7.2 *Prohibited Signs*.

f) *Public facilities.* The improvements standards and guarantees applicable to the public facilities that will serve the site shall comply with Article 7: *Subdivision and* Article 14: *Parks, Recreation, Greenways, and Open Space*.

(i) The PD Plan for PUD-CZ demonstrates a safe and adequate on-site transportation circulation system. The on-site transportation circulation system shall be integrated with the off-site transportation circulation system of the Town. The PD Plan for PUD-CZ shall be consistent with the Apex Transportation Plan and the *Town of Apex Standard Specifications and Standard Details* and show required right-of-way widths and road sections. A Traffic Impact Analysis (TIA) shall be required per Sec. 13.19.

(ii) The PD Plan for PUD-CZ demonstrates a safe and adequate on-site system of potable water and wastewater lines that can accommodate the proposed development, and are efficiently integrated into off-site potable water and wastewater public improvement plans. The PD Plan shall include a proposed water and wastewater plan.

(iii) Adequate off-site facilities for potable water supply, sewage disposal, solid waste disposal, electrical supply, fire protection and roads shall be planned and programmed for the development proposed in the PD Plan for PUD-CZ, and the development is conveniently located in relation to schools and police protection services.

(iv) The PD Plan shall demonstrate compliance with the parks and recreation requirements of Sec. Article 14: *Parks, Recreation, Greenways, and Open Space* and Sec. 7.3.1 *Privately-owned Play Lawns* if there is a residential component in the PUD-CZ.

g) *Natural resource and environmental protection.* The PD Plan for PUD-CZ demonstrates compliance with the current regulatory standards of this Ordinance related to natural resource and environmental protection in Sec. 6.1 *Watershed Protection Overlay District*, Sec. 6.2 *Flood Damage Prevention Overlay District*, and Sec. 8.1 *Resource Conservation*.

h) *Storm water management.* The PD Plan shall demonstrate that the post-development rate of on-site storm water discharge from the entire site shall not exceed pre-development levels in accordance with Sec. 6.1.7 of the UDO.

i) *Phasing.* The PD Plan for PUD-CZ shall include a phasing plan for the development. If development of the PUD-CZ is proposed to occur in more than one phase, then guarantees shall be provided that project improvements and amenities that are necessary and desirable for residents of the project, or that are of benefit to the Town, are constructed with the first phase of the project, or, if this is not possible, then as early in the project as is technically feasible.

j) *Consistency with 2045 Land Use Map.* The PD Plan for PUD-CZ demonstrates consistency with the goals and policies established in the Town's 2045 Land Use.

k) *Complies with the UDO.* The PD Plan for PUD-CZ demonstrates compliance with all other relevant portions of the UDO.

Legislative Considerations

The Town Council shall find the PUD-CZ designation demonstrates compliance with the following standards. Sec. 2.3.3.F:

The applicant shall propose site-specific standards and conditions that take into account the following considerations, which are considerations that are relevant to the legislative determination of whether or not the proposed conditional zoning district rezoning request is in the public interest. These considerations do not exclude the legislative consideration of any other factor that is relevant to the public interest.

1) *Consistency with 2045 Land Use Map.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and consistency with the purposes, goals, objectives, and policies of the 2045 Land Use Map.

2) *Compatibility.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and compatibility with the character of surrounding land uses.

3) *Zoning district supplemental standards.* The proposed Conditional Zoning (CZ) District use's compliance with Sec. 4.4 *Supplemental Standards,* if applicable.

4) *Design minimizes adverse impact.* The design of the proposed Conditional Zoning (CZ) District use's minimization of adverse effects, including visual impact of the proposed use on adjacent lands; and avoidance of significant adverse impacts on surrounding lands regarding trash, traffic, service delivery, parking and loading, odors, noise, glare, and vibration and not create a nuisance.

5) *Design minimizes environmental impact.* The proposed Conditional Zoning District use's minimization of environmental impacts and protection from significant deterioration of water and air resources, wildlife habitat, scenic resources, and other natural resources.

6) *Impact on public facilities.* The proposed Conditional Zoning (CZ) District use's avoidance of having adverse impacts on public facilities and services, including roads, potable water and wastewater facilities, parks, schools, police, fire and EMS facilities.

7) *Health, safety, and welfare.* The proposed Conditional Zoning (CZ) District use's effect on the health, safety, or welfare of the residents of the Town or its ETJ.

8) *Detrimental to adjacent properties.* Whether the proposed Conditional Zoning (CZ) District use is substantially detrimental to adjacent properties.

9) *Not constitute nuisance or hazard.* Whether the proposed Conditional Zoning (CZ) District use constitutes a nuisance or hazard due to traffic impact or noise, or because of the number of persons who will be using the Conditional Zoning (CZ) District use.

10) *Other relevant standards of this Ordinance.* Whether the proposed Conditional Zoning (CZ) District use complies with all standards imposed on it by all other applicable provisions of this Ordinance for use, layout, and general development characteristics.

March 18, 2025

Rynal Stephenson, PE
DRMP
5808 Faringdon Pl., Suite 100
Raleigh, NC 27609

Subject: **Staff summary and comments for West Village Commercial Phasing TIA, 01/30/2025**

Mr. Stephenson:

Please review the following comments and recommendations on your traffic impact analysis (TIA). You may schedule a meeting with me and your client to discuss at your convenience.

Study Area

This phasing analysis studied access to the proposed development via one (1) site driveway:

- Kelly Road and Proposed Site Driveway (Site Driveway #4 in the 2016 TIA)

Additionally, the following four (4) intersections were studied in the analysis:

- Kelly Road and Olive Chapel Road
- Kelly Road and Apex Barbeque Road
- Kelly Road and Leo Drive
- Kelly Road and Old US 1

Trip Generation

This phasing study analyzes the initial commercial phase of the West Village development as well as the Full Build Out of the development. The initial commercial phase, to be completed in 2028, is proposed to consist of:

- 12,130 s.f. daycare
- 14,500 s.f. of retail
- 14,500 s.f. of office space

Traffic generation for the initial commercial phase is 1,628 new daily trips with 113 inbound trips and 74 outbound trips in the A.M. peak hour and 97 inbound trips and 128 outbound trips in the P.M. peak hour. These trips are new trips assigned to the external roadway network.

The Full Build, to be completed in 2030, is proposed to consist of:

- 200,000 s.f. of office space
- 255,000 s.f. of retail and restaurant
- Bank with 8 drive-thru windows
- 20,000 s.f. daycare
- Gas Station with Convenience Store – 16 pumps

Traffic generation at full build-out on the external roadway network is 23,761 new daily trips with 1,279 inbound trips and 888 outbound trips in the A.M. peak hour and 1,400 inbound trips and 1,590 outbound trips in the P.M. peak hour.

Trip Distribution, Assignment, and Growth

Retail and Office Trips:

- 10% north of Olive Chapel Road on Kelly Road
- 15% east and 5% west of Kelly Road on Olive Chapel Road
- 10% east and 10% west of Kelly Road on Apex Barbecue Road
- 10% north and 10% south on NC 540
- 15% east on Old US 1
- 15% west on Old US 1

Residential Phase (single-family and townhome) trips:

- 15% north of Olive Chapel Road on Kelly Road
- 10% east of Kelly Road on Olive Chapel Road
- 10% west of Kelly Road on Apex Barbecue Road
- 25% north and 20% south on NC 540
- 15% east on Old US 1
- 5% west on Old US 1

The TIA included traffic from four approved background developments in addition to 4% annual background growth.

- Depot 499
- Townes at Pleasant Park (fka Sears Property)
- Friendship Village
- Holland Road Assembly

Traffic Capacity Analysis and Recommendations

The following table shows the intersections that were included in the original West Village TIA. Some intersections were not analyzed in this phased analysis as improvements were unlikely to change based on traffic patterns. The table shows the improvements at each intersection that are identified as part of the zoning conditions for the West Village PUD but have not yet been constructed.

Intersection	**Remaining Improvements per West Village PUD Zoning Conditions** ***(not yet constructed)***
Kelly Rd at Olive Chapel Rd	1. Construct 200' EB right-turn lane 2. Construct an additional 300' WB left-turn lane (with SB receiving through lane on Kelly Rd)
Kelly Rd at Apex Barbecue Rd	None remaining
Kelly Rd at Southwinds Run *(not analyzed in phasing study)*	1. Construct 100' NB left-turn lane 2. Construct a second NB through lane through the intersection and drop as right-turn lane at Site Drive #1 (Eva Pearl Dr) 3. Begin an additional SB through lane immediately south of Southwinds Run
Kelly Rd at Old US 1	1. Convert the intersection to a right-in/right-out 2. Construct an additional WB through lane, beginning at NC 540 SB off-ramp as a free-flow right turn existing the ramp 3. Construct 200' WB right-turn lane
NC 540 NB Ramps at Old US 1 *(not analyzed in phasing study)*	None remaining
NC 540 SB Ramps at Old US 1 *(not analyzed in phasing study)*	1. Construct free-flow right-turn lane for the NC 540 SB off-ramp 2. Construct additional receiving through lane continuing west to drop as right-turn lane Site Drive #6 (Pleasant Plans Rd)
Humie Olive Rd at Old US 1 *(not analyzed in phasing study)*	None remaining
Kelly Rd at Eva Pearl Dr (fka Site Drive #1) *(not analyzed in phasing study)*	1. Construct an additional NB through lane to drop as right-turn lane at Site Drive #1 (Eva Pearl Dr)
Kelly Rd at Gaither St (fka Site Drive #2) *(not analyzed in phasing study)*	1. Construct an additional NB through lane 2. Construct an additional SB through lane
Kelly Rd at Leo Dr (fka Site Drive #3)	1. Construct an additional NB through lane 2. Construct an additional SB through lane

Table continued on next page.

Table continued from previous page.

Intersection	Remaining Improvements per West Village PUD Zoning Conditions *(not yet constructed)*
Kelly Rd at Site Driveway (fka Site Drive #4)	1. Construct and dedicate 'Road A' from the roundabout at Boyette St and Pleasant Plains Rd to Kelly Rd at Site Drive #4 2. Construct roundabout on Kelly Rd at Site Drive #4 (Site Driveway)
Old US 1 at Boyette St (fka Site Drive #5) *(not analyzed in phasing study)*	1. Convert Boyette St to a full-movement intersection 2. Construct dual 200' SB left-turn lanes 3. Construct 200' SB right-turn lane 4. Construct an additional WB through lane 5. Construct 200' WB right-turn lane 6. Construct 300' EB left-turn lane 7. Construct additional EB through lane, dropping 1000' east of the intersection
Old US 1 at Pleasant Plains Rd (/fka Site Drive #6) *(not analyzed in phasing study)*	1. Construct an additional WB through lane to drop as a right-turn lane at Site Drive #6 (Pleasant Plains Rd) 2. Construct an additional EB through lane beginning 400' west of Site Drive #6 (Pleasant Plains Rd)

The initial commercial phase is projected to generate 1,628 daily trips and the total commercial portion of the West Village development is projected to generate 23,761 new daily trips. The initial commercial phase is approximately 7% of the total commercial development planned.

Level of Service (LOS) is a grade of A through F assigned to an intersection, approach, or movement to describe how well or how poorly it operates. LOS A through D is considered acceptable for peak hour operation. LOS E or F describes potentially unacceptable operation, and developers may be required to mitigate their anticipated traffic impact to improve LOS based on the Apex Unified Development Ordinance (UDO).

Tables 1 through 5 describe the levels of service (LOS) for the scenarios analyzed in the TIA. "*NA"* is shown when the scenario does not apply. "*Free*" indicates when an approach is in free-flow and there is no LOS metric for the approach. The scenarios are as follows:

- **Existing 2024** - Existing year 2024 traffic.
- **No Build 2028** – Projected year (2028) with background traffic growth and background development.
- **Build 2028**– Projected year (2028) with background traffic, and initial commercial phase build-out, including recommended improvements where applicable.
- **No Build 2030 -** Projected year (2030) with background traffic growth and background development.
- **Build 2030** – Projected year (2030) with background traffic, and full build-out, including recommended improvements where applicable.

Kelly Road at Site Driveway (Site Drive #4 in original TIA)

Table 1. A.M./P.M. Peak Hour Levels of Service Kelly Road at Site Driveway		
	Build 2028 (Unsignalized)	**Build 2030** (Roundabout)
Overall	*NA*	B / F
Site Drive #4 (Eastbound)	NA	B / F
Site Driveway (Westbound)	B / C[1]	A / C
Kelly Road (Northbound)	*Free*	B / D
Kelly Road (Southbound)	A / A[2]	A / B

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

Initial Commercial Phase (Build 2028)

- The site driveway will be constructed with one ingress lane and one egress lane, with stop control for the site driveway approach.
- Southbound left-turn lane with a minimum 75 feet full width storage plus appropriate taper.
- A northbound right-turn lane with 50 feet of full width storage is marginally warranted but not recommended due to future plans to construct a roundabout at this location.

Full Build (Build 2030) – Improvements per original West Village PUD Requirements

- Construction of a roundabout.
- Construct an additional northbound receiving lane and terminate the second southbound lane as an exclusive right-turn lane to make Kelly Road a four-lane median-divided roadway north of the intersection; 2 lane roadway remains south of intersection.
- Site Driveway 4 (EB and WB approaches) constructed with one ingress lane and one egress lane, each.

Apex staff recommendations:

Staff concurs with the operational results of the TIA. Under Build 2028 conditions the site driveway is expected to operate acceptably as proposed. It should be noted that the Apex Transportation Plan identifies a roundabout at this location on Kelly Road, to tie in with an eastbound major collector street. Additionally, the Transportation Plan shows widening of Kelly Road from this intersection north to a four lane, median divided roadway.

In addition to the southbound left-turn lane at the Site Driveway, staff recommends a proportional fee in lieu for the future roundabout at the Site Driveway which is required to be constructed during the development of POD 3, west of Kelly Road.

Kelly Road at Leo Drive (Site Drive #3 in original TIA)

Table 2. A.M./P.M. Peak Hour Unsignalized Levels of Service Kelly Road and Leo Drive					
	Existing 2024	**No Build 2028**	**Build 2028**	**No Build 2030**	**Build 2030**
Overall	*NA*	*NA*	*NA*	*NA*	*NA*
Leo Drive (Eastbound)	B / B[1]	B / C[1]	B / C[1]	B / C[1]	E / F[1]
Leo Drive (Westbound)	B / B[1]	B / B[1]	B / C[1]	B / C[1]	D / F[1]
Kelly Road (Northbound)	A / A[2]	A / A[2]	A / A[2]	A / A[2]	A / B[2]
Kelly Road (Southbound)	A / A[2]	A / A[2]	A / A[2]	A / A[2]	A / B[2]

1. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

Initial Commercial Phase (Build 2028)

- No improvements are recommended for the developer under Build 2028 conditions.

Full Build (Build 2030) – Improvements per original West Village PUD Requirements

- Construct additional northbound and southbound through lanes to make Kelly Road a four-lane median-divided roadway.

Apex staff recommendations:

Staff concurs with the TIA. The site trips for the first commercial phase of the West Village development will only add to the northbound and southbound through movements at this intersection. Under Build 2030 conditions, the eastbound and westbound approaches are anticipated to operate at LOS D or worse during both the AM and PM peak hours. However, the queues are between one and three vehicles long on these approaches. The poor level of service is mainly due to the increase in volumes along Kelly Road, reducing gaps available for minor approach traffic.

Kelly Road at Olive Chapel Road

Table 3. A.M./P.M. Peak Hour Signalized Levels of Service Kelly Road at Olive Chapel Road					
	Existing 2024	**No Build 2028**	**Build 2028**	**No Build 2030**	**Build 2030**
Overall	*C / D*	*E / E*	*E / E*	*E / F*	*E / F*
Olive Chapel Road (Eastbound)	D / E	D / F	D / F	D / F	E / F
Olive Chapel Road (Westbound)	C / C	C / C	C / C	C / C	D / E
Kelly Road (Northbound)	D / D	F / F	F / F	F / F	D / F
Kelly Road (Southbound)	C / C	C / D	D / D	D / F	E / E

TIA recommendations:

Initial Commercial Phase (Build 2028)

- No improvements are recommended for the developer under Build 2028 conditions.

Full Build (Build 2030) – Improvements per original West Village PUD Requirements

- Construct an additional westbound left-turn lane
- Construct an additional southbound receiving lane south of intersection on Kelly Road
- Construct an exclusive eastbound right-turn lane
- Signal phasing and timing adjustments to accommodate new lanes

Apex staff recommendations:

Staff concurs with the TIA findings based on the UDO thresholds for this site by itself, but notes that the site is still a portion of the build-out of the commercial phase of the PUD which has a greater impact as a whole and would still be committed to providing future improvements as noted. Staff recommends a proportionate share of a fee in lieu toward the future improvements for Build 2030 be committed by the Build 2028 phase.

The site trips for the first commercial phase of the West Village development account for less than 3% of the overall traffic at this intersection; therefore, no improvements are recommended for construction in Build 2028. With the improvements for Full Build in place, the intersection is expected to still operate at an overall LOS E during the AM peak hour and LOS F during the PM peak hour, but with less delay than under No Build 2030 conditions.

Kelly Road at Apex Barbecue Road

Table 4. A.M./P.M. Peak Hour Signalized Levels of Service Kelly Road at Apex Barbecue Road					
	Existing 2024	**No Build 2028**	**Build 2028**	**No Build 2030**	**Build 2030**
Overall	*C / C*	*C / C*	*C / D*	*D / E*	*F / F*
Apex Barbecue Road (Eastbound)	B / B	B / B	B / B	C / C	C / C
Apex Barbecue Road (Westbound)	C / C	C / C	C / C	C / C	C / C
Kelly Road (Northbound)	C / C	D / C	D / D	D / D	F / F
Kelly Road (Southbound)	C / C	C / D	C / D	D / F	F / F

TIA recommendations:

Initial Commercial Phase (Build 2028)

- No improvements are recommended for the developer under Build 2028 conditions.

Full Build (Build 2030) – Improvements per original West Village PUD Requirements

- Improvements for this intersection identified in the original TIA for full build conditions have been constructed.

Apex staff recommendations:

Staff concurs with the TIA. The signal is expected to operate at LOS D or better under Build 2028 conditions. The site trips for the first commercial phase of the West Village development account for approximately 6% of the overall traffic at this intersection. However, it should be noted that Build 2030 is extending beyond the build year for the original TIA assumptions that resulted in those recommendations, and the newly projected build out shows overall LOS F and Kelly Road approaches at LOS F. Therefore, staff recommend a reevaluation of recommendations to accommodate Build 2030 when that future site plan is proposed.

Old US 1 at Kelly Road

Table 5. A.M./P.M. Peak Hour Unsignalized Levels of Service Old US 1 at Kelly Road					
	Existing 2024	**No Build 2028**	**Build 2028**	**No Build 2030**	**Build 2030** (Right-in/Right-out)
Overall	*NA*	*NA*	*NA*	*NA*	*NA*
Old US 1 (Eastbound)	A / B[2]	B / B[2]	B / C[2]	B / C[2]	NA
Old US 1 (Westbound)	Free	Free	Free	Free	Free
Kelly Road (Southbound)	F / F[1]	F / F[1]	F / F[1]	F / F[1]	D / F[1]

2. Level of service for stop-controlled minor street approaches.
2. Level of service for left turn movements on free-flowing approaches.

TIA recommendations:

Initial Commercial Phase (Build 2028)

- No improvements are recommended for the developer under Build 2028 conditions.
    - The TIA acknowledges a signal was reviewed, but NCDOT commented they are unlikely to approve one due to proximity to NC 540.

Full Build (Build 2030) – Improvements per original West Village PUD Requirements

- Under Build 2030 conditions this intersection will be converted to a right-in/right-out when a new connection is made between Kelly Road and Old US 1 to the west via a separate portion of the overall West Village development.

Apex staff recommendations:

Staff concurs with the TIA given NCDOT was not in favor of signalization due to proximity to NC 540 or constructing access restrictions at this time. Under Build 2028 conditions, the Kelly Road approach is anticipated to continue to operate at LOS F during both the AM and PM peak hours. The southbound left-turn queue increases by approximately 4 vehicles during the AM peak hour and 6 vehicles during the PM peak hour. Site traffic for the initial commercial phase is expected to be 7% or less of the existing 2024 traffic at this intersection; therefore, no improvements are required.

Under Build 2030 conditions, this intersection will be converted to a right-in/right-out with the new internal street connection between the roundabout on Kelly Road and the one that was previously constructed in West Village according to the zoning conditions. This connection will provide access from Kelly Road at the planned roundabout (Site Drive #4/Site Driveway) to a full movement, signalized intersection at Old US 1.

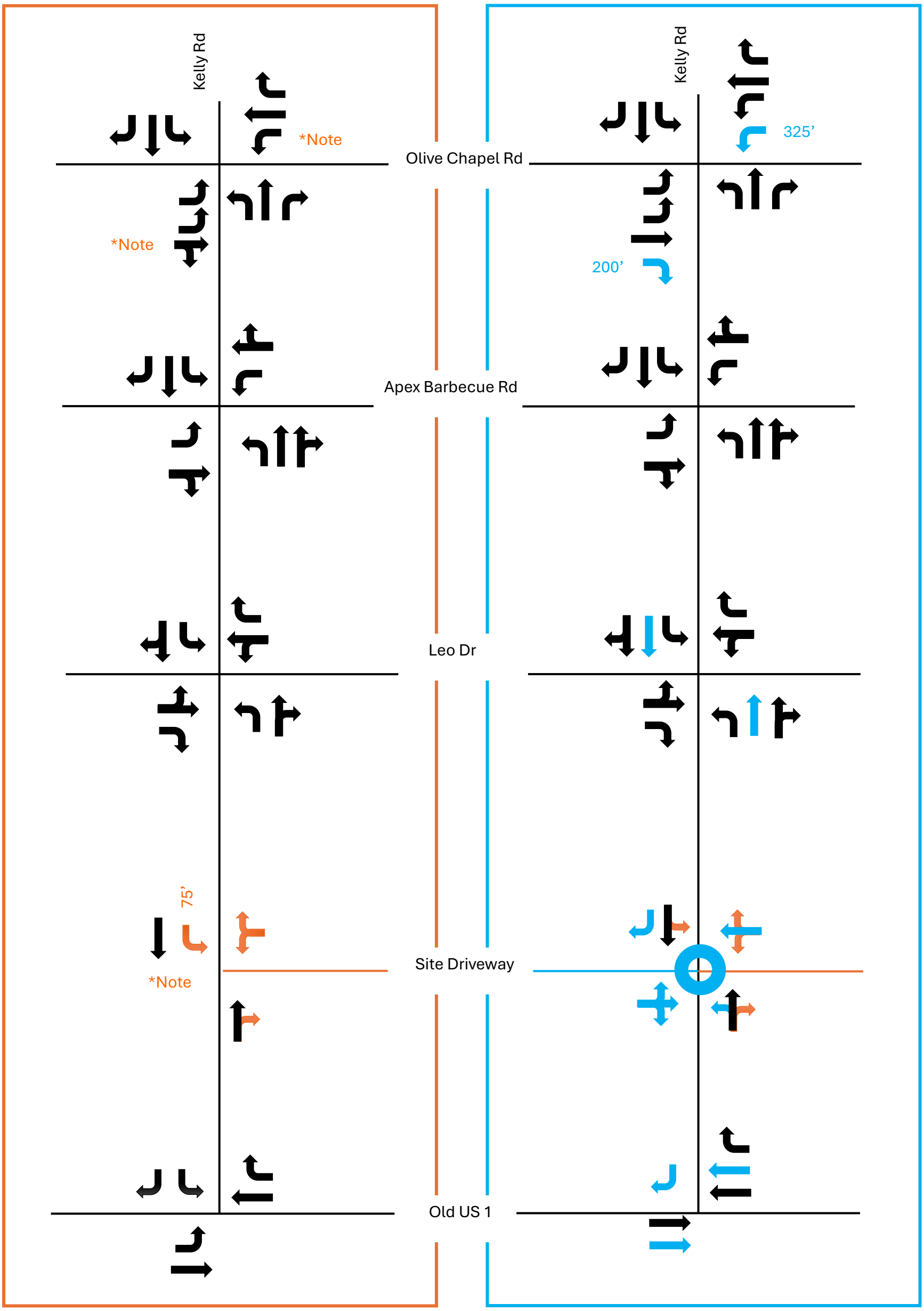
Please coordinate with the NCDOT District Engineer's Office concerning any recommendations on NCDOT facilities. Town staff will be available for meetings to discuss recommendations as needed.

Sincerely,

Jessica McClure, PE
919-372-7448

Build 2028 (Initial Commercial Phase) Recommendations

Build 2030 (Full Build Out) Recommendations



*Note – developer to pay proportional fee in lieu for future improvements as noted in West Village Commercial Phasing Study Review Letter (03/18/25)

Roundabout


Photography Prepared by: Town of Apex Planning Department
March 2025
February 2025 Aerial
Rezoning #25CZ05
Fahey Dr
Leben St
Custom Ln
West Village
Leo Dr
Kelly Rd
540
NC 540 Hwy NB
RAMP NC 540 NB to Salem
NC 540 Hwy SB
RAMP Salem to NC 540 SB
RAMP NC 540 SB to Salem
Salem St
0
200
400
Feet
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PLANNED UNIT DEVELOPMENT APPLICATION

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Application #: 25CZ05 Submittal Date: 4-25-2025

Fee Paid $ Check #

PETITION TO AMEND THE OFFICIAL ZONING DISTRICT MAP

Project Name: West Village PUD Amendment

Address(es): 2517 Kelly Road (West Village PUD POD 1)

PIN(s) 0731434504

Acreage: 5.8591

Current Zoning: PUD-CZ Proposed Zoning: PUD-CZ w/ amended conditions

Current 2045 LUM Designation: Community Mixed Use (CMU); High Density Residential/Office Employment/Commercial Services

Is the proposed rezoning consistent with the 2045 LUM Classification(s)? Yes ☒ No ☐

If any portion of the project is shown as mixed use (3 or more stripes on the 2045 Land Use Map) provide the following:

Area classified as mixed use: Acreage: 5.8591

Area proposed as non-residential development: Acreage: 5.8591

Percent of mixed use area proposed as non-residential: Percent: 100%

Applicant Information

Name: Trilandco, LLC, a North Carolina limited liability company

Address: 4400 Triland Way

City: Cary State: NC Zip: 27518

Phone: c/o Matthew J. Carpenter; 919-835-4032 E-mail: rhamad@trilandproperty.com

Owner Information

Name: Fahey Family Farm, LLC, a North Carolina limited liability company

Address: 1115 Capitata Xing

City: Apex State: NC Zip: 27502

Phone: N/A E-mail: N/A

Agent Information

Name: Matthew J. Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: 919-835-4032 E-mail: MatthewCarpenter@parkerpoe.com

Other contacts: Jeff Roach; Peak Engineering; jroach@peakengineering.com; 919-439-0100

Rynal Stephenson; DRMP; rstephenson@drmp.com

PLANNED UNIT DEVELOPMENT APPLICATION

Application #: 25CZ05 Submittal Date: 4-25-2025

PLANNED UNIT DEVELOPMENT DISTRICT STANDARDS:

In return for greater flexibility in site design requirements, Planned Development (PD) Districts are expected to deliver exceptional quality community designs that preserve critical environmental resources; provide high quality community amenities; incorporate creative design in the layout of buildings, Resource Conservation Area and circulation; ensure compatibility with surrounding land uses and neighborhood character; provide high quality architecture; and provide greater efficiency in the layout and provision of roads, utilities, and other infrastructure. The Planned Development (PD) Districts shall not be used as a means of circumventing the Town's adopted land development regulations for routine developments. The PD text and plan should demonstrate how the standards of Sec. 2.3.4.F are met be the proposed rezoning.

LEGISLATIVE CONSIDERATIONS - CONDITIONAL ZONING

The applicant shall propose site-specific standards and conditions that take into account the following considerations, which are considerations that are relevant to the legislative determination of whether or not the proposed conditional zoning district rezoning request is in the public interest. These considerations do not exclude the legislative consideration of any other factor that is relevant to the public interest. Use additional pages as needed.

1) *Consistency with 2045 Land Use Map.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and consistency with the purposes, goals, objectives, and policies of the 2045 Land Use Map.

The proposed PUD Amendment is consistent with the property's Community Mixed-Use LUM designation which calls for High Density Residential, Office Employment, and Commercial Services. The existing West Village PUD permits a variety of residential, office, and commercial uses on the property and this PUD Amendment does not propose changes to permitted uses. Rather, it proposes revisions to the phasing of transportation infrastructure improvements to facilitate the development of non-residential uses on the property as envisioned by the LUM and West Village PUD.

2) *Compatibility.* The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and compatibility with the character of surrounding land uses.

The PUD Amendment does not propose any changes to permitted uses on the property which are set forth in the previously approved West Village PUD and consistent with the LUM. The proposed small-scale non-residential development will act as a transition between the 460,000 sf of non-residential entitlement west of Kelly Road and existing residential neighborhoods to the north.

3) Zoning district supplemental standards. The proposed Conditional Zoning (CZ) District use's compliance with Sec 4.4 *Supplemental Standards*, if applicable.

The proposed development will comply with all applicable Supplemental Standards in UDO Section 4.4.

4) *Design minimizes adverse impact.* The design of the proposed Conditional Zoning (CZ) District use's minimization of adverse effects, including visual impact of the proposed use on adjacent lands; and avoidance of significant adverse impacts on surrounding lands regarding trash, traffic, service delivery, parking and loading, odors, noise, glare, and vibration and not create a nuisance.

The PUD will follow design guidelines included in the original PUD and all UDO standards for trash, traffic, service delivery, parking and loading, odors, noise, glare, and vibration. Traffic impacts will be mitigated by transportation infrastructure improvements detailed in the revised Public Facilities section of the PUD.

5) *Design minimizes environmental impact.* The proposed Conditional Zoning District use's minimization of environmental impacts and protection from significant deterioration of water and air resources, wildlife habitat, scenic resources, and other natural resources.

The amended PUD will not have adverse impacts on natural resources. The site does not have streams or other environmentally sensitive areas and the amendments do not propose any changes to existing environmental conditions in the West Village PUD.

6) *Impact on public facilities.* The proposed Conditional Zoning (CZ) District use's avoidance of having adverse impacts on public facilities and services, including roads, potable water and wastewater facilities, parks, schools, police, fire and EMS facilities.

The amended PUD will not have adverse impacts on public facilities and services. The site is in the Town's ETJ, will be annexed prior to construction, and will connect to Town water and sewer services. The PUD does not permit residential uses on the property, so there will be minimal impact on parks and schools. Police, fire, and EMS facilities in the area are sufficient and the site will provide safe and efficient access for emergency service vehicles. The PUD includes significant road improvements and this PUD Amendment phases those improvements to correlate with planned non-residential phases.

7) *Health, safety, and welfare.* The proposed Conditional Zoning (CZ) District use's effect on the health, safety, or welfare of the residents of the Town or its ETJ.

The PUD amendment will improve the health, safety, and welfare of residents of the Town by facilitating the development of neighborhood serving non-residential uses on the property and completing necessary infrastructure improvements.

8) *Detrimental to adjacent properties.* Whether the proposed Conditional Zoning (CZ) District use is substantially detrimental to adjacent properties.

The proposed uses will not be substantially detrimental to adjacent properties. As discussed above, the site is designated for non-residential uses on the LUM and entitled for non-residential uses by the West Village PUD. The project will meet all UDO standards for noise and lighting to ensure compatibility with the adjacent residential neighborhood.

PETITION PROCESS INFORMATION

9) *Not constitute nuisance or hazard.* Whether the proposed Conditional Zoning (CZ) District use constitutes a nuisance or hazard due to traffic impact or noise, or because of the number of persons who will be using the Conditional Zoning (CZ) District use.

The proposed non-residential uses will not constitute a nuisance or hazard. The site is located in a planned commercial corridor adjacent to the 540/S Salem Street interchange.

10) *Other relevant standards of this Ordinance.* Whether the proposed Conditional Zoning (CZ) District use complies with all standards imposed on it by all other applicable provisions of this Ordinance for use, layout, and general development characteristics.

The amended PUD complies with all standards imposed on it by all other applicable provisions of the Ordinance.

DEVELOPMENT NAME APPROVAL APPLICATION

Application #: 25CZ05 Submittal Date: 4-25-2025

Fee for Initial Submittal: No Charge Fee for Name Change after Approval: $500*

Purpose

To provide a consistent and clearly stated procedure for the naming of subdivisions and/or developments and entrance roadways (in conjunction with *Town of Apex Address Policy*) so as to allow developers to define and associate the theme or aesthetics of their project(s) while maintaining the Town's commitment to preserving the quality of life and safety for all residents of Apex proper and extraterritorial jurisdiction.

Guidelines

- ✓ The subdivision/development name shall not duplicate, resemble, or present confusion with an existing subdivision/development within Apex corporate limits or extraterritorial jurisdiction except for the extension of an existing subdivision/development of similar or same name that shares a continuous roadway.
- ✓ The subdivision/development name shall not resemble an existing street name within Apex corporate limits or extraterritorial jurisdiction unless the roadway is a part of the subdivision/development or provides access to the main entrance.
- ✓ The entrance roadway of a proposed subdivision/development shall contain the name of the subdivision/development where this name does not conflict with the Town of Apex *Road Name Approval Application* and *Town of Apex Address Policy* guidelines.
- ✓ The name "Apex" shall be excluded from any new subdivision/development name.
- ✓ Descriptive words that are commonly used by existing developments will be scrutinized more seriously in order to limit confusion and encourage distinctiveness. A list of commonly used descriptive words in Apex's jurisdiction is found below.
- ✓ The proposed subdivision/development name must be requested, reviewed and approved during preliminary review by the Town.
- ✓ A $500.00 fee will be assessed to the developer if a subdivision/development name change is requested after official submittal of the project to the Town.*

*The imposed fee offsets the cost of administrative changes required to alleviate any confusion for the applicant, Planning staff, other Town departments, decision-making bodies, concerned utility companies and other interested parties. There is no charge for the initial name submittal.

Existing Development Titles, Recurring

	Residential	Non-Residential
10 or more	Creek, Farm(s), Village(s),	Center/Centre
6 to 9	Crossing(s), Park, Ridge, Wood(s)	Commons, Park
3 to 5	Acres, Estates, Glen(s), Green•, Hills	Crossing(s), Plaza, Station, Village(s)

•excludes names with Green Level

DEVELOPMENT NAME APPROVAL APPLICATION

Application #: 25CZ05 Submittal Date: 4-25-2025

Proposed Subdivision/Development Information

Description of location: 2517 Kelly Road

Nearest intersecting roads: Kelly Road/S Salem Street

Wake County PIN(s): 0731434504

Township: White Oak

Contact Information (as appropriate)

Contact person: Rehab Hamad; Trilandco, LLC

Phone number: c/o Matthew J. Carpenter; 919-835-4032 Fax number: N/A

Address: 4400 Triland Way, Cary, NC 27518

E-mail address: rhamad@trilandproperty.com

Owner: Fahey Family Farm, LLC

Phone number: N/A Fax number: N/A

Address: 1115 Capitata Xing, Apex, NC 27502

E-mail address: N/A

Proposed Subdivision/Development Name

1st Choice: TBD

2nd Choice *(Optional)*: TBD

Town of Apex Staff Approval:

Town of Apex Planning Department Staff Date

STREET NAME APPROVAL APPLICATION

Application #: 25CZ05 Submittal Date: 4-25-2025

Wake County Approval Date: _____

Guidelines:

- No names duplicating or sounding similar to existing road names
- Avoid difficult to pronounce names
- No individuals' names
- Avoid proper names of a business, e.g. Hannaford Drive
- Limit names to 14 characters in length
- No directionals, e.g. North, South, East, West
- No punctuation marks, e.g. periods, hyphens, apostrophes, etc.
- Avoid using double suffixes, e.g. Deer Path Lane
- All names must have an acceptable suffix, e.g. Street, Court, Lane, Path, etc.
- Use only suffixes which are Town of Apex approved
- Town of Apex has the right to deny any street name that is determined to be inappropriate

Information:

Description of location: 2517 Kelly Road

Nearest intersecting roads: Kelly Road/S Salem Street

Wake County PIN(s): 0731434504

Township: White Oak

Contact information (as appropriate)

Contact person: Rehab Hamad; Trilandco, LLC

Phone number: c/o Matthew J. Carpenter; 919-835-4032 Fax number: N/A

Address: 4400 Triland Way, Cary, NC 27518

E-mail address: rhamad@trilandproperty.com

Owner: Fahey Family Farm, LLC

Phone number: N/A Fax number: N/A

Address: 1115 Capaitata Xing, Apex, NC 27502

E-mail address: N/A

STREET NAME APPROVAL APPLICATION

Application #: 25CZ05 Submittal Date: 4-25-2025

# of roads to be named: NONE

Please submit twice as many road names as needed, with preferred names listed first. Proposed road names should be written exactly as one would want them to appear. Town of Apex Planning Department staff will send all approved street names to the Wake County GIS Department for county approval. Please allow several weeks for approval. Upon approval Wake County GIS – Street Addressing will inform you of the approved street names.

Example: Road Name Suffix

Hunter Street

1	N/A	11	
2		12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9		19	
10		20	

TOWN OF APEX STAFF APPROVAL

Town of Apex Staff Approval Date

WAKE COUNTY STAFF APPROVAL:

GIS certifies that _____ names indicated by checkmark ☑ are approved.
Please disregard all other names.

Comments:

Wake County GIS Staff Approval Date

TOWN OF APEX UTILITIES OFFER AND AGREEMENT

Application #: 25CZ05 Submittal Date: 4-25-2025

Town of Apex
73 Hunter Street
P.O. Box 250 Apex, NC 27502
919-249-3400

WAKE COUNTY, NORTH CAROLINA CUSTOMER SELECTION AGREEMENT

2517 Kelly Road

(the "Premises")

The Town of Apex offers to provide you with electric utilities on the terms described in this Offer & Agreement. If you accept the Town's offer, please fill in the blanks on this form and sign and we will have an Agreement once signed by the Town.

Trilandco, LLC, the undersigned customer ("Customer") hereby irrevocably chooses and selects the Town of Apex (the "Town") as the permanent electric supplier for the Premises. Permanent service to the Premises will be preceded by temporary service if needed.

The sale, delivery, and use of electric power by Customer at the Premises shall be subject to, and in accordance with, all the terms and conditions of the Town's service regulations, policies, procedures and the Code of Ordinances of the Town.

Customer understands that the Town, based upon this Agreement, will take action and expend funds to provide the requested service. By signing this Agreement the undersigned signifies that he or she has the authority to select the electric service provider, for both permanent and temporary power, for the Premises identified above.

Any additional terms and conditions to this Agreement are attached as Appendix 1. If no appendix is attached this Agreement constitutes the entire agreement of the parties.

Acceptance of this Agreement by the Town constitutes a binding contract to purchase and sell electric power.

Please note that under North Carolina General Statute §160A-332, you may be entitled to choose another electric supplier for the Premises.

Upon acceptance of this Agreement, the Town of Apex Electric Utilities Division will be pleased to provide electric service to the Premises and looks forward to working with you and the owner(s).

ACCEPTED:

CUSTOMER: Trilandco, LLC	TOWN OF APEX
BY: DocuSigned by: Rehab Hamad 7EB4B0B1A6C944 Authorized Agent	BY: ______ Authorized Agent
DATE: ______	DATE: ______

AGENT AUTHORIZATION FORM

Application #: 25CZ05 Submittal Date: 4-25-2025

FAHEY FAMILY FARM, LLC is the owner* of the property for which the attached application is being submitted:

- ☑ Rezoning: For Conditional Zoning and Planned Development rezoning applications, this authorization includes express consent to zoning conditions that are agreed to by the Agent which will apply if the application is approved.
- ☑ Site Plan
- ☑ Subdivision
- ☑ Variance
- ☑ Other: _____

The property address is: 2517 Kelly Road, Apex, NC 27502; PIN 0731434504

The agent for this project is: Matthew J. Carpenter and Rehab Hamad

☐ I am the owner of the property and will be acting as my own agent

Agent Name: Matthew J. Carpenter and Rehab Hamad

Address: 301 Fayetteville Street, Suite 1400, Raleigh, NC 27601

Telephone Number: 919-835-4032

E-Mail Address: MatthewCarpenter@parkerpoe.com

Signature(s) of Owner(s)*

FAHEY FAMILY FARM, LLC,
a North Carolina limited liability company

By: Patrick S. Fahey

Name: PATRICK S. FAHEY

Title: MANAGER

Attach additional sheets if there are additional owners.

*Owner of record as shown on the latest equalized assessment rolls of Wake County. An option to purchase does not constitute ownership. If ownership has been recently transferred, a copy of the deed must accompany this authorization.

Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this application and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the application and any related documents. If electronic signatures are used the application shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

AFFIDAVIT OF OWNERSHIP

Application #: 25CZ05 Submittal Date: 4-25-2025

The undersigned, PATRICK S. FAHEY (the "Affiant") first being duly sworn, hereby swears or affirms as follows:

1. Affiant is over eighteen (18) years of age and authorized to make this Affidavit. The Affiant is the sole owner, or is the authorized agent of all owners, of the property located at 2517 Kelly Road, Apex, NC 27502; PIN 0731434504 and legally described in **Exhibit "A"** attached hereto and incorporated herein (the "Property").

2. This Affidavit of Ownership is made for the purpose of filing an application for development approval with the Town of Apex.

3. If Affiant is the owner of the Property, Affiant acquired ownership by deed, dated 3/6/2018, and recorded in the Wake County Register of Deeds Office on 3/6/2018, in Book 17062 Page 1716.

4. If Affiant is the authorized agent of the owner(s) of the Property, Affiant possesses documentation indicating the agency relationship granting the Affiant the authority to apply for development approval on behalf of the owner(s).

5. If Affiant is the owner of the Property, from the time Affiant was deeded the Property on 3/6/2018, Affiant has claimed sole ownership of the Property. Affiant or Affiant's predecessors in interest have been in sole and undisturbed possession and use of the property during the period of ownership. Since taking possession of the Property on 3/6/2018, no one has questioned Affiant's ownership or right to possession nor demanded any rents or profits. To Affiant's knowledge, no claim or action has been brought against Affiant (if Affiant is the owner), or against owner(s) (if Affiant is acting as an authorized agent for owner(s)), which questions title or right to possession of the property, nor is any claim or action pending against Affiant or owner(s) in court regarding possession of the Property.

This the 28th day of January, 2025.

FAHEY FAMILY FARM, LLC,
a North Carolina limited liability company

By: Patrick S. Fahey
Name: PATRICK S. FAHEY
Title MANAGER
FAHEY FAMILY FARM, LLC

STATE OF ~~NORTH CAROLINA~~ Nebraska
COUNTY OF Douglas

I, the undersigned, a Notary Public in and for the County of Douglas, hereby certify that Patrick Fahey, Affiant, personally known to me or known to me by said Affiant's presentation of said Affiant's Drivers license, personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing Affidavit.

GENERAL NOTARY - State of Nebraska
ANDREA YORK
My Comm. Exp. October 19, 2025

[NOTARY SEAL]

Andrea York
Notary Public
State of ~~North Carolina~~ Nebraska
My Commission Expires: 10/19/2025

AFFIDAVIT OF OWNERSHIP: EXHIBIT A – LEGAL DESCRIPTION

Application #: 25CZ05 Submittal Date: 4-25-2025

Insert legal description below.

BEING all of Lot 2, containing 6.2501 acres, more or less, as shown on that map entitled "MINOR SUBDIVISION PLAT PROPERTY OF SM RLAEIGH, LLC", by Dan Gregory, Professional Land Surveyor of Bass, Nixon & Kennedy, Inc., dated December 5, 2017, and recorded in Book of Maps 2018, Page 175, in the office of the Register of Deeds, Wake County, North Carolina.

Legal Description
2517 Kelly Road
PIN 0731434504

BEGINNING AT A POINT LOCATED ON THE EASTERN RIGHT-OF-WAY LINE OF KELLY ROAD, BEING THE SOUTHWESTERN PROPERTY CORNER OF WEST VILLAGE NORTH OPEN SPACE AS RECORDED IN BOOK OF MAPS 2023, PAGE 1512, WAKE COUNTY REGISTRY, AND HAVING NC GRID (NAD '83/2011) COORDINATES OF NORTH 713,765.72 FEET, EAST 2,034,027.38 FEET; THENCE ALONG AND WITH SAID SOUTHERN PROPERTY LINE NORTH 56°46'21" EAST A DISTANCE OF 31.80 FEET TO AN EXISTING IRON PIPE; THENCE SOUTH 89°42'52" EAST A DISTANCE OF 392.72 FEET TO A POINT LOCATED ON THE WESTERN RIGHT-OF-WAY LINE OF FAHEY DRIVE AS SHOWN ON BOOK OF MAPS 2022, PAGE 2228, WAKE COUNTY REGISTRY; THENCE ALONG AND WITH SAID RIGHT-OF-WAY LINE WITH A CURVE TO THE LEFT AN ARC DISTANCE OF 30.93 FEET, SAID CURVE HAVING A RADIUS OF 38.50 FEET, A CHORD DIRECTION OF SOUTH 72°27'20" EAST, AND A CHORD DISTANCE OF 30.11 FEET TO A POINT; THENCE WITH A CURVE TO THE RIGHT AN ARC DISTANCE OF 8.08 FEET, SAID CURVE HAVING A RADIUS OF 19.50 FEET, A CHORD DIRECTION OF SOUTH 83°36'25" EAST, AND A CHORD DISTANCE OF 8.02 FEET TO A POINT; THENCE SOUTH 23°33'07" EAST A DISTANCE OF 29.53 FEET TO A POINT; THENCE CROSSING SAID RIGHT-OF-WAY NORTH 66°26'53" EAST A DISTANCE OF 50.00 FEET TO A POINT LOCATED ON THE EASTERN RIGHT-OF-WAY LINE OF FAHEY DRIVE; THENCE ALONG AND WITH SAID RIGHT-OF-WAY LINE NORTH 23°33'07" WEST A DISTANCE OF 29.07 FEET TO A POINT LOCATED ON THE SOUTHWESTERN PROPERTY CORNER OF COMMON OPEN SPACE 2 AS RECORDED IN BOOK OF MAPS 2022, PAGE 2228, WAKE COUNTY REGISTRY; THENCE ALONG AND WITH SAID SOUTHERN PROPERTY LINE SOUTH 89°42'52" EAST A DISTANCE OF 160.42 FEET TO AN EXISTING IRON PIPE LOCATED ON THE WESTERN RIGHT-OF-WAY LINE OF NC HIGHWAY 540; THENCE ALONG AND WITH SAID RIGHT-OF-WAY LINE SOUTH 05°40'24" WEST A DISTANCE OF 113.38 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE SOUTH 05°37'10" WEST A DISTANCE OF 298.89 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE SOUTH 00°44'07" WEST A DISTANCE OF 128.58 FEET TO AN EXISTING IRON PIPE LOCATED ON THE NORTHEASTERN PROPERTY CORNER OF LANDS NOW OR FORMERLY OF FRIENDSHIP COWORKING LLC AS RECORDED IN DEED BOOK 18673, PAGE 206, WAKE COUNTY REGISTRY; THENCE ALONG AND WITH SAID NORTHERN PROPERTY LINE NORTH 44°10'51" WEST A DISTANCE OF 73.95 FEET TO AN EXISTING IRON PIPE; THENCE SOUTH 48°27'04" WEST A DISTANCE OF 219.36 FEET TO A POINT LOCATED ON THE EASTERN RIGHT-OF-WAY LINE OF KELLY ROAD; THENCE ALONG AND WITH SAID RIGHT-OF-WAY LINE NORTH 34°34'58" WEST A DISTANCE OF 205.03 FEET TO A POINT; THENCE NORTH 33°28'03" WEST A DISTANCE OF 228.20 FEET TO A POINT; THENCE NORTH 33°13'39" WEST A DISTANCE OF 296.33 FEET TO A THE POINT OF BEGINNING, CONTAINING 5.8591 ACRES.

WAKE COUNTY PUBLIC SCHOOL SYSTEM

Wake County Residential Development Notification

Developer Company *Information*	
Company *Name*	N/A - No residential development proposed
Company Phone *Number*	
Developer Representative *Name*	
Developer Representative *Phone Number*	
Developer Representative *Email*	

New Residential Subdivision *Information*	
Date of Application for Subdivision	
City, Town or Wake County Jurisdiction	
Name of Subdivision	
Address of Subdivision (if unknown enter nearest cross streets)	
REID(s)	
PIN(s)	

Please complete each section of this form and submit with your application.

Please complete each section of this form and submit with your application.

Please send any questions about this form to: studentassignment-gis-group@wcpss.net.

Projected Dates *Information*	
Subdivision *Completion Date*	
Subdivision *Projected First Occupancy Date*	

Lot by Lot Development *Information*

Unit Type	Total # of Units	**Senior Living**	**Studio**	**1 Bedroom**	**2 Bedroom**	**3 Bedroom**	**4 Bedroom**	Square Foot Range		Price Range		Anticipated Completion Units & Dates					
								Min	Max	Low	High	Year	# Units	Year	# Units	Year	# Units
Single Family																	
Townhomes																	
Condos																	
Apartments																	
Other																	

Revised 08/10/2018

NOTICE OF NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

January 16, 2025
Date

Dear Neighbor:
You are invited to a neighborhood meeting to review and discuss the development proposal at

2517 Kelly Road | 0731434504
Address(es) | PIN(s)

in accordance with the Town of Apex Neighborhood Meeting procedures. This meeting is intended to be a way for the applicant to discuss the project and review the proposed plans with adjacent neighbors and neighborhood organizations before the submittal of an application to the Town. This provides neighbors an opportunity to raise questions and discuss any concerns about the impacts of the project before it is officially submitted. If you are unable to attend, please refer to the Project Contact Information page for ways to contact the applicant. Notified neighbors may request that the applicant provide updates and send plans via email or mail. Once an application has been submitted to the Town, it may be tracked using the Interactive Development Map or the Apex Development Report located on the Town of Apex website at http://www.apexnc.org/180. Applications for Rezoning must hold a second Neighborhood Meeting in the month prior to the anticipated public hearing date.

A Neighborhood Meeting is required because this project includes (check all that apply):

	Application Type	Approving Authority
☑	Rezoning (including Planned Unit Development)	Town Council
☑	Major Site Plan	Technical Review Committee (staff)
☑	Minor Site Plan for the uses "Day care facility", "Government service", "School, public or private", "Restaurant, drive-through", or "Convenience store with gas sales"	Technical Review Committee (staff)
☐	Special Use Permit	Board of Adjustment (QJPH*)
☐	Residential Master Subdivision Plan (excludes exempt subdivisions)	Technical Review Committee (staff)

*Quasi-Judicial Public Hearing: The Board of Adjustment cannot discuss the project prior to the public hearing.

The following is a description of the proposal (also see attached map(s) and/or plan sheet(s)):

The applicant is proposing a rezoning to amend conditions of the West Village PUD and a site plan for the development of non-residential uses, including, but not limited to, a daycare, retail space, and office space.

Estimated submittal date: February 3, 2025

MEETING INFORMATION:

Property Owner(s) name(s):	Fahey Family Farm, LLC
Applicant(s):	Trilandco, LLC c/o Matthew Carpenter
Contact information (email/phone):	matthewcarpenter@parkerpoe.com; (919) 835-4032
Meeting Address:	Virtual (Zoom) - See attached notice letter
Date/Time of meeting**:	January 30, 2025 (5:30 - 6:30 PM)

Welcome: 5:30 PM Project Presentation: 5:30 PM Question & Answer: 6:00PM

**Meetings shall occur between 5:00 p.m.-9:00 p.m. on a Monday through Thursday (excluding Town recognized holidays). If you have questions about the general process for this application, please contact the Planning Department at 919-249-3426. You may also find information about the Apex Planning Department and on-going planning efforts at http://www.apexnc.org/180.

Parker Poe
Attorneys & Counselors at Law

To: Neighboring Property Owners and Tenants
From: Matthew Carpenter
Date: January 16, 2025

Re: Notice of Virtual Neighborhood Meeting

You are invited to attend a virtual neighborhood meeting on January 30, 2025 at 5:30 PM to discuss upcoming rezoning and site plan applications for an approximately 6.19-acre property located at 2517 Kelly Road (PIN 0731434504). The rezoning will amend the West Village PUD zoning conditions that currently apply to the property and rezone the property from Planned Unit Development Conditional Zoning (PUD-CZ) to PUD-CZ with revised conditions. The site plan application will allow for the development of non-residential uses on the property, including, but not limited to, a day care facility, retail space, and office space.

During the meeting, the applicant will describe the nature of the rezoning request and field any questions from the public. Enclosed are: (1) a vicinity map outlining the location of the property; (2) a zoning map of the area; (3) a copy of the PUD Plan, (4) a draft site plan, (5) a Transportation Plan exhibit, (6) a project contact information sheet; and (7) a common construction issues & who to call information sheet.

The meeting will be held virtually. You can participate online via Zoom or by telephone. To participate in the Zoom online meeting:

Visit:	https://zoom.us./join
Enter the following meeting ID:	825 8184 0818
Enter the following password:	895920

To participate by telephone:

Dial:	1 929 205 6099
Enter the following meeting ID:	825 8184 0818
Enter the Participant ID:	#
Enter the Meeting password:	895920

If you have any questions about this rezoning, please contact me at (919) 835-4032 or via email at matthewcarpenter@parkerpoe.com.

Sincerely,

Matthew Carpenter

2517 Kelly Road

Vicinity Map

N

0 200 400 800 ft

1 inch equals 400 feet

2517 Kelly Road

Zoning Map

Current Zoning: PUD-CZ

N

0 200 400 800 ft

1 inch equals 400 feet

Disclaimer

*iMaps makes every effort to produce and publish the most current and accurate information possible. However, the maps are produced for information purposes, and are **NOT** surveys. No warranties, expressed or implied ,are provided for the data therein, its use,or its interpretation.*

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	S40°32'07"W	71.72
L2	S41°36'33"W	53.02
L3	S42°59'16"W	53.35
L4	S44°03'19"W	53.17
L5	S45°07'59"W	53.49
L6	S46°17'03"W	53.01
L7	S47°08'27"W	49.64
L8	S47°56'55"W	40.75
L9	S48°37'10"W	50.54
L10	S50°43'16"W	84.89
L11	S51°56'36"W	53.06
L12	S52°56'35"W	52.31
L13	S54°05'42"W	56.50
L14	S54°00'47"W	21.64
L15	S56°04'32"W	95.13
L16	S57°13'06"W	90.86
L17	N04°40'34"E	50.02
L21	S24°58'58"E	73.12
L22	S26°40'10"E	79.58
L23	S29°35'51"E	60.12
L24	S30°35'44"E	44.59
L25	S32°44'34"E	108.36

PHASING NOTES

1. THE PROPERTY WILL BE DEVELOPED IN UP TO 10 PHASES. THE TIMING AND AMOUNT OF PHASES WILL BE DEFINED AT THE TIME OF SITE PLAN REVIEW.

2. ACCESS POINTS ARE PRELIMINARY IN NATURE AND SUBJECT TO TOWN OF APEX AND NCDOT REVIEW AT TIME OF SITE PLAN REVIEW.

3. LIMITS OF LAND DISTURBANCE WITHIN EACH PHASE TO BE FINALIZED AT SITE PLAN PHASE.

4. PUBLIC UTILITIES SHALL BE PROVIDED FOR EACH PHASE.

5. ROADWAY PHASING – PRIOR TO TIME OF THE FIFTY-FIRST PLATTED LOT ASSOCIATED WITH THE RESIDENTIAL LOCATED OFF OF OLD US HWY 1, THE SECOND POINT OF ACCESS (SOUTHERNMOST PORTION OF STREET 'A'), NECESSARY PORTION OF THE SOUTHERNMOST ROUNDABOUT AND STREET 'B' SHOWN SHALL BE CONSTRUCTED. AS A PART OF THE NON-RESIDENTIAL DEVELOPMENT IN POD 3, THE ROUNDABOUT PROPOSED ON KELLY ROAD SHALL BE CONSTRUCTED ALONG WITH THE PORTION OF STREET 'A' TYING BACK TO THE SOUTHERNMOST ROUNDABOUT. PRIOR TO TIME OF THE FIRST CERTIFICATE OF OCCUPANCY FOR ANY COMMERCIAL WITHIN POD 3, STREET 'A' WILL BE FULLY CONSTRUCTED, CONNECTING KELLY ROAD TO OLD US HWY 1.

SITE NOTES

1. REFER TO PUD DOCUMENT FOR A COMPLETE LIST OF ALLOWABLE USES FOR EACH TRACT OR DEVELOPMENT AREA.

2. NO SITE DEVELOPMENT ACTIVITY INCLUDING BUT NOT LIMITED TO TESTING, CLEARING, INSTALLATION OF S&E MEASURES, OR GRADING, SHALL OCCUR UNTIL REQUIRED PROTECTION FENCING HAS BEEN INSTALLED AND INSPECTED. A PROTECTION FENCING INSTALLATION PERMIT MAY BE OBTAINED AT THE PLANNING DEPARTMENT OR BY CALLING 919-249-3426.

3. PROTECTION FENCING MUST BE PLACED AWAY FROM ANY SAVED TREE ONE FOOT FOR EACH INCH OF TREE CALIPER. PROTECTION FENCING MUST BE PLACED AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RESOURCE CONSERVATION AREA, SUCH AS, BUT NOT LIMITED TO, HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS. PROTECTION FENCING MUST BE PLACED ALONG THE OUTSIDE LINE OF THE 100-YEAR FLOODPLAIN, AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER. ADDITIONAL PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER; SUCH AREAS MAY INCLUDE BUT ARE NOT LIMITED TO, COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC).

4. ALL GRADING AND SUPPORT STRUCTURES ASSOCIATED WITH ANY RETAINING STRUCTURE SHALL NOT ENCROACH INTO ANY REQUIRED BUFFER OR PROTECTED AREA (SUCH AS, BUT NOT LIMITED TO, RCA AND CRITICAL ROOT ZONES OF TREES, PUBLIC UTILITY EASEMENTS, AND RIGHTS-OF-WAY), AND SHALL BE CONTAINED ENTIRELY ON SITE.

5. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, PLAY FIELDS AND GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.

6. THE SCREENING OF TRASH CONTAINERS (INCLUDING DUMPSTERS AND ROLL-OUT CARTS), OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, ON THE GROUND, OR ON BUILDINGS SHALL MEET THE REQUIREMENTS FOUND IN SECTION 8.2.8 OF THE UNIFIED DEVELOPMENT ORDINANCE; SPECIFICALLY SCREENING MUST BE DONE SO THAT:

A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.

B. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR.

C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.

D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX-FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.

E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS THEY MUST BE AT LEAST EIGHT-FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS TALLER; AND BE BUILT OF MASONRY MATERIAL.

7. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.

8. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING (INCLUDING MULCH), SCREENING (i.e.: DUMPSTERS/TRASH, MECHANICAL/HVAC, ETC.), SITE STABILIZATION (SEEDING), AND PARKING AND PAVEMENT MARKING MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.

9. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED. SIGNAGE WILL COMPLY WITH APEX'S UDO.

10. EXACT ACCESS AND STUB LOCATIONS TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

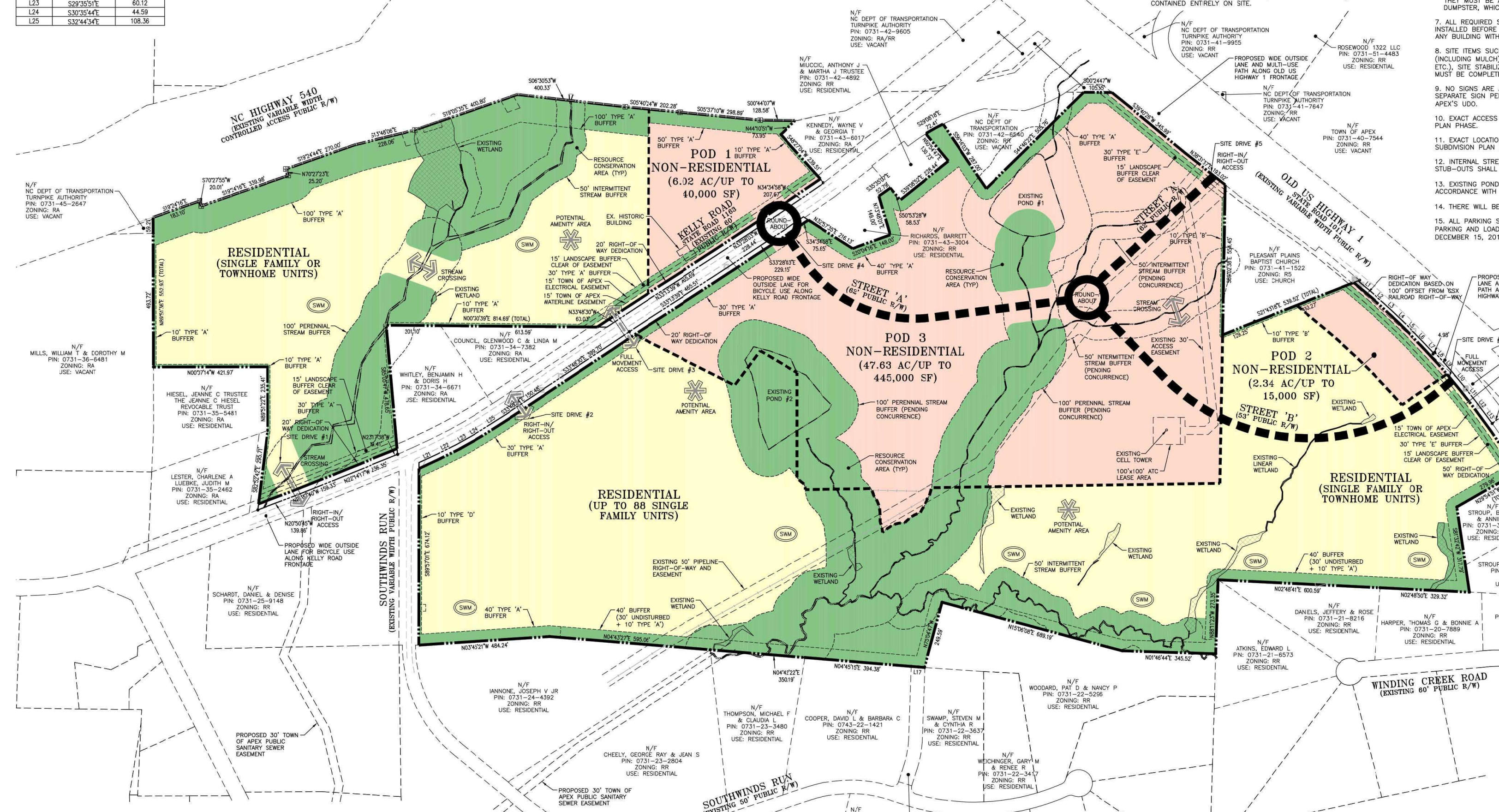
11. EXACT LOCATION OF RESOURCE CONSERVATION AREA TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

12. INTERNAL STREETS SHALL BE DEDICATED TO THE TOWN OF APEX. ROAD STUB-OUTS SHALL BE PROVIDED PER TOWN OF APEX REQUIREMENTS.

13. EXISTING PONDS #1 & 2 MAY BE DRAINED AT A LATER DATE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.

14. THERE WILL BE NO RESIDENTIAL DRIVEWAYS ON STREETS 'A' AND 'B'.

15. ALL PARKING STANDARDS WITHIN THE PUD WILL COMPLY WITH SECTION 8.3, PARKING AND LOADING, OF THE TOWN OF APEX'S UDO (EFFECTIVE DATE DECEMBER 15, 2015).

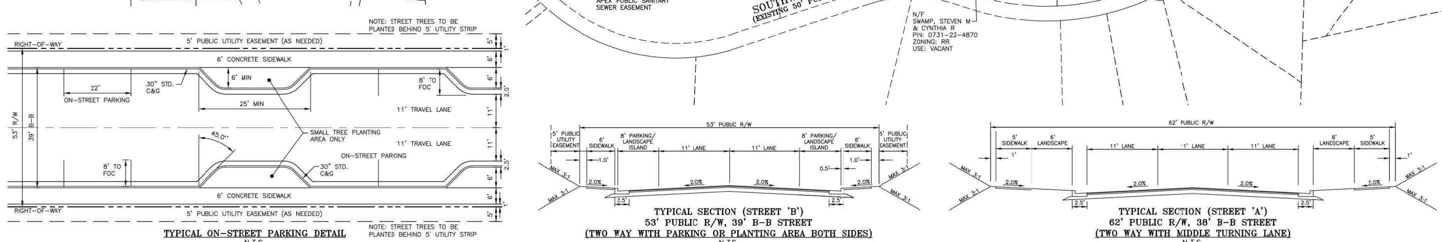


LEGEND

- NON-RESIDENTIAL USE
- RESIDENTIAL USE
- APPROXIMATE LOCATION OF RESOURCE CONSERVATION AREAS OR PLANTED BUFFERS
- VEHICULAR SITE ACCESS POINTS AND APPROXIMATE STREAM CROSSING LOCATIONS
- POSSIBLE LOCATION OF AMENITY AREA (1 TOTAL ON SITE)
- SWM APPROXIMATE LOCATION OF STORMWATER MANAGEMENT FACILITY

NOTE: ALL ITEMS IN LEGEND OTHER THAN VEHICULAR SITE ACCESS POINTS ARE SHOWN CONCEPTUALLY, FINAL LOCATION OF AMENITIES, RCA, & STORMWATER MANAGEMENT FACILITIES WILL BE DETERMINED AT THE TIME OF SITE PLAN.

GRAPHIC SCALE
1 inch = 200 ft.



TYPICAL ON-STREET PARKING DETAIL
N.T.S.

TYPICAL SECTION (STREET 'B')
53' PUBLIC R/W, 39' B-B STREET
(TWO WAY WITH PARKING OR PLANTING AREA BOTH SIDES)
N.T.S.

TYPICAL SECTION (STREET 'A')
62' PUBLIC R/W, 38' B-B STREET
(TWO WAY WITH MIDDLE TURNING LANE)
N.T.S.

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 • McAdamsCo.com

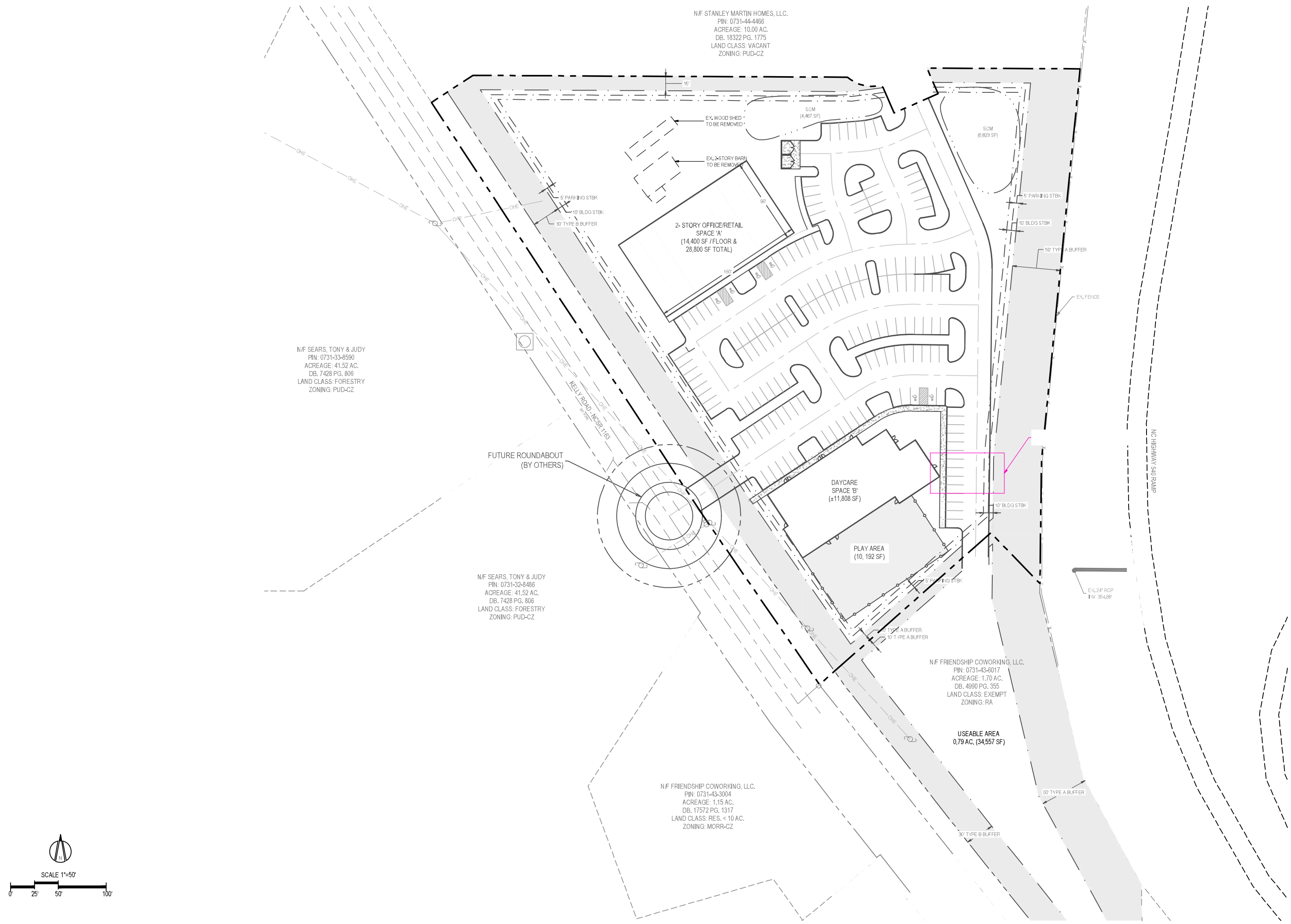
REVISIONS:
1. 2020-06-12 PER TOWN OF APEX COMMENTS
2. 2020-06-24 PER TOWN OF APEX COMMENTS

DEVELOPER:
STANLEY MARTIN HOMES
4020 WESTCHASE BOULEVARD, SUITE 190
RALEIGH, NC 27607

WEST VILLAGE
KELLY ROAD & OLD US HIGHWAY 1
APEX, NORTH CAROLINA

PRELIMINARY LAYOUT & PHASING PLAN

PROJECT NO.	ORL-15000
FILENAME:	ORL15000-S1
DESIGNED BY:	RCZ
DRAWN BY:	RLU
SCALE:	1"=200'
DATE:	05-01-2020
SHEET NO.	C-2



SITE DATA	
OWNER	FAHEY FAMILY FARM, LLC.
SITE ADDRESS	2517 KELLY ROAD
	APEX, NC 27502
PIN	0731-43-4504
REAL ID	454267
ACREAGE	6.19 AC.
DB, PG	DB 17062, PG 1716
2045 LAND USE MAP	PUD-CZ
EXISTING USE	SINGLE FAM
REZONING 07-19-2016	15CZ33
PROPOSED ZONING	PUD-CZ
TOWNSHIP	WHITE OAK
SUB-WATERSHED	BEAVER CREEK
RIVER BASIN	CAPE FEAR
FEMA MAP	MAP#3720073100K DATE 07.19.22
HISTORICAL	(1) BARN PER WA1052
ROW DEDICATION	XX AC. (XX SF)
NEW TRACT AREA	XX AC. (XX SF)
DEVELOPMENT TYPE - COMMERCIAL	
PROPOSED USE	OFFICE / RETAIL & DAYCARE
DENSITY	500,000 SF
MIN. LOT AREA	5,000 SF
MIN. LOT SIZE	5,000 SF
MIN. LOT WIDTH	N/A
BUILDING DETAILS	
MAX. BUILDING HEIGHT	75' (5-STORY)
PROPOSED BUILDING HEIGHT	XX'
PROPOSED BUILDING STORIES	2 STORIES
BUILDING SETBACKS	
FRONT	5'
SIDE	5'
CORNER	5'
REAR	5'
BUILD UPON AREA	
MAX. BUILD UPON AREA	4.33' AC. (70 %)
PROPOSED BULD UPON AREA	XX' AC. (XX %)
PARKING	
PARKING CALCS. (OFFICE / BUSINESS)	1 SPACE / 250 SF
BUILDING SF TOTAL	28,800 SF
PARKING REQUIRED	116 SPACES
PARKING PROVIDED	117 SPACES
PARKING CALCS. (DAY CARE)	1 SPACE / 6 PERSON
TOTAL CAPACITY	250
PARKING REQUIRED	42 SPACES
PARKING PROVIDED	52 SPACES
TOTAL PARKING REQUIRED	158 SPACES
TOTAL PARKING PROVIDED	169 SPACES
ADA PARKING CALCS.	151 TO 200 = 6
ADA PARKING REQUIRED	6 SPACES
ADA PARKING PROVIDED	6 SPACES
RCA	
RCA REQUIRED	1.55 AC. (67,518 SF) - 25%
RCA (PERIMETER BUFFERS)	1.65 AC. (71,914 SF) - 27%
RCA (SCM)	XX AC. (XX SF)
RCA PROVIDED	XX AC. (XX SF)
IMPERVIOUS	
NET TRACT AREA	XX AC. (XX SF)
EXISTING IMPERVIOUS	XX AC. (XX SF)
BUILDINGS	(XX SF)
SIDEWALKS	(XX SF)
ROADWAY B-B	(XX SF)
LOT AREA IMPERVIOUS (MAX. ALLOWED)	XX SF (XX%)

CONCEPT PLANS

ALL INFORMATION AND LINE WORK RETRIEVED FROM WAKE COUNTY GIS MAP SERVICES. THIS IS INTENDED FOR CONCEPTUAL USE ONLY. LINE WORK IS APPROXIMATE AND SUBJECT TO CHANGE UPON OBTAINING SURVEY.

ALL SITE DATE NOTED IN RED IS TO BE DETERMINED (TBD).

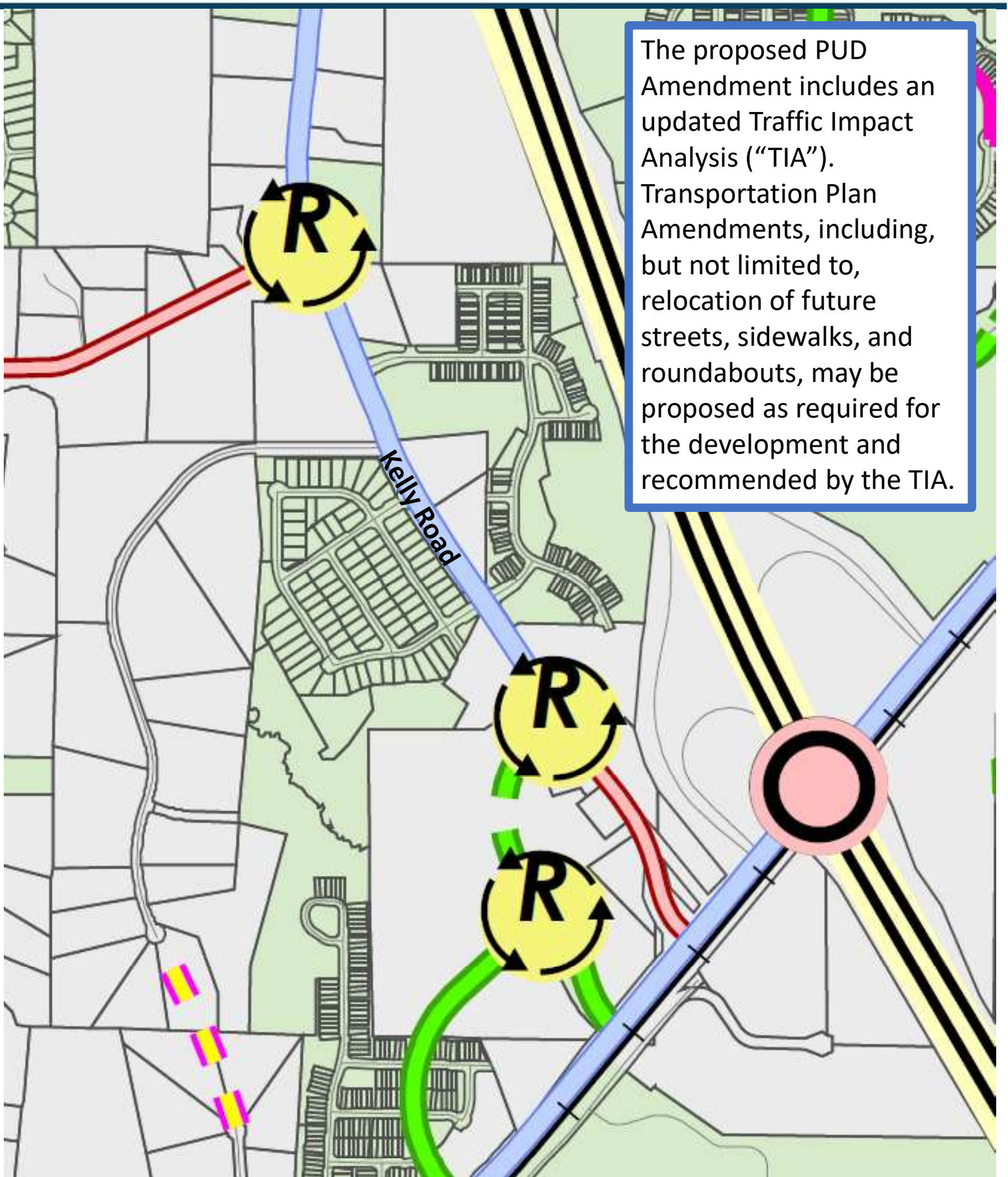
PEAK
Engineering & Design
1125 Apex Peakway | Apex, NC 27502
ph: 919.439.0100
www.PeakEngineering.com

KELLY ROAD COMMERCIAL

2517 KELLY ROAD
APEX, NC
WAKE COUNTY

DRAWN BY:	CHECKED BY:	PROJECT NO.
MD	JR	240403
DATE		SHEET NO.
01.09.25		SP-1

Thoroughfare and Collector Street Plan



The proposed PUD Amendment includes an updated Traffic Impact Analysis ("TIA"). Transportation Plan Amendments, including, but not limited to, relocation of future streets, sidewalks, and roundabouts, may be proposed as required for the development and recommended by the TIA.

PROJECT CONTACT INFORMATION

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Development Contacts:

Project Name: West Village PUD Amendment Zoning: PUD-CZ

Location: 2517 Kelly Road

Property PIN(s): 0731434504 Acreage/Square Feet: 6.19 ac

Property Owner: Fahey Family Farm, LLC

Address: 1115 Capitata Crossing

City: Apex State: NC Zip: 27502-9011

Phone: Email:

Developer: Trilandco, LLC c/o Matthew Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: N/A Email: matthewcarpenter@parkerpoe.com

Engineer: Peak Engineering & Design, PLLC, attn: Jeff Roach

Address: 1125 Apex Peakway

City: Apex State: NC Zip: 27502

Phone: (919) 439-0100 Fax: N/A Email: jroach@peakengineering.com

Builder (if known): Trilandco, LLC c/o Matthew Carpenter

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4032 Fax: N/A Email: matthewcarpenter@parkerpoe.com

Please note that Town staff will not have complete information about a proposed development until the application is submitted for review. If you have a question about Town development standards and how they relate to the proposed development, please contact the appropriate staff person listed below.

Town of Apex Department Contacts	
Planning Department Main Number (Provide development name or location to be routed to correct planner)	(919) 249-3426
Parks, Recreation & Cultural Resources Department Angela Reincke, Parks Planning Project Manager	(919) 372-7468
Transportation & Infrastructure Development Russell Dalton, Traffic Engineering Manager	(919) 249-3358
Water Resources Department Jessica Bolin, Environmental Engineering Manager (Stormwater, Sedimentation & Erosion Control) Matt Reker, Utility Engineer/FOG Program Manager (Water & Sewer)	(919) 249-3537 (919) 946-4394
Electric Utilities Division Rodney Smith, Electric Technical Services Manager	(919) 249-3342

COMMON CONSTRUCTION ISSUES & WHO TO CALL

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Noise & Hours of Construction:	Non-Emergency Police	919-362-8661

Noise from tree removal, grading, excavating, paving, and building structures is a routine part of the construction process. The Town generally limits construction hours from 7:00 am to 8:30 pm so that there are quiet times even during the construction process. Note that construction outside of these hours is allowed with special permission from the Town when it makes more sense to have the construction occur at night, often to avoid traffic issues. In addition, the Town limits hours of blasting rock to Monday-Friday from 8:00 am to 5:00 pm. Report violations of construction hours and other noise complaints to the Non-Emergency Police phone number at 919-362-8661.

Construction Traffic:	Infrastructure Inspections	919-249-3386

Construction truck traffic will be heavy throughout the development process, including but not limited to removal of trees from site, loads of dirt coming in and/or out of the site, construction materials such as brick and wood brought to the site, asphalt and concrete trucks come in to pave, etc. The Town requires a construction entrance that is graveled to try to prevent as much dirt from leaving the site as possible. If dirt does get into the road, the Town can require they clean the street (see "Dirt in the Road" below).

Road Damage & Traffic Control:	Infrastructure Inspections	919-249-3386

There can be issues with roadway damage, roadway improvements, and traffic control. Potholes, rutting, inadequate lanes/signing/striping, poor traffic control, blocked sidewalks/paths are all common issues that should be reported to Transportation & Infrastructure Development – Infrastructure Inspections at 919-249-1109. The Town will get NCDOT involved if needed.

Parking Violations:	Non-Emergency Police	919-362-8661

Unless a neighbor gives permission, there should be no construction parking in neighbors' driveways or on their property. Note that parking in the right-of-way is allowed, but Town regulations prohibit parking within 15 feet of driveways so as not to block sight triangles. Trespassing and parking complaints should be reported to the Non-Emergency Police phone number at 919-362-8661.

Dirt in the Road:	Water Resources	919-362-8166

Sediment (dirt) and mud gets into the existing roads due to rain events and/or vehicle traffic. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleaning of the roadways with the developer.

Dirt on Properties or in Streams:	Water Resources	919-362-8166

Sediment (dirt) can leave the site and get onto adjacent properties or into streams and stream buffers; it is typically transported off-site by rain events. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the appropriate repairs with the developer.

Dust:	Water Resources	919-362-8166

During dry weather dust often becomes a problem blowing into existing neighborhoods or roadways. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the use of water trucks onsite with the grading contractor to help control the dust.

Trash:	Water Resources	919-362-8166

Excessive garbage and construction debris can blow around on a site or even off of the site. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleanup and trash collection with the developer/home builder.

Temporary Sediment Basins:	Water Resources	919-362-8166

Temporary sediment basins during construction (prior to the conversion to the final stormwater pond) are often quite unattractive. Concerns should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that he can coordinate the cleaning and/or mowing of the slopes and bottom of the pond with the developer.

Stormwater Control Measures:	Water Resources	919-362-8166

Post-construction concerns related to Stormwater Control Measures (typically a stormwater pond) such as conversion and long-term maintenance should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed.

Electric Utility Installation:	Rodney Smith	919-249-3342

Concerns with electric utility installation can be addressed by the Apex Electric Utilities Department. Contact Rodney Smith at 919-249-3342.

NEIGHBORHOOD MEETING SIGN-IN SHEET

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Meeting Address: virtual via Zoom

Date of meeting: January 30, 2025 Time of meeting: 5:30 PM

Property Owner(s) name(s): Fahey Family Farm, LLC

Applicant(s): Trilandco, LLC c/o Matthew J. Carpenter

Please print your name below, state your address and/or affiliation with a neighborhood group, and provide your phone number and email address. Providing your name below does not represent support or opposition to the project; it is for documentation purposes only. For virtual meetings, applicants must include all known participants and request the information below.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	No neighbors attended the meeting				
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					

Use additional sheets, if necessary.

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Property Owner(s) name(s): Fahey Family Farm, LLC

Applicant(s): Trilandco, LLC c/o Matthew J. Carpenter

Contact information (email/phone): MatthewCarpenter@parkerpoe.com; 919-835-4032

Meeting Address: virtual via Zoom

Date of meeting: January 30, 2025 Time of meeting: 5:30 PM

Please summarize the questions/comments and your responses from the Neighborhood Meeting or emails/phone calls received in the spaces below (attach additional sheets, if necessary). Please state if/how the project has been modified in response to any concerns. The response should not be "Noted" or "No Response". There has to be documentation of what consideration the neighbor's concern was given and justification for why no change was deemed warranted.

Question/Concern #1:

No neighbors attended the meeting

Applicant's Response:

Question/Concern #2:

Applicant's Response:

Question/Concern #3:

Applicant's Response:

Question/Concern #4:

Applicant's Response:

AFFIDAVIT OF CONDUCTING A NEIGHBORHOOD MEETING, SIGN-IN SHEET AND ISSUES/RESPONSES SUBMITTAL

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

I, Matthew J. Carpenter, do hereby declare as follows:
Print Name

1. I have conducted a Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Minor Site Plan, Residential Master Subdivision Plan, or Special Use Permit in accordance with UDO Sec. 2.2.7.B *Neighborhood Meeting*.

2. The meeting invitations were mailed to the Apex Planning Department, all property owners and tenants abutting and within 300 feet of the subject property and any neighborhood association that represents citizens in the notification area via first class mail a minimum of 14 days in advance of the Neighborhood Meeting.

3. The meeting was conducted at virtually via Zoom (location/address) on 1/30/2025 (date) from 5:30 PM (start time) to 6:30 PM (end time).

4. I have included the mailing list, meeting invitation, sign-in sheet, issue/response summary, and zoning map/reduced plans with the application.

5. I have prepared these materials in good faith and to the best of my ability.

1/30/2025
Date

By: [signature]

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Matthew Carpenter, a Notary Public for the above State and County, on this the 30 day of January, 2025.

SEAL

MARIA STALLINGS Commission Expires NOTARY PUBLIC April 11, 2026 WAKE COUNTY, NC

Maria Stallings
Notary Public

Maria Stallings
Print Name

My Commission Expires: April 11, 2026

OWNER	MAILING ADDRESS	
ARYA, ANJALI NAIR, AJAY	3577 RISE DR	MORRISVILLE NC 27560-5924
BELLAM, ANUDEEP VUNNAM, SAI KAMALA	1971 FAHEY DR	APEX NC 27502-7093
BHAVSAR, DEWANG S BHAVSAR, DIPTI PATEL	2010 LEO DR	APEX NC 27502-4361
BRAHMANDAY, GOVINDA RAGHURAM PALURU, HIMABINDU	829 NIJINSKI WAY	CARY NC 27519-6740
COHEN, STEVEN A SLUSS-COHEN, ILDAURA TANISHA	608 PENINSULA FOREST PL	CARY NC 27519-1605
COUNCIL, GLENWOOD C COUNCIL, LINDA M	2411 KELLY RD	APEX NC 27502-9589
FAHEY FAMILY FARM LLC	1115 CAPITATA XING	APEX NC 27502-9011
FRIENDSHIP COWORKING LLC	2121 MCKENZIE RIDGE LN	APEX NC 27502-6629
GUPTA, MANIK GUPTA, RAJASAVI	842 PEPPER TREE LN	SANTA CLARA CA 95051-5227
GUPTA, SANDEEP RAMBACHAN RAI, SWETA	1952 FAHEY DR	APEX NC 27502-7093
HARGROVE, CATHERINE HEART HARGROVE, CHRISTOPHER EARL	2000 LEO DR	APEX NC 27502-4361
HENDERSON, SAMUEL JUSTIN WALTERS, TYLER SCOTT	1953 FAHEY DR	APEX NC 27502-7093
KARUPPASWAMY, RAMKUMAR KARUPPUSWAMY, RADHIKKAA	1950 FAHEY DR	APEX NC 27502-7093
LI, JUAN	1954 FAHEY DR	APEX NC 27502-7093
LU, YI-TIEN WANG, NAN-YI	1977 FAHEY DR	APEX NC 27502-7093
MALATHI, MOGAN RAJ NADARAJAN BABU, PRIYADARSHINI	1970 FAHEY DR	APEX NC 27502-7093
MASADI, AKHILA BIKKINENI, KONDAL RAO	1969 FAHEY DR	APEX NC 27502-7093
MIUCCIO, ANTHONY J TRUSTEE MIUCCIO, MARTHA J TRUSTEE	PO BOX 2063	APEX NC 27502-1154
MUDDASANI, SANDEEP REDDY MUDDASANI, SHILPA GOUD	2008 LEO DR	APEX NC 27502-4361
MUTHALIP ABUBAKKAR, SHEIK ABDUL BASHEER, ABIYABARVIN AHAMED	1983 CUSTOM LN	APEX NC 27502-4349
PAREEK, ABHISHEK	1967 FAHEY DR	APEX NC 27502-7093
PATURKAR, SHREYAS JITENDRA SHINTRE, PALLAVI SHRINIVAS	1957 FAHEY DR	APEX NC 27502-7093
RAGHUNATHAN, RAGHUNATHAN	2002 LEO DR	APEX NC 27502-4361
RAYALA, GIRIDHAR	1973 FAHEY DR	APEX NC 27502-7093
SAMANTA, SOURISHMOY SINHA, PARINITA	1959 FAHEY DR	APEX NC 27502-7093
SEARS, TONY C SEARS, JUDY T	2508 KELLY RD	APEX NC 27502-9563
SHARMA, SANJAY	1513 KIRBY LN	RALEIGH NC 27614
SHEN, SI	4009 RATCLIFFE	BENTONVILLE AR 72713-7650
SHIELDS LAND LLC	PO BOX 65	HOLLY SPRINGS NC 27540-0065
SKL REALTY LLC	3904 WEDONIA DR	CARY NC 27519-6629
SOTOS, GUSTAVO REZENDE DOS SGARBI, ROXANE TASSI	2006 LEO DR	APEX NC 27502-4361
STANLEY MARTIN HOMES LLC	11710 PLAZA AMERICA DR STE 1100	RESTON VA 20190-4771
THAKURI, SUMAN CHAND, ARPANA	1956 FAHEY DR	APEX NC 27502-7093
UNDEELA, SHASHANK THOTA, KIRANMAI	1972 FAHEY DR	APEX NC 27502-7093
VALENCIA, CAMILA ANDREA SAYDAH, JOHN DEMAREST	1968 FAHEY DR	APEX NC 27502-7093
ZISKIN, NATALIE PARHAM, ANDREW	1974 FAHEY DR	APEX NC 27502-7093
Current Tenant	1947 Fahey DR	APEX NC 27502
Current Tenant	1949 Fahey DR	APEX NC 27502
Current Tenant	1955 Fahey DR	APEX NC 27502
Current Tenant	1961 Fahey DR	APEX NC 27502
Current Tenant	1963 Fahey DR	APEX NC 27502
Current Tenant	1966 Fahey DR	APEX NC 27502
Current Tenant	1975 Fahey DR	APEX NC 27502
Current Tenant	2517 Kelly RD	APEX NC 27502
Current Tenant	2524 Kelly RD	APEX NC 27502
Current Tenant	2601 Kelly RD	APEX NC 27502
Current Tenant	2604 Kelly RD	APEX NC 27502
Current Tenant	2004 Leo DR	APEX NC 27502

APEX ENVIRONMENTAL ADVISORY BOARD
Suggested Zoning Conditions

West Village PUD Amendment 2/3/2025

The Town of Apex Environmental Advisory Board offers this general list of suggested rezoning conditions for rezoning applicants to consider before filling a rezoning petition. The purpose of this list is to encourage and recommend implementation of exceptional environmental practices for future development that exceeds Town requirements. The Board will review each rezoning pre-application request and expand on suggested conditions by offering specific recommendations on a case-by-case basis.

The decision to include any of the recommendations below is voluntary by the applicant and the Board does not expect applicants to add all of the suggested conditions. Planning staff will include all zoning conditions suggested by this Board and will note which conditions have been added by the applicant in the staff reports to the Planning Board and Town Council. Applicants should review this list before meeting with the Board. NOTE: Text in green indicates suggested zoning condition language from Planning Staff. Underlined text indicates text or numbers that may be changed based on the specific project. Additional conditions may be suggested by the EAB at the meeting.

This document is divided into two parts:

- Part I – Residential applies to single-family dwellings and townhome subdivisions, but does not include the parking lots, exterior building lights or exterior architecture.
- Part II – Non-Residential includes condominiums, apartments, and multi-family, common areas in residential developments (e.g. amenity areas, parking lots, exterior building lights, and exterior architecture), commercial, office, and industrial areas. Your development may include elements of each part.

Please be sure to read and complete the entire document. Please provide a response to each goal and/or sub-goal. Any proposed modifications to the green zoning language should be listed in the section at the end of the document.

Part I – Residential

Single-family dwelling and townhome subdivisions (excluding parking lots, exterior building lights and exterior architecture).

STORMWATER AND WATER CONSERVATION – WATER QUALITY (1-5)	YES	NO	N/A
Goal 1. Increase riparian buffer widths from surface waters in environmentally sensitive areas. The project shall increase the riparian buffer width by at least ____ feet above the minimum required by the Unified Development Ordinance. The additional buffer width shall be measured from the top of bank on each side of the stream.	☐	☐	☑
Goal 2. Install signage near environmental sensitive areas in order to reduce pet waste and excess nutrient inputs near Stormwater Control Measure (SCM) drainage areas.			

STORMWATER AND WATER CONSERVATION – WATER QUALITY (1-5)	YES	NO	N/A
The project shall install one (1) sign per SCM to reduce pet waste and prohibit fertilizer, in locations that are publicly accessible, such as adjacent to amenity centers, sidewalks, greenways, or side paths.	☐	☐	☑
Goal 3. Implement Low Impact Development (LID) techniques as defined by the NC Department of Environmental Quality. The project shall install a minimum of _____ Low Impact Development Technique as defined and approved by the NC Department of Environmental Quality. The specific type of LID technique shall be reviewed and approved by the Water Resources Department at site or subdivision plan review.	☐	☐	☑
Goal 4. Increase pervious surface to reduce stormwater runoff and pollutant concentrations. *Option 5.1:* Install pervious pavements where practicable (e.g. when parking maximums are exceeded). The Department of Public Works & Transportation does not currently support these options within the right-of-way (ROW). These may be done on private sites, but not within the public ROW. a. The project shall utilize pervious pavement when constructing the parking spaces for parking lot-style townhomes. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review. The selected system shall be maintained by the developer and/or owner's association. **AND/OR** b. The project shall utilize pervious pavement when constructing the driveways for residential units. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review. The selected system shall be maintained by the developer and/or owner's association.	☐ ☐	☐ ☐	☑ ☑
Goal 5. Use the stormwater captured in the on-site SCM to irrigate landscaping within the development. At least _____ SCM shall be designed and constructed to provide irrigation to the surrounding landscaping on site. The design shall be reviewed and approved by the Water Resources Department at site plan.	☐	☐	☑

PLANTING AND LANDSCAPING (6-13)	YES	NO	N/A
Goal 6. Preserve tree canopy and prioritize medium to large, healthy, desirable species. *Option 6.1:* Preserve existing trees (percentage-based). Numbers shown may be changed based on project**.** The project shall preserve a minimum of _____% of the existing tree canopy. Where the project abuts adjacent developments, special effort shall be taken to locate the preserved trees adjacent to areas of preserved open space, including but not limited to, RCA, perimeter landscape buffers, riparian buffers, and/or HOA maintained open spaces. *Option 6.2:* Replace canopy (percentage- or DBH size-based) where there is sufficient space. The project shall replace any large type trees, that measure 18-inches in caliper size or larger, and small type trees, that measure 8-inches in caliper size or larger, that are removed as a part of the development. The ratio of replacement shall be 1 large tree to 1 replacement tree of similar species or mature size. The UDO's required landscaping may be used to satisfy this requirement. To determine the number of trees that must be replaced, a tree survey for the full property shall be provided to the Planning Department. The survey shall be independently verified by a third-party licensed arborist.	☐ ☐	☐ ☐	☑ ☑

PLANTING AND LANDSCAPING (6-13)	YES	NO	N/A
Goal 7. Plant trees to improve energy efficiency.			
Option 7.1: Plant deciduous shade trees on southern side of buildings**.** To improve energy efficiency, a combination of large and small deciduous shade trees shall be planted on the southern side of any buildings.	☐	☐	☑
Option 7.2: Plant evergreen trees as a windbreak on northern side of buildings. To improve energy efficiency, the project shall plant evergreen trees on the northern side of all buildings to act as a windbreak.	☐	☐	☑
Goal 8. Increase biodiversity. Note: Invasive species are prohibited. Please see the Town's Design and Development Manual for a link to the list of prohibited species. *Option 8.1:* Plant pollinator-friendly flora. Provide diverse and abundant pollinator and bird food sources (e.g. Snectar, pollen, and berries from blooming plants) that bloom in succession from spring to fall. (Refer to the Apex Design & Development Manual for suggested native species). a. The project shall ensure that _____% of the landscaping shall be native species, which shall provide diverse and abundant pollinator and bird food sources. Special attention shall be paid to providing diverse and abundant pollinator and bird food sources, including plants that bloom in succession from spring to fall. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.	☐	☐	☑
Option 8.2: Provide and allow for undisturbed spaces (e.g. leaf piles, unmown fields, fallen trees) for nesting and overwintering for native pollinators and wildlife. In order to support wildlife and pollinators, HOA covenants shall not require that fallen leaves or dormant plants be removed during the winter on areas without turf grass, including individual homes and HOA owned common areas.	☐	☐	☑
Option 8.3: Retain and protect old ponds if the dam is structurally sound. To preserve and protect existing species, existing ponds shall be preserved if structurally sound.	☐	☐	☑
Option 8.4: Increase the number of native trees and shrubs. a. The project shall increase biodiversity within perimeter buffers, common owned open space, and other landscape areas by providing a variety of native and adaptive species for the canopy, understory and shrub levels. A minimum of _____% of the species selected shall be native or a native of North Carolina.	☐	☐	☑
AND/OR			
b. No single species of native or adaptive vegetation shall constitute more than 20% of the plant material of its type within a single development site.	☐	☐	☑
Goal 9. Implement xeriscaping in design, which will use landscaping that requires less irrigation and chemical use. Contact Planning for assistance, if needed. a. The project commits to planting only drought tolerant plants, of which _____% of the plants selected shall be native. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.	☐	☐	☑
OR			
b. To reduce irrigation requirements, the project shall select and plant only warm season grasses.	☐	☐	☑
Goal 10. Promote the benefits of native pollinators. The project shall plant at least _____ native pollinator demonstration garden within the development. The developer shall coordinate with a local or state agency that specializes in the design or certification of such gardens. Informational signage regarding the purpose of the garden and selected vegetation shall be provided. The pollinator garden shall be maintained by the developer or HOA.	☐	☐	☑
Goal 11. Improve soil quality to be amenable for a variety of native and non-invasive plantings.			

PLANTING AND LANDSCAPING (6-13)	YES	NO	N/A
To encourage the establishment of healthy plants, reduce fertilizers, and reduce stormwater runoff, topsoil shall be retained on site and a minimum of 4 inches of topsoil shall be placed on each lot and within disturbed common areas.	☐	☐	☑
Goal 12. Increase perimeter buffer requirements, especially in transitional areas (nonresidential to residential areas). The UDO requires a _____-foot buffer along the _____perimeter of the property. The applicant shall add _____-foot buffer in that location, which would be an increase of _____-feet above the requirement.	☐	☐	☑
Goal 13. Reduce impacts to resource conservation Areas (RCAs). a. The project shall install signage adjacent to wooded or natural condition Resource Conservation Area. The signage shall indicate that the area is RCA and is to be preserved in perpetuity and not disturbed.	☐	☐	☑
OR			
b. A farm-style split rail fence shall be installed where wooded or natural condition Resource Conservation Area (RCA) abuts individual residential lots.	☐	☐	☑

SUSTAINABLE BUILDINGS (14)	YES	NO	N/A
Goal 14. Apply for green building certifications, such as LEED, Energy Star, BREEAM, Green Globes, NGBS Green, or GreenGuard. The project shall be designed to meet the requirements for one of the green building certifications listed above. A third-party consultant shall be hired to evaluate the project and certify to the Town of Apex that the project meets the standards for the certification. The applicant shall forward a copy of the certification application to the Town of Apex Planning Department to verify that the application has been submitted.	☐	☐	☑

WASTE MANAGEMENT (15)	YES	NO	N/A
Goal 15. Encourage the proper disposal of pet waste to reduce environmental impacts. ***Numbers shown may be changed based on project.*** The project shall install at least one (1) pet waste station per 25 residential units throughout the community in locations that are publicly accessible, such as adjacent to amenity centers, SCMs, sidewalks, greenways or side paths. If there fewer than 25 homes, at least one (1) pet waste station shall be installed.	☐	☐	☑

CLEAN ENERGY (16-18)	YES	NO	N/A
Goal 16. Install rooftop solar on buildings. a. A solar PV system of at least _____kW shall be installed on at least _____homes within the development. All solar installation required by this condition shall be completed or under construction prior to 90% of the building permits being issued for the development. The lot(s) on which this home/these homes is/are located shall be identified on the Master Subdivision Plat, which may be amended from time to time.	☐	☐	☑
AND/OR			
b. A solar PV system shall be installed on a minimum of _____model home. All solar installation required by this condition shall be completed or under construction prior to _____% of the building permits being issued for the development. The lot(s) on which this home/these homes is/are located shall be identified on the Master Subdivision Plat, which may be amended from time to time.	☐	☐	☑
AND/OR			

CLEAN ENERGY (16-18)	YES	NO	N/A
c. The amenity center for the project shall include a rooftop solar PV system with a capacity of at least _____ kWHs.	☐	☐	☑
Goal 17. Include solar conduit in building design. All homes shall be pre-configured with conduit for a solar energy system.	☐	☐	☑
Goal 18. Encourage clean transportation. The developer shall install at least _____electric vehicle charging station in amenity centers or common area parking lots.	☐	☐	☑

Part II - Non-Residential

Includes condominiums, apartments, and multi-family, common areas in residential developments (e.g. amenity areas, parking lots, exterior building lights, and exterior architecture), commercial, office, and industrial areas.

STORMWATER AND WATER CONSERVATION – WATER QUANTITY (1)	YES	NO	N/A
Goal 1. Increase design storm for retention basin in flood-prone areas. The UDO requires that treatment for the first 1-inch of runoff will be provided such that the removal of 85% Total Suspended Solids is achieved. Each option is intended to be used as an improvement to the minimum UDO requirements. If an area is already required to mitigate the 25-year storm, option b should not be selected.			
a. Post-development peak runoff shall not exceed pre-development peak runoff for the 24-hour, 1-year, 10-year, 25-year and 100-year storm events in accordance with the Unified Development Ordinance.	☐	☐	☑
OR			
b. Post development peak runoff shall not exceed pre-development peak runoff for the 24-hour, 1-year, 10-year, and 25-year storm events in accordance with the Unified Development Ordinance.	☐	☐	☑

STORMWATER AND WATER CONSERVATION – WATER QUALITY (2-7)	YES	NO	N/A
Goal 2. Increase riparian buffer widths from surface waters in environmentally sensitive areas. The project shall increase the riparian buffer width by at least _____feet above the minimum required by the Unified Development Ordinance. The additional buffer width shall be measured from the top of bank on each side of the stream.	☐	☐	☑
Goal 3. Limit tree clearing, stormwater control measures (SCM), or infrastructure in either zone of the riparian buffer. No clearing or land disturbance shall be permitted within the riparian buffer, except the minimum necessary to install required sewer infrastructure and SCM outlets. The SCM water storage and treatment area shall not be permitted within the riparian buffer. The sewer shall be designed to minimize impacts to the riparian buffer.	☐	☐	☑
Goal 4. Install signage near environmental sensitive areas in order to reduce pet waste and excess nutrient inputs near Stormwater Control Measure (SCM) drainage areas. The project shall install one (1) sign per SCM to reduce pet waste and prohibit fertilizer, in locations that are publicly accessible, such as adjacent to amenity centers, sidewalks, greenways, or side paths.	☐	☐	☑
Goal 5. Implement low impact development (LID) techniques as defined by the NC Department of Environmental Quality. The project shall install a minimum of _____Low Impact Development Technique as defined and approved by the NC Department of Environmental Quality. The specific	☐	☐	☑

STORMWATER AND WATER CONSERVATION – WATER QUALITY (2-7)	YES	NO	N/A
type of LID technique shall be reviewed and approved by the Water Resources Department at site or subdivision plan review.			
Goal 6. Increase pervious surface to reduce stormwater runoff and pollutant concentrations. The Department of Public Works & Transportation does not currently support these options within the ROW. These may be done on private sites, but not within the public ROW. *Option 6.1:* Install pervious pavements where practicable (e.g. when parking maximums are exceeded). a. The project shall utilize pervious pavement when constructing parking spaces that are in excess of the minimum parking requirement. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review.	☐	☐	☑
AND/OR			
b. The project shall utilize pervious pavement for all of the parking spaces provided. The specific type of pervious pavement system shall be reviewed and approved by the Water Resources Department at site or subdivision plan review.	☐	☐	☑
Option 6.2: Modify curb and gutters to provide stormwater infiltration and evaporation, such as swale-only, reverse curbs, Silva cells, or curb cuts with rain gardens. To increase stormwater infiltration and evaporation, the project shall use modified curb and gutter designs to direct driveway runoff to one or more stormwater device, such as, but not limited to, bioswales, Silva cells, or rain gardens. The specific type and design shall be selected at site or subdivision plan review. The proposal shall be reviewed and approved by the Water Resources Department and Department of Public Works and Transportation.	☐	☐	☑
Option 6.3: Utilize green street design. May be done within the public ROW if it's in the form of a bioretention cell within a landscaped median or large roundabout. Will require approval by the Department of Public Works and Transportation. The project shall design and install one or more bioretention cells within the landscape median or roundabout along the primary road. The specific type and design shall be determined at site or subdivision plan review. The proposal shall be reviewed and approved by the Water Resources Department and Department of Public Works and Transportation.	☐	☐	☑
Goal 7. Stormwater re-use application: Integrate irrigation from the SCM (wet pond) on site.			
At least one _____SCM shall be designed and constructed to provide irrigation to the surrounding landscaping on site. The design shall be reviewed and approved by the Water Resources Department at site plan.	☐	☐	☑

PLANTING AND LANDSCAPING (8-15)	YES	NO	N/A
Goal 8. Preserve tree canopy and prioritize medium to large, healthy, desirable species. *Option 8.1:* Preserve existing trees (percentage-based). Numbers shown may be changed based on project**.** The EAB's preference is for a minimum of 50%. a. The project shall preserve a minimum of _____% of the existing tree canopy. Preserved areas may include, but are not limited to, RCA, perimeter buffers, riparian buffers and/or HOA maintained open space throughout the neighborhood.	☐	☐	☑
OR			
b. The project shall preserve a minimum of _____% of the existing tree canopy. Where the project abuts adjacent developments, special effort shall be taken to	☐	☐	☑

PLANTING AND LANDSCAPING (8-15)	YES	NO	N/A
locate the preserved trees adjacent to areas of existing preserved open space, including but not limited to, RCA, perimeter landscape buffers, riparian buffers, and/or HOA maintained open spaces. *Option 8.2:* Replace canopy (percentage- or DBH size-based) where there is sufficient space. The project shall replace any large type trees, that measure 18-inches in caliper size or larger, and small type trees, that measure 8-inches in caliper size or larger, that are removed as a part of the development. The ratio of replacement shall be 1 large tree to 1 replacement tree. The UDO's required landscaping may be used to satisfy this requirement. To determine the number of trees that must be replaced, a tree survey for the full property shall be provided to the Planning Department. The survey shall be independently verified by a third-party licensed arborist.	☐	☐	☑
Goal 9. Plant trees for improved energy efficiency. *Option 9.1:* Plant deciduous shade trees on southern side of buildings. To improve energy efficiency, a combination of large and small deciduous shade trees shall be planted on the southern side of any buildings.	☐	☐	☑
Option 9.2: Plant evergreen trees as a windbreak on northern side of buildings. To improve energy efficiency, the project shall plant evergreen trees on the northern side of all buildings to act as a windbreak.	☐	☐	☑
Goal 10. Increase biodiversity. *Option 10.1:* Plant pollinator-friendly flora. Provide diverse and abundant pollinator and bird food sources (e.g. nectar, pollen, and berries from blooming plants) that bloom in succession from spring to fall. (Refer to the Apex Design & Development Manual for suggested native species). a. The project shall select and install tree, shrub and perennial species with special attention to providing diverse and abundant pollinator and bird food sources, including plants that bloom in succession from spring to fall.	☐	☐	☑
OR			
b. The project shall ensure that _____% of the landscaping shall be native species. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review.	☐	☐	☑
Option 10.2: Retain and protect old ponds if the dam is structurally sound. To preserve and protect existing species, existing ponds shall be preserved if structurally sound.	☐	☐	☑
Option 10.3: Increase the number of native tree and shrub species selected. a. The project shall increase biodiversity within perimeter buffers, common owned open space, and other landscape areas by providing a variety of native and adaptive species for the canopy, understory and shrub levels. A minimum of _____% of the species selected shall be native or a native of North Carolina.	☐	☐	☑
OR			
b. No invasive species shall be permitted. No single species of tree or shrub shall constitute more than 20% of the plant material of its type within a single development site.	☐	☐	☑
Goal 11. Implement green infrastructure. *Option 11.1:* Plant rain gardens. The project shall install one or more rain gardens throughout the site.	☐	☐	☑
Option 11.2: Install vegetated rooftops. a. The project shall install a vegetated rooftop, aka green roof, on each building.	☐	☐	☑
OR			
b. The project shall install a vegetated rooftop, aka green roof, on at least _____ft^2 of each building.	☐	☐	☑

PLANTING AND LANDSCAPING (8-15)	YES	NO	N/A
Option 11.3: Implement xeriscaping in design. a. The project commits to planting _____% drought tolerant native plants. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review. **OR** b. The project commits to planting only drought tolerant plants. At least _____% of the plants selected shall be native. Landscaping shall be coordinated with and approved by the Planning Department at site or subdivision review. **OR** c. To reduce irrigation requirements, the project shall select and plant only warm season grasses.	☐ ☐ ☐	☐ ☐ ☐	☑ ☑ ☑
Goal 12. Install community gardens and native pollinator demonstration gardens. The project shall plant at least _____ native pollinator demonstration garden within the development. The developer shall coordinate with a local or state agency that specializes in the design or certification of such gardens. Informational signage regarding the purpose of the garden and selected vegetation shall be provided.	☐	☐	☑
Goal 13. Improve soil quality to be amenable for a variety of native and non-invasive plantings. To encourage the establishment of healthy plants, reduce fertilizers, and reduce stormwater runoff, topsoil shall be retained on site and a minimum of 4 inches of topsoil shall be placed within disturbed areas.	☐	☐	☑
Goal 14. Increase perimeter buffer requirements, especially in transitional areas (nonresidential to residential areas). The UDO requires a _____-foot buffer along the _____perimeter of the property. The applicant is proposing a _____-foot buffer in that location, which would be an increase of _____-feet above the requirement.	☐	☐	☑
Goal 15. Add information signage or other marking at the boundary of lots when they are adjacent to a wooded or natural condition resource conservation area (RCA) indicating that the area beyond the sign is RCA and is not to be disturbed. a. The project shall install signage adjacent to wooded or natural condition Resource Conservation Area. The signage shall indicate that the area is RCA and is to be preserved in perpetuity and not disturbed. **OR** b. A farm-style split rail fence shall be installed where wooded or natural condition Resource Conservation Area (RCA) abuts individual residential lots.	☐ ☐	☐ ☐	☑ ☑

SUSTAINABLE BUILDINGS (16)	YES	NO	N/A
Goal 16. Apply for green building certifications, such as LEED, Energy Star, BREEAM, Green Globes, NGBS Green, or GreenGuard. The project shall be designed to meet the requirements for _____green building certification. A third-party consultant shall be hired to evaluate the project and certify to the Town of Apex that the project meets the standards for the certification. The applicant shall forward a copy of the certification application to the Town of Apex Planning Department to verify that the application has been submitted.	☐	☐	☑

WASTE REDUCTION (17)	YES	NO	N/A
Goal 17. Install pet waste stations in public areas for multi-family, apartments, or condominiums or dog friendly businesses.			

WASTE REDUCTION (17)	YES	NO	N/A
The project shall install at least _____ pet waste stations throughout the community, in locations that are publicly accessible, such as adjacent to amenity centers, SCMs, sidewalks, greenways or side paths.	☐	☐	☑

CLEAN ENERGY (18-20)	YES	NO	N/A
Goal 18. Install rooftop solar on buildings.			
a. A solar PV system shall be incorporated into buildings to be constructed on the property. Such PV systems shall have a capacity of not less than 2 kW/1,000 heated square feet of building floor area.	☐	☐	☑
OR			
b. A solar PV system of at least 3.5kW shall be installed on at least _____% of or _____ buildings within the development. All solar installation required by this condition shall be completed or under construction prior to _____% of the building permits being issued for the development. The buildings on which these PV systems are located shall be identified on the Site Plan, which may be amended from time to time.	☐	☐	☑
OR			
c. The amenity center for the project shall include a rooftop solar PV system with a capacity of at least _____ kWHs.	☐	☐	☑
Goal 19. Include solar conduit in building design.			
The project shall install conduit for solar energy systems for all non-residential buildings. The roof shall also be engineered to support the weight of a future rooftop solar PV system.	☐	☐	☑
Goal 20. Encourage clean transportation.			
a. The installation of EV charging spaces shall not reduce the width of adjacent sidewalk to less than 5 feet.	☐	☐	☑
AND/OR			
b. EV charging spaces shall be located such that the cords shall not cause a trip hazard.	☐	☐	☑
AND/OR			
c. The developer shall provide 5% of all parking spaces as EV charging spaces.	☐	☐	☑

LIGHTING EFFICIENCY (21-24)	YES	NO	N/A
Goal 21. Include energy efficient lighting in building design.			
Option 21.1: *Increase the use of LEDs.* The exterior lighting for all multi-family and commercial buildings and parking lots will consist entirely of LED fixtures.	☐	☐	☑
Option 21.2: Lower maximum foot-candles outside of buildings. On the lighting plan, the average footcandle measurement for parking, building lighting and driveways shall be at least 0.5 footcandles lower than the UDO requires.	☐	☐	☑
Goal 22. Install timers or light sensors or smart lighting technology.			
a. The project shall install light timers, motion sensors, or other smart lighting technology for all exterior lighting.	☐	☐	☑
Goal 23. Include International Dark Sky Association compliance standards.			
The project shall use full cutoff LED fixtures that have a maximum color temperature of 3000K for all exterior lighting, including, but not limited to, parking lot and building mounted fixtures.	☐	☐	☑

Applicant Clarification/Additional Language:
The proposed PUD Amendment is exempt from EAB review. UDO Section 2.1.9.A).2).a) states: The following conditional rezoning requests shall be exempt from review by the Board: a) Rezonings to amend zoning conditions which have no environmental impact on a site including but not limited to revisions to architectural standards, building height setbacks, and uses. This PUD Amendment proposes revisions to existing PUD conditions related to transportation infrastructure improvements, but does not propose any amendments to conditions which have an environmental impact.
Additional Board Recommendations:

NOTICE OF NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

April 1, 2025
Date

Dear Neighbor:
You are invited to a neighborhood meeting to review and discuss the development proposal at

2517 Kelly Road — Address(es)
0731434504 — PIN(s)

in accordance with the Town of Apex Neighborhood Meeting procedures. This meeting is intended to be a way for the applicant to discuss the project and review the proposed plans with adjacent neighbors and neighborhood organizations before the submittal of an application to the Town. This provides neighbors an opportunity to raise questions and discuss any concerns about the impacts of the project before it is officially submitted. If you are unable to attend, please refer to the Project Contact Information page for ways to contact the applicant. Notified neighbors may request that the applicant provide updates and send plans via email or mail. Once an application has been submitted to the Town, it may be tracked using the Interactive Development Map or the Apex Development Report located on the Town of Apex website at http://www.apexnc.org/180. Applications for Rezoning must hold a second Neighborhood Meeting in the month prior to the anticipated public hearing date.

A Neighborhood Meeting is required because this project includes (check all that apply):

	Application Type	Approving Authority
☑	Rezoning (including Planned Unit Development)	Town Council
☐	Major Site Plan	Technical Review Committee (staff)
☐	Minor Site Plan for the uses "Day care facility", "Government service", "School, public or private", "Restaurant, drive-through", or "Convenience store with gas sales"	Technical Review Committee (staff)
☐	Special Use Permit	Board of Adjustment (QJPH*)
☐	Residential Master Subdivision Plan (excludes exempt subdivisions)	Technical Review Committee (staff)

*Quasi-Judicial Public Hearing: The Board of Adjustment cannot discuss the project prior to the public hearing.

The following is a description of the proposal (also see attached map(s) and/or plan sheet(s)):

The applicant is proposing a rezoning to amend conditions of the West Village PUD and a site plan for the development of non-residential uses, including, but not limited to, a daycare, retail space, and office space.

Estimated submittal date: Submitted on February 3, 2025

MEETING INFORMATION:

Property Owner(s) name(s):	Fahey Family Farm, LLC
Applicant(s):	Trilandco, LLC c/o Collier R. Marsh
Contact information (email/phone):	colliermarsh@parkerpoe.com; (919) 835-4663
Meeting Address:	Virtual (Zoom) - See attached notice letter
Date/Time of meeting**:	April 15, 2025 (5:30 - 6:30 PM)

Welcome: 5:30 PM Project Presentation: 5:30 PM Question & Answer: 6:00PM

**Meetings shall occur between 5:00 p.m.-9:00 p.m. on a Monday through Thursday (excluding Town recognized holidays). If you have questions about the general process for this application, please contact the Planning Department at 919-249-3426. You may also find information about the Apex Planning Department and on-going planning efforts at http://www.apexnc.org/180.

Parker Poe
Attorneys & Counselors at Law

To: Neighboring Property Owners and Tenants
From: Collier R. Marsh
Date: April 1, 2025

Re: Notice of Second Virtual Neighborhood Meeting

You are invited to attend a second virtual neighborhood meeting on April 15, 2025 at 5:30 PM to discuss 25CZ05, the proposed rezoning and site plan applications for an approximately 6.19-acre property located at 2517 Kelly Road (PIN 0731434504). The rezoning will amend the West Village PUD zoning conditions that currently apply to the property and rezone the property from Planned Unit Development Conditional Zoning (PUD-CZ) to PUD-CZ with revised conditions. The site plan application will allow for the development of non-residential uses on the property, including, but not limited to, a day care facility and office space.

During the meeting, the applicant will describe the nature of the rezoning request, provide updates since the first neighborhood meeting, and field any questions from the public. Enclosed are: (1) a vicinity map outlining the location of the property; (2) a zoning map of the area; (3) a copy of the PUD Plan, (4) a draft site plan, (5) a Transportation Plan exhibit, (6) a project contact information sheet; and (7) a common construction issues & who to call information sheet.

The meeting will be held virtually. You can participate online via Zoom or by telephone. To participate in the Zoom online meeting:

Visit:	https://zoom.us./join
Enter the following meeting ID:	875 3788 7197
Enter the following password:	180565

To participate by telephone:

Dial:	1 929 205 6099
Enter the following meeting ID:	875 3788 7197
Enter the Participant ID:	#
Enter the Meeting password:	180565

If you have any questions about this rezoning, please contact me at (919) 835-4663 or via email at colliermarsh@parkerpoe.com.

Sincerley,

Collier R. Marsh

2517 Kelly Road

Vicinity Map

N

0 200 400 800 ft

1 inch equals 400 feet

2517 Kelly Road

Zoning Map

Current Zoning: PUD-CZ

N

0 200 400 800 ft

1 inch equals 400 feet

Disclaimer

*iMaps makes every effort to produce and publish the most current and accurate information possible. However, the maps are produced for information purposes, and are **NOT** surveys. No warranties, expressed or implied ,are provided for the data therein, its use,or its interpretation.*

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	S40°32'07"W	71.72
L2	S41°36'33"W	53.02
L3	S42°59'16"W	53.35
L4	S44°03'19"W	53.17
L5	S45°07'59"W	53.49
L6	S46°17'03"W	53.01
L7	S47°08'27"W	49.64
L8	S47°56'55"W	40.75
L9	S48°37'10"W	50.54
L10	S50°43'16"W	84.89
L11	S51°56'36"W	53.06
L12	S52°56'35"W	52.31
L13	S54°05'42"W	56.50
L14	S54°00'47"W	21.64
L15	S56°04'32"W	95.13
L16	S57°13'06"W	90.86
L17	N04°40'34"E	50.02
L21	S24°58'58"E	73.12
L22	S26°40'10"E	79.58
L23	S29°35'51"E	60.12
L24	S30°35'44"E	44.59
L25	S32°44'34"E	108.36

PHASING NOTES

1. THE PROPERTY WILL BE DEVELOPED IN UP TO 10 PHASES. THE TIMING AND AMOUNT OF PHASES WILL BE DEFINED AT THE TIME OF SITE PLAN REVIEW.

2. ACCESS POINTS ARE PRELIMINARY IN NATURE AND SUBJECT TO TOWN OF APEX AND NCDOT REVIEW AT TIME OF SITE PLAN REVIEW.

3. LIMITS OF LAND DISTURBANCE WITHIN EACH PHASE TO BE FINALIZED AT SITE PLAN PHASE.

4. PUBLIC UTILITIES SHALL BE PROVIDED FOR EACH PHASE.

5. ROADWAY PHASING – PRIOR TO TIME OF THE FIFTY–FIRST PLATTED LOT ASSOCIATED WITH THE RESIDENTIAL LOCATED OFF OF OLD US HWY 1, THE SECOND POINT OF ACCESS (SOUTHERNMOST PORTION OF STREET 'A'), NECESSARY PORTION OF THE SOUTHERNMOST ROUNDABOUT AND STREET 'B' SHOWN SHALL BE CONSTRUCTED. AS A PART OF THE NON–RESIDENTIAL DEVELOPMENT IN POD 3, THE ROUNDABOUT PROPOSED ON KELLY ROAD SHALL BE CONSTRUCTED ALONG WITH THE PORTION OF STREET 'A' TYING BACK TO THE SOUTHERNMOST ROUNDABOUT. PRIOR TO TIME OF THE FIRST CERTIFICATE OF OCCUPANCY FOR ANY COMMERCIAL WITHIN POD 3, STREET 'A' WILL BE FULLY CONSTRUCTED, CONNECTING KELLY ROAD TO OLD US HWY 1.

SITE NOTES

1. REFER TO PUD DOCUMENT FOR A COMPLETE LIST OF ALLOWABLE USES FOR EACH TRACT OR DEVELOPMENT AREA.

2. NO SITE DEVELOPMENT ACTIVITY INCLUDING BUT NOT LIMITED TO TESTING, CLEARING, INSTALLATION OF S&E MEASURES, OR GRADING, SHALL OCCUR UNTIL REQUIRED PROTECTION FENCING HAS BEEN INSTALLED AND INSPECTED. A PROTECTION FENCING INSTALLATION PERMIT MAY BE OBTAINED AT THE PLANNING DEPARTMENT OR BY CALLING 919–249–3426.

3. PROTECTION FENCING MUST BE PLACED AWAY FROM ANY SAVED TREE ONE FOOT FOR EACH INCH OF TREE CALIPER. PROTECTION FENCING MUST BE PLACED AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RESOURCE CONSERVATION AREA, SUCH AS, BUT NOT LIMITED TO, HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS. PROTECTION FENCING MUST BE PLACED ALONG THE OUTSIDE LINE OF THE 100–YEAR FLOODPLAIN, AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER. ADDITIONAL PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER; SUCH AREAS MAY INCLUDE BUT ARE NOT LIMITED TO, COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC).

4. ALL GRADING AND SUPPORT STRUCTURES ASSOCIATED WITH ANY RETAINING STRUCTURE SHALL NOT ENCROACH INTO ANY REQUIRED BUFFER OR PROTECTED AREA (SUCH AS, BUT NOT LIMITED TO, RCA AND CRITICAL ROOT ZONES OF TREES, PUBLIC UTILITY EASEMENTS, AND RIGHTS–OF–WAY), AND SHALL BE CONTAINED ENTIRELY ON SITE.

5. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, PLAY FIELDS AND GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.

6. THE SCREENING OF TRASH CONTAINERS (INCLUDING DUMPSTERS AND ROLL–OUT CARTS), OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, ON THE GROUND, OR ON BUILDINGS SHALL MEET THE REQUIREMENTS FOUND IN SECTION 8.2.8 OF THE UNIFIED DEVELOPMENT ORDINANCE; SPECIFICALLY SCREENING MUST BE DONE SO THAT:

   A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.

   B. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR.

   C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.

   D. ANY GROUND–MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX–FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.

   E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS THEY MUST BE AT LEAST EIGHT–FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS TALLER; AND BE BUILT OF MASONRY MATERIAL.

7. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.

8. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING (INCLUDING MULCH), SCREENING (i.e.: DUMPSTERS/TRASH, MECHANICAL/HVAC, ETC.), SITE STABILIZATION (SEEDING), AND PARKING AND PAVEMENT MARKING MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.

9. NO SIGNS ARE APPROVED AS PART OF THE PUD–CZ PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED. SIGNAGE WILL COMPLY WITH APEX'S UDO.

10. EXACT ACCESS AND STUB LOCATIONS TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

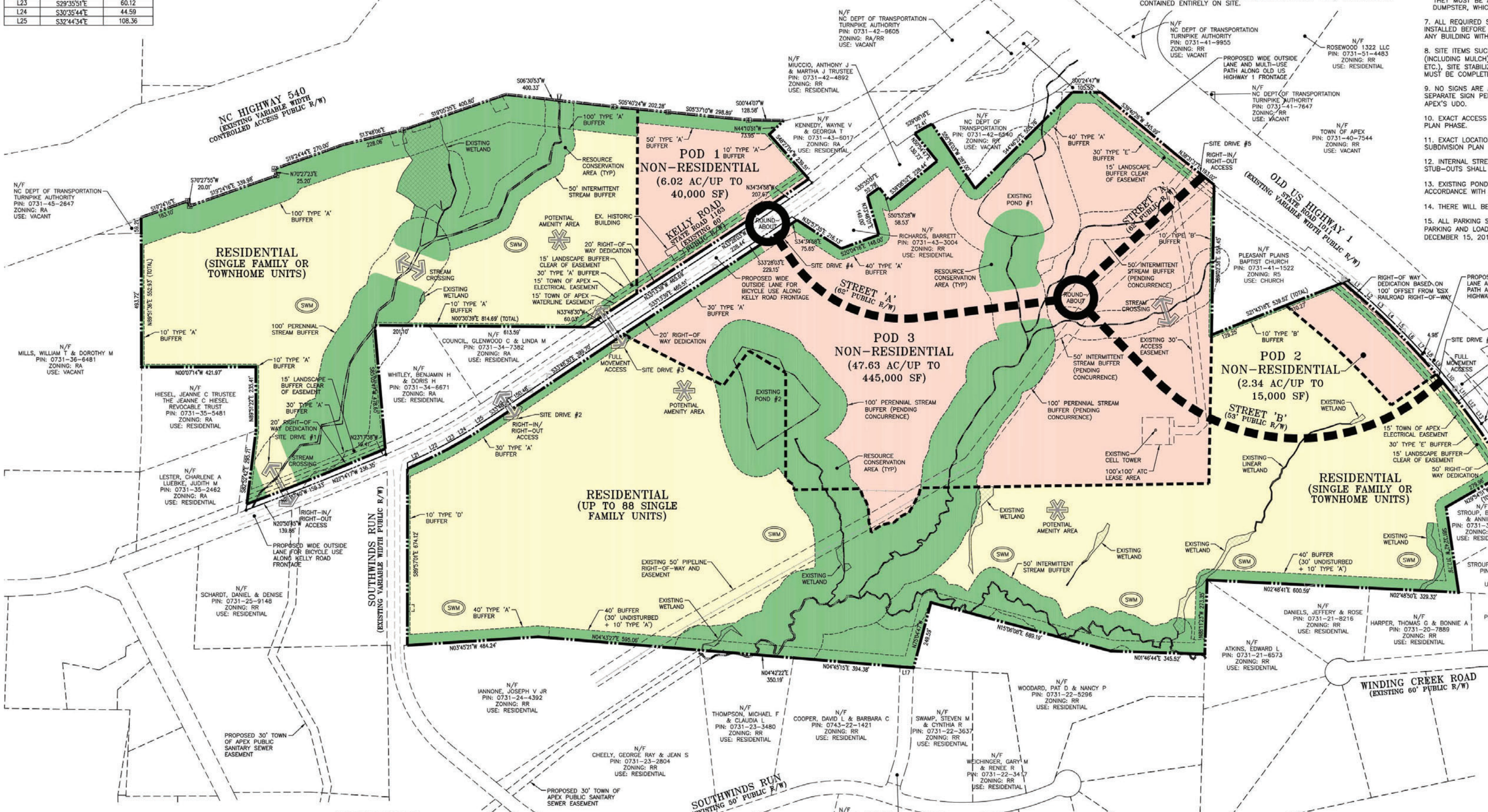
11. EXACT LOCATION OF RESOURCE CONSERVATION AREA TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

12. INTERNAL STREETS SHALL BE DEDICATED TO THE TOWN OF APEX. ROAD STUB–OUTS SHALL BE PROVIDED PER TOWN OF APEX REQUIREMENTS.

13. EXISTING PONDS #1 & 2 MAY BE DRAINED AT A LATER DATE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.

14. THERE WILL BE NO RESIDENTIAL DRIVEWAYS ON STREETS 'A' AND 'B'.

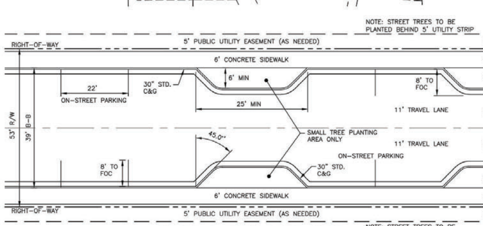
15. ALL PARKING STANDARDS WITHIN THE PUD WILL COMPLY WITH SECTION 8.3, PARKING AND LOADING, OF THE TOWN OF APEX'S UDO (EFFECTIVE DATE DECEMBER 15, 2015).



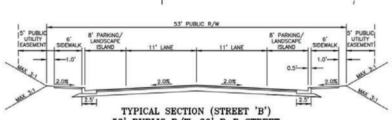
LEGEND

- NON–RESIDENTIAL USE
- RESIDENTIAL USE
- APPROXIMATE LOCATION OF RESOURCE CONSERVATION AREAS OR PLANTED BUFFERS
- VEHICULAR SITE ACCESS POINTS AND APPROXIMATE STREAM CROSSING LOCATIONS
- POSSIBLE LOCATION OF AMENITY AREA (1 TOTAL ON SITE)
- SWM — APPROXIMATE LOCATION OF STORMWATER MANAGEMENT FACILITY

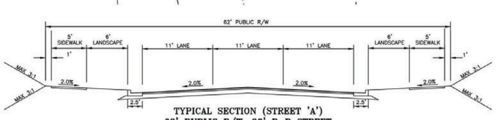
NOTE: ALL ITEMS IN LEGEND OTHER THAN VEHICULAR SITE ACCESS POINTS ARE SHOWN CONCEPTUALLY, FINAL LOCATION OF AMENITIES, RCA, & STORMWATER MANAGEMENT FACILITIES WILL BE DETERMINED AT THE TIME OF SITE PLAN.



TYPICAL ON–STREET PARKING DETAIL
N.T.S.



TYPICAL SECTION (STREET 'B')
53' PUBLIC R/W, 39' B–B STREET
(TWO WAY WITH PARKING OR PLANTING AREA BOTH SIDES)
N.T.S.



TYPICAL SECTION (STREET 'A')
62' PUBLIC R/W, 38' B–B STREET
(TWO WAY WITH MIDDLE TURNING LANE)
N.T.S.

GRAPHIC SCALE
200 0 100 200 400
1 inch = 200 ft.

PRELIMINARY DRAWING – NOT RELEASED FOR CONSTRUCTION

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 • McAdamsCo.com

McADAMS

REVISIONS:
1 2020-06-12 PER TOWN OF APEX COMMENTS
2 2020-06-24 PER TOWN OF APEX COMMENTS

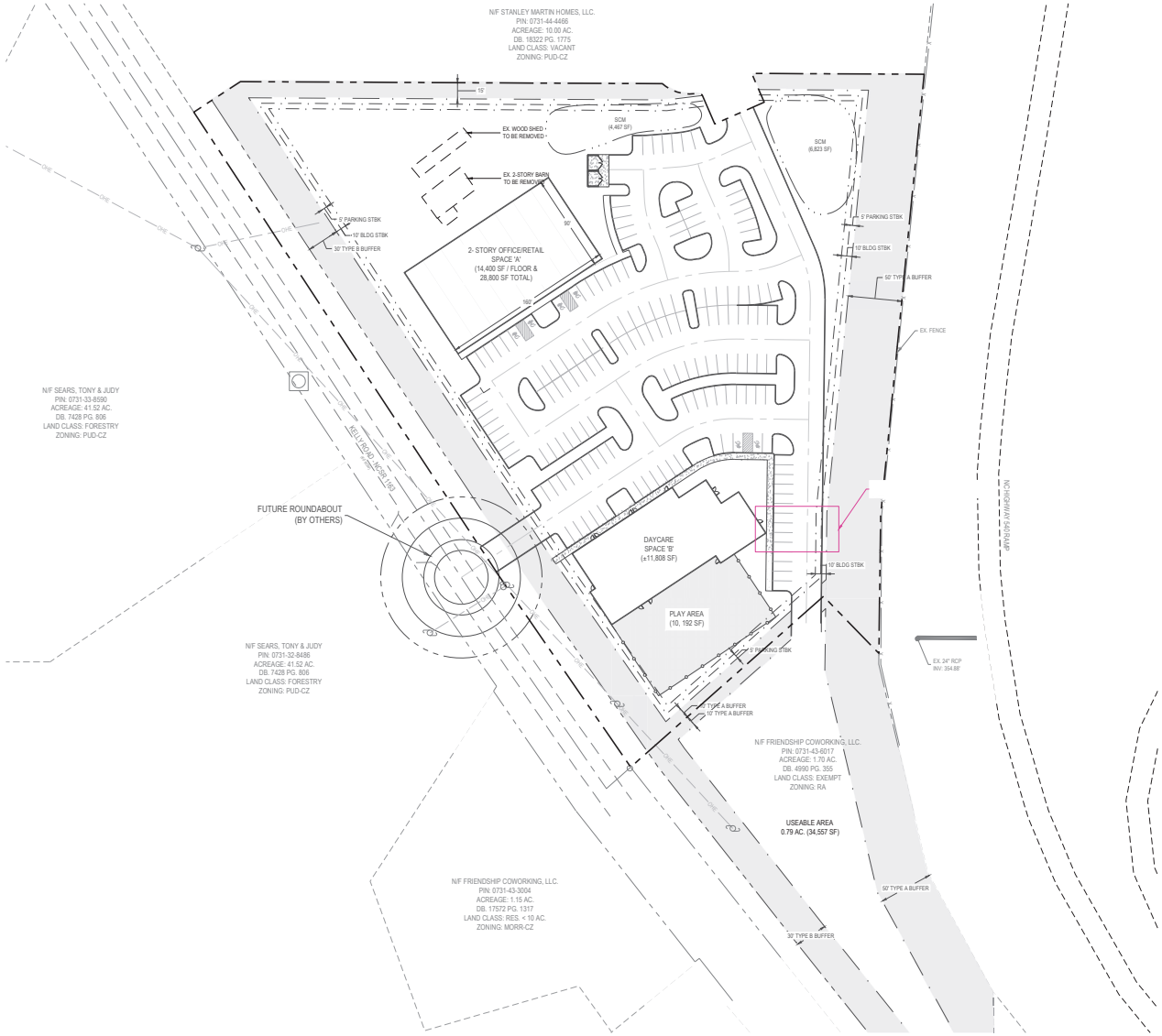
DEVELOPER:
STANLEY MARTIN HOMES
4020 WESTCHASE BOULEVARD, SUITE 190
RALEIGH, NC 27607

WEST VILLAGE
KELLY ROAD & OLD US HIGHWAY 1
APEX, NORTH CAROLINA

PRELIMINARY LAYOUT & PHASING PLAN

PROJECT NO.	ORL-15000
FILENAME:	ORL15000-S1
DESIGNED BY:	RCZ
DRAWN BY:	RLU
SCALE:	1"=200'
DATE:	05-01-2020
SHEET NO.	C-2

McADAMS



SITE DATA	
OWNER	FAHEY FAMILY FARM, LLC.
SITE ADDRESS	2517 KELLY ROAD APEX, NC 27502
PIN	0731-43-4504
REAL ID	454287
ACREAGE	6.19 AC.
DB, PG	DB 17062, PG 1716
2045 LAND USE MAP	PUD-CZ
EXISTING USE	SINGLE FAM
REZONING 07-19-2016	15C233
PROPOSED ZONING	PUD-CZ
TOWNSHIP	WHITE OAK
SUB-WATERSHED	BEAVER CREEK
RIVER BASIN	CAPE FEAR
FEMA MAP	MAP#3720073100K DATE 07.19.22
HISTORICAL	(1) BARN PER WA1052
ROW DEDICATION	XX AC. (XX SF)
NEW TRACT AREA	XX AC. (XX SF)
DEVELOPMENT TYPE - COMMERCIAL	
PROPOSED USE	OFFICE / RETAIL & DAYCARE
DENSITY	500,000 SF
MIN. LOT AREA	5,000 SF
MIN. LOT SIZE	5,000 SF
MIN. LOT WIDTH	N/A
BUILDING DETAILS	
MAX. BUILDING HEIGHT	75' (5-STORY)
PROPOSED BUILDING HEIGHT	XX'
PROPOSED BUILDING STORIES	2 STORIES
BUILDING SETBACKS	
FRONT	5'
SIDE	5'
CORNER	5'
REAR	5'
BUILD UPON AREA	
MAX. BUILD UPON AREA	4.33 AC. (70 %)
PROPOSED BULD UPON AREA	XX AC. (XX %)
PARKING	
PARKING CALCS. (OFFICE / BUSINESS)	1 SPACE / 250 SF
BUILDING SF TOTAL	28,800 SF
PARKING REQUIRED	116 SPACES
PARKING PROVIDED	117 SPACES
PARKING CALCS. (DAY CARE)	1 SPACE / 6 PERSON
TOTAL CAPACITY	250
PARKING REQUIRED	42 SPACES
PARKING PROVIDED	52 SPACES
TOTAL PARKING REQUIRED	158 SPACES
TOTAL PARKING PROVIDED	169 SPACES
ADA PARKING CALCS.	151 TO 200 = 8
ADA PARKING REQUIRED	6 SPACES
ADA PARKING PROVIDED	6 SPACES
RCA	
RCA REQUIRED	1.55 AC. (67,518 SF) - 25%
RCA (PERIMETER BUFFERS)	1.65 AC. (71,914 SF) - 27%
RCA (SCM)	XX AC. (XX SF)
RCA PROVIDED	XX AC. (XX SF)
IMPERVIOUS	
NET TRACT AREA	XX AC. (XX SF)
EXISTING IMPERVIOUS	XX AC. (XX SF)
BUILDINGS	(XX SF)
SIDEWALKS	(XX SF)
ROADWAY B-B	(XX SF)
LOT AREA IMPERVIOUS (MAX. ALLOWED)	XX SF (XX%)

CONCEPT PLANS

ALL INFORMATION AND LINE WORK RETRIEVED FROM WAKE COUNTY GIS MAP SERVICES. THIS IS INTENDED FOR CONCEPTUAL USE ONLY. LINE WORK IS APPROXIMATE AND SUBJECT TO CHANGE UPON OBTAINING SURVEY.

ALL SITE DATE NOTED IN RED IS TO BE DETERMINED (TBD).

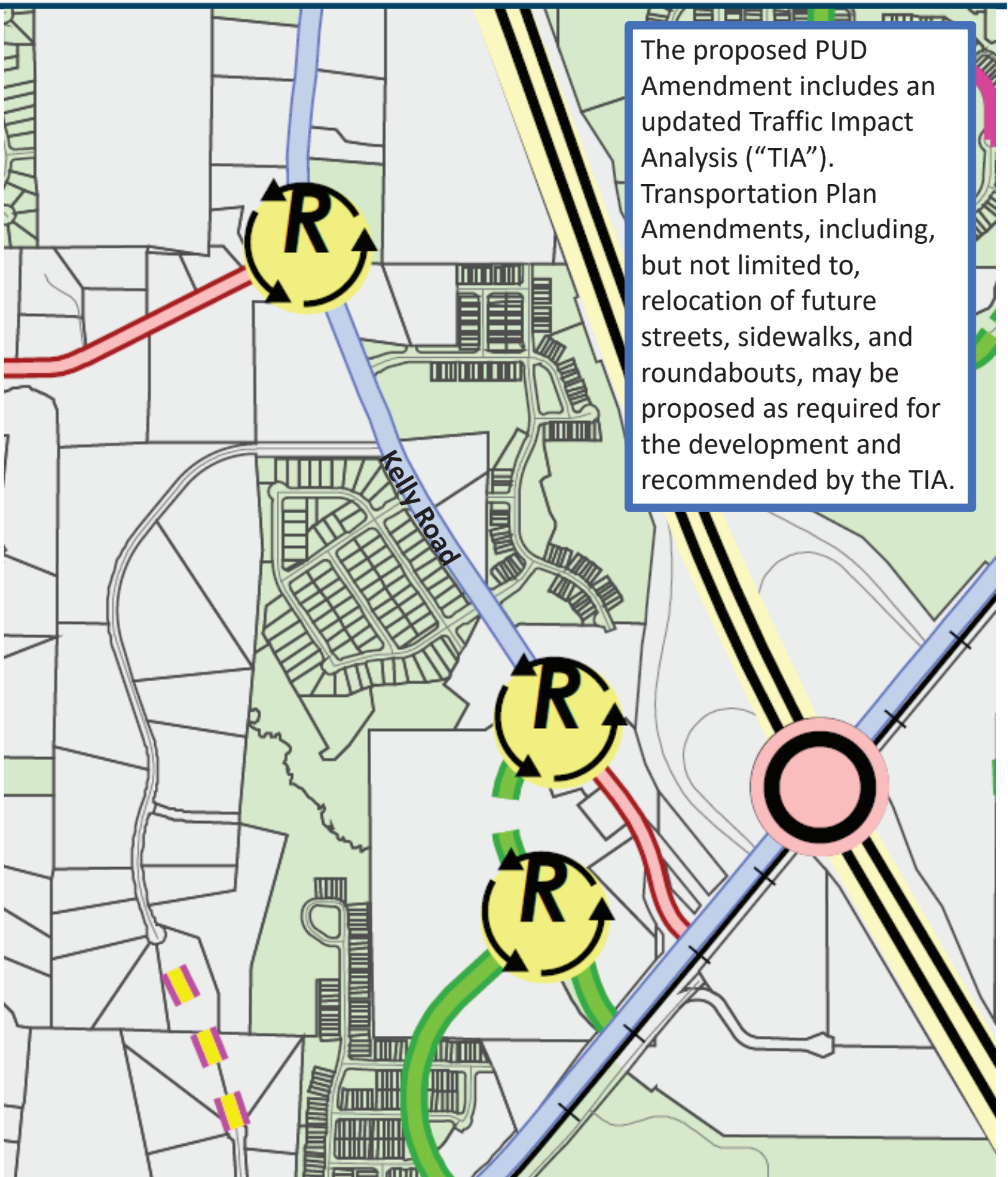
PEAK Engineering & Design
1125 Apex Peakway | Apex, NC 27502
ph: 919.439.0100
www.PeakEngineering.com

KELLY ROAD COMMERCIAL

2517 KELLY ROAD
APEX, NC
WAKE COUNTY

DRAWN BY: MD	CHECKED BY: JR	PROJECT NO. 240403
DATE 01.09.25		SHEET NO. SP-1

Thoroughfare and Collector Street Plan



The proposed PUD Amendment includes an updated Traffic Impact Analysis ("TIA"). Transportation Plan Amendments, including, but not limited to, relocation of future streets, sidewalks, and roundabouts, may be proposed as required for the development and recommended by the TIA.

PROJECT CONTACT INFORMATION

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Development Contacts:

Project Name: West Village PUD Amendment Zoning: PUD-CZ

Location: 2517 Kelly Road

Property PIN(s): 0731434504 Acreage/Square Feet: 6.19 ac

Property Owner: Fahey Family Farm, LLC

Address: 1115 Capitata Crossing

City: Apex State: NC Zip: 27502-9011

Phone: Email:

Developer: Trilandco, LLC c/o Collier R. Marsh

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4663 Fax: N/A Email: colliermarsh@parkerpoe.com

Engineer: Peak Engineering & Design, PLLC, attn: Jeff Roach

Address: 1125 Apex Peakway

City: Apex State: NC Zip: 27502

Phone: (919) 439-0100 Fax: N/A Email: jroach@peakengineering.com

Builder (if known): Trilandco, LLC c/o Collier R. Marsh

Address: 301 Fayetteville Street, Suite 1400

City: Raleigh State: NC Zip: 27601

Phone: (919) 835-4663 Fax: N/A Email: colliermarsh@parkerpoe.com

Please note that Town staff will not have complete information about a proposed development until the application is submitted for review. If you have a question about Town development standards and how they relate to the proposed development, please contact the appropriate staff person listed below.

Town of Apex Department Contacts	
Planning Department Main Number (Provide development name or location to be routed to correct planner)	(919) 249-3426
Parks, Recreation & Cultural Resources Department Angela Reincke, Parks Planning Project Manager	(919) 372-7468
Transportation & Infrastructure Development Russell Dalton, Traffic Engineering Manager	(919) 249-3358
Water Resources Department Jessica Bolin, Environmental Engineering Manager (Stormwater, Sedimentation & Erosion Control) Matt Reker, Utility Engineer/FOG Program Manager (Water & Sewer)	(919) 249-3537 (919) 946-4394
Electric Utilities Division Rodney Smith, Electric Technical Services Manager	(919) 249-3342

OWNER	MAILING ADDRESS	
ARYA, ANJALI	1963 FAHEY DR	APEX NC 27502-7093
BELLAM, ANUDEEP VUNNAM, SAI KAMALA	1971 FAHEY DR	APEX NC 27502-7093
BHAVSAR, DEWANG S BHAVSAR, DIPTI PATEL	2010 LEO DR	APEX NC 27502-4361
BRAHMANDAY, GOVINDA RAGHURAM PALURU, HIMABINDU	829 NIJINSKI WAY	CARY NC 27519-6740
COHEN, STEVEN A SLUSS-COHEN, ILDAURA TANISHA	608 PENINSULA FOREST PL	CARY NC 27519-1605
COUNCIL, GLENWOOD C COUNCIL, LINDA M	2411 KELLY RD	APEX NC 27502-9589
FAHEY FAMILY FARM LLC	1115 CAPITATA XING	APEX NC 27502-9011
FRIENDSHIP COWORKING LLC	2121 MCKENZIE RIDGE LN	APEX NC 27502-6629
GUPTA, MANIK GUPTA, RAJASAVI	842 PEPPER TREE LN	SANTA CLARA CA 95051-5227
GUPTA, SANDEEP RAMBACHAN RAI, SWETA	1952 FAHEY DR	APEX NC 27502-7093
HARGROVE, CATHERINE HEART HARGROVE, CHRISTOPHER EARL	2000 LEO DR	APEX NC 27502-4361
KARUPPASWAMY, RAMKUMAR KARUPPUSWAMY, RADHIKKAA	1950 FAHEY DR	APEX NC 27502-7093
LI, JUAN	1954 FAHEY DR	APEX NC 27502-7093
LU, YI-TIEN WANG, NAN-YI	1977 FAHEY DR	APEX NC 27502-7093
MALATHI, MOGAN RAJ NADARAJAN BABU, PRIYADARSHINI	1970 FAHEY DR	APEX NC 27502-7093
MIUCCIO, ANTHONY J TRUSTEE MIUCCIO, MARTHA J TRUSTEE	PO BOX 2063	APEX NC 27502-1154
MUDDASANI, SANDEEP REDDY MUDDASANI, SHILPA GOUD	2008 LEO DR	APEX NC 27502-4361
MUTHALIP ABUBAKKAR, SHEIK ABDUL BASHEER, ABIYABARVIN AHAMED	1983 CUSTOM LN	APEX NC 27502-4349
PAREEK, ABHISHEK	1967 FAHEY DR	APEX NC 27502-7093
PATURKAR, SHREYAS JITENDRA SHINTRE, PALLAVI SHRINIVAS	1957 FAHEY DR	APEX NC 27502-7093
RAGHUNATHAN, RAGHUNATHAN	2002 LEO DR	APEX NC 27502-4361
RAYALA, GIRIDHAR	1973 FAHEY DR	APEX NC 27502-7093
SAMANTA, SOURISHMOY SINHA, PARINITA	1959 FAHEY DR	APEX NC 27502-7093
SEARS, TONY C SEARS, JUDY T	2508 KELLY RD	APEX NC 27502-9563
SHEN, SI	4009 RATCLIFFE	BENTONVILLE AR 72713-7650
SHIELDS LAND LLC	PO BOX 65	HOLLY SPRINGS NC 27540-0065
SOTOS, GUSTAVO REZENDE DOS SGARBI, ROXANE TASSI	2006 LEO DR	APEX NC 27502-4361
STANLEY MARTIN HOMES LLC	11710 PLAZA AMERICA DR STE 1100	RESTON VA 20190-4771
THAKURI, SUMAN CHAND, ARPANA	1956 FAHEY DR	APEX NC 27502-7093
ZISKIN, NATALIE PARHAM, ANDREW	1974 FAHEY DR	APEX NC 27502-7093
Current Tenant	1947 Fahey DR	APEX NC 27502
Current Tenant	1949 Fahey DR	APEX NC 27502
Current Tenant	1966 Fahey DR	APEX NC 27502
Current Tenant	1975 Fahey DR	APEX NC 27502
Current Tenant	2517 Kelly RD	APEX NC 27502
Current Tenant	2524 Kelly RD	APEX NC 27502
Current Tenant	2601 Kelly RD	APEX NC 27502
Current Tenant	2604 Kelly RD	APEX NC 27502
Current Tenant	2004 Leo DR	APEX NC 27502

COMMON CONSTRUCTION ISSUES & WHO TO CALL

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Noise & Hours of Construction:	**Non-Emergency Police**	**919-362-8661**

Noise from tree removal, grading, excavating, paving, and building structures is a routine part of the construction process. The Town generally limits construction hours from 7:00 am to 8:30 pm so that there are quiet times even during the construction process. Note that construction outside of these hours is allowed with special permission from the Town when it makes more sense to have the construction occur at night, often to avoid traffic issues. In addition, the Town limits hours of blasting rock to Monday-Friday from 8:00 am to 5:00 pm. Report violations of construction hours and other noise complaints to the Non-Emergency Police phone number at 919-362-8661.

Construction Traffic:	**Infrastructure Inspections**	**919-249-3386**

Construction truck traffic will be heavy throughout the development process, including but not limited to removal of trees from site, loads of dirt coming in and/or out of the site, construction materials such as brick and wood brought to the site, asphalt and concrete trucks come in to pave, etc. The Town requires a construction entrance that is graveled to try to prevent as much dirt from leaving the site as possible. If dirt does get into the road, the Town can require they clean the street (see "Dirt in the Road" below).

Road Damage & Traffic Control:	**Infrastructure Inspections**	**919-249-3386**

There can be issues with roadway damage, roadway improvements, and traffic control. Potholes, rutting, inadequate lanes/signing/striping, poor traffic control, blocked sidewalks/paths are all common issues that should be reported to Transportation & Infrastructure Development – Infrastructure Inspections at 919-249-1109. The Town will get NCDOT involved if needed.

Parking Violations:	**Non-Emergency Police**	**919-362-8661**

Unless a neighbor gives permission, there should be no construction parking in neighbors' driveways or on their property. Note that parking in the right-of-way is allowed, but Town regulations prohibit parking within 15 feet of driveways so as not to block sight triangles. Trespassing and parking complaints should be reported to the Non-Emergency Police phone number at 919-362-8661.

Dirt in the Road:	**Water Resources**	**919-362-8166**

Sediment (dirt) and mud gets into the existing roads due to rain events and/or vehicle traffic. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleaning of the roadways with the developer.

Dirt on Properties or in Streams:	**Water Resources**	**919-362-8166**

Sediment (dirt) can leave the site and get onto adjacent properties or into streams and stream buffers; it is typically transported off-site by rain events. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the appropriate repairs with the developer.

Dust:	**Water Resources**	**919-362-8166**

During dry weather dust often becomes a problem blowing into existing neighborhoods or roadways. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that staff can coordinate the use of water trucks onsite with the grading contractor to help control the dust.

Trash:	**Water Resources**	**919-362-8166**

Excessive garbage and construction debris can blow around on a site or even off of the site. These incidents should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed. Staff will coordinate the cleanup and trash collection with the developer/home builder.

Temporary Sediment Basins:	**Water Resources**	**919-362-8166**

Temporary sediment basins during construction (prior to the conversion to the final stormwater pond) are often quite unattractive. Concerns should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed so that he can coordinate the cleaning and/or mowing of the slopes and bottom of the pond with the developer.

Stormwater Control Measures:	**Water Resources**	**919-362-8166**

Post-construction concerns related to Stormwater Control Measures (typically a stormwater pond) such as conversion and long-term maintenance should be reported by visiting the Report a Concern page at https://www.apexnc.org/1173/ or by calling the number listed.

Electric Utility Installation:	**Rodney Smith**	**919-249-3342**

Concerns with electric utility installation can be addressed by the Apex Electric Utilities Department. Contact Rodney Smith at 919-249-3342.

NEIGHBORHOOD MEETING SIGN-IN SHEET

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Meeting Address: Virtual via Zoom

Date of meeting: April 15, 2025 Time of meeting: 5:30pm - 6:30pm

Property Owner(s) name(s): See attached

Applicant(s): Trilandco, LLC

Please print your name below, state your address and/or affiliation with a neighborhood group, and provide your phone number and email address. Providing your name below does not represent support or opposition to the project; it is for documentation purposes only. For virtual meetings, applicants must include all known participants and request the information below.

	NAME/ORGANIZATION	ADDRESS	PHONE #	EMAIL	SEND PLANS & UPDATES
1.	Brian Griffith	2524 & 2601 Kelly Rd, Apex, NC 25702		[redacted]	
2.	Pat Fahey	2517 Kelly Road			
3.	Phone attendee/name unknown				
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					

Use additional sheets, if necessary.

SUMMARY OF DISCUSSION FROM THE NEIGHBORHOOD MEETING

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

Property Owner(s) name(s): See attached

Applicant(s): Trilandco, LLC

Contact information (email/phone): Collier R. Marsh; (919) 835-4663; colliermarsh@parkerpoe.com

Meeting Address: Virtual via Zoom

Date of meeting: April 15, 2025 Time of meeting: 5:30pm - 6:30pm

Please summarize the questions/comments and your responses from the Neighborhood Meeting or emails/phone calls received in the spaces below (attach additional sheets, if necessary). Please state if/how the project has been modified in response to any concerns. The response should not be "Noted" or "No Response". There has to be documentation of what consideration the neighbor's concern was given and justification for why no change was deemed warranted.

Question/Concern #1:
Will the project be extending utilities?

Applicant's Response:
Yes, the POD 1 project will be extending utilities across the site.

Question/Concern #2:
What frontage improvements will be provided?

Applicant's Response:
The Pod 1 project will include all of the Town's required improvements on the Kelly Road frontage and will dedicate right of way for a future roundabout.

Question/Concern #3:
What is the anticipated hearing schedule?

Applicant's Response:
The project is tracking for hearings in May.

Question/Concern #4:

Applicant's Response:

AFFIDAVIT OF CONDUCTING A NEIGHBORHOOD MEETING, SIGN-IN SHEET AND ISSUES/RESPONSES SUBMITTAL

This document is a public record under the North Carolina Public Records Act and may be published on the Town's website or disclosed to third parties.

I, Collier R. Marsh, do hereby declare as follows:
Print Name

1. I have conducted a Neighborhood Meeting for the proposed Rezoning, Major Site Plan, Minor Site Plan, Residential Master Subdivision Plan, or Special Use Permit in accordance with UDO Sec. 2.2.7.B *Neighborhood Meeting*.

2. The meeting invitations were mailed to the Apex Planning Department, all property owners and tenants abutting and within 300 feet of the subject property and any neighborhood association that represents citizens in the notification area via first class mail a minimum of 14 days in advance of the Neighborhood Meeting.

3. The meeting was conducted at virtually via Zoom (location/address) on 4/15/25 (date) from 5:30pm (start time) to 6:30pm (end time).

4. I have included the mailing list, meeting invitation, sign-in sheet, issue/response summary, and zoning map/reduced plans with the application.

5. I have prepared these materials in good faith and to the best of my ability.

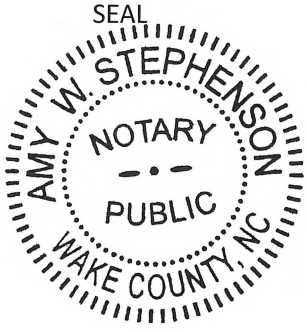
4/23/25
Date

By: Collier R. Marsh

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, Amy W. Stephenson, a Notary Public for the above State and County, on this the 23rd day of April, 2025.

SEAL



Amy W. Stephenson
Notary Public

Amy W. Stephenson
Print Name

My Commission Expires: October 2 2028

Parker Poe

Matthew J. Carpenter
Attorney
t: 919-835-4032
MatthewCarpenter@parkerpoe.com

Atlanta, GA
Charleston, SC
Charlotte, NC
Columbia, SC
Greenville, SC
Raleigh, NC
Spartanburg, SC
Washington, DC

February 3, 2025

Via Town of Apex IDT
Planning
Town of Apex
322 N. Mason Street
Apex, NC 27502

RE: West Village PUD Amendment for 2517 Kelly Road; PIN 0731434504; West Village PUD POD 1 (the "Property")

To Whom It May Concern,

This letter is to inform you of a proposed PUD Amendment to rezone the Property from Planned Unit Development Conditional Zoning (PUD-CZ) to PUD-CZ with amended conditions to allow an approximately 40,000 square foot non-residential development (the "Project").

In 2016, the Property was rezoned to PUD-CZ as part of the overall West Village PUD development (Rezoning 15CZ33, the "2016 PUD") and in 2020, the PUD was amended (Rezoning 20CZ05) to modify buffers and other design standards (collectively, the "West Village PUD"). The West Village PUD permits up to 380 residential units and up to 500,000 square feet of non-residential uses across 163.34 acres as shown on the West Village PUD Preliminary Layout and Phasing Plan dated May 1, 2020 (the "Layout Plan"). Since 2016, several residential phases have been developed, but the non-residential phases have not developed.

The West Village PUD includes significant road improvements for residential and non-residential development. Though it specifies phasing for certain road improvements in the residential district, it lacks phasing for transportation infrastructure improvements in the commercial district and all road improvements are required prior to issuance of the first certificate of occupancy for a commercial building. Accordingly, as currently written, the PUD would require the Project - a relatively small 40,000 sf non-residential development - to construct additional through lanes, on ramps, and traffic signals that were required for 500,000 sf of non-residential uses approved in the West Village PUD.

To remedy this oversight, the developer completed an updated Traffic Impact Analysis ("TIA") which recommends road improvements based on the anticipated traffic impacts of the Project. This PUD Amendment proposes technical revisions to West Village PUD Section 13: Public Facilities, as set forth in the attached **Exhibit A**, to incorporate the updated TIA recommendations. Road improvements that were commitments of the original West Village PUD remain, but will be completed by subsequent non-residential phases.

A corresponding PUD-CZ rezoning application has been filed in the Town's development portal.

Sincerely,

Matthew Carpenter

Exhibit A
to
West Village PUD Amendment Letter
Revisions to West Village PUD

Section 13: Public Facilities

The proposed PUD shall meet all Public Facilities requirements as set forth in UDO Section 2.3.4(F) (1) (f) and be designed according to sound engineering standards. Specifically, road and utility infrastructure shall be as follows:

- **General Roadway Infrastructure:**
  All proposed roadway infrastructure will be consistent with the Town of Apex UDO and Transportation Plan, and the Traffic Impact Analysis approvedby the Town of Apex and NCDOT. An internal road network will be provided in accordance with the Town's UDO. All road networks will promote connectivity wherever possible to adjacent neighborhoods, undeveloped property, nearby points of interest, and municipal destinations. Further, cul-de-sacs will be avoided except where environmental features make through streets unfeasible.

Roadway Phasing – Prior to time of the fifty-first certificate of occupancy associated with the residential located off of Old US HWY 1, the second point of access (southernmost portion of Street A), necessary portion of the southernmost roundabout and Street B shown shall be constructed. As a part of the non-residential development in Pod 3, the roundabout proposed on Kelly Road shall be constructed along with the portion of Street A tying back to the southernmost roundabout. Prior to time of the first certificate of occupancy associated with POD 3, as part of the development of POD 3, Street A will be complete the connection from KellyRoad and Old US HWY 1.

- **Off-Site Transportation Conditions:**
  The project will also provide the following off-site transportation conditions:

All recommendations on state-maintained roadways are subject to NCDOT review and approval as part of the driveway permits and encroachment agreements. Build 2018 refers to the first plat of residential development. Build 2030 refers to the first plat of commercial development for POD 2 or POD 3 and does not include the development of POD 1, also identified as Build 2028, which is subject to separate recommendations set forth below. Please note that prior analysis and the original basis for build-out recommendations was based on a Build 2020 analysis. Internal Protected Storage Length (IPS) refers to the required minimum distance from the intersection along the proposed driveway or street before any full movement commercial driveway access or public street intersection will be allowed.

Developer shall provide right-of-way dedication along Kelly Road and Old US 1 based on a 100-foot right-of-way. Where Old US 1 abuts railroad right-of-way the developer shall be responsible for dedicating public right-of-way 70 feet from roadway centerline along the project frontage or as otherwise required to accommodate a 100-foot road right-of-way exclusive of railroad right-of-way.

Street 'A' and Street 'B' (including Kelly Road at Site Drive #4)

- Street 'A' shall be constructed as a 3-lane 38-foot curb and gutter street with 5-foot sidewalk on both sides on 62-foot public right-of-way.
- Street 'B' shall be constructed as a 2-lane 39'-foot curb and gutter street with on-street parking and 6-foot sidewalk on both sides on 53-foot public right-of-way.
- Residential driveway access shall not be permitted along Streets 'A' and 'B'.
- Prior to platting the 51st residential unit in the Residential area located adjacent to Old US 1, developer shall construct and dedicate as public Street 'A' from Site Drive #5 to the roundabout at Street 'B', roundabout serving Street 'A' at Street 'B', and Street 'B' from Site Drive #6/Pleasant Plains Road to the roundabout at Street 'A'.
- Prior to the first certificate of occupancy within POD 3, developer shall construct and dedicate as public Street 'A' from the roundabout at Street 'B' to Kelly Road at Site Drive #4 and construct a roundabout on Kelly Road at Site Drive #4. The roundabout will serve a 4-lane divided roadway to the north and 2-lane roadway to the south.
    - POD 1: *Kelly Road Roundabout*. Developer shall prepare a preliminary design and engineer's estimate for review and approval and dedicate right of way and construction easements for the future construction of a roundabout at the intersection of the site driveway, Kelly Road, and Street A as shown on the Town of Apex Thoroughfare and Collector Street Plan (the "Roundabout"). Prior to site plan final plat for POD 1, Developer shall pay a fee in lieu for eight percent (8%) of the estimated costs to design and construct the Roundabout.

Kelly Road at Olive Chapel Road

- Developer shall construct a 200-foot eastbound right turn lane and a 300-foot additional westbound left turn lane on Olive Chapel Road (with southbound receiving through lane on Kelly Road) for Build 2030.
- POD 1: Developer shall provide a preliminary plan and engineer's estimate for review and approval and pay a fee in lieu in the amount of 8% of the total estimated cost of the aforementioned improvements prior to site plan final plat in POD 1.

Kelly Road at Apex Barbecue Road

- Improvements have been completed by others satisfying the prior zoning requirements for a Build 2020 analysis including the following: construction of a 400-foot eastbound left turn lane, 350-foot westbound left turn lane, 350-foot northbound left turn lane, 150-foot northboundright turn lane, 350-foot southbound left turn lane, and 200-foot southbound right turn lane. No additional improvements are recommended for updated commercial build dates, Build 2028 (POD 1) and Build 2030 (PODS 2 & 3).

Kelly Road at Southwinds Run

Developer shall construct a 100-foot northbound left turn lane on Kelly Road, an additional (second) northbound through lane through the intersection to drop as aright turn at Site Drive #1, and begin an additional (second) southbound through lane immediately south of Southwinds Run for Build 2030.

Old US 1 at Kelly Road

- Developer shall construct a 100-foot westbound right turn lane on Old US 1 for Build 2018.
- Developer shall convert the intersection to right-in/right-out as well as construct an additional westbound through lane, beginning at the NC 540 Southbound off-ramp as a free-flow right turn exiting the ramp, along with a 200-foot westbound right turn lane on Old US 1 for Build 2030.

NC 540 Ramps at Old US 1

- Developer shall provide a free-flow right turn lane for the NC 540 Southbound off-ramp and additional receiving through lane continuing west to drop as a right turn at Site Drive #6 on Old US 1 for Build 2030.

Old US 1 at Pleasant Plains Road & Site Drive #6

- Developer shall construct Site Drive #6 with a through-right lane and a 200-foot left turn lane for Build 2018.
- Developer shall construct a 200-foot eastbound left turn lane and 200-foot westbound left turn lane on Old US 1 for Build 2018.
- Developer shall construct an additional westbound through lane on Old US 1 to drop as a right turn lane at Site Drive #6 for Build 2030.
- Developer shall construct an additional eastbound through lane on Old US 1 beginning 400 feet west of Site Drive #6 for Build 2030.

Kelly Road at Site Drive #1

- Developer shall construct Site Drive #1 as a right-in and right-out only providing 100 feet IPS and a 100-foot northbound right turn lane on Kelly Road for Build 2018.

- Developer shall construct an additional northbound through lane on Kelly Road to drop as a right turn lane at Site Drive #1 for Build 2030.

Kelly Road at Site Drive #2

- Developer shall construct Site Drive #2 as a right-in and right-out only providing 100 feet IPS for Build 2018.
- Developer shall construct an additional northbound through lane and an additional southbound through lane on Kelly Road at Site Drive #2 for Build 2030.

Kelly Road at Site Drive #3

- Developer shall construct Site Drive #3 with a 100-foot eastbound right turn lane and a 100-foot westbound right turn lane on the Site Drive #3 approaches adjacent to through-right lanes with 200 feet IPS for Build 2018.
- Developer shall construct 100-foot northbound and 100-foot southbound left turn lanes on Kelly Road for Build 2018.
- Developer shall construct an additional (second) southbound through lane and additional (second) northbound through lane on Kelly Road at Site Drive #3 for Build 2030.

Old US 1 at Site Drive #5

- Developer shall convert Site Drive #5 from a right-in/right-out to a signalized full-movement intersection with 200-foot dual southbound left turn lanes and a 200-foot southbound right turn lane providing 300 feet IPS providing connectivity to both the residential and commercial phases for Build 2030.
- Developer shall construct an additional (second) westbound through lane and add a 200-foot westbound right turn lane on Old US 1 for Build 2030.
- Developer shall construct a 300-foot eastbound left turn lane and an additional (second) eastbound through lane on Old US 1 dropping 1000 feet east of the intersection for Build 2030.

Construction of the preceding roadway infrastructure improvements shall not be required for the development of POD 1. Fee in lieu payments and additional right of way dedication where required for POD 1 are noted in the above sections where applicable. Development of POD 1 shall include the below roadway infrastructure improvements which shall be consistent with the Traffic Impact Analysis on file with the Town of Apex prepared by DRMP dated 1/30/2025 and the Town of Apex Transportation Plan. The road improvements shall be subject to Town of Apex and North Carolina Department of Transportation approval.

- *Kelly Road Widening*. Developer shall dedicate right of way for the length of the property's Kelly Road frontage, measured a minimum of 55 feet from the existing centerline of Kelly Road, and widen and improve Kelly Road for the length of the property's Kelly Road frontage based on an 84-foot back-to-back

curb and gutter 4-lane divided roadway with 5-foot sidewalks and 6-foot bike lanes in a 110-foot right of way.

- *Kelly Road and Site Driveway*. Developer shall construct:
    - the Site Driveway with a stop-controlled approach, one ingress lane, and one egress lane; and
    - a southbound left turn lane on Kelly Road with a minimum of 75 feet of storage.

- **Electric Charging Stations:**
  Developer shall provide 2 charging stations, one within the residential and one within the non-residential for electric vehicles within the overall project. In addition to these committed stations, two additional charging stations will be installed as part of the overall project.

- **Water & Sewer Utilities:**
  All **water and sanitary sewer** service will be provided by the developer and conform to the Town of Apex Public Works and Utilities Department requirements. Preliminary location and tie in points are shown on sheet C-3 and C-4 of the PUD plans. The water extension shown along Kelly Road to Old US HWY 1, alternatively, could be located through Pod – 3 Commercial and southernmost residential accomplishing the intent of the routing shown on sheet C-3 and C-4. The ultimate routing will be dictated by timing of commercial development, roadway construction internal to the site and timing commitment related to the extension. However, this will be coordinated with the Town of Apex at time of site plan and construction documents.

  Developer to provide $75,000 in escrow for use by the Westwinds community for insurance associated with community wells, for use in drilling new wells or to extend public water into the community as a primary or secondary water source. Ultimately, the well-related use of the funds will be determined by the Westwinds community. Land owners will be required to annex into the Town of Apex prior to making any connections to public water services provided by the Town.

- **Other Utilities:**
  Electricity will be provided by Apex Electric. Phone, cable and gas will be provided by the developer and shall meet the Town of Apex standards as outlined in the UDO.

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	S40°32'07"W	71.72
L2	S41°36'33"W	53.02
L3	S42°59'16"W	53.35
L4	S44°03'19"W	53.17
L5	S45°07'59"W	53.49
L6	S46°17'03"W	53.01
L7	S47°08'27"W	49.64
L8	S47°56'55"W	40.75
L9	S48°37'10"W	50.54
L10	S50°43'16"W	84.89
L11	S51°56'36"W	53.06
L12	S52°36'35"W	52.31
L13	S54°05'42"W	56.50
L14	S54°04'47"W	21.64
L15	S56°04'32"W	95.13
L16	S57°13'06"W	90.86
L17	N04°40'34"E	50.02
L21	S24°58'58"E	73.12
L22	S26°40'10"E	79.58
L23	S29°35'51"E	60.12
L24	S30°35'44"E	44.59
L25	S32°44'34"E	108.36

PHASING NOTES

1. THE PROPERTY WILL BE DEVELOPED IN UP TO 10 PHASES. THE TIMING AND AMOUNT OF PHASES WILL BE DEFINED AT THE TIME OF SITE PLAN REVIEW.

2. ACCESS POINTS ARE PRELIMINARY IN NATURE AND SUBJECT TO TOWN OF APEX AND NCDOT REVIEW AT TIME OF SITE PLAN REVIEW.

3. LIMITS OF LAND DISTURBANCE WITHIN EACH PHASE TO BE FINALIZED AT SITE PLAN PHASE.

4. PUBLIC UTILITIES SHALL BE PROVIDED FOR EACH PHASE.

5. ROADWAY PHASING – PRIOR TO TIME OF THE FIFTY–FIRST PLATTED LOT ASSOCIATED WITH THE RESIDENTIAL LOCATED OFF OF OLD US HWY 1, THE SECOND POINT OF ACCESS (SOUTHERNMOST PORTION OF STREET 'A'), NECESSARY PORTION OF THE SOUTHERNMOST ROUNDABOUT AND STREET 'B' SHOWN SHALL BE CONSTRUCTED. AS A PART OF THE NON–RESIDENTIAL DEVELOPMENT IN POD 3, THE ROUNDABOUT PROPOSED ON KELLY ROAD SHALL BE CONSTRUCTED ALONG WITH THE PORTION OF STREET 'A' TYING BACK TO THE SOUTHERNMOST ROUNDABOUT. PRIOR TO TIME OF THE FIRST CERTIFICATE OF OCCUPANCY FOR ANY COMMERCIAL WITHIN POD 3, STREET 'A' WILL BE FULLY CONSTRUCTED, CONNECTING KELLY ROAD TO OLD US HWY 1.

SITE NOTES

1. REFER TO PUD DOCUMENT FOR A COMPLETE LIST OF ALLOWABLE USES FOR EACH TRACT OR DEVELOPMENT AREA.

2. NO SITE DEVELOPMENT ACTIVITY INCLUDING BUT NOT LIMITED TO TESTING, CLEARING, INSTALLATION OF S&E MEASURES, OR GRADING, SHALL OCCUR UNTIL REQUIRED PROTECTION FENCING HAS BEEN INSTALLED AND INSPECTED. A PROTECTION FENCING INSTALLATION PERMIT MAY BE OBTAINED AT THE PLANNING DEPARTMENT OR BY CALLING 919–249–3426.

3. PROTECTION FENCING MUST BE PLACED AWAY FROM ANY SAVED TREE ONE FOOT FOR EACH INCH OF TREE CALIPER. PROTECTION FENCING MUST BE PLACED AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RESOURCE CONSERVATION AREA, SUCH AS, BUT NOT LIMITED TO, HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS. PROTECTION FENCING MUST BE PLACED ALONG THE OUTSIDE LINE OF THE 100–YEAR FLOODPLAIN, AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER. ADDITIONAL PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER; SUCH AREAS MAY INCLUDE BUT ARE NOT LIMITED TO, COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC).

4. ALL GRADING AND SUPPORT STRUCTURES ASSOCIATED WITH ANY RETAINING STRUCTURE SHALL NOT ENCROACH INTO ANY REQUIRED BUFFER OR PROTECTED AREA (SUCH AS, BUT NOT LIMITED TO, RCA AND CRITICAL ROOT ZONES OF TREES, PUBLIC UTILITY EASEMENTS, AND RIGHTS–OF–WAY), AND SHALL BE CONTAINED ENTIRELY ON SITE.

5. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, PLAY FIELDS AND GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.

6. THE SCREENING OF TRASH CONTAINERS (INCLUDING DUMPSTERS AND ROLL–OUT CARTS), OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, ON THE GROUND, OR ON BUILDINGS SHALL MEET THE REQUIREMENTS FOUND IN SECTION 8.2.8 OF THE UNIFIED DEVELOPMENT ORDINANCE; SPECIFICALLY SCREENING MUST BE DONE SO THAT:

A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.

B. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE, AND ARE SIMILAR IN MATERIALS AND COLOR.

C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.

D. ANY GROUND–MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX–FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.

E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS THEY MUST BE AT LEAST EIGHT–FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS TALLER; AND BE BUILT OF MASONRY MATERIAL.

7. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.

8. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING (INCLUDING MULCH), SCREENING (i.e.: DUMPSTERS/TRASH, MECHANICAL/HVAC, ETC.), SITE STABILIZATION (SEEDING), AND PARKING AND PAVEMENT MARKING MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.

9. NO SIGNS ARE APPROVED AS PART OF THE PUD–CZ PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED. SIGNAGE WILL COMPLY WITH APEX'S UDO.

10. EXACT ACCESS AND STUB LOCATIONS TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

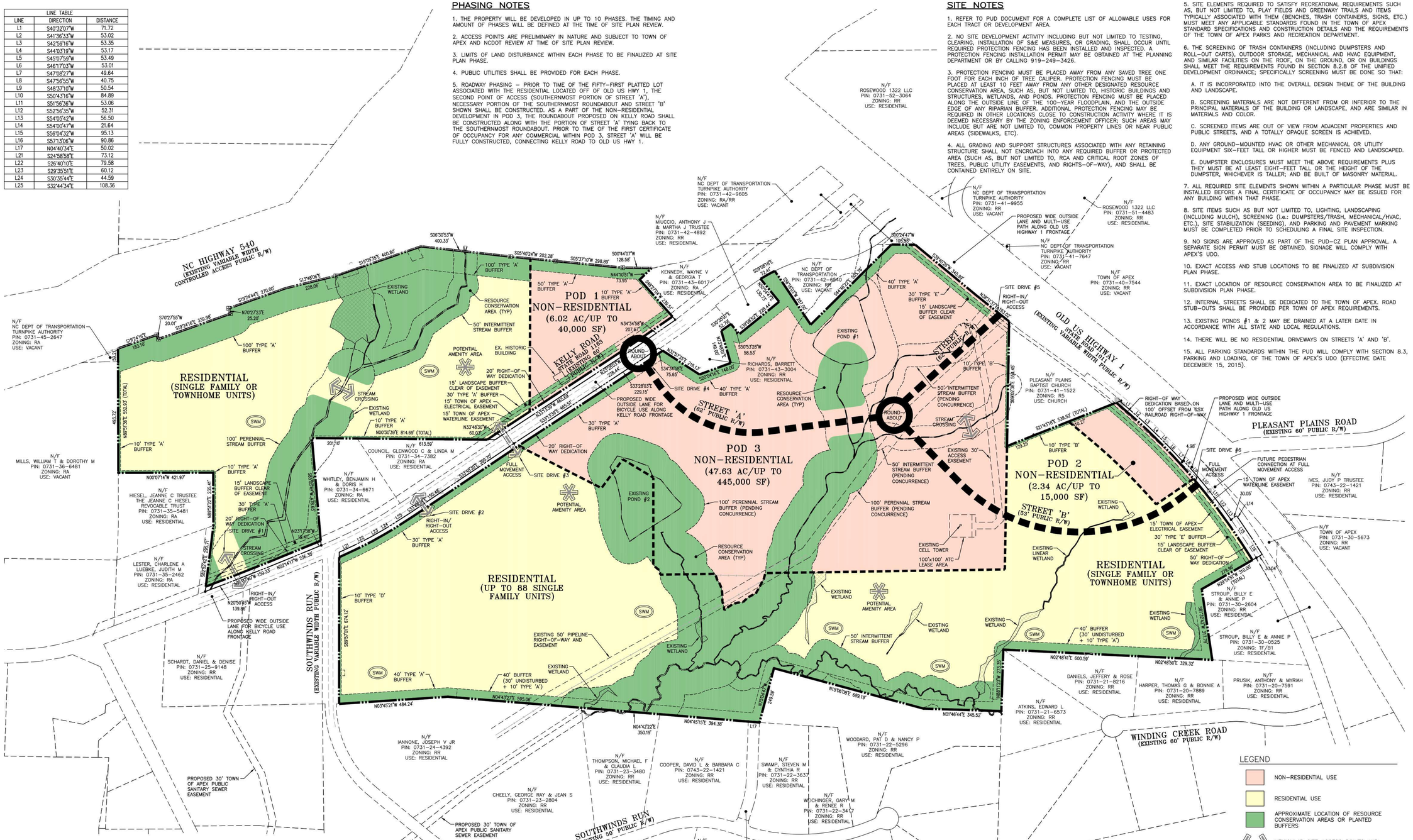
11. EXACT LOCATION OF RESOURCE CONSERVATION AREA TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

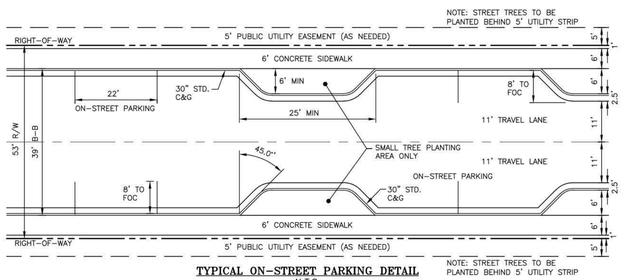
12. INTERNAL STREETS SHALL BE DEDICATED TO THE TOWN OF APEX. ROAD STUB–OUTS SHALL BE PROVIDED PER TOWN OF APEX REQUIREMENTS.

13. EXISTING PONDS #1 & 2 MAY BE DRAINED AT A LATER DATE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.

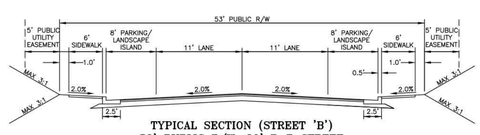
14. THERE WILL BE NO RESIDENTIAL DRIVEWAYS ON STREETS 'A' AND 'B'.

15. ALL PARKING STANDARDS WITHIN THE PUD WILL COMPLY WITH SECTION 8.3, PARKING AND LOADING, OF THE TOWN OF APEX'S UDO (EFFECTIVE DATE DECEMBER 15, 2015).

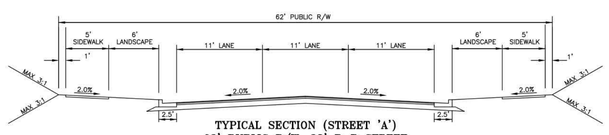




TYPICAL ON–STREET PARKING DETAIL
N.T.S.



TYPICAL SECTION (STREET 'B')
53' PUBLIC R/W, 39' B–B STREET
(TWO WAY WITH PARKING OR PLANTING AREA BOTH SIDES)
N.T.S.



TYPICAL SECTION (STREET 'A')
62' PUBLIC R/W, 38' B–B STREET
(TWO WAY WITH MIDDLE TURNING LANE)
N.T.S.

LEGEND

- NON–RESIDENTIAL USE
- RESIDENTIAL USE
- APPROXIMATE LOCATION OF RESOURCE CONSERVATION AREAS OR PLANTED BUFFERS
- VEHICULAR SITE ACCESS POINTS AND APPROXIMATE STREAM CROSSING LOCATIONS
- POSSIBLE LOCATION OF AMENITY AREA (1 TOTAL ON SITE)
- SWM APPROXIMATE LOCATION OF STORMWATER MANAGEMENT FACILITY

NOTE: ALL ITEMS IN LEGEND OTHER THAN VEHICULAR SITE ACCESS POINTS ARE SHOWN CONCEPTUALLY, FINAL LOCATION OF AMENITIES, RCA, & STORMWATER MANAGEMENT FACILITIES WILL BE DETERMINED AT THE TIME OF SITE PLAN.

GRAPHIC SCALE
200 0 100 200 400
1 inch = 200 ft.

PRELIMINARY DRAWING – NOT RELEASED FOR CONSTRUCTION

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
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McADAMS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 4770 JOSHUA A. DECKER

REVISIONS:
1 2020–06–12 PER TOWN OF APEX COMMENTS
2 2020–06–24 PER TOWN OF APEX COMMENTS

DEVELOPER:
STANLEY MARTINHOMES
4020 WESTCHASE BOULEVARD, SUITE 190
RALEIGH, NC 27607

WEST VILLAGE
KELLY ROAD & OLD US HIGHWAY 1
APEX, NORTH CAROLINA

PRELIMINARY LAYOUT & PHASING PLAN

PROJECT NO.	ORL–15000
FILENAME:	ORL15000–S1
DESIGNED BY:	RCZ
DRAWN BY:	RLU
SCALE:	1"=200'
DATE:	05–01–2020
SHEET NO.	C-2

McADAMS

X:\Projects\ORL\ORL–15000\Planning\PUD–Rezoning\Current Drawings\ORL15000–S1.dwg, 6/24/2020 9:22:27 AM, updegrove, 1:1

5808 Faringdon Place, Suite 100, Raleigh, North Carolina 27609
Phone: 919.872.5115 | 1.833.811.3767
www.DRMP.com

January 30, 2025

DRMP #:2400935

Sajid Hassan
Town of Apex Transportation
105-B Upchurch Street
Apex, NC 27502
919-372-7360
Sajid.Hassan@apexnc.org

Subject: Phasing Study for Off-Site Improvements
West Village Development - Apex

Dear Mr. Hassan:

This letter provides a summary of the phasing study prepared for the initial phase of commercial development in the West Village PUD to determine off-site transportation improvements required for this phase of development. A Traffic Impact Analysis (TIA) was prepared in 2015 for the overall development as part of the PUD approval. This TIA was reviewed by the Town and NCDOT and required transportation improvements were identified in the conditions of approval at the Town (see attached). The improvements were not phased for the commercial portion of the PUD; therefore, this phasing study is requesting the improvements be phased.

Initial Commercial Phase

The initial phase of commercial development is proposed along the east side of Kelly Road and would include a day care (~ 12,130 s.f. building) and a two-story building with office / retail space (~ 29,000 s.f. total). The day care building would be completed initially, and the mixed-use building would be completed afterwards. This development is the first phase of the commercial portion of the West Village PUD. The subject property is approximately 8% of the overall West Village development.

Access would be provided via one new full movement driveway on Kelly Road and a connection to the north to Fahey Drive. The new full movement driveway is ultimately planned for a roundabout, but the roundabout would not be constructed with the initial phase of development. The connection to Fahey Drive would provide an indirect second access to Kelly Road via Leo Drive.

Scope of Study

The phasing study scope is based on the MOU submitted and approved by the Town. A copy of the approved MOU (dated October 30, 2024) is attached.

The study area includes intersections from the original TIA and PUD that have required improvements that are not constructed and that would be relevant to this phase. The study intersections include:

- Olive Chapel Road & Kelly Road (signalized)
- Apex Barbeque Road & Kelly Road (signalized)
- Leo Drive and Kelly Road (unsignalized)
- Kelly Road and Proposed Site Driveway (Site Driveway #4 in TIA)
- Old US 1 and Kelly Road

Traffic Volumes

Existing peak hour traffic volumes are based on traffic counts collected at the existing study intersections above during the weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods in November 2024. Count data is attached. Existing 2024 lanes and peak hour traffic volumes are shown in the attached figures.

No-Build Traffic Volumes

No-build traffic volumes were calculated by growing the existing peak hour traffic volumes to the future years using an annual growth rate of 4%.

In addition to annual traffic growth, the following adjacent development trips were added to the future year traffic volumes:

- Depot 499
- Townes at Pleasant Park (fka Sears Property)
- Friendship Village
- Holland Road Assembly

Adjacent development trips were taken from the TIA reports prepared for each development. Some homes within the Depot 499 development were occupied and the trips captured in the traffic counts; however, to be conservative, no reduction in the adjacent development trips was made in this study. Residential trips for the Depot 499 development were included as adjacent development for future 2028 conditions, while full build out trips were included in future 2030 conditions.

Adjacent development information is provided in the attachments. Refer to the attached figures for the projected (2028 and 2030) peak hour traffic volumes, adjacent development trips, and no-build (2028 and 2030) peak hour traffic volumes.

Site Trip Generation

Average weekday daily, AM peak hour, and PM peak hour trips for the initial commercial development phase were estimated using methodology contained within the ITE *Trip Generation Manual*, 11th Edition. Table 1 provides a summary of the trip generation potential for this phase of development.

Table 1: Trip Generation Summary – Initial Commercial Phase

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)			Weekday PM Peak Hour Trips (vph)		
			Enter	Exit	Total	Enter	Exit	Total
Day Care (565)	12,130 SF	576	71	62	133	63	72	135
General Office (710)	14,400 SF	215	28	4	32	6	27	33
Retail Shopping Center (822)	14,400 SF	837	22	15	37	50	51	101
Total Trips		**1,628**	**121**	**81**	**202**	**119**	**150**	**269**
Internal Capture Trips AM (4% Enter, 10% Exit) PM (3% Enter, 2% Exit)		--	*-2*	*-2*	*-4*	*-2*	*-2*	*-4*
Pass-By Trips (Retail - 31% AM, 40% PM)		--	*-6*	*-5*	*-11*	*-20*	*-20*	*-40*
Primary (New) Trips		**1,628**	**113**	**74**	**187**	**97**	**128**	**225**

Internal capture trips were determined based on the NCHRP Report 684. As shown, a relatively low number of internal capture trips are expected within the initial commercial phase. Pass-by trips were calculated for the retail space using the ITE *Trip Generation Manual*.

Refer to Table 2, on the following page, for a summary of the full build out trip generation from the original TIA. The trip generation for full build out includes assumptions for the phase 1 commercial area as well as trips from some residential development that is already completed.

Table 2: Trip Generation Summary – Full Build (from Original TIA)

Description	Weekday 24-Hour Volumes	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
		Enter	Exit	Enter	Exit
East of Kelly Road	2,498	176	154	163	163
West of Kelly Road	31,192	1,087	723	1,237	1,434
Fast Food Outparcel	2,481	116	111	85	78
Total Site Trips	**36,171**	**1,379**	**988**	**1,485**	**1,675**
East of Kelly Road	*214*	-	-	*2*	*2*
West of Kelly Road	*10,956*	*82*	*82*	*79*	*79*
Fast Food Outparcel	*1,240*	*18*	*18*	*4*	*4*
Pass-By Trips	***12,410***	***100***	***100***	***85***	***85***
Total Primary (New) Trips	**23,761**	**1,279**	**888**	**1,400**	**1,590**

As shown in Tables 1-2, the initial commercial phase is expected to generate approximately 8% of the total full build out trips analyzed in the TIA.

Site Trip Distribution and Assignment

Site trips are distributed based on the regional trip distribution from the original TIA report and modified as appropriate near the site driveway. Refer to the attached site trip distribution and assignment figures. Although there is interconnectivity to the north, this traffic study assigns all development trips to the new site access to be conservative.

Capacity Analysis

Study intersections were analyzed during the weekday AM and PM peak hours for the following traffic scenarios:

- Existing 2024 Conditions
- No-Build 2028 (Phase 1 Build Year) Conditions
- Build 2028 Phase 1 Conditions
- No-Build 2030 (Full Build Year) Conditions
- Build 2030 (Full Build Out) Conditions with All Required Improvements

Capacity analyses were performed utilizing Synchro (Version 11). Synchro reports and intersection results summary tables are attached. Tables 3 –7, attached, provide the intersection capacity analysis results for the study intersections.

This study assumes the initial commercial development (Phase 1) would be completed by 2028. Although a schedule is unknown for the remaining commercial development within the PUD, this study assumes a full build out year of 2030. Additional intersections beyond the study intersections are included in the Synchro analysis models for reference, but results are not provided for these locations in this study.

Future conditions analyses consider trips generated by numerous adjacent developments, several of which consist of residential uses. When trips for commercial and residential developments are added to each other, there is some double-counting of trips that can overestimate traffic volumes. Trips between residential and commercial uses are complementary and would not be added separately to the roadway network. While this study considers all trips as new added traffic, it should be noted that this is not expected to be the case.

Furthermore, the traffic growth projected for Kelly Road and reflected in this study is not likely to occur if conditions along the corridor are congested. There are alternative north-south routes to Kelly Road that can be utilized if/when congestion occurs on Kelly Road. Future traffic volumes and the following analysis results are therefore considered conservative.

Kelly Road and Olive Chapel Road

Analysis indicates that Phase 1 site trips are expected to have minimal impact on intersection operations. Overall intersection delay is expected to increase by approximately two seconds or less, when compared to 2028 no-build conditions, and queue lengths are expected to increase by no more than one vehicle length for any movement. No improvements are recommended for Phase 1.

2030 build conditions were analyzed with the required intersection improvements consisting of the following:

- Provide dual westbound left turn lanes.
- Provide an exclusive eastbound right turn lane.
- Signal phasing and timing adjustments to accommodate new lanes.

With the improvements above, the intersection is expected to operate at an overall LOS E during the AM peak hour and LOS F during the PM peak hour. Overall intersection delay is expected to be less than under 2030 no-build conditions.

Kelly Road and Apex Barbecue Road

This intersection was analyzed with existing lanes and traffic control. All improvements previously required of the development have been recently constructed by others.

Analysis indicates that Phase 1 site trips are expected to have minimal impact on intersection operations. Under 2028 build conditions, the intersection is expected to operate at an overall LOS C during the AM peak hour and LOS D during the PM peak hour.

Future 2030 conditions analyses indicate the potential for significant congestion on the Kelly Road approaches. As discussed previously, however, this analysis does not take into consideration complementary trips between developments and the likelihood that some traffic would choose an alternative route to avoid congestion.

Kelly Road and Leo Drive

The minor-street approaches of Leo Drive and the major-street left turn movements on Kelly Road are expected to operate at LOS C or better under future 2028 conditions. Phase 1 site trips are not expected to have a noticeable impact on intersection operations, and no improvements are recommended.

2030 Build conditions were analyzed with Kelly Road as a four-lane divided roadway. Analysis indicates the Leo Drive approaches may experience longer delays, particularly in the PM; however, queues are projected to be short (one or two vehicles).

Kelly Road and Old US 1

The southbound approach of Kelly Road currently operates at LOS F and is expected to continue to do so under future 2028 conditions. The addition of Phase 1 site trips is projected to increase queue lengths on the Kelly Road approach by approximately 105 feet (about four vehicles) in the AM peak hour and 152 feet (about six vehicles) in the PM peak hour.

A traffic signal was considered to reduce delays on Kelly Road. Due to the proximity of this intersection to the NC 540 interchange, NCDOT is not expected to allow signalization of the intersection. Extension of the existing southbound right turn lane was also considered. Southbound left turn movement queues are longer than the right turn movement queues, however, and a 100-150 foot extension of the right turn lane may provide limited benefit.

Under 2030 build conditions, the intersection was analyzed as a right-in/right-out (RIRO) and Old US 1 was analyzed with two eastbound and westbound through lanes. The southbound approach of Kelly Road is expected to operate at LOS D in the AM peak hour and LOS F in the PM peak hour as a RIRO. If delay and queues are long on Kelly Road, it is likely traffic will divert to alternative routes. The RIRO configuration at the intersection is not recommended until future development occurs within the West Village PUD to provide an alternate connection for Kelly Road to Old US 1 with a traffic signal that has more separation from the NC 540 interchange.

Kelly Road and Site Driveway

The site driveway and major-street left turn movement on Kelly Road are projected to operate at LOS C or better under 2028 no-build conditions.

Auxiliary turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways.* An exclusive southbound left turn lane is warranted on Kelly Road with a minimum of 75 feet of storage. A short right turn lane on Kelly Road is marginally warranted; however, it is not recommended due to future plans to install a roundabout at this intersection.

Analysis of 2030 build conditions with the roundabout project overall LOS B conditions in the AM peak hour and LOS F in the PM. The eastbound approach is expected to operate at LOS F in the PM. Provision of a slip lane on this approach may improve operations in the future and can be considered at the time the roundabout is constructed.

Summary

This phasing study was prepared to identify improvements that would be necessary for the initial phase of commercial development within the West Village PUD. The original West Village PUD included transportation improvements that were assigned to the commercial phase of development; however, the PUD considered the improvements and all commercial development would occur at the same time. The initial phase of commercial development includes limited uses and accounts for only approximately 8% of the West Village PUD.

Based on the analysis results of Build (2028) Phase 1 traffic, the initial commercial development will not have a significant impact on the study area intersections. Improvements were recently constructed at the Apex Barbeque Road/Kelly Road intersection.

Although the Kelly Road approach at Old US 1 operates at LOS F and is expected to continue to operate with long delays during peak times, the initial phase of commercial development is not expected to have a negative impact on the intersection. Queues and delays on Kelly Road are expected to increase slightly with the initial phase. Traffic signals to the east and west of the intersection at NC 540 and at Pleasant Plains Road will create some gaps in through traffic on Old US 1. A traffic signal was considered for the intersection; however, it is not expected to be approved due to the spacing with the NC 540 interchange ramp intersection. The intersection will be restricted to right-in/right-out movements in the future with commercial development in West Village that will provide a roadway connection between existing Kelly Road and Old US 1 that provides increased spacing with the NC 540 interchange. It is not recommended to restrict the Kelly Road intersection until the additional roadway infrastructure can be constructed.

Roadway improvements are required to be constructed in the future as the West Village commercial development occurs. Many improvements are required when network connections are made within the commercial development area.

Future traffic projections in this phasing study should be considered conservative (high). This study includes traffic projections for several adjacent developments in addition to a 4% annual growth rate. Adjacent development trips are expected to interact with each other instead of being added to each other, which would result in less traffic growth. In addition, alternate routes are available for traffic on Kelly Road as well as Old US 1 if congestion increases.

Roadway Improvements Required of Phase 1

Kelly Road and Site Driveway

- Construct the site driveway as a stop-controlled approach with one ingress lane and one egress lane (striped as a shared left-right turn lane).
- Construct a left turn lane with a minimum of 75 feet of storage on the southbound approach of Kelly Road.
- Provide right-of-way necessary for the future construction of a roundabout at the intersection.

If you should have any questions or comments regarding this letter, please feel free to contact me at rstephenson@drmp.com or by phone at 919-872-5115.

Sincerely,

1/30/25

Rynal Stephenson, P.E.
Chief Traffic Analysis Engineer
DRMP, Inc.

Corporate License #F-1524

Attachments: Intersection Capacity Analysis Tables
Figures
Approved Scope Letter
Traffic Counts
Signal Plans
Adjacent Development Information
Synchro Reports
Original PUD Approval Plan and Requirements

cc: Daniel Boulware, PE, NCDOT District
Amanda Bunce, Town of Apex Planning
Russell Dalton, PE, Town of Apex
Rehab Hamad, MBA
Jessica McClure, PE, Town of Apex
Jeff Roach, PE, Peak Engineering

List of Figures

DRMP
5808 Faringdon Place, Suite 100, Raleigh, North Carolina 27609
Phone: 919.872.5115 | 1.833.811.3767
www.DRMP.com

Table 3: Analysis Summary of Kelly Road and Olive Chapel Road

AM Peak Hour	Lane Group	EBL	EBTR	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Overall
Existing (2024)	Total Delay	35	38.4		18.4	40.1	0.1	21.3	53.1	20	34.1	36.4	15	
	LOS	C	D		B	D	A	C	D	C	C	D	B	LOS C
	Approach Delay		36.6			23.3			40.4			27.7		33.1
	Approach LOS		D			C			D			C		
	Queue Length 50th (ft)	122	223		28	123	0	35	187	44	50	89	64	
	Queue Length 95th (ft)	188	332		54	206	0	80	#389	97	107	159	109	
No-Build (2028)	Total Delay	37.5	39.7		21.4	42.8	0.1	28.7	174.1	23.5	44.9	43.6	14.9	
	LOS	D	D		C	D	A	C	F	C	D	D	B	LOS E
	Approach Delay		38.6			25.2			122.5			34		56.1
	Approach LOS		D			C			F			C		
	Queue Length 95th (ft)	234	400		60	248	0	102	#660	125	#159	#269	137	
Build (2028)	Total Delay	37.2	39.8		24.3	43.2	0.1	30.2	186.5	24.1	45.5	45.7	14.9	
	LOS	D	D		C	D	A	C	F	C	D	D	B	LOS E
	Approach Delay		38.5			25.8			129.5			35.2		58.4
	Approach LOS		D			C			F			D		
	Queue Length 95th (ft)	234	407		69	249	0	105	#680	136	#161	#296	138	
No-Build (2030)	Total Delay	39.1	40.2		24	44.2	0.2	41.1	256.1	25.6	51.5	78.7	15.9	
	LOS	D	D		C	D	A	D	F	C	D	E	B	LOS E
	Approach Delay		39.6			26.3			180.2			53.4		75.1
	Approach LOS		D			C			F			D		
	Queue Length 95th (ft)	262	442		64	271	0	115	#789	142	#198	#481	156	
Build (2030) w/ Improvements	Total Delay	72.3	66.8	27.3	68.6	74	0.2	48.5	63.3	19.5	100.6	57.4	16.3	
	LOS	E	E	C	E	E	A	D	E	B	F	E	B	LOS E
	Approach Delay		63.9			54.4			49.4			55.2		56
	Approach LOS		E			D			D			E		
	Queue Length 95th (ft)	#405	488	168	#241	#404	0	#149	#824	228	#276	547	148	

PM Peak Hour	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Overall
Existing (2024)	Total Delay	108.9	39		23.4	37.6	0.1	20.7	53.9	15.9	33.7	37.7	29.4	
	LOS	F	D		C	D	A	C	D	B	C	D	C	LOS D
	Approach Delay		78.9			26.3			40.8			32.8		43.8
	Approach LOS		E			C			D			C		
	Queue Length 95th (ft)	#259	252		106	324	0	50	#392	95	103	#311	#445	
No-Build (2028)	Total Delay	208.7	40.3		28.2	38.8	0.2	30.8	142	18.2	42.8	65.7	43.3	
	LOS	F	D		C	D	A	C	F	B	D	E	D	LOS E
	Approach Delay		136.4			28.2			102			51.6		75.3
	Approach LOS		F			C			F			D		
	Queue Length 95th (ft)	#338	301		123	390	0	62	#601	120	#148	#541	#617	
Build (2028)	Total Delay	208.7	40.3		30	38.8	0.2	31.7	154.1	18.7	42.8	69.8	43.3	
	LOS	F	D		C	D	A	C	F	B	D	E	D	LOS E
	Approach Delay		136			28.7			107.9			53.2		77.1
	Approach LOS		F			C			F			D		
	Queue Length 95th (ft)	#338	303		130	390	0	67	#620	135	#148	#556	#617	
No-Build (2030)	Total Delay	273.9	40.7		31.2	39.3	0.2	33.6	301.5	19.6	48.9	123.1	60.4	
	LOS	F	D		C	D	A	C	F	B	D	F	E	LOS F
	Approach Delay		174			29.2			219.5			83.6		119
	Approach LOS		F			C			F			F		
	Queue Length 95th (ft)	#387	330		132	429	0	70	#840	137	#184	#695	#722	
Build (2030) w/ Improvements	Total Delay	149.7	74.2	33.6	62.6	104.5	0.2	122.8	119.2	18.4	162.4	72.4	30.5	
	LOS	F	E	C	E	F	A	F	F	B	F	E	C	LOS F
	Approach Delay		114.6			70.8			87.5			65.8		82.2
	Approach LOS		F			E			F			E		
	Queue Length 95th (ft)	#435	441	70	#318	#811	0	#265	#1113	329	#309	#874	579	

Table 4: Analysis Summary of Kelly Road and Olive Chapel Road

AM Peak Hour	Lane Group	EBL	EBTR	WBL	WBTR	NBL	NBTR	SBL	SBT	SBR	Overall
Existing (2024)	Total Delay	12.5	18	10.9	26.6	19.2	30.4	21.9	28	12.1	
	LOS	B	B	B	C	B	C	C	C	B	LOS C
	Approach Delay		16.1		25.3		29.5		23.4		23.7
	Approach LOS		B		C		C		C		
	Queue Length 95th (ft)	56	136	21	235	29	120	79	114	26	
No-Build (2028)	Total Delay	12.9	19	10.4	31	23.7	38.1	31.9	35.2	15.7	
	LOS	B	B	B	C	C	D	C	D	B	LOS C
	Approach Delay		17		29.4		37		31.7		29
	Approach LOS		B		C		D		C		
	Queue Length 95th (ft)	63	158	24	324	37	178	116	187	35	
Build (2028)	Total Delay	13.1	19.5	10.7	31.4	24.2	38.9	33.1	36.2	15.7	
	LOS	B	B	B	C	C	D	C	D	B	LOS C
	Approach Delay		17.4		29.3		37.6		33		29.7
	Approach LOS		B		C		D		C		
	Queue Length 95th (ft)	63	168	30	324	43	194	116	226	35	
No-Build (2030)	Total Delay	19.3	27.8	10.6	32.7	26.9	43.5	60.2	39.1	25.4	
	LOS	B	C	B	C	C	D	E	D	C	LOS D
	Approach Delay		25.5		31.2		42.2		48.5		36.4
	Approach LOS		C		C		D		D		
	Queue Length 95th (ft)	66	295	25	403	41	204	#305	212	52	
Build (2030)	Total Delay	17.9	32.6	20.9	33.1	44.1	123.9	97.7	333.3	26.4	
	LOS	B	C	C	C	D	F	F	F	C	LOS F
	Approach Delay		29.5		30.1		113		253.6		117.8
	Approach LOS		C		C		F		F		
	Queue Length 95th (ft)	66	373	85	403	118	#511	#346	#900	52	
PM Peak Hour	**Lane Group**	**EBL**	**EBT**	**WBL**	**WBT**	**NBL**	**NBT**	**SBL**	**SBT**	**SBR**	**Overall**
Existing (2024)	Total Delay	12.8	21.2	12.2	28.4	19.5	30.4	22.5	34.4	12.2	
	LOS	B	C	B	C	B	C	C	C	B	LOS C
	Approach Delay		18.6		25.9		28.8		27.3		26
	Approach LOS		B		C		C		C		
	Queue Length 95th (ft)	42	110	34	215	47	125	105	#276	47	
No-Build (2028)	Total Delay	12.8	21.8	11.8	31	27.1	35.3	35.2	50.6	14.4	
	LOS	B	C	B	C	C	D	D	D	B	LOS C
	Approach Delay		18.9		28.2		34.1		40.6		33.0
	Approach LOS		B		C		C		D		
	Queue Length 95th (ft)	47	125	37	271	58	173	#165	#450	63	
Build (2028)	Total Delay	12.9	22.2	12.1	31.4	30.9	36.5	37.8	55.8	14.3	
	LOS	B	C	B	C	C	D	D	E	B	LOS D
	Approach Delay		19.4		28.2		35.6		44.7		35
	Approach LOS		B		C		D		D		
	Queue Length 95th (ft)	47	132	42	271	67	196	#179	#494	63	
No-Build (2030)	Total Delay	16.4	37	10.5	36.1	41.4	48.7	110.8	97.9	29.1	
	LOS	B	D	B	D	D	D	F	F	C	LOS E
	Approach Delay		31.5		33.4		47.7		92.9		56.8
	Approach LOS		C		C		D		F		
	Queue Length 95th (ft)	48	229	38	504	73	216	#396	#582	109	
Build (2030)	Total Delay	15.8	36.5	19	36.5	116.2	387.6	165.5	697.2	29.7	
	LOS	B	D	B	D	F	F	F	F	C	LOS F
	Approach Delay		32.7		31.9		339.5		518.5		293.4
	Approach LOS		C		C		F		F		
	Queue Length 95th (ft)	48	314	105	504	#345	#803	#391	#1312	109	

Table 5: Analysis Summary of Kelly Road and Leo Drive

AM Peak Hour	Lane Group	EB[2]	WB[2]	NB[1]	SB[1]	Overall
Existing (2024)	HCM Control Delay	11.5	11.4	7.6	7.7	N/A
	HCM Lane/Approach LOS	B	B	A	A	
	HCM 95th- Queue (ft)	5	3	0	0	
No-Build (2028)	HCM Control Delay	12	11.8	7.6	7.7	N/A
	HCM Lane/Approach LOS	B	B	A	A	
	HCM 95th- Queue (ft)	5	5	0	0	
Build (2028)	HCM Control Delay	13.6	13.3	7.8	7.8	N/A
	HCM Lane/Approach LOS	B	B	A	A	
	HCM 95th- Queue (ft)	8	5	0	0	
No-Build (2030)	HCM Control Delay	12.7	12.5	7.7	7.8	N/A
	HCM Lane/Approach LOS	B	B	A	A	
	HCM 95th- Queue (ft)	8	5	0	0	
Build (2030)	HCM Control Delay	44.8	34.7	9.8	9.1	N/A
	HCM Lane/Approach LOS	E	D	A	A	
	HCM 95th- Queue (ft)	35	23	0	3	
PM Peak Hour	Lane Group	EB[2]	WB[2]	NB[1]	SB[1]	Overall
Existing (2024)	HCM Control Delay	13.9	13.2	7.8	7.9	N/A
	HCM Lane/Approach LOS	B	B	A	A	
	HCM 95th- Queue (ft)	5	3	0	3	
No-Build (2028)	HCM Control Delay	15.6	14.6	7.9	8.1	N/A
	HCM Lane/Approach LOS	C	B	A	A	
	HCM 95th- Queue (ft)	8	3	0	3	
Build (2028)	HCM Control Delay	17.8	16.3	8	8.3	N/A
	HCM Lane/Approach LOS	C	C	A	A	
	HCM 95th- Queue (ft)	10	5	0	3	
No-Build (2030)	HCM Control Delay	16.9	15.3	7.9	8.2	N/A
	HCM Lane/Approach LOS	C	C	A	A	
	HCM 95th- Queue (ft)	10	5	0	3	
Build (2030)	HCM Control Delay	133.5	78.6	10.6	12	N/A
	HCM Lane/Approach LOS	F	F	B	B	
	HCM 95th- Queue (ft)	65	23	3	5	

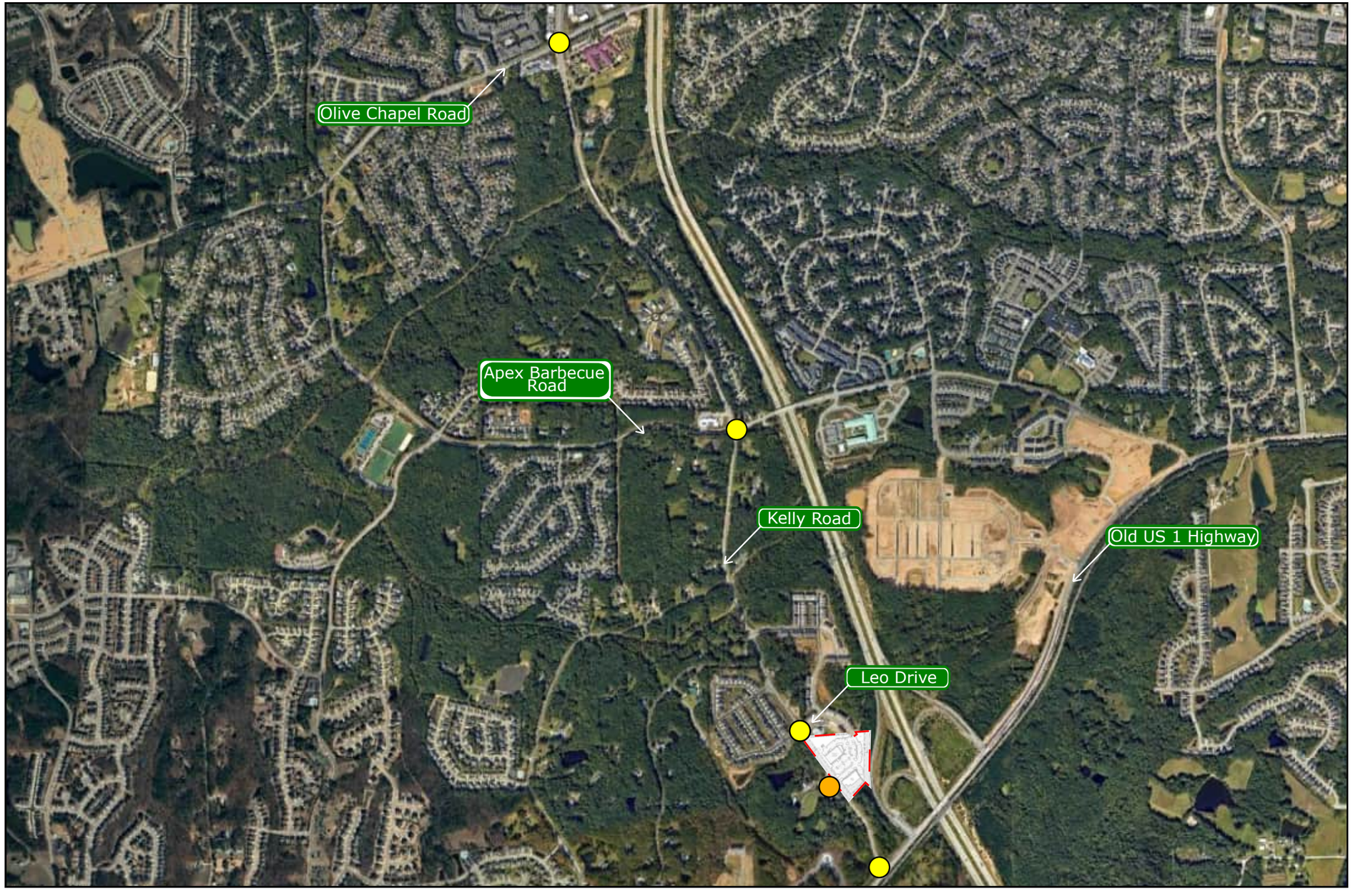
Table 6: Analysis Summary of Kelly Road and Old US 1

AM Peak Hour	Lane Group	EB[1]	SB[2]	Overall
Existing (2024)	HCM Control Delay	9.3	84.2	N/A
	HCM Lane/Approach LOS	A	F	
	HCM 95th- Queue (ft)	10	158	
No-Build (2028)	HCM Control Delay	11	Long Delays	N/A
	HCM Lane/Approach LOS	B	F	
	HCM 95th- Queue (ft)	15	410	
Build (2028)	HCM Control Delay	11.5	Long Delays	N/A
	HCM Lane/Approach LOS	B	F	
	HCM 95th- Queue (ft)	20	515	
No-Build (2030)	HCM Control Delay	11.7	Long Delays	N/A
	HCM Lane/Approach LOS	B	F	
	HCM 95th- Queue (ft)	18	490	
Build (2030)	HCM Control Delay	-	26.2	N/A
	HCM Lane/Approach LOS	-	D	
	HCM 95th- Queue (ft)	-	100	
PM Peak Hour	**Lane Group**	**EB[2]**	**SB[1]**	**Overall**
Existing (2024)	HCM Control Delay	10.5	67.7	N/A
	HCM Lane/Approach LOS	B	F	
	HCM 95th- Queue (ft)	15	153	
No-Build (2028)	HCM Control Delay	14.3	Long Delays	N/A
	HCM Lane/Approach LOS	B	F	
	HCM 95th- Queue (ft)	28	383	
Build (2028)	HCM Control Delay	15	Long Delays	N/A
	HCM Lane/Approach LOS	C	F	
	HCM 95th- Queue (ft)	33	535	
No-Build (2030)	HCM Control Delay	17.1	Long Delays	N/A
	HCM Lane/Approach LOS	C	F	
	HCM 95th- Queue (ft)	38	455	
Build (2030)	HCM Control Delay	-	169.8	N/A
	HCM Lane/Approach LOS	-	F	
	HCM 95th- Queue (ft)	-	450	

Table 7: Analysis Summary of Kelly Road and Site Driveway

AM Peak Hour	Lane Group	EB[2]	WB[2]	NB[1]	SB[1]	Overall
Build (2028)	HCM Control Delay	-	12.9	-	8	N/A
	HCM Lane/Approach LOS	-	B	-	A	
	HCM 95th- Queue (ft)	-	15	-	5	
Build (2030) Roundabout	HCM Control Delay	12.5	7.7	10.2	8.7	B
	HCM Lane/Approach LOS	B	A	B	A	10.2
	HCM 95th- Queue (ft)	197	14	47	111	
PM Peak Hour	**Lane Group**	**EB[2]**	**WB[2]**	**NB**	**SB[1]**	**Overall**
Build (2028)	HCM Control Delay	-	17.8	-	8.3	N/A
	HCM Lane/Approach LOS	-	C	-	A	
	HCM 95th- Queue (ft)	-	43	-	5	
Build (2030) Roundabout	HCM Control Delay	109.2	16.9	25	12.1	F
	HCM Lane/Approach LOS	F	C	D	B	56.2
	HCM 95th- Queue (ft)	Long	46	133	282	

FIGURES



LEGEND

- Study Intersection
- Proposed Site Access
- Study Area

N

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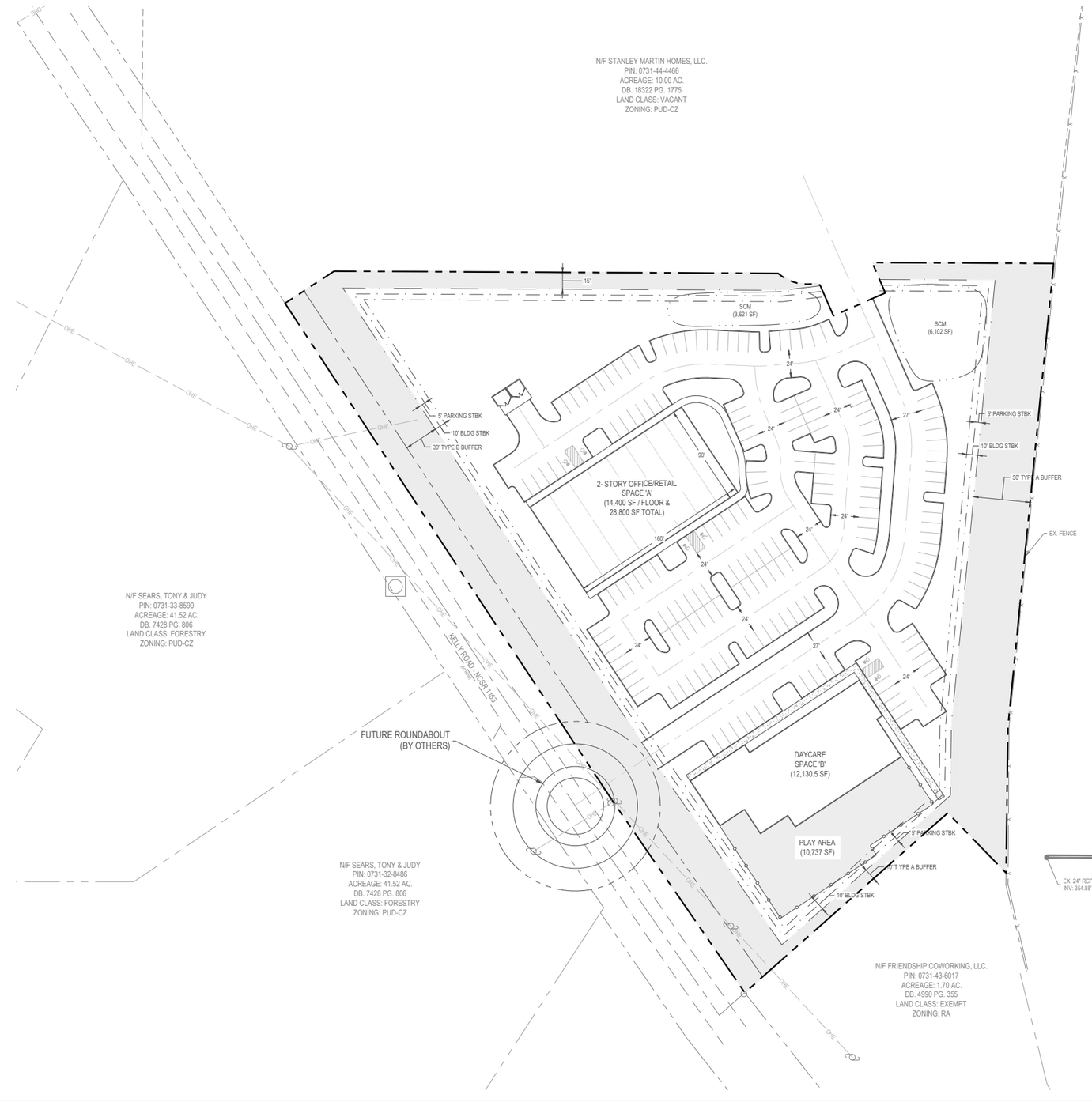
Site Location Map

Scale: Not to Scale | Figure 1



SITE DATA	
OWNER	FAHEY FAMILY FARM, LLC.
SITE ADDRESS	2517 KELLY ROAD APEX, NC 27502
PIN REAL ID	0731-43-4504 464267
ACREAGE	6.19 AC.
DB. PG	DB 17062, PG 1719
2045 LAND USE MAP EXISTING USE REZONING 07-19-2016 PROPOSED ZONING	PUD-CZ SINGLE FAM 150Z33 PUD CZ
TOWNSHIP	WHITE OAK
SUB-WATERSHED	BEAVER CREEK
RIVER BASIN	CAPE FEAR
FEMA MAP	MAP#3720873100K DATE 07.19.22
HISTORICAL	(1) BARN PER WA1052
ROW DEDICATION	XX AC. (XX SF)
NET TRACT AREA	XX AC. (XX SF)

DEVELOPMENT TYPE - COMMERCIAL	
PROPOSED USE	OFFICE/RETAIL & DAYCARE
DENSITY	5900 SF
MIN. LOT AREA	5,000 SF
MIN. LOT SIZE	5,000 SF
MIN. LOT WIDTH	N/A

BUILDING DETAILS	
MAX. BUILDING HEIGHT	75' (5-STORY)
PROPOSED BUILDING HEIGHT	XX'
PROPOSED BUILDING STORIES	2 STORIES

BUILDING SETBACKS	
FRONT	5'
SIDE	5'
CORNER	5'
REAR	5'

BUILD UPON AREA	
MAX. BUILD UPON AREA	4.33 AC. (70%)
PROPOSED BUILD UPON AREA	XX AC. (XX %)

PARKING	
PARKING CALCS. (MIXED USE)	1 SPACE / 250 SF
BUILDING SF TOTAL	28,800 SF
PARKING REQUIRED	116 SPACES
PARKING PROVIDED	133 SPACES
PARKING CALCS. (DAY CARE)	1 SPACE / 8 PERSON
TOTAL CAPACITY	300
PARKING REQUIRED	50 SPACES
PARKING PROVIDED	30 SPACES
TOTAL PARKING REQUIRED	166 SPACES
TOTAL PARKING PROVIDED	193 SPACES
ADA PARKING CALCS.	151 TO 200 = 6
ADA PARKING REQUIRED	6 SPACES
ADA PARKING PROVIDED	6 SPACES

RCA	
RCA REQUIRED	1.55 AC. (67,518 SF) - 25%
RCA (PERIMETER BUFFERS)	1.85 AC. (71,914 SF) - 27%
RCA (STREAM BUFFERS)	XX AC. (XX SF)
RCA (SCM)	XX AC. (XX SF)
RCA PROVIDED	XX AC. (XX SF)

OPEN SPACE	
OS REQUIRED	XX AC. (XX SF)
OS PROVIDED	XX AC. (XX SF)

IMPERVIOUS	
NET TRACT AREA	XX AC. (XX SF)
EXISTING IMPERVIOUS	XX AC. (XX SF)
LOT AREA MAX.	XX SF (XX%)
BUILDINGS	(XX SF)
SIDEWALKS	(XX SF)
ROADWAY & IB	(XX SF)
LOT AREA IMPERVIOUS (MAX. ALLOWED)	XX SF (XX%)

CONCEPT PLANS

ALL INFORMATION AND LINE WORK RETRIEVED FROM WAKE COUNTY GIS MAP SERVICES. THIS IS INTENDED FOR CONCEPTUAL USE ONLY. LINE WORK IS APPROXIMATE AND SUBJECT TO CHANGE UPON OBTAINING SURVEY.

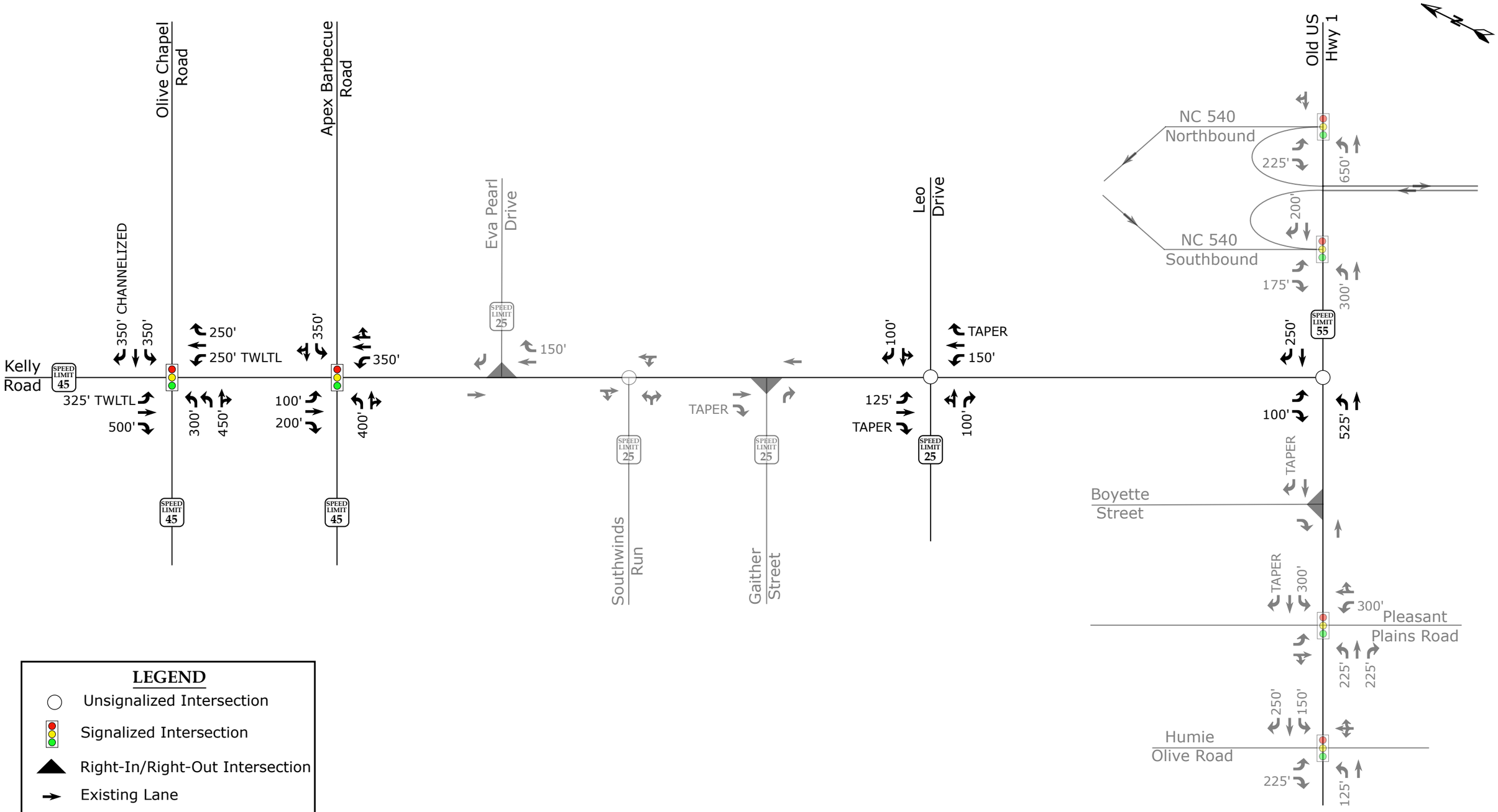
ALL SITE DATE NOTED IN RED IS TO BE DETERMINED (TBD).

PEAK
Engineering & Design
1125 Apex Peakway | Apex, NC 27502
ph: 919.439.0100
www.PeakEngineering.com

KELLY ROAD COMMERCIAL

2517 KELLY ROAD
APEX NC
WAKE COUNTY

DRAWN BY:	CHECKED BY:	PROJECT NO.
MD	JR	240306
DATE		SHEET NO.
08.12.24		SP-2



LEGEND

- ○ Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- Existing Lane
- X' Storage (In Feet)
- TWLTL Two-Way Left-Turn Lane
- SPEED LIMIT XX Posted Speed Limit

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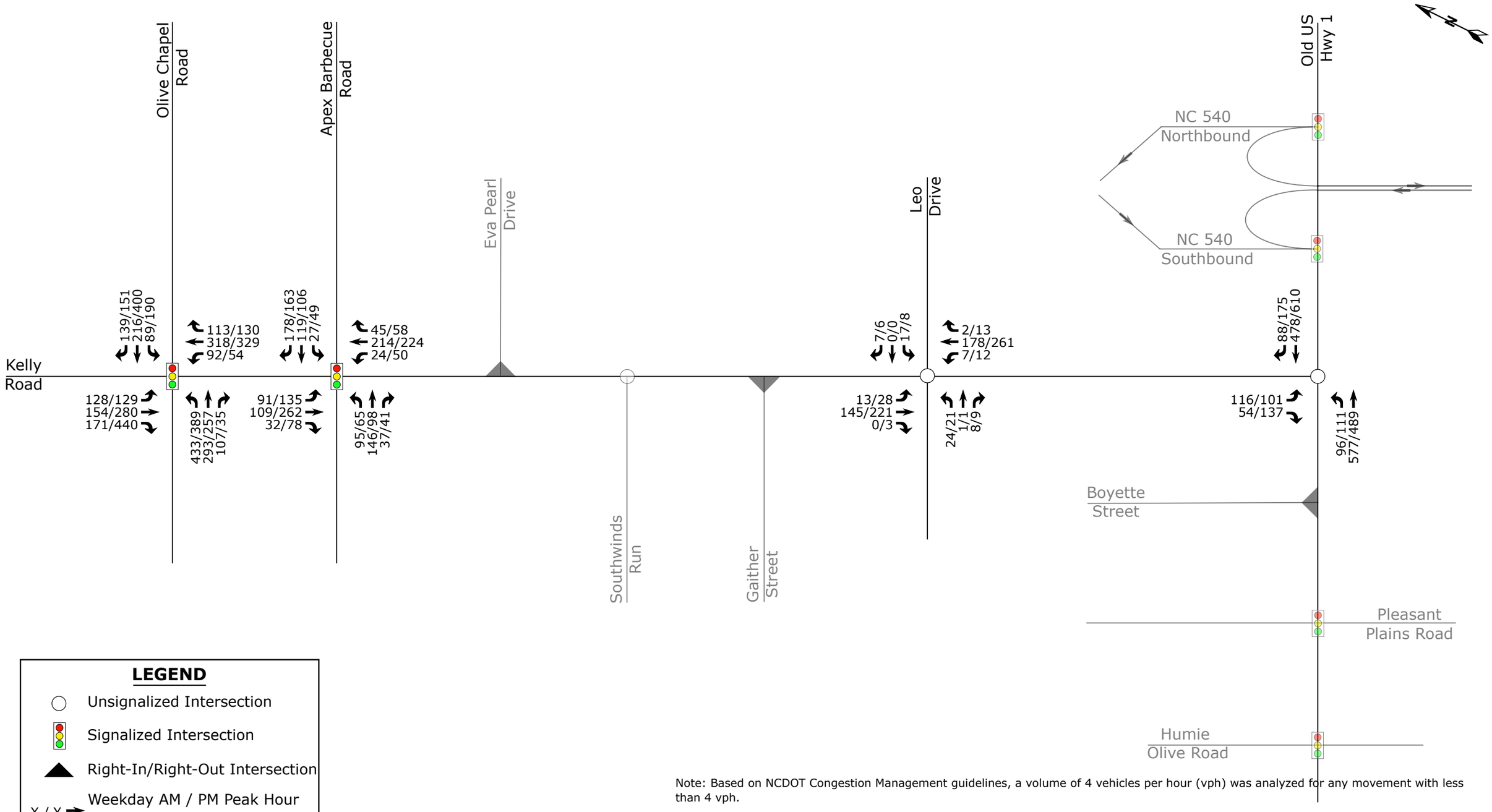
2024 Existing
Lane Configurations

Scale: Not to Scale | Figure 3



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

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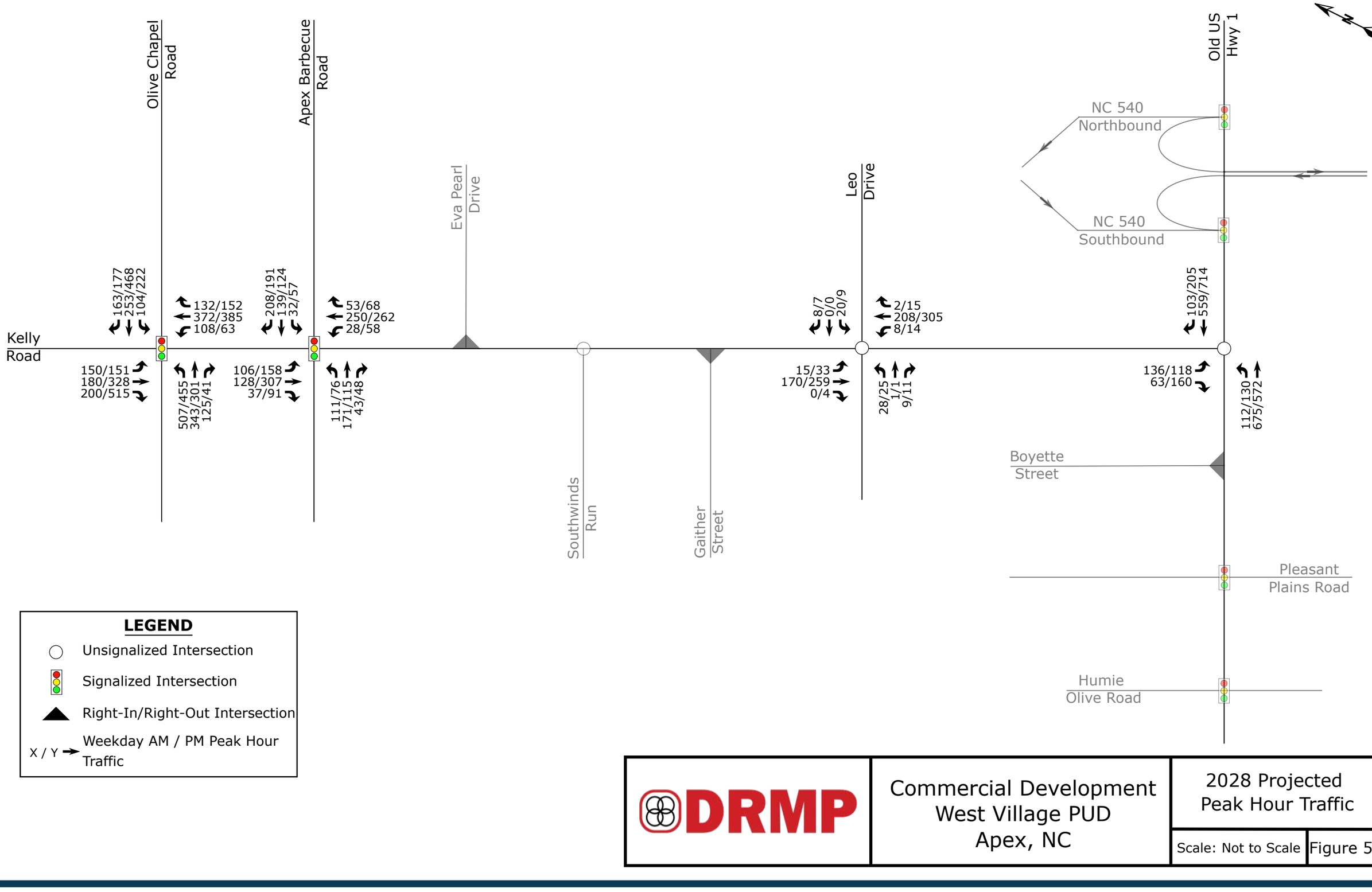
2024 Existing
Peak Hour Traffic

Scale: Not to Scale | Figure 4



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

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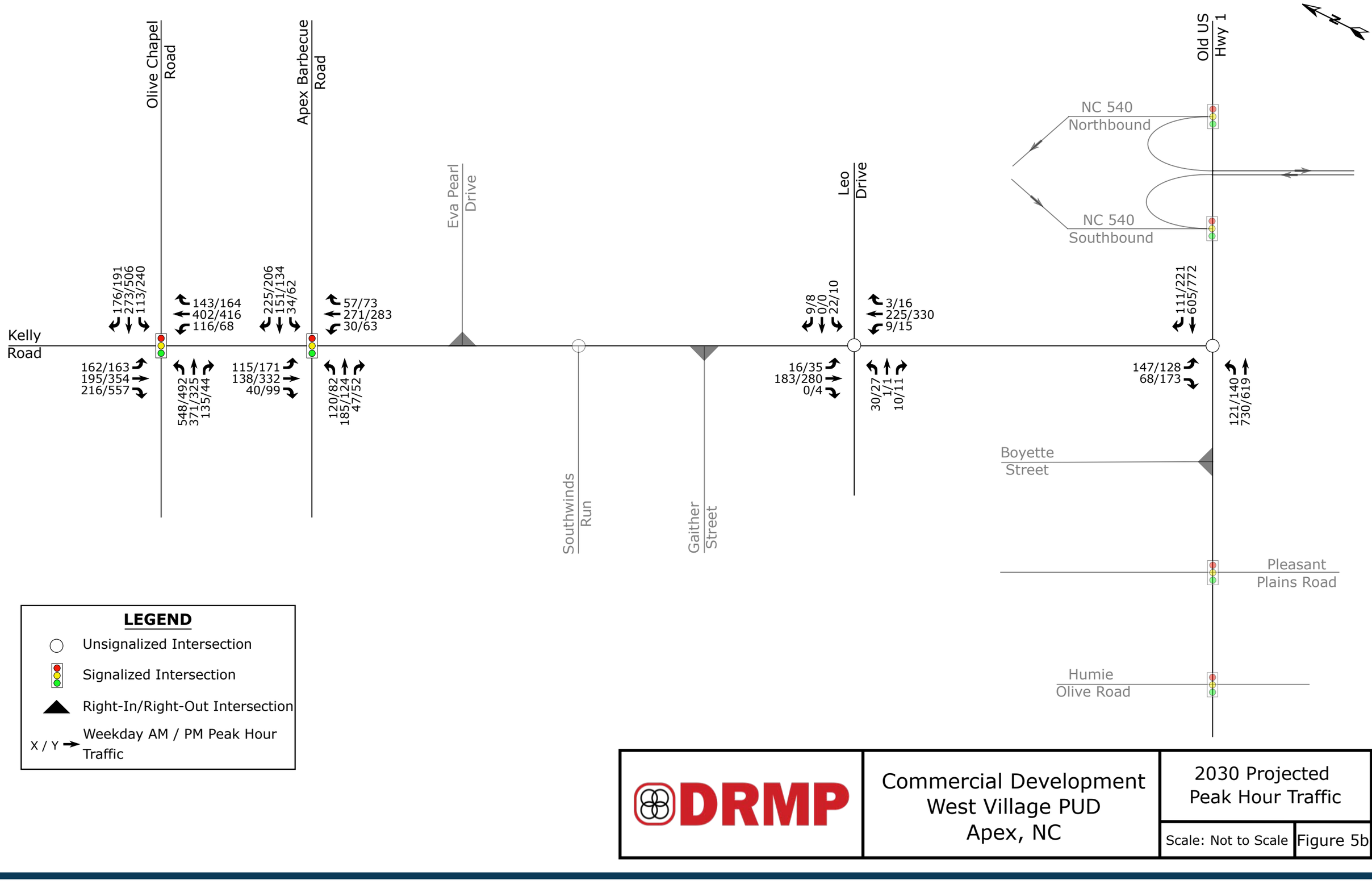
2028 Projected
Peak Hour Traffic

Scale: Not to Scale | Figure 5a



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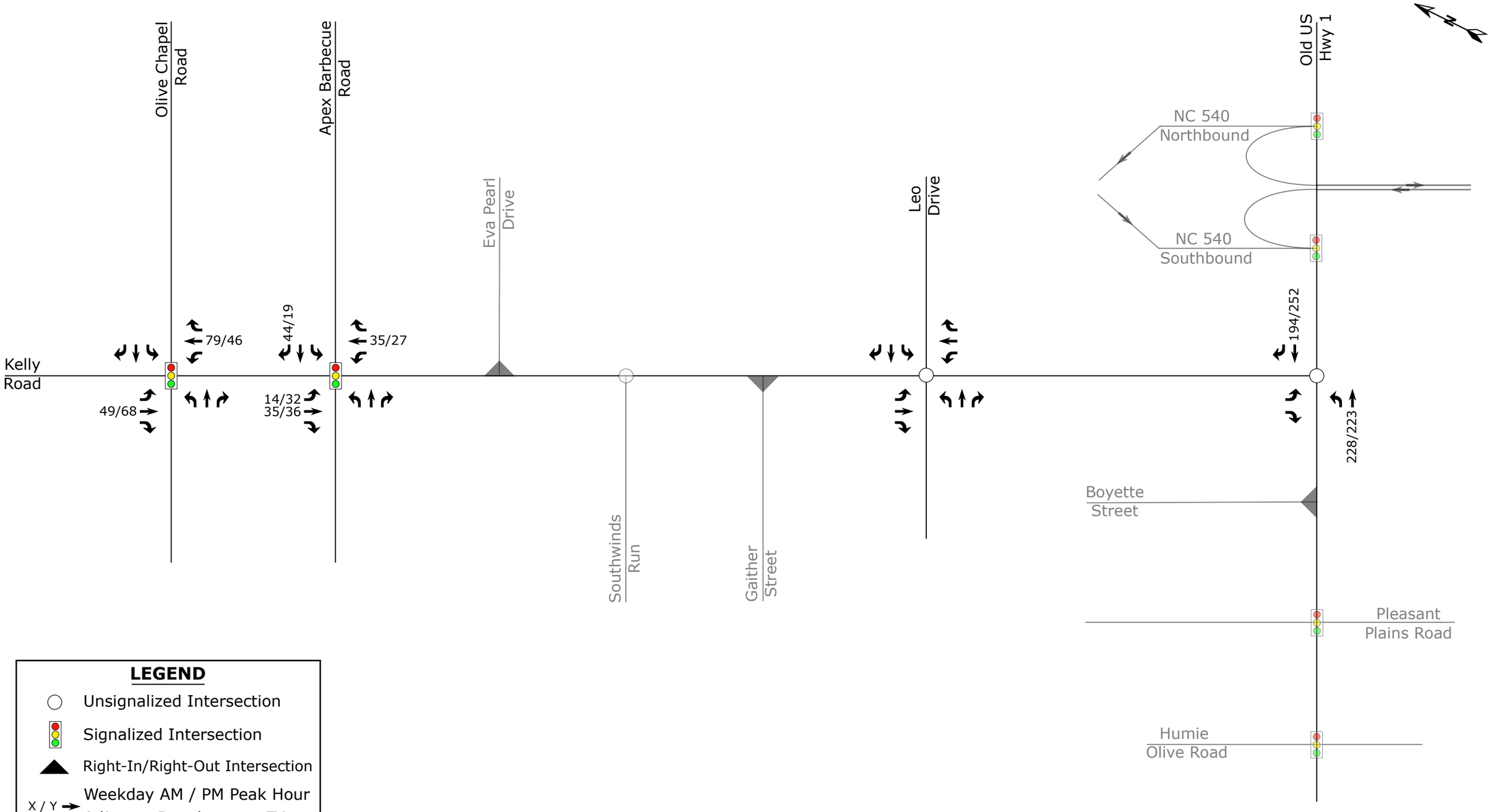
2030 Projected Peak Hour Traffic

Scale: Not to Scale

Figure 5b



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips

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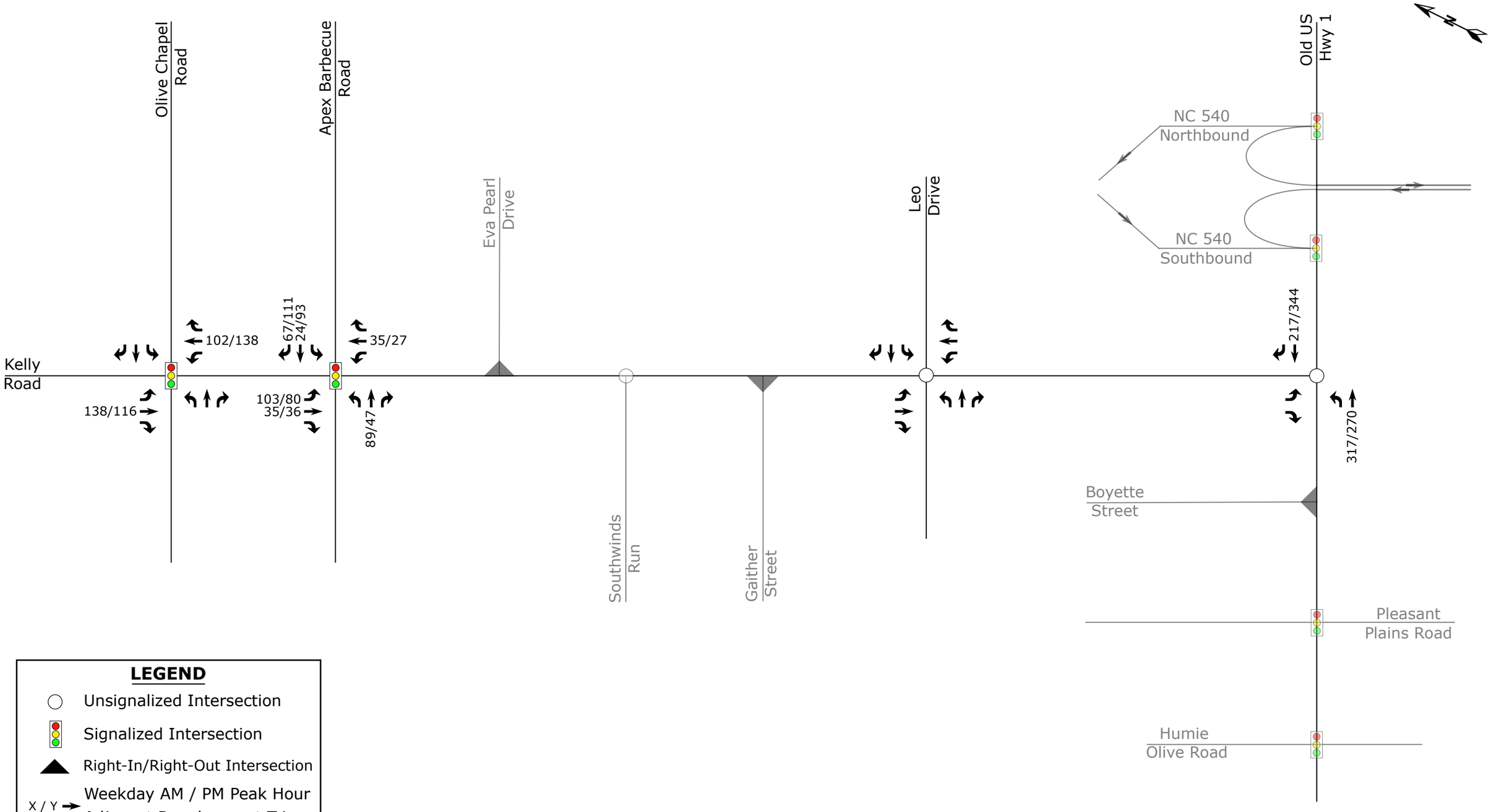
2028 Adjacent Development Trips

Scale: Not to Scale | Figure 6a



LEGEND

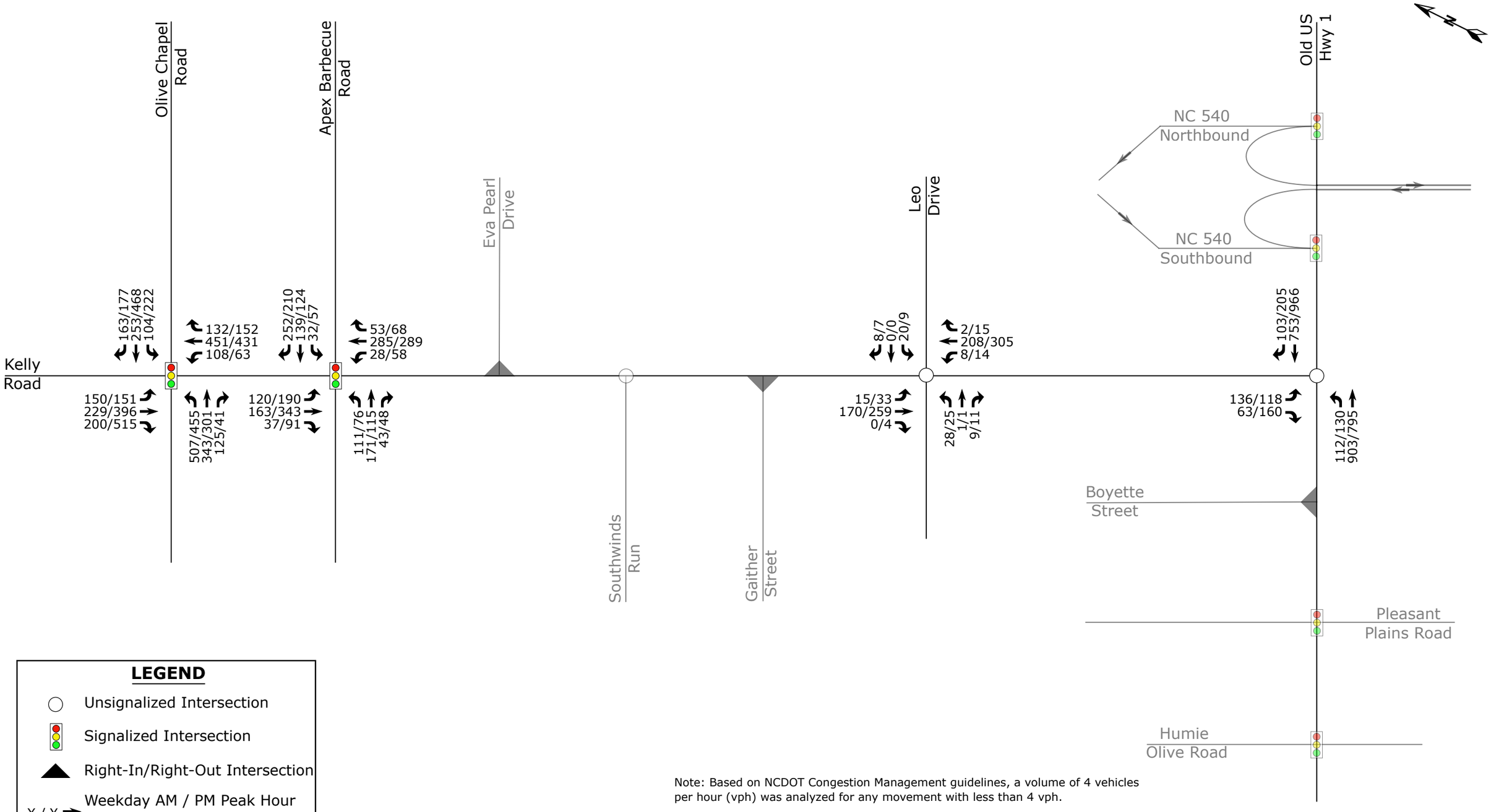
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips

DRMP

Commercial Development
West Village PUD
Apex, NC

Full-Build Adjacent Development Trips

Scale: Not to Scale | Figure 6b



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

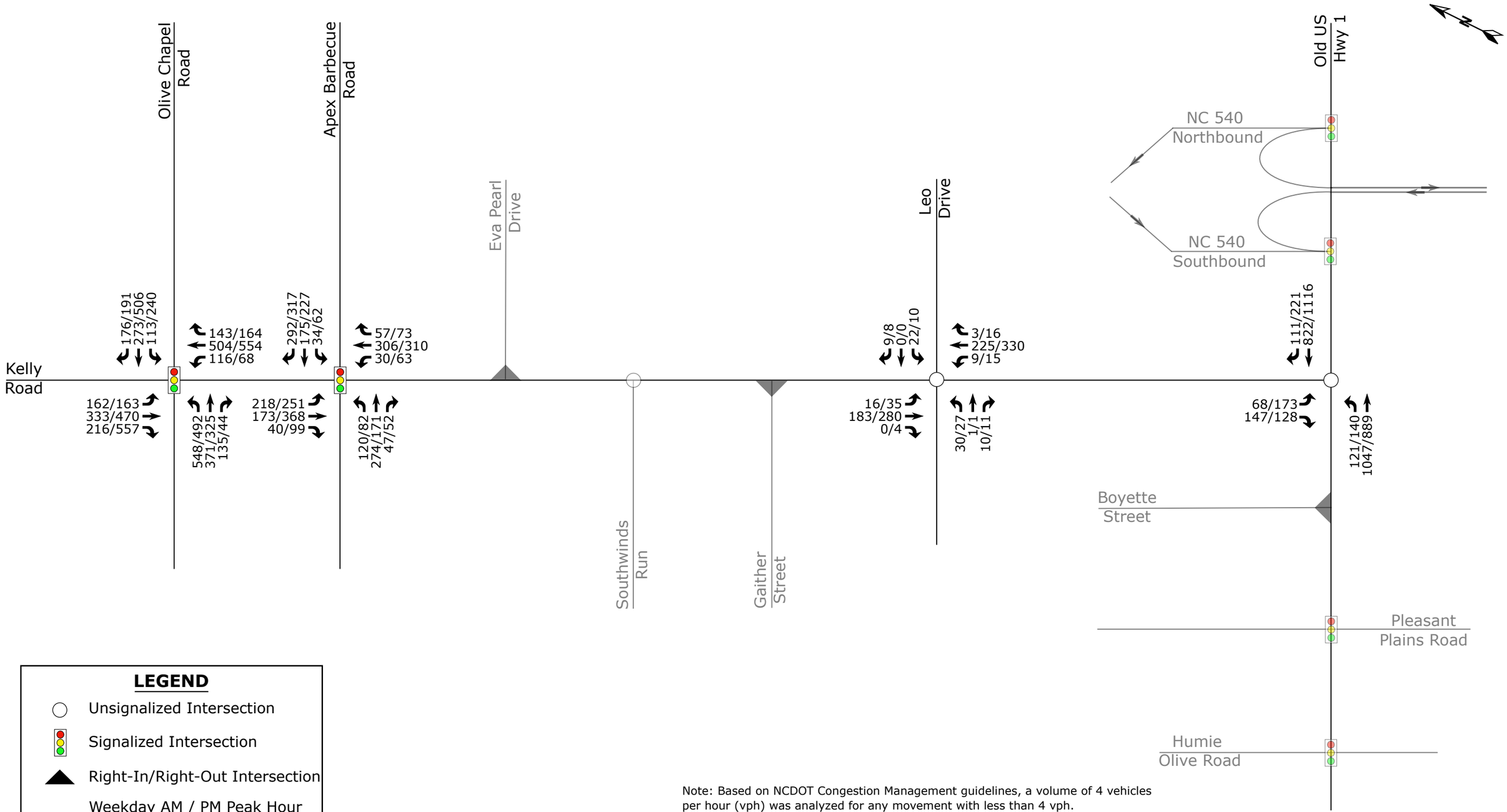
Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP

Commercial Development
West Village PUD
Apex, NC

2028 No-Build
Peak Hour Traffic

Scale: Not to Scale | Figure 7a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

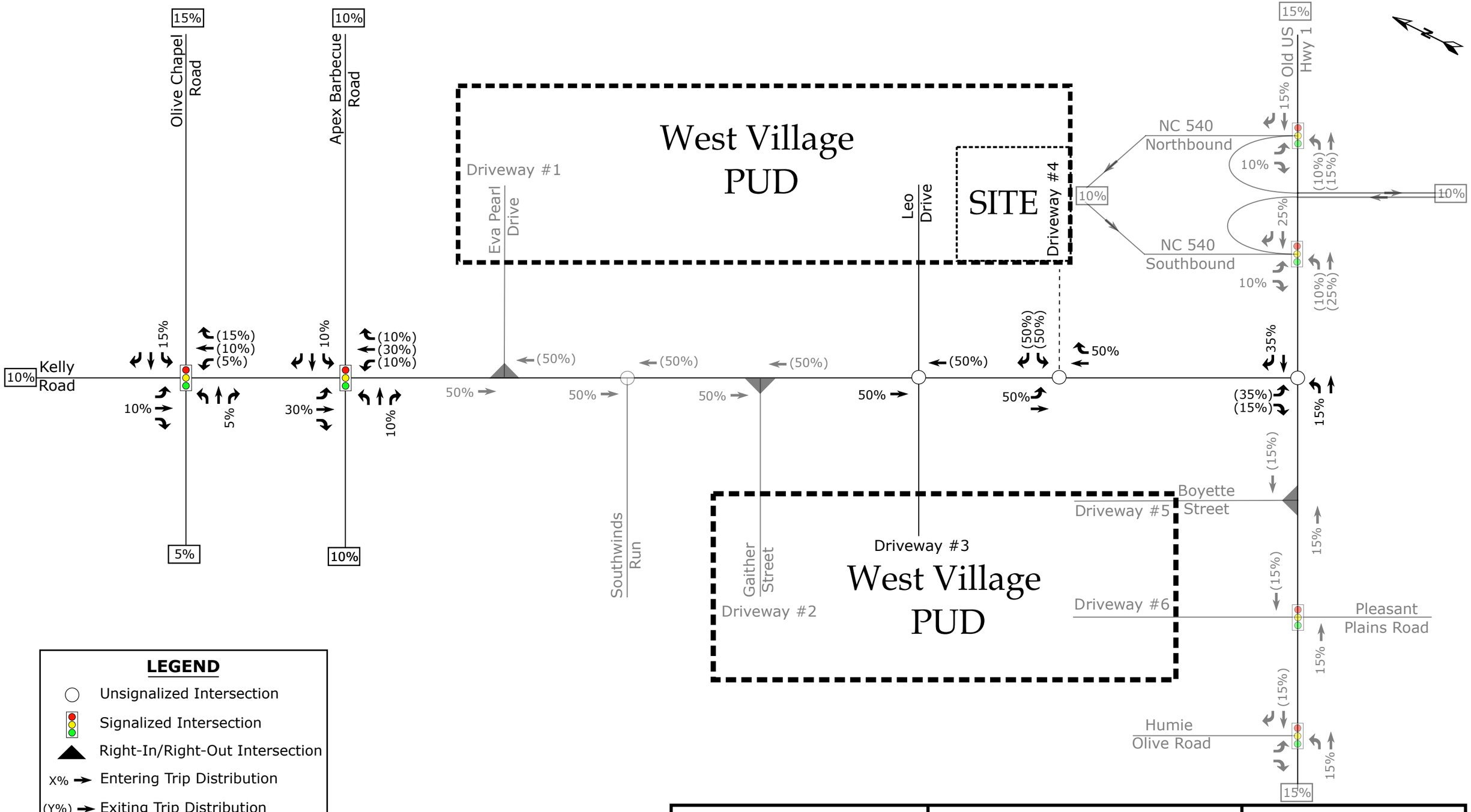
Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP

Commercial Development
West Village PUD
Apex, NC

2030 No-Build
Peak Hour Traffic

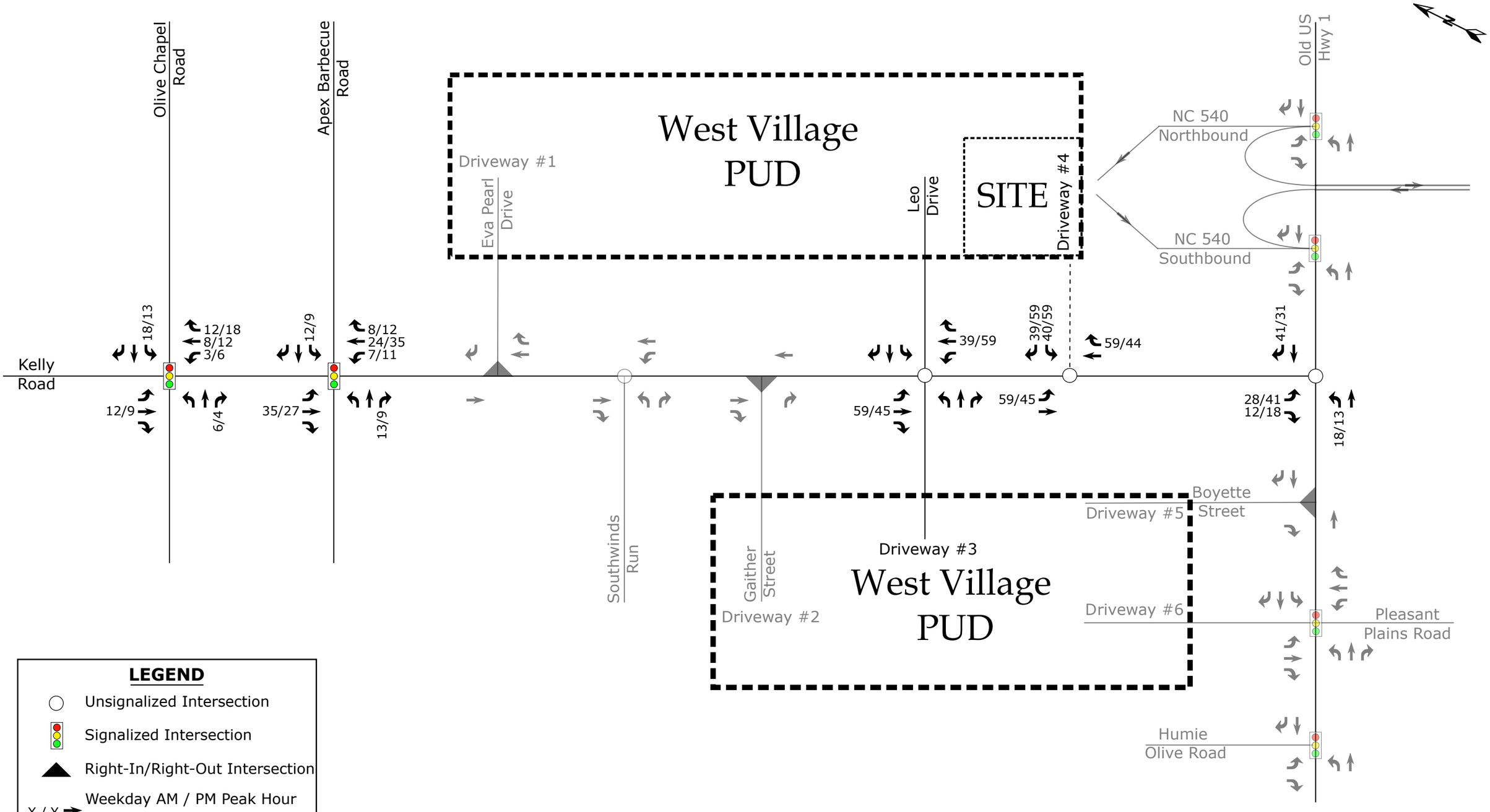
Scale: Not to Scale | Figure 7b



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution

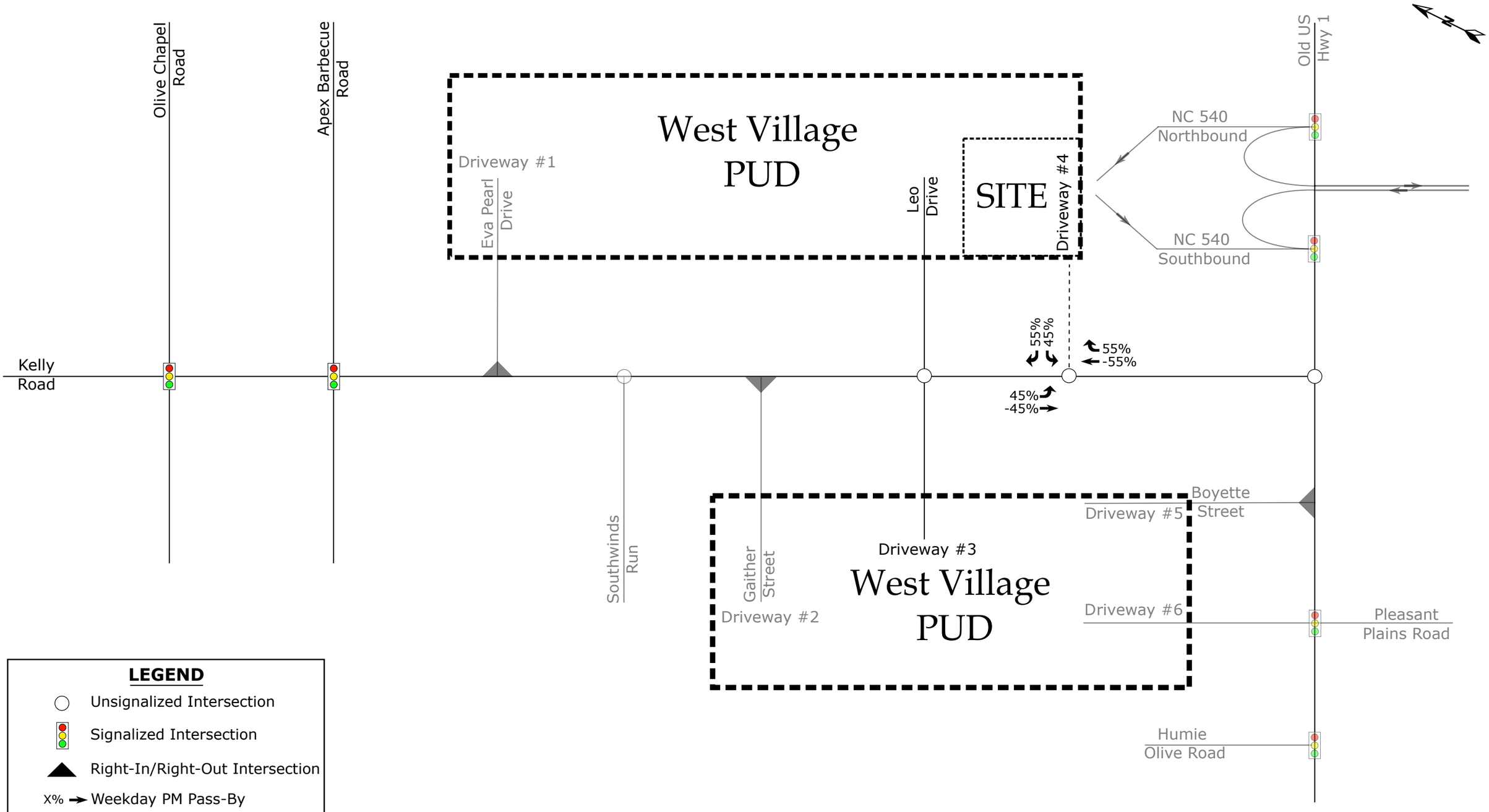
DRMP	Commercial Development West Village PUD Apex, NC	Site Trip Distribution Scale: Not to Scale | Figure 8a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

DRMP	Commercial Development West Village PUD Apex, NC	Site Trip Assignment Scale: Not to Scale | Figure 8b



LEGEND

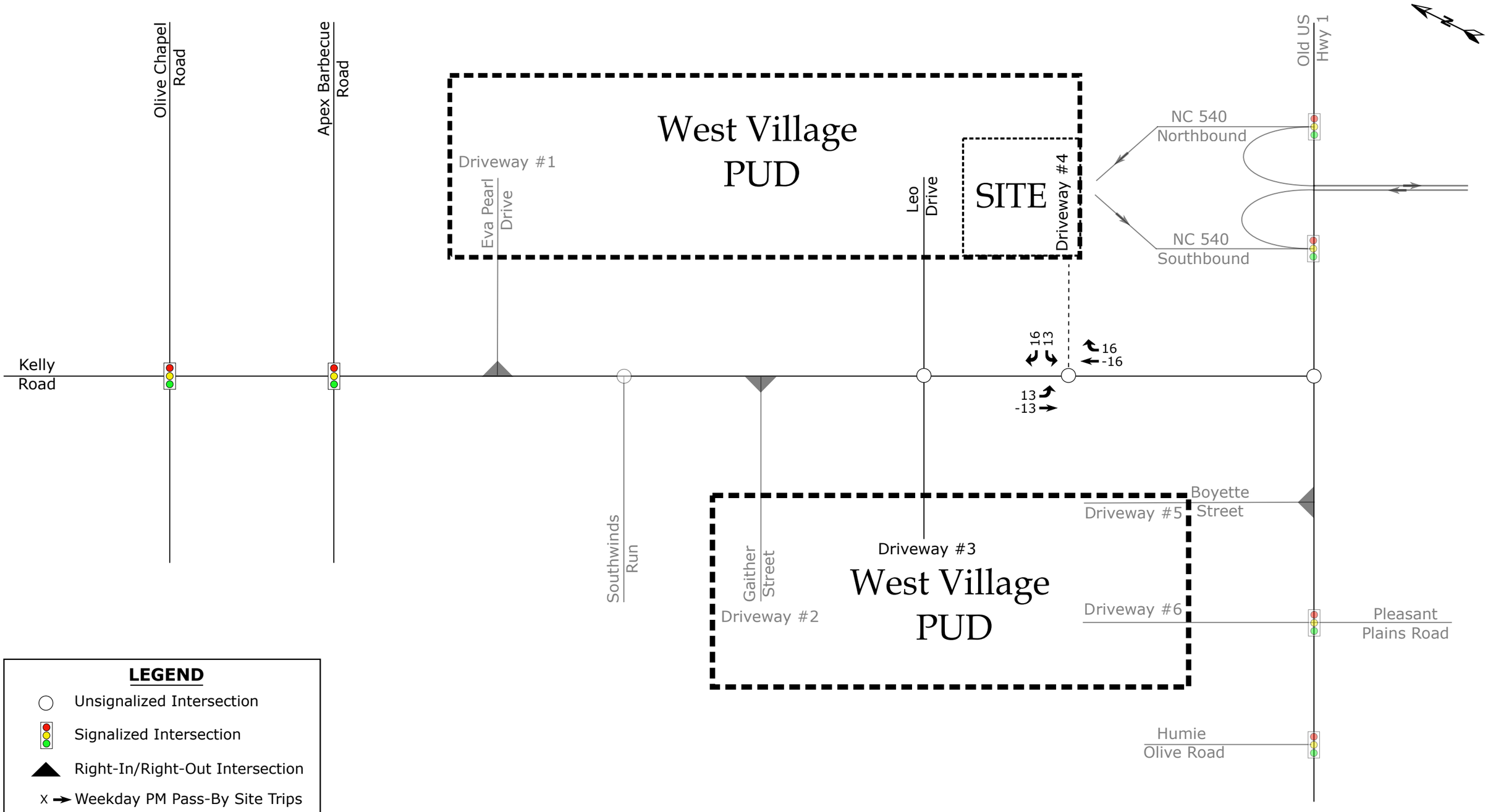
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% → Weekday PM Pass-By Trip Distribution

DRMP

Commercial Development
West Village PUD
Apex, NC

Pass-By Site Trip Distribution

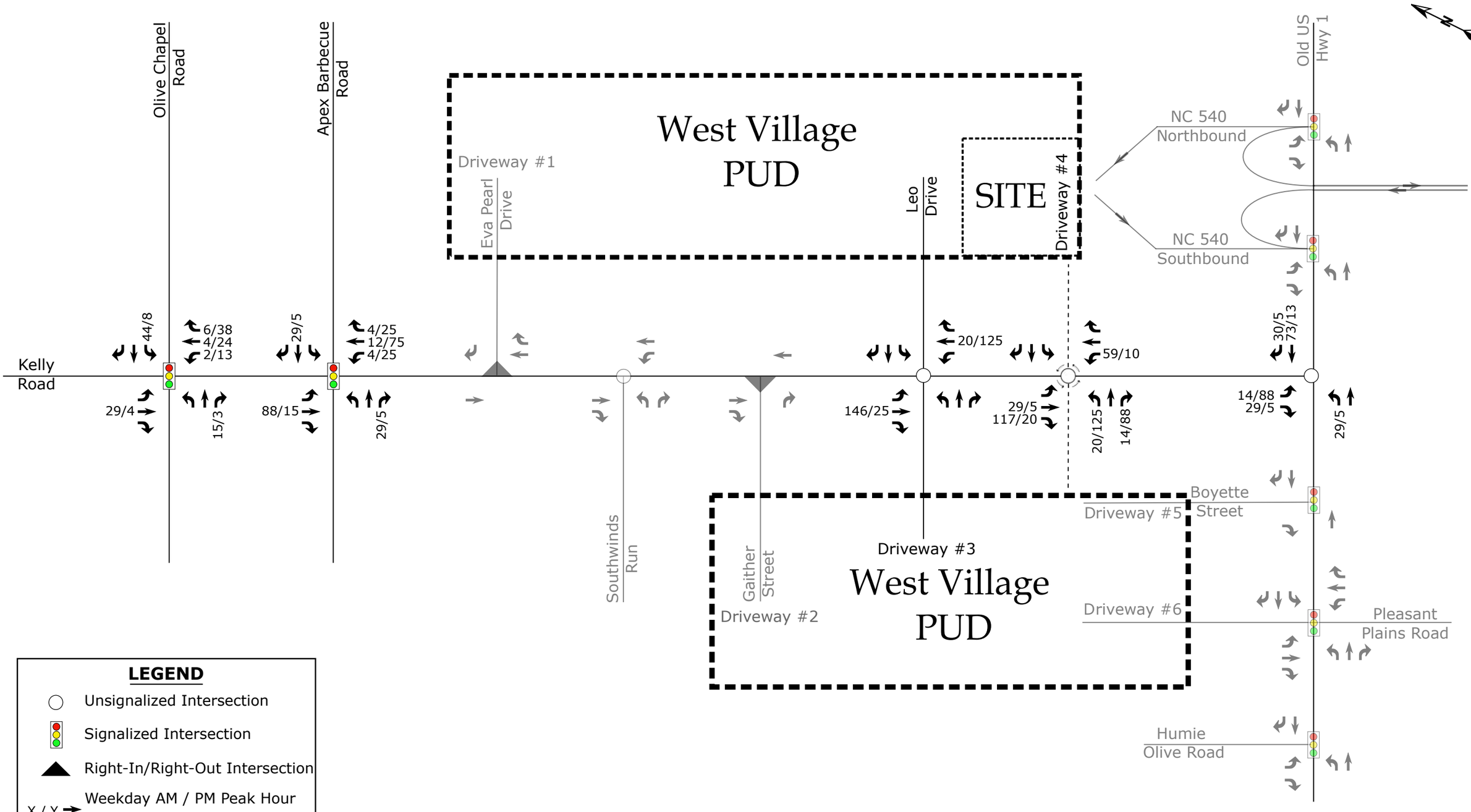
Scale: Not to Scale | Figure 9a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X → Weekday PM Pass-By Site Trips

DRMP	Commercial Development West Village PUD Apex, NC	Pass-By Site Trips Scale: Not to Scale — Figure 9b



LEGEND

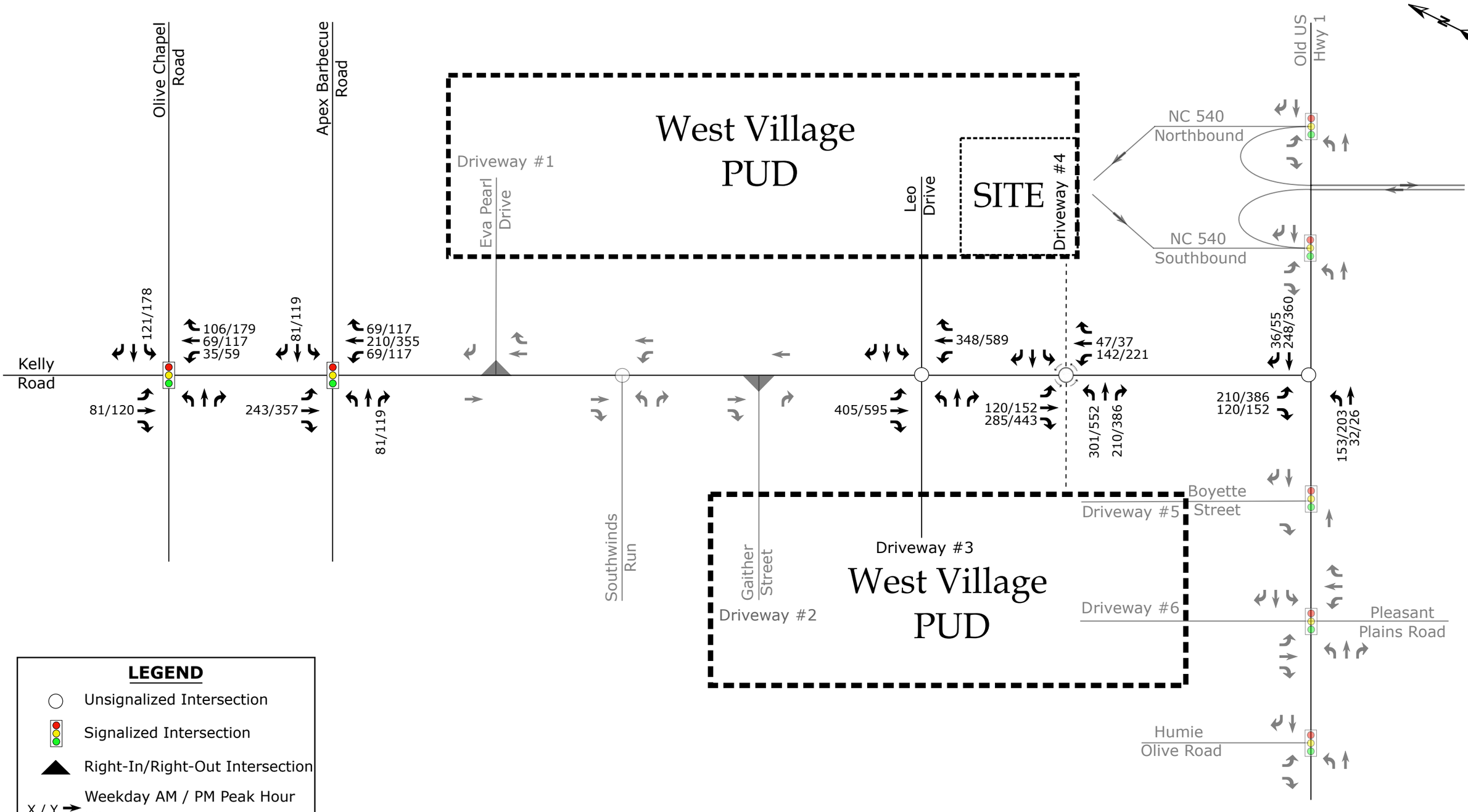
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

DRMP

Commercial Development
West Village PUD
Apex, NC

Office Site Trips

Scale: Not to Scale | Figure 10a



LEGEND

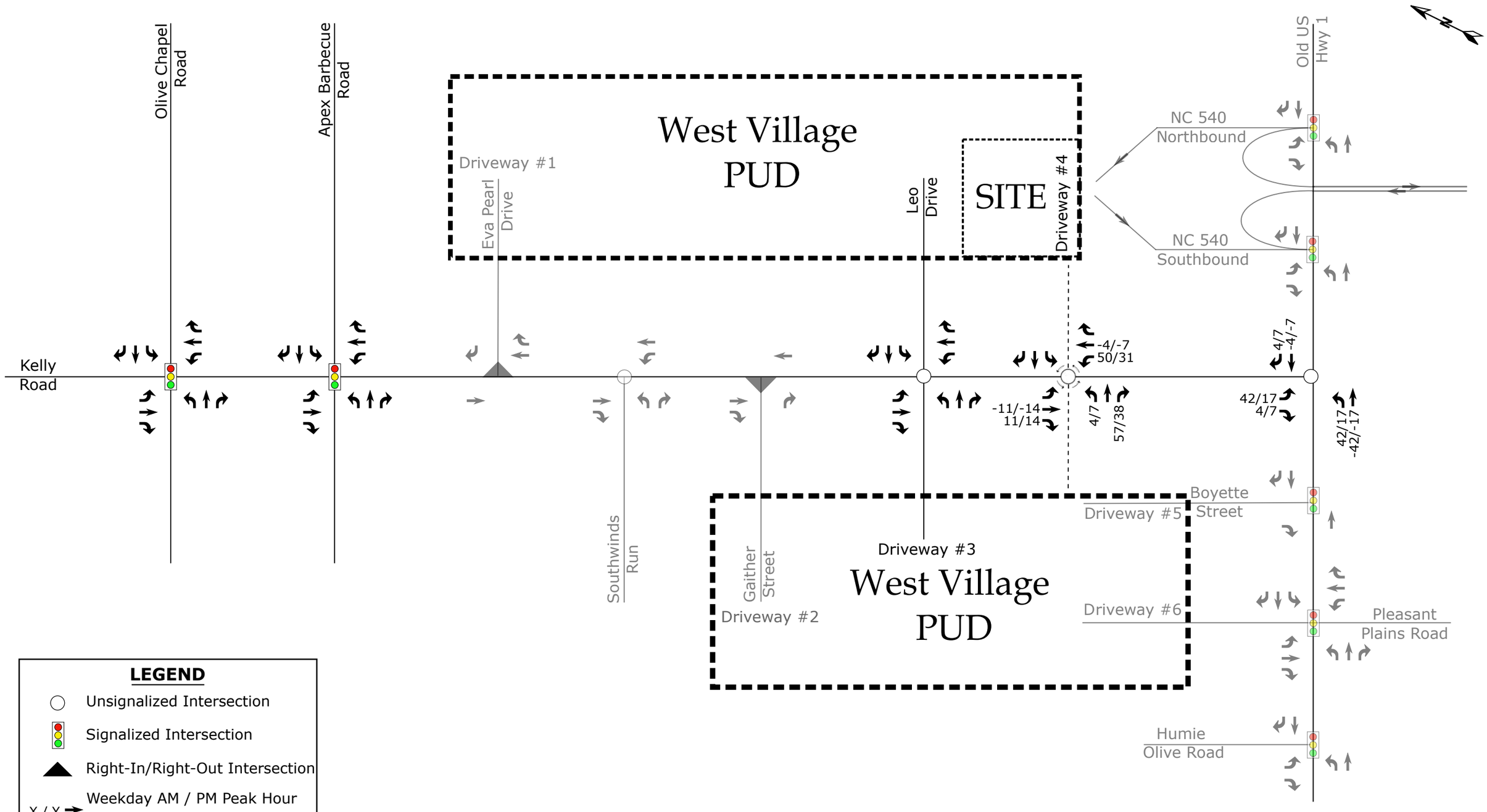
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

DRMP

Commercial Development
West Village PUD
Apex, NC

Retail Site Trips

Scale: Not to Scale | Figure 10b



LEGEND

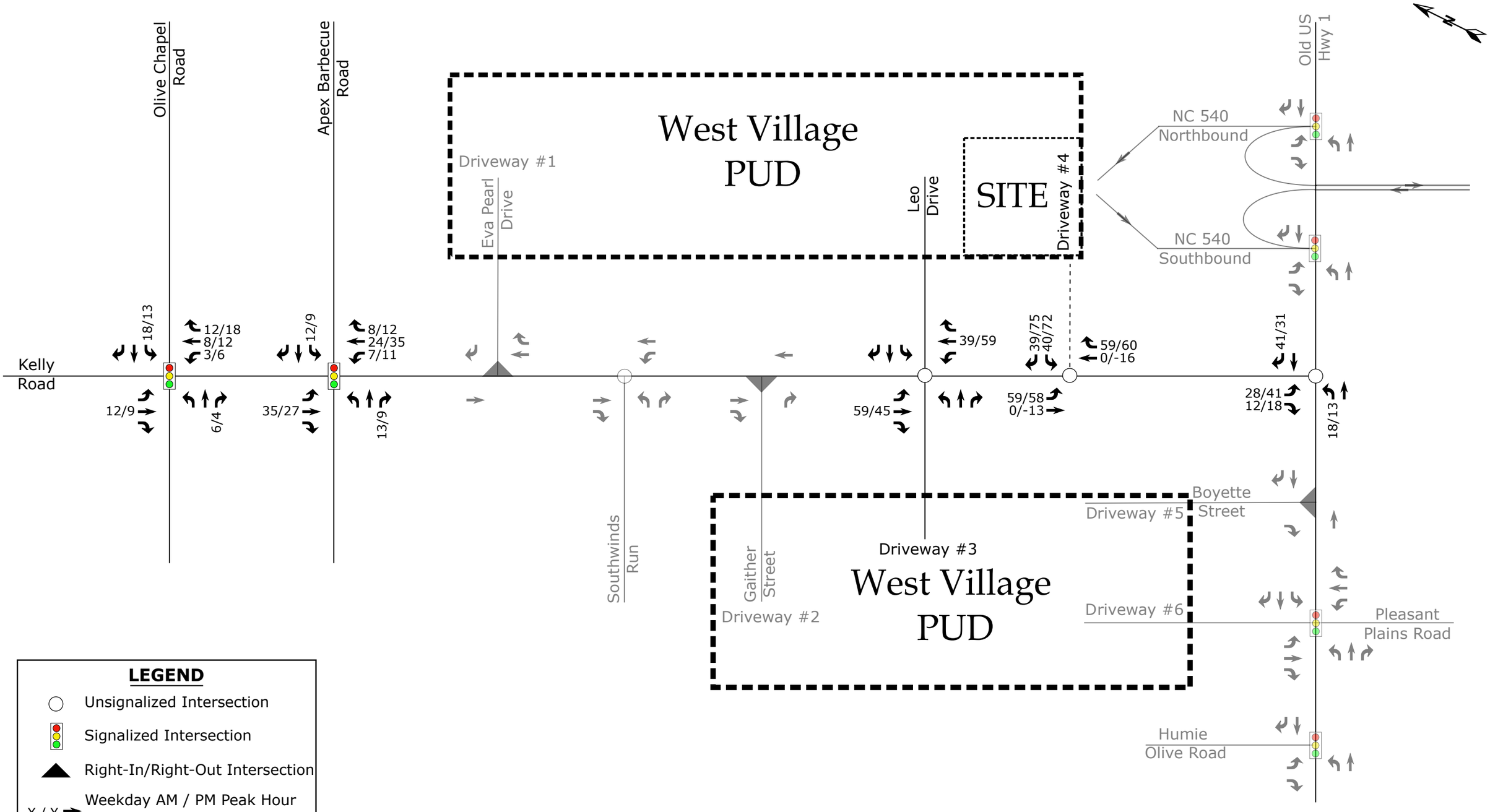
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

DRMP

Commercial Development
West Village PUD
Apex, NC

Pass-By Site Trips

Scale: Not to Scale | Figure 10c



LEGEND

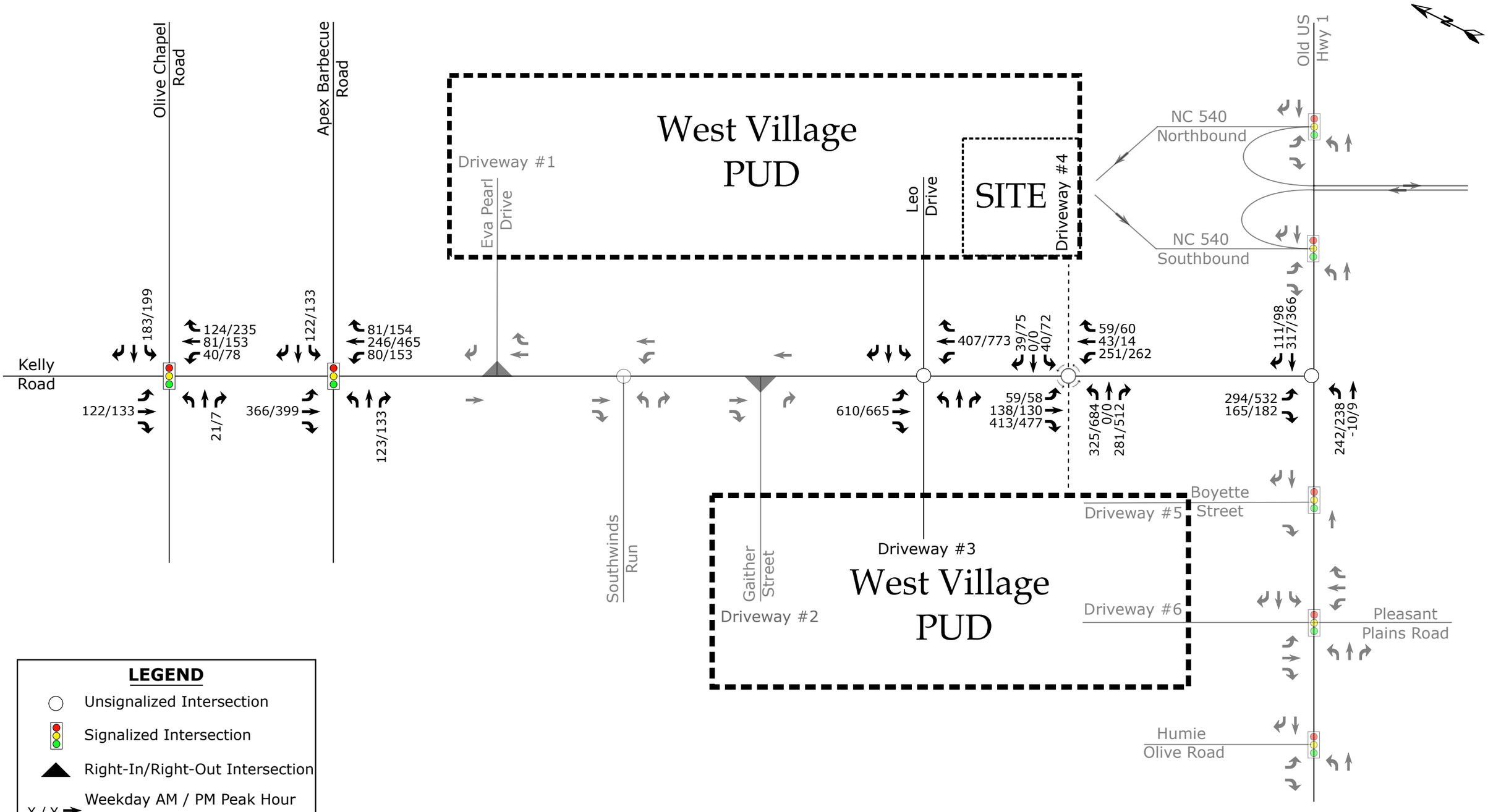
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

DRMP

Commercial Development
West Village PUD
Apex, NC

Total Site Trips
Phase 1

Scale: Not to Scale | Figure 11a



LEGEND

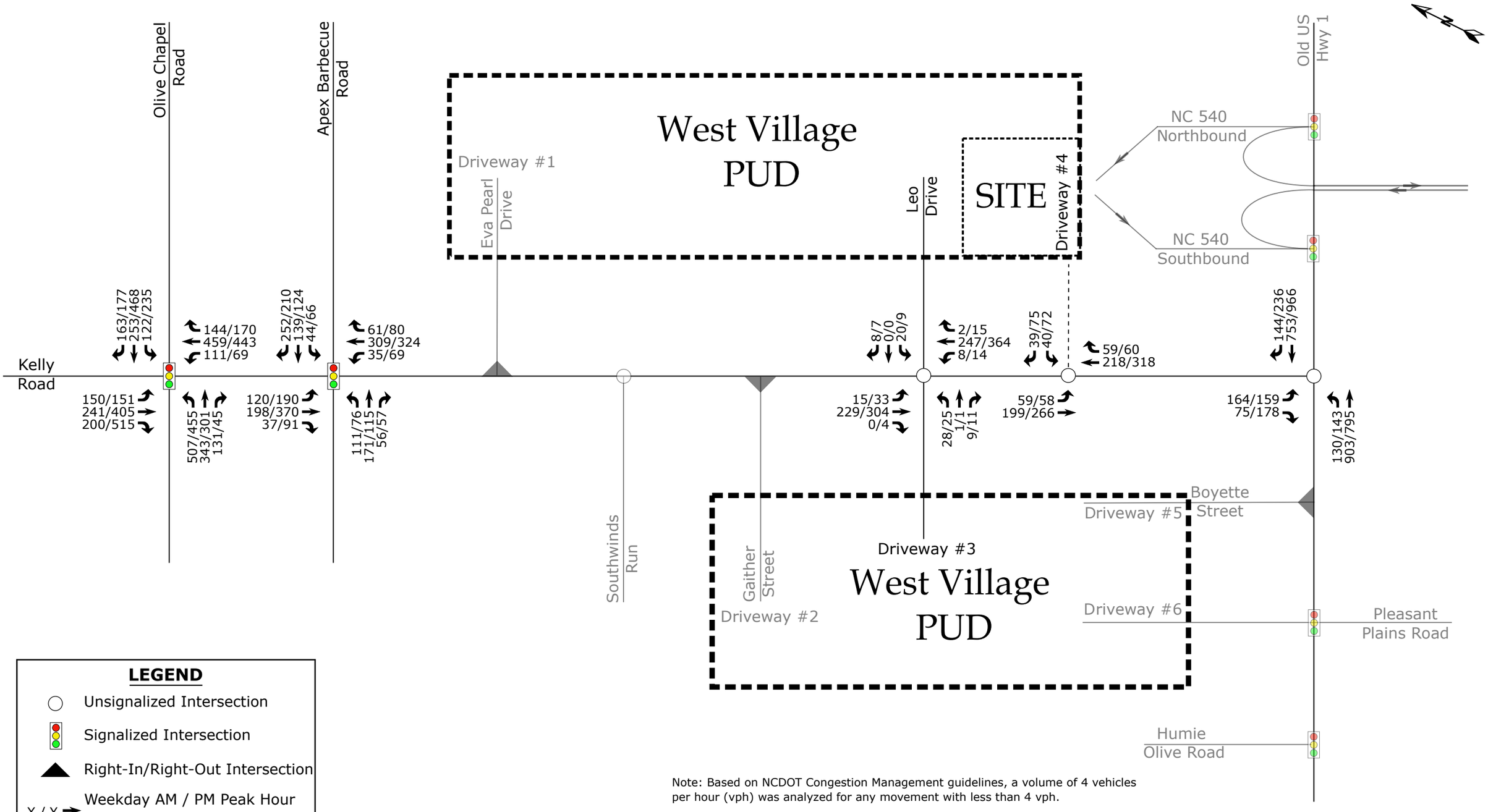
- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

DRMP

Commercial Development
West Village PUD
Apex, NC

Total Site Trip Assignment

Scale: Not to Scale | Figure 11b

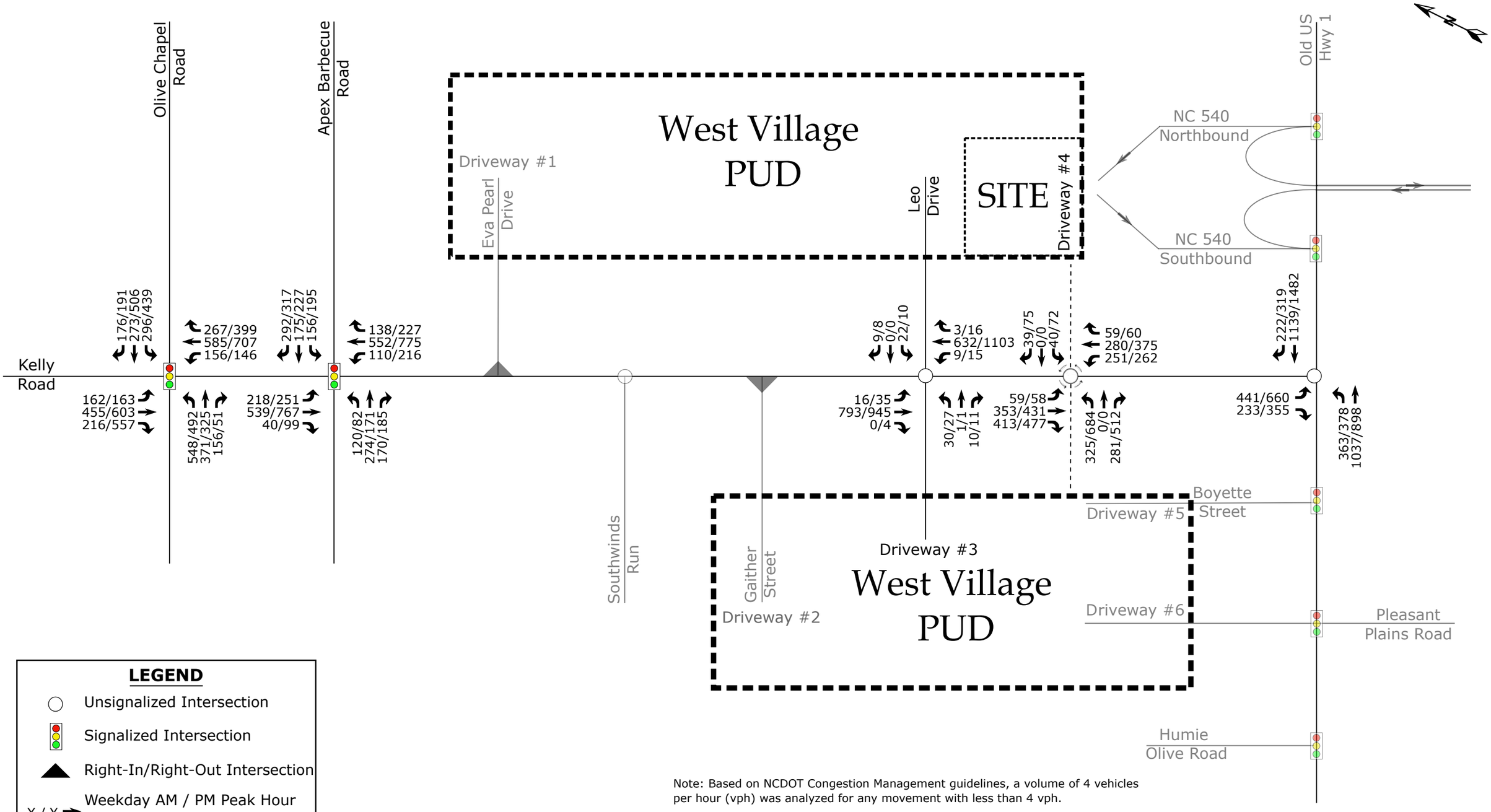


LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP	Commercial Development West Village PUD Apex, NC	2028 Build Peak Hour Traffic
		Scale: Not to Scale | Figure 12



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

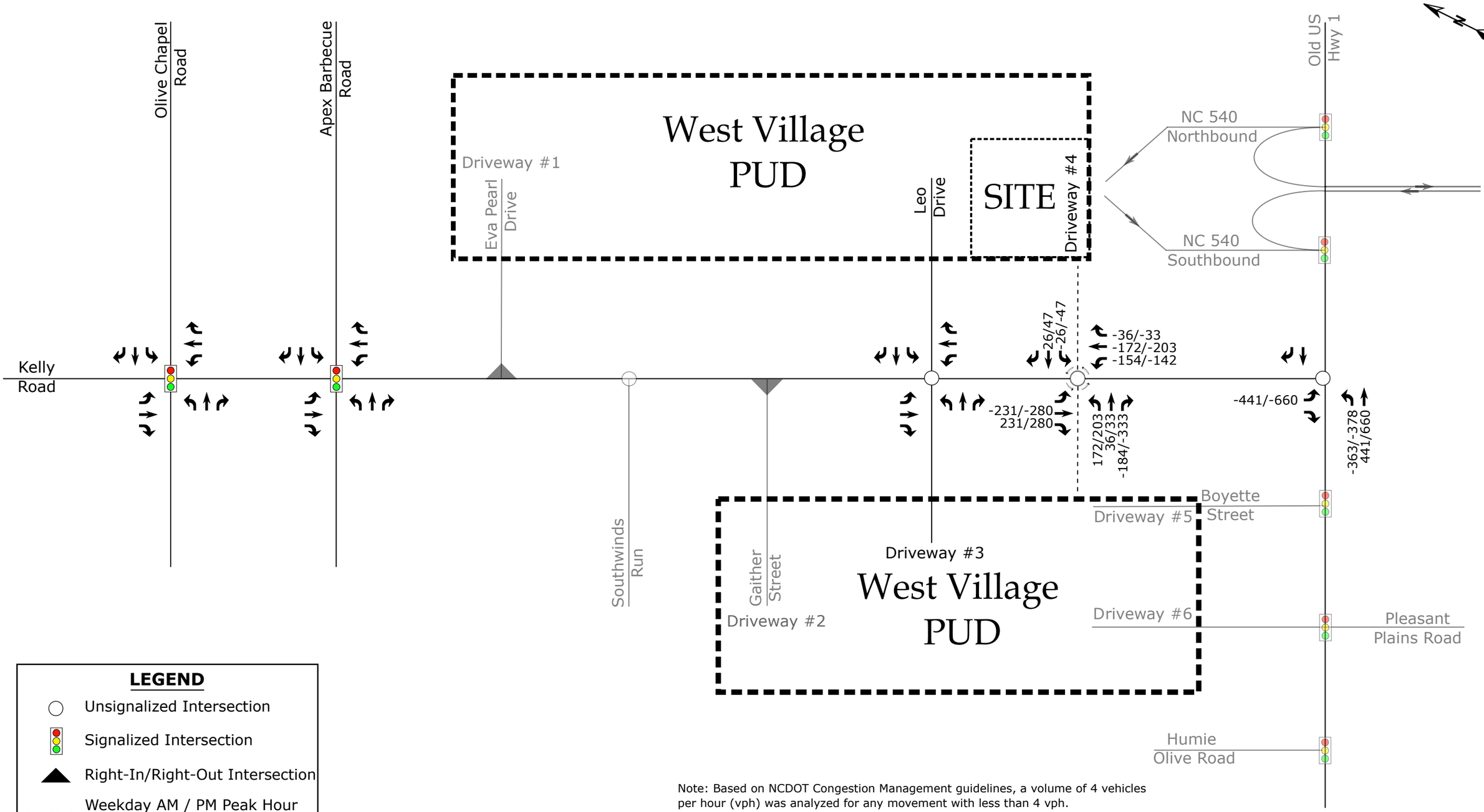
Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP

Commercial Development
West Village PUD
Apex, NC

2030 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 13a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

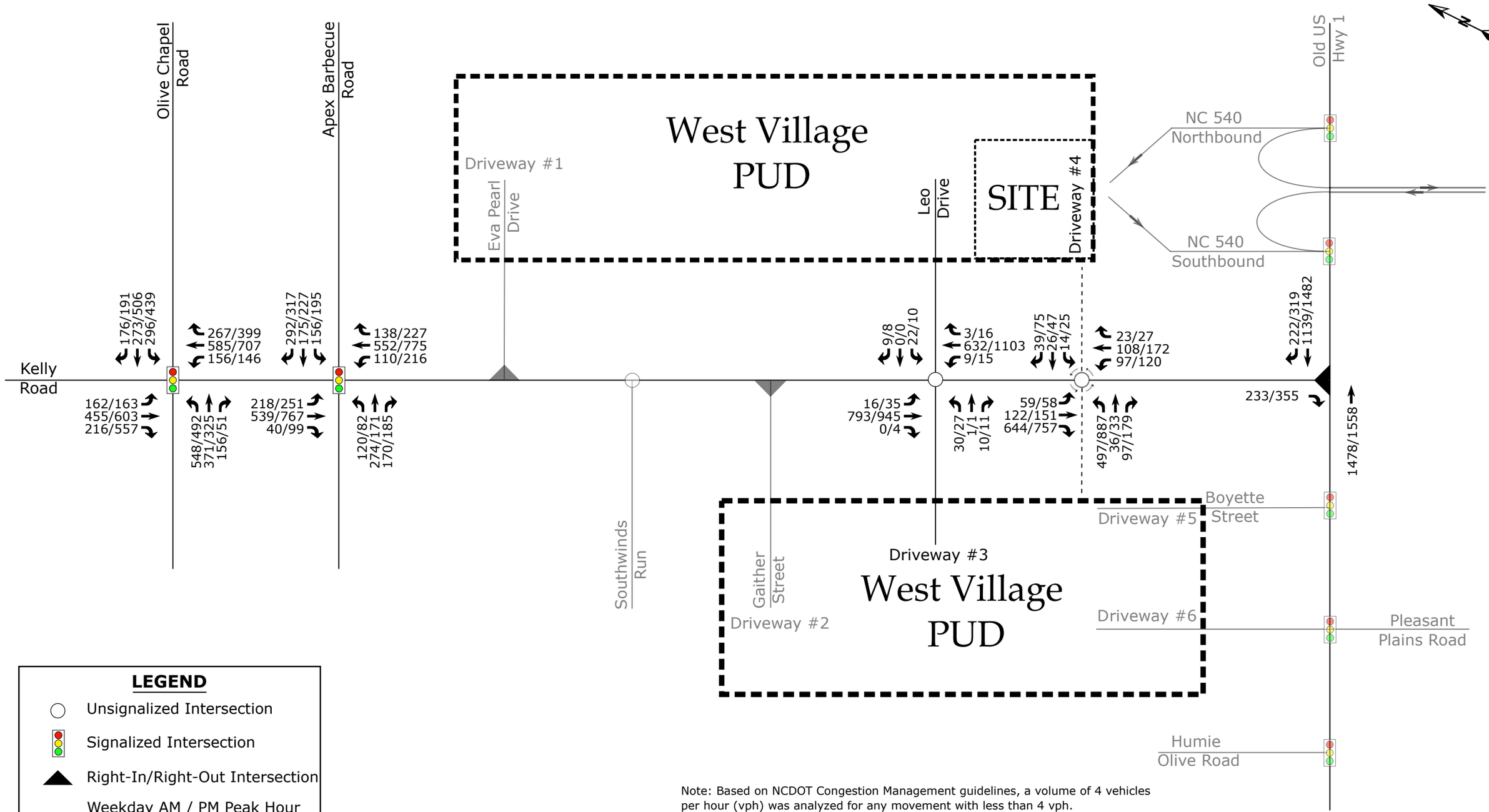
Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP

Commercial Development
West Village PUD
Apex, NC

2030 Build
Diverted Traffic

Scale: Not to Scale | Figure 13b



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP

Commercial Development
West Village PUD
Apex, NC

2030 Build
Peak Hour Traffic

Scale: Not to Scale | Figure 13c

DRMP

SCOPE LETTER

DRMP

October 30, 2024

Sajid Hassan
Town of Apex Transportation
105-B Upchurch Street
Apex, NC 27502
919-372-7360
Sajid.Hassan@apexnc.org
[Sent via Email]

Reference: West Village Commercial Development

Subject: Updated MOU for Traffic Phasing Study

Dear Mr. Hassan:

The following is an updated Memorandum of Understanding (MOU) outlining the proposed scope of work and assumptions related to the traffic phasing study to be prepared for the development of the initial phase of commercial development in the West Village PUD. This MOU is based on an initial virtual meeting on September 27th and incorporates comments received from the Town's initial review of the MOU. It is our understanding that a phasing study would be required to address impacts of the initial phase of the commercial development.

The initial phase of commercial development is proposed along the east side of Kelly Road and would include a day care (~ 12,130 s.f. building) and a two-story building with office / retail space (~ 29,000 s.f. total). The day care building would be completed initially, and the mixed-use building would be completed afterwards. This development is the first phase of the commercial portion of the West Village PUD. The property is approximately 8% of the overall West Village development.

Access would be provided via one new full movement driveway on Kelly Road and a connection to the north to Fahey Drive. The new full movement driveway is ultimately planned for a roundabout, but the roundabout would not be constructed with the initial phase of development. The connection to Fahey Drive would provide an indirect second access to Kelly Road via Leo Drive.

Study Area

Based on the call with City staff on September 27th and follow up coordination, it is our understanding the study area would need to include intersections from the original TIA and PUD that have required improvements that are not constructed and that would be relevant to this phase. The study intersections will include:

- Olive Chapel Road & Kelly Road (signalized)
- Apex Barbeque Road & Kelly Road (signalized)
- Leo Drive and Kelly Road (unsignalized)
- Kelly Road and Proposed Site Driveway (Site Driveay #4 in TIA)
- Old US 1 and Kelly Road

Other intersections NOT included in the phasing study scope include:

- Kelly Road and Eva Pearl Drive (Site Driveway #1) – already built
- Southwinds Run and Kelly Road – not relevant
- NC 540 Northbound ramps and Old US 1 – No improvements remain
- NC 540 Southbound ramps and Old US 1 – No improvements remain
- Old US 1 and Boyette Street (Site Driveway #5) – not relevant
- Old US 1 and Pleasant Plains Road / Site Driveway #6) – not relevent
- Old US 1 and Humie Olive Roak – not relevant

Existing Traffic Volumes

Current traffic counts would be required for the existing study intersections above during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods, while schools are in session.

Background Traffic Volumes

Background traffic volumes will be determined by projecting 2024 existing traffic volumes to the year Phase 1 build year using an annual growth rate of 4% as required by the Town. The following adjacent developments are to be considered:

- Depot 499
- Townes at Pleasant Park (fka Sears Property)

- Friendship Village
- Holland Road Assembly

Future Roadway Improvements

It was discussed that other developments could be completing roadway improvements in the area. No other improvements are planned by the Town of Apex or NCDOT at the study intersections.

Trip Generation

Average weekday daily, AM peak hour, and PM peak hour trips for the initial phase of commercial development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11th Edition. Refer to Table 1 for a summary of the trip generation for the initial commercial phase.

Table 1: Trip Generation Summary – Initial Commercial Phase

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)			Weekday PM Peak Hour Trips (vph)		
			Enter	Exit	Total	Enter	Exit	Total
Day Care (565)	12,130 SF	576	71	62	133	63	72	135
General Office (710)	14,400 SF	215	28	4	32	6	27	33
Retail Shopping Center (822)	14,400 SF	837	22	15	37	50	51	101
Total Trips		**1,628**	**121**	**81**	**202**	**119**	**150**	**269**
Internal Capture Trips AM (4% Enter, 10% Exit) PM (3% Enter, 2% Exit)		--	*-2*	*-2*	*-4*	*-2*	*-2*	*-4*
Pass-By Trips (31% AM, 40% PM)		--	*-6*	*-5*	*-11*	*-20*	*-20*	*-40*
Primary (New) Trips		**1,628**	**113**	**74**	**187**	**97**	**128**	**225**

Internal capture trips were calculated based on the NCHRP 684 for the office and retail uses. The day care is not included in the internal capture calculations; however, it is likely that some day care trips will be internal capture. Refer to the attached NCHRP reports for the internal capture calculations.

In addition, pass-by trips for the retail space will be calculated using the ITE Trip Generation manual, which includes pass-by trip rates of 31% in the AM and 40% in the PM.

Trip Distribution and Assignment

Site trips are distributed based on the regional trip distribution from the original TIA report and modified as appropriate near the site driveway. Refer to the attached site trip distribution figure.

Although there is interconnectivity to the north, this traffic study assigns all development trips to the new site access to be conservative.

Analysis Scenarios

All capacity analyses will be performed utilizing Synchro (Version 11). All study intersections will be analyzed during the weekday AM and PM peak hours under the following proposed traffic scenarios:

- Existing 2024 Conditions
- No-Build 2028 (Phase 1 Build Year) Conditions
- Build 2028 Phase 1 Conditions
- Build 2028 Phase 1 Conditions With Necessary Required Improvements
- No-Build 2030 (Full Build Year) Conditions
- Build 2030 (Full Build Out) Conditions with All Required Improvements

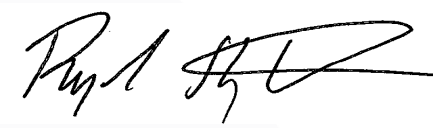
This study assumes the initial commercial development (Phase 1) would be completed by 2028. Although a schedule is unknown for the remaining commercial development within the PUD, this scope assumes a full build out year of 2030.

Report

The Traffic Phasing Study will be prepared based on Town and NCDOT requirements.

If you find this memorandum of understanding acceptable, please let me know. If you should have any questions or comments regarding this letter, please feel free to contact me at rstephenson@drmp.com or by phone at 919-872-5115.

Sincerely,

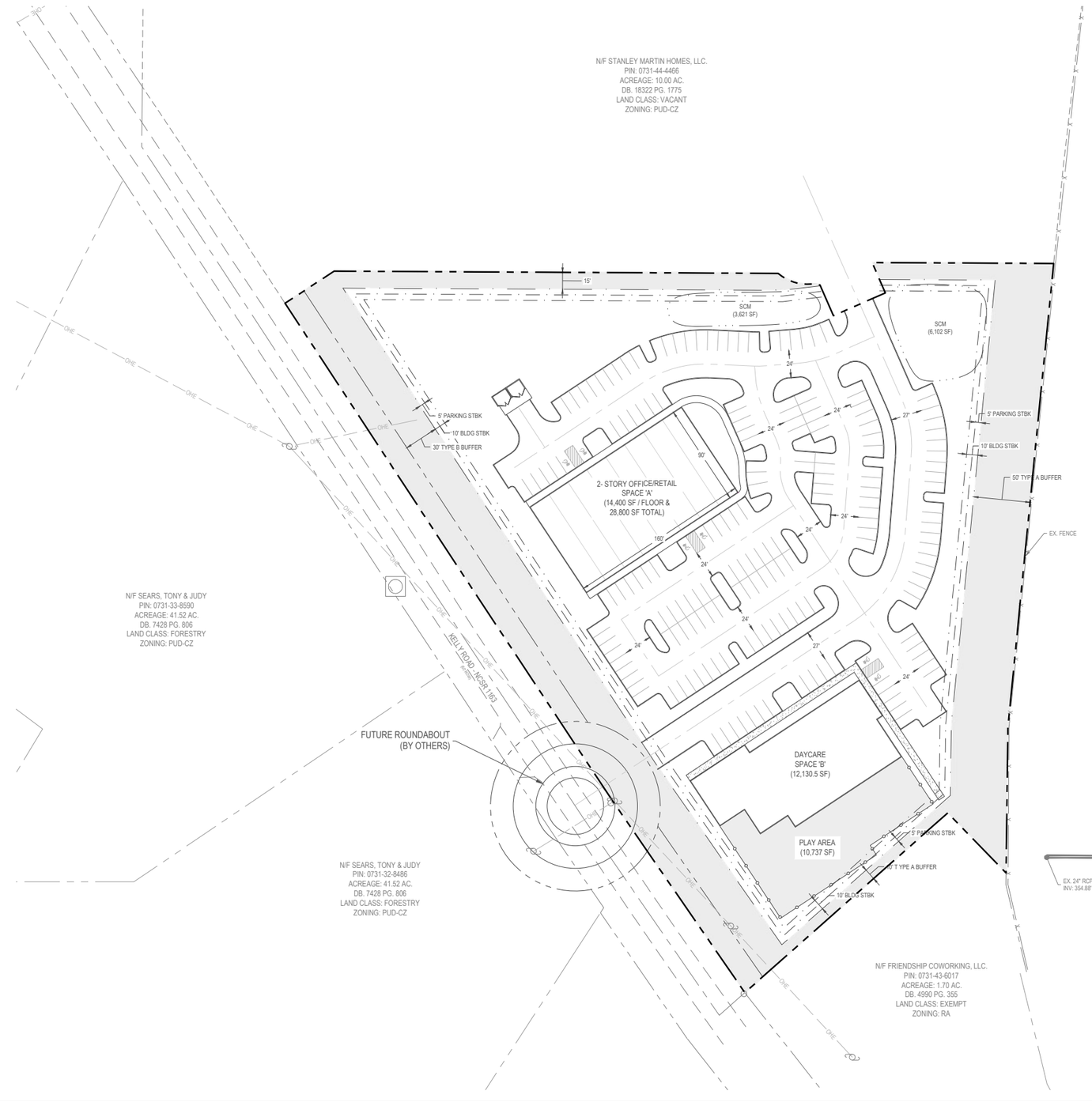


Rynal Stephenson, P.E.
Chief Traffic Analysis Engineer
DRMP, Inc.

Attachments:

- Site Plan
- Site Trip Distribution Figure
- NCHRP Internal Capture Reports

cc: Amanda Bunce, Town of Apex Planning
Russell Dalton, PE, Town of Apex
Rehab Hamad, MBA
Jessica McClure, PE, Town of Apex
Jeff Roach, PE, Peak Engineering



SITE DATA	
OWNER	FAHEY FAMILY FARM, LLC.
SITE ADDRESS	2517 KELLY ROAD APEX, NC 27502
PIN REAL ID	0731-43-4504 464267
ACREAGE	6.19 AC.
DB. PG	DB 17062, PG 1719
2045 LAND USE MAP EXISTING USE REZONING 07-19-2016 PROPOSED ZONING	PUD-CZ SINGLE FAM 150Z33 PUD CZ
TOWNSHIP	WHITE OAK
SUB-WATERSHED	BEAVER CREEK
RIVER BASIN	CAPE FEAR
FEMA MAP	MAP#3720873100K DATE 07.19.22
HISTORICAL	(1) BARN PER WA1052
ROW DEDICATION	XX AC. (XX SF)
NET TRACT AREA	XX AC. (XX SF)

DEVELOPMENT TYPE - COMMERCIAL	
PROPOSED USE	OFFICE/RETAIL & DAYCARE
DENSITY	5900 SF
MIN. LOT AREA	5,000 SF
MIN. LOT SIZE	5,000 SF
MIN. LOT WIDTH	N/A

BUILDING DETAILS	
MAX. BUILDING HEIGHT	75' (5-STORY)
PROPOSED BUILDING HEIGHT	XX'
PROPOSED BUILDING STORIES	2 STORIES

BUILDING SETBACKS	
FRONT	5'
SIDE	5'
CORNER	5'
REAR	5'

BUILD UPON AREA	
MAX. BUILD UPON AREA	4.33 AC. (70%)
PROPOSED BUILD UPON AREA	XX AC. (XX %)

PARKING	
PARKING CALCS. (MIXED USE)	1 SPACE / 250 SF
BUILDING SF TOTAL	28,800 SF
PARKING REQUIRED	116 SPACES
PARKING PROVIDED	133 SPACES
PARKING CALCS. (DAY CARE)	1 SPACE / 8 PERSON
TOTAL CAPACITY	300
PARKING REQUIRED	50 SPACES
PARKING PROVIDED	30 SPACES
TOTAL PARKING REQUIRED	166 SPACES
TOTAL PARKING PROVIDED	193 SPACES
ADA PARKING CALCS.	151 TO 200 = 6
ADA PARKING REQUIRED	6 SPACES
ADA PARKING PROVIDED	6 SPACES

RCA	
RCA REQUIRED	1.55 AC. (67,518 SF) - 25%
RCA (PERIMETER BUFFERS)	1.85 AC. (71,914 SF) - 27%
RCA (STREAM BUFFERS)	XX AC. (XX SF)
RCA (SCM)	XX AC. (XX SF)
RCA PROVIDED	XX AC. (XX SF)

OPEN SPACE	
OS REQUIRED	XX AC. (XX SF)
OS PROVIDED	XX AC. (XX SF)

IMPERVIOUS	
NET TRACT AREA	XX AC. (XX SF)
EXISTING IMPERVIOUS	XX AC. (XX SF)
LOT AREA MAX.	XX SF (XX%)
BUILDINGS	(XX SF)
SIDEWALKS	(XX SF)
ROADWAY & IB	(XX SF)
LOT AREA IMPERVIOUS (MAX. ALLOWED)	XX SF (XX%)

CONCEPT PLANS

ALL INFORMATION AND LINE WORK RETRIEVED FROM WAKE COUNTY GIS MAP SERVICES. THIS IS INTENDED FOR CONCEPTUAL USE ONLY. LINE WORK IS APPROXIMATE AND SUBJECT TO CHANGE UPON OBTAINING SURVEY.

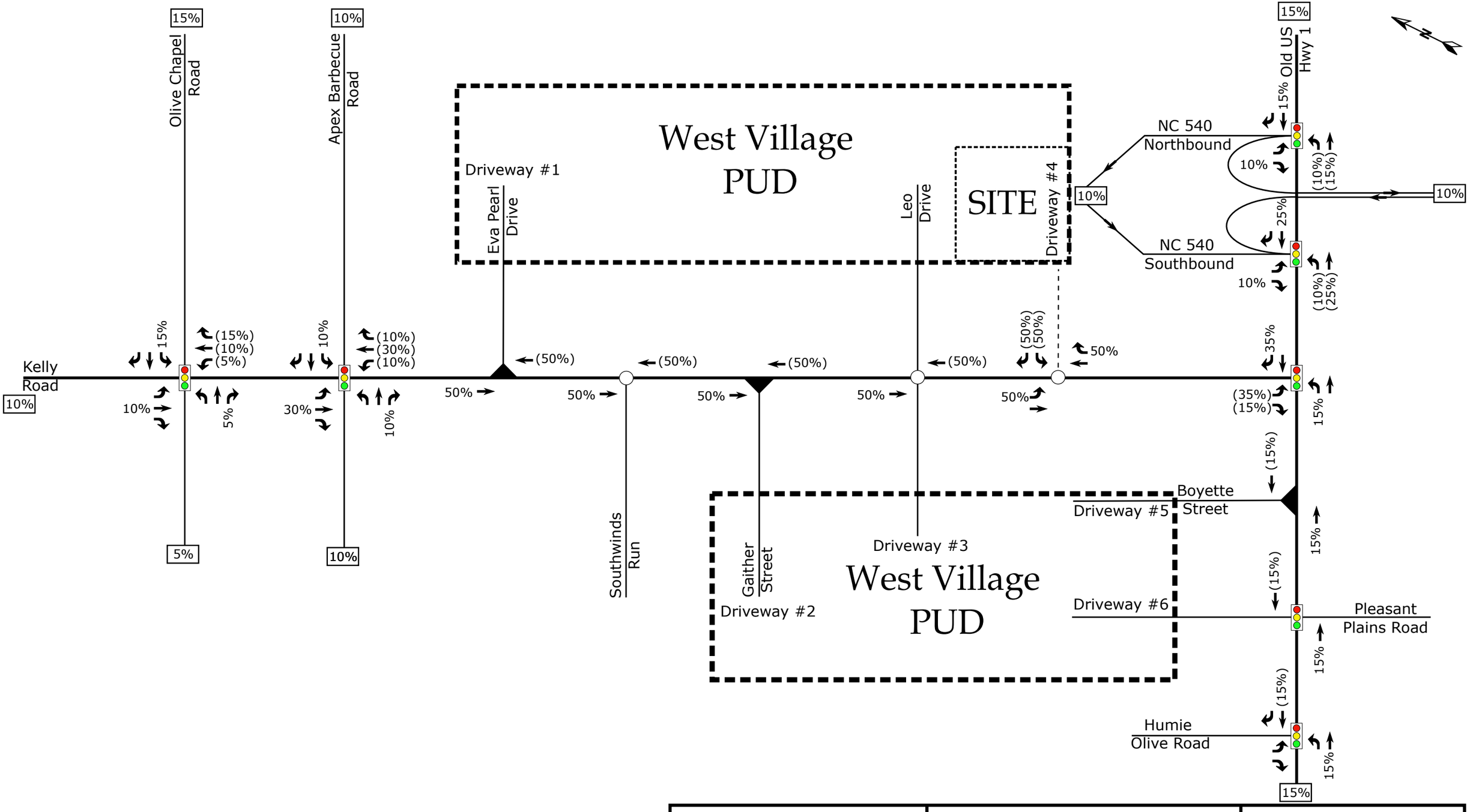
ALL SITE DATE NOTED IN RED IS TO BE DETERMINED (TBD).

PEAK
Engineering & Design
1125 Apex Peakway | Apex, NC 27502
ph: 919.439.0100
www.PeakEngineering.com

KELLY ROAD COMMERCIAL

2517 KELLY ROAD
APEX NC
WAKE COUNTY

DRAWN BY:	CHECKED BY:	PROJECT NO.
MD	JR	240306
DATE		SHEET NO.
08.12.24		SP-2



DRMP	Commercial Development West Village PUD Apex, NC	Site Trip Distribution Scale: Not to Scale | Figure 1

Traffic Counts

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	West Village Commercial Development	**Organization:**	DRMP
Project Location:	Apex NC	**Performed By:**	RGS
Scenario Description:		**Date:**	10/1/2024
Analysis Year:	2028	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	14	KSF	32	28	4
Retail	822	14	KSF	37	22	15
Restaurant				0	0	0
Cinema/Entertainment				0	0	0
Residential				0	0	0
Hotel				0	0	0
All Other Land Uses[2]				0	0	0
				69	50	19

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.10	0%	0%	1.10	0%	0%
Retail	1.10	0%	0%	1.10	0%	0%
Restaurant	1.10	0%	0%	1.10	0%	0%
Cinema/Entertainment	1.10	0%	0%	1.10	0%	0%
Residential	1.10	0%	0%	1.10	0%	0%
Hotel	1.10	0%	0%	1.10	0%	0%
All Other Land Uses[2]	1.10	0%	0%	1.10	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	1		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	76	55	21
Internal Capture Percentage	5%	4%	10%
External Vehicle-Trips[5]	66	48	18
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	3%	25%
Retail	4%	6%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	West Village Commercial Development	**Organization:**	DRMP
Project Location:	Apex NC	**Performed By:**	RGS
Scenario Description:		**Date:**	10/1/2024
Analysis Year:	2028	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	14	KSF	33	6	27
Retail	822	14	KSF	101	50	51
Restaurant				0	0	0
Cinema/Entertainment				0	0	0
Residential				0	0	0
Hotel				0	0	0
All Other Land Uses[2]				0	0	0
				134	56	78

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office	1.10	0%	0%	1.10	0%	0%
Retail	1.10	0%	0%	1.10	0%	0%
Restaurant	1.10	0%	0%	1.10	0%	0%
Cinema/Entertainment	1.10	0%	0%	1.10	0%	0%
Residential	1.10	0%	0%	1.10	0%	0%
Hotel	1.10	0%	0%	1.10	0%	0%
All Other Land Uses[2]	1.10	0%	0%	1.10	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2000	2000		2000	
Retail					2000	
Restaurant					2000	
Cinema/Entertainment					2000	
Residential		2000	2000			
Hotel					2000	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	1		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	148	62	86
Internal Capture Percentage	3%	3%	2%
External Vehicle-Trips[5]	130	54	76
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	14%	3%
Retail	2%	2%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

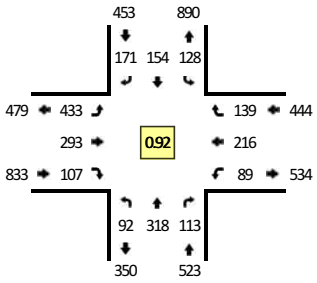
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

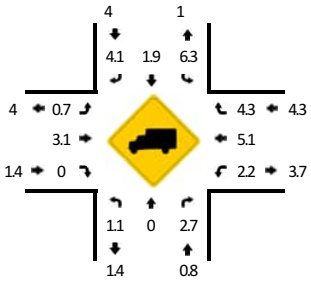
LOCATION: Kelly Rd -- Olive Chapel Rd
CITY/STATE: Apex, NC

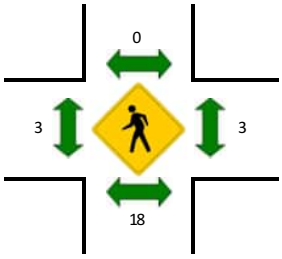
QC JOB #: 16831601
DATE: Tue, Nov 19 2024

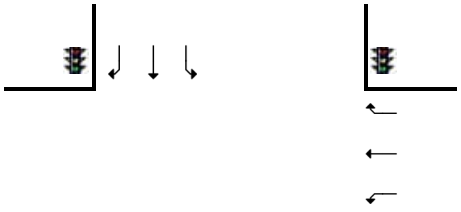
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

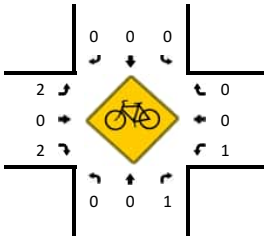
TRUE DATA TO IMPROVE MOBILITY

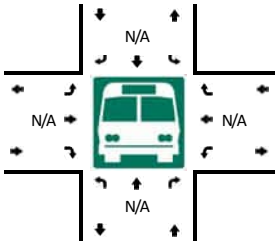


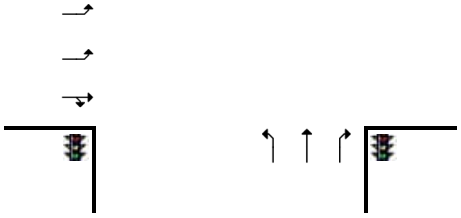


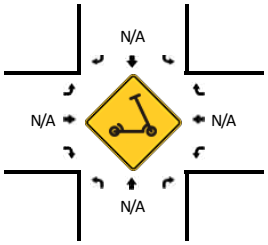












15-Min Count Period Beginning At	Kelly Rd (Northbound)				Kelly Rd (Southbound)				Olive Chapel Rd (Eastbound)				Olive Chapel Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	62	16	0	8	25	40	0	77	39	4	0	16	58	15	0	364	
7:15 AM	11	81	23	0	16	24	25	0	117	71	11	0	19	40	30	0	468	
7:30 AM	8	81	20	0	26	29	29	0	110	75	12	0	21	53	42	0	506	
7:45 AM	8	103	25	0	29	57	30	0	98	90	23	0	24	69	28	0	584	1922
8:00 AM	31	110	28	0	29	42	43	0	114	67	17	0	17	54	31	0	583	2141
8:15 AM	10	77	29	0	32	35	34	0	117	55	9	0	30	51	34	0	513	2186
8:30 AM	8	59	20	0	38	41	43	0	104	82	31	0	20	53	43	0	542	2222
8:45 AM	43	72	36	0	29	36	51	0	98	89	50	0	22	58	31	0	615	2253

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	172	288	144	0	116	144	204	0	392	356	200	0	88	232	124	0	2460
Heavy Trucks	0	0	4		8	8	4		0	8	0		4	16	4		56
Buses																	
Pedestrians		52				0				4				12			68
Bicycles	0	0	0		0	0	0		4	0	4		4	0	0		12
Scooters																	

Comments:

Report generated on 11/25/2024 2:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

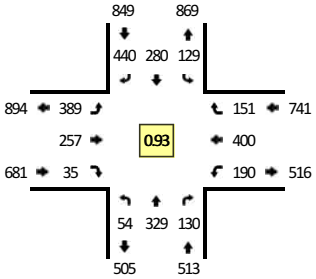
Type of peak hour being reported: Intersection Peak

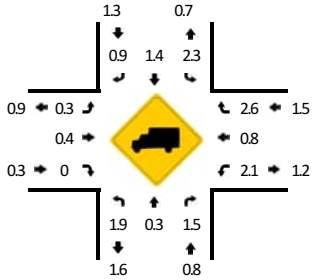
Method for determining peak hour: Total Entering Volume

LOCATION: Kelly Rd -- Olive Chapel Rd
CITY/STATE: Apex, NC

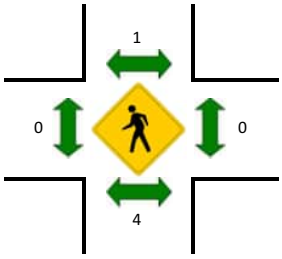
QC JOB #: 16831602
DATE: Tue, Nov 19 2024

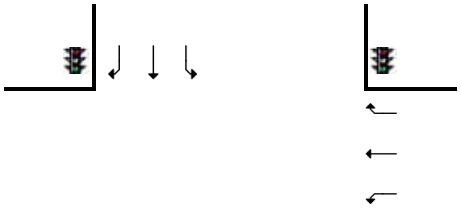
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

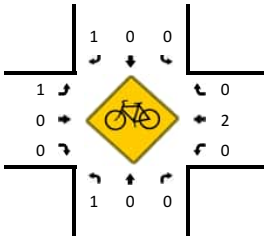


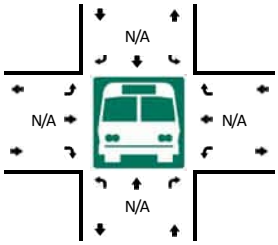


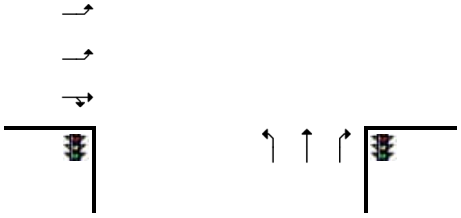
TRUE DATA TO IMPROVE MOBILITY

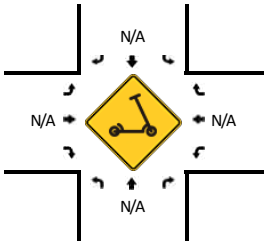












15-Min Count Period Beginning At	Kelly Rd (Northbound)				Kelly Rd (Southbound)				Olive Chapel Rd (Eastbound)				Olive Chapel Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	71	84	26	0	27	62	91	0	79	56	8	0	38	104	16	0	662	
4:15 PM	14	57	20	0	39	75	102	0	72	75	9	0	45	106	33	0	647	
4:30 PM	12	98	28	0	27	62	97	0	97	56	10	0	46	83	51	0	667	
4:45 PM	14	77	33	0	32	65	106	0	88	52	6	0	47	125	36	0	681	2657
5:00 PM	14	75	33	0	34	73	121	0	86	83	10	0	50	80	31	0	690	2685
5:15 PM	14	79	36	0	36	80	116	0	118	66	9	0	47	112	33	0	746	2784
5:30 PM	9	63	18	0	38	70	118	0	77	44	4	0	46	130	31	0	648	2765
5:45 PM	10	80	18	0	28	72	127	0	79	68	7	0	49	94	28	0	660	2744

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	316	144	0	144	320	464	0	472	264	36	0	188	448	132	0	2984
Heavy Trucks	0	0	0		0	8	0		0	0	0		4	4	4		20
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		4	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 11/25/2024 2:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

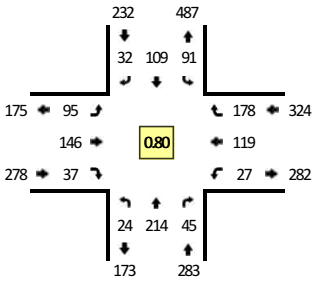
Type of peak hour being reported: Intersection Peak

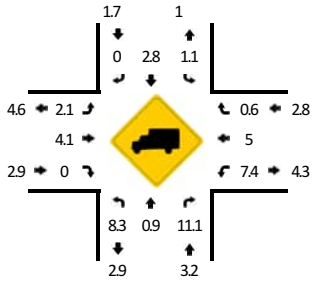
Method for determining peak hour: Total Entering Volume

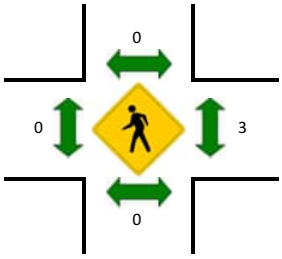
LOCATION: Kelly Rd -- Apex Barbecue Rd
CITY/STATE: Apex, NC

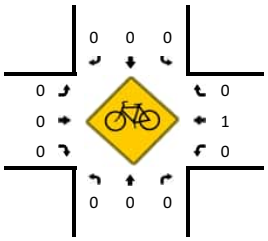
QC JOB #: 16831603
DATE: Tue, Nov 19 2024

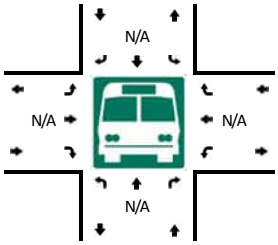
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

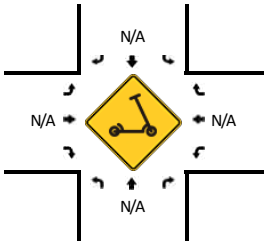












15-Min Count Period Beginning At	Kelly Rd (Northbound)				Kelly Rd (Southbound)				Apex Barbecue Rd (Eastbound)				Apex Barbecue Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	39	4	0	13	16	16	0	17	14	9	0	3	49	22	0	205	
7:15 AM	1	46	9	0	18	24	9	0	28	32	11	0	3	21	31	0	233	
7:30 AM	4	48	10	0	19	25	5	0	20	42	8	0	5	36	44	0	266	
7:45 AM	5	62	10	0	34	29	11	0	26	47	10	0	13	41	62	0	350	1054
8:00 AM	14	58	16	0	20	31	7	0	21	25	8	0	6	21	41	0	268	1117
8:15 AM	9	53	9	0	21	25	5	0	10	29	14	0	8	9	31	0	223	1107
8:30 AM	3	40	25	0	22	23	9	0	19	27	14	0	6	13	33	0	234	1075
8:45 AM	8	39	39	0	26	20	5	0	16	32	6	0	14	24	38	0	267	992

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	248	40	0	136	116	44	0	104	188	40	0	52	164	248	0	1400
Heavy Trucks	4	0	4		0	4	0		0	12	0		4	4	0		32
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/25/2024 2:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

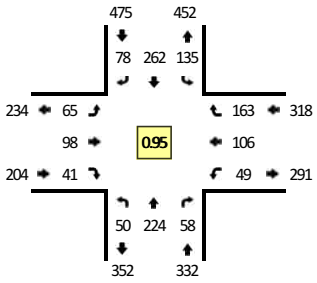
Type of peak hour being reported: Intersection Peak

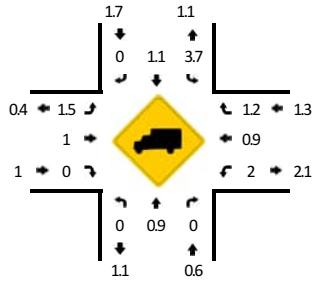
Method for determining peak hour: Total Entering Volume

LOCATION: Kelly Rd -- Apex Barbecue Rd
CITY/STATE: Apex, NC

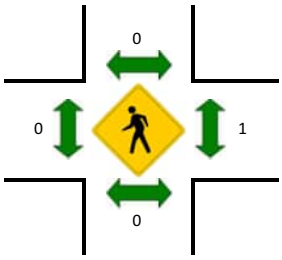
QC JOB #: 16831604
DATE: Tue, Nov 19 2024

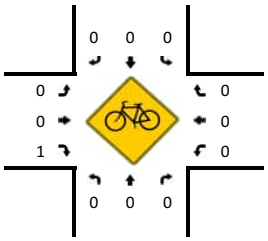
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

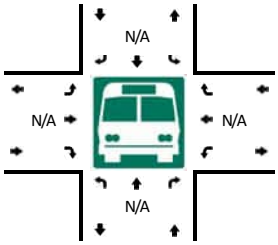


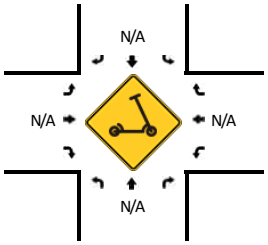


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	Kelly Rd (Northbound)				Kelly Rd (Southbound)				Apex Barbecue Rd (Eastbound)				Apex Barbecue Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	32	7	0	20	42	14	0	11	29	11	0	26	25	39	0	268	
4:15 PM	9	31	7	0	38	57	10	0	21	25	4	0	14	23	37	0	276	
4:30 PM	6	51	11	0	40	60	18	0	13	24	5	0	15	24	54	0	321	
4:45 PM	5	58	9	0	33	66	14	0	18	20	16	0	10	24	41	0	314	1179
5:00 PM	16	54	24	0	23	80	23	0	21	30	8	0	9	28	29	0	345	1256
5:15 PM	23	61	14	0	39	56	23	0	13	24	12	0	15	30	39	0	349	1329
5:30 PM	18	51	9	0	32	64	25	0	8	22	8	0	12	24	20	0	293	1301
5:45 PM	10	53	7	0	31	72	18	0	16	30	5	0	5	24	39	0	310	1297

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	244	56	0	156	224	92	0	52	96	48	0	60	120	156	0	1396
Heavy Trucks	0	0	0		12	0	0		0	0	0		0	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/25/2024 2:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

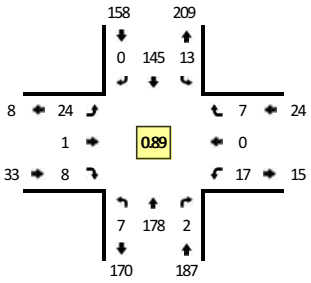
Type of peak hour being reported: Intersection Peak

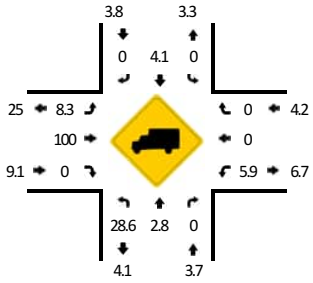
Method for determining peak hour: Total Entering Volume

LOCATION: Kelly Rd -- Leo Drive
CITY/STATE: Apex, NC

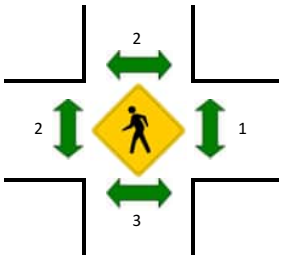
QC JOB #: 16831605
DATE: Tue, Nov 19 2024

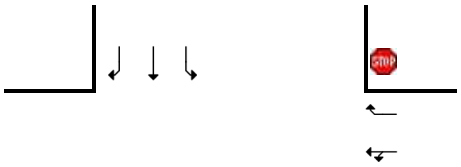
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

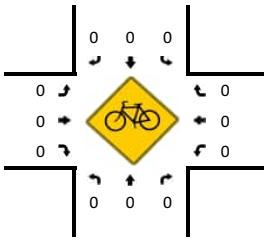


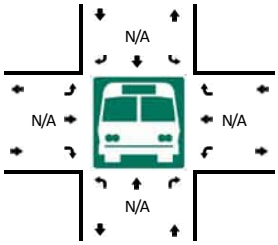


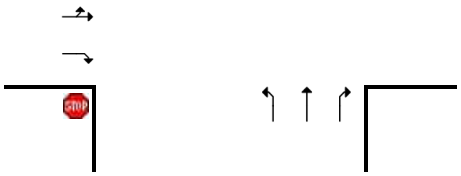
TRUE DATA TO IMPROVE MOBILITY

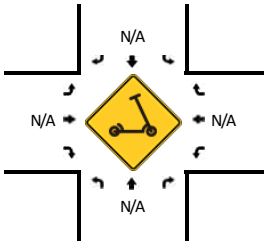












15-Min Count Period Beginning At	Kelly Rd (Northbound)				Kelly Rd (Southbound)				Leo Drive (Eastbound)				Leo Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	23	0	0	1	25	2	0	3	0	5	0	4	0	0	0	66	
7:15 AM	2	27	1	0	2	38	0	0	2	2	3	0	2	0	2	0	81	
7:30 AM	2	38	0	0	1	41	0	0	4	0	5	0	3	0	2	0	96	
7:45 AM	3	44	0	0	3	35	0	1	2	0	0	1	4	0	3	0	96	339
8:00 AM	1	51	2	0	3	37	0	0	11	1	2	0	3	0	2	0	113	386
8:15 AM	1	45	0	0	5	32	0	0	6	0	1	0	7	0	0	0	97	402
8:30 AM	1	44	1	0	4	38	1	0	1	0	0	0	1	0	3	0	94	400
8:45 AM	3	41	1	0	0	32	0	0	6	0	1	0	2	0	0	0	86	390

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	204	8	0	12	148	0	0	44	4	8	0	12	0	8	0	452
Heavy Trucks	0	8	0		0	0	0		4	4	0		0	0	0		16
Buses																	
Pedestrians		0				8				4				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

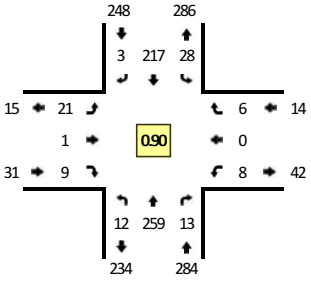
Report generated on 11/25/2024 2:07 PM

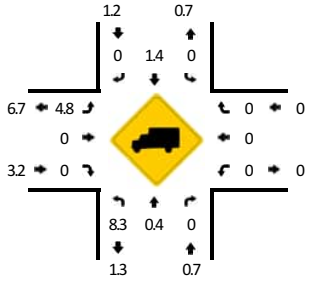
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

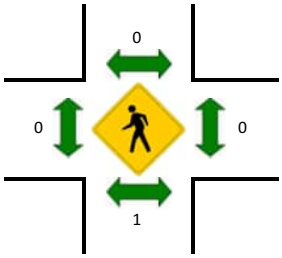
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

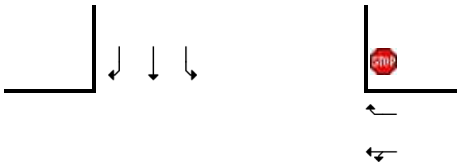
LOCATION: Kelly Rd -- Leo Drive | **QC JOB #:** 16831606
CITY/STATE: Apex, NC | **DATE:** Tue, Nov 19 2024

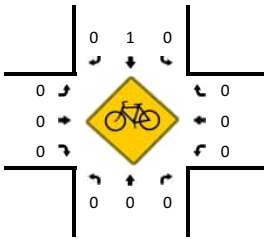
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

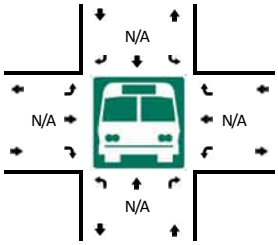


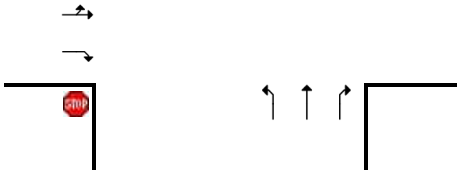


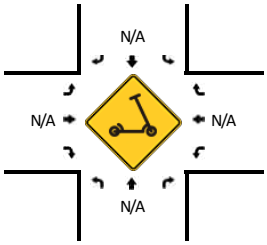












15-Min Count Period Beginning At	Kelly Rd (Northbound)				Kelly Rd (Southbound)				Leo Drive (Eastbound)				Leo Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	44	2	0	4	47	5	0	2	0	1	0	1	0	0	0	108	
4:15 PM	2	43	3	0	4	54	1	0	4	0	0	0	3	0	0	0	114	
4:30 PM	1	48	3	0	6	50	2	1	5	0	2	0	3	0	0	0	121	
4:45 PM	2	54	3	0	8	58	0	0	6	0	2	0	2	0	1	0	136	479
5:00 PM	1	62	3	0	5	62	2	0	7	1	4	0	4	0	2	0	153	524
5:15 PM	6	86	5	0	9	50	0	0	1	0	1	0	1	0	2	0	161	571
5:30 PM	3	57	2	0	6	47	1	0	7	0	2	0	1	0	1	0	127	577
5:45 PM	3	49	1	0	11	51	1	0	8	0	0	0	2	0	3	0	129	570

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	344	20	0	36	200	0	0	4	0	4	0	4	0	8	0	644
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/25/2024 2:07 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

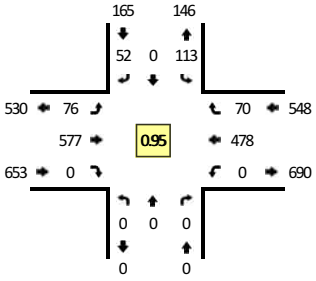
Type of peak hour being reported: Intersection Peak

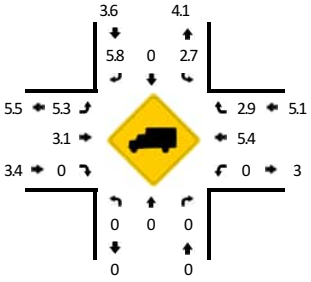
Method for determining peak hour: Total Entering Volume

LOCATION: Kelly Rd -- Old US Hwy 1
CITY/STATE: Apex, NC

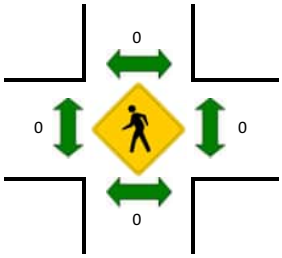
QC JOB #: 16831607
DATE: Tue, Nov 19 2024

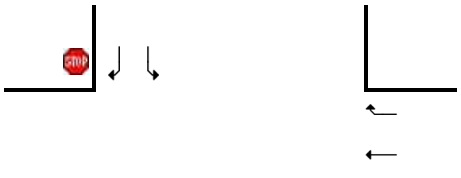
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

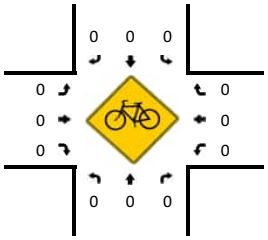


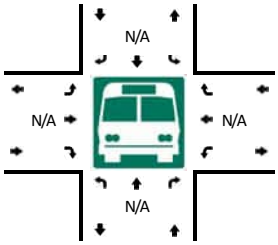


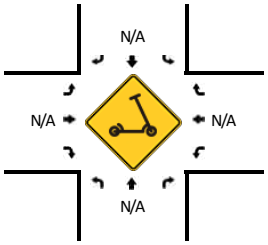
TRUE DATA TO IMPROVE MOBILITY











15-Min Count Period Beginning At	Kelly Rd (Northbound)				Kelly Rd (Southbound)				Old US Hwy 1 (Eastbound)				Old US Hwy 1 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	20	0	12	0	14	102	0	0	0	180	12	0	340	
7:15 AM	0	0	0	0	30	0	12	0	22	181	0	0	0	104	11	0	360	
7:30 AM	0	0	0	0	38	0	14	0	19	143	0	0	0	91	19	0	324	
7:45 AM	0	0	0	0	25	0	14	0	21	151	0	0	0	103	28	0	342	1366
8:00 AM	0	0	0	0	30	0	10	0	21	139	0	0	0	100	30	0	330	1356
8:15 AM	0	0	0	0	28	0	15	0	24	133	0	0	0	65	20	0	285	1281
8:30 AM	0	0	0	0	28	0	9	0	35	143	0	0	0	74	14	0	303	1260
8:45 AM	0	0	0	0	21	0	14	0	20	141	0	0	0	89	26	0	311	1229

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	120	0	48	0	88	724	0	0	0	416	44	0	1440
Heavy Trucks	0	0	0		0	0	0		8	32	0		0	24	4		68
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/25/2024 2:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

QUALITY COUNTS REPORT
====================

Intersectio	Kelly Rd	Old US Hwy 1	Lane Configuration:										
City/State:	Apex	NC		STOP	SBLane1	SBLane2	SBLane3	SBLane4	SBLane5	SBLane6	SBLane7		
QCJobNo:	16831608				R	L							
ClientID:			EBLane7									R	WBLane1
Date:	########		EBLane6									T	WBLane2
Comments:			EBLane5										WBLane3
Latitude/L(	35.70681	-78.8824	EBLane4										WBLane4
PEAK HOU	4:45 PM		EBLane3										WBLane5
PEAK HOU	5:45 PM		EBLane2	L									WBLane6
PEAK 15-M	5:15 PM		EBLane1	T									WBLane7
PEAK 15-M	5:30 PM												
PHF	0.96				NBLane7	NBLane6	NBLane5	NBLane4	NBLane3	NBLane2	NBLane1	STOP	

PEAK-HOUR VOLUMES

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight	NBEntering	SBEntering	EBEntering	WBEnterin	NBLeaving	SBLeaving	EBLeaving	WBLeaving
	0	0	0	101	0	137	111	489	0	0	610	175	0	238	600	785	286	0	590	747

PERCENT HEAVY VEHICLES

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight	NBEntering	SBEntering	EBEntering	WBEnterin	NBLeaving	SBLeaving	EBLeaving	WBLeaving
HEAVY VEH	0	0	0	2	0	0.7	0.9	2.2	0	0	1.6	1.1	0	1.3	2	1.5	1	0	2.2	1.5
BUSES																				

PEAK-HOUR VOLUMES - PEDESTRIANS

Leg/Crossv	South	North	West	East
	0	0	0	0

PEAK-HOUR VOLUMES - MICROMOBILITY

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
Bicycles	0	0	0	0	0	2	0	0	0	0	0	0
Scooters												

PEAK 15-MIN FLOWRATES

VehicleTyp	NBLeft	NBThru	NBRight	NBU-Turn	NBRTOR	SBLeft	SBThru	SBRight	SBU-Turn	SBRTOR	EBLeft	EBThru	EBRight	EBU-Turn	EBRTOR	WBLeft	WBThru	WBRight	WBU-Turn	WBRTOR	Total
All Vehicle:	0	0	0	0	0	56	0	148	0	0	128	456	0	0	0	0	644	264	0	0	1696
Heavy Truc	0	0	0			0	0	0			0	12	0			0	8	4			24
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	4			0	0	0			0	0	0			4
Scooters																					

ALL-VEHICLE VOLUMES

Time Perio	NB Left	NB Thru	NB Right	NB U-Turn	NB RTOR	SB Left	SB Thru	SB Right	SB U-Turn	SB RTOR	EB Left	EB Thru	EB Right	EB U-Turn	EB RTOR	WB Left	WB Thru	WB Right	WB U-Turn	WB RTOR	Total	Hourly Totals
4:00 PM	0	0	0	0		16	0	32	0		21	118	0	0		0	114	29	0		330	
4:15 PM	0	0	0	0		24	0	32	0		24	120	0	0		0	116	26	0		342	
4:30 PM	0	0	0	0		16	0	35	0		20	98	0	0		0	120	33	0		322	
4:45 PM	0	0	0	0		34	0	27	0		24	112	0	0		0	160	34	0		391	1385
5:00 PM	0	0	0	0		36	0	44	0		28	133	0	0		0	141	37	0		419	1474
5:15 PM	0	0	0	0		14	0	37	0		32	114	0	0		0	161	66	0		424	1556
5:30 PM	0	0	0	0		17	0	29	0		27	130	0	0		0	148	38	0		389	1623
5:45 PM	0	0	0	0		20	0	37	0		23	131	0	0		0	131	35	0		377	1609

HEAVY-VEHICLE VOLUMES

Time Perio	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	Total
4:00 PM	0	0	0	0	0	0	0	3	0	0	2	1	6
4:15 PM	0	0	0	0	0	2	0	6	0	0	3	0	11
4:30 PM	0	0	0	0	0	3	1	3	0	0	2	2	11
4:45 PM	0	0	0	1	0	0	1	3	0	0	3	0	8
5:00 PM	0	0	0	1	0	1	0	3	0	0	2	1	8
5:15 PM	0	0	0	0	0	0	0	3	0	0	2	1	6
5:30 PM	0	0	0	0	0	0	0	2	0	0	3	0	5
5:45 PM	0	0	0	0	0	0	0	4	0	0	2	0	6

BUS VOLUMES

Time Perio	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	Total
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													

PEDESTRIAN VOLUMES

Time Perio	South Leg	North Leg	West Leg	East Leg	Total
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0

BICYCLE VOLUMES

Time Perio	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	Total
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0

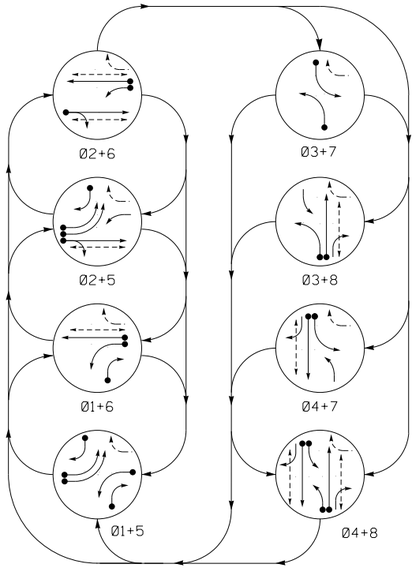
DRMP

SIGNAL PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-5518 AF	Sig.2.0

8 Phase Fully Actuated (Isolated)

PHASING DIAGRAM



OASIS 2070 EV PREEMPT

FUNCTION	EVP 3	EVP 5
Interval 1 – Dwell Green	255	255
Interval 1 – Dwell Yellow	0.0*	0.0*
Interval 1 – Dwell Red	0.0*	0.0*
Interval 5 – Exit Green	1	1
Interval 5 – Yellow	0.0	0.0
Interval 5 – Red	0.0	0.0
Exit Phase(s)	2+6	4+8
Priority	MEDIUM	MEDIUM
Delay Time	0.0	0.0
Min Green Before Pre	1	1
Ped Clear Before Pre	10	10
Yellow Clear Before Pre	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*
Dwell Min Time	7	7
Enable Backup Protection	N	N
Ped Clear Through Yellow	Y	Y
Omit Overlaps	-	-
Preempt Extend**	2	2

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+5	Ø1+6	Ø2+6	Ø3+7	Ø3+8	Ø4+7	Ø4+8	EVP 3	EVP 5	FLASH
11	←	←	F/Y	F/Y	R	R	R	R	←	R	Y
21, 22	R	R	G	G	R	R	R	R	R	R	Y
31	R	R	R	R	←	←	F/Y	F/Y	R	←	R
41	R	R	R	R	R	R	G	G	R	R	R
42	R/G	R	R/G	R	R	R	G	G	R	R	R
51, 52	←	R	←	R	R	R	R	R	R	R	R
61, 62	R	G	R	G	R	R	R	R	G	R	Y
71	R	R	R	R	←	←	F/Y	←	F/Y	R	R
81	R	R	R	R	R	G	R	G	R	G	R
82	R/G	R	R/G	R	R	R	G	R	G	R	R
P21, P22	DW	DW	W	W	DW	DW	DW	DW	DW	DW	DRK
P41, P42	DW	DW	DW	DW	DW	DW	W	W	DW	DW	DRK
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DW	DW	DRK
P81, P82	DW	DW	DW	DW	DW	W	DW	W	DW	DW	DRK

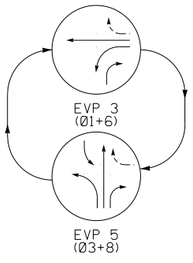
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW C&D
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	-	-
					6	Y	Y	Y	-	3	-	-
1B	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	-	Y
2A	6X6	300	5	Y	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	15	-	-
					8	Y	Y	-	-	3	-	-
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	-	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	3	-	-
5B	6X40	0	2-4-2	Y	5	Y	Y	-	-	-	-	Y
5C	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	-	Y
6A	6X6	300	5	Y	6	Y	Y	-	-	-	-	-
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	15	-	-
					4	Y	Y	-	-	3	-	-
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	-	-	-

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012 and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: http://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Reposition all existing signal heads as shown.
6. Set all detector units to presence mode.
7. Refer to the roadway design provided by Town of Apex for pavement markings.
8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
10. Pedestrian pedestals are conceptual and shown for reference only. See sheets P1-P3 for pushbutton location details.
11. This intersection features an optical preemption system. Shown location of optical detector are conceptual only.
12. Optical detector 10 calls EVP 3. Optical detector 20 calls EVP 5.

EV PREEMPT PHASES



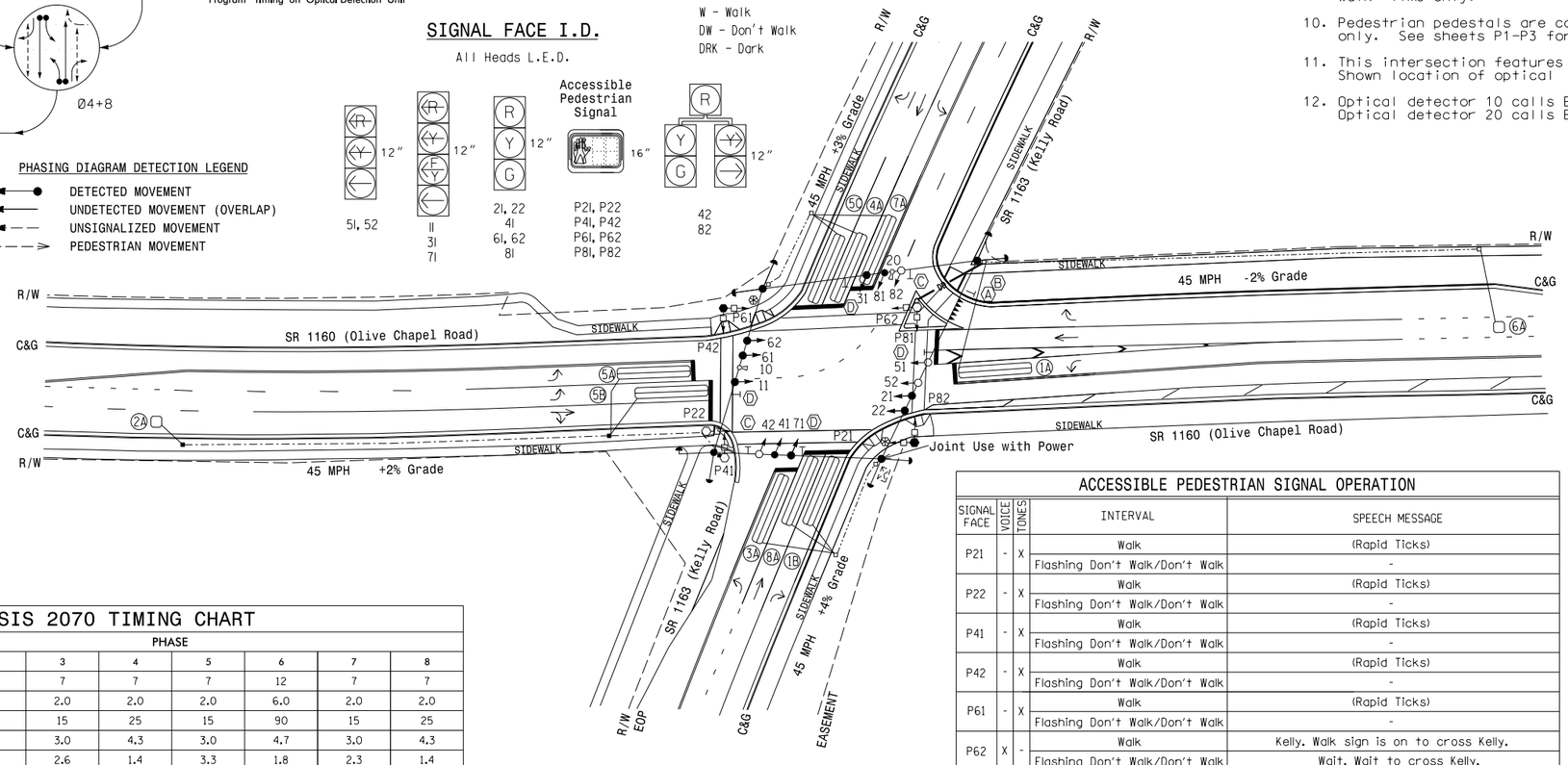
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.

W - Walk
DW - Don't Walk
DRK - Dark



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
⊡	Pedestrian Signal Head With Push Button & Sign	■
○	Signal Pole with Guy	●
○	Signal Pole with Sidewalk Guy	●
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
-----	2-in Underground Conduit	-----
- - - - -	Right of Way	- - - - -
→	Directional Arrow	→
⬡	Type II Signal Pedestal	●
⊛	Type I Pushbutton Post	⊛
◭	Curb Ramp	◭
○◁	Optical Detector	●◁
Ⓐ	"YIELD" Sign (R1-2)	Ⓐ
Ⓑ	Ped Crossing Sign (W11-2)	Ⓑ
Ⓒ	Right Arrow "ONLY" Sign (R3-5R)	Ⓒ
Ⓓ	Street Name Sign (D3-1)	Ⓓ

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21	-	X	Walk	(Rapid Ticks)
			Flashing Don't Walk/Don't Walk	-
P22	-	X	Walk	(Rapid Ticks)
			Flashing Don't Walk/Don't Walk	-
P41	-	X	Walk	(Rapid Ticks)
			Flashing Don't Walk/Don't Walk	-
P42	-	X	Walk	(Rapid Ticks)
			Flashing Don't Walk/Don't Walk	-
P61	-	X	Walk	(Rapid Ticks)
			Flashing Don't Walk/Don't Walk	-
P62	X	-	Walk	Kelly. Walk sign is on to cross Kelly.
			Flashing Don't Walk/Don't Walk	Wait. Wait to cross Kelly.
P81	X	-	Walk	Olive Chapel. Walk sign is on to cross Olive Chapel.
			Flashing Don't Walk/Don't Walk	Wait. Wait to cross Olive Chapel.
P82	-	X	Walk	(Rapid Ticks)
			Flashing Don't Walk/Don't Walk	-

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max Green 1 *	15	90	15	25	15	90	15	25
Yellow Clearance	3.0	4.7	3.0	4.3	3.0	4.7	3.0	4.3
Red Clearance	3.3	1.8	2.6	1.4	3.3	1.8	2.3	1.4
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	7	-	7	-	7	-	7
Don't Walk 1	-	19	-	12	-	20	-	11
Walk Advance Time	-	5	-	5	-	5	-	5
Seconds Per Actuation *	-	2.5	-	-	-	2.5	-	-
Max Variable Initial *	-	34	-	-	-	34	-	-
Time Before Reduction *	-	15	-	-	-	15	-	-
Time To Reduce *	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

vhb
4000 WestChase Boulevard, Suite 530
Raleigh, NC 27607
NC License No. C-3705

Signal Upgrade-Final Design

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/18/2017
Drawing produced by
ITS & Signals Unit

Prepared for the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SR 1160 (Olive Chapel Road) at SR 1163 (Kelly Road)

Division 5 Wake County Apex

PLAN DATE:	Jan. 2017	REVIEWED BY:	J.L. Lewis
PREPARED BY:	J. Ma	VHB PROJECT NO.:	38545.00

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 033108 ENGINEER JIANXIN MA

SIGNATURE DATE

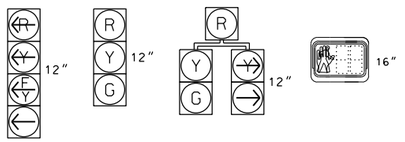
SIG. INVENTORY NO. 05-2214

1/3/2017
#:\projects\Raleigh#38545.00 Apex Kelly Road U-5518#NCDOT#Traffic#Signals#Design#Signals#052214_sig_final_20170103.dgn
User:jma

PROJECT REFERENCE NO.	SHEET NO.
36249.4460	Sig-1.0

SIGNAL FACE I.D.

All Heads L.E.D.



11, 31, 51, 71 — 21, 22, 41, 61, 62, 81, 82 — 42 — P61, P62, P81, P82

MAXTIME PREEMPTION CHART

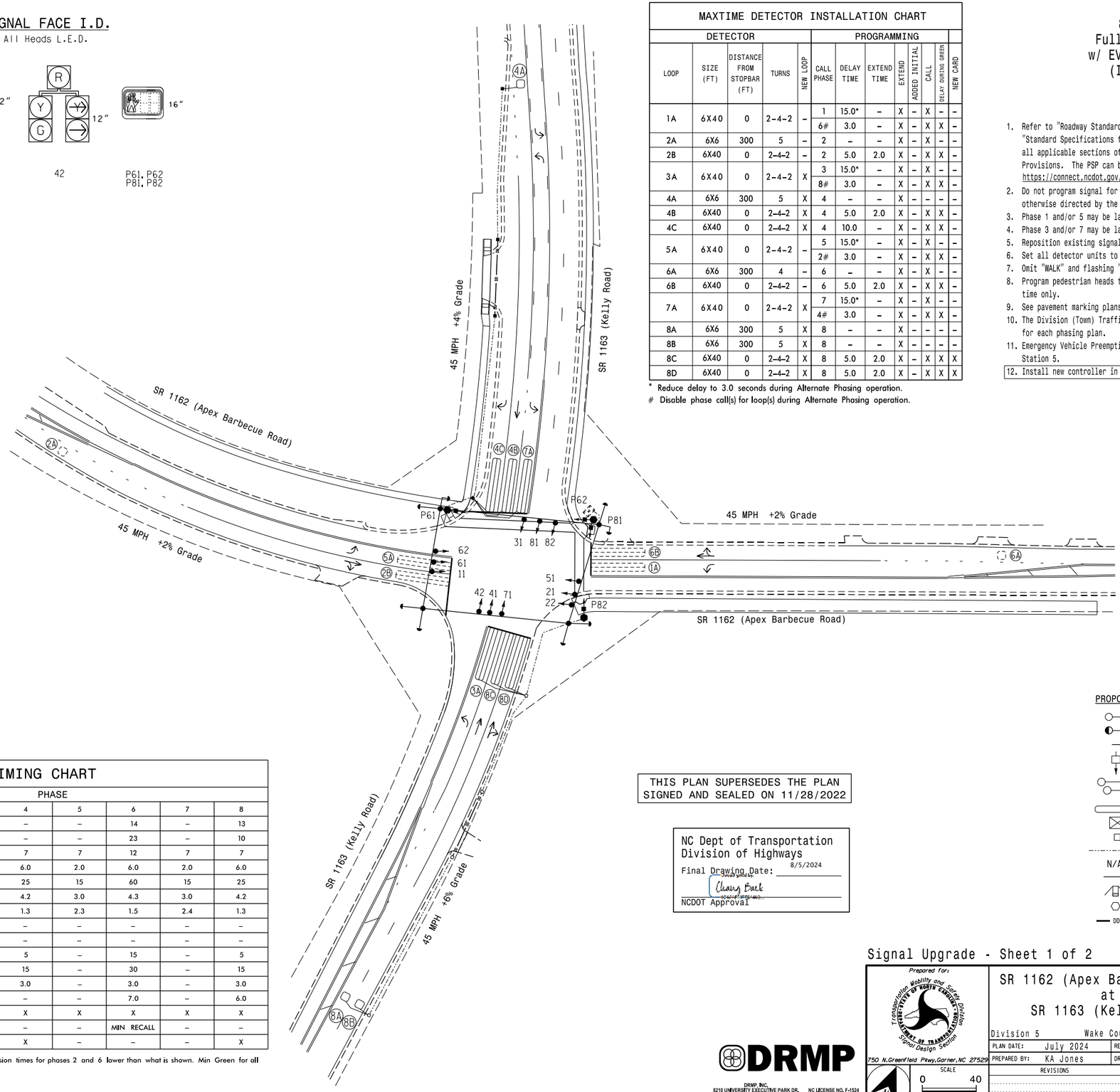
FUNCTION	PRE 2
Type	EMERG VEH
Exit Phases	2,6
Delay	0
Max Presence	120
Enter Min Green	1
Enter Walk	1
Enter Ped Clear	255 *
Enter Yellow Change	25.5 *
Enter Red Clear	25.5 *
Track Green	0
Track Yellow Change	25.5 *
Track Red Clear	25.5 *
Dwell Green	7
Exit Min Green	255 *
Exit Yellow Change	25.5 *
Exit Red Clear	25.5 *
Call Extend Time	2.0
Exit Type	EXIT PHASES
Ped Clear Through Yellow	Y
Require All Red Entry	N

* Directs controller to use default phase timing.

MAXTIME TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Walk *	–	–	–	–	–	14	–	13
Ped Clear	–	–	–	–	–	23	–	10
Min Green *	7	12	7	7	7	12	7	7
Passage *	2.0	6.0	2.0	6.0	2.0	6.0	2.0	6.0
Max 1 *	15	60	15	25	15	60	15	25
Yellow Change	3.0	4.3	3.0	4.2	3.0	4.3	3.0	4.2
Red Clear	2.6	1.5	2.1	1.3	2.3	1.5	2.4	1.3
Added Initial *	–	–	–	–	–	–	–	–
Maximum Initial *	–	–	–	–	–	–	–	–
Time Before Reduction *	–	15	–	5	–	15	–	5
Time To Reduce *	–	30	–	15	–	30	–	15
Minimum Gap	–	3.0	–	3.0	–	3.0	–	3.0
Advance Walk	–	–	–	–	–	7.0	–	6.0
Non Lock Detector	X	X	X	X	X	X	X	X
Vehicle Recall	–	MIN RECALL	–	–	–	MIN RECALL	–	–
Dual Entry	–	–	–	X	–	–	–	X

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



MAXTIME DETECTOR INSTALLATION CHART

DETECTOR LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
1A	6X40	0	2-4-2	–	1	15.0*	–	X	–	X	–	–
					6#	3.0	–	X	–	X	X	–
2A	6X6	300	5	–	2	–	–	X	–	X	–	–
2B	6X40	0	2-4-2	–	2	5.0	2.0	X	–	X	X	–
3A	6X40	0	2-4-2	X	3	15.0*	–	X	–	X	–	–
					8#	3.0	–	X	–	X	X	–
4A	6X6	300	5	X	4	–	–	X	–	–	–	–
4B	6X40	0	2-4-2	X	4	5.0	2.0	X	–	X	X	–
4C	6X40	0	2-4-2	X	4	10.0	–	X	–	X	X	–
5A	6X40	0	2-4-2	–	5	15.0*	–	X	–	X	–	–
					2#	3.0	–	X	–	X	X	–
6A	6X6	300	4	–	6	–	–	X	–	X	–	–
6B	6X40	0	2-4-2	–	6	5.0	2.0	X	–	X	X	–
7A	6X40	0	2-4-2	X	7	15.0*	–	X	–	X	–	–
					4#	3.0	–	X	–	X	X	–
8A	6X6	300	5	X	8	–	–	X	–	–	–	–
8B	6X6	300	5	X	8	–	–	X	–	–	–	–
8C	6X40	0	2-4-2	X	8	5.0	2.0	X	–	X	X	X
8D	6X40	0	2-4-2	X	8	5.0	2.0	X	–	X	X	X

* Reduce delay to 3.0 seconds during Alternate Phasing operation.
\# Disable phase call(s) for loop(s) during Alternate Phasing operation.

8 Phase
Fully Actuated
w/ EV Preemption
(Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024, "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: https://connect.ncdot.gov/resources/safety/pages/its-and-signals.aspx
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or 5 may be lagged.
4. Phase 3 and/or 7 may be lagged.
5. Reposition existing signal heads 31,41,42,71,81,82.
6. Set all detector units to presence mode.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. See pavement marking plans for stop bar and crosswalk locations.
10. The Division (Town) Traffic Engineer will determine the hours of use for each phasing plan.
11. Emergency Vehicle Preemption switch is located inside Public Safety Station 5.
12. Install new controller in existing cabinet.

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 11/28/2022

NC Dept of Transportation
Division of Highways
Final Drawing Date: 8/5/2024
Drawing prepared by: Cleary Bart
NCDOT Approval

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Curb Ramp	N/A
	Type II Signal Pedestal	
DD	Directional Drill	N/A

Signal Upgrade - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for: NCDOT Transportation Mobility and Safety Division, Signal Design Section

SR 1162 (Apex Barbecue Road) at SR 1163 (Kelly Road)

Division 5 Wake County Apex

PLAN DATE: July 2024 REVIEWED BY: ZM Esposito

PREPARED BY: KA Jones DRMP PROJ NO: 19399 (044)

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO
Zachary Esposito
SIGNATURE 7/26/2024 DATE

SIG. INVENTORY NO. 05-2326

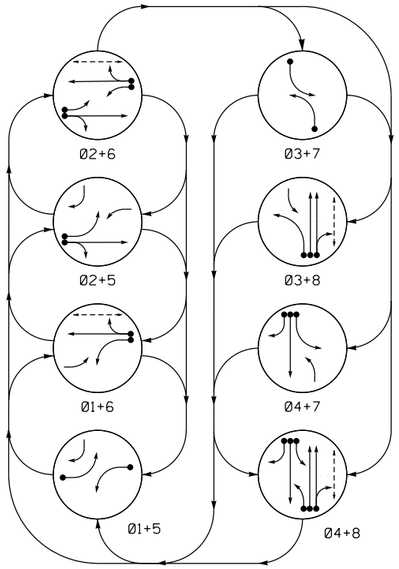
DRMP
DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR, SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260
NC LICENSE NO. F-1524
www.drmpc.com

750 N.Greenfield Pkwy,Garner,NC 27529

PROJECT REFERENCE NO.	SHEET NO.
36249.4460	Sig-1.1

8 Phase Fully Actuated w/ EV Preemption (Isolated)

DEFAULT PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

EV PREEMPT DEFAULT PHASE

(Medium Priority)

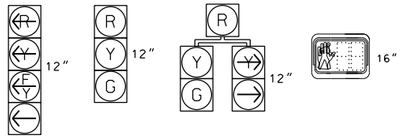
EVP 2 (Ø2+5)

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	EVP2	FLASH
11	↚	←	F/Y	F/Y	R̸	R̸	R̸	R̸	F/Y	R̸
21,22	R	R	G	G	R	R	R	G	R	
31	R̸	R̸	R̸	R̸	↚	←	F/Y	R̸	R̸	R̸
41	R	R	R	R	R	R	G	G	R	
42	R/	R	R/	R	R	R	G	G	R/	R
51	↚	F/Y	↚	F/Y	R̸	R̸	R̸	R̸	↚	R̸
61,62	R	G	R	G	R	R	R	R	R	
71	R̸	R̸	R̸	R̸	↚	F/Y	↚	F/Y	R̸	R̸
81,82	R	R	R	R	R	G	R	G	R	
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	DW	W	DW	W	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



11, 31, 51, 71 — 21, 22, 41, 61, 62, 81, 82 — 42 — P61, P62, P81, P82

NOTES

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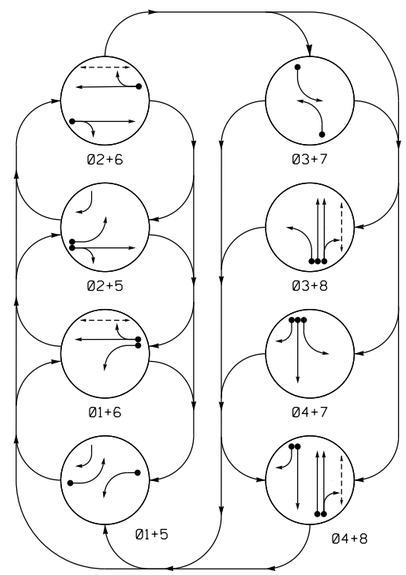
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or 5 may be lagged.
4. Phase 3 and/or 7 may be lagged.
5. Reposition existing signal heads 31,41,42,71,81,82.
6. Set all detector units to presence mode.
7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
9. See pavement marking plans for stop bar and crosswalk locations.
10. The Division (Town) Traffic Engineer will determine the hours of use for each phasing plan.
11. Emergency Vehicle Preemption switch is located inside Public Safety Station 5.
12. Install new controller in existing cabinet.

ALTERNATE PHASING DIAGRAM

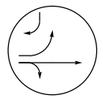


PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

EV PREEMPT ALTERNATE PHASE

(Medium Priority)



EVP 2 (Ø2+5)

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	EVP2	FLASH
11	↚	←	R̸	R̸	R̸	R̸	R̸	R̸	R̸	R̸
21,22	R	R	G	G	R	R	R	G	R	
31	R̸	R̸	R̸	R̸	↚	←	R̸	R̸	R̸	R̸
41	R	R	R	R	R	R	G	G	R	
42	R/	R	R/	R	R	R	G	G	R/	R
51	↚	R̸	↚	R̸	R̸	R̸	R̸	R̸	↚	R̸
61,62	R	G	R	G	R	R	R	R	R	
71	R̸	R̸	R̸	R̸	↚	R̸	↚	R̸	R̸	R̸
81,82	R	R	R	R	R	G	R	G	R	
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DW	DRK
P81,P82	DW	DW	DW	DW	DW	W	DW	W	DW	DRK

THIS PLAN SUPERSEDES THE PLAN SIGNED AND SEALED ON 11/28/2022

NC Dept of Transportation
Division of Highways
Final Drawing Date: 8/5/2024
Docusigned by: Cleary Burk
NCDOT Approval

Signal Upgrade - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared for: NC Department of Transportation, Mobility and Safety Division, Signal Design Section

SR 1162 (Apex Barbecue Road) at SR 1163 (Kelly Road)

Division 5 | Wake County | Apex

PLAN DATE:	July 2024	REVIEWED BY:	ZM Esposito
PREPARED BY:	KA Jones	DRMP PROJ NO:	19399 (044)

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

DRMP

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR, SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4269
NC LICENSE NO. F-1524
www.drmpi.com
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M ESPOSITO

Docusigned by: Zachary M. Esposito 7/26/2024
ENGINEER'S SIGNATURE DATE

SIG. INVENTORY NO. 05-2326

ADJACENT DEVELOPMENT INFORMATION

TRAFFIC IMPACT ANALYSIS UPDATE

FOR

FRIENDSHIP STATION

LOCATED

IN

APEX, NORTH CAROLINA

Prepared For:
Parkside Development Group, LLC
PO Box 1438
Apex, NC 27502

Prepared By:
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609
License #C-0910

March 2017

RKA Project No. 16238

Prepared By: DBL

Reviewed By: TAA

FRIENDSHIP STATION

SITE DATA

RETAIL	44,500	SF
APARTMENTS	185	
20' x 50' T/H (PARK)	31	
22' x 45' T/H (ALLEY)	100	
24' x 55' T/H (2 CAR)	206	
34' x 110' ALLEY LOTS	74	
40' x 115' LOTS	96	
50' x 110' RANCH LOTS	66	(55+)
55' x 115' LOTS	80	
	838	RES UNITS

1" = 200'

Jones & Cnossen ENGINEERING, PLLC
Civil Engineering | Construction Management | Land Planning
221 N. Salem St., Suite 001
PO Box 1062
Apex, NC 27502

3-2-17

Table 2: Trip Generation Summary – Phase 2

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single Family Detached Housing (210)	316 Units	3,010	59	178	199	117
Townhomes (230)	238 Units	1,390	18	87	84	40
Townhomes (230)[1]	99 Units	580	7	37	34	17
Apartments (220)	185 Units	1,250	19	75	77	42
Shopping Center (820)	44,000 sq. ft.	3,990	58	36	166	180
Shopping Center (820)	100,000 sq. ft.	6,800	97	59	288	311
General Office Building (710)	68,000 sq. ft.	980	124	17	26	129
Total Trips		**18,000**	**382**	**489**	**874**	**836**
Internal Capture (8% Daily, 8% PM)		*770*	--	--	*42*	*29*
Total External Trips		***17,230***	***382***	***489***	***832***	***807***
Shopping Center Pass-By Trips (34% PM)			--	--	*-156*	*-156*
Total Primary Trips		**17,230**	**382**	**489**	**676**	**651**

ASSUME MOSTLY BUILT

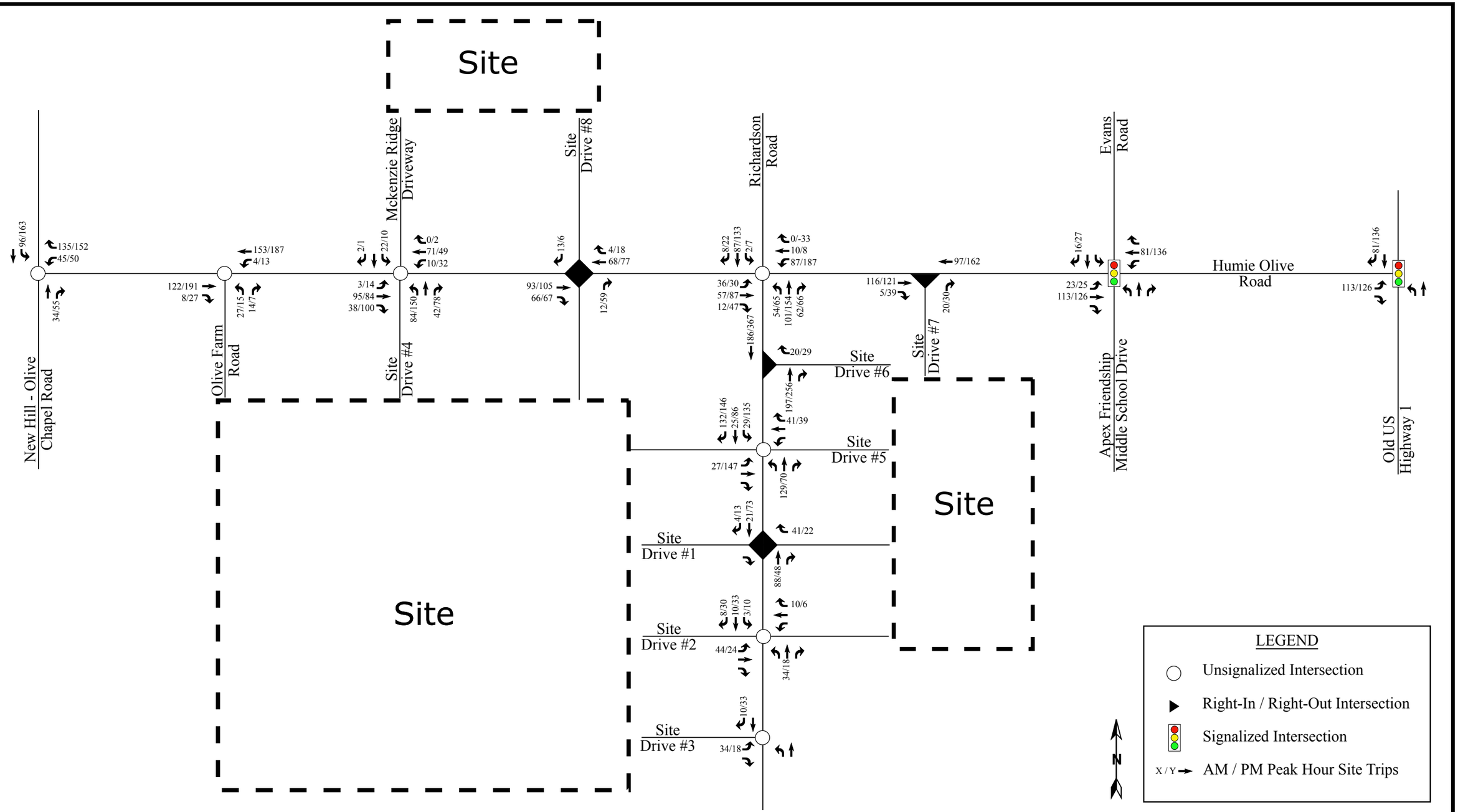
1. Trip Generation for the townhomes north of Humie Olive Road were calculated separately. These trips were not included in the internal capture calculations.

44% of Total Built (AM)

29% of Total Built (PM)

It is estimated that Phase 2 of the proposed development will generate approximately 18,000 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 871 total trips (382 entering and 489 exiting) will occur during the weekday AM peak hour and 1,710 (874 entering and 836 exiting) will occur during the weekday PM peak hour.

Internal capture of trips between the residential and retail uses were considered in this study. It is worth noting that the 99 townhomes north of Humie Olive Road were not included in the internal capture calculations due to their separation from the retail land uses. Based on ITE 9th



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Friendship Station Update
Apex, NC

Total Site Trip Assignment
Phase 2

Scale: Not to Scale

Figure 12b

TRAFFIC IMPACT ANALYSIS

FOR

DEPOT 499

LOCATED

IN

Apex, North Carolina

Prepared For:
Lennar Corporation
1100 Perimeter Park Drive, Suite 112
Morrisville, North Carolina 25760

Prepared By:
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609
License #C-0910

January 2020

RKA Project No. 19399

Prepared By: NB

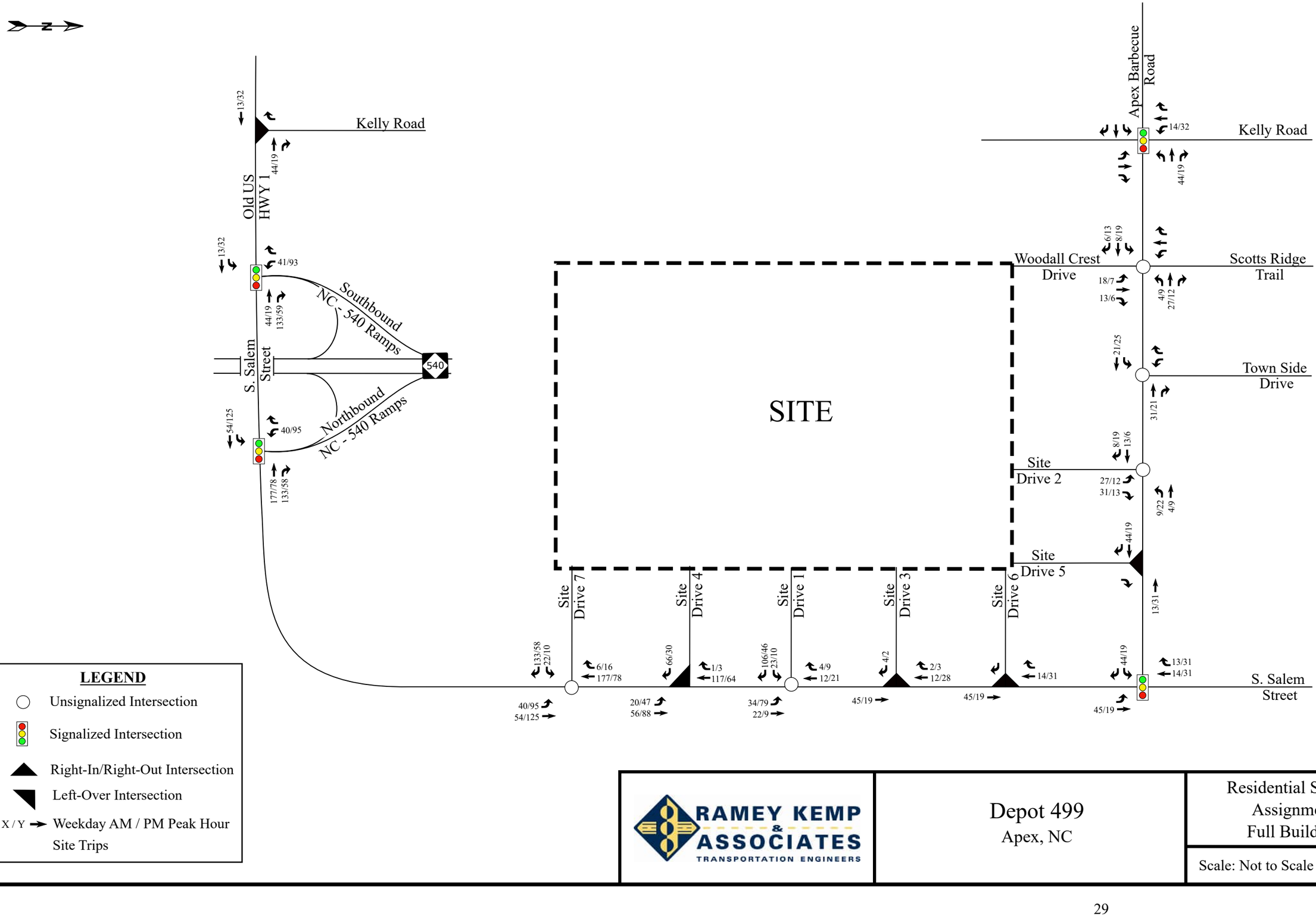
Reviewed By: RS

Table 2B: Trip Generation Summary – Full Buildout

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multifamily Housing (Low-Rise) (220)	1,500 units	11,300	144	481	415	243
General Office Building (710)	375,000 s.f.	3,820	467	64	86	392
Shopping Center (820)	250,000 s.f.	11,210	172	105	514	556
Total		**26,330**	**783**	**650**	**1,015**	**1,191**
Internal Capture (7% Entering AM, 8% Exiting AM 24% Entering PM, 20% Exiting PM)			*-55*	*-52*	*-244*	*-238*
Total External Trips			**728**	**598**	**771**	**953**
Pass-By Trips: Shopping Center (34% PM)			*0*	*0*	*-142*	*-142*
Total Primary Trips			**728**	**598**	**629**	**811**

It is estimated that the proposed development will generate approximately 26,330 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 1,433 trips (783 entering and 650 exiting) will occur during the weekday AM peak hour and 2,206 (1,015 entering and 1,191 exiting) will occur during the weekday PM peak hour.

Internal capture of trips between the residential and retail uses was considered in this study. Internal capture is the consideration for trips that will be made within the site between different land uses, so the vehicle never leaves the internal site but can still be considered as a trip to that specific land use. Internal capture typically only considers trips between residential, office, and retail/restaurant land uses. Based on the NCHRP Internal Capture methodology, an AM peak hour internal capture rate of 7% entering and 8% exiting was applied to the total trips. Also, a PM peak hour internal capture rate of 24% entering and 20% exiting was applied to the total trips. The internal capture reductions are expected to account for 107 (55 entering



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

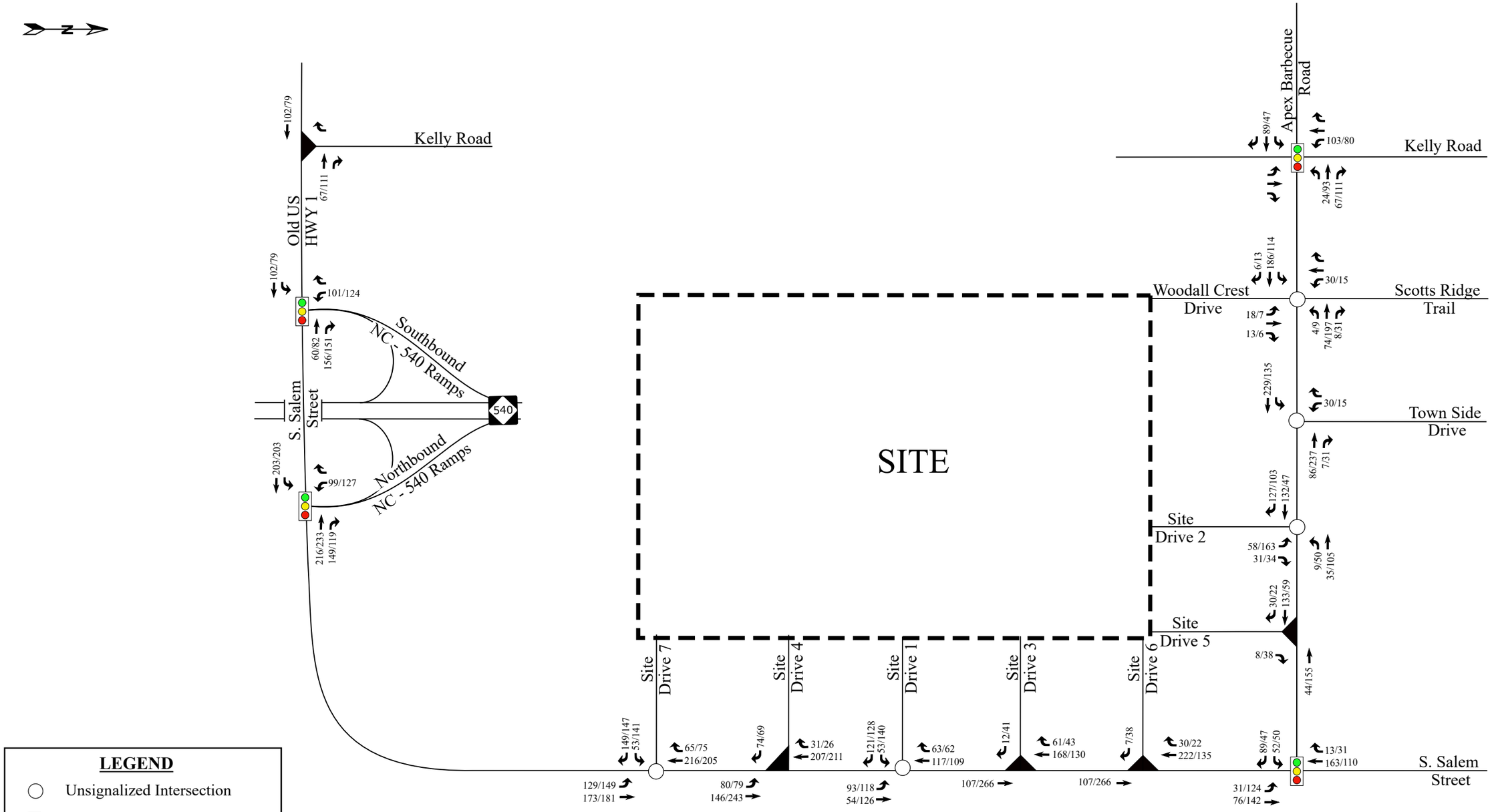
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Depot 499
Apex, NC

Residential Site Trip Assignment - Full Build-Out

Scale: Not to Scale

Figure 12b



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Depot 499
Apex, NC

Total Site Trip Assignment
- Full Buildout

Scale: Not to Scale

Figure 15

TRAFFIC IMPACT ANALYSIS

FOR

SEARS PROPERTY

LOCATED

IN

APEX, NC

Prepared For:
Beazer Homes – Raleigh Division
5400 Trinity Road, Suite 313
Raleigh, NC 27607

Prepared By:
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609
License #C-0910

NORTH CAROLINA PROFESSIONAL SEAL 050502 11/30/21 ENGINEER NATHANIEL A. BOUQUIN

NOVEMBER 2021

RKA Project No. 21511

Prepared By: DT

Reviewed By: NB

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

The proposed development is assumed to consist of 160 townhomes and an 11,000 s.f. daycare center. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 10th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Multifamily Housing (Low-Rise) (220)	160 units	1,170	17	58	57	33
Daycare Center (565)	11,000 s.f.	520	64	57	57	65
Total Trips		**1,690**	**81**	**115**	**114**	**98**

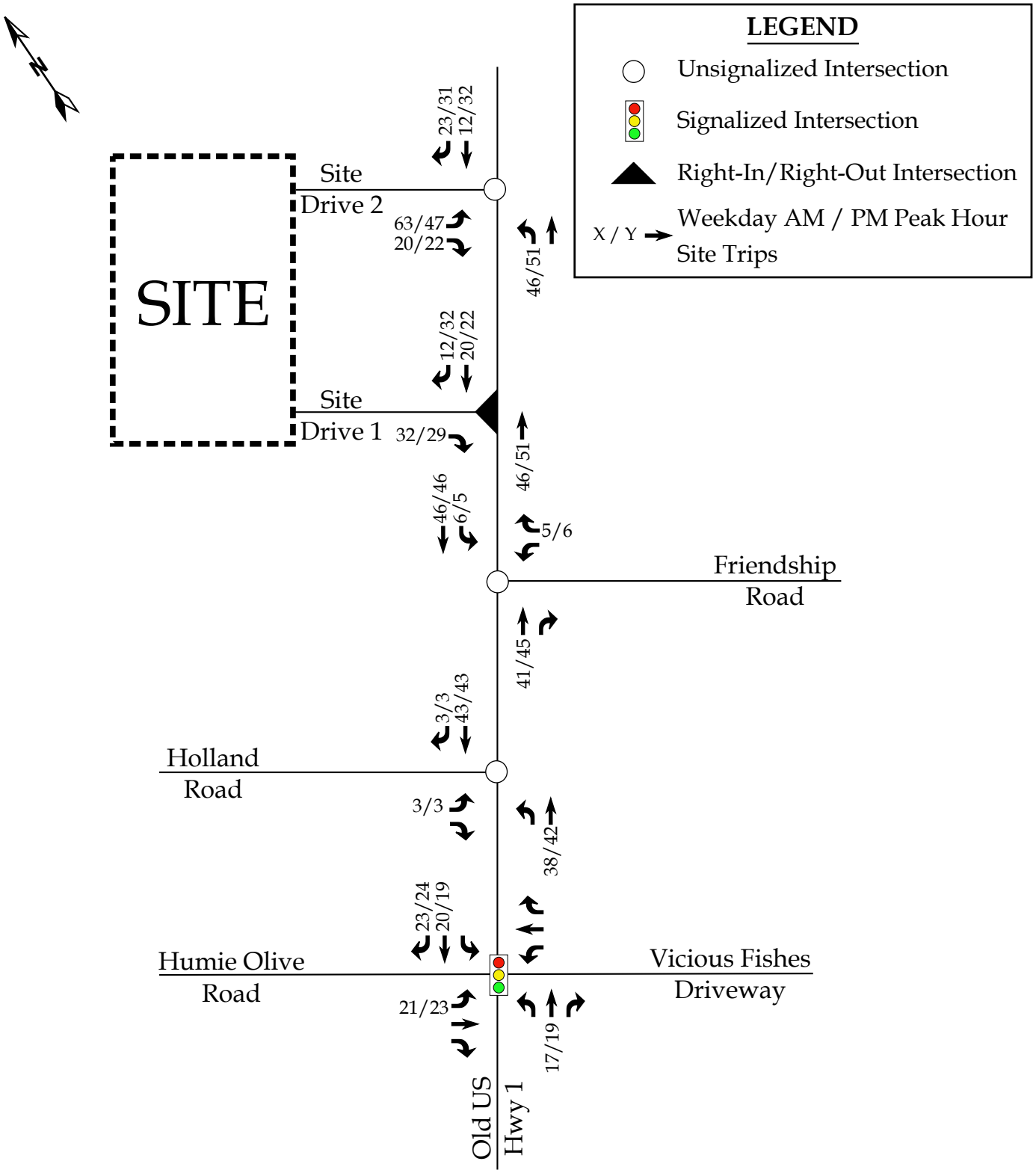
It is estimated that the proposed development will generate approximately 1,690 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 196 trips (81 entering and 115 exiting) will occur during the weekday AM peak hour and 212 trips (114 entering and 98 exiting) will occur during the weekday PM peak hour. It should be noted that the proposed development is anticipated to be below the typical threshold for NCDOT to require a TIA (3,000 trips per day); however, a copy of the TIA will be provided to NCDOT for courtesy review.

4.2. Site Trip Distribution and Assignment

Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment.

It is estimated that the residential site trips will be regionally distributed as follows:

- 75% to/from the north via Old US Hwy 1



Moving forward. RKA RAMEY KEMP ASSOCIATES	Sears Property Apex, NC	Total Site Trip Assignment Scale: Not to Scale | Figure 10

TRAFFIC IMPACT ANALYSIS

FOR

HOLLAND ROAD MIXED-USE

LOCATED

IN

APEX, NC

Prepared For:
Peak Engineering & Design, PLLC
1125 Apex Peakway
Apex, NC 27502

Prepared By:
Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609
License #C-0910

APRIL 2021

RKA Project No. 21015

Prepared By: DT

Reviewed By: NB

4. SITE TRIP GENERATION AND DISTRIBUTION

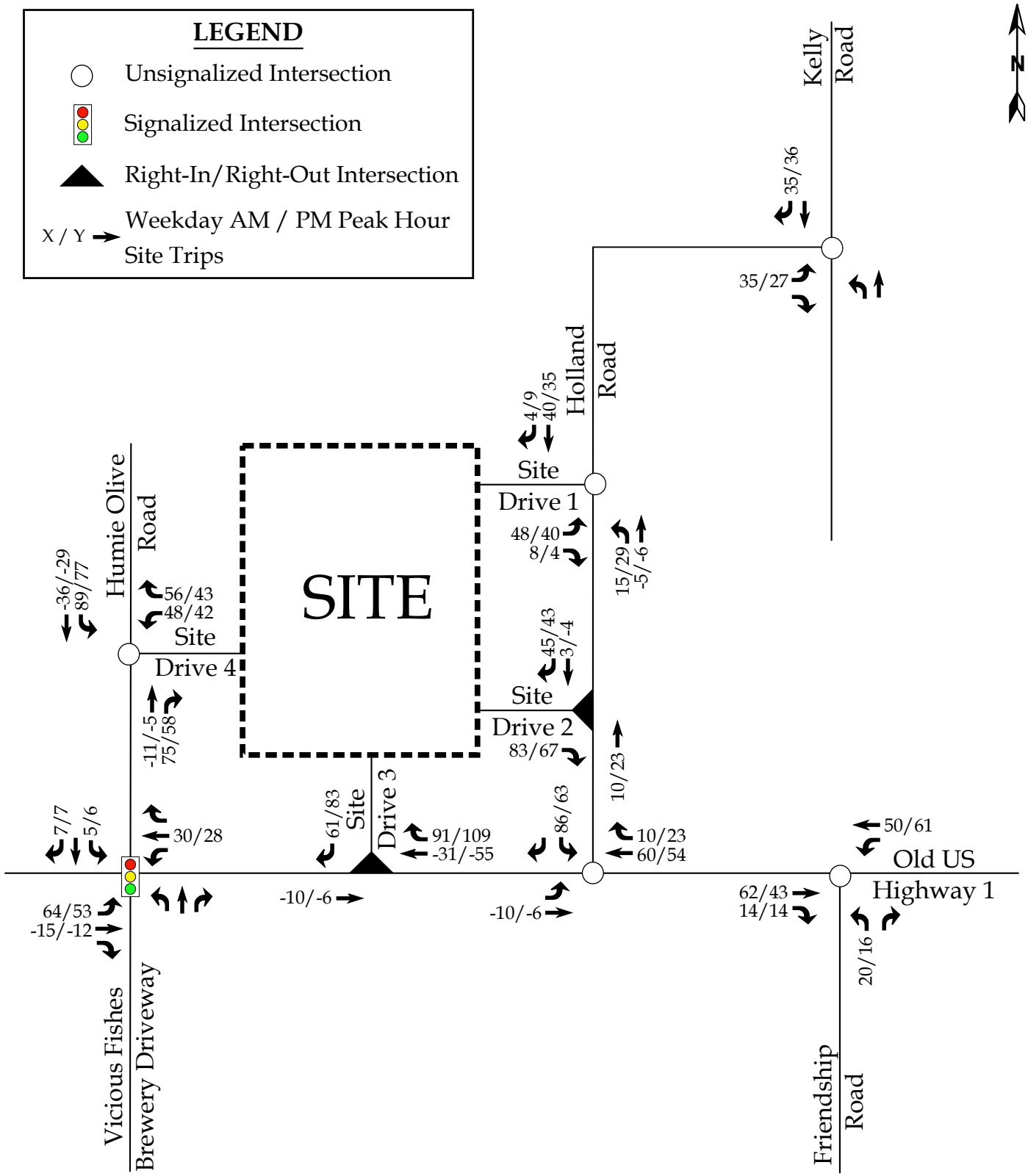
4.1. Trip Generation

The proposed development is assumed to consist of a maximum of 110 single-family homes, a 60,000 s.f. shopping center, two (2) 4,000 s.f. fast-food restaurants with drive-thru, an 8,500 s.f. quality restaurant, and a 10 f.p. gas station with convenience market. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 10th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single Family Homes (210)	110 units	1,140	21	62	70	41
Shopping Center (820)	60,000 s.f.	4,250	113	69	179	193
Quality Restaurant (931)	8,500 s.f.	710	--**	--**	44	22
Fast-Food Restaurant w/ Drive-Thru (934)	8,000 s.f.	3,770	164	158	136	125
Gas Station w/ Convenience Market (945)	10 f.p.	2,050	64	61	71	69
Total Trips		**11,920**	**362**	**350**	**500**	**450**
Internal Capture (12% AM Entering & 13% AM Exiting) (35% PM Entering, 38% PM Exiting)			*-43*	*-46*	*-175*	*-171*
Total External Trips			**319**	**304**	**325**	**279**
Pass-By Trips: Fast-Food Restaurant with Drive-Through (49% AM, 50% PM)			*-69*	*-69*	*-41*	*-41*
Pass-By Trips: Quality Restaurant (44% PM)			*--*	*--*	*-9*	*-9*
Pass-By Trips: Gas Station w/ Convenience Market (62% AM, 56% PM)			*-34*	*-34*	*-25*	*-25*
Pass-By Trips: Shopping Center (34% PM)			*--*	*--*	*-40*	*-40*
Total Primary Trips			**216**	**201**	**210**	**164**

**No trips are expected to be generated during the weekday AM peak hour, as this land use is not typically open during this peak hour.



Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Holland Road Mixed-Use
Apex, NC

Total Site Trip Assignment

Scale: Not to Scale | Figure 14

DRMP

SYNCHRO AND SIMTRAFFIC REPORTS

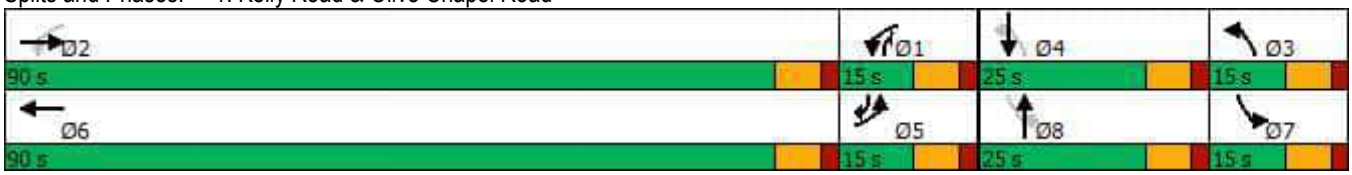
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	433	293	107	89	216	139	92	318	113	128	154	171
Future Volume (vph)	433	293	107	89	216	139	92	318	113	128	154	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1770	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.229			0.574			0.229		
Satd. Flow (perm)	3399	1770	0	431	1881	1599	1048	1825	1552	420	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	481	326	119	99	240	154	102	353	126	142	171	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	481	445	0	99	240	154	102	353	126	142	171	190
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	19.7	27.6		37.4	17.8	87.3	30.9	20.1	34.9	29.8	19.6	44.3
Actuated g/C Ratio	0.23	0.32		0.43	0.20	1.00	0.35	0.23	0.40	0.34	0.22	0.51
v/c Ratio	0.63	0.79		0.29	0.63	0.10	0.21	0.84	0.20	0.49	0.42	0.24
Control Delay	35.0	38.4		18.4	40.1	0.1	21.3	53.1	20.0	34.1	36.4	15.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	35.0	38.4		18.4	40.1	0.1	21.3	53.1	20.0	34.1	36.4	15.0
LOS	C	D		B	D	A	C	D	C	C	D	B
Approach Delay		36.6			23.3			40.4			27.7	
Approach LOS		D			C			D			C	
Queue Length 50th (ft)	122	223		28	123	0	35	187	44	50	89	64
Queue Length 95th (ft)	188	332		54	206	0	80	#389	97	107	159	109
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	765	1690		342	1796	1599	476	420	587	297	489	791
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.26		0.29	0.13	0.10	0.21	0.84	0.21	0.48	0.35	0.24

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 87.3
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Kelly Road & Olive Chapel Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	389	257	35	190	400	151	54	329	130	129	280	440
Future Volume (vph)	389	257	35	190	400	151	54	329	130	129	280	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1811	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.313			0.365			0.215		
Satd. Flow (perm)	3399	1811	0	589	1881	1599	666	1825	1552	394	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	432	286	39	211	444	168	60	366	144	143	311	489
Shared Lane Traffic (%)												
Lane Group Flow (vph)	432	325	0	211	444	168	60	366	144	143	311	489
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	10.0	21.4		36.0	26.0	85.8	30.8	20.1	39.7	29.7	23.2	38.3
Actuated g/C Ratio	0.12	0.25		0.42	0.30	1.00	0.36	0.23	0.46	0.35	0.27	0.45
v/c Ratio	1.09	0.72		0.47	0.78	0.11	0.17	0.86	0.20	0.50	0.63	0.70
Control Delay	108.9	39.0		23.4	37.6	0.1	20.7	53.9	15.9	33.7	37.7	29.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	108.9	39.0		23.4	37.6	0.1	20.7	53.9	15.9	33.7	37.7	29.4
LOS	F	D		C	D	A	C	D	B	C	D	C
Approach Delay		78.9			26.3			40.8			32.8	
Approach LOS		E			C			D			C	
Queue Length 50th (ft)	~137	161		65	218	0	19	191	44	49	156	222
Queue Length 95th (ft)	#259	252		106	324	0	50	#392	95	103	#311	#445
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	398	1753		450	1821	1599	367	427	717	296	495	695
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.19		0.47	0.24	0.11	0.16	0.86	0.20	0.48	0.63	0.70

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 85.8
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 43.8 Intersection LOS: D
Intersection Capacity Utilization 73.3% ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	507	343	125	104	253	163	108	451	132	150	229	200
Future Volume (vph)	507	343	125	104	253	163	108	451	132	150	229	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1770	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.193			0.393			0.199		
Satd. Flow (perm)	3399	1770	0	363	1881	1599	717	1825	1552	365	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	563	381	139	116	281	181	120	501	147	167	254	222
Shared Lane Traffic (%)												
Lane Group Flow (vph)	563	520	0	116	281	181	120	501	147	167	254	222
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	22.5	32.9		42.8	20.3	93.1	30.2	20.1	35.0	30.2	20.1	47.6
Actuated g/C Ratio	0.24	0.35		0.46	0.22	1.00	0.32	0.22	0.38	0.32	0.22	0.51
v/c Ratio	0.69	0.83		0.37	0.69	0.11	0.35	1.27	0.25	0.63	0.64	0.28
Control Delay	37.5	39.7		21.4	42.8	0.1	28.7	174.1	23.5	44.9	43.6	14.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	37.5	39.7		21.4	42.8	0.1	28.7	174.1	23.5	44.9	43.6	14.9
LOS	D	D		C	D	A	C	F	C	D	D	B
Approach Delay		38.6			25.2			122.5			34.0	
Approach LOS		D			C			F			C	
Queue Length 50th (ft)	154	276		34	153	0	46	~376	58	67	137	70
Queue Length 95th (ft)	234	400		60	248	0	102	#660	125	#159	#269	137
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	820	1613		321	1714	1599	342	394	568	267	396	798
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.32		0.36	0.16	0.11	0.35	1.27	0.26	0.63	0.64	0.28

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 93.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 56.1 Intersection LOS: E
Intersection Capacity Utilization 80.2% ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	301	41	222	468	177	63	431	152	151	396	515
Future Volume (vph)	455	301	41	222	468	177	63	431	152	151	396	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1811	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.261			0.171			0.199		
Satd. Flow (perm)	3399	1811	0	491	1881	1599	312	1825	1552	365	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	506	334	46	247	520	197	70	479	169	168	440	572
Shared Lane Traffic (%)												
Lane Group Flow (vph)	506	380	0	247	520	197	70	479	169	168	440	572
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	10.1	25.3		40.8	30.8	91.1	31.3	20.1	40.7	30.2	23.4	38.5
Actuated g/C Ratio	0.11	0.28		0.45	0.34	1.00	0.34	0.22	0.45	0.33	0.26	0.42
v/c Ratio	1.35	0.76		0.56	0.82	0.12	0.27	1.19	0.24	0.62	0.93	0.87
Control Delay	208.7	40.3		28.2	38.8	0.2	30.8	142.0	18.2	42.8	65.7	43.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	208.7	40.3		28.2	38.8	0.2	30.8	142.0	18.2	42.8	65.7	43.3
LOS	F	D		C	D	A	C	F	B	D	E	D
Approach Delay		136.4			28.2			102.0			51.6	
Approach LOS		F			C			F			D	
Queue Length 50th (ft)	~197	199		78	270	0	25	~334	58	64	~286	311
Queue Length 95th (ft)	#338	301		123	390	0	62	#601	120	#148	#541	#617
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	375	1685		441	1750	1599	263	402	692	272	472	659
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.23		0.56	0.30	0.12	0.27	1.19	0.24	0.62	0.93	0.87

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 91.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.35
Intersection Signal Delay: 75.3 Intersection LOS: E
Intersection Capacity Utilization 85.3% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	507	343	131	122	253	163	111	459	144	150	241	200
Future Volume (vph)	507	343	131	122	253	163	111	459	144	150	241	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.958				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1767	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.191			0.362			0.199		
Satd. Flow (perm)	3399	1767	0	359	1881	1599	661	1825	1552	365	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	563	381	146	136	281	181	123	510	160	167	268	222
Shared Lane Traffic (%)												
Lane Group Flow (vph)	563	527	0	136	281	181	123	510	160	167	268	222
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	23.0	33.5		43.4	20.4	93.7	30.2	20.1	35.0	30.2	20.1	48.1
Actuated g/C Ratio	0.25	0.36		0.46	0.22	1.00	0.32	0.21	0.37	0.32	0.21	0.51
v/c Ratio	0.68	0.84		0.43	0.69	0.11	0.38	1.30	0.28	0.63	0.68	0.28
Control Delay	37.2	39.8		24.3	43.2	0.1	30.2	186.5	24.1	45.5	45.7	14.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	37.2	39.8		24.3	43.2	0.1	30.2	186.5	24.1	45.5	45.7	14.9
LOS	D	D		C	D	A	C	F	C	D	D	B
Approach Delay		38.5			25.8			129.5			35.2	
Approach LOS		D			C			F			D	
Queue Length 50th (ft)	154	282		40	154	0	48	~391	65	67	147	70
Queue Length 95th (ft)	234	407		69	249	0	105	#680	136	#161	#296	138
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	832	1602		320	1706	1599	328	392	564	265	394	801
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.33		0.42	0.16	0.11	0.38	1.30	0.28	0.63	0.68	0.28

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 93.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.30
Intersection Signal Delay: 58.4 Intersection LOS: E
Intersection Capacity Utilization 81.9% ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	455	301	45	235	468	177	69	443	170	151	405	515
Future Volume (vph)	455	301	45	235	468	177	69	443	170	151	405	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1807	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.258			0.171			0.199		
Satd. Flow (perm)	3399	1807	0	485	1881	1599	312	1825	1552	365	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	506	334	50	261	520	197	77	492	189	168	450	572
Shared Lane Traffic (%)												
Lane Group Flow (vph)	506	384	0	261	520	197	77	492	189	168	450	572
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	10.1	25.5		40.8	30.8	91.1	31.3	20.1	40.5	30.2	23.4	38.5
Actuated g/C Ratio	0.11	0.28		0.45	0.34	1.00	0.34	0.22	0.44	0.33	0.26	0.42
v/c Ratio	1.35	0.76		0.60	0.82	0.12	0.30	1.22	0.27	0.62	0.95	0.87
Control Delay	208.7	40.3		30.0	38.8	0.2	31.7	154.1	18.7	42.8	69.8	43.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	208.7	40.3		30.0	38.8	0.2	31.7	154.1	18.7	42.8	69.8	43.3
LOS	F	D		C	D	A	C	F	B	D	E	D
Approach Delay		136.0			28.7			107.9			53.2	
Approach LOS		F			C			F			D	
Queue Length 50th (ft)	~197	201		83	270	0	28	~350	66	64	~298	311
Queue Length 95th (ft)	#338	303		130	390	0	67	#620	135	#148	#556	#617
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	375	1682		436	1750	1599	263	402	689	272	472	659
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.23		0.60	0.30	0.12	0.29	1.22	0.27	0.62	0.95	0.87

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 91.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.35
Intersection Signal Delay: 77.1 Intersection LOS: E
Intersection Capacity Utilization 86.0% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	548	371	135	113	273	176	116	504	143	162	333	216
Future Volume (vph)	548	371	135	113	273	176	116	504	143	162	333	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1770	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.174			0.199			0.199		
Satd. Flow (perm)	3399	1770	0	327	1881	1599	363	1825	1552	365	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	609	412	150	126	303	196	129	560	159	180	370	240
Shared Lane Traffic (%)												
Lane Group Flow (vph)	609	562	0	126	303	196	129	560	159	180	370	240
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	24.1	36.2		46.0	21.9	96.4	30.2	20.1	35.1	30.2	20.1	49.3
Actuated g/C Ratio	0.25	0.38		0.48	0.23	1.00	0.31	0.21	0.36	0.31	0.21	0.51
v/c Ratio	0.72	0.85		0.41	0.71	0.12	0.50	1.47	0.28	0.70	0.97	0.30
Control Delay	39.1	40.2		24.0	44.2	0.2	41.1	256.1	25.6	51.5	78.7	15.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	39.1	40.2		24.0	44.2	0.2	41.1	256.1	25.6	51.5	78.7	15.9
LOS	D	D		C	D	A	D	F	C	D	E	B
Approach Delay		39.6			26.3			180.2			53.4	
Approach LOS		D			C			F			D	
Queue Length 50th (ft)	174	309		37	171	0	53	~473	68	77	225	80
Queue Length 95th (ft)	262	442		64	271	0	115	#789	142	#198	#481	156
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	850	1569		309	1668	1599	257	381	549	258	383	797
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.36		0.41	0.18	0.12	0.50	1.47	0.29	0.70	0.97	0.30

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 96.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.47
Intersection Signal Delay: 75.1 Intersection LOS: E
Intersection Capacity Utilization 86.2% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	492	325	44	240	506	191	68	554	164	163	470	557
Future Volume (vph)	492	325	44	240	506	191	68	554	164	163	470	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		450	350		350	250		250	325		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1811	0	1787	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.238			0.170			0.199		
Satd. Flow (perm)	3399	1811	0	448	1881	1599	310	1825	1552	365	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1627			1614	
Travel Time (s)		33.1			33.9			24.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	547	361	49	267	562	212	76	616	182	181	522	619
Shared Lane Traffic (%)												
Lane Group Flow (vph)	547	410	0	267	562	212	76	616	182	181	522	619
Turn Type	Prot	NA		D.P+P	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases				2		Free	4		8	8		4
Detector Phase	5	2		1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	15.0	90.0		15.0	90.0		15.0	25.0	15.0	15.0	25.0	15.0
Total Split (%)	10.3%	62.1%		10.3%	62.1%		10.3%	17.2%	10.3%	10.3%	17.2%	10.3%
Maximum Green (s)	8.0	83.0		8.0	83.0		8.0	18.0	8.0	8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min		None	Min		None	None	None	None	None	None
Act Effct Green (s)	10.1	27.6		43.7	33.6	94.0	31.3	20.1	41.3	30.2	23.5	38.6
Actuated g/C Ratio	0.11	0.29		0.46	0.36	1.00	0.33	0.21	0.44	0.32	0.25	0.41
v/c Ratio	1.51	0.77		0.61	0.84	0.13	0.30	1.58	0.27	0.69	1.14	0.97
Control Delay	273.9	40.7		31.2	39.3	0.2	33.6	301.5	19.6	48.9	123.1	60.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	273.9	40.7		31.2	39.3	0.2	33.6	301.5	19.6	48.9	123.1	60.4
LOS	F	D		C	D	A	C	F	B	D	F	E
Approach Delay		174.0			29.2			219.5			83.6	
Approach LOS		F			C			F			F	
Queue Length 50th (ft)	~234	221		85	301	0	29	~523	66	73	~404	~406
Queue Length 95th (ft)	#387	330		132	429	0	70	#840	137	#184	#695	#722
Internal Link Dist (ft)		2103			2160			1547			1534	
Turn Bay Length (ft)	300			350		350	250		250	325		500
Base Capacity (vph)	363	1643		437	1706	1599	255	390	681	264	458	640
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.51	0.25		0.61	0.33	0.13	0.30	1.58	0.27	0.69	1.14	0.97

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 94
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.58
Intersection Signal Delay: 119.0 Intersection LOS: F
Intersection Capacity Utilization 95.5% ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road

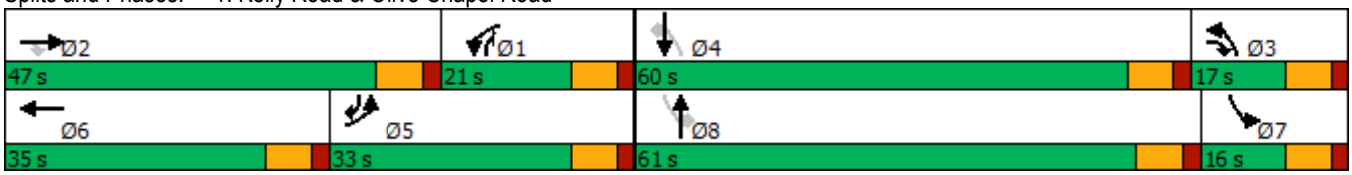
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	548	371	156	296	273	176	156	585	267	162	455	216
Future Volume (vph)	548	371	156	296	273	176	156	585	267	162	455	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		200	325		350	250		250	325		500
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1844	1567	3467	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.950			0.143			0.077		
Satd. Flow (perm)	3399	1844	1567	3467	1881	1599	261	1825	1552	141	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1168			1614	
Travel Time (s)		33.1			33.9			17.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	609	412	173	329	303	196	173	650	297	180	506	240
Shared Lane Traffic (%)												
Lane Group Flow (vph)	609	412	173	329	303	196	173	650	297	180	506	240
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8	1	7	4	5
Permitted Phases			2			Free	4		8	8		4
Detector Phase	5	2	3	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	7.0	7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	33.0	47.0	17.0	21.0	35.0		17.0	61.0	21.0	16.0	60.0	33.0
Total Split (%)	22.8%	32.4%	11.7%	14.5%	24.1%		11.7%	42.1%	14.5%	11.0%	41.4%	22.8%
Maximum Green (s)	26.0	40.0	10.0	14.0	28.0		10.0	54.0	14.0	9.0	53.0	26.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0	0.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	None
Act Effct Green (s)	27.3	35.7	59.6	18.0	26.5	137.3	63.4	52.3	75.4	63.4	44.6	76.9
Actuated g/C Ratio	0.20	0.26	0.43	0.13	0.19	1.00	0.46	0.38	0.55	0.46	0.32	0.56
v/c Ratio	0.90	0.86	0.25	0.72	0.83	0.12	0.54	0.94	0.35	0.93	0.85	0.27
Control Delay	72.3	66.8	27.3	68.6	74.0	0.2	48.5	63.3	19.5	100.6	57.4	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	72.3	66.8	27.3	68.6	74.0	0.2	48.5	63.3	19.5	100.6	57.4	16.3
LOS	E	E	C	E	E	A	D	E	B	F	E	B
Approach Delay		63.9			54.4			49.4			55.2	
Approach LOS		E			D			D			E	
Queue Length 50th (ft)	293	369	102	155	273	0	89	578	149	117	444	115
Queue Length 95th (ft)	#405	488	168	#241	#404	0	#149	#824	228	#276	547	148
Internal Link Dist (ft)		2103			2160			1088			1534	
Turn Bay Length (ft)	300		200	325		350	250		250	325		500
Base Capacity (vph)	699	568	679	455	414	1599	321	750	851	194	741	871
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	0.87	0.73	0.25	0.72	0.73	0.12	0.54	0.87	0.35	0.93	0.68	0.28

Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 137.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 56.0 Intersection LOS: E
Intersection Capacity Utilization 86.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Kelly Road & Olive Chapel Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	492	325	51	439	506	191	146	707	399	163	603	557
Future Volume (vph)	492	325	51	439	506	191	146	707	399	163	603	557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			4%			3%	
Storage Length (ft)	300		200	325		350	250		250	325		500
Storage Lanes	2		1	2		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3399	1844	1567	3467	1881	1599	1734	1825	1552	1743	1835	1560
Flt Permitted	0.950			0.950			0.073			0.073		
Satd. Flow (perm)	3399	1844	1567	3467	1881	1599	133	1825	1552	134	1835	1560
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2183			2240			1168			1614	
Travel Time (s)		33.1			33.9			17.7			24.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	547	361	57	488	562	212	162	786	443	181	670	619
Shared Lane Traffic (%)												
Lane Group Flow (vph)	547	361	57	488	562	212	162	786	443	181	670	619
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	D.P+P	NA	pm+ov	D.P+P	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8	1	7	4	5
Permitted Phases			2			Free	4		8	8		4
Detector Phase	5	2	3	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0	7.0	7.0	12.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	14.0	19.0	14.0	14.0	19.0		14.0	14.0	14.0	14.0	14.0	14.0
Total Split (s)	25.0	42.0	14.0	29.0	46.0		14.0	60.0	29.0	14.0	60.0	25.0
Total Split (%)	17.2%	29.0%	9.7%	20.0%	31.7%		9.7%	41.4%	20.0%	9.7%	41.4%	17.2%
Maximum Green (s)	18.0	35.0	7.0	22.0	39.0		7.0	53.0	22.0	7.0	53.0	18.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0	2.0	2.0	6.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	3.0	2.0	2.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	0.0	15.0	0.0	0.0	15.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	30.0	0.0	0.0	30.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	None
Act Effct Green (s)	20.0	32.9	47.4	28.1	41.0	145.0	64.0	55.0	88.1	64.0	54.5	79.5
Actuated g/C Ratio	0.14	0.23	0.33	0.19	0.28	1.00	0.44	0.38	0.61	0.44	0.38	0.55
v/c Ratio	1.17	0.87	0.11	0.73	1.06	0.13	0.99	1.14	0.47	1.14	0.97	0.72
Control Delay	149.7	74.2	33.6	62.6	104.5	0.2	122.8	119.2	18.4	162.4	72.4	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	149.7	74.2	33.6	62.6	104.5	0.2	122.8	119.2	18.4	162.4	72.4	30.5
LOS	F	E	C	E	F	A	F	F	B	F	E	C
Approach Delay		114.6			70.8			87.5			65.8	
Approach LOS		F			E			F			E	
Queue Length 50th (ft)	~315	326	37	228	~580	0	~112	~862	226	~148	616	421
Queue Length 95th (ft)	#435	441	70	#318	#811	0	#265	#1113	329	#309	#874	579
Internal Link Dist (ft)		2103			2160			1088			1534	
Turn Bay Length (ft)	300		200	325		350	250		250	325		500
Base Capacity (vph)	468	470	512	672	531	1599	164	692	943	159	696	854
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	1.17	0.77	0.11	0.73	1.06	0.13	0.99	1.14	0.47	1.14	0.96	0.72

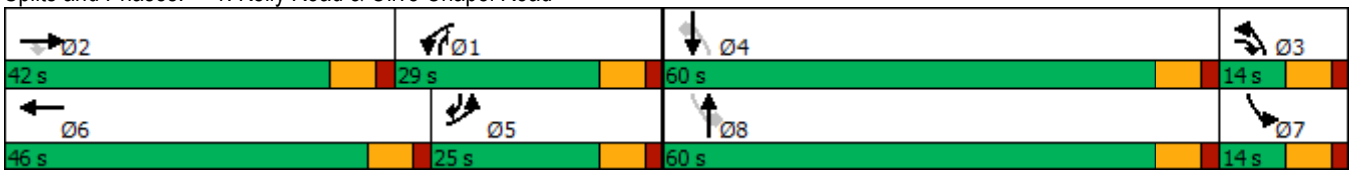
Intersection Summary

Area Type: Other
Cycle Length: 145
Actuated Cycle Length: 145
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 82.2 Intersection LOS: F
Intersection Capacity Utilization 103.6% ICU Level of Service G
Analysis Period (min) 15

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

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

Splits and Phases: 1: Kelly Road & Olive Chapel Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	146	37	27	119	178	24	214	45	91	109	32
Future Volume (vph)	95	146	37	27	119	178	24	214	45	91	109	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.970			0.910			0.974				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1789	0	1752	1678	0	1717	3344	0	1734	1825	1552
Flt Permitted	0.424			0.600			0.679			0.537		
Satd. Flow (perm)	782	1789	0	1106	1678	0	1227	3344	0	980	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2466			922	
Travel Time (s)		17.6			16.9			37.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	106	162	41	30	132	198	27	238	50	101	121	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	203	0	30	330	0	27	288	0	101	121	36
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	34.7	33.6		36.6	27.8		26.5	18.1		27.9	23.1	37.1
Actuated g/C Ratio	0.45	0.43		0.47	0.36		0.34	0.23		0.36	0.30	0.48
v/c Ratio	0.22	0.26		0.05	0.55		0.06	0.37		0.23	0.22	0.05
Control Delay	12.5	18.0		10.9	26.6		19.2	30.4		21.9	28.0	12.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.5	18.0		10.9	26.6		19.2	30.4		21.9	28.0	12.1
LOS	B	B		B	C		B	C		C	C	B
Approach Delay		16.1			25.3			29.5			23.4	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	28	56		7	141		9	68		34	41	8
Queue Length 95th (ft)	56	136		21	235		29	120		79	114	26
Internal Link Dist (ft)		1081			1033			2386			842	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	490	1277		619	1198		493	943		473	609	757
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.22	0.16		0.05	0.28		0.05	0.31		0.21	0.20	0.05

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 77.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 23.7
Intersection LOS: C
Intersection Capacity Utilization 52.9%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Kelly Road & Apex Barbecue Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	98	41	49	106	163	50	224	58	135	262	78
Future Volume (vph)	65	98	41	49	106	163	50	224	58	135	262	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.955			0.909			0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1761	0	1752	1676	0	1717	3327	0	1734	1825	1552
Flt Permitted	0.437			0.652			0.408			0.508		
Satd. Flow (perm)	806	1761	0	1202	1676	0	737	3327	0	927	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2466			922	
Travel Time (s)		17.6			16.9			37.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	109	46	54	118	181	56	249	64	150	291	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	155	0	54	299	0	56	313	0	150	291	87
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	32.2	28.2		33.2	25.3		31.1	17.9		28.4	23.0	33.9
Actuated g/C Ratio	0.40	0.35		0.42	0.32		0.39	0.22		0.36	0.29	0.42
v/c Ratio	0.16	0.25		0.10	0.56		0.14	0.42		0.34	0.55	0.13
Control Delay	12.8	21.2		12.2	28.4		19.5	30.4		22.5	34.4	12.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.8	21.2		12.2	28.4		19.5	30.4		22.5	34.4	12.2
LOS	B	C		B	C		B	C		C	C	B
Approach Delay		18.6			25.9			28.8			27.3	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)	20	61		15	131		17	74		49	138	19
Queue Length 95th (ft)	42	110		34	215		47	125		105	#276	47
Internal Link Dist (ft)		1081			1033			2386			842	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	453	1253		578	1192		422	860		446	525	675
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.16	0.12		0.09	0.25		0.13	0.36		0.34	0.55	0.13

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 79.9
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 57.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Kelly Road & Apex Barbecue Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	171	43	32	139	252	28	285	53	120	163	37
Future Volume (vph)	111	171	43	32	139	252	28	285	53	120	163	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.970			0.903			0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1789	0	1752	1665	0	1717	3351	0	1734	1825	1552
Flt Permitted	0.317			0.556			0.560			0.392		
Satd. Flow (perm)	585	1789	0	1025	1665	0	1012	3351	0	716	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2466			922	
Travel Time (s)		17.6			16.9			37.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	190	48	36	154	280	31	317	59	133	181	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	238	0	36	434	0	31	376	0	133	181	41
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	44.3	41.5		46.6	34.7		30.4	18.8		28.1	25.0	36.9
Actuated g/C Ratio	0.48	0.45		0.50	0.37		0.33	0.20		0.30	0.27	0.40
v/c Ratio	0.31	0.30		0.06	0.70		0.08	0.55		0.42	0.37	0.07
Control Delay	12.9	19.0		10.4	31.0		23.7	38.1		31.9	35.2	15.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.9	19.0		10.4	31.0		23.7	38.1		31.9	35.2	15.7
LOS	B	B		B	C		C	D		C	D	B
Approach Delay		17.0			29.4			37.0			31.7	
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	35	99		10	215		12	103		53	95	11
Queue Length 95th (ft)	63	158		24	324		37	178		116	187	35
Internal Link Dist (ft)		1081			1033			2386			842	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	410	1075		600	1001		411	732		334	496	626
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.30	0.22		0.06	0.43		0.08	0.51		0.40	0.36	0.07

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 92.7
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Kelly Road & Apex Barbecue Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	115	48	57	124	210	58	289	68	190	343	91
Future Volume (vph)	76	115	48	57	124	210	58	289	68	190	343	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.956			0.906			0.971				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1763	0	1752	1671	0	1717	3333	0	1734	1825	1552
Flt Permitted	0.359			0.614			0.216			0.396		
Satd. Flow (perm)	662	1763	0	1132	1671	0	390	3333	0	723	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2466			922	
Travel Time (s)		17.6			16.9			37.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	128	53	63	138	233	64	321	76	211	381	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	181	0	63	371	0	64	397	0	211	381	101
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	39.0	33.1		40.2	29.7		31.0	19.1		28.9	22.5	33.1
Actuated g/C Ratio	0.44	0.38		0.46	0.34		0.35	0.22		0.33	0.26	0.38
v/c Ratio	0.21	0.27		0.11	0.66		0.23	0.55		0.61	0.82	0.17
Control Delay	12.8	21.8		11.8	31.0		27.1	35.3		35.2	50.6	14.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.8	21.8		11.8	31.0		27.1	35.3		35.2	50.6	14.4
LOS	B	C		B	C		C	D		D	D	B
Approach Delay		18.9			28.2			34.1			40.6	
Approach LOS		B			C			C			D	
Queue Length 50th (ft)	24	74		18	176		22	103		80	209	25
Queue Length 95th (ft)	47	125		37	271		58	173		#165	#450	63
Internal Link Dist (ft)		1081			1033			2386			842	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	423	1111		596	1053		291	764		355	466	595
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.20	0.16		0.11	0.35		0.22	0.52		0.59	0.82	0.17

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 88.1
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 33.0 Intersection LOS: C
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Kelly Road & Apex Barbecue Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	171	56	44	139	252	35	309	61	120	198	37
Future Volume (vph)	111	171	56	44	139	252	35	309	61	120	198	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.963			0.903			0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1776	0	1752	1665	0	1717	3347	0	1734	1825	1552
Flt Permitted	0.314			0.539			0.494			0.354		
Satd. Flow (perm)	579	1776	0	994	1665	0	893	3347	0	646	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2466			922	
Travel Time (s)		17.6			16.9			37.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	123	190	62	49	154	280	39	343	68	133	220	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	252	0	49	434	0	39	411	0	133	220	41
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	44.4	41.5		46.6	34.7		30.9	19.4		28.7	25.7	37.5
Actuated g/C Ratio	0.48	0.44		0.50	0.37		0.33	0.21		0.31	0.28	0.40
v/c Ratio	0.31	0.32		0.09	0.70		0.10	0.59		0.43	0.44	0.07
Control Delay	13.1	19.5		10.7	31.4		24.2	38.9		33.1	36.2	15.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	13.1	19.5		10.7	31.4		24.2	38.9		33.1	36.2	15.7
LOS	B	B		B	C		C	D		C	D	B
Approach Delay		17.4			29.3			37.6			33.0	
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	35	106		13	215		15	114		53	116	11
Queue Length 95th (ft)	63	168		30	324		43	194		116	226	35
Internal Link Dist (ft)		1081			1033			2386			842	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	405	1059		584	993		388	726		322	501	632
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.30	0.24		0.08	0.44		0.10	0.57		0.41	0.44	0.06

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 93.3
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 29.7 Intersection LOS: C
Intersection Capacity Utilization 62.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Kelly Road & Apex Barbecue Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	115	57	66	124	210	69	324	80	190	370	91
Future Volume (vph)	76	115	57	66	124	210	69	324	80	190	370	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.951			0.906			0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1754	0	1752	1671	0	1717	3330	0	1734	1825	1552
Flt Permitted	0.356			0.599			0.174			0.345		
Satd. Flow (perm)	657	1754	0	1105	1671	0	314	3330	0	630	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2466			922	
Travel Time (s)		17.6			16.9			37.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	128	63	73	138	233	77	360	89	211	411	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	191	0	73	371	0	77	449	0	211	411	101
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lead		Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	39.1	33.0		40.2	29.7		31.1	19.7		29.7	23.0	33.5
Actuated g/C Ratio	0.44	0.37		0.45	0.33		0.35	0.22		0.33	0.26	0.38
v/c Ratio	0.21	0.29		0.13	0.66		0.29	0.61		0.63	0.87	0.17
Control Delay	12.9	22.2		12.1	31.4		30.9	36.5		37.8	55.8	14.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.9	22.2		12.1	31.4		30.9	36.5		37.8	55.8	14.3
LOS	B	C		B	C		C	D		D	E	B
Approach Delay		19.4			28.2			35.6			44.7	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)	24	79		21	176		27	118		80	231	25
Queue Length 95th (ft)	47	132		42	271		67	196		#179	#494	63
Internal Link Dist (ft)		1081			1033			2386			842	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	418	1092		580	1041		269	754		335	472	598
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.20	0.17		0.13	0.36		0.29	0.60		0.63	0.87	0.17

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 88.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 35.0 Intersection LOS: D
Intersection Capacity Utilization 67.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Kelly Road & Apex Barbecue Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	274	47	34	175	292	30	306	57	218	173	40
Future Volume (vph)	120	274	47	34	175	292	30	306	57	218	173	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.978			0.906			0.977				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1804	0	1752	1671	0	1717	3354	0	1734	1825	1552
Flt Permitted	0.229			0.400			0.525			0.339		
Satd. Flow (perm)	422	1804	0	738	1671	0	949	3354	0	619	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			913			906	
Travel Time (s)		17.6			16.9			13.8			13.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	304	52	38	194	324	33	340	63	242	192	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	356	0	38	518	0	33	403	0	242	192	44
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	50.7	41.1		52.9	41.3		31.7	19.4		29.5	26.1	40.5
Actuated g/C Ratio	0.50	0.41		0.53	0.41		0.32	0.19		0.29	0.26	0.40
v/c Ratio	0.39	0.48		0.07	0.75		0.09	0.62		0.82	0.41	0.07
Control Delay	19.3	27.8		10.6	32.7		26.9	43.5		60.2	39.1	25.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	19.3	27.8		10.6	32.7		26.9	43.5		60.2	39.1	25.4
LOS	B	C		B	C		C	D		E	D	C
Approach Delay		25.5			31.2			42.2			48.5	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	39	196		11	276		14	124		115	110	19
Queue Length 95th (ft)	66	295		25	403		41	204		#305	212	52
Internal Link Dist (ft)		1081			1033			833			826	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	350	998		553	925		377	675		294	474	573
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.36		0.07	0.56		0.09	0.60		0.82	0.41	0.08

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 100.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 72.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Kelly Road & Apex Barbecue Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	171	52	62	227	317	63	310	73	251	368	99
Future Volume (vph)	82	171	52	62	227	317	63	310	73	251	368	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.965			0.913			0.971				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1780	0	1752	1684	0	1717	3333	0	1734	1825	1552
Flt Permitted	0.187			0.468			0.173			0.303		
Satd. Flow (perm)	345	1780	0	863	1684	0	313	3333	0	553	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			913			906	
Travel Time (s)		17.6			16.9			13.8			13.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	91	190	58	69	252	352	70	344	81	279	409	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	248	0	69	604	0	70	425	0	279	409	110
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	56.6	32.4		57.8	46.7		31.2	19.6		29.6	23.1	38.0
Actuated g/C Ratio	0.53	0.30		0.54	0.44		0.29	0.18		0.28	0.22	0.36
v/c Ratio	0.29	0.46		0.10	0.82		0.32	0.69		1.05	1.03	0.20
Control Delay	16.4	37.0		10.5	36.1		41.4	48.7		110.8	97.9	29.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	16.4	37.0		10.5	36.1		41.4	48.7		110.8	97.9	29.1
LOS	B	D		B	D		D	D		F	F	C
Approach Delay		31.5			33.4			47.7			92.9	
Approach LOS		C			C			D			F	
Queue Length 50th (ft)	26	156		20	353		35	148		~175	~355	56
Queue Length 95th (ft)	48	229		38	504		73	216		#396	#582	109
Internal Link Dist (ft)		1081			1033			833			826	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	317	928		700	878		225	631		265	396	540
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.29	0.27		0.10	0.69		0.31	0.67		1.05	1.03	0.20

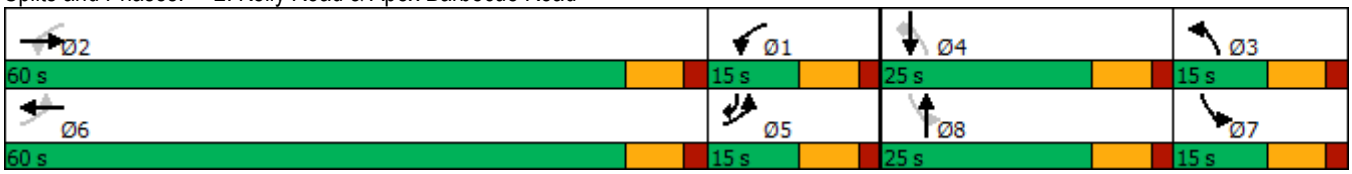
Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 106.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 56.8 Intersection LOS: E
Intersection Capacity Utilization 79.1% ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 2: Kelly Road & Apex Barbecue Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	274	170	156	175	292	110	552	138	218	539	40
Future Volume (vph)	120	274	170	156	175	292	110	552	138	218	539	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.942			0.906			0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1737	0	1752	1671	0	1717	3330	0	1734	1825	1552
Flt Permitted	0.255			0.261			0.198			0.198		
Satd. Flow (perm)	470	1737	0	481	1671	0	358	3330	0	361	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2992			1087	
Travel Time (s)		17.6			16.9			45.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	304	189	173	194	324	122	613	153	242	599	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	493	0	173	518	0	122	766	0	242	599	44
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	50.8	39.6		50.8	41.4		30.3	20.2		30.3	20.2	34.6
Actuated g/C Ratio	0.50	0.39		0.50	0.41		0.30	0.20		0.30	0.20	0.34
v/c Ratio	0.38	0.73		0.45	0.76		0.50	1.16		0.99	1.65	0.08
Control Delay	17.9	32.6		20.9	33.1		44.1	123.9		97.7	333.3	26.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	17.9	32.6		20.9	33.1		44.1	123.9		97.7	333.3	26.4
LOS	B	C		C	C		D	F		F	F	C
Approach Delay		29.5			30.1			113.0			253.6	
Approach LOS		C			C			F			F	
Queue Length 50th (ft)	39	263		52	276		54	~304		115	~556	19
Queue Length 95th (ft)	66	373		85	403		118	#511		#346	#900	52
Internal Link Dist (ft)		1081			1033			2912			1007	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	366	952		382	916		242	663		244	363	477
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.36	0.52		0.45	0.57		0.50	1.16		0.99	1.65	0.09

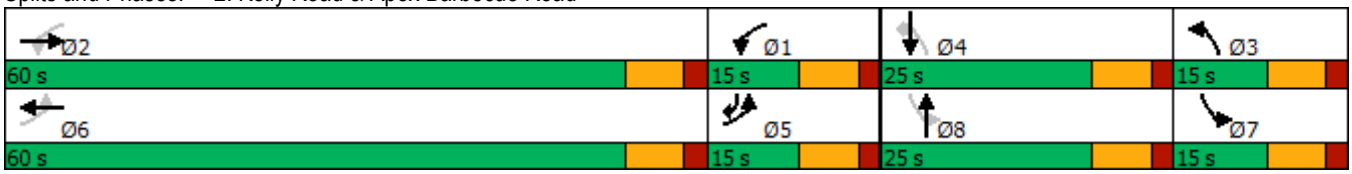
Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 101.2
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.65
Intersection Signal Delay: 117.8 Intersection LOS: F
Intersection Capacity Utilization 84.9% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 2: Kelly Road & Apex Barbecue Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	171	185	195	227	317	216	775	227	251	767	99
Future Volume (vph)	82	171	185	195	227	317	216	775	227	251	767	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			2%			6%			4%	
Storage Length (ft)	400		0	350		0	350		800	100		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.922			0.913			0.966				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1700	0	1752	1684	0	1717	3316	0	1734	1825	1552
Flt Permitted	0.200			0.312			0.199			0.199		
Satd. Flow (perm)	369	1700	0	575	1684	0	360	3316	0	363	1825	1552
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1161			1113			2992			1087	
Travel Time (s)		17.6			16.9			45.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	91	190	206	217	252	352	240	861	252	279	852	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	91	396	0	217	604	0	240	1113	0	279	852	110
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	6			2			4			8		4
Detector Phase	5	2		1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	7.0	12.0		7.0	12.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	14.0	19.0		14.0	19.0		14.0	14.0		14.0	14.0	14.0
Total Split (s)	15.0	60.0		15.0	60.0		15.0	25.0		15.0	25.0	15.0
Total Split (%)	13.0%	52.2%		13.0%	52.2%		13.0%	21.7%		13.0%	21.7%	13.0%
Maximum Green (s)	8.0	53.0		8.0	53.0		8.0	18.0		8.0	18.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	6.0		2.0	6.0	2.0
Minimum Gap (s)	2.0	3.0		2.0	3.0		2.0	3.0		2.0	3.0	2.0
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	5.0		0.0	5.0	0.0
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	15.0		0.0	15.0	0.0
Recall Mode	None	Min		None	Min		None	None		None	None	None
Act Effct Green (s)	56.6	36.4		56.6	46.8		30.2	20.1		30.2	20.1	35.0
Actuated g/C Ratio	0.53	0.34		0.53	0.44		0.28	0.19		0.28	0.19	0.33
v/c Ratio	0.28	0.69		0.41	0.82		1.05	1.78		1.21	2.48	0.22
Control Delay	15.8	36.5		19.0	36.5		116.2	387.6		165.5	697.2	29.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	15.8	36.5		19.0	36.5		116.2	387.6		165.5	697.2	29.7
LOS	B	D		B	D		F	F		F	F	C
Approach Delay		32.7			31.9			339.5			518.5	
Approach LOS		C			C			F			F	
Queue Length 50th (ft)	26	240		67	353		~147	~625		~203	~1005	56
Queue Length 95th (ft)	48	314		105	504		#345	#803		#391	#1312	109
Internal Link Dist (ft)		1081			1033			2912			1007	
Turn Bay Length (ft)	400			350			350			100		200
Base Capacity (vph)	326	880		527	871		229	624		231	343	494
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.28	0.45		0.41	0.69		1.05	1.78		1.21	2.48	0.22

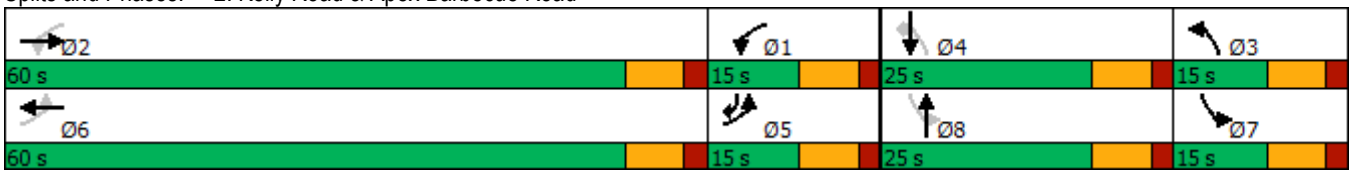
Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 107
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.48
Intersection Signal Delay: 293.4 Intersection LOS: F
Intersection Capacity Utilization 106.2% ICU Level of Service G
Analysis Period (min) 15

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

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

Splits and Phases: 2: Kelly Road & Apex Barbecue Road



Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	4	8	17	4	7	7	178	4	13	145	4
Future Vol, veh/h	24	4	8	17	4	7	7	178	4	13	145	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	4	9	19	4	8	8	198	4	14	161	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	411	407	161	412	407	198	165	0	0	202	0	0
Stage 1	189	189	-	214	214	-	-	-	-	-	-	-
Stage 2	222	218	-	198	193	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	551	533	884	550	533	843	1413	-	-	1370	-	-
Stage 1	813	744	-	788	725	-	-	-	-	-	-	-
Stage 2	780	723	-	804	741	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	536	524	884	535	524	843	1413	-	-	1370	-	-
Mov Cap-2 Maneuver	536	524	-	535	524	-	-	-	-	-	-	-
Stage 1	808	737	-	783	721	-	-	-	-	-	-	-
Stage 2	764	719	-	783	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	11.4	0.3	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1413	-	-	534	884	533	843	1370	-	-
HCM Lane V/C Ratio	0.006	-	-	0.058	0.01	0.044	0.009	0.011	-	-
HCM Control Delay (s)	7.6	-	-	12.2	9.1	12.1	9.3	7.7	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.1	0	0	-	-

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	4	9	8	4	6	12	261	13	28	221	4
Future Vol, veh/h	21	4	9	8	4	6	12	261	13	28	221	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	4	10	9	4	7	13	290	14	31	246	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	637	638	246	633	628	290	250	0	0	304	0	0
Stage 1	308	308	-	316	316	-	-	-	-	-	-	-
Stage 2	329	330	-	317	312	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	390	394	793	392	400	749	1316	-	-	1257	-	-
Stage 1	702	660	-	695	655	-	-	-	-	-	-	-
Stage 2	684	646	-	694	658	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	373	380	793	374	386	749	1316	-	-	1257	-	-
Mov Cap-2 Maneuver	373	380	-	374	386	-	-	-	-	-	-	-
Stage 1	695	644	-	688	648	-	-	-	-	-	-	-
Stage 2	667	640	-	664	642	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	13.2	0.3	0.9
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1316	-	-	374	793	378	749	1257	-	-
HCM Lane V/C Ratio	0.01	-	-	0.074	0.013	0.035	0.009	0.025	-	-
HCM Control Delay (s)	7.8	-	-	15.4	9.6	14.9	9.9	7.9	-	-
HCM Lane LOS	A	-	-	C	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.1	0	0.1	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	4	9	20	4	8	8	208	4	4	170	4
Future Vol, veh/h	28	4	9	20	4	8	8	208	4	4	170	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	4	10	22	4	9	9	231	4	4	189	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	455	450	189	455	450	231	193	0	0	235	0	0
Stage 1	197	197	-	249	249	-	-	-	-	-	-	-
Stage 2	258	253	-	206	201	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	515	504	853	515	504	808	1380	-	-	1332	-	-
Stage 1	805	738	-	755	701	-	-	-	-	-	-	-
Stage 2	747	698	-	796	735	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	502	499	853	502	499	808	1380	-	-	1332	-	-
Mov Cap-2 Maneuver	502	499	-	502	499	-	-	-	-	-	-	-
Stage 1	799	736	-	750	696	-	-	-	-	-	-	-
Stage 2	729	693	-	780	733	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	11.8	0.3	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1380	-	-	502	853	501	808	1332	-	-
HCM Lane V/C Ratio	0.006	-	-	0.071	0.012	0.053	0.011	0.003	-	-
HCM Control Delay (s)	7.6	-	-	12.7	9.3	12.6	9.5	7.7	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	4	11	9	4	7	14	305	15	33	259	4
Future Vol, veh/h	25	4	11	9	4	7	14	305	15	33	259	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	12	10	4	8	16	339	17	37	288	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	748	750	288	743	737	339	292	0	0	356	0	0
Stage 1	362	362	-	371	371	-	-	-	-	-	-	-
Stage 2	386	388	-	372	366	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	329	340	751	331	346	703	1270	-	-	1203	-	-
Stage 1	657	625	-	649	620	-	-	-	-	-	-	-
Stage 2	637	609	-	648	623	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	312	325	751	312	331	703	1270	-	-	1203	-	-
Mov Cap-2 Maneuver	312	325	-	312	331	-	-	-	-	-	-	-
Stage 1	648	606	-	641	612	-	-	-	-	-	-	-
Stage 2	617	601	-	613	604	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.6	14.6	0.3	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1270	-	-	314	751	318	703	1203	-	-
HCM Lane V/C Ratio	0.012	-	-	0.103	0.016	0.045	0.011	0.03	-	-
HCM Control Delay (s)	7.9	-	-	17.8	9.9	16.9	10.2	8.1	-	-
HCM Lane LOS	A	-	-	C	A	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0.1	0	0.1	-	-

Intersection

Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	4	9	20	4	8	8	247	4	15	229	4
Future Vol, veh/h	28	4	9	20	4	8	8	247	4	15	229	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	4	10	22	4	9	9	274	4	17	254	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	589	584	254	589	584	274	258	0	0	278	0	0
Stage 1	288	288	-	292	292	-	-	-	-	-	-	-
Stage 2	301	296	-	297	292	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	420	423	785	420	423	765	1307	-	-	1285	-	-
Stage 1	720	674	-	716	671	-	-	-	-	-	-	-
Stage 2	708	668	-	712	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	405	415	785	405	415	765	1307	-	-	1285	-	-
Mov Cap-2 Maneuver	405	415	-	405	415	-	-	-	-	-	-	-
Stage 1	715	665	-	711	666	-	-	-	-	-	-	-
Stage 2	690	663	-	689	662	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.6	13.3	0.2	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1307	-	-	406	785	407	765	1285	-	-
HCM Lane V/C Ratio	0.007	-	-	0.088	0.013	0.066	0.012	0.013	-	-
HCM Control Delay (s)	7.8	-	-	14.7	9.6	14.5	9.8	7.8	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	4	11	9	4	7	14	364	15	33	304	4
Future Vol, veh/h	25	4	11	9	4	7	14	364	15	33	304	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	12	10	4	8	16	404	17	37	338	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	863	865	338	858	852	404	342	0	0	421	0	0
Stage 1	412	412	-	436	436	-	-	-	-	-	-	-
Stage 2	451	453	-	422	416	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	275	292	704	277	297	647	1217	-	-	1138	-	-
Stage 1	617	594	-	599	580	-	-	-	-	-	-	-
Stage 2	588	570	-	609	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	259	279	704	260	283	647	1217	-	-	1138	-	-
Mov Cap-2 Maneuver	259	279	-	260	283	-	-	-	-	-	-	-
Stage 1	609	574	-	591	572	-	-	-	-	-	-	-
Stage 2	569	563	-	574	572	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.8	16.3	0.3	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1217	-	-	262	704	267	647	1138	-	-
HCM Lane V/C Ratio	0.013	-	-	0.123	0.017	0.054	0.012	0.032	-	-
HCM Control Delay (s)	8	-	-	20.7	10.2	19.3	10.6	8.3	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0.2	0	0.1	-	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	4	10	22	4	9	9	225	4	16	183	4
Future Vol, veh/h	30	4	10	22	4	9	9	225	4	16	183	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	4	11	24	4	10	10	250	4	18	203	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	518	513	203	519	513	250	207	0	0	254	0	0
Stage 1	239	239	-	270	270	-	-	-	-	-	-	-
Stage 2	279	274	-	249	243	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	468	465	838	467	465	789	1364	-	-	1311	-	-
Stage 1	764	708	-	736	686	-	-	-	-	-	-	-
Stage 2	728	683	-	755	705	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	451	455	838	450	455	789	1364	-	-	1311	-	-
Mov Cap-2 Maneuver	451	455	-	450	455	-	-	-	-	-	-	-
Stage 1	759	698	-	731	681	-	-	-	-	-	-	-
Stage 2	709	678	-	730	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	12.5	0.3	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1364	-	-	451	838	451	789	1311	-	-
HCM Lane V/C Ratio	0.007	-	-	0.084	0.013	0.064	0.013	0.014	-	-
HCM Control Delay (s)	7.7	-	-	13.7	9.4	13.5	9.6	7.8	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	4	11	10	4	8	15	330	16	35	280	4
Future Vol, veh/h	27	4	11	10	4	8	15	330	16	35	280	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	50	125	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	4	12	11	4	9	17	367	18	39	311	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	806	808	311	800	794	367	315	0	0	385	0	0
Stage 1	389	389	-	401	401	-	-	-	-	-	-	-
Stage 2	417	419	-	399	393	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	300	315	729	303	321	678	1245	-	-	1173	-	-
Stage 1	635	608	-	626	601	-	-	-	-	-	-	-
Stage 2	613	590	-	627	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	282	300	729	284	306	678	1245	-	-	1173	-	-
Mov Cap-2 Maneuver	282	300	-	284	306	-	-	-	-	-	-	-
Stage 1	626	588	-	617	593	-	-	-	-	-	-	-
Stage 2	592	582	-	591	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	15.3	0.3	0.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1245	-	-	284	729	290	678	1173	-	-
HCM Lane V/C Ratio	0.013	-	-	0.121	0.017	0.054	0.013	0.033	-	-
HCM Control Delay (s)	7.9	-	-	19.4	10	18.1	10.4	8.2	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0.2	0	0.1	-	-

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	4	10	22	4	9	9	632	4	16	793	4
Future Vol, veh/h	30	4	10	22	4	9	9	632	4	16	793	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	4	11	24	4	10	10	702	4	18	881	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1292	1645	443	1203	1645	353	885	0	0	706	0	0
Stage 1	919	919	-	724	724	-	-	-	-	-	-	-
Stage 2	373	726	-	479	921	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	120	99	562	140	99	643	760	-	-	888	-	-
Stage 1	292	348	-	383	429	-	-	-	-	-	-	-
Stage 2	620	428	-	537	347	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	111	96	562	129	96	643	760	-	-	888	-	-
Mov Cap-2 Maneuver	111	96	-	129	96	-	-	-	-	-	-	-
Stage 1	288	341	-	378	423	-	-	-	-	-	-	-
Stage 2	596	422	-	509	340	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	44.8	34.7	0.1	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	760	-	-	109	562	123	643	888	-	-
HCM Lane V/C Ratio	0.013	-	-	0.347	0.02	0.235	0.016	0.02	-	-
HCM Control Delay (s)	9.8	-	-	54.6	11.5	43	10.7	9.1	-	-
HCM Lane LOS	A	-	-	F	B	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0.1	0.9	0	0.1	-	-

Intersection

Int Delay, s/veh 5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	4	11	10	4	8	15	1103	16	35	945	4
Future Vol, veh/h	27	4	11	10	4	8	15	1103	16	35	945	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	100	150	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	4	12	11	4	9	17	1226	18	39	1050	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1779	2408	527	1874	2401	622	1054	0	0	1244	0	0
Stage 1	1130	1130	-	1269	1269	-	-	-	-	-	-	-
Stage 2	649	1278	-	605	1132	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	52	33	496	44	33	430	656	-	-	555	-	-
Stage 1	217	277	-	178	238	-	-	-	-	-	-	-
Stage 2	425	235	-	451	276	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	42	30	496	35	30	430	656	-	-	555	-	-
Mov Cap-2 Maneuver	42	30	-	35	30	-	-	-	-	-	-	-
Stage 1	211	258	-	173	232	-	-	-	-	-	-	-
Stage 2	398	229	-	402	257	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	190.1	124.7	0.1	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	656	-	-	40	496	33	430	555	-	-
HCM Lane V/C Ratio	0.025	-	-	0.861	0.025	0.471	0.021	0.07	-	-
HCM Control Delay (s)	10.6	-	-	253.1	12.4	188.3	13.5	12	-	-
HCM Lane LOS	B	-	-	F	B	F	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.3	0.1	1.6	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	39	218	59	59	199
Future Vol, veh/h	40	39	218	59	59	199
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	43	242	66	66	221

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	628	275	0	0	308	0
Stage 1	275	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	447	764	-	-	1253	-
Stage 1	771	-	-	-	-	-
Stage 2	711	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	423	764	-	-	1253	-
Mov Cap-2 Maneuver	423	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	673	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	543	1253	-
HCM Lane V/C Ratio	-	-	0.162	0.052	-
HCM Control Delay (s)	-	-	12.9	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.2	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	75	318	60	58	266
Future Vol, veh/h	72	75	318	60	58	266
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	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	83	353	67	64	296

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	811	387	0	0	420	0
Stage 1	387	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	349	661	-	-	1139	-
Stage 1	686	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	329	661	-	-	1139	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.8	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	442	1139	-
HCM Lane V/C Ratio	-	-	0.37	0.057	-
HCM Control Delay (s)	-	-	17.8	8.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.2	-

MOVEMENT SUMMARY

Site: 1 [01 2030 Build AM (Site Folder: General)]

Kelly Road and Site Driveway
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Kelly Road														
179	L2	97	2.0	108	2.0	0.371	10.2	LOS B	1.8	47.0	0.69	0.74	0.80	21.4
300	T1	108	2.0	120	2.0	0.371	10.2	LOS B	1.8	47.0	0.69	0.74	0.80	20.1
59	R2	23	2.0	26	2.0	0.371	10.2	LOS B	1.8	47.0	0.69	0.74	0.80	20.9
Approach		228	2.0	253	2.0	0.371	10.2	LOS B	1.8	47.0	0.69	0.74	0.80	20.8
East: Site Driveway														
118	L2	14	2.0	16	2.0	0.146	7.7	LOS A	0.6	14.4	0.64	0.64	0.64	23.1
273	T1	26	2.0	29	2.0	0.146	7.7	LOS A	0.6	14.4	0.64	0.64	0.64	22.8
62	R2	39	2.0	43	2.0	0.146	7.7	LOS A	0.6	14.4	0.64	0.64	0.64	21.8
Approach		79	2.0	88	2.0	0.146	7.7	LOS A	0.6	14.4	0.64	0.64	0.64	22.4
North: Kelly Road														
49	L2	59	2.0	66	2.0	0.166	4.4	LOS A	0.7	18.3	0.30	0.17	0.30	24.2
466	T1	122	2.0	136	2.0	0.166	4.4	LOS A	0.7	18.3	0.30	0.17	0.30	23.1
258	R2	644	2.0	716	2.0	0.584	9.9	LOS A	4.4	111.2	0.48	0.31	0.48	20.3
Approach		825	2.0	917	2.0	0.584	8.7	LOS A	4.4	111.2	0.44	0.28	0.44	21.0
West: Site Driveway														
140	L2	497	2.0	552	2.0	0.648	12.5	LOS B	7.8	196.9	0.69	0.66	0.88	19.8
116	T1	36	2.0	40	2.0	0.648	12.5	LOS B	7.8	196.9	0.69	0.66	0.88	20.8
123	R2	97	2.0	108	2.0	0.648	12.5	LOS B	7.8	196.9	0.69	0.66	0.88	18.9
Approach		630	2.0	700	2.0	0.648	12.5	LOS B	7.8	196.9	0.69	0.66	0.88	19.7
All Vehicles		1762	2.0	1958	2.0	0.648	10.2	LOS B	7.8	196.9	0.57	0.49	0.65	20.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [02 2030 Build PM (Site Folder: General)]

Kelly Road and Site Driveway
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Kelly Road														
179	L2	120	2.0	133	2.0	0.695	25.0	LOS D	5.2	133.3	0.85	1.23	1.71	17.1
300	T1	172	2.0	191	2.0	0.695	25.0	LOS D	5.2	133.3	0.85	1.23	1.71	15.5
59	R2	27	2.0	30	2.0	0.695	25.0	LOS D	5.2	133.3	0.85	1.23	1.71	17.5
Approach		319	2.0	354	2.0	0.695	25.0	LOS D	5.2	133.3	0.85	1.23	1.71	16.3
East: Site Driveway														
118	L2	25	2.0	28	2.0	0.406	16.9	LOS C	1.8	45.5	0.79	0.91	1.09	20.3
273	T1	47	2.0	52	2.0	0.406	16.9	LOS C	1.8	45.5	0.79	0.91	1.09	20.3
62	R2	75	2.0	83	2.0	0.406	16.9	LOS C	1.8	45.5	0.79	0.91	1.09	19.1
Approach		147	2.0	163	2.0	0.406	16.9	LOS C	1.8	45.5	0.79	0.91	1.09	19.7
North: Kelly Road														
49	L2	58	2.0	64	2.0	0.203	5.0	LOS A	0.9	22.8	0.37	0.25	0.37	24.1
466	T1	151	2.0	168	2.0	0.203	5.0	LOS A	0.9	22.8	0.37	0.25	0.37	22.9
258	R2	757	2.0	841	2.0	0.718	14.0	LOS B	11.1	281.6	0.70	0.70	0.94	18.8
Approach		966	2.0	1073	2.0	0.718	12.1	LOS B	11.1	281.6	0.62	0.60	0.81	19.7
West: Site Driveway														
140	L2	887	2.0	986	2.0	1.183	109.2	LOS F	105.6	2681.3	1.00	4.15	5.79	7.5
116	T1	33	2.0	37	2.0	1.183	109.2	LOS F	105.6	2681.3	1.00	4.15	5.79	9.6
123	R2	179	2.0	199	2.0	1.183	109.2	LOS F	105.6	2681.3	1.00	4.15	5.79	7.6
Approach		1099	2.0	1221	2.0	1.183	109.2	LOS F	105.6	2681.3	1.00	4.15	5.79	7.6
All Vehicles		2531	2.0	2812	2.0	1.183	56.2	LOS F	105.6	2681.3	0.83	2.24	3.10	11.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	96	577	478	88	116	54
Future Vol, veh/h	96	577	478	88	116	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	250	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	641	531	98	129	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	629	0	-	0	1386	531
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	855	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	953	-	-	-	158	548
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	417	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	953	-	-	-	140	548
Mov Cap-2 Maneuver	-	-	-	-	140	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	417	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	84.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	953	-	-	-	140	548
HCM Lane V/C Ratio	0.112	-	-	-	0.921	0.109
HCM Control Delay (s)	9.3	-	-	-	117.6	12.4
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.4	-	-	-	6.3	0.4

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	111	489	610	175	101	137
Future Vol, veh/h	111	489	610	175	101	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	250	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	543	678	194	112	152

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	872	0	-	0	1467	678
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	789	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	773	-	-	-	141	452
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	448	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	773	-	-	-	119	452
Mov Cap-2 Maneuver	-	-	-	-	119	-
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	448	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	67.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	773	-	-	-	119	452
HCM Lane V/C Ratio	0.16	-	-	-	0.943	0.337
HCM Control Delay (s)	10.5	-	-	-	136.5	17
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	6.1	1.5

Intersection	
Int Delay, s/veh	76.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	112	903	753	103	136	63
Future Vol, veh/h	112	903	753	103	136	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	250	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	1003	837	114	151	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	951	0	-	0	2088	837
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	1251	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	722	-	-	-	~ 58	367
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	270	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	722	-	-	-	~ 48	367
Mov Cap-2 Maneuver	-	-	-	-	~ 48	-
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	270	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	$ 788.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	722	-	-	-	48	367
HCM Lane V/C Ratio	0.172	-	-	-	3.148	0.191
HCM Control Delay (s)	11	-	-	-	$ 1146.3	17.1
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.6	-	-	-	16.4	0.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	79.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	130	795	966	205	118	160
Future Vol, veh/h	130	795	966	205	118	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	250	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	144	883	1073	228	131	178

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1301	0	-	0	2244	1073
Stage 1	-	-	-	-	1073	-
Stage 2	-	-	-	-	1171	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	532	-	-	-	~ 46	268
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	295	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	532	-	-	-	~ 34	268
Mov Cap-2 Maneuver	-	-	-	-	~ 34	-
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	295	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	$ 671.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	532	-	-	-	34	268
HCM Lane V/C Ratio	0.272	-	-	-	3.856	0.663
HCM Control Delay (s)	14.3	-	-	-	$ 1526	41.4
HCM Lane LOS	B	-	-	-	F	E
HCM 95th %tile Q(veh)	1.1	-	-	-	15.3	4.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	122.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	130	903	753	144	164	75
Future Vol, veh/h	130	903	753	144	164	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	250	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	144	1003	837	160	182	83

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	997	0	-	0	2128	837
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	1291	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	694	-	-	-	~ 55	367
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	258	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	694	-	-	-	~ 44	367
Mov Cap-2 Maneuver	-	-	-	-	~ 44	-
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	258	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	$ 1104.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	694	-	-	-	44	367
HCM Lane V/C Ratio	0.208	-	-	-	4.141	0.227
HCM Control Delay (s)	11.5	-	-	-	$ 1601.1	17.7
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.8	-	-	-	20.6	0.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	162.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	143	795	966	236	159	178
Future Vol, veh/h	143	795	966	236	159	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	250	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	883	1073	262	177	198

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1335	0	-	0	2274	1073
Stage 1	-	-	-	-	1073	-
Stage 2	-	-	-	-	1201	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	517	-	-	-	~ 44	268
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	285	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	517	-	-	-	~ 30	268
Mov Cap-2 Maneuver	-	-	-	-	~ 30	-
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	285	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	$ 1186.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	517	-	-	-	30	268
HCM Lane V/C Ratio	0.307	-	-	-	5.889	0.738
HCM Control Delay (s)	15	-	-	-	$ 2461.1	48.6
HCM Lane LOS	C	-	-	-	F	E
HCM 95th %tile Q(veh)	1.3	-	-	-	21.4	5.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	134.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	121	1047	822	111	147	68
Future Vol, veh/h	121	1047	822	111	147	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	0	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	1163	913	123	163	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1036	0	-	0	2344	913
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	1431	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	671	-	-	-	~ 40	331
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	220	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	671	-	-	-	~ 32	331
Mov Cap-2 Maneuver	-	-	-	-	~ 32	-
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	220	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	$ 1438.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	671	-	-	-	32	331
HCM Lane V/C Ratio	0.2	-	-	-	5.104	0.228
HCM Control Delay (s)	11.7	-	-	-	$ 2095	19.1
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.7	-	-	-	19.6	0.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	156.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	140	889	1116	221	128	173
Future Vol, veh/h	140	889	1116	221	128	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	525	-	-	0	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	156	988	1240	246	142	192

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1486	0	-	0	2540	1240
Stage 1	-	-	-	-	1240	-
Stage 2	-	-	-	-	1300	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	452	-	-	-	~ 30	214
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	255	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	452	-	-	-	~ 20	214
Mov Cap-2 Maneuver	-	-	-	-	~ 20	-
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	255	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	$ 1379.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	452	-	-	-	20	214
HCM Lane V/C Ratio	0.344	-	-	-	7.111	0.898
HCM Control Delay (s)	17.1	-	-	-	$ 3130.5	84.5
HCM Lane LOS	C	-	-	-	F	F
HCM 95th %tile Q(veh)	1.5	-	-	-	18.2	7.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1478	1139	222	0	233
Future Vol, veh/h	0	1478	1139	222	0	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	225	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1642	1266	247	0	259

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	633
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	422
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	422
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	26.2
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	422
HCM Lane V/C Ratio	-	-	-	0.613
HCM Control Delay (s)	-	-	-	26.2
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	4

Intersection	
Int Delay, s/veh	16.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1558	1482	319	0	355
Future Vol, veh/h	0	1558	1482	319	0	355
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	225	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1731	1647	354	0	394

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	824
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	~ 316
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	~ 316
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	169.8
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	316
HCM Lane V/C Ratio	-	-	-	1.248
HCM Control Delay (s)	-	-	-	169.8
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	18

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

DRMP

ORIGINAL PUD APPROVAL PLAN AND REQUIREMENTS

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	S47°32'07"W	71.72
L2	S47°36'33"W	53.02
L3	S42°53'16"W	53.35
L4	S44°02'16"W	53.17
L5	S40°17'36"W	53.49
L6	S46°17'32"W	53.01
L7	S47°30'27"W	49.64
L8	S47°56'56"W	40.75
L9	S48°27'10"W	52.54
L10	S50°47'18"W	54.89
L11	S51°58'26"W	53.06
L12	S52°59'30"W	52.31
L13	S54°35'42"W	56.50
L14	S54°30'47"W	21.84
L15	S56°34'32"W	95.13
L16	S57°15'06"W	90.66
L17	N04°40'34"E	50.00
L21	S24°56'58"E	73.12
L22	S20°40'01"E	79.58
L23	S20°30'01"E	60.12
L24	S30°30'44"E	44.59
L25	S30°44'34"E	108.36

PHASING NOTES

1. THE PROPERTY WILL BE DEVELOPED IN UP TO 10 PHASES. THE TIMING AND AMOUNT OF PHASES WILL BE DEFINED AT THE TIME OF SITE PLAN REVIEW.

2. ACCESS POINTS ARE PRELIMINARY IN NATURE AND SUBJECT TO TOWN OF APEX AND NCDOT REVIEW AT TIME OF SITE PLAN REVIEW.

3. LIMITS OF LAND DISTURBANCE WITHIN EACH PHASE TO BE FINALIZED AT SITE PLAN PHASE.

4. PUBLIC UTILITIES SHALL BE PROVIDED FOR EACH PHASE.

5. ROADWAY PHASING – PRIOR TO TIME OF THE FIFTY-FIRST PLATTED LOT ASSOCIATED WITH THE RESIDENTIAL LOCATED OFF OF OLD US HWY 1, THE SECOND POINT OF ACCESS (SOUTHERNMOST PORTION OF STREET 'A'), NECESSARY PORTION OF THE SOUTHERNMOST ROUNDABOUT AND STREET 'B' SHOWN SHALL BE CONSTRUCTED. AS A PART OF THE NON-RESIDENTIAL DEVELOPMENT IN POD 3, THE ROUNDABOUT PROPOSED ON KELLY ROAD SHALL BE CONSTRUCTED ALONG WITH THE PORTION OF STREET 'A' TYING BACK TO THE SOUTHERNMOST ROUNDABOUT. PRIOR TO TIME OF THE FIRST CERTIFICATE OF OCCUPANCY FOR ANY COMMERCIAL WITHIN POD 3, STREET 'A' WILL BE FULLY CONSTRUCTED, CONNECTING KELLY ROAD TO OLD US HWY 1.

SITE NOTES

1. REFER TO PUD DOCUMENT FOR A COMPLETE LIST OF ALLOWABLE USES FOR EACH TRACT OR DEVELOPMENT AREA.

2. NO SITE DEVELOPMENT ACTIVITY INCLUDING BUT NOT LIMITED TO TESTING, CLEARING, INSTALLATION OF SIMC MEASURES, OR GRADING, SHALL OCCUR UNTIL REQUIRED PROTECTION FENCING HAS BEEN INSTALLED AND INSPECTED. A PROTECTION FENCING INSTALLATION PERMIT MAY BE OBTAINED AT THE PLANNING DEPARTMENT OR BY CALLING 919-249-3426.

3. PROTECTION FENCING MUST BE PLACED AWAY FROM ANY SAVED TREE ONE FOOT FOR EACH INCH OF TREE CALIPER. PROTECTION FENCING MUST BE PLACED AT LEAST 10 FEET AWAY FROM ANY OTHER DESIGNATED RESOURCE CONSERVATION AREA, SUCH AS, BUT NOT LIMITED TO, HISTORIC BUILDINGS AND STRUCTURES, WETLANDS, AND PONDS. PROTECTION FENCING MUST BE PLACED ALONG THE OUTSIDE LINE OF THE 100-YEAR FLOODPLAIN, AND THE OUTSIDE EDGE OF ANY RIPARIAN BUFFER. ADDITIONAL PROTECTION FENCING MAY BE REQUIRED IN OTHER LOCATIONS CLOSE TO CONSTRUCTION ACTIVITY WHERE IT IS DEEMED NECESSARY BY THE ZONING ENFORCEMENT OFFICER; SUCH AREAS MAY INCLUDE BUT ARE NOT LIMITED TO, COMMON PROPERTY LINES OR NEAR PUBLIC AREAS (SIDEWALKS, ETC).

4. ALL GRADING AND SUPPORT STRUCTURES ASSOCIATED WITH ANY RETAINING STRUCTURE SHALL NOT ENCROACH INTO ANY REQUIRED BUFFER OR PROTECTED AREA (SUCH AS, BUT NOT LIMITED TO, RCA AND CRITICAL ROOT ZONES OF TREES, PUBLIC UTILITY EASEMENTS, AND RIGHTS-OF-WAY), AND SHALL BE CONTAINED ENTIRELY ON SITE.

5. SITE ELEMENTS REQUIRED TO SATISFY RECREATIONAL REQUIREMENTS SUCH AS, BUT NOT LIMITED TO, PLAY FIELDS AND GREENWAY TRAILS AND ITEMS TYPICALLY ASSOCIATED WITH THEM (BENCHES, TRASH CONTAINERS, SIGNS, ETC.) MUST MEET ANY APPLICABLE STANDARDS FOUND IN THE TOWN OF APEX STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS AND THE REQUIREMENTS OF THE TOWN OF APEX PARKS AND RECREATION DEPARTMENT.

6. THE SCREENING OF TRASH CONTAINERS (INCLUDING DUMPSTERS AND ROLL-OUT CARTS), OUTDOOR STORAGE, MECHANICAL AND HVAC EQUIPMENT, AND SIMILAR FACILITIES ON THE ROOF, ON THE GROUND, OR ON BUILDINGS SHALL MEET THE REQUIREMENTS FOUND IN SECTION 8.2.8 OF THE UNIFIED DEVELOPMENT ORDINANCE; SPECIFICALLY SCREENING MUST BE DONE SO THAT:

A. IT IS INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND LANDSCAPE.

B. SCREENING MATERIALS ARE NOT DIFFERENT FROM OR INFERIOR TO THE PRINCIPAL MATERIALS OF THE BUILDING OR LANDSCAPE AND ARE SIMILAR IN MATERIALS AND COLOR.

C. SCREENED ITEMS ARE OUT OF VIEW FROM ADJACENT PROPERTIES AND PUBLIC STREETS, AND A TOTALLY OPAQUE SCREEN IS ACHIEVED.

D. ANY GROUND-MOUNTED HVAC OR OTHER MECHANICAL OR UTILITY EQUIPMENT SIX-FEET TALL OR HIGHER MUST BE FENCED AND LANDSCAPED.

E. DUMPSTER ENCLOSURES MUST MEET THE ABOVE REQUIREMENTS PLUS THEY MUST BE AT LEAST EIGHT-FEET TALL OR THE HEIGHT OF THE DUMPSTER, WHICHEVER IS TALLER; AND BE BUILT OF MASONRY MATERIAL.

7. ALL REQUIRED SITE ELEMENTS SHOWN WITHIN A PARTICULAR PHASE MUST BE INSTALLED BEFORE A FINAL CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR ANY BUILDING WITHIN THAT PHASE.

8. SITE ITEMS SUCH AS BUT NOT LIMITED TO, LIGHTING, LANDSCAPING (INCLUDING MULCH), SCREENING (i.e.: DUMPSTERS/TRASH, MECHANICAL/HVAC, ETC.), SITE STABILIZATION (SEEDING), AND PARKING AND PAVEMENT MARKING MUST BE COMPLETED PRIOR TO SCHEDULING A FINAL SITE INSPECTION.

9. NO SIGNS ARE APPROVED AS PART OF THE PUD-CZ PLAN APPROVAL. A SEPARATE SIGN PERMIT MUST BE OBTAINED. SIGNAGE WILL COMPLY WITH APEX'S UDO.

10. EXACT ACCESS AND STUB LOCATIONS TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

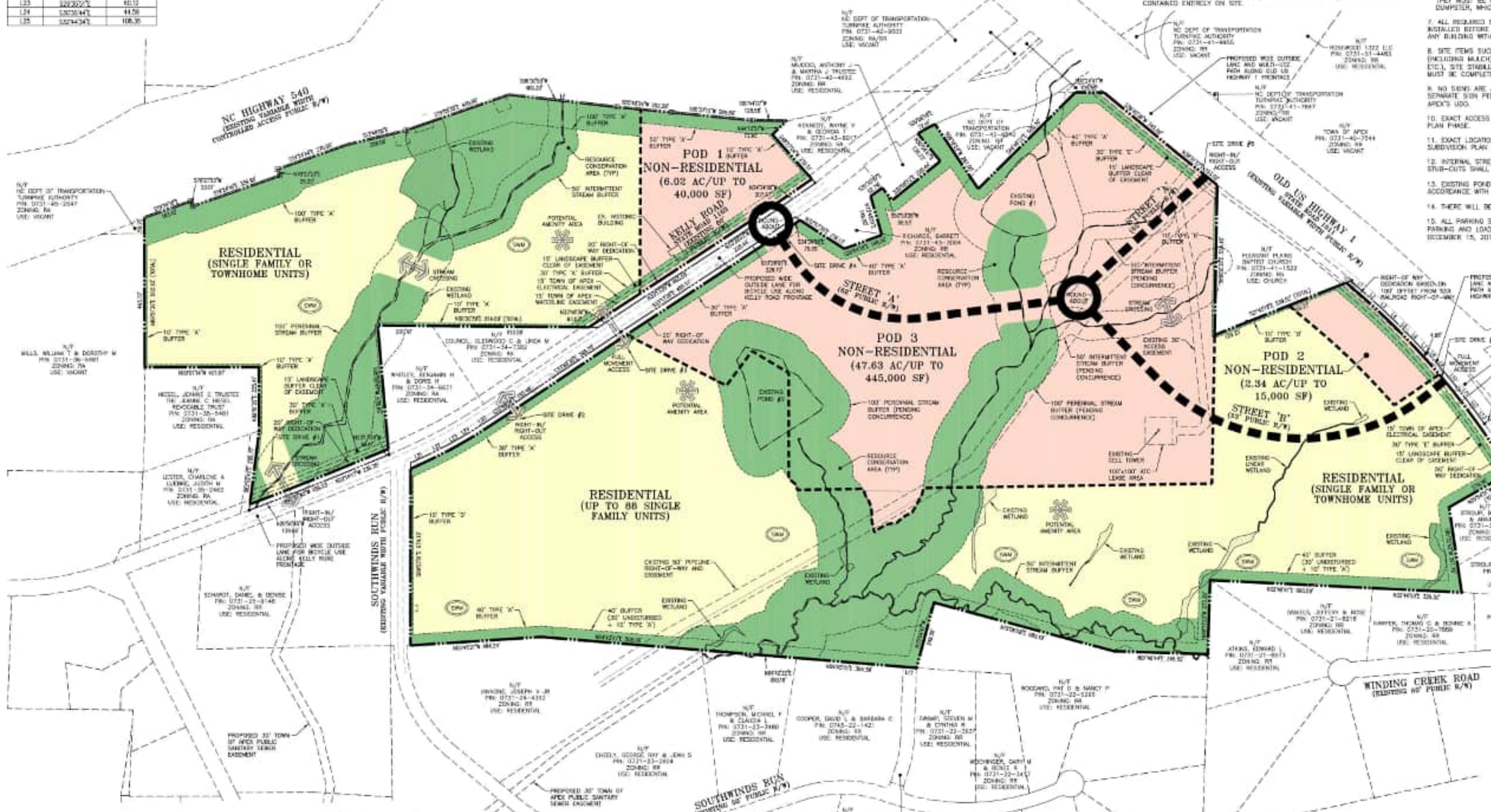
11. EXACT LOCATION OF RESOURCE CONSERVATION AREA TO BE FINALIZED AT SUBDIVISION PLAN PHASE.

12. INTERNAL STREETS SHALL BE DEDICATED TO THE TOWN OF APEX. ROAD STUB-OUTS SHALL BE PROVIDED PER TOWN OF APEX REQUIREMENTS.

13. EXISTING PONDS #1 & 2 MAY BE DRAINED AT A LATER DATE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.

14. THERE WILL BE NO RESIDENTIAL DRIVEWAYS ON STREETS 'A' AND 'B'.

15. ALL PARKING STANDARDS WITHIN THE PUD WILL COMPLY WITH SECTION 8.3 PARKING AND LOADING, OF THE TOWN OF APEX'S UDO (EFFECTIVE DATE DECEMBER 15, 2015).

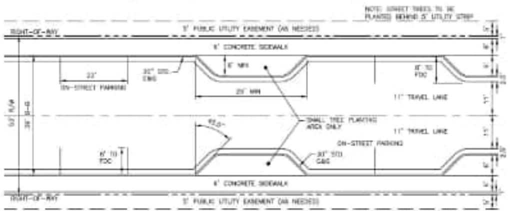


LEGEND

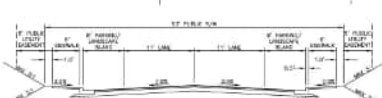
- NON-RESIDENTIAL USE
- RESIDENTIAL USE
- APPROXIMATE LOCATION OF RESOURCE CONSERVATION AREAS OR PLANTED BUFFERS
- VEHICULAR SITE ACCESS POINTS AND APPROXIMATE STREAM CROSSING LOCATIONS
- POSSIBLE LOCATION OF AMENITY AREA (1 TOTAL ON SITE)
- APPROXIMATE LOCATION OF STORMWATER MANAGEMENT FACILITY

NOTE: ALL ITEMS IN LEGEND OTHER THAN VEHICULAR SITE ACCESS POINTS ARE SHOWN CONCEPTUALLY. FINAL LOCATION OF AMENITIES, RCA, & STORMWATER MANAGEMENT FACILITIES WILL BE DETERMINED AT THE TIME OF SITE PLAN.

GRAPHIC SCALE
1 inch = 200 ft.



TYPICAL ON-STREET PARKING DETAIL
N.T.S.



TYPICAL SECTION (STREET 'B')
53' PUBLIC R/W, 39' B-B STREET
(TWO WAY WITH PARKING OR PLANTING AREA BOTH SIDES)
N.T.S.

TYPICAL SECTION (STREET 'A')
62' PUBLIC R/W, 38' B-B STREET
(TWO WAY WITH MIDDLE TURNING LANE)
N.T.S.

PRELIMINARY DRAWING — NOT RELEASED FOR CONSTRUCTION

THE JOHN R. McADAMS COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 • McAdamsCo.com
McADAMS

DEVELOPER:
STANLEY MARTINHOMES
4020 WESTCHASE BOULEVARD, SUITE 190
RALEIGH, NC 27607

WEST VILLAGE
KELLY ROAD & OLD US HIGHWAY 1
APEX, NORTH CAROLINA

PRELIMINARY LAYOUT & PHASING PLAN

PROJECT NO.	ORL-15000
FILENAME	ORL15000-S1
DESIGNED BY	RCZ
DRAWN BY	RLU
SCALE	1"=200'
DATE	05-01-2020
SHEET NO.	C-2

McADAMS

- **General Roadway Infrastructure:**

All proposed roadway infrastructure will be consistent with the Town of Apex UDO and Transportation Plan (updated in 2011), and the Traffic Impact Analysis approved by the Town of Apex and NCDOT. An internal road network will be provided in accordance with the Town's UDO. All road networks will promote connectivity wherever possible to adjacent neighborhoods, undeveloped property, nearby points of interest, and municipal destinations. Further, cul-de-sacs will be avoided except where environmental features make through streets unfeasible.

Roadway Phasing – Prior to time of the fifty-first certificate of occupancy associated with the residential located off of Old US HWY 1, the second point of access (southernmost portion of Street A), necessary portion of the southernmost roundabout and Street B shown shall be constructed. As a part of the non-residential development in Pod 3, the roundabout proposed on Kelly Road shall be constructed along with the portion of Street A tying back to the southernmost roundabout. Prior to time of the first certificate of occupancy associated with Pod 3, Street A will be complete the connection from Kelly Road and Old US HWY 1.

- **Off-Site Transportation Conditions:**

The project will also provide the following off-site transportation conditions:

All recommendations on state maintained roadways are subject to NCDOT review and approval as part of the driveway permits and encroachment agreements. Build 2018 refers to the first plat of residential development or as otherwise determined by Apex Town Council during the review and approval of subdivision plans. Build 2020 refers to the first plat of commercial development or as otherwise determined by Apex Town Council during the review and approval of commercial site plans. Internal Protected Storage Length (IPS) refers to the required minimum distance from the intersection along the proposed driveway or street before any full movement commercial driveway access or public street intersection will be allowed.

Developer shall provide right-of-way dedication along Kelly Road and Old US 1 based on a 100-foot right-of-way. Where Old US 1 abuts railroad right-of-way the developer shall be responsible for dedicating public right-of-way 70 feet from roadway centerline along the project frontage or as otherwise required to accommodate a 100-foot road right-of-way exclusive of railroad right-of-way.

Street 'A' and Street 'B' (including Kelly Road at Site Drive #4)

- Street 'A' shall be constructed as a 3-lane 38-foot curb and gutter street with 5-foot sidewalk on both sides on 62-foot public right-of-way.

- Street 'B' shall be constructed as a 2-lane 39'-foot curb and gutter street with on-street parking and 6-foot sidewalk on both sides on 53-foot public right-of-way.
- Residential driveway access shall not be permitted along Streets 'A' and 'B'.
- Prior to platting the 51st residential unit in the Residential area located adjacent to Old US 1, developer shall construct and dedicate as public Street 'A' from Site Drive #5 to the roundabout at Street 'B', roundabout serving Street 'A' at Street 'B', and Street 'B' from Site Drive #6/Pleasant Plains Road to the roundabout at Street 'A'.
- Prior to the first certificate of occupancy within POD 3, developer shall construct and dedicate as public Street 'A' from the roundabout at Street 'B' to Kelly Road at Site Drive #4 and construct a roundabout on Kelly Road at Site Drive #4. The roundabout will serve a 4-lane divided roadway to the north and 2-lane roadway to the south for Build 2020.

Kelly Road at Olive Chapel Road

- Developer shall construct a 200-foot eastbound right turn lane and a 300-foot additional westbound left turn lane on Olive Chapel Road (with southbound receiving through lane on Kelly Road) for Build 2020.

Kelly Road at Apex Barbecue Road

- Developer shall construct a 400-foot eastbound left turn lane, 350-foot westbound left turn lane, 350-foot northbound left turn lane, 150-foot northbound right turn lane, 350-foot southbound left turn lane, and 200-foot southbound right turn lane for Build 2020.

Kelly Road at Southwinds Run

- Developer shall construct a 100-foot northbound left turn lane on Kelly Road, an additional (second) northbound through lane through the intersection to drop as a right turn at Site Drive #1, and begin an additional (second) southbound through lane immediately south of Southwinds Run for Build 2020.

Old US 1 at Kelly Road

- Developer shall construct a 100-foot westbound right turn lane on Old US 1 for Build 2018.
- Developer shall convert the intersection to right-in/right-out as well as construct an additional westbound through lane, beginning at the NC 540 Southbound off-ramp as a free-flow right turn exiting the ramp, along with a 200-foot westbound right turn lane on Old US 1 for Build 2020.
- Prior to platting the 300th residential unit, the developer will complete a signal warrant analysis at the intersection of Old US 1 and Kelly Road to determine if a

traffic signal is warranted at the intersection. If the signal is warranted and approved for installation by NCDOT, the developer will permit and install the traffic signal. However, if Street "A" through POD 3 is under construction prior to installation of the signal, then the requirement for the signal shall be waived and the Kelly Road / Old US 1 intersection shall be converted to a Right-In/Right-Out as required in the improvements for the commercial development.

NC 540 Ramps at Old US 1

- Developer shall provide a free-flow right turn lane for the NC 540 Southbound off-ramp and additional receiving through lane continuing west to drop as a right turn at Site Drive #6 on Old US 1 for Build 2020.

Old US 1 at Pleasant Plains Road & Site Drive #6

- Developer shall construct Site Drive #6 with a through-right lane and a 200-foot left turn lane for Build 2018.
- Developer shall construct a 200-foot eastbound left turn lane and 200-foot westbound left turn lane on Old US 1 for Build 2018.
- Developer shall install a traffic signal once warranted and approved by NCDOT and install communication with the NC 540 traffic signals.
- Developer shall construct an additional westbound through lane on Old US 1 to drop as a right turn lane at Site Drive #6 for Build 2020.
- Developer shall construct an additional eastbound through lane on Old US 1 beginning 400 feet west of Site Drive #6 for Build 2020.

Kelly Road at Site Drive #1

- Developer shall construct Site Drive #1 as a right-in and right-out only providing 100 feet IPS and a 100-foot northbound right turn lane on Kelly Road for Build 2018.
- Developer shall construct an additional northbound through lane on Kelly Road to drop as a right turn lane at Site Drive #1 for Build 2020.

Kelly Road at Site Drive #2

- Developer shall construct Site Drive #2 as a right-in and right-out only providing 100 feet IPS for Build 2018.
- Developer shall construct an additional northbound through lane and an additional southbound through lane on Kelly Road at Site Drive #2 for Build 2020.

Kelly Road at Site Drive #3

- Developer shall construct Site Drive #3 with a 100-foot eastbound right turn lane and a 100-foot westbound right turn lane on the Site Drive #3 approaches adjacent to through-right lanes with 200 feet IPS for Build 2018.
- Developer shall construct 100-foot northbound and 100-foot southbound left turn lanes on Kelly Road for Build 2018.
- Developer shall construct an additional (second) southbound through lane and additional (second) northbound through lane on Kelly Road at Site Drive #3 for Build 2020.

Old US 1 at Site Drive #5

- Developer shall construct Site Drive #5 as a full-movement intersection with 200-foot dual southbound left turn lanes and a 200-foot southbound right turn lane providing 300 feet IPS providing connectivity to both the residential and commercial phases for Build 2020.
- Developer shall construct an additional (second) westbound through lane and add a 200-foot westbound right turn lane on Old US 1 for Build 2020.
- Developer shall construct a 300-foot eastbound left turn lane and an additional (second) eastbound through lane on Old US 1 dropping 1000 feet east of the intersection for Build 2020.

- **Electric Charging Stations:**
  Developer shall provide 2 charging stations, one within the residential and one within the non-residential for electric vehicles within the overall project. In addition to these committed stations, two additional charging stations will be installed as part of the overall project.

- **Water & Sewer Utilities:**
  All **water and sanitary sewer** service will be provided by the developer and conform to the Town of Apex Public Works and Utilities Department requirements. Preliminary location and tie in points are shown on sheet C-3 and C-4 of the PUD plans. The water extension shown along Kelly Road to Old US HWY 1, alternatively, could be located through Pod – 3 Commercial and southernmost residential accomplishing the intent of the routing shown on sheet C-3 and C-4. The ultimate routing will be dictated by timing of commercial development, roadway construction internal to the site and timing commitment related to the extension. However, this will be coordinated with the Town of Apex at time of site plan and construction documents.

TOWN OF APEX
POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

PUBLIC NOTIFICATION OF PUBLIC HEARINGS

CONDITIONAL ZONING #25CZ05
West Village PUD Amendment

Pursuant to the provisions of North Carolina General Statutes §160D-602 and to the Town of Apex Unified Development Ordinance (UDO) Section 2.2.11, notice is hereby given of public hearings before the Planning Board of the Town of Apex. The purpose of these hearings is to consider the following:

Applicants: Trilandco, LLC
Authorized Agent: Matthew Carpenter, Parker Poe & Adams & Bernstein LLP
Property Address: 2517 Kelly Road
Acreage: ±5.8591 acres
Property Identification Number (PIN): 0731434504
2045 Land Use Map Designation: High Density Residential/Office Employment/Commercial Services
Existing Zoning of Property: Planned Unit Development-Conditional Zoning (PUD-CZ #15CZ33)
Proposed Zoning of Property: Planned Unit Development-Conditional Zoning (PUD-CZ)

Public Hearing Location: Apex Town Hall
Council Chamber, 2nd Floor
73 Hunter Street, Apex, North Carolina

Planning Board Public Hearing Date and Time: May 12, 2025 4:30 PM

You may attend the meeting in person or view the meeting through the Town's YouTube livestream at: https://www.youtube.com/c/townofapexgov.

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the clerk of the Planning Board, Jeri Pederson (322 N. Mason Street or USPS mail - P.O. Box 250, Apex, NC 27502), at least two business days prior to the Planning Board vote. You must provide your name and address for the record. The written statements will be delivered to the Planning Board prior to their vote. Please include the Public Hearing name in the subject line.

A separate notice of the Town Council public hearing on this project will be mailed and posted in order to comply with State public notice requirements.

Vicinity Map:

Property owners, tenants, and neighborhood associations within 300 feet of the proposed conditional zoning have been sent this notice via first class mail. All interested parties may submit comments with respect to the application by the means specified above. In addition to the above map, the location of the property may be viewed online at https://maps.raleighnc.gov/imaps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-249-3426, Planning Department, with questions or for further information. To view the petition and related documents on-line: https://www.apexnc.org/DocumentCenter/View/49579/25CZ05.

Dianne F. Khin, AICP
Planning Director

Published Dates: April 28-May 12, 2025

Legal Notice of Public Hearings | AGENDA

apexnc.org/DocumentCenter/View/50450/25CZ05-PB-PN-combo?bidId=

Apex, NC - Official... | IDT | Planning Departme... | Real Estate Search | Unified Developme... | Applications & Sche... | WFM | Municode Meetings | Historic Map' | Chatham County La... | Apex Utility Distribu... | Imported From IE | Alphabetical Listing...

AGENDA

TOWN OF APEX
POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

PUBLIC NOTIFICATION
OF PUBLIC HEARINGS
CONDITIONAL ZONING #25CZ05
West Village PUD Amendment

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Dianne F. Khin, AICP
Planning Director

Published Dates: April 28-May 12, 2025

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELEFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ05
West Village PUD Amendment (Desarrollo de Unidad Planificada)

De conformidad con las disposiciones de los Estatutos Generales de Carolina del Norte §160D-602 y con la Sección 2.2.11 de la Ordenanza de Desarrollo Unificado (UDO) del ayuntamiento de Apex, por la presente se notifican las audiencias públicas ante la Junta de Planificación de Apex. El propósito de estas audiencias es considerar lo siguiente:

Solicitantes: Trilandco, LLC
Agente autorizado: Matthew Carpenter, Parker Poe & Adams & Bernstein LLP
Dirección de la propiedad: 2517 Kelly Road
Superficie: ±5.8591 acres
Números de identificación de la propiedad: 0731434504
Designación en el Mapa de Uso Territorial para 2045: High Density Residential/Office Employment/Commercial Services
Ordenamiento territorial existente de la propiedad: Planned Unit Development-Conditional Zoning (PUD-CZ #15CZ33)
Ordenamiento territorial propuesto para la propiedad: Planned Unit Development-Conditional Zoning (PUD-CZ)

63°F Sunny

9:53 AM
4/28/2025

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELÉFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS

ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ05
West Village PUD Amendment (Desarrollo de Unidad Planificada)

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Ordenamiento territorial propuesto para la propiedad: Planned Unit Development-Conditional Zoning (PUD-CZ)

Lugar de la audiencia pública: Ayuntamiento de Apex
Cámara del Consejo, 2º piso
73 Hunter Street, Apex, Carolina del Norte

Fecha y hora de la audiencia pública de la Junta de Planificación: 12 de mayo de 2025 4:30 P.M.

Puede asistir a la reunión de manera presencial o seguir la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la secretaría de la Junta de Planificación, Jeri Pederson (322 N. Mason Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la votación de la Junta de Planificación. Debe proporcionar su nombre y dirección para que conste en el registro. Las declaraciones escritas se entregarán a la Junta de Planificación antes de la votación. No olvide incluir el nombre de la audiencia pública en el asunto.

De conformidad con los requisitos estatales de notificaciones públicas, se enviará por correo y se publicará por separado una notificación de la audiencia pública del Consejo Municipal sobre este proyecto.

Mapa de las inmediaciones:

Los propietarios, inquilinos y asociaciones de vecinos en un radio de 300 pies del Ordenamiento Territorial Condicional propuesto han recibido esta notificación por correo postal de primera clase. Todas las partes interesadas pueden presentar comentarios sobre la solicitud a través de los medios especificados anteriormente. La ubicación de la propiedad también puede verse aquí: https://maps.raleighnc.gov/imaps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/478. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/49579/25CZ05.

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 28 de abril - 12 de mayo de 2025

Property owners, tenants, and neighborhood associations within 300 feet of the proposed conditional zoning have been sent this notice via first class mail. All interested parties may submit comments with respect to the application by the means specified above. In addition to the above map, the location of the property may be viewed online at https://maps.raleighnc.gov/imaps. The 2045 Land Use Map may be viewed online at www.apexnc.org/DocumentCenter/View/478. You may call 919-249-3426, Planning Department, with questions or for further information. To view the petition and related documents on-line: https://www.apexnc.org/DocumentCenter/View/49579/25CZ05

Dianne F. Khin, AICP
Planning Director

Published Dates: April 28-May 12, 2025

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELEFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ05
West Village PUD Amendment (Desarrollo de Unidad Planificada)

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Cámara del Consejo, 2º piso
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Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 28 de abril - 12 de mayo de 2025

TOWN OF APEX
POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

AFFIDAVIT CERTIFYING
Public Notification – Written (Mailed) Notice

Section 2.2.11
Town of Apex Unified Development Ordinance

Project Name:	Conditional Zoning # 25CZ05 West Village PUD Amendment
Project Location:	2517 Kelly Road
Authorized Agent:	Matthew Carpenter
Firm:	Parker Poe & Adams Bernstein LLP
Planning Board Public Hearing Date:	May 12, 2025
Project Planner:	Lauren Staudenmaier

This is to certify that I, as Planning Director, mailed or caused to have mailed by first class postage for the above mentioned project on April 28, 2025, a notice containing the time and place, location, nature and scope of the application, where additional information may be obtained, and the opportunity for interested parties to be heard, to the property owners and tenants within 300' of the land subject to notification. I further certify that I relied on information from the Wake County Tax Assessor and the Town of Apex Master Address Repository provided to me by Town of Apex GIS Staff as to accuracy of the list and accuracy of mailing addresses of property owners and tenants within 300' of the land subject to notification.

4/28/2025
Date

Planning Director

STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, LAUREN J SISSON, a Notary Public for the above State and County, this the 28th day of APRIL, 2025.

LAUREN J SISSON
Notary Public - North Carolina
Wake County
My Commission Expires Oct 3, 2027

SEAL

Notary Public

My Commission Expires: 10/03/2027

TOWN OF APEX
POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

PUBLIC NOTIFICATION OF PUBLIC HEARINGS

CONDITIONAL ZONING #25CZ05
West Village PUD Amendment

Pursuant to the provisions of North Carolina General Statutes §160D-602 and to the Town of Apex Unified Development Ordinance (UDO) Section 2.2.11, notice is hereby given of public hearings before the Town Council of the Town of Apex. The purpose of these hearings is to consider the following:

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Proposed Zoning of Property: Planned Unit Development-Conditional Zoning (PUD-CZ)

Public Hearing Location: Apex Town Hall
Council Chamber, 2nd Floor
73 Hunter Street, Apex, North Carolina

Comments received prior to the Planning Board public hearing will not be provided to the Town Council. Separate comments for the Town Council public hearing must be provided by the deadline specified below.

Town Council Public Hearing Date and Time: May 27, 2025 6:00 PM

You may attend the meeting in person or view the meeting through the Town's YouTube livestream at: https://www.youtube.com/c/townofapexgov.

If you are unable to attend, you may provide a written statement by email to public.hearing@apexnc.org, or submit it to the Office of the Town Clerk (73 Hunter Street or USPS mail - P.O. Box 250, Apex, NC 27502), at least two business days prior to the Town Council vote. You must provide your name and address for the record. The written statements will be delivered to the Town Council prior to their vote. Please include the Public Hearing name in the subject line.

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Dianne F. Khin, AICP
Planning Director

Published Dates: May 2-May 27, 2025

Legal Notice of Public Hearings | AGENDA

apexnc.org/DocumentCenter/View/50530/25CZ05-TC-PN-combo?bidId=

Apex, NC - Official... | IDT | Planning Departme... | Real Estate Search | Unified Developme... | Applications & Sche... | WFM | Municode Meetings | Historic Map'

AGENDA 1 / 2 33%

TOWN OF APEX
POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

PUBLIC NOTIFICATION OF PUBLIC HEARINGS
CONDITIONAL ZONING #25CZ05
West Village PUD Amendment

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Dianne F. Khin, AICP
Planning Director

Published Dates: May 2-May 27, 2025

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELEFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ05
West Village PUD Amendment (Desarrollo de Unidad Planificada)

72°F Sunny
9:52 AM 5/2/2025

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELÉFONO 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS

ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ05
West Village PUD Amendment (Desarrollo de Unidad Planificada)

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Ordenamiento territorial propuesto para la propiedad: Planned Unit Development-Conditional Zoning (PUD-CZ)

Lugar de la audiencia pública: Ayuntamiento de Apex
Cámara del Consejo, 2º piso
73 Hunter Street, Apex, Carolina del Norte

Los comentarios recibidos antes de la audiencia pública de la Junta de Planificación no se proporcionarán al Consejo Municipal. Los comentarios para la audiencia pública del Consejo Municipal deben presentarse por separado en el plazo especificado a continuación.

Fecha y hora de la audiencia pública del Consejo Municipal: 27 de mayo de 2025 6:00 P.M.

Puede asistir a la reunión de manera presencial o seguir la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la oficina del Secretario Municipal (73 Hunter Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la votación del Consejo Municipal. Debe proporcionar su nombre y dirección para que conste en el registro. Las declaraciones escritas se entregarán al Consejo Municipal antes de la votación. No olvide incluir el nombre de la audiencia pública en el asunto.

Mapa de las inmediaciones:

Los propietarios, inquilinos y asociaciones de vecinos en un radio de 300 pies del Ordenamiento Territorial Condicional propuesto han recibido esta notificación por correo postal de primera clase. Todas las partes interesadas pueden presentar comentarios sobre la solicitud a través de los medios especificados anteriormente. La ubicación de la propiedad también puede verse aquí: https://maps.raleighnc.gov/imaps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/478. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/49579/25CZ05.

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 2 de mayo - 27 de mayo de 2025

Legal Notice of Public Hearings | AGENDA

apexnc.org/DocumentCenter/View/50530/25CZ05-TC-PN-combo?bidId=

Apex, NC - Official... | IDT | Planning Departme... | Real Estate Search | Unified Developme... | Applications & Sche... | WFM | Municode Meetings | Historic Map'

AGENDA 2 / 2 33%

Published Dates: May 2-May 27, 2025

TOWN OF APEX
PO BOX 250
APEX, NORTH CAROLINA 27502
TELEPHONE 919-249-3426

NOTIFICACIÓN PÚBLICA DE AUDIENCIAS PÚBLICAS
ORDENAMIENTO TERRITORIAL CONDICIONAL #25CZ05
West Village PUD Amendment (Desarrollo de Unidad Planificada)

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Lugar de la audiencia pública: Ayuntamiento de Apex
Cámara del Consejo, 2º piso
73 Hunter Street, Apex, Carolina del Norte

Los comentarios recibidos antes de la audiencia pública de la Junta de Planificación no se proporcionarán al Consejo Municipal. Los comentarios para la audiencia pública del Consejo Municipal deben presentarse por separado en el plazo especificado a continuación.

Fecha y hora de la audiencia pública del Consejo Municipal: 27 de mayo de 2025 6:00 P.M.
Puede asistir a la reunión de manera presencial o seguir la transmisión en directo por YouTube a través del siguiente enlace: https://www.youtube.com/c/townofapexgov.

Si no puede asistir, puede enviar una declaración escrita por correo electrónico a public.hearing@apexnc.org, o presentarla a la oficina del Secretario Municipal (73 Hunter Street o por correo USPS a P.O. Box 250, Apex, NC 27502), al menos dos días hábiles antes de la votación del Consejo Municipal. Debe proporcionar su nombre y dirección para que conste en el registro. Las declaraciones escritas se entregarán al Consejo Municipal antes de la votación. No olvide incluir el nombre de la audiencia pública en el asunto.

Mapa de las inmediaciones:

Los propietarios, inquilinos y asociaciones de vecinos en un radio de 300 pies del Ordenamiento Territorial Condicional propuesto han recibido esta notificación por correo postal de primera clase. Todas las partes interesadas pueden presentar comentarios sobre la solicitud a través de los medios especificados anteriormente. La ubicación de la propiedad también puede verse aquí: https://maps.raleighnc.gov/zmaps. Puede ver el Mapa de Uso Territorial para 2045 aquí: www.apexnc.org/DocumentCenter/View/478. Si tiene preguntas o desea obtener más información, puede comunicarse con el Departamento de Planificación al 919-249-3426. Puede ver la solicitud y otros documentos relacionados aquí: https://www.apexnc.org/DocumentCenter/View/49579/25CZ05.

Dianne F. Khin, AICP
Directora de Planificación

Fechas de publicación: 2 de mayo - 27 de mayo de 2025

72°F Sunny
9:52 AM 5/2/2025

TOWN OF APEX
POST OFFICE BOX 250
APEX, NORTH CAROLINA 27502
PHONE 919-249-3426

AFFIDAVIT CERTIFYING
Public Notification – Written (Mailed) Notice

Section 2.2.11
Town of Apex Unified Development Ordinance

Project Name:	Conditional Zoning # 25CZ05 West Village PUD Amendment
Project Location:	2517 Kelly Road
Authorized Agent:	Matthew Carpenter
Firm:	Parker Poe
Town Council Public Hearing Date:	May 27, 2025
Project Planner:	Lauren Staudenmaier

This is to certify that I, as Planning Director, mailed or caused to have mailed by first class postage for the above mentioned project on May 2, 2025, a notice containing the time and place, location, nature and scope of the application, where additional information may be obtained, and the opportunity for interested parties to be heard, to the property owners and tenants within 300' of the land subject to notification. I further certify that I relied on information from the Wake County Tax Assessor and the Town of Apex Master Address Repository provided to me by Town of Apex GIS Staff as to accuracy of the list and accuracy of mailing addresses of property owners and tenants within 300' of the land subject to notification.

5/5/2025
Date

Planning Director

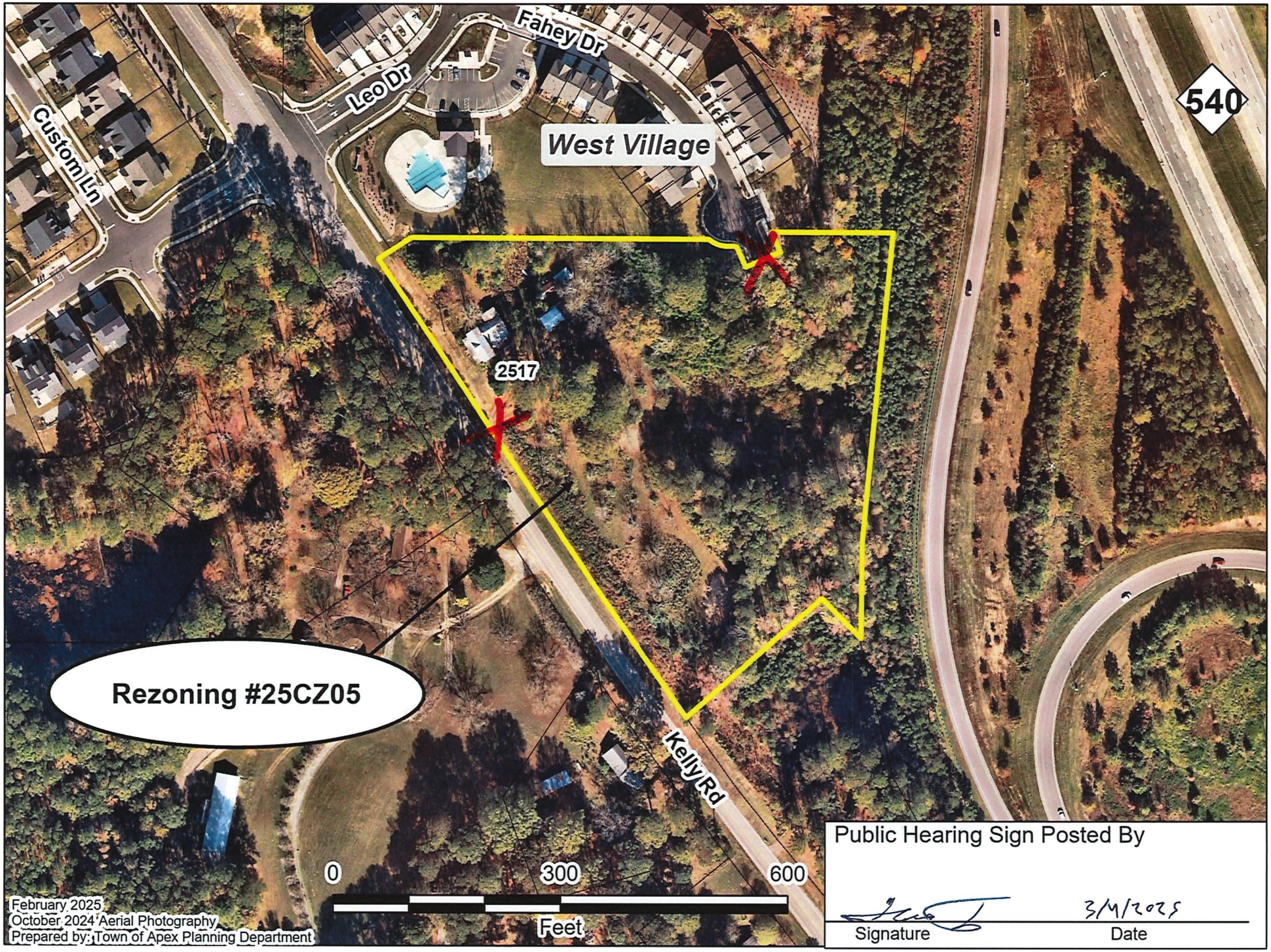
STATE OF NORTH CAROLINA
COUNTY OF WAKE

Sworn and subscribed before me, LAUREN J SISSON, a Notary Public for the above State and County, this the 5th day of May, 2025.

Notary Public

LAUREN J SISSON
Notary Public - North Carolina
Wake County
My Commission Expires Oct 3, 2027

My Commission Expires: 10/03/2027



Public Hearing Sign Posted By

Signature

3/4/2025

Date