ALBEMARLE COUNTY PLANNING
STAFF REPORT SUMMARY

Project Name: ZMA201900008 Parkway Place	**Staff:** Cameron Langille, Senior Planner
Planning Commission Hearing: March 10, 2020	**Board of Supervisors Public Hearing:** May 6, 2020
Owner: Thomas D & Clarence H. Wetsel	**Applicant**: Kotarides Developers, LLC
Acreage: 27.31 acres	**Rezone from:** R-4 Residential to PRD Planned Residential Development
TMP: 06100-00-00-16700 & 06100-00-00-167C0	**Location:** 878 E. Rio Road E., Charlottesville VA, 22901
School Districts: Agnor-Hurt – Elementary**,** Burley – Middle, and Albemarle – High	**By-right use**: Property zoned R-4 Residential – 4 dwelling units/acre
Magisterial District: Rio	**Proffers**: Yes
Proposal: Rezone 27.31 acres from R-4 Residential (4 units/acre) to PRD Planner Residential Development - residential (3 – 34 units/acre) with limited commercial uses. Up to 328 units are proposed with a gross density of up to 12.01 units/acre and a net density of up to 16.17 units/acre. Application includes proffers for road and transit improvements and dedication of land to public use for parks.	**Requested # of Dwelling Units:** 328 (maximum)
DA (Development Area): Neighborhood 2 – Places29	**Comp. Plan Designation:** Neighborhood Service Center – commercial, retail, and employment uses with supporting residential (3-20 units/acre); Urban Mixed Use (in Centers) – retail, residential, commercial, employment, office, institutional, and open space; Urban Density Residential – residential (6.01 – 34 units/ acre); supporting uses such as religious institutions, schools, commercial, office and service uses; Public Open Space – recreation and open space uses; and Privately Owned Open Space, Environmental Features – privately owned recreational amenities and open space; floodplains, steep slopes, wetlands, and other environmental features.
Character of Property: Primarily undeveloped fallow farmland with one single-family detached structure and several accessory structures previously used for agricultural purposes.	**Use of Surrounding Properties:** CATEC, Waldorf School, Dunlora Forest subdivision, John Warner Parkway Trail, and detached single-family homes.
Factors Favorable: 1. The rezoning request is consistent with the majority of the future land use recommendations within the Places29 Master Plan and Comprehensive Plan. The request is providing	**Factors Unfavorable:** 1. The request does not provide a complete mix of uses consistent with a Neighborhood Center as recommended by the Places29 Master Plan and Comprehensive Plan.

road improvements consistent with the Places29 Master Plan transportation recommendations. 2. The request is consistent with the majority of the applicable Neighborhood Model Principles. 3. The request will provide a new public park, trailhead, and outdoor recreational amenities. 4. The rezoning provides affordable rental housing that meets the housing policy within the Comprehensive Plan for a period of 10 years. 5. The request includes proffers for construction of a new transit stop with benches and shelters. 6. The request includes proffers for road improvements that will alleviate some of the current traffic issues along Rio Road E.	2. Even with the proffered road improvements, the request will result in increased delay times for some travel movements at nearby intersections which currently experience problems with congestion. 3. Board requested corridor study of Rio Road has not been funded/completed. 4. Ultimate improvement to nearby intersections have not been determined and/or funded for completion. 5. The properties are not located with a Priority Area as defined in the Comprehensive Plan/Places29 Master Plan.
RECOMMENDATION: Staff does not recommend approval of ZMA201900008 because the factors unfavorable outweigh the factors favorable.	

STAFF PERSON: Cameron Langille, Senior Planner
PLANNING COMMISSION: March 10, 2020
BOARD OF SUPERVISORS: May 6, 2020

PETITION:

PROJECT: ZMA201900008 Parkway Place
MAGISTERIAL DISTRICT: Rio
TAX MAP/PARCEL(S): 06100000016700, 061000000167C0
LOCATION: 878 E. Rio Road E.
PROPOSAL: Proposal to rezone two properties for up to 328 residential dwelling units
PETITION: Rezone a total of approximately 27.31 acres from the R-4 Zoning District, which allows residential uses at densities up to 4 units/acre to Planned Residential Development (PRD), which allows residential (3 – 34 units/acre) with limited commercial uses. A maximum of 328 multifamily residential units are proposed along with approximately 13 acres of both public and private open space at a net density of 16.17 units/acre, and a gross density of 12.01 units/acre. Request for a substitution of recreation facilities in accordance with 18-4.16.2.
ZONING: R-4 Residential - 4 units/acre
OVERLAY DISTRICT(S): AIA – Airport Impact Area Overlay, EC – Entrance Corridor, FH – Flood Hazard Overlay, Managed and Preserved Steep Slopes Steep Slopes
PROFFERS: Yes
COMPREHENSIVE PLAN: Neighborhood Service Center – commercial, retail, and employment uses with supporting residential (3-20 units/acre); Urban Mixed Use (in Centers) – retail, residential, commercial, employment, office, institutional, and open space; Urban Density Residential – residential (6.01 – 34 units/ acre); supporting uses such as religious institutions, schools, commercial, office and service uses; Public Open Space – recreation and open space uses; and Privately Owned Open Space, Environmental Features – privately owned recreational amenities and open space; floodplains, steep slopes, wetlands, and other environmental features in Neighborhood 2 of the Places29 Comprehensive Plan Area.

CHARACTER OF THE AREA

The proposal includes two Tax Map Parcels. The first parcel is identified as Tax Map Parcel (TMP) 61-167 and is located within the Neighborhood 2 Comprehensive Plan Area, which is part of the Places29 Development Area (Attachment 1).

TMP 61-167 measures 1.584 acres and is currently zoned R-4 Residential. The property is also located within the Airport Impact Area (AIA) Overlay Zoning District, and the Entrance Corridor (EC) Overlay Zoning District. TMP 61-167 is currently occupied by a two-story detached single-family residential structure with a finished square footage of approximately 1,300 sq. ft.

The second parcel is identified as TMP 61-167C and is located within the Neighborhood 2 Comprehensive Plan Area, which is part of the Places29 Development Area. TMP 61-167C measures 25.734 acres and is currently zoned R-4 Residential. The property is also located within the Airport Impact Area (AIA) Overlay Zoning District, and the Entrance Corridor (EC) Overlay Zoning District. Portions of the property are located within the Managed and Preserved Steep Slopes Overlay Districts, as well as a small area at the southwest corner of the property that is within the Flood Hazard (FH) Overlay Zoning District. TMP 61-167C contains mostly open fields with some areas covered by mature tree and shrub vegetation. There are eight (8) accessory structures on TMP 61-167C that have been used as agricultural outbuildings in the past. At the far southwest corner of the property there are areas located within a Water Protection Ordinance (WPO) stream buffer (Attachment 2).

The subject properties measure a combined 27.31 acres and have historically been used for agricultural purposes, commonly referred to as the Wetsel Farm.

Rio Road E. borders the subject properties to the east and north, and John Warner Parkway borders the property to the west and north. Land owned by the City of Charlottesville adjoins the subject parcels to the southwest. The City-owned land is part of the John Warner Parkway Trail. The trail continues into the subject properties within a dedicated public greenway easement that measures 5.890 acres. Across Rio Road E. and John Warner Parkway to the north is the Charlottesville Albemarle Technical Education Center. To the north, east, and south there are detached single family homes. Across Rio Road E. to the southeast is the Dunlora Forest subdivision, which features detached single-family homes, duplexes, and attached single-family homes. The Charlottesville Waldorf School is located immediately south of the subject properties (Attachment 2).

SPECIFICS OF THE PROPOSAL

Kotarides Developers, LLC is requesting approval of a Zoning Map Amendment (ZMA) application to rezone the properties from the R-4 Residential Zoning District to the Planned Residential Development (PRD) Zoning District with proffers. The purpose for the zoning change is to allow development of a multifamily residential apartment community which will be referred to hereafter as Parkway Place. The maximum number of dwelling units proposed is 328, for a net density of 16.17 du/acre and a gross density of 12.01 du/acre.

Since PRD is a Planned Zoning District, the application includes proffering an Application Plan which establishes the locations and standards for on-site improvements (Attachment 3). The applicant has also provided a written proffer statement (Attachment 4).

The Application Plan identifies where future buildings, vehicular travel ways, parking, stormwater management, open space, land proposed to be dedicated to public use, and outdoor recreation areas will be located (Attachment 3, Sheet 1). Development standards that would apply to the proposed PRD District, such as permitted uses, building heights, setbacks, architectural standards, landscaping/buffers, and affordable housing are listed as notes on Sheet 1A of the Application Plan.

Part of the Application Plan includes a detailed plan for road improvements within the Rio Road E. right-of-way (ROW) adjacent to the subject properties (Attachment 3, Sheet 2). This includes dedication of approximately 1.0 acre of land to public use in order to provide space to construct the physical improvements proposed within the ROW. The applicant is proposing to construct two major intersection improvements within the ROW. The Virginia Department of Transportation (VDOT) refers to the proposed designs as “Green T” intersections. One will be located at the intersection of Dunlora Drive/Rio Road E., and the other at the primary entrance to Parkway Place. Green T intersections eliminate the need for full traffic signals at the specific intersection because they provide a dedicated travel lane, referred to by VDOT as the “main line,” for through-traffic traveling past the intersection. A separate protected turn lane is provided that allows vehicles to make left turns off the main line on to an intersecting street. Other improvements include medians and curbing that separate the main lines from turn lanes. Additionally, the applicant is providing new acceleration lanes, merge lanes, and tapered right turn lanes at various points along the proposed road improvements. The purpose and goal of the road improvements is to allow ease of movement for vehicles traveling into and out of the Dunlora Subdivision, as well as vehicles entering and leaving Parkway Place. Per VDOT review of this proposal, the operations at the Dunlora Drive/Rio Road E. intersection will be improved.

The existing R-4 Zoning District allows for a range of residential dwelling types, including detached single family, two-family dwellings (duplexes), and attached single family (townhouses, triplexes, and quadruplexes) but multifamily apartments are not permitted either by-right or through Special Use

Permit. The permitted gross density in the R-4 Zoning District is 4 units/acre, which would allow for up to 109 dwelling units. However, if the properties were to be developed according to the cluster development option regulations specified in Section 18-15.5 of the Zoning Ordinance, density could be increased up to 6 units/acre, or 163 units.

Below is a table comparing the number of units, unit types, affordable housing requirements that would apply to a by-right development versus the Parkway Place proposal.

	By-right Zoning	Proposal Zoning	Change resulting from proposed Zoning
Dwelling Units	109/163*	328	219/165 additional units
Unit Types	Single Family Attached and detached units	Single Family Attached and detached units; multi-family/apartments	Multi-family/ apartments permitted
Affordable Housing	None required**	49 units	Assurance that affordable units will be provided

*under cluster development option
**affordable units could be provided under a cluster development option, but is not required

APPLICANT'S JUSTIFICATION FOR THE REQUEST

The applicant has provided a detailed request found in Attachment 5.

COMMUNITY MEETING

The applicants conducted a Community Meeting for ZMA201900008 in Lane Auditorium at the Albemarle County Office Building – McIntire on Thursday, July 18th, 2019 at 6:00pm. Approximately 75 members of the public were in attendance. Topics of discussion involving staff from the Albemarle County Department of Community Development, VDOT, the applicant and their representatives, and members included:

A. Questions and concerns about transportation impacts, including how traffic congestion will be mitigated at the intersections of Dunlora Drive/Rio Road E. and Rio Road E./John Warner Parkway. Currently, vehicles traveling north on Rio Road E. block the intersection at Dunlora Drive and physically prevent vehicles from making a left turn onto Rio Road E. southbound.

Applicants' answers: The Green T improvement called for within the Rio Road E. ROW will provide adequate space and stacking for all vehicle movements heading in both directions along Rio Road E., as well as for vehicles exiting Dunlora Drive heading in either direction. The TIA has a detailed analysis on how this design will enable traffic to flow more smoothly. This means that the level of congestion that currently backs up along Rio Road E. and blocks Dunlora Drive will be reduced and the blockages will be less frequent. Additional merge lanes will be installed to allow drivers exiting Dunlora Drive to have adequate space and time to merge into the continuous through travel lane heading south along Rio toward Charlottesville.

Furthermore, the proffers state that all proposed road improvements will be completed prior to obtaining the first building permit for residential structures in Parkway Place. This means that the infrastructure improvements will be fully completed before any new residents move in and add vehicles to the surrounding roadways.

B. Questions about the magnitude of the traffic impacts at the intersection of Dunlora Forest Drive and Rio Road E.

Applicants' answers: A roundabout was evaluated as a potential way to mitigate perceived traffic congestion at this intersection. It was ultimately decided that the Green T proposed at the primary entrance to Parkway Place would provide enough stacking for vehicles entering the development, and even with up to 328 new units, vehicles would not back up as far as Dunlora Forest Drive and impede travel into and out of the Dunlora Forest neighborhood.

C. Questions and concerns about improvements proposed with Parkway Place and how they will affect the quality of life for residents of existing neighborhoods.

Applicants' answer: This project proposes dedication of a 1.1-acre public park that will include a trailhead for vehicle parking. All members of the public will be allowed access to this park and parking lot and will be able to enjoy the new trail connection that will lead down to the John Warner Parkway greenway that currently exists. This is a major benefit, because there are not easily accessible trailheads anywhere near the intersection of Rio Road E. and John Warner Parkway, which serves as a barrier for some citizens to access the existing trail system.

D. Questions about whether the proposal(s) includes adequate space for parking for residents and guests of Parkway Place.

Applicants' and staff answers: Yes, the Zoning Ordinance requires 1 guest parking space per every 4 dwelling units. Additionally, the site designers have determined that adequate space is available for the maximum possible amount of parking that would be required if the full 328 multifamily units get developed.

E. Questions about proposed building heights and privacy concerns for residential homes adjacent to Parkway Place.

Applicants' answer: The original proposal called for 4 story buildings within Parkway Place. Based on community feedback, the building heights have been reduced to 3 stories, with a maximum height of 45 feet total. Additionally, the Application Plan has notes stating that "for each story that begins above 40 feet in height of for each story above the third story, the minimum stepback shall be 15 feet." Given the distance of existing homes across Rio Road E. from the proposed building envelopes in parkway Place, dwelling units on the third story would not be situated high enough to provide an angle of sight down into the backyards of those adjacent residential structures.

F. Questions about interconnections to adjacent properties such as the Charlottesville Waldorf School.

Applicants' answers: The Application Plan provides an interconnection on the south side of Parkway Place to TMP 61-167A, which is another property bordering the Waldorf School. Full interconnections further south to the Waldorf School property will be possible in the future if it redevelops.

Following the official community meeting, some members of the Places29-Rio drafted a resolution for the CAC to consider opposing ZMA201900008. This resolution was adopted by a 6:4 vote at the January 23, 2020 the Places29-Rio CAC meeting.

In addition to feedback received from community meeting attendees, staff have received numerous letters and email from members of the public regarding this request. All public feedback received

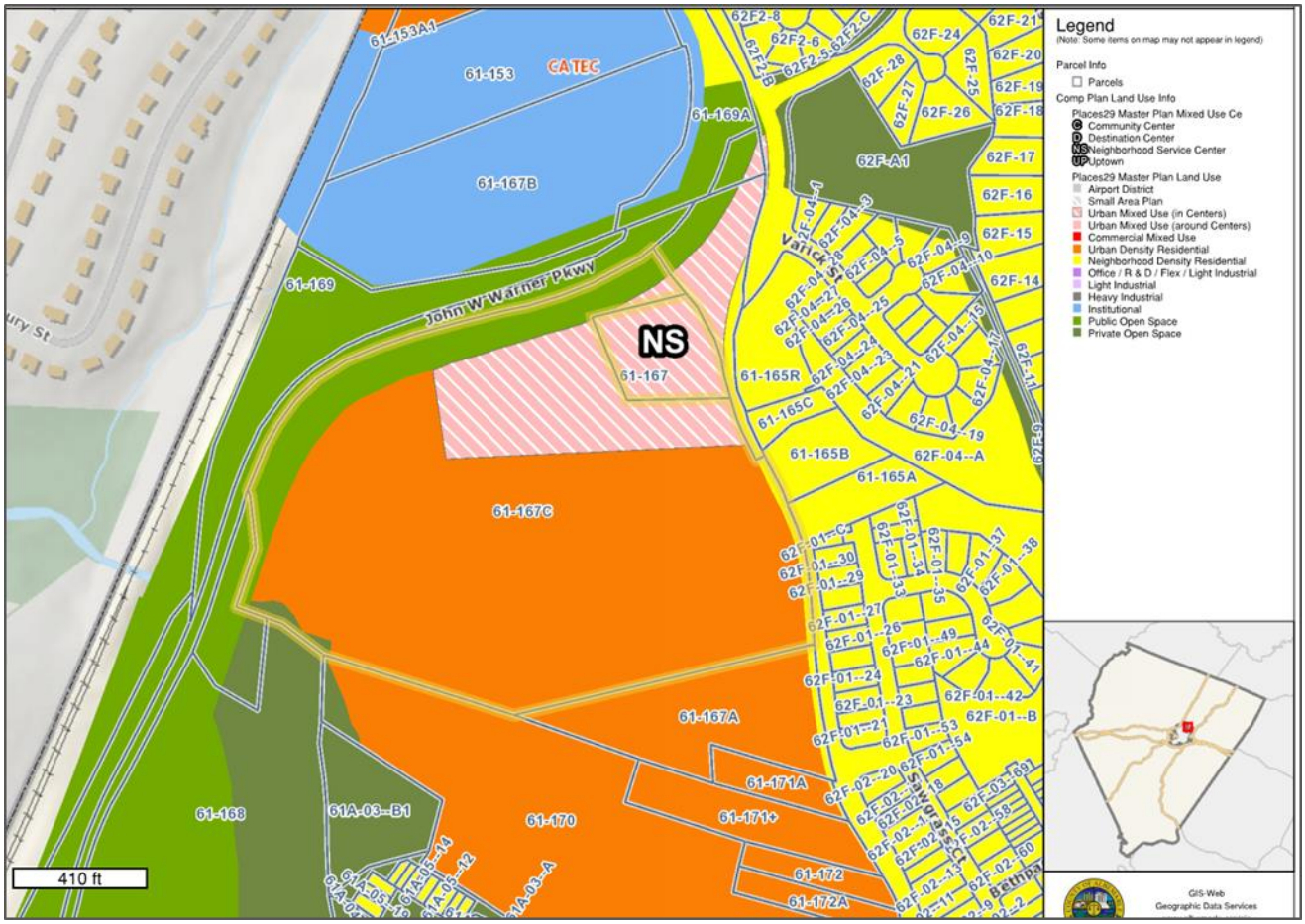
through March 3, 2020 and the Places29-Rio CAC resolution opposing the application have been compiled into a single document, Attachment 6.

PLANNING AND ZONING HISTORY

Other than plats that were recorded as part of the right-of-way dedication for the John Warner Parkway and greenway easements, there is no Planning or Zoning history for this parcel.

COMPREHENSIVE PLAN

The subject properties are located in Neighborhood 2 of the Places29 Master Plan. A description of each future land use classification and an overview map is provided below.



The Future Land Use Plan-South contained in the Places29 Master Plan designates TMP 61-167 as a **Neighborhood Service Center (NS)** with the future land use classification of **Urban Mixed Use (in Centers)**. The Urban Mixed Use designation is identified by the hatched pink color on the map. Below is a description of what types of uses and character/form should be provided in Neighborhood Service Centers and areas designated as Urban Mixed Use in Centers.

Neighborhood Service Centers:

- Provided in locations that recognize the availability of vacant or underutilized sites and the desire to distribute these Centers throughout the area to maximize their accessibility;

- Intended to serve residents who live in the areas around them;
- Allow development of a range of uses that would serve the surrounding neighborhood;
- Provide increased pedestrian and bicycle access to the everyday goods and services offered;
- Have a visual and physical relationship to major roads that makes them accessible to additional customers from outside the immediate neighborhood.

Urban Mixed Use (in Centers):

- Residential uses include single-family detached, single-family attached, and multifamily dwellings at gross densities between 3-20 du/acre, with maximum building heights of three (3) stories;
- Neighborhood retail and commercial service uses with building footprints up to 15,000 sq. ft., with maximum building heights of three (3) stories;
- Institutional uses with building footprints up to 15,000 sq. ft.;
- Office/R&D/Flex uses with maximum building footprints of 15,000 sq. ft., with varying building heights depending on the mixture of uses within individual structures;
- Open space that includes a minimum of one "small green park conveniently located" with a minimum size between ¼ and ½ acre;
- Each center must have a minimum of 10% usable open space.

The Future Land Use Plan-South calls for four future land use classifications across different portions of TMP 61-167C. Portions of TMP 61-167C are designated for **Urban Mixed Use (in Centers)** which has the same description as mentioned above. The other three land use classifications are as follows:

1. **Urban Density Residential** (identified by orange on map) - primary uses to consist of residential uses at gross densities between 6.01-34 dwelling units/acre. Secondary uses in this classification include supporting uses such as religious institutions, schools, commercial, office and service uses**;**
2. **Public Open Space** (identified by dark green on map) **-** allows for a range of public recreation and open space uses. This designation is only used in Centers and areas around Centers, and is intended to provide space and amenities for public activities**;**
3. **Privatively Owned Open Space, Environmental Features** (identified by light green on map) **-** includes open space that is owned and managed by private or semi-public entities, such as homeowners' associations, private homeowners, commercial or business park landowners, and others. These areas consist of recreational and passive open space amenities, and may include floodplains, steep slopes, wetlands, and other areas with environmental constraints.

Based on the recommended land use classifications and the net density analysis provided by the applicant as, the proposed minimum (104) and maximum (328) number dwelling units are consistent with the overall residential density recommendations specified by the Master Plan for this site (Attachment 7). The net density acreage available for development (20.28 acres) was calculated by subtracting the John Warner Parkway greenway acreage, areas designed as Parks & Green Systems future land use, and areas of Preserved Steep Slopes outside of the greenway/Parks & Green Systems. Using the acreage remaining in the UDR portions of the site (14.95 acres), the minimum and maximum number of dwelling units possible under Master Plan recommendations was determined to be a minimum of 89 units (6.01 units/acre) and maximum of 508 units (34 units/acre). Using the acreage in the NS and Urban Mixed Use portions of the site (5.33 acres) , the minimum and maximum number of dwelling units possible under Master Plan recommendations was determined to be a minimum of 15 units (3 units/acre) and maximum of 106 units (20 units/acre).

Therefore, the applicants proposed maximum number of units of 328 brings the site to a net density of 16.17 units/acre, approximately the mid-point of the 6-34 unit Urban Density Range and well below the maximum 614 units possible under the Master Plan recommendations. The proposal is inconsistent

with the Master Plan land use recommendations in that no non-residential uses are proposed in the Neighborhood Center, other than the trailhead park.

Page 4-18 of the Places29 Master Plan identifies the NS Center on the Wetsel properties as "The Meadow Creek Parkway" center and states that "*land uses shown on the Future Land Use Map in the immediate vicinity of the Parkway are derived from the Jones & Jones study, which still provides guidance for development in the area immediately adjacent to the Parkway and Rio Road E. corridor. The study recommendations should be considered during review of land use decisions."* The Jones & Jones study refers to this area as the "Rolling Uplands-Open" and identifies suitable uses on these properties and others in the immediate vicinity. Page 8 of the Jones & Jones study identifies the following general use categories as suitable in this area:

- Residential and commercial development;
- Park/open space; rural preservation;
- Transportation corridor.

Since the Places29 Master Plan and Jones & Jones study were adopted in 2011 and 2001, respectively, the John Warner Parkway has been constructed. The Meadow Creek Parkway referred to in both documents is the now existing John Warner Parkway. This road was built according to the alignment identified as "Alternative A" in the Jones & Jones study. A series of recommendations related to urban development patterns that should occur on properties along Rio Road E. and the John Warner Parkway are listed on page 18 of the Jones & Jones study. The most pertinent recommendations are as follows:

- *Discourage excessive linear-style development (strip development) along major roads; instead encourage compact communities with strong centers and clearly defined boundaries.*
- *Maintain the linear park atmosphere along the parkway, thus enhancing the overall value of future developments bordering the parkway.*
- *Create districts and neighborhoods that have centers or focal points for congregating. These centers may include parks, plazas, schools, community centers, or small commercial and social areas. Centers should be within easy walking distance for most residents in the neighborhood.*
- *Establish an ordered network of streets, bikeways, pedestrian paths, and transit routes that will connect new neighborhoods, existing residential areas and non-residential districts.*
- *Create appealing streetscapes and public spaces with street trees and landscaping to make the neighborhood inviting and to connect residential areas to each other as well as to commercial centers and common areas.*
- *Integrate development with open space and recreation opportunities, including the parkway, parks and natural areas, and pedestrian/bike paths. Connect to surrounding park and recreation amenities such as Pen Park and the proposed Rivanna river walk, as well as to other existing developed areas.*
- *Encourage new development that respects the existing landscape and that is compatible in scale, form, and character with the terrain features.*

Several maps and exhibits contained in the Jones & Jones study identify areas suitable for urban development vs. open space, parks, trails, etc. These drawings are very general and conceptual in nature. These drawings can be viewed on pages 19 and 22 of the study. The application plan and site layout proposed with ZMA201900008 is consistent with the following exhibits in the study: *Urban Development Pattern* on page 19, *Urban Development – Pedestrian Connections* on page 19, *Urban Development – Vehicular Connections* on page 19, and *Corridor Land Use Concept* on page 22.

Therefore, staff compared the Parkway Place application primarily with the recommendations contained in Chapter 8 of the Comprehensive Plan and the Places29 Master Plan. Where relevant, the Jones &

Jones study recommendations are incorporated into the analysis. See the Neighborhood Model analysis in Attachment 8 for additional information.

The Neighborhood Model: Staff has reviewed the proposal against the Neighborhood Model Principles and found that it is consistent with most of the principles. The detailed Neighborhood Model Analysis can be found in Attachment 8.

Affordable Housing: The applicant is providing 15% of the overall units (49 units) as affordable housing consistent with Strategy 6b of Chapter 9 of the Comprehensive Plan. Since Parkway Place will be rental units, the 49 affordable units must be maintained as rental units for a period of ten (10) years following the issuance of the certificate of occupancy for residential buildings. The Housing Planner has reviewed the proposal and has no objections.

ZONING ORDINANCE REQUIREMENTS

Relationship between the application and the intent and purposes of the requested zoning district:

The purpose and intent of the Planned Residential Development (PRD) zoning district is to:

- Encourage sensitivity toward the natural characteristics of the site and toward impact on the surrounding area in land development;
- Promote economical and efficient land use, an improved level of amenities, appropriate and harmonious physical development, and creative design consistent with the best interest of the county and the area in which it is located;
- Open space may serve such varied uses as recreation, protection of areas sensitive to development, buffering between dissimilar uses and preservation of agricultural activity
- Recommended to be employed in areas where the comprehensive plan recommends densities in excess of 15 dwelling units per acre, in recognition that development at such densities generally requires careful planning with respect to impact.

The PRD is intended to provide flexibility and variety of development for residential purposes and uses ancillary thereto. It should allow developments that are consistent with the goals of the Future Land Use Plans in the Master Plans and the Neighborhood Model Principles.

This application is consistent with a majority of the Neighborhood Model Principles, and most of the future land use recommendations from the Places29 Master Plan.

Anticipated impact on public facilities and services:

Streets:

Although Rio Road E. and John Warner Parkway border the subject properties, access into the site can only be provided via Rio Road E. This is because the John Warner Parkway greenway is between the developable portion of the site and John Warner Parkway.

One of the primary concerns expressed by members of the public with this project is additional traffic that will be generated. Residents were concerned about the already congested intersection of Belvedere Boulevard and Rio Road E., and the overall traffic on Rio Road E. and the John Warner Parkway. The applicant conducted a full Traffic Impact Analysis (TIA) for this project to evaluate impacts to adjacent roads and intersections (Attachment 11). Assuming all 328 units were developed, the traffic generation figures are as follows:

- AM Peak Hours, vehicles per hour – 31 entering, 87 exiting
- PM Peak Hours, vehicles per hour – 85 entering, 54 exiting
- Average Daily Traffic, vehicles per day – 1,786 total trips (893 entering, 893 exiting)

Utilizing VDOT's Access Management Design Standards for Entrances and Intersections, as well as trip generation figures from the TIA, the applicant determined where new entrances and intersections should be located along Rio Road E. to provide access into Parkway Place. This includes where right-turn taper lanes, and left turn lanes should be provided. The applicant determined that two access points are needed along Rio Road E. The entrance closest to the intersection between John Warner Parkway Place/Rio Road E. will be a right-in only. The second entrance will be a full access entrance with a left turn lane onto Rio Road E. heading westbound, and a right turn lane heading eastbound.

Further expanding on the TIA's findings, the proposed Green T intersections (essentially protected left-turn acceleration lanes to provide safety and improved operations) at Rio Road E./Dunlora Drive, and the primary full access entrance into Parkway Place were the appropriate solution to ease traffic congestion. This is based on the TIA's level of service summaries for these intersections.

The TIA also covers expected impacts to adjacent streets and intersections. This includes an evaluation for the existing traffic conditions and delay times for turn movements under the following scenarios:

- Existing conditions – current delay times (2018)
- No-build scenario (2023) - expected delay times should no development occur on the Wetsel property through 2023;
- Build conditions, by right (2023) – expected delay times should a by-right development occur on the Wetsel property between the present and 2023;
- Build conditions (2023) – expected delay times should Parkway Place be approved and proposed road improvements/328 dwelling units built between the present and 2023.

At the beginning of the TIA, there is an email attachment that was sent to staff by the applicant following conclusion of the last formal review of this application. The attachment compares traffic figures that would be generated under an R-4 by-right development scenario on the Wetsel properties, against the traffic figures that will result with the Parkway Place proposal and proposed road improvements. Staff has only conducted a cursory examination of these figures, but they indicate that a by-right development scenario would exacerbate traffic congestion and delay times to a much greater extent than Parkway Place because the Green T intersection improvements cannot be required to be installed with the "by-right" development of the properties.

The County is aware of traffic congestion and delay times experienced at the following intersections in the vicinity of the Wetsel properties: John Warner Parkway/Rio Road E., Belvedere Boulevard/Rio Road E., Dunlora Drive/Rio Road E., Pen Park Road/Rio Road E., Pen Park Lane/Rio Road E. In order to address traffic situations at these intersections and roadways, a request to conduct a transportation study for the Rio Road E. corridor has been submitted by staff to the Board of Supervisors. Funding for the study has not been allocated at this time. The request will go before the Board on March 4, 2020.

The following summary of impacts to streets from the proposal have been identified by VDOT, County Transportation Planning staff, and Planning staff:

Drawbacks:

1. As noted in the TIA, the proposed development <u>with noted improvements</u> will increase total intersection delay at John Warner Parkway/Rio Road E. intersection by 6.3% from 53.7 to 57.1 seconds compared to the "No Build AM Peak" scenario. At the "No Build PM Peak," the intersection delay increases by 7.5% from 59.9 to 64.4 seconds.
2. John Warner Parkway/Rio Road E. intersection is the worst operationally under the future build conditions with nearly all movements failing in both AM and PM peak.

a. Average delay increase in the AM is 3.4 seconds, and 4.5 seconds in the PM from no build to build alternatives. This will not result in a significant decrease in service at this intersection overall.
b. Movements impacted the most between no build and build are as follows: left turns from Rio Road E. East to John Warner Parkway in the AM with a 15 second increase: through movement from John Warner Parkway to Rio Road E. West in the PM with a 13 second increase. Both increases would be noticeable with long queues that exceed storage length making for driver frustrations.
c. All other travel movements at this intersection will have little to no change.

3. Per VDOT staff - Although the dual Green T concept appears to operate at acceptable levels of service for the side streets, the full roadway improvements plan must include evaluation of numerous design elements that are not shown on the Application Plan. It remains possible that this concept may not be feasible at this location.
4. A corridor study related to transportation improvements for this section of Rio Road E. and adjacent intersections has not yet been funded or completed. Some potential solutions to some intersections are under review; however, ideal solutions for the entire corridor have not yet been fully studied comprehensively. The proffered transportation improvements could best be evaluated in light of more comprehensive evaluation of the Rio Road corridor, where a series impacts and improvements in the area will be studied and ultimately agreed to by the Board.

Neutral:

1. Per VDOT staff - The existing signal poles are not shown on the conceptual roadway improvements drawing. If any signal infrastructure must be relocated, an approved signal modification plan will be required prior to construction permit issuance.
2. Left turns from Dunlora Forest Drive onto Rio Road E. will have not have noticeable increases in delay for left turns onto Rio Road E. at either peak AM or peak PM travel hours under the build conditions compared to the existing conditions. The time of delay increase expected under the build conditions compared to the no build (2023) and by-right (2023) scenarios, the delay increase is the same for peak AM and PM travel at 0.5 and 0.6 second increases, respectively.

Benefits:

1. Pending final review of complete road plans designed by a registered civil engineer, the dual Green T concept would greatly improve safety and operations at the intersection of Dunlora Drive and Rio Road E. The study claims improvements of up to 79% less delay in the AM peak and 65% in the PM peak for the westbound left movements on to Rio Road E., even with full buildout of the maximum 328 multifamily units proposed at Parkway Place.
2. The Application Plan and proffer statement include providing a new transit stop with benches and a shelter in the right-turn taper lane leading into Parkway Place. Charlottesville Albemarle Transit (CAT) staff have verified that this is an ideal and convenient location for providing a transit stop in the Places29 Development Area. The nearest stop for CAT buses heading south/east toward the City is approximately 1/4 mile to the north of Parkway Place. The new transit stop location will allow buses to pick up and drop off riders without disrupting through traffic heading east/south along Rio Road E. It may expand ridership in this area due to its proximity to existing neighborhoods which will further reduce vehicle usage on surrounding roads.
3. Assuming an average of 50/50 split share between local and state funding sources were to be utilized for constructing the proposed road improvement projects, the value offered in proffer #1b is generally consistent with the cost of the improvements that would otherwise be the responsibility of the developer.
4. Other road transportation improvements proposed with the application include a new 10' pedestrian and bicycle trail way along the frontage of Rio Road E. E. that will connect to the

existing trails along John Warner Parkway. This will further expand and enhance the bike/PED systems in the Rio Road E. and John Warner Parkway transportation corridors. This is consistent with the recommended cross section for Rio Road E. called for in the Places29 Master Plan (*Appendix 3: Roadway Cross Sections* from the Places29 Master Plan).

5. Albemarle County cannot require developers to construct virtually any road improvements (other than sidewalks and potentially right-turn taper lanes along Rio Road) if the Wetsel properties were to develop under a by-right use scenario. Traffic congestion would be greatly impacted even though less units would be constructed, as indicated by the TIA attachment. Under a by-right development scenario, the only solution for alleviating traffic congestion would be through approval of County-funded capital improvement projects, or some other form of public project such as a grant through VDOT's SmartScale program. If approved at all, it could take many years for such solutions to receive funding and be constructed after a by-right development occurs. This would result in a significantly worse level of operation along affected roads and intersections. Therefore, the proposed improvements offer a solution to some of the existing congestion and delays experienced in this area. Approval of a rezoning such as Parkway Place is the only way to require these improvements to be built by a private developer.

In summary, the proposed residential density is suitable at this location considering its proximity to the City of Charlottesville and location along a major transit route and well-developed bike route, will provide long-term benefits to transportation, addressing climate change, and regional housing affordability. However, some intersections/roads will still experience an increase in delay at peak AM/PM travel hours despite the proposed improvements. The County has not yet completed a study of the Rio Road corridor to identify the most suitable solutions to address these problems. Alternative road improvements may be identified in the future once the study has been completed. Those solutions could potentially be better for this location than the proposed dual Green T concept. Currently, such information is unknown.

Schools:
Students living in this area would attend Agnor-Hurt Elementary, Burley Middle School, and Albemarle High School. Albemarle County Public Schools have provided calculations that estimate how many students will be generated at each school level by housing type (Attachment 12). The table below specifies the yield of students generated at each school level should the subject property be built out to the maximum number of multifamily dwelling units proposed with the ZMA.

Official Calculator

Dwelling Type	**Elementary**	**Middle**	**High**	**Total**
Single-family detached	0.15 students/unit	0.08	0.12	0.35
Single-family attached (162 units)	0.13 (21)	0.05 (8)	0.08 (13)	0.26 (42)
Townhomes	0.15	0.06	0.08	0.29
Multifamily (328 units)	40	10	16	68

As stated in the project Narrative (Attachment 5, pages 8-9), the applicant sought additional information from ACPS about current enrollment for nearby multifamily developments with similar densities as what is proposed at Parkway Place. This includes the Reserve at Belvedere and Arden Place. The applicant developed alternate enrollment projections based on current enrollment at those neighborhoods, and the number of bedrooms proposed per multifamily unit in Parkway Place. As such, the projected enrollment based on the applicant's analysis is as follows:

Development	# units	Elementary	Middle	High	Total
Reserve at Belvedere	294	7	2	4	13
Arden Place	212	4	2	4	10
Parkway Place	328	6	5	7	18

The school system has provided annual estimates of student enrollment at all three schools over the next ten academic years. Under both the official ACPS calculations and the applicants revised analysis, only Albemarle High School is projected to exceed capacity. The Albemarle County Public Schools' 'Long Range Planning Advisory Committee Recommendations' (July 11, 2019) also recommends the following for the County's high schools: *"The Division has embarked upon a "center" based strategy to address capacity issues at its three comprehensive high schools, in particular at Albemarle High School. This agile approach addresses both instructional and capacity needs in an efficient manner. Long-term county population growth is forecast to grow by 44% over the next thirty years. That could yield another 1,800 high school students, roughly the size of the current AHS."*

Neither Agnor-Hurt or Burley would exceed capacity under either projection scenario. As the Places29 Master Plan is fully realized, growth must be closely monitored since Albemarle High schools does not have the long-term capacity to support additional residential growth expected in this part of the County. However, dedication of land for two new elementary schools are proffered commitments of other large developments in the Places29 Development Area. This includes a 7-acre site within Brookhill and a 12.85-acre site within North Pointe. The Brookhill development also has a proffer requiring dedication of an approximately 60-acre site along Berkmar Drive that could be used for a comprehensive public high school.

Fire & Rescue:
The proposal is not expected to create new demands on Fire and Rescue services. Two points of access along Rio Road E. are proposed. Fire and Rescue has not identified any issues with adequate access and water availability at this time, which will also be reviewed at the site planning stage and will have to meet Fire and Rescue requirements. Fire and Rescue has reviewed this rezoning application and has no objection to the proposal.

Utilities:
This project is in the Albemarle County Service Authority (ACSA) jurisdictional area for both water and sewer. ACSA did not identify any capacity issues with either utility. There is an existing 12" water line located along Rio Road E. adjacent to the property. The only concern expressed by ACSA staff is that water pressure is high in this area. This may require pressure reducing valve (PRV) installation on some water lines at the site plan stage. This is not a major issue that would affect safe development of the site or affect waterlines of adjacent properties.

Proposal Located Outside Priority Area:
The Implementation chapter of the Places29 Master Plan identifies three "Priority Areas" where significant public investments in infrastructure improvements should be made, and private development should be focused in those area. The Plan states that "while decisions on private development proposals (rezonings and special use permits) and public investments should not be based solely on these Priorities, in the absence of specific objective criteria, decisions on development proposals should be made with an understanding of where public investments are

focused. Focusing public investments creates efficiencies and ensures that infrastructure is in place when it is needed. County land use decisions should be consistent with the Priorities established in this Plan."

The Wetsel properties are not located within one of the three identified Priority Areas in the Place29 Master Plan. That said, some infrastructure improvements have been completed along the Rio Road E. corridor since the Master Plan was adopted. This includes construction and opening of the John Warner Parkway. Board review and potential endorsement of the Rio Road E. corridor transportation study mentioned earlier in the staff report is scheduled for March 4, 2020. The Planning Commission and Board have requested a study of the Rio Road Corridor to evaluate current and future conditions and identify improvements to address existing problematic areas and future transportation related issues.

Anticipated impact on environmental, cultural and historic resources:

There are no known cultural or historic resources on the subject properties.

Areas of Preserved Steep Slopes near Meadow Creek have been removed from the net density acreage of this development because the applicant is complying with the definition of "green systems" from the Comprehensive Plan, Chapter 11 *Parks and Recreation, Greenways, Blueways, and Green Systems*, as well as Strategy 8C from Chapter 8 The Development Areas. Any sensitive environmental features meeting the definition of "green systems" from Chapter 11 have been subtracted from the net acreage available for development, which is consistent with Strategy 8C of the Comprehensive Plan. 100-year floodplain areas, WPO stream buffers, and Preserved Steep Slopes have minimal amounts of land disturbances other than minor grading associated with utility installation.

Stormwater management will be reviewed by County Engineering staff during the site planning stage of the project. Stormwater facilities will be designed in accordance with the Virginia Stormwater Management Program (VSMP) regulations administered by the Virginia Department of Environmental Quality (DEQ).

Anticipated impact on nearby and surrounding properties:

County staff have received a number of comments from members of the public regarding concerns with aspects of this application. These issues are summarized below, with staff comments in italics.

- Additional traffic with further strain key intersections adjacent to the development. This includes John Warner Parkway/Rio Road E., Dunlora Drive/Rio Road E., and Dunlora Forest Drive/Rio Road. E.

County staff and engineers with VDOT have reviewed the TIA and the proposed road improvements. The findings indicate that even with the amount of vehicles entering and exiting Parkway Place, the delay times at the intersection of Dunlora Drive and Rio Road E. will be greatly improved when compared to the existing conditions (2018) and the no-build scenario projections (2023). The findings indicate that this is particularly true for left turn movements from Rio Road onto Dunlora Drive.

Delay times at John Warner Parkway/Rio Road E. will experience a delay increase at Peak AM and PM travel hours. It should be noted that this increase is only 3.4 total seconds in the AM and 4.5 seconds in the PM when compared to the no-build scenario projections (2023).

Delay times at Dunlora Forest Drive/Rio Road E. will increase even with the proposed road improvements. However, the largest increase for any turn movement from Dunlora Forest Drive

onto Rio Road E. at either peak AM/PM hours is 2.8 seconds when compared to the no-build scenario (2023). A corridor study will be conducted by County staff in the future to identify strategies to enhance travel time along Rio Road and this will include the intersection of Dunlora Forest Drive/Rio Road E.

- The proposed building heights are incompatible with surrounding developments and should be reduced to two stories at maximum.

Three story buildings are consistent with the form recommendations called for by the Places29 Master Plan on the subject properties. Even though residential structures in nearby neighborhoods do not exceed two stories, there are, in fact, some single-family detached structures in Dunlora (for example) that exceed 35 ft. in height when measured from grade to the top of roof pitch. With the maximum 45 ft. building height specified by notes on Sheet 1A of the Application Plan, Parkway Place buildings will only stand 10 ft. taller than some of the two-story single-family homes nearby. Furthermore, for buildings in Parkway Place adjacent to Rio Road, a minimum 15 ft. stepback will apply to the third story, or any story beginning above 40 ft. Staff contends that this is not a drastic difference in height between the development and surrounding neighborhoods. Furthermore, in order to accomplish the Comprehensive Plan's goals for increasing density in the Development Areas, allowing structures that are taller than two stories is a realistic practice that can help achieve those goals.

- The proposed density is greater than surrounding neighborhoods, and the unit type is inconsistent with existing dwellings. Any residential development on the Wetsel properties should have a comparable density to surrounding neighborhoods only feature single-family detached, duplexes, or single-family attached/townhomes.

The Comprehensive Plan has long viewed this area as a location where higher density development could occur, further the ability of the Development Areas to contained future growth demands. The same residential density as the current Places29 Master Plan (6.01-34 du/acre) was recommended in the 1996 Comprehensive Plan. The application is proposing a net density (16.17 du/acre), in the mid-range of the of 6-34 DU/Ac ranges recommended in the plan.

- Any development on the Wetsel properties qualifies as "infill" development and not "greenfield" development, as defined by the Comprehensive Plan.

Objective 5 in Chapter 8 of the Comprehensive Plan identifies strategies related to "infill development" (Strategy 5d) and "greenfield development" (Strategy 5c). The Comprehensive Plan is clear in that it gives no formal definition of either. For greenfields, it states that "While there is no formal definition, greenfields are typically thought of as multi-acre sites, not closely surrounded by existing development." For infill, it states: "As with greenfields, the term infill has no formal definition. Typically, an infill site is a vacant parcel surrounded or mostly surrounded by existing development."

The Wetsel properties are a large, multi-acre site (27+ acres) which is consistent with the greenfield definition. Infill developments are typically smaller parcels that are entirely vacant but surrounded by development. In the context of the Comprehensive Plan's definitions, an infill site would be equivalent to a single vacant parcel within an existing subdivision where every other lot has been built on. Strategy 5c goes on to say that "medium density development next to a high-density development may be more appropriate than high density to help create a variety of housing types within a neighborhood." It could be interpreted that the inverse of that statement is true for the Wetsel properties given the fact that all adjacent residential neighborhoods lack dwelling unit types other than single-family and two-family dwellings.

Public need and justification for the change:

The County's growth management policy states that new residential development should occur in the designated Development Areas where infrastructure and services are provided, rather than in the Rural Area. This site is designated as a Neighborhood Service Center and is located more than half a mile from the closest Rural Area boundary (the Rivanna River to the northeast). Although the application does not provide a full range of mixed uses, including non-residential commercial, office, or institutional, it does provide affordable housing and a public park that exceeds the minimum size recommendations specified in the Places29 Master Plan. The park includes a much-needed trailhead with parking that will benefit all County residents, including those who live in surrounding neighborhoods. This will expand access to the John Warner Parkway greenway and help accomplish the Comprehensive Plan's goals for providing a cohesive and accessible trail system throughout the Development Area.

The proffered road improvements would generally mitigate traffic congestion on adjacent roads that are already busy at peak travel hours, despite the increase in vehicle trips should Parkway Place be built to the maximum number of units proposed. Surrounding neighborhoods such as Dunlora would benefit from the proposed Rio Road E. improvements through enhanced traffic flow and safety in all travel movements at the intersection of Dunlora Drive/Rio Road E. There will be increased delays at peak AM and PM hours at the intersection of John Warner Parkway/Rio Road E. Most movements at other times of day will not be noticeably affected by delays at this intersection.

If the Wetsel properties were to develop at the highest potential density possible under a by-right scenario under the current R-4 zoning, Albemarle County could not require developers to construct the same road improvements proposed with Parkway Place. Traffic congestion would be greatly impacted even though less units would be constructed, as indicated by the TIA attachment. Under a by-right development scenario, the only solution for alleviating traffic congestion would be through approval of County-funded capital improvement projects, or some other form of public project such as a grant through VDOT's SmartScale program. If approved at all, it could take many years for such solutions to receive funding and be constructed after a by-right development occurs. This would result in a significantly worse level of operation along affected roads and intersections.

Despite the risk of the traffic implications of "by-right" development, staff is also concerned that the proposed rezoning and the proffered transportation improvements could best be evaluated in light of more comprehensive evaluation of the Rio Road corridor, where a series impacts and improvements in area will be considered and proposed.

PROFFERS

Proffers are contained in the Proffer Statement (Attachment 4) and are summarized below. Staff have no suggested revisions to the proffer statement. Please be aware that the applicant has elected for this ZMA to be considered under the 2019 Virginia State Code proffer laws that dictate the types of proffers which localities may accept through legislative development applications (Attachment 13).

- **Introduction Paragraph: Development of the property shall be in general accord with the Application Plan.**

  The Application Plan identifies major elements of the Parkway Place proposal. The Application Plan shows building envelopes, road improvements, open space, recreational areas, inter-parcel connections, trails, grading, and stormwater. It also contains notes consistent with development standards required by the Zoning Ordinance in Planned Zoning Districts.

- **Proffer 1a: Rio Road improvements.**

This proffer describes the proposed Green T road improvements and ROW widening proposed in the Application Plan. It also states that these improvements will be constructed prior to the issuance of the first building permit for Parkway Place. It concludes by describing when and by whom the improvements will be deemed complete.

- **Proffer 1b: Cash contribution in lieu of improvements.**
  This proffer would allow for the County to elect to receive a cash contribution of $750,000 from the developer in lieu of constructing the road improvements shown on the Application Plan. This proffer was offered in case some unforeseen circumstances occur that result in a better road improvement solution being identified and potentially funded by the County and/or VDOT.

- **Proffers 2a and 2b: Trailhead park construction and dedication.**
  These proffers describe the trailhead park as shown on the Application Plan and state the method by which it will be dedicated to public use. The proffer commits the developer to build the improvements within the park and then dedicate the park and land to the County.

- **Proffers 3a and 3b:**
  These proffers describe the transit stop as shown on the Application Plan. It also provides a provision for the County to elect to receive a $20,000 cash in lieu contribution should the transit stop become infeasible for unforeseen circumstances, or a better location elsewhere be identified.

SUMMARY

Staff has identified the following factors which are favorable to this request:

1. The rezoning request is consistent with most of the future land use recommendations within the Places29 Master Plan, including recommended residential density. The proposed roadway improvements are consistent with the Rio Road E. recommended future cross section in the Places29 Master Plan. This will expand bicycle and pedestrian infrastructure at a major intersection in the Rio Magisterial District.
2. The request is consistent with the majority of the Neighborhood Model principles.
3. The proposed development will provide a new public park trailhead with parking and outdoor amenities that will benefit all members of the community and expand access to the John Warner Parkway greenway system.
4. The proposed development will provide 15% affordable housing units as recommended by the County's Housing Policy.
5. The proposal includes proffers to enhance access to transit services.
   The proposed road improvements will decrease delay times and increase safety at the Dunlora Drive/Rio Road E. intersection. Additional through-lanes, turn lanes, and road widening along Rio Road E. will expand the street infrastructure beyond its current capacity and will provide increased traffic flow and safety for all drivers traveling through the corridor.

Staff has identified the following factors which are unfavorable to this request:

1. The request does not provide a complete mix of uses that meets the definition of a Neighborhood Service Center as recommended by the Places29 Master Plan.
2. Delay times at some nearby intersections will be increased even with the proposed road improvements.
3. Board and Planning Commission requested Corridor Study of Rio Road has not yet been funded or initiated.
4. Final improvement concepts, design and funding are not currently in place for problematic intersections in relatively close proximity to this development, including John Warner

Parkway/Rio Road E., Belvedere Blvd/Rio Road E., Pen Park Rd./Rio Road. E, and Pen Park Ln/Rio Road E.

5. The project is located outside of a Priority Area for development and infrastructure development as identified in the Comprehensive Plan/Places29 Master Plan.

RECOMMENDATION

At this time, staff believes that the unfavorable factors outweigh the favorable factors and therefore, staff cannot recommend approval of ZMA201900008 Parkway Place.

PLANNING COMMISSION POSSIBLE MOTIONS – ZMA201900008:

A. Should a Planning Commissioner choose to **recommend approval** of this zoning map amendment:

Move to recommend approval of ZMA2019-08, Parkway Place.

B. Should a Planning Commissioner choose to **recommend denial** of this zoning map amendment:

Move to recommend denial of ZMA2019-08, Parkway Place (state reasons for denial).

ATTACHMENTS:

1 – Location Map and Aerial Imagery

2 – Existing Conditions

3 – Parkway Place Application Plan, "Parkway Place Development – Parkway Place Application Plan, Sheets 1, 1A, 2, and 3") *(revision date November 18, 2019)*

4 – Parkway Place Proffer Statement

5 – Project Narrative/Justification for Request

6 – Public Feedback – Compilation (*various dates)*

7 – Allowable Density Analysis, "Parkway Place Allowable Density Analysis (ZMA-2019-08)"

8 – Consistency with Neighborhood Model Principles Analysis

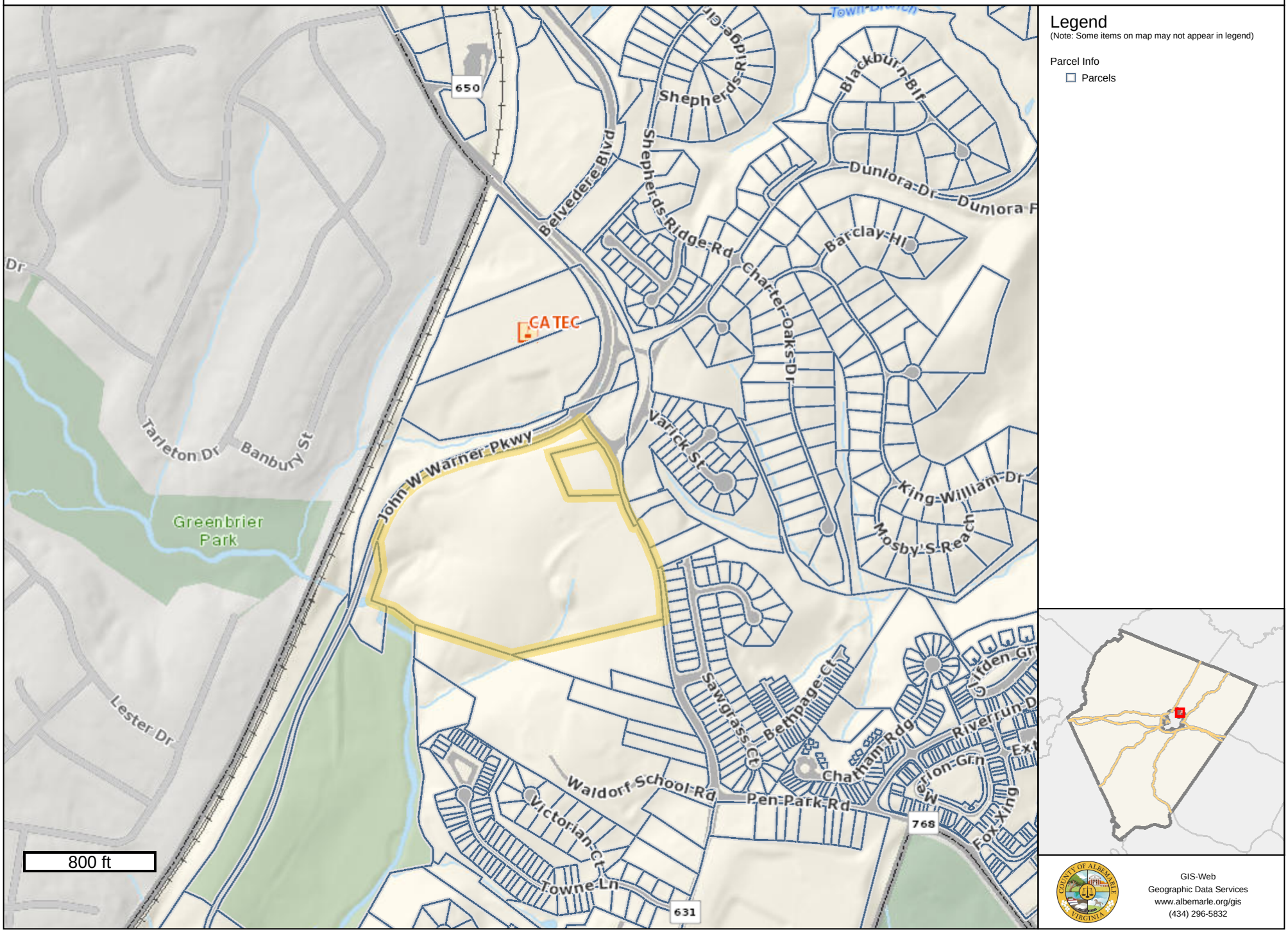
9 – Parkway Place Illustrative Exhibits (*revision date November 18, 2019*)

10 – City of Charlottesville Email Correspondence Regarding Buffers in John Warner Parkway Greenway (*various dates*)

11 - Traffic Impact Analysis, "Rio Road E. Multi-Family – Revised Traffic Impact Analysis (TIA)" (*dated November 14, 2019)*

12 – Albemarle County Public Schools Emails Regarding Enrollment Calculations (*various dates*)

13 – Email from Applicant Electing for ZMA201900008 to be Considered under 2019 Virginia State Code Proffer Legislation (*dated February 19, 2020*)



Legend

(Note: Some items on map may not appear in legend)

Parcel Info

- ☐ Parcels

GIS-Web
Geographic Data Services
www.albemarle.org/gis
(434) 296-5832

Any determination of topography or contours, or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design, modification, or construction of improvements to real property or for flood plain determination.

February 24, 2020

Map elements may scale larger than GIS data measured in the map or as provided on the data download page due to the projection used. Map Projection: WGS84 Web Mercator (Auxiliary Sphere) (EPSG 3857)

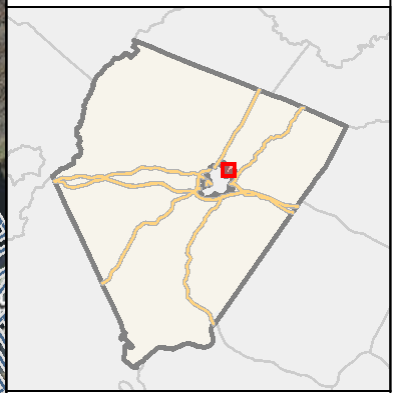


Legend

(Note: Some items on map may not appear in legend)

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	TMP NUMBER	OWNER	DB/PG
A	61-165R	DUNLORA INVESTMENTS, LLC	4967/169
B	61-165C	MARTIN, LAWRENCE E JR	4552/15
C	61-165B	ROGERS, WILLIAM H JR & SHARYON L	526/432
D	61-165A	EAT RHINO, LLC	4893/742
E	62F-01-C	DUNLORA FOREST PROPERTY OWNERS ASSOCIATION	4717/196
F	62F-01-30	BALLIF, SANDRA M	4587/179
G	62F-01-29	TAYLOR, ROBERT F LIVING TRUST	5141/521
H	62F-01-28	MCKENNEY, JOYCE B	5159/737
I	62F-01-27	PENKAVA, ROBERTA	4470/314
J	62F-01-26	SIMON, CAROL OR ROBYN RUSSELL	4434/466
K	62F-01-25	POPESCU, DANA G	5050/251

LIMITS OF THE PUBLIC PARK EASEMENT DB.3616, PG.344-351 AND DEDICATED TO CITY OF CHARLOTTESVILLE IN DB.4622, PG.523-537

TMP 61-169 CITY OF CHARLOTTESVILLE DB 4622 PG 523

JOHN W WARNER PARKWAY VARIABLE WIDTH R/W

DUNLORA DRIVE

RIO ROAD EAST STATE ROUTE 631 30' PRESCRIPTIVE & VARIABLE WIDTH R/W

TMP 61-167 WETSEL, THOMAS D LIFE ESTATE DB 1688 PG 564

VARIABLE WIDTH DRAINAGE & SLOPE EASEMENT DB 3613 PG 344

RIVANNA TRAIL

PROPERTY BOUNDARY

VARIABLE WIDTH DRAINAGE, TRAIL & SLOPE EASEMENT DB 3613 PG 344

9'x12' SHED

14'x16' CINDER BLOCK

CONCRETE

HOUSE

ASPHALT

12'x30' FRAME SHED

18'x21' POLE BARN

ASPHALT WALK

WOVEN WIRE FENCE

TREE LINE

12' DIA SILO

UTILITY EASEMENT DB 3613 PG 344

GRAVEL

WOVEN WIRE FENCE

VARIABLE WIDTH DRAINAGE EASEMENT DB 3613 PG 344

24'x30' FRAME BARN

STONE WALL

10'x28' FRAME SHED

18'x24' FRAME POLE BARN

10'x12' FRAME SHED

8'x24' FRAME SHED (9' OH)

WOVEN WIRE FENCE

TMP 61-167C WETSEL, THOMAS D & CLARENCE H & MARY W HOOD DB 1681 PG 174

QWEST COMMUNICATIONS EASEMENT DB 3144 PG 309

EXISTING DAM BREAK INUNDATION ZONE

VARIABLE WIDTH DRAINAGE & SLOPE EASEMENT DB 3613 PG 344

EXISTING 100-YEAR FLOODPLAIN (TYP.)

EXISTING PRESERVED STEEP SLOPES (TYP.)

LOCATION OF WATER PROTECTION ORDINANCE BUFFER PER ALBEMARLE COUNTY GIS

PROPERTY BOUNDARY

EXISTING MANAGED STEEP SLOPES (TYP.)

EXISTING STREAM

MEADOW CREEK

TREE LINE

TMP 61-168 N/F CITY OF CHARLOTTESVILLE DB 4622 PG 523

TMP 61-170 N/F CHARLOTTESVILLE WALDORF SCHOOL, INC. DB 4202 PG 453

BARBED WIRE FENCE

TMP 61-167A N/F WHITED FAMILY, LLC DB 2159 PG 380

A B C D E F G H I J K

GRAPHIC SCALE
150 0 75 150
(IN FEET)
1 inch = 150 ft.

COLLINS ENGINEERING
200 GARRETT STREET, SUITE K, CHARLOTTESVILLE, VIRGINIA 22902 OFFICE 434-293-3719
LPDA LANDSCAPE ARCHITECTURE LAND PLANNING
Kotarides Builders · Developers Property Management

REVISIONS

DATE	DESCRIPTION
06/17/19	INITIAL SUBMITTAL
09/03/19	RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS
11/18/19	RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS

PARKWAY PLACE DEVELOPMENT
PARKWAY PLACE DEVELOPMENT
SHEET 4: EXISTING CONDITIONS
RIVANNA MAGISTERIAL DISTRICT

JUNE 17, 2019

SCALE
1" = 150'

SHEET 4

OPEN SPACE CHART	
PARCEL	
TMP 06100-00-00-16700	1.58 ACRES
TMP 06100-00-00-167C0	25.73 ACRES
TOTAL AREA:	27.31 ACRES
AREA DEDICATED TO PUBLIC R/W =	1.0 ACRES
TOTAL DEVELOPMENT AREA =	26.31 ACRES

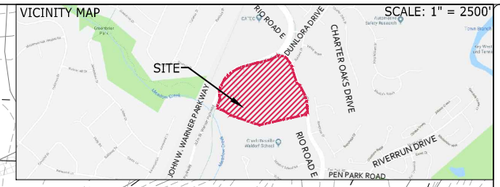
OPEN SPACE PROVIDED:
- COMMON OPEN SPACE AREA = 4.5 ACRES (MIN.)
- OPEN SPACE TO BE DEDICATED TO PUBLIC USE = 1.1 ACRES
- ACTIVE RECREATION AREA = 1.5 ACRES (MIN.)
- CONSERVATION AREA DEDICATED TO PUBLIC USE = 5.89 ACRES
- GREENWAY = 0.12 ACRES (INCLUDED IN THE 4.5 ACRES)

TOTAL OPEN SPACE PROVIDED = 12.99 ACRES MIN. (49.37%)

MIN. REQUIRED OPEN SPACE = 4.83 ACRES
(MIN. O.S. CALCULATION: 26.31 ACRES -CONSERV. AREA(5.89ac)-PARK(1.1ac) x 25%)
MIN. PROVIDED OPEN SPACE = 4.5 AC (COMMON) + 1.5 AC (ACTIVE)=6.0 AC

NOTES:
1. WPO STREAM BUFFERS, PRESERVED SLOPES, & GREENWAY AREAS SHALL BE PROTECTED PER THE REGULATIONS WITHIN THE ALBEMARLE COUNTY ZONING ORDINANCE.
2. OPEN SPACE IS DEFINED AS LAND OR WATER LEFT IN UNDISTURBED NATURAL CONDITION AND UNOCCUPIED BY BUILDING LOTS, STRUCTURES, STREETS, OR PARKING LOTS, EXCEPT AS OTHERWISE SPECIFICALLY PROVIDED IN THE COUNTY ZONING ORDINANCE, SECTION 18-4.7. PLEASE NOTE THAT ONLY 80% OF THE MINIMUM OPEN SPACE MAY BE A) LOCATED ON PRESERVED SLOPES AND B) DEVOTED TO STORMWATER MANAGEMENT FACILITIES, UNLESS THE FACILITY IS INCORPORATED INTO A PERMANENT POND, LAKE, OR OTHER WATER FEATURE DEEMED TO CONSTITUTE A DESIRABLE OPEN SPACE AMENITY PER SECTION 18-4.7(c)(3).

VICINITY MAP — SCALE: 1" = 2500'



NOTE: ENTRANCE IMPROVEMENTS SHALL BE SUBJECT TO VDOT AND COUNTY REVIEW AND APPROVAL. SEE THE RIO ROAD FRONTAGE IMPROVEMENT PLAN.

EXISTING MANAGED STEEP SLOPES (TYP.)
LIMITS OF THE PUBLIC PARK EASEMENT DB.3616, PG.344-351 AND DEDICATED TO CITY OF CHARLOTTESVILLE IN DB.4622, PG.523-537
TMP 61-169
JOHN W. WARNER PARKWAY
PROPOSED 50' LANDSCAPED BUFFER
EXISTING ASPHALT PATHWAY
CONSERVATION AREA 5.89 ACRES
100' STREAM BUFFER
GREENWAY (0.32 AC.) PART OF CONSERVATION AREA
GREENWAY (0.12 AC.)
100' YEAR FLOODPLAIN
TMP 61-168
MEADOW CREEK
BUILDING ENVELOPE
TRAVELWAY/PARKING ENVELOPE
POCKET PARK ★ (0.70 ACRES MIN.) ACTIVE RECREATION OPEN SPACE
RECREATIONAL AMENITY SPACE ★ (0.80 ACRES MIN.) ACTIVE RECREATION OPEN SPACE
PUBLIC ACCESS EASEMENT
TRAVELWAY/PARKING ENVELOPE
BUILDING ENVELOPE
TRAVELWAY/PARKING ENVELOPE
BUILDING ENVELOPE
PROPOSED STORMWATER MANAGEMENT FACILITY
COMMON OPEN SPACE 4.5 ACRES (MIN.)
TMP 61-170
*BUILDING ENVELOPE INCLUDES GARAGE PARKING STRUCTURE
EXISTING PRESERVED STEEP SLOPES (TYP.)
PROPOSED LOCATION OF INTERPARCEL VEHICULAR ROAD CONNECTION TO TMP 61-167A
TMP 61-167A
PROPOSED 10' ASPHALT PEDESTRIAN & BICYCLE PATHWAY ALONG RIO ROAD - PATHWAY TO CONNECT TO THE EXISTING PEDESTRIAN PATHWAY ALONG JOHN WARNER PARKWAY
PROPOSED 30' LANDSCAPED BUFFER
OPEN SPACE 1.1 ACRES TO BE DEDICATED TO PUBLIC USE
DUNLORA DRIVE
PUBLIC ACCESS EASEMENT
RIO ROAD E
TMP 61-165R
TMP 61-165C
TMP 61-165B
TMP 61-165A
TMP 62F-01-C
TMP 62F-01-30
TMP 62F-01-29
TMP 62F-01-28
TMP 62F-01-27
TMP 62F-01-26
TMP 62F-01-25

LEGEND
- BUILDING DEVELOPMENT ENVELOPE
- TRAVELWAY / PARKING AREA
- ACTIVE RECREATION AREA
- CONSERVATION AREA
- OPEN SPACE
- GREENWAY
- EXISTING ASPHALT PATHWAY
- EXISTING 100 YR FLOODPLAIN
- EASEMENT LINE
- PROPERTY LINE
- PRESERVED SLOPES (GIS MAPPING)
- MANAGED SLOPES (GIS MAPPING)
- RIGHT-OF-WAY FOR RIO ROAD PROPOSED IMPROVEMENTS
- OPEN SPACE TO BE DEDICATED TO PUBLIC USE
- PROPOSED 50' & 30' LANDSCAPE BUFFER
- PROPOSED 10' PEDESTRIAN & BICYCLE PATHWAY
- RESERVED LAND FOR TRAILHEAD
- POTENTIAL BUS STOP

GRAPHIC SCALE
150 0 75 150
(IN FEET)
1 inch = 150 ft.

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LPDA LANDSCAPE ARCHITECTURE LAND PLANNING
Kotarides Builders · Developers Property Management

REVISIONS

DATE	DESCRIPTION
06/17/19	INITIAL SUBMITTAL
09/03/19	RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS
11/18/19	RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS

PARKWAY PLACE DEVELOPMENT
PARKWAY PLACE APPLICATION PLAN
SHEET 1 OF 3: PRD PLAN
RIVANNA MAGISTERIAL DISTRICT

JUNE 17, 2019

SCALE
1" = 150'

SHEET 1

GENERAL NOTES

OWNERS: TMP 06100-00-00-16700
WETSEL, THOMAS D. LIFE ESTATE
878 E RIO ROAD
CHARLOTTESVILLE, VA 22901

TMP 06100-00-00-167C0
WETSEL, THOMAS D. & CLARENCE H. WETSEL
878 E RIO ROAD
CHARLOTTESVILLE, VA 22901

DEVELOPER: KOTARIDES DEVELOPERS
1128 INDEPENDENCE BLVD. SUITE 200
VIRGINIA BEACH, VA 23455

ENGINEER: COLLINS ENGINEERING
200 GARRETT STREET, SUITE 200
CHARLOTTESVILLE, VA 22902

TAX MAP & ZONING:

06100-00-00-16700	06100-00-00167C0
D.B. 1688, PG. 564	D.B. 1681, PG. 174
R-4 RESIDENTIAL	R-4 RESIDENTIAL

TOTAL PROJECT AREA:

06100-00-00-16700	-	1.58 AC.
06100-00-00-167C0	-	25.73 AC.
		27.31 AC. TOTAL

PROPOSED ZONING: PLANNED RESIDENTIAL DEVELOPMENT (PRD)
NOTE: PROPERTY SHALL STILL COMPLY WITH EXISTING ZONING OVERLAY DISTRICTS: AIRPORT IMPACT AREA OVERLAY DISTRICT (AIA), FLOODPLAIN HAZARD OVERLAY DISTRICT (FH), AREAS OF MANAGED AND PRESERVED SLOPES OVERLAY DISTRICT, AND ENTRANCE CORRIDOR OVERLAY DISTRICT (EC). THESE OVERLAY DISTRICTS ARE NOT BEING REVISED AS PART OF THE PROJECT.

TOPOGRAPHY: TOPOGRAPHY & BOUNDARY INFORMATION COMPILED BY ROUDABUSH, GALE & ASSOCIATES, INC., IN AUGUST 2018.

DATUM: NAD 83

NET DENSITY: OVERALL NET DENSITY CALCULATIONS (BASED ON THE ALB. COUNTY GIS COMPREHENSIVE PLAN MAPS)
NEIGHBORHOOD SERVICE CENTER (3-20 UNIT/ACRE) x 5.33 ACRES = 15 UNITS (MIN.) & 106 UNITS (MAX)
URBAN DENSITY RESIDENTIAL (6.01 -34 UNITS/ACRE) x 14.95 ACRES =89 UNITS (MIN.) & 508 UNITS (MAX)
PUBLIC & PRIVATE OPEN SPACE AREA (ZERO UNITS/ACRE) = 0 UNITS (MIN. & MAX)
OVERALL ALLOWABLE NET DENSITY: 104 UNITS (MIN.) TO 614 UNITS (MAX.)

NOTE: MAXIMUM NUMBER OF PROPOSED RESIDENTIAL UNITS SHALL NOT EXCEED 328 UNITS WITH THIS APPLICATION PLAN (16.17 DU/ACRE).

ALLOWABLE USES: THE ALLOWABLE USES FOR THIS DEVELOPMENT SHALL BE IN ACCORDANCE WITH SECTION 18-19.3 OF THE ALBEMARLE COUNTY ZONING ORDINANCE.

BUILDING HEIGHTS: THE MAXIMUM BUILDING HEIGHT FOR THIS DEVELOPMENT SHALL BE A 3 STORY BUILDING WITH A BUILDING HEIGHT NOT TO EXCEED 45 FEET. FOR EACH STORY THAT BEGINS ABOVE 40 FEET IN HEIGHT OR FOR EACH STORY ABOVE THE THIRD STORY, WHICHEVER IS LESS, THE MINIMUM STEPBACK SHALL BE 15 FEET.

ACCESS: THE PROJECT CURRENTLY HAS (2) ACCESS POINTS FROM RIO ROAD THAT WILL SERVE AS ACCESS TO THE SITE. THE DEVELOPMENT IS PROPOSING AN INTERCONNECTION TO TMP 61-167A AS SHOWN ON THE APPLICATION PLAN. THERE IS ALSO A PEDESTRIAN AND BICYCLE CONNECTION FROM THE PROPERTY TO THE CITY OF CHARLOTTESVILLE PROPERTY ADJACENT TO THE DEVELOPMENT.

PARKING: PARKING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 18.4.12 OF THE ALBEMARLE COUNTY ZONING ORDINANCE.

FIRE & RESCUE: THE PROJECT SHALL CONFORM WITH ALBEMARLE COUNTY FIRE AND RESCUE REGULATIONS FOR FIRE PROTECTION AND ACCESS TO THE SITE. ALL DRIVE LANES WITHIN THE APARTMENT COMPLEX THAT ARE ADJACENT TO A BUILDING ENVELOPE SHALL BE 26' IN WIDTH FOR FIRE PROTECTION OF THE 3 STORY BUILDINGS.

ROAD IMPROVEMENTS: 1.0 +/- ACRES TO BE DEDICATED FOR ROADWAY IMPROVEMENTS SHOWN ON SHEET 2 AND PER PROFFER NO. 1.

UTILITIES: COUNTY WATER AND SEWER

WATERSHED: RIVANNA RIVER - MEADOW CREEK

FLOODPLAIN: THERE IS A FLOODPLAIN LOCATED ON THIS SITE. FEMA MAP ID 51003C0280D DATED FEBRUARY 4, 2005. IN ADDITION, A DAM BREACH INUNDATION ZONE EXISTS ON THE PROPERTY FOR THE SOUTH RIVANNA DAM, WHICH IS A FEDERAL DAM LOCATED UPSTREAM OF THE PROPERTY.

LAND DEDICATED TO PUBLIC USE:
1. 1.1+/- ACRES OF OPEN SPACE IS AVAILABLE UPON REQUEST TO BE DEDICATED TO PUBLIC USES AS SHOWN ON THE APPLICATION PLAN FOR A TRAILHEAD. DURING SITE PLANNING, THE DEVELOPER WILL COORDINATE WITH THE CITY AND COUNTY PARK AUTHORITIES TO DESIGN THE AMENITIES AND LANDSCAPING WITHIN THE TRAILHEAD PARK. THE DEVELOPERS SHALL CONSTRUCT ALL IMPROVEMENTS WITHIN THE TRAILHEAD PARK.
2. 1.0+/- ACRES OF RIGHT OF WAY SHALL BE DEDICATED TO PUBLIC USE AS SHOWN ON THE APPLICATION PLAN FOR ROAD FRONTAGE IMPROVEMENTS ALONG RIO ROAD PER PROFFER NO. 1. NOTE: WITHIN THE ROADWAY DEDICATION AREA, ALONG RIO ROAD, A 10' ASPHALT PEDESTRIAN AND BICYCLE TRAILWAY SHALL BE CONSTRUCTED, AS SHOWN ON THE APPLICATION PLAN.

BUILDING ARCHITECTURE: BUILDINGS WITHIN VIEW OF THE JOHN WARNER PARKWAY AND ADJACENT TO RIO ROAD WILL INCLUDE A VARIETY OF ARCHITECTURAL MATERIALS AND COLORS, PORCHES AND PROJECTIONS, AND OFFSETTING OR STAGGERING PORTIONS OF THE BUILDINGS, IN ADDITION TO THE USE OF PROJECTIONS AND BAYS, AND POSSIBLY TWO-STORY HYPHENS, TO PROMOTE DIVERSITY OF ARCHITECTURAL CHARACTER, TO REDUCE UNIFORMITY AMONG THE BUILDINGS, TO ESTABLISH HUMAN SCALE, AND TO BREAK UP THE MASS OF THE BUILDINGS AND THE ROOF LINES.

BUFFERS: WITHIN THE LANDSCAPE BUFFER SHOWN ON THE APPLICATION PLAN, THE DEVELOPER WILL EITHER RETAIN THE EXISTING NATURAL UNDISTURBED VEGETATION AND/OR PLANT A MIX OF DECIDUOUS AND EVERGREEN TREES AND SHRUBS LOCALLY NATIVE TO VIRGINIA AT A DEPTH OF THIRTY FEET (30') WITHIN THE FIFTY FOOT (50') BUFFER AND AT A DEPTH OF TWENTY FEET (20') WITHIN THE THIRTY FOOT (30') BUFFER. THE BUFFER WILL ACHIEVE A NATURALISTIC ARRANGEMENT OF TREES AND SHRUBS IN A MIX OF DECIDUOUS AND EVERGREEN SPECIES AND WILL INCLUDE LARGE TREES. PROPOSED SPECIES WILL BE REVIEWED BY THE DIRECTOR OF THE DEPARTMENT OF COMMUNITY DEVELOPMENT OR HIS/HER DESIGNEE AT THE SITE PLAN STAGE. ALL PLANTINGS WILL CONFORM TO CURRENT ANSI STANDARDS FOR NURSERY STOCK. INSTALLATION AND MAINTENANCE OF THE LANDSCAPE BUFFER, BOTH IN THE EXISTING AND FUTURE PARK LAND, WILL BE THE RESPONSIBILITY OF THE DEVELOPER, AND THE APPROPRIATE EASEMENTS AND MAINTENANCE AGREEMENTS WILL BE OBTAINED FROM THE CITY AND COUNTY PRIOR TO THE FIRST CERTIFICATE OF OCCUPANCY (CO).

AFFORDABLE HOUSING: 15% OF THE TOTAL NUMBER OF DWELLING UNITS SHALL BE AFFORDABLE HOUSING RENTALS FOR 10 YEARS FOLLOWING THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. RENTS FOR SUCH UNITS SHALL NOT EXCEED HOUSING AND URBAN DEVELOPMENT (HUD) FAIR MARKET RENTS MAKING THEM AFFORDABLE TO THOSE EARNING 80% OF AREA MEDIAN INCOME. THE PROPERTY OWNER SHALL MAINTAIN RECORDS DOCUMENTING THE HOUSEHOLD INCOME OF THE OCCUPANTS OF THE AFFORDABLE UNITS, AND UPON REQUEST BY THE COUNTY, THE PROPERTY OWNER SHALL PROVIDE THESE RECORDS TO THE COUNTY ON AN ANNUAL BASIS.

NOTES:
1. EXACT LOCATION OF ROADWAYS AND TRAVELWAYS SHALL BE DETERMINED WITH THE SITE PLAN PROCESS.
2. ALL PROPOSED ROADWAYS SHALL HAVE STREET TREES IN ACCORDANCE WITH ALBEMARLE COUNTY REQUIREMENTS. ALL TREES SHALL BE MAINTAINED BY THE APARTMENT COMPLEX MANAGEMENT SERVICES.
3. THE PROPOSED OPEN SPACE AREAS MAY BE EXPANDED DURING THE DESIGN PHASES TO ALLOW FOR ADDITIONAL AREA TO ACCOMMODATE UTILITIES, STORMWATER MANAGEMENT, AND EROSION CONTROL MEASURES, AS NECESSARY FOR THE DEVELOPMENT.
4. THE PROPERTY SHALL BE DEVELOPED IN GENERAL ACCORD WITH THE KEY FEATURES OF THIS APPLICATION PLAN, INCLUDING THE DEDICATION OF 1.1 ACRES FOR A TRAILHEAD PARK. MINOR VARIATIONS FROM THIS PLAN ARE PERMITTED, IN ACCORDANCE WITH ALBEMARLE COUNTY ZONING REQUIREMENTS AND REGULATIONS.
5. UTILITIES, INCLUDING BUT NOT LIMITED TO WATER, STORM SEWER, SANITARY SEWER UTILITIES, MAY BE INSTALLED WITHIN THE CONSERVATION AREAS ON THE PROPERTY. UTILITIES MAY BE INSTALLED WITHIN THE PRESERVED SLOPES, IN ACCORDANCE WITH ALBEMARLE COUNTY ZONING ORDINANCE AND REGULATIONS.
6. ALL ROADWAY FRONTAGE IMPROVEMENTS ALONG RIO ROAD SHALL BE SUBJECT TO ALBEMARLE COUNTY AND VDOT REVIEW AND APPROVAL. MODIFICATIONS AND CHANGES TO THE ROAD FRONTAGE IMPROVEMENTS PROPOSED WITHIN THE APPLICATION PLAN MAY BE IMPLEMENTED AS REQUESTED BY THE COUNTY AND VDOT DURING THE REVIEW AND APPROVAL PROCESS.
7. INTERIOR SIDEWALKS FOR THE PEDESTRIAN NETWORK THROUGHOUT THE APARTMENT COMPLEX SHALL BE INCLUDED IN THE BUILDING ENVELOPE AREAS AND TRAVELWAY/PARKING ENVELOPE AREAS AS SHOWN ON THE APPLICATION PLAN.
8. ACTIVE RECREATION AREA ★ SHALL INCLUDE A CLUBHOUSE, FITNESS AREA, SWIMMING POOL, RECREATION FIELD, AND A TOT LOT, AND ADDITIONAL FACILITIES MAY BE PROVIDED AT THE OWNER'S DISCRETION AND ANY EQUIVALENT AMENITIES, AS DETERMINED BY PLANNING, MAY BE SUBSTITUTED. ALL PROJECT AMENITIES MUST BE COMPLETED PRIOR TO 50% OF THE UNITS RECEIVING CERTIFICATE OF OCCUPANCIES.
9. ADDITIONAL RECREATIONAL AREAS MAY BE PROVIDED WITHIN THE 4.5 ACRES OF COMMON OPEN SPACE AREA. THE TOTAL ACREAGE OF COMMON OPEN SPACE (INCLUDING THE ACTIVE RECREATIONAL AREA) SHALL BE A MINIMUM OF 6.0 ACRES. THE MINIMUM ACREAGE OF ACTIVE RECREATION AREA SHALL BE 1.50 ACRES.
10. THE DEVELOPER SHALL DESIGN AND CONSTRUCT PARK AMENITIES FOR THE "TRAILHEAD PARK". THE AMENITIES SHAL INCLUDE THE ASPHALT PARKING AREA, BENCHES, TRAIL CONNECTIONS, LANDSCAPING, PUBLIC ART, AND A GAZEBO OR OTHER SMALL STRUCTURE.
11. A MINIMUM OF 75% OF THE REQUIRED PHOSPHORUS NUTRIENT REDUCTIONS SHALL BE ACHIEVED ONSITE.

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LPDA LANDSCAPE ARCHITECTURE LAND PLANNING
Kotarides Builders · Developers Property Management

REVISIONS

DESCRIPTION	DATE
INITIAL SUBMITTAL	06/17/19
RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS	09/03/19
RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS	11/18/19

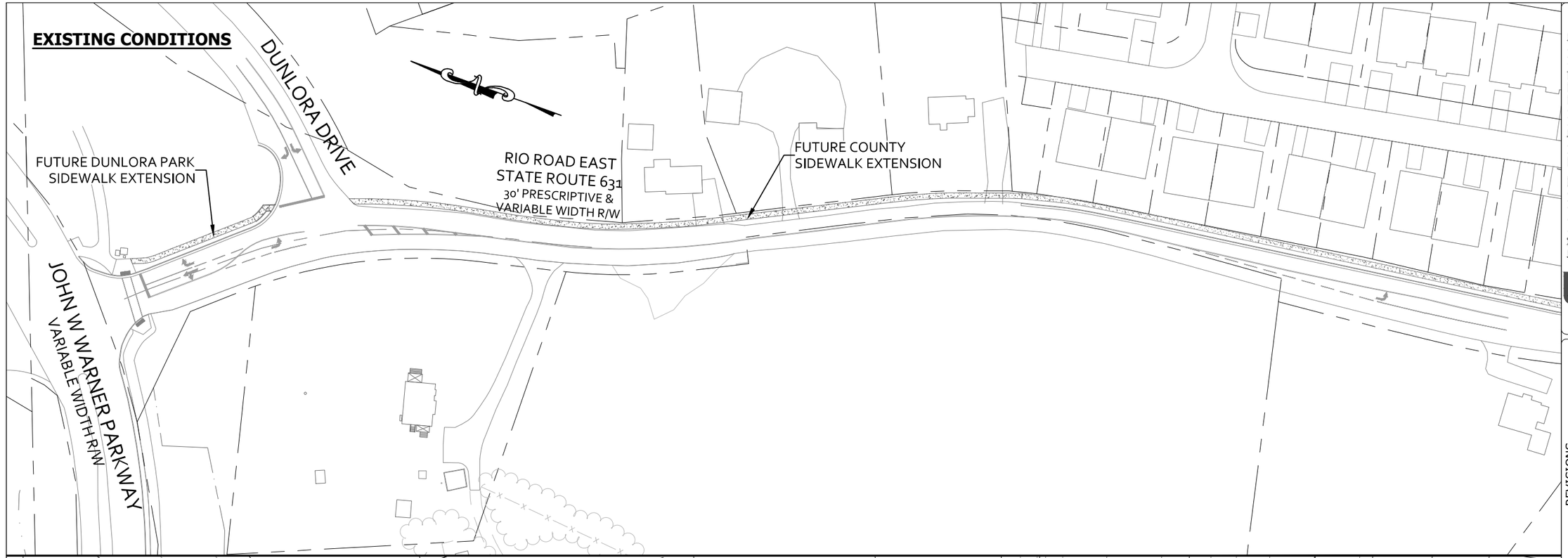
PARKWAY PLACE DEVELOPMENT
PARKWAY PLACE APPLICATION NOTES
SHEET 1A OF 3: PRD PLAN
RIVANNA MAGISTERIAL DISTRICT

JUNE 17, 2019

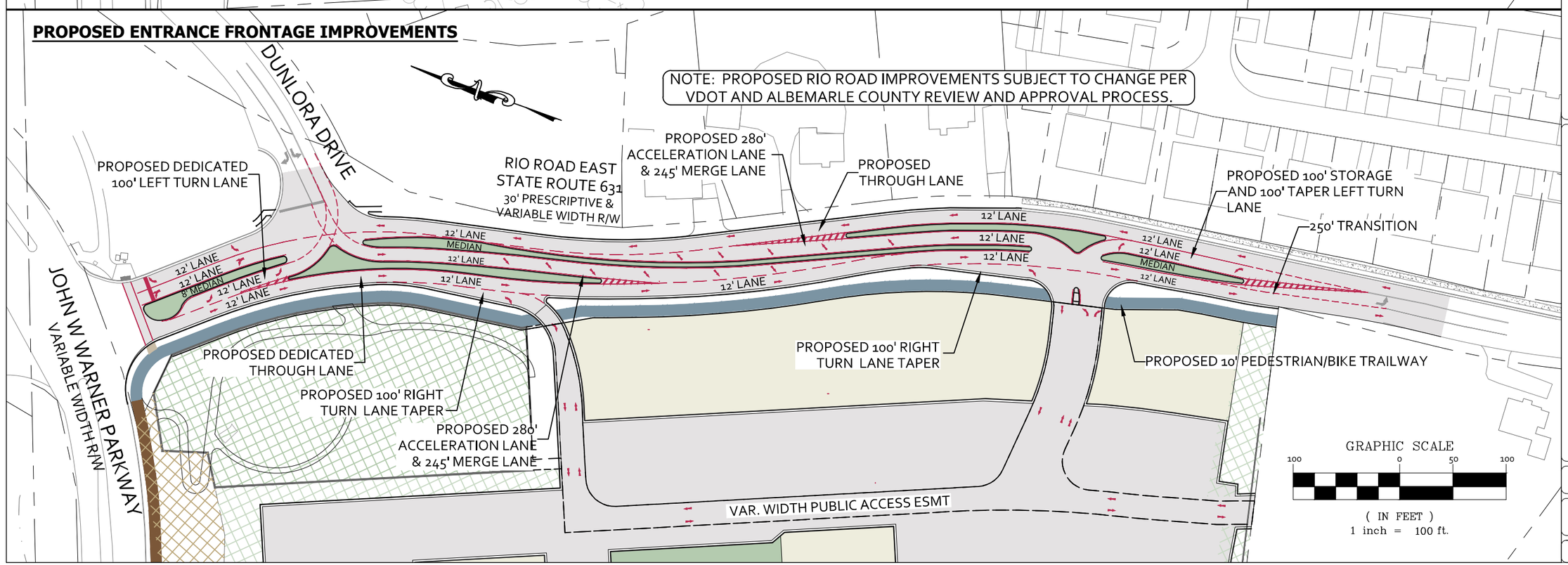
N.A.

SHEET 1A

EXISTING CONDITIONS



PROPOSED ENTRANCE FRONTAGE IMPROVEMENTS



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PARKWAY PLACE DEVELOPMENT

PARKWAY PLACE APPLICATION PLAN
SHEET 2 OF 3: ENTRANCE FRONTAGE IMPROVEMENTS
RIVANNA MAGISTERIAL DISTRICT

JUNE 17, 2019

SCALE
1" = 100'

SHEET 2

JOHN W WARNER PARKWAY
VARIABLE WIDTH R/W

DUNLORA DRIVE

RIP RAP CHANNEL TO NATURAL STREAM CHANNEL

PROPOSED PUBLIC STORM SEWER OUTFALL
NOTE: OUTFALL RECEIVES RUN-OFF FROM THE PUBLIC VDOT R/W ALONG RIO ROAD

PROPOSED PUBLIC 8" DIP SANITARY SEWER

TRAIL HEAD
DIRECT OUTFALL
DRAINAGE AREA
=1.2 ACRES

DA #2
DIRECT OUTFALL
DRAINAGE AREA=6.0 ACRES

DA #1
POND DRAINAGE
AREA=11.1 ACRES

EXISTING 36" RCP SANITARY SEWER

DISTURBED AREA CREATED BY THE STORM AND SANITARY SEWER INSTALLATION SHALL BE LANDSCAPED WITH LOCALLY NATIVE PLANTS (SHRUBS AND LOW MAINTENANCE GRASSES) AS ALLOWED BY ACSA

CONNECTION TO EXISTING SANITARY SEWER

STORMWATER MANAGEMENT FACILITY

PROPOSED SWM BASIN OUTFALL

RIO ROAD EAST
STATE ROUTE 631 30' PRESCRIPTIVE & VARIABLE WIDTH R/W

EXISTING 12" DIP WATERLINE

CONNECTION TO EXISTING WATERLINE

GRAPHIC SCALE
150 0 75 150
(IN FEET)
1 inch = 150 ft.

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LPDA LANDSCAPE ARCHITECTURE LAND PLANNING
Kotarides Builders , Developers Property Management

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PARKWAY PLACE DEVELOPMENT

PARKWAY PLACE APPLICATION PLAN
SHEET 3 OF 3: GRADING, SWM & UTILITY PLAN
RIVANNA MAGISTERIAL DISTRICT

JUNE 17, 2019

SCALE
1" = 150'

SHEET 3

Original Proffers ____X_____
Amendment _____

PROFFER STATEMENT

ZMA 2019-00008

Project Name: **Parkway Place**

Tax Map and Parcel Number(s): **06100-00-00-167C0 and 06100-00-00-16700**

Owner(s) of Record: **Thomas D. Wetsel, Clarence H. Wetsel, and Mary W. Hood**

Date: November 18, 2019

Approximately 27.31 acres to be rezoned from **R-4 Residential** to **PRD – Planned Residential Development**

Thomas D. Wetsel, Clarence H. Wetsel, and Mary W. Wood are the sole owners (collectively, the "Owner") of Tax Map and Parcel Numbers 06100-00-00-167C0 and 06100-00-00-16700 (the "Property"), which is the subject of rezoning application ZMA 2019-00008, a project known as "Parkway Place" (the "Project"). The Project Application Plan, dated June 14, 2019, last revised November 18, 2019, prepared by Collins Engineering, is entitled, "Parkway Place Application Plan," comprised of the PRD Plan (Sheets 1 and 1A of 3), Entrance Frontage Improvements (Sheet 2 of 3), and Grading, Stormwater Management & Utility Plan (Sheet 3 of 3).

Pursuant to Section 33.3 of the Albemarle County Zoning Ordinance, the Owner hereby voluntarily proffers the conditions listed below which shall be applied to the Property if it is rezoned to the zoning district identified above. These conditions are proffered as a part of the requested rezoning and the Owner acknowledges that the conditions are reasonable:

1. **<u>Rio Road Improvements</u>**:

   (a) To mitigate traffic impacts, the Owner shall dedicate to public use approximately one acre of additional right-of-way along the frontage of the property for widening Rio Road East and shall construct road improvements, including turn lanes and associated widening, as shown on Sheet 2 of the Application Plan (the "Proposed Road Improvements"). The Proposed Road Improvements are conceptual and are subject to change based on County and VDOT recommendations. The Owner shall substantially complete the construction of the road improvements in accordance with final road plans approved by County (the "Rio Road Improvements") prior to issuance of the first building permit for the Project. The Rio Road Improvements shall be deemed "substantially complete" by one or more of the following methods, whichever occurs first: (i) the Albemarle County Engineer or its designee determines them to be complete; (ii) they are constructed and inspected and the VDOT construction bond is released, or (iii) a VDOT official otherwise confirms that they are substantially complete.

(b) Notwithstanding the provisions of subparagraph (a), following approval of ZMA 2019-00008, should the County determine that the Proposed Road Improvements are not preferred, the County shall notify the Owner in writing of the County's election to receive a cash contribution in lieu of the Proposed Road Improvements, and the Owner shall contribute to the County's Capital Improvement Program (CIP) fund Seven Hundred and Fifty Thousand Dollars ($750,000.00) as a cash contribution toward Rio Road improvements.

2. **Trailhead Park**.

(a) The Owner shall construct amenities in the trailhead park within the "Open Space, +/- 1.1 Acres," as noted on sheet 1 of the Application Plan and as approved by the County Parks and Recreation Department (the "Trailhead Park"). The Owner shall substantially complete the Trailhead Park amenities prior to issuance of the first certificate of occupancy.

(b) Upon written request by the County, the Owner shall dedicate to the County by special warranty deed of fee simple title or grant of perpetual easement, whichever is preferred by the County, for no consideration, the approximately 1.1-acre Trailhead Park, as shown on the Application Plan. Upon dedication, maintenance of the Trailhead Park will be the responsibility of the County (unless the County conveys its interest in the Trailhead Park to the City of Charlottesville, in which case the City shall maintain it). The Owner shall provide and maintain the public access easement to the Trailhead Park as shown on the Application Plan.

3. **Transit Stop**.

(a) The Owner shall construct a Charlottesville Area Transit (CAT) stop (the "Transit Stop") on the Property along the frontage of Rio Road East. The Transit Stop shall be designed and constructed in coordination with, and shall be approved by, the appropriate County authority and CAT and shall incorporate a shelter, a rest bench, pedestrian access, and signage consistent with similar existing CAT transit stops. The Transit Stop shall be installed and completed concurrently with the Rio Road Improvements. If any portion of the Transit Stop is located on the Property, the Owner shall dedicate it to public use or grant an easement as necessary to allow for the public access and usage of the Transit Stop.

(b) Notwithstanding the provisions of subparagraph (a), following approval of ZMA 2019-00008, should the City of Charlottesville prefer that a transit stop be constructed in the location of the current bus stop on City-owned property (Tax Map 06100-00-00-16900) on the north side of Rio Road East, or (b) should the City elect to receive funds for constructing the Transit Stop in lieu of the Owner's construction of the Transit Stop, the County shall notify the Owner in writing of the City's election to receive a cash contribution in lieu of the Transit Stop, and the Owner shall contribute Twenty Thousand Dollars ($20,000.00) to the City of Charlottesville's Capital Improvement Program (CIP) as a cash contribution for construction of the Transit Stop in either location.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY BLANK.]

OWNERS:

_____
Thomas D. Wetsel by his attorney-in-fact, Mary W. Hood

_____
Clarence H. Wetsel by his attorney-in-fact, Helena Wetsel

_____
Mary W. Hood

41393685 v1

Parkway Place

Zoning Map Amendment Application Narrative
Original Submission: June 17, 2019
Revised Narrative for Resubmission: September 3, 2019
Revised Narrative for Resubmission: **November 18, 2019**

Project Proposal

On behalf of Kotarides Developers, LLC ("Kotarides" or the "Applicant"), we hereby request the approval of a Zoning Map Amendment ("ZMA") for Tax Map Parcels 06100-00-00-16700 and 06100-00-00-167C0 (the "Property"). We specifically request for the 27.31 acres comprising the Property, located at the intersection of Rio Road East and John Warner Parkway, to be rezoned from R-4 Residential to Planned Residential Development - PRD with proffers. The purpose of this ZMA is to allow for the development of a multi-family apartment community to be known as "Parkway Place" (the "Project"). The development will also include a publicly-accessible trailhead park to provide a community recreational amenity and access to the existing Rivanna Trail system on the Property along John Warner Parkway. Enclosed as Attachment A is the Project's concept plan, entitled, "Parkway Place Development," dated November 18, 2019, prepared by Collins Engineering (the "Concept Plan"). The Project layout is depicted on Sheet 1, which is referred to herein as the "PRD Plan." **The PRD Plan (Sheet 1 of 3), the Entrance Frontage Improvements (Sheet 2 of 3), and the Grading, Stormwater Management, & Utility Plan (Sheet 3 of 3) together comprise the three-page "Application Plan."** Following the Application Plan and Existing Conditions sheet is a set of Illustrative Exhibits prepared by LPDA.

The Applicant:

Kotarides was founded in 1963 by Alex and O. Pete Kotarides as a small home builder in Virginia Beach. The company has been family-owned and operated for the past 56 years. Kotarides built its first apartment community in 1969 in Virginia Beach, and it continues to own and manage the community. The company develops, builds, and manages all its properties, thus maintaining the quality of facilities and service, and is very focused on being a good neighbor in the communities in which its properties are located.

Existing Uses:

As shown on Sheet 4 ("Existing Conditions") of the Concept Plan, TMP 61-167C (25.73 acres) contains open fields, several agricultural outbuildings, and the Rivanna Trail; TMP 61-167 is the site of a single-family residence. Both parcels are zoned R-4. The Property is designated for Urban Density Residential and Urban Mixed Use (in Center) in the Comprehensive Plan. The large parcel is subject to a permanent easement on an approximately 5.890 acre area for a public park and trail. A copy of the instrument establishing the easement is included in the application materials.

Proposed Uses:

Kotarides proposes developing the Property into a multi-family housing community containing 328 dwelling units, which would have a gross density of 12.01 dwelling units per acre (DUA). The PRD Plan shows the location of the building envelopes, travelways/parking envelopes, and greenspace. An illustrative plan of the Project and Landscaping are also attached. As shown on Attachment B ("Allowable Density Analysis"), the Property contains 5.89 acres of Public Open Space (the existing city park easement) and 1.14 acres of Private Open Space (which includes all steep slopes, stream buffers, and flood plains). The net density of the proposed development, after subtracting the acreage of the Public Open Space, Private Open Space, WPO stream buffer, preserved slopes, and flood plain would be **16.17 DUA**: 328 / (14.95 acres + 5.33

acres). See Attachment B: net density calculations include the 14.95 orange area (Urban Residential Density) + 5.33 striped area (Urban Mixed Use in Center) and exclude the 5.89 Public Open Space/city park and 1.14 Private Open Space.

The Applicant will dedicate approximately 1.1 acres in the northeast corner of the Property at the intersection of Rio Road and John Warner Parkway as a public park. The Applicant will work with the County Parks and Recreation Department to design a Neighborhood Service Center consisting of a trailhead park, which will provide parking for those accessing Rivanna Trail (the "Trailhead Park"). The Trailhead Park will include gateway monumentation, a gazebo with trail maps or other small structure, and public art; the exact amenities will be determined in conjunction with county and city parks and recreation departments, and the park design will be informed by recommendations from the Architectural Review Board. The Applicant believes that this proposed park amenity providing connectivity to the existing trail system is a more appropriate use for this Neighborhood Service Center than mixed use development that would bring additional traffic to the area. As further beautification of the area and to increase the enjoyment of the Trail, Kotarides also proposes extending the County's wildflower meadow planting project planned for City property at the northeast corner of the Rio intersection onto the eased area along John Warner Parkway, stretching along the western boundary of the Property.

As shown and noted on the PRD Plan, 12.99 acres of the 27.31 total acreage would be used for private common open space, open space dedicated to public use for the proposed Trailhead Park, active recreation areas for the apartment community, a greenway continuation of the Rivanna Trail, and the existing public open space conservation area.

Surrounding Properties:

The Property is located within the urban ring just on the edge of the Charlottesville city limits. A number of residential neighborhoods have been developed on surrounding properties, including Belvedere, The Reserve at Belvedere, Dunlora, Dunlora Forest, and Shepherd's Ridge at Dunlora to the north and east off Rio Road West; and Riverrun, Treesdale, Stonehenge, and Stonewater off Rio Road East southeast of the Property. Several institutional uses are in close proximity to the Property as well, including Charlottesville Albemarle Technical Education Center (CATEC) immediately northeast across John Warner Parkway, several churches on Rio Road, and Charlottesville Waldorf School and Charlottesville Catholic School to the south. Please refer to the enclosed Vicinity Maps for the location of the project in the context of existing roadways and walking trails, neighborhoods, parks, and institutional uses and businesses.

Consistency with the Comprehensive Plan



Land Use Designations

The Future Land Use South Map designates the Property as **Urban Density Residential** (orange), **Urban Mixed Use (in Centers)** (pink/white stripe), **Public Open Space** along John Warner Parkway (green), and **Privately Owned Open Space; Environmental Features** in the western corner (dark green) where the stream and WPO stream buffer and 100-year flood plain are located, along with Preserved Slopes, none of which will be disturbed by the development.

The Places29 Master Plan for the Northern Development Areas (the "Master Plan") land use plan designates 14.95 acres of the Property for Urban Density Residential and 5.33 acres in the northeast corner as Urban Mixed Use (in Centers). Please see the Comprehensive Plan Land Use Map (page 1 of the lllustrative Exhibits) and the Allowable Density Analysis attached as Attachment B. The Urban Density Residential designation "is used in areas around Centers where multifamily housing with a gross density range between 6.01 and 34 units per acre is desired." (See Master Plan, Ch. 4, "Land Use Designations"). The 14.95 acres of the Property within the UDR designation could be developed with between 89 units (minimum) to 508 units (maximum) based on desired density. The existing zoning, R-4, is inconsistent with the Comprehensive Plan because it permits only four dwelling units per acre, not the medium density desired in this location. Primary uses within UDR areas are multifamily and single-family residential. As further detailed in the "Primary and Secondary Uses" section of Chapter 4, residential buildings should not be taller than four (4) stories or 45 feet unless by exception. The Project fits squarely within the desired primary use for areas designated as Urban Density Residential as it will be a multi-family residential development with proposed gross density of twelve (12) DUA. All buildings are proposed as three-story buildings no greater than 45' tall.

In the Neighborhood Service Center area, residential uses with density of 3-20 DUA and three stories, retail and office uses, institutional uses, and open space are permitted. With 5.33 acres in this designation, the Property could support 15 to 106 units in the Neighborhood Service Center Area. As discussed below, the Applicant believe that an open space use is most appropriate in this area of the Property based on context.

A public park easement held by the City of Charlottesville comprises 5.89 acres of the Property along John W. Warner Parkway. Private Open Space designation covers 1.14 acres of the Property.

Neighborhood Model Principles

Mixture of Uses

In the Urban Density Residential areas, secondary uses may include retail, commercial, and office uses that support the neighborhood, open space, and institutional uses. However, retail use is not permitted within the PRD district. (Office use would be permitted with an approved special use permit.) The eastern corner of the Property at the intersection of Rio and John Warner Parkway is designated Urban Mixed Use (in Centers), which means a location where a Neighborhood Service Center is desirable. Table LU 1: *Land Uses in Centers and Uptown* indicates that a Neighborhood Service Center (NS)[1] should have a minimum of one (1) small green park conveniently located and intended to be a central focal point of the center with additional open space as necessary, depending on the intensity and mix of uses. Table LU I further recommends, with regard to Open Space, that each Center needs a minimum of 10% usable open space and that the minimum size of the park should be ¼ to ½ acre. The proposed Trailhead Park, which will comprise approximately 1.1 acres, will serve as a gateway to the Rivanna Trail that runs along the Parkway side of the Property, providing parking to those beyond walking distance and a green area and information center for trail visitors.

In discussions with the former Director of Community Development and Parks & Recreation about use of the Neighborhood Service Center portion of the Property, the Applicant determined that commercial or mixed use would be less desirable at this intersection than a public trailhead park. The proposed Trailhead Park is particularly appropriate in this location because the existing trail along John Warner Parkway comes to an abrupt stop from the southwest and has no connection point from the northeast. Objective 4 of the

[1] Places29: A Master Plan for the Northern Development Areas, adopted February 2, 2011, amended June 10, 2015, Chapter 4.

Parks and Recreation, Greenways, Blueways, Green Systems Chapter of the Comprehensive Plan is to "(p)rovide access points to greenways and blueways." As Strategy 4(a) explains, "(a)ccess points are important because they make it possible for residents and visitors to get to community destinations by trail."[2] The Places29 Master Plan also recommends to "(p)rovide for trail connections from adjacent and nearby neighborhoods to the Greenway network).[3] By contrast, commercial development at this intersection would be undesirable as it would increase traffic levels to the Property. "With infill and redevelopment, not all Neighborhood Model Principles may be applicable depending on the context of the site."[4] Considering this Center within its context, the Applicant suggests that a public park providing access to the existing trail and conserved public open space as well as a connection to the multi-use sidewalk to be extended southeast on Rio Road is more desirable than commercial uses. Given that office use is the only non-residential use permitted in PRD zoning, there is no loss in potential street-level amenities, such as coffee shops or other retail establishments, which would not be permitted in the district and would only increase traffic in the area.

The Project will be a focal point of a Residential Neighborhood. Parkway Place will be organized around both privately-owned Common Open Space and Public Open Space. Common Open Space will be located in the center of the community in the form of passive recreation areas and active recreational amenities, and privately-owned Open Space is located in the southern portion of the Property where environmental features will be preserved and stormwater management facilities will be installed. Public Open Space will be along John Warner Parkway and at the intersection with Rio Road in the form of the proposed Trailhead Park, which will provide to the surrounding community a connection to a public open space and a Center…with "convenient pedestrian and bicycle connections to the Center."[5]

Neighborhood Centers

The Applicant is not proposing any buildings within the portion of the Property designated as Urban Mixed Use (in Centers). The Project will "maintain the visual integrity"[6] of the Rio Road and John Warner Parkway Entrance Corridors by continuing the character of the John Warner Parkway Entrance Corridor as rolling natural open space with tree and flower plantings. Within the Landscape Buffer shown on the Application Plan, the Applicant will either retain the existing natural undisturbed vegetation and/or plant a mix of deciduous and evergreen trees and shrubs locally native to Virginia at a depth of thirty feet (30') within the fifty foot (50') buffer and at a depth of twenty feet (20') within the thirty foot (30') buffer. The buffer will achieve a naturalistic arrangement of trees and shrubs in a mix of deciduous and evergreen species and will include large trees. The installation of the Trailhead Park with tree plantings and landscaping along the EC and intersection will enhance the viewshed from both Rio Road and John Warner Parkway. As described in the Mixture of Use principle section above with respect to the portion of the property designated as Urban Density Residential, the Applicant has determined that the Project would not be strengthened by adding non-residential buildings within the Urban Mixed Use (in Centers) portion of the Property. Such mixed uses would increase the traffic in the area and would take away from the area needed for the public Trailhead Park area.

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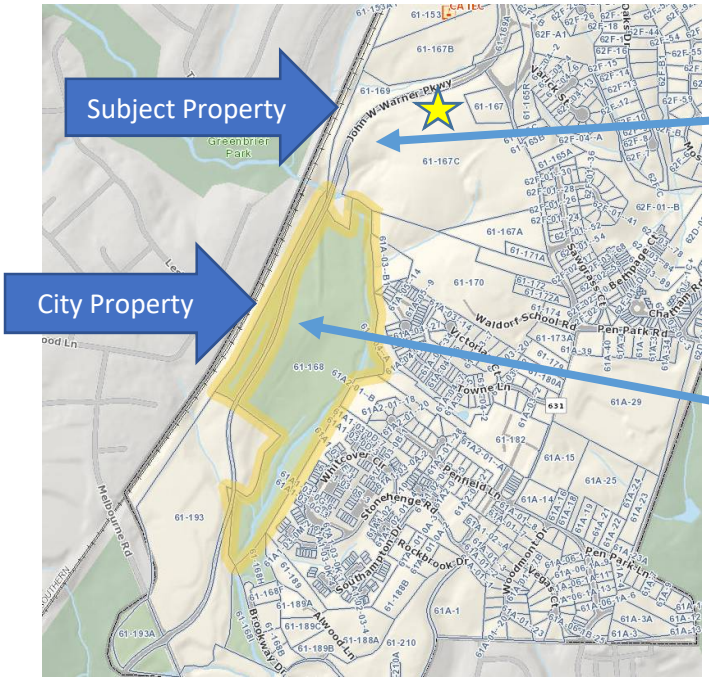
[2] Albemarle County Comprehensive Plan, adopted June 10, 2015, Chapter 11, Parks and Recreation, Greenways, Blueways, Green Systems, p. 11.21.

[3] Places29: A Master Plan, Chapter 6, Community Facilities and Services, p. 6-3.

[4] Id., Chapter 8, Development Areas, Objective 6, p. 8.32.

[5] Id., Chapter 5, Place Types, p. 5-2.

[6] Albemarle County Comprehensive Plan, 2015, Plan Summary, Historic, Cultural, and Scenic Resources, Objective 8, p. 5-19.

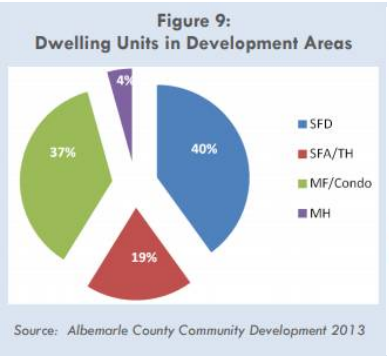


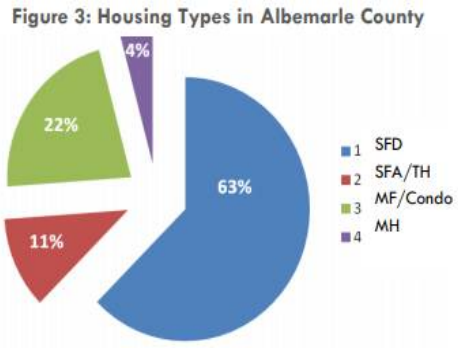
As shown on the Landscaping exhibit prepared by LPDA, within the existing city park located within a 5.89-acre easement on the Property along John Warner Parkway, the existing trees will remain, and the Applicant will plan new shade trees.

Further, as was noted by the ARB in its August 19, 2019 meeting, the property immediately southwest of the Property on John Warner Parkway is owned by the City of Charlottesville, which will help to continue the unbroken greenscape along the road and the bike/pedestrian trail.

Mixture of Housing Types and Affordability

The Comprehensive Plan posits a strategy of ensuring that Development Areas provide a variety of housing types, stating that "a full range of housing types creates choices for residents." A primary impetus for housing type choice is housing affordability, which apartments are uniquely suited to satisfy. The Comprehensive Plan also notes that "a mixture of housing types may not be necessary for infill development, depending on the context and location." As the pie charts accompanying Strategy 2g in the Development Areas chapter and Strategy 4a in the Housing chapter illustrates, the County has a very low stock of multifamily housing overall and within the Development Areas specifically, being only four percent (4%) in both calculations:





The *Comprehensive Regional Housing Study and Needs Assessment* published by The Central Virginia Regional Housing Partnership of the Thomas Jefferson Planning District Commission reports that only three percent (3%) of the land in Albemarle County is zoned for multifamily housing, while ninety-five percent (95%) is zoned for single-family housing (Table 14. Residential Zoning by Jurisdiction, 2018). The report goes on to explain that "(u)nder the goal of protecting single-family neighborhoods, such zoning restricts the opportunities for multi-family housing and increases multi-family land prices" (Id., p. 61).

The areas surrounding the development are heavily developed with single-family detached homes, single-family attached homes, and condominiums. As we have seen in a number of recent developments (e.g. Rio

West and Greenfield Terrace Apartments), in such context of existing residential development, it is appropriate to consider the proposed housing type in the context of surrounding development. The Objective 2, Strategy 2g of Urban Development Areas provides that *"(u)less a mixture of housing types already exists in an area*, new development proposals should offer a variety of housing types for different income levels"[7] (emphasis added.) In its July 30, 2019 work session for ZMA201900004 Breezy Hill, the Planning Commission discussed the question posed by staff, "Should a variety of housing types (such as townhomes and single-family detached) be provided within the development, or should only single-family detached dwellings be provided?" Staff reported that "considering the proximity of this proposed development to the existing Running Deer neighborhood, which is listed as being 'expected to retain their low-density character,' Staff believes it would not be inappropriate for only single-family detached dwelling units to be provided in Breezy Hill." The Commission discussed the various possibilities and the pros and cons of multiple housing types in relation to open space and affordable housing.

The Applicant does not propose to provide two or more housing types within this development for several reasons. The Urban Density Residential designation calls for medium density in this location, there is a range of housing types in multiple developments in close proximity to the Project, the development of single-family or townhome units on the property would not be an efficient use of the property and, further, would not enhance the housing mix in the area, which already includes townhome, condominium, and single-family options. Further, the Applicant is proposing 15% affordable units within the Project for ten years, as described in the paragraph below, which will ensure a mix of housing affordability on site, which is the primary goal of this strategy of the Neighborhood Model Principle as is indicated by the following statement: "Unless a mixture of housing types already exists in an area, new development proposals should offer a variety of housing types for different income levels" (emphasis added).[8]

Affordable Housing:
Multifamily housing often provides the best affordable option in high-cost areas close to urban development where people work. The Applicant will offer 15% of the units at Housing and Urban Development (HUD) Fair Market Rents, making them affordable for those earning 80% of regional Area Median Income (AMI), based on family size; such affordable rates shall be offered for at least ten (10) years following issuance of the Certificate of Occupancy for the Project.

Relegated Parking
This principle is met because all parking is relegated to the rear or sides of buildings. None of the parking areas will be visible from the Entrance Corridors. In its August 19, 2019 advisory hearing, the ARB decided to review illumination and parking lot landscape buffering as part of the site plan review. The Project will have sufficient parking space for the proposed use.

Interconnected Streets and Transportation Networks
See the section entitled, "Road Infrastructure" below and the enclosed TIA analysis. The Project will include an approximately one-acre land dedication for Rio Road improvements. The Applicant is proffering road widening and improvements to Rio Road. The Project will provide public access into the new Trailhead Park and an interparcel vehicular connection to TMP 61-167A to the south.

Multimodal Transportation Opportunities
As shown on the Application Plan, the Project includes interior sidewalks, a connector to the existing trail along John Warner Parkway, and a new 10' bicycle/pedestrian pathway along Rio Road.

[7] Albemarle County Comprehensive Plan, Chapter 8, Development Areas, Objective 2, p. 8.18.
[8] Albemarle County Comprehensive Plan, Objective 2, Strategy 2g, p. 8.18.

Parks, Recreational Amenities, and Open Space

As discussed above, the Applicant will dedicate approximately 1.1 acres for use as a public park abutting the existing City park. The Applicant will construct the improvements within the Trailhead Park as planned in conjunction with the County Parks & Recreation Department with advice from the ARB during the site planning phase of the Project. The Application Plan notes commit to specific types of recreational options, and the proffers guarantee construction of the amenities within the Trailhead Park.

As noted on the Plan, the Applicant will plant additional trees and shrubs within a Landscape Buffer within the existing 5.9 acre public park trail easement. The Buffers note was developed with input from the ARB planner and captures the comments from the ARB's advisory meeting on August 19, 2019. Charlottesville Department of Parks & Recreation has provided a letter (see enclosed November 12, 2019 letter from Todd Brown) confirming that it has no objections to the additional grading and planting within the City's easement area. The Applicant will maintain all plantings within the Landscape Buffer.

Buildings and Spaces of Human Scale

The Architectural Review Board considered a series of 14 questions from ARB staff at its August 19, 2019 meeting. In response to the question "(i)s human scale exhibited in the proposal, or is it anticipated that human scale will be easily achievable in the proposed development," the landscape architect on the ARB commented that the six-acre park and trailhead park and porches contributed to the satisfaction of this principle. The ARB as a whole answered that, yes, this principle had been met by the proposal. The ARB was fine with proposed three-story buildings, recommending that the massing be "broken up" by (a) reducing uniformity in materials and color, (b) staggering or setback of portions of the buildings and use of projections and bays, and (c) the proposed landscaping. Though a mix of heights would help, it noted, such as two-story "hyphens," it did not find them necessary for satisfying the desire for human scale. The Application Plan includes a Building Architecture note, developed in conjunction with the ARB Planner, to address all recommendations regarding building massing and architecture.

Respecting Terrain and Careful Grading and Regrading of Terrain

The project has been designed to respect the existing terrain and to protect the existing natural resources of the property. All grading activity for the project will be outside of the preserved slopes, greenways, floodplain, and stream buffers, as shown on the Application Plan. Private utilities have been designed outside of the natural resource areas to protect these areas on the site. The public utility connections have been designed to limit the impacts to the natural resources on the property.

Impacts on Public Facilities & Public Infrastructure

This Project has been designed to have a minimal effect on the existing public infrastructure.

Water/Sewer:

The Property is located within the jurisdictional area for County water and sanitary sewer service. There is an existing 12" waterline along Rio Road that will provide water and fire flow protection to accommodate the proposed density and use of the Property. A sanitary sewer extension will be installed across Meadow Creek and the city property to the south of the Property. The existing water and sanitary sewer utilities are adequately sized to accommodate the Project. An alternate sanitary sewer connection is being explored

across the properties to the east of the project. Both alignments area feasible, and both alignments have a minimal impact to the preserved slopes on the site.

Road Infrastructure:
The proposed frontage improvements along Rio Road are designed to mitigate the additional traffic from the proposed development and help address some existing traffic issues with the Dunlora and Rio Road intersection created by existing development. A Traffic Impact Analysis report is included with this Application. The report includes the analysis and distribution of the traffic generated from the proposed development. The report also outlines the proposed roadway improvements to mitigate the traffic impacts from the fully-completed development. Four movement points are highlighted where wait times are undesirably high. These delays will increase over time with or without Parkway Place, but the proposed improvements will lessen the increased times in some locations. Most notably, the lane delay turning left out of Dunlora Drive, without road improvements, is expected to increase to an extremely high level without this Project. With the Project's proposed road improvements, the wait time will decrease over today's levels and will be a dramatic improvement over the level that would be experienced without the Project. The reason for the improvement is because of the proposed left median acceleration lane heading south toward the Project's full-movement driveway. Please see Attachment E - Traffic Impact Analysis for further details. All planned or proposed traffic improvements are subject to change based on direction from VDOT. The proposed traffic improvements are shown on Sheet 2 ("Entrance Frontage Improvements") of the Application Plan.

Fire Rescue:
The Application Plan includes information regarding Fire & Rescue and shows 26' fire lanes, as required for the height of the proposed buildings. Shawn Maddox indicated in the Fire Rescue Review Comments that Fire Rescue has no objections to the Project.

Schools:
Students living within the Project would be within the current school districts for Agnor-Hurt Elementary School, Burley Middle School, and Albemarle High School. According to planning staff, "(w)ith current enrollment, Agnor-Hurt Elementary and Burley Middle School are under capacity; however, Albemarle High School 2018-19 enrollment was over capacity by 126 students."[9] The total impacts of the apartment complex on the school system is minimal, due to the total number of 3-bedroom units within the development. Less than 10% of the total number of units will be 3-bedroom units, and one third of the units will be one-bedroom units.

The County Schools[10] provided the following matrix and estimates:

OFFICAL CALCULATOR

Type of Dwelling Unit	**Elementary**	**Middle**	**High**	**Total**
Single Family (Detached)	0.15	0.08	0.12	0.35
Single Family (Attached) (162)	0.13 (21)	0.05 (8)	0.08 (13)	0.26 (42)
Town Home	0.15	0.06	0.08	0.29
Multi-Family (328 Units)	**0.12 (40)**	**0.03 (10)**	**0.05 (16)**	**0.21 (68)**

[9] Planning Commission Staff Report for ZMA201800013 Rio West, June 18, 2019.
[10] Email from Rosalyn Schmitt, Chief Operating Officer, Albemarle County Public Schools.

However, using the actual transportation data provided by County Schools[11], the total number of expected school students per year from this Project is 18 students, based on data for comparable projects provided by the Albemarle County Public Schools and the relatively small proportion of larger units:

Transportation Data from Albemarle County Schools (School Year 2019-20)

		Pre-K	Elem	Middle	High	
Reserve at Belvedere	(294 Units)	1	7	2	4	
Arden Place	(212 Units)	0	4	2	4	
Parkway Place	(328 Units)	0	6	5	7 =	18 students

Impacts on Environmental Features

The Project proposes dedication of approximately 1.1 acres of open space to public use at the intersection of Rio Road and John Warner Parkway. This property would be used for a Trailhead Park, providing parking and other amenities to the existing 5.89 acre park easement already dedicated on the Property for a bicycle and pedestrian trailway. The resulting aggregate 6.99+ acre public open space dedication would commit one quarter of the Property to open space public use. In addition, there are existing preserved steep slopes along the stream banks and adjacent to Meadow Creek that will be preserved with this development. These preserved steep slopes will be protected as common open space on the property and will not be disturbed. Upland pocket park areas are also proposed within the development for active recreational amenities. These amenities include a pool, a clubhouse, and an active recreational field. Finally, a 10' pedestrian/bike trail will extend the existing Rivanna Trail on the north side of the Property along Rio Road on the east side of the Property. The total amount of proposed open space, which includes open space dedicated to public use (Trailhead Park), active recreation areas, the conservation area, the greenway, and common open space, is approximately 49.47% of the Property's total acreage (less the acre to be dedicated for the Rio Road improvements). Please see the locations and acreage calculations of open space on the Application Plan.

There are no proposed impacts to the existing streams or wetlands on the property. The Property is being clustered with this development, and all proposed development will be limited to the areas outside of the critical slopes, including the preserved and managed slopes, and outside of the existing floodplain, streams, and wetland areas on the Property. Please see Sheet 3 of the Application Plan, entitled "Grading, Stormwater Management, & Utility Plan."

Proposed Proffers to Address Impacts

Please see the attached Proffer Statement.

[11] Email from Renee DeVall, Routing and Planning Manager, Albemarle County Pupil Transportation.

Attachments

A ***Parkway Place Development Concept Plan***, prepared by Collins Engineering:

(1) **PARKWAY PLACE APPLICATION PLAN:**

Sheet 1 of 3: PRD Plan

Sheet 2 of 3: Entrance Frontage Improvements

Sheet 3 of 3: Grading, Stormwater Management & Utility Plan

(2) Sheet 4: Existing Conditions (ILLUSTRATIVE ONLY - NOT PART OF APPLICATION PLAN)

Parkway Place Development Illustrative Attachments, prepared by LPDA

Zoning Maps (Existing Zoning; Comprehensive Plan Land Use Map)
Vicinity - Walking Radius
Vicinity - Driving Radius
PRD - Illustrative Plan
Sections; Transverse Sections (3 sheets)
Landscaping
Public Spaces

B Parkway Place Allowable Density Analysis (ZMA-2019-00008)

C City of Charlottesville Parks and Recreation Letter, dated November 12, 2019

D Albemarle County Schools Emails regarding Student Enrollment Expectations and Transportation

E Traffic Impact Analysis and Response Letter prepared by Ramey Kemp & Associates, dated November 14, 2019

41411997_1

Proposed (for 1/23/20 CAC Meeting)

Places29 Rio CAC
Resolution to Deny ZMA20190008

The Parkway Place rezoning application (ZMA20190008 is not in keeping with the County Comprehensive plan guidelines, and will adversely impact the adjacent existing communities.

A stated Comprehensive Plan objective is to "Promote infill and redevelopment that is "compatible with surrounding neighborhoods and uses". The immediate surrounding neighborhoods communities are at lower densities, less than half of what is being proposed in the rezoning application

Further the proposed high residential density of 328 new units (16.1 net dwelling units per acre) will generate an additional 1800 vehicle trips a day, a 15% increase over current volume, plus there is a projected 2% annual future general traffic increase. With this increased traffic on adjacent roads, the developer's proposed road improvements will not be a viable improvement alternative, given that the current roads are already suffering from overcrowded and unsafe conditions,

Accordingly, the CAC recommends that the Parkway Place Zoning Map Amendment NOT be approved unless amended to offer a residential density consistent with the adjacent communities, and that the anticipated traffic conditions are fully resolved

DUNLORA

Received
JUN 11 2019
County of Albemarle
Board of Supervisor's Office

June 10, 2019

Dear Nancy Hunt;

Attached please find petitions signed by 483 (Wetsel petition) and 465 (Belvedere 999 petition) voting residents of the Dunlora neighborhood opposing any rezoning or further development in the Rio 29 corridor. These signatures represent over 90% of Dunlora households. This corridor which includes the intersection of Dunlora Dr./Rio Rd./ John Warner Parkway as well as Belvedere Dr. should be evaluated with regard to necessary infrastructure improvements and these improvements then implemented before any rezoning is considered.

While it is recognized the County's interest is effective utilization of land in the growth area, there are several facts to consider:

- The Rio Road/John Warner Parkway intersection is one of the busiest in the County. This intersection is currently rated by the Virginia Department of Transportation (VDOT) as a "D". This grade means "operations with a control delay between 35 and 55 s/veh or a volume to capacity ratio greater than 1.0" *Highway Capacity Manual.*
- Entry/egress from Dunlora is already difficult and dangerous regardless the time of day traveled.
- VDOT and county officials have acknowledged this particular area needs improvements even with current traffic volumes. According to the 2019 update of Albemarle County Transportation Priorities improving the intersection at Rio Rd. and John Warner Parkway isn't being considered. The proposed developments are in stark contrast to the purely residential surrounding community environment and are inconsistent with the Places29 area goal to "preserve the character of existing neighborhoods".
- Additionally, potential impact on the surrounding schools, some of which are already over capacity, does not appear to have been adequately addressed.

We in Neighborhood Two of the Rio District request that no further development be considered until the infrastructure surrounding the area is evaluated and improvements in road safety and traffic flow are implemented. This request is consistent with the consideration granted to Rivanna Village in the *Village of Rivanna Master Plan* Adopted 5-12-10 Page 5 Amended June 10, 2015 which states, "Future residential development should only be approved if and when

transportation improvements to US 250 have been made and sufficient sewer capacity is in place to support that development."

In addition, Rio Rd. and John Warner Parkway are considered an entrance corridor. Preserving the character of the current surrounding neighborhoods and eliminating traffic backups would make this much more appealing to those traveling through or considering Charlottesville as their future home.

Sincerely,

The Dunlora Board of Directors

Jennifer Mathes

Janice Huebner

Tom Duffey

Ernest Anastasi

Jane Beckert

Associa Community Group 1413 Sachem Place, Suite 2 Charlottesville, VA 22901
Phone: 434-984-0700 Fax: 434-984-1211

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE 5/3/2019

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	TERESA FADELY	1270 TOWNBROOK CROSSING	Teresa Fadely
2	Marian Pinkham	2212 Shepherds Ridge Rd	Marian Pinkham
3	CATHERINE MURRAY	2206 SHEPHERDS RIDGE RD.	Catherine Murray
4	CURT YOHE	2199 SHEPHERDS RIDGE RD.	Curtis D Yohe
5	ALICE COOK	2189 Shepherds Ridge Rd	Alice Cook
6	WAYNE FERGUSON	2200 Shepherds Ridge Rd	W Ferguson
7	ELVA FERGUSON	2200 Shepherds Ridge Rd	Elva Ferguson
8	Judith N Reid	2137 Shepherds Ridge Rd	Judith N Reid
9	Della C Booth	2135 Shepherds Ridge Rd	Della C. Booth
10	Veronica A GREGG	2129 Shepherds Ridge Rd	Veronica A. Gregg
11	DELLA H. DIRICKSON	2127 Shepherds Ridge Rd	Della H. Dirickson
12	WILLIAM C DIRICKSON	2127 SHEPHERDS RIDGE RD	
13	Alan G Forbes	2126 Shepherds Ridge Rd	Alan G Forbes
14	Helen J. Forbes	2126 Shepherds Ridge Rd.	Helen J. Forbes
15	CHRISTINE MORRISON	2120 SHEPHERDS RIDGE RD	Christine Morrison
16	Carolyn Rowe	2112 Shepherds Ridge	Carolyn Rowe
17	KATIE DOTSON	2111 Shepherds Ridge Rd	Katie Dotson
18	EDNA POSNER	2119 SHEPHERD RIDGE RD.	Edna Posner
19	Jane Bupp	2121 Shepherds Ridge Rd	Jane W. Bupp
20	Peggy Bidwell (Margaret)	2125 Shepherds Ridge Rd.	Margaret Bidwell
21	Edward J. Bidwell	2128 Shepherds Ridge Road	Edward J. Bidwell
22	MARGARET Ann Andrews	2222 Shepherds Ridge Rd.	Margaret Ann Andrews
23	Mary E. Bailey	2220 Shepherds Ridge Rd	Mary E. Bailey
24	CURTIS V. BAILEY	1220 Townbrook Xing	C.V. Bailey
25	Eugene McVey	1215 Townbrook Xing	Eugene McVey

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE 5/1/2019

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	June Taft	2238 Shepherds Ridge Rd Charlottesville, VA 22901	June Taft
2	Alice Batten	1291 Townbrook Crossing	Alice Batten
3	GARY FADELY	1270 TOWNBROOK CROSSING	Gary Fadely
4	Douglas Hudson	1276 Townbrook Crossing	
5	STERLING HUDSON	1276 Townbrook Crossing	Sterling Hudson
6	Phyllis Tignor	1271 Townbrook Crossing	Phyllis Tignor
7	NANCY F. GILBERT	1269 TOWNBROOK CROSSING	Nancy F. Gilbert
8	SALLY MARSHALL	2231 Shepherds Ridge Rd., Charlottesville	Sally
9	CHRIS BARNICLE	2237 Shepherds Ridge Rd. CHARLOTTESVILLE	Barnicle
10	William A. Baker	2239 Shepherds Ridge Rd.	Charlottesville
11	Nancie Garth	2247 Shepherds Ridge Rd	Nancie Hurt Garth
12	Eileen Berger	2228 Shepherds Ridge Rd	
13	Richard Berger	2228 Shepherds Ridge Rd	
14	EDWARD GUIDA	2238 SHEPHERDS RIDGE RD.	
15	JOHN E KUK III	2229 " " "	
16	PATRICIA A KUK	" " " "	Patricia A. Kuk
17	MICHAEL HORN	2223 SHEPHERDS RIDGE RD.	
18	Denise Casteen	2221 Shepherds Ridge Rd	
19	JOANN FAILLACE	2215 Shepherds Ridge	M. Joann Faillace
20	JANICE S. LINKOUS	2205 Shepherds Ridge Rd.	
21	George R. Coleman	2213 Shepherds Ridge Rd	George R. Coleman
22	BEVERLY GAY NICHOLS	2207 SHEPHERDS RIDGE	
23	Kerin Shikiar	Kerin Shikiar 2191 Shepherds Ridge Rd.	
24	A. DAVID DRAYER	2197 SHEPHERDS RIDGE RD	A David Drayer
25	JUDITH M. DRAYER	2197 SHEPHERDS RIDGE RD	Judith M. Drayer

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Tara Friedman	1308 Breckenridge Ct	Tara Friedman
2	Heather Quillian	1230 Loony Run	
3	Kathleen McQuilkin	1324 Breckenridge Ct	Kathleen McQuilkin
4	John McQuilkin	1324 Breckenridge Ct.	
5	Jason Jones	1317 Breckenridge CT	
6	Patrick Campbell	1117 Pike Pl	
7	Kristine Campbell	1117 Pike Pl	Kristine Campbell
8	Cordelia Wilson	1315 Breckenridge Ct	
9	Carolyn Piotrowski	1108 Pike Pl	Carolyn Piotrowski
10	Jeff Blauvelt	1118 Pike Pl	
11	Melinda Caldwell	1118 Pike Place	Melinda Caldwell
12	Boris Vovtchen	1111 Pike Place	
13	Raina Robeva	1111 Pike Place	
14	Steven Friedman	1308 Breckenridge Ct	
15	Fatima Khan	1107 Pike Place	
16	SHAHARYAR KHAN	1107 Pike PL	
17	Kara Williams	1323 Breckenridge Ct	
18	Keith Kobyra	1330 Breckenridge Ct	
19	Emily Kobyra	1330 Breckenridge Ct	
20	Sarah Click	1311 Breckenridge Ct.	
21	Tim Click	1311 Breckenridge Ct	
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Wetsel Farm

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE May 2019

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	FRANK Ehlers	1223 Mountford Ct	
2	TERESA Gable	1223 Mountford ct	
3	MARGARET GABLE	1223 MOUNTFORD CT	
4	Luis Alvarez, Jr.	1219 Mountford Ct.	
5	Judith A. English	1219 Mountford Ct.	
6	Eileen French	1228 Mountford Ct.	
7	Brent French	1228 Mountford Ct.	
8	Laura M. Thomas	1221 Mountford Ct.	
9	Jeannette May	1224 Mountford Ct	
10	Paul S. Thomas	1221 Mountford Ct.	
11	Nancy J. Brinkac	915 Charter Oaks Dr.	NANCY BRINKAC
12	Elizabeth Williams	945 Charter Oaks Dr.	
13	Carolyn McPherson	910 Charter Oaks Dr.	
14	Etta Levin	890 Charter Oaks Dr.	
15	Julius Levin	890 Charter Oaks Dr.	
16	JASON WILLIFORD	860 CHARTER OAKS DR.	
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Wetsel

(62)

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE: May 2019

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	John P. Springett	895 Charter Oaks	John P. Springett
2	Martha T. Springett	895 Charter Oaks Dr.	Martha T. Springett
3	Margaret Dryer	830 Charter Oaks Dr	Margaret Dryer
4	MARK DRYER	830 CHARTER OAKS DRIVE	Mark Dryer
5	THOMAS WHEELER	840 Charter Oaks Dr	
6	MARY C WHEELER	840 CHARTER OAKS DR	Mary C. Wheeler
7	Gina James	850 Charter Oaks Dr	
8	Bernadette Thomas	860 Charter Oaks Dr	Bernadette Thomas
9	Steve Panos	870 Charter oaks Dr	
10	Zannis "	870 Charter oaks	
11	HARALAMBOS	870 Charter Oaks	
12	Joanne Panos	" " "	
13	Victoria Richardson	880 Charter Oaks Dr	Victoria Richardson
14	David Richardson	880 Charter Oaks. Dr	
15	JULIUS LEVIN	890 CHARTER OAKS DR	
16	Etta [illegible]	890 Charter Oaks	Etta Levin
17	Joy Cross	905 Charter Oaks	
18	Whitman Cross	910 Charter Oaks	
19	Kelly Garrett	905 Charter Oaks	Kelly Garrett
20	James Garrett	905 Charter Oaks	James Garrett
21	Jayme T. Naughton	950 Charter Oaks	Jayme T. Naughton
22	Stuart Williams	945 Charter Oaks Dr	
23	PATRICIA MOORE	975 CHARTER Oaks	Patricia S. Moore
24	BRYAN THOMAS	975 CHARTER Oaks	Bryan Thomas
25	JANE THOMAS	975 CHARTER Oaks	Jane Thomas

Wetsel

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE..May 2019

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Nathan B. Smith	930 Charter Oaks Drive	
2	Jodi R Schwartzman	920 Charter Oaks Dr	
3	Melody Smith	930 Charter Oaks Dr.	Melody Smith
4	Julie myers	925 Charter Oaks Dr	
5	James Hubbard	935 Charter Oaks Dr.	
6	George Hoke	960 Charter Oaks Dr	
7	Tracy Hoke	960 CHARTER OAKS DR	
8	Camille Hoke	960 Charter Oaks Dr	Camille Hoke
9	WILLIAM BUCKLEY	970 CHARTER OAKS DR	
10	Lawrence Clarke	1000 Charter Oaks Dr.	
11	Susan m. Clarke	1000 Charter Oaks Dr.	Susan M. Clarke
12	Vicki Miller	955 Charter Oaks Dr.	
13	Brian Miller	955 Charter Oaks Dr	
14	ALEXIS A. HALLEY	2036 Shepherds Ridge Rd.	
15	Jennifer Mathes	885 Charter Oaks Dr	
16	Donald Mathes	885 Charter Oaks Dr	
17	Patricia Gillen	1007 Dunlora Dr.	
18	[illegible]	1007 Dunlora Dr	
19	Patrick Punch	374 Shepherds Ridge Cir	
20	Y. Heidi Yoon	1115 Dunlora Dr	
21	VIVEK DHAND	1115 DUNLORA DR	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Kent Schlussel	1171 River Chase Ridge	Kent Schlussel
2	Judith Schlussel	1171 River Chase Ridge	Judith Schlussel
3	Rebecca Rush	1159 River Chase Ridge	Rebecca L Rush
4	Thomas Osinski	1159 River Ch. Rdg	Thomas Osinski
5	P. Ann LaPanta	1158 River Chase Rdg	P. Ann LaPanta
6	Lissa Weathers	2445 Eastham Hill	Lissa Weathers
7	Susan L Hunter	1158 River Chase Ridge	
8	Matthew Johnson	1155 River Chase Ridge.	
9	Kellapura Murthy	1163 River Chase Ridge	
10	Richard Elzey	3759 Burgess Store Rd Barboursville	
11	CATHERINE MURTY	1163 RIVER CHASE RIDGE.	
12	Cindy Cooper	1162 River Chase Ridge	
13	Vicki Bombardieri	1170 River Chase Rdg	
14	Russ Bombardieri	1170 River Chase Rdg	
15	Rodney Sullivan	1183 River Chase Ridge	
16	Pam Sullivan	1183 River Chase Ridge	
17	Eric T. Cooper	1162 River Chase Ridge	
18	Carol McIntyre	1186 River Chase Ridge	
19	James C Boyd	1189 River Chase Rdg	
20	Barbara Boyd	1189 River Chase Rdg	
21	Amy Lenert	1195 River Chase Rdg	
22	Jeff Lenert	1195 River Chase Rdg	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE..4.22.2019.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Nan Halperin	1376 River Brook Ct	
2	MICHAEL ORLOFF	1376 RIVER BROOK CT	
3	Jan Davoie	1384 River Brook Ct.	
4	Ron Londen	1389 River Brook Ct	
5	Ann Cooper	1385 RiverBrook Ct	
6	Donald Davoie	1384 River Brook Ct	
7	Collin Hensien	1388 River Brook Ct	
8	MARK HENSIEN	1388 River Brook CT	
9	Coleen McNamara	1388 River Brook CT	
10	Christine Londen	1389 River Brook Ct	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Janet AnAstasi	1135 River Oaks Ln	Janet Anastasi
2	ERNEST ANASTASI	1135 RIVER OAKS LANE	Ernest Anastasi
3	Caitlin Henning	1409 River Oaks Rdg	Cait Henning
4	Lynda Fanning	1401 River Oaks Rdg	~~Charlottesville~~ Lynda Fanning
5	Steven Ball	1412 River Oaks Rdg	Steven Ball
6	Margaret Ball	1412 River Oaks Rdg	Margaret Ball
7	margaret wood	361 Shepherds Ridge Circle	Margaret Ball POA
8	Chris Smarte	1409 River Oaks Ridge	Chris Smarte
9	Linda L. Meade	1400 River Oaks Ridge	Linda L. Meade
10	NANCY T. MEADE	1400 RIVER OAKS RIDGE	Nancy T. Meade
11	Emily Shifflett	1404 ROR	~~EB Shifflett~~
12	Michael Shifflett	1404 ROR	
13	Jeanne Stoall	1417 RIVER OAKS RDG	Jeanne M. Stoall
14	Phil Shiflett	1425 River Oaks Rdg.	Phil Shiflett
15	J. Alan Shiflett	425 River Oaks Rdg.	J. Shiflett
16	Nathan Cors	1433 River Oaks Rdg	
17	Sheila McCormick	1420 ROR	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	THOMAS DUFFEY	2164 LORING CIRCLE	
2	Jane Duffey	2164 Loring Circle	
3	Chris Hartwell	2165 Loring Circle	
4	Judith Smith	2136 Loring Circle	
5	William Smith	2136 Loring Circle	
6	Kristi Hartwell	2165 Loring Circle	
7	TIFFANY COLAVINCENZO	2179 LORING CIRCLE	
8	Dylan Suttle	2124 Loring Circle	
9	Cathy Biggs-Suttle	2124 Loring Circle	
10	Dennis D. Anchetta	2171 Loring Circle	
11	Nancy Hartman	2117 Loring Circle	
12	PAUL HARTMAN	2117 Loring Circle	
13	Kerry Hall	2111 Loring Circle	
14	Mike Eccles	2018 Kemper Lane	
15	Bill Schoelwer	2017 Kemper Lane	
16	Ashish Patel	2012 Kemper Lane	
17	CHRIS PITT	2005 Kemper lane	
18	GRAHAM SHIFFLETT	2112 LORING CIR	
19	Brenda C. Shifflett	2112 Loring Cir.	
20	Laura Cook	2011 Kemper Ln	
21	Ryan McCrystal	2174 Loring Cir	
22	Kara Allmon	2153 Loring Cir	
23	Joseph Thorndike	2129 Loring Cir	
24	Ana Lynch	2223 Ambrose Way	
25	Braden O'Meara	2211 Ambrose Way	
26	Robert Abbott	2217 Ambrose Way	

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	BETTY E SPANN	1085 Blackburn Bluff	Betty E Spann
2	PAULA CUTRUZZOLA	1094 Blackburn BLF	P Cutruzzola
3	TODD CUTRUZZOLA	1094 BLACKBURN BLF	T Cutruzzola
4	Arthur Sherwood	1088 Blackburn Blf	Arthur Sherwood
5	Karen Sherwood	1088 Blackburn Blf	Karen Sherwood
6	Mary Jane Derby	1082 Blackburn Blf.	Mary Jane Derby
7	Ken Derby	1082 Blackburn Blf	Ken Derby
8	Sudie Althisar	1325 Blackburn Way	Sudie S. Althisar
9	Raleigh Althisar	" "	
10	Paul Easton	1317 Blackburn Way	Paul Easton
11	Karen Byrne	" "	Karen Byrne
12	Ken Porter	1028 Blackburn Bluff	Kenneth L Porter
13	Vanessa Shami	1025 Blackburn Bluff	
14	Susan Porter	1028 Blackburn Bluff	
15	Shelley Robbins	1034 Blackburn Bluff	S. Robbins
16	Lynn Bremer	1046 Blackburn Bluff	Lynn Bremer
17	Bob Joplin	1040 Blackburn Bluff	
18	RoyAnn Murray	1058 Blackburn Blf	
19	William Murray	1058 Blackburn Blf	
20	Christine Chase	1059 Blackburn Blf.	C Chase
21	Ken Jannotta	1064 Blackburn Blf.	K Jannotta
22	Peggy Jannotta	1064 Blackburn Blf	Peggy V. Jannotta
23	WILLIAM WARDLAW	1069 BLACKBURN BLF	
24	MARY WARDLAW	1069 BLACKBURN BLF	Mary E. Wardlaw
25	Karin Bencel	1040 Blackburn Blf	

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Dorothy M. Salvatierra	1016 Blackburn Bluff	Dorothy M. Salvatierra
2	George Salvatierra	1016 Blackburn Bluff	
3	Deborah van Eerden	1091 Blackburn Bluff	
4	Michel van Eerden	1091 Blackburn Blf	
5	Ginny Echelberger	1031 Blackburn Blf	
6	Leonard Touchette	1045 Blackburn Bluff	
7	Bonnie Touchette	1045 Blackburn Bluff	
8	Robert E. Bremer	1046 Blackburn Blf	
9	Chas Bridgman	1052 Blackburn Blf	
10	Harris McGehee	1070 Blackburn Blf	
11	Mary Lynn Haney	1301 Blackburn Way	
12	Gary Haney	1301 Blackburn Way	
13	GREGORY ROBBINS	1034 BLACKBURN BLUFF	
14	Mary Crawford	1309 Blackburn Way	
15	Dante Crawford	1309 Blackburn Way	
16	Tara McGehee	1070 Blackburn Bluff	
17	Nathan Biediger	1052 Blackburn Blf	
18	JEFF CUTRIZZULA	1094 BLACKBURN BLF	
19	HEATHER BOE	1022 BLACKBURN BLUFF	
20	NICHOLAS GERON	1022 BLACKBURN BLUFF	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Claire Wood	1271 Riverchase Ln	Claire Wood
2	DAVID BRUSH	1290 River Chase La.	David Brush
3	DELORES BRUSH	1290 RIVER CHASE LA.	Delores Brush
4	Emily D. Oliver	1300 River Chase	Emily D Oliver
5	Christine Mazumba	1310 River Chase	
6	Jen Collins	1305 River Chase Lane	
7	JAMES Collins	1305 River Chase Ln	
8	Katie Smith	1338 River Chase Ln	
9	Chris Smith	1338 River Chase Ln	
10	Christopher Sides	1341 River Chase Ln	
11	Jeffrey Fishwick	1260 River Chase Ln.	
12	George M. Cohen	1264 River Chase Lane	
13	Lauren Cohen	1264 River Chase Lane	Lauren Cohen
14	Linda Cohen	1264 River Chase Lane	Linda D Cohen
15	Carol Fishwick	1260 River Chase Lane	Carol Fishwick
16	George Bogner	1265 River Chase Lane	
17	Jennifer Smith	1265 River Chase Lane	
18	Robert Wood	1271 River Chase Lane	
19	Nancy Maune	1270 River Chase Lane	Nancy F Maune
20	Emily van Wincoop	1281 River Chase Lane	Emily van Wincoop
21	Rupinder Kaur	1299 River Chase Lane	RK2
22	Rupinder Kaur	1299 River Chase Lane	RK2
23	Anne Waite	1339 Mosby Rch	Anne P Waite
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	WARREN QUILLIAN	1230 LORING RUN	
2	Reese Quillian	1230 Loring RUN	Reese Quillian
3	Susan Roberts	1230 Loring Run	Susan Roberts
4	Heather Quillian	1230 Loring Run	Heather Quillian
5	ANNE LINDEN	1455 GLENSIDE GREEN	Anne Lamb Linden
6	Eliza Holland	2068 Loring Place	E Holland
7	MATT HOLLAND	2068 LORING PLACE	
8	Carrie Moranville	2056 Loring Place	Carrie Moranville
9	Mary Moranville	2056 Loring Place	Mary Moranville
10	Mark Moranville	2056 Loring Pl	MARK MORANVILLE
11	JIRI JELINEK	2050 LORING PL	
12	Huai Cheng	1235 Loring Run	
13	Linlin Wang	1235 Loring Run	Linlin Wang
14	Joyce Miller	1242 Loring Run	Joyce Miller
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16	JARROD CATHY	1248 Loring Run	
17	Rob Teweles	1254 Loring Run	Rob Teweles
18	XIUFENG HUANG	2074 LORING PL	
19	GUIFEN M HUANG	2074 LORING PL	
20	Heath Spencer	2080 Loring PL.	Heath Spencer
21	Denise Lunsford	1241 Loring Run	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	JoLee Tarbell	1330 Mosbys Reach	JoLee Tarbell
2	Scott Jones	656 King William	
3	Marcy Adams	1303 Mosbys Reach	Marcy Adams
4	Gene Flamm	1320 Mosbys Reach	Gene Flamm
5	CONNIE FLAMM	1320 MOSBY'S REACH	Connie Flamm
6	Amy Clasen	1350 Mosby's Reach	Amy Clasen
7	David Balahan	1363 Mosby's Reach	David Balahan
8	Harman Cheema	824 King William Dr	
9	Lori Balahan	1363 Mosbys Rch	
10	VICKY EICHER	808 KING WILLIAM DR.	V. Eicher
11	Ingrid Farrell	805 King William Dr.	I. Farrell
12	Dewey Cornell	811 King William Dr	Dey Cornell
13	Nancy Cornell	811 King William Dr	Nancy Cornell
14	LAURA KUHN	817 KING WILLIAM DR	Laura Kuhn
15	Katrie Hullfish	817 King William Dr.	KKHullfish
16	Barb Woodsmall	~~8410~~ 1340 Mosbys Rch.	
17	MARY Pickrell	1357 Mosbys Reach	Mary Pickrell
18	Marc Perdue	1351 Mosby's Reach	Marc Perdue
19	~~Carrie W~~	1357 Mosbys Reach	
20	Taylor Hu	1357 Mosbys Rch	
21	Thomas Howard	800 King William Dr.	
22	Penny L Howard	800 King William Dr.	PENNY L. Howard
23	Janice Huebner	829 King William Dr	Janice Huebner
24	Ron Hu	829 King William Dr	
25	AMAR CHEEMA	824 KING WILLIAM DR.	

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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	David Kashatus	1345 Mosby Rch	Dan Kashatus
2	Jennifer Kashatus	1345 Mosby Rch	Jennifer Kashatus
3	THOMAS C. TOPEL	832 KING WILLIAM	
4	Martha E. Topel	832 King William Dr	Martha E Topel
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Lisa Foster	1145 Dunlora Dr.	
2	Kent Rucker	2050 Stoplights Parkway	
3	Bayard Catron	2038 Shepherd Ridge	
4	Laura Jones	856 King William Drive	
5	Amy B. Anderson	823 King William Dr.	Amy B. Anderson
6	Zachariah D. Anderson	823 King William Dr.	Zachariah D. A.
7	THEODORE D ANDERSON	823 KING WILLIAM DR	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE...4/28/19

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	JEFF JENKINS	2003 SHEPHERDS RIDGE RD	
2	Lisa muratt	2002 Shepherds Ridge Rd	
3	James Muratt	2002 Shepherds Ridge Rd.	
4	Mary Nadolski	403 Pickett Lane	
5	Joseph Nadolski	403 Picket Lane	
6	Robyn Wheichel	2004 Shepherds Ridge Rd	
7		995 Dunlora Dr	Jane Whitworth
8		995 Dunlora Dr	Robert Whitworth
9	Jennifer Furin	998 Dunlora	
10	Tim Furin	998 Dunlora	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Sherry Mangold	1335 Pendleton Court	Sherry Mangold
2	Kent M Mangold	1335 Pendleton Ct	K M Mangold
3	Rebecca L'Ecuyer	112 Ring Willson	Rebecca J. Ecuyer
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Lucille DIGGES	1334 PENDLETON CT.	Lucille Digges
2	Kennerly DIGGES	1334 PENDLETON CT	
3	Katrina Callson	935 King William Dr	
4	Gilman Calls	935 King William Dr	
5	George Hartogensis	945 King William Dr	
6	Alex Siedlecki	965 King William Dr	
7	Mary Jane Siedlecki	965 King William DR	Maryjane Siedlecki
8	Pam Wiese	1296 Barclay Hl	
9	Susan Chaplinsky	960 King William	Susan Chaplinsky
10	JOHN M. ATKINSON	952 KING WILLIAM DR.	
11	Monica Atkinson	952 King William Dr	Matkinson
12	Robin Rockwell	1319 Pendleton CT	
13	Gary Rockwell	1319 Pendleton Ct	
14	Jim Kent	944 King William Dr.	
15	SHERI KENT	944 King William Dr	Sheri Kent
16	Joan D Carris	1318 Pendleton CT	Joan D. Carris
17	Sharron Leland	925 King Wm. Dr.	Sharron D Leland
18	Jon Leland	925 King William	
19	Nancy Hartogensis	945 King William Dr	Nancy Hartogensis
20	ELLIOT MININBERG	985 King William Dr	
21	PATRICIA F. MININBERG	" " "	
22	Kerrie Mandeville	1326 Pendleton Ct	Kerrie Mandeville
23	PAUL MANDEVILLE	1326 PENDLETON CT	
24	Mallory Mandeville	1326 Pendleton Ct	Mallory Mandeville
25	SARA J CARRIS	1318 Pendleton CT	

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Sharon Balint	1121 River Oaks LN	Sharon Balint
2	Dianne Burris	1105 River Oaks Ln.	Dianne Burris
3	Brooke Arnold	1104 River Oaks Ln	Brooke Arnold
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Ingrid Horn	1141 River Oaks Ln	Ingrid Horn
2	LARRY HORN	1141 RIVER OAKS LN	
3	Paige Horn (Kelly)	1141 RIVER OAKS LN	Kelly P Horn
4	Elizabeth Robinson	1142 River Oaks Lane	Elizabeth A robinson
5	Scott Womack	1142 River Oak, Lane	Scott S Womack
6	Aileen Selmeczi	1100 River Oaks Lane	Aileen Selmeczi
7	Gary Selmeczi	1100 River Oaks Lane	Gary Selmeczi
8	Eunice Hooper	1116 River Oak Ln	E. Hooper
9	JOHN HOLDEN	1130 RIVER OAKS LN	
10	Margaret Dame	1153 River Oaks Lane	Margaret Dame
11	Robert Dane	1153 River Oaks Lane	
12	Eric Sigler	1150 River Oaks Lane	
13	TODD WARNER	1129 RIVER OAKS LN	
14	Rita Minerd	1113 River Oaks Ln	Rita M. Minerd
15	Doug MINERD	1113 RIVER OAKS LN	
16	JEAN NIC HOLDEN	1130 RIVER OAKS	
17	AKanksha Meyer	1147 River Oaks Ln	Akanksha Meyer
18	Jennifer Bivens	1158 River Oaks Ln	Jennifer Bivens
19	Phyllis Brown	1166 River Oaks Lane	Phyllis Brown
20	Barbara Caswell	1108 River Oaks Lane	Barbara J Caswell
21	Ann Dye	1173 River Oaks	Ann Dye
22	Robert Dye	1173 River Oaks	Robert Dye
23	DON BANTON	1102 RIVER OAKS	D Banton
24	Gwansik Park	1190 River Oaks	Gwansik Park
25	Eunyoung Hwang	1190 River Oaks	Hwangeunyoung

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE 5/20/19

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Lexie A McV	1215 Townbrook	L. McV
2	Ruy Monroy	1214 Townbrook	Ruy
3	Velma A. Reichle	1278 Townbrook	Velma A. Reichle
4	Brent Isaacs	1284 Townbrook	Brent Isaacs
5	Stephen Isaacs	1284 Townbrook Xing	
6	Brenda Peterson	2190 Shepherds Ridge	Brenda Peterson
7	Patricia Earle	1212 Townbrook Crossing	Patricia Earle
8	Brett Kobloch	1222 Townbrook Xing	
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE..5/7/19

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Leslie Middleton	374 Shepherds Ridge Circle	Leslie B Middleton
2	William W Hopkins	362 Shep. Ridge Cir	William W Hopkins
3	Chester Yuan	356 Shepherds Ridge Cir	C Yuan
4	Arleen Yuan	356 Shepherds Ridge	Arleen Yuan
5	ROBERT S DRAKE	350 Shepherds Ridge	Robert S Drake
6	Barbara Drake	" " "	Barbara Drake
7	MARY AROUZEO	308 Shepherds Ridge	Mary Arouzeo
8	MARY AROUZEO	308 Shepherds Ridge	Mary Arouzeo
9	Hedy Southard	332 Shepherds Ridge Cir	H Southard
10	TINITA FERRO	302 SHEPHERDS RIDGE	Tinita Ferro
11	TEFTA FERRO	"	Tefta Ferro
12	Nancy C Gough	2110 Shepherds Ridge Rd	Nancy C Gough
13	Roderick Vawter	344 Shepherds Rdg. Circle	Roderick Vawter
14	Jacquelyn M. Vawter	344 Shepherds Ridge Circle	J. Vawter
15	CARLA ISAACS	1284 TOWNBROOK XING CVILLE	Carla Isaacs
16	Dale Walden	2118 Shepherds Ridge Rd 22901	D Walden
17	Janet B Mcstrell	2113 Shepherds Ridge	Janet B Mcstrell
18	Jon Leuder	320 Shepherds Ridge Circle	Jon Leuder
19	MELINDA HENDRICKS	314 SHEPHERDS RIDGE CIR.	Melinda Hendricks
20	PAUL HENDRICKS	314 SHEPHERDS RIDGE CIR.	Paul Hendricks
21	ELIZABETH MEYER	320 SHEPHERDS RIDGE CIR.	Elizabeth A. Meyer
22	JOANNE VIA	329 Shepherds Ridge Cir	Joanne Via
23	Charles A. Via	329 Shepherds Ridge Cir	Charles A Via
24	Joy H. Tiny	326 Shepherds Ridge Cir	Joy H Tiny
25	PAUL H TINY	326 Shepherds Ridge CIR	Paul H Tiny

Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA..GATES...DATE..5/15/19

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Bill L. Stackhouse	1260 Town Brook Xing	Bill L. Stackhouse
2	Gloria Stackhouse	1260 Townbrook Xing	Gloria Stackhouse
3	Liz Amrhein	403 -Townbrook Ct.	Liz Amrhein
4	Paul Amrhein	403 Townbrook Ct	
5	Frank Alexander	405 Townbrook Ct	
6	Mary Howard	407 Townbrook Ct	Mary B. Howard
7	Tom Howard	407 Townbrook Ct.	Tom Howard
8	~~Joe~~ Sue Seymour	413 Townbrook Ct.	Sue Seymour
9	Leslie Kerstetter	415 " "	Leslie Kerstetter
10	Sheila E Porter	417 Townbrook Ct	Sheila E Porter
11	James S. Moore	413 Townbrook Ct.	James S. Moore
12	MARY BARNABEI	408 TOWNBROOK CT	Mary Barnabei
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA GATES.....DATE 5/15/19

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Ann Marie Vinson	1263 Townbrook Xing	Ann Marie Vinson
2	William H. Mitchell	416 Townbrook Ct	William H. Mitchell
3	Alan Binder	414 Townbrook Ct	Alan Binder
4	Lenore Binder	" "	Lenore Binder
5	Alexander Walker	406 Townbrook Ct	Alexander Walker
6	John B Walker	406 Townbrook Ct	John B Walker
7	Wayne Schnitger	1261 Townbrook Xing	Wayne Schnitger
8	Constance Schnitger	1261 Townbrook Xing	C. Schnitger
9	John Anderson	1259 Townbrook Xing.	John Anderson
10	Mary Anderson	1259 Townbrook Xing	Mary Anderson
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	ROSS SARGENT	1344 Dunlora Dr.	R. L. Sargent
2	LORRAINE SARGENT	1344 Dunlora Dr	Lorraine Sargent
3	PATRICIA HUBBARD	1348 Dunlora Dr	P Hubbard
4	James Culver	1336 Dunlora Dr.	J. Culver
5	Grace Culver	1338 Dunlora Dr	
6	Claire Culver	1338 Dunlora Dr	
7	DAN McCallum	1390 Dunlora Dr.	
8	Diane McCallum	1390 Dunlora Dr.	Diane McCallum
9	Lydia Bryant	1382 Dunlora Dr	Lydia Bryant
10	Caroline Polk	1298 Dunlora Dr.	
11	FORREST SHOPE	1298 DUNLORA DR	
12	NICK BRANDT	1331 DUNLORA DR.	
13	Andy Lockhart	1404 Dunlora Dr	
14	DEBBIE LOCKHART	1404 Dunlora Dr	D M Lockhart
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Petition Against Proposed Zoning Changes in Rio District

Community: .....DUNLORA.....DATE.....

To Deny Proposed Zoning Change to Parcel ID 061000-00-00-167C0
(Wetsel Farm Property)

	Printed Name	Street Address	Signature
1	Liz Forney	840 King William	Liz Forney
2	David Forney	840 King William	David Forney
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4	-BetyWest	845 King William Dr.	BetyWest
5	Sorin ARUIN	1257 Dunlora Drive	
6	GRUIA ALINA	1257 Dunlora Drive	Alina Gruia
7	CRAIG T. MURPHY	928 KING-WILLIAM DR.	
8	MAUREEN NOVITSKI	920 King William Dr	
9	Terri Morgaglione	904 King William Dr	Terri Morgaglione
10	R. Keith Slater	905 King William Dr.	R. Keith Slater
11	Kara Mathews	888 King William Dr	
12	CARL MATHEWS	888 KING WILLIAM DR	Carl Mathews
13	~~Tom & Sharon Leland~~	~~925 King William~~	~~Tom Leland~~
14		925 King William	Sharon Leland
15	Jane Beckert	893 KWD	Jane Beckert
16	Paul Beckert	893 KWD	Paul
17	Dorie Mangan	848 KWD	Dorie Mangan
18	Michael Mangan	848 KWD	Michael Mangan
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DUNLORA FOREST PETITION TO OPPOSE REZONING OF WETSEL PROPERTY
JULY 2019

RECEIVED
JUL 17 2019
COMMUNITY
DEVELOPMENT

PETITION TO OPPOSE REZONING APPLICATION FOR WETSEL PROPERTY

	PRINTED NAME	ADDRESS	SIGNATURE
1	Linda Broadbent	1813 Barefoot Ct 22901	Linda Broadbent
2	Susan Towe - Susan Towe	1831 Barefoot Ct. 22901	Susan Towe
3	Judy Casella	1837 Barefoot Ct 22901	Judy Casella
4	David Jarrett	1843 Barefoot Ct 22901	
5	Jennifer Jarrott	1843 Barefoot Ct 22901	
6	MICHAEL Gough	1836 BAREFOOT CT 22901	Michael
7	MINOR JOHNSON	1824 BAREFOOT Ct. 22901	
8	PEGGY JOHNSON	1824 BAREFOOT Ct 22901	
9	Virginia Payne	1822 Barefoot Ct 22901	
10	Sonny Payne	1822 Barefoot Ct 22901	
11	[illegible]	1805 Barefoot Ct 22901	
12	Robyn Mann ROBYN MANN	1819 Barefoot Ct. 22901	
13	James Casella	1837 Barefoot Ct 22901	
14	Gia Desiderio	1830 Barefoot Court 22901	
15	[illegible]	1811 Barefoot Court 22901	
16	Ann Kashatus	1803 Barefoot Ct	
17	PETER J. KASHATUS	1803 BAREFOOT CT	
18	MICHELLE HUNT	1836 BAREFOOT CT	
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PETITION TO OPPOSE REZONING APPLICATION FOR WETSEL PROPERTY

	PRINTED NAME	ADDRESS	SIGNATURE
55	Lisa Drimmond	1842 Barefoot Ct	
56	Susan R. Raupp	1191 Pen Park Rd.	
57	Lanny Drummond	1842 Barefoot Ct	
58	Sandy Ballif	1637 Sawgrass Ct.	
59	Robert Taylor	1635 Sawgrass Ct.	
60	Roberta Penkave	1627 Sawgrass Ct.	
61	Lyrraine Frisina	1626 Sawgrass Ct.	
62	John Dempsey	1591 Sawgrass Ct	
63	Cecelia Rosenberg	1611 Sawgrass Ct.	
64	ELIZABETH MICHEL	1569 SAWGRASS CT 22901	
65	DAVID T. MICHEL	1569 SAWGRASS CT 22901	
66	Reid Appleton	1567 Sawgrass CT 22901	
67	KATHLEEN SAVAGE	1551 SAWGRASS CT 22901	
68	Anne Meth	1568 Sawgrass Ct 22901	
69	Martin Meth	1560 SAWGRASS CT 22901	
70	Jane Fruchtnicht	1608 SAWGRASS CT 2290	
71	LORETTA COUGHLIN	1576 SAWGRASS CT. 23901	
72	LARRY Burton	1584 Sawgrass Ct 22901	
73	A.F. SEAMAN	1606 SAWGRASS CT 22901	
74	Thomas Noble	1622 Sawgrass Ct 22901	
75	Paul Capozzoli	1642 Sawgrass Ct 22901	
76	Laura Capozzoli	1642 Sawgrass Ct 22901	
77	SUSAN D. WILLIAMS	1578 Sawgrass Ct 22901	
78	Linda L. Noble	1622 Sawgrass Ct. 22901	
79	Elaine Chapman	1805 Barefoot 22901	
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PETITION TO OPPOSE REZONING APPLICATION FOR WETSEL PROPERTY

	PRINTED NAME	ADDRESS	SIGNATURE
82	JOYCE McKENNEY	1629 Sawgrass Ct. 22901	
83	Shirley R. Dudley	1581 SAWGRASS CT 22901	Shirley R. Dudley
84	CYNTHIA Zazakos	1559 Sawgrass Ct. 22901	
85	Jennifer Hale	1557 Sawgrass Ct 22901	
86	Vicky Mossman	1546 Sawgrass Ct 22901	Vicky Mossman
87	Nicole Weatherford	1554 Sawgrass Ct 22901	Nicole Weatherford
88	Leslie Madigan	1586 Sawgrass Ct 22901	
89	ANTHONY LAQUINTANO	1613 SAWGRASS CT 22901	
90	CLOUD N. RAUPP	1191 Pen Park Rd 22901	
91	Peggy Koury	1573 Sawgrass Ct 22901	Peggy J Koury
92	Holly Faulconer	1616 Sawgrass Ct 22901	
93	Chapin Faulconer	1616 Sawgrass Ct 22901	
94	Philip D Dupont	1614 Sawgrass Ct 22901	
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: 2-328 -Places 29 Rio Community Advisory Comm • Plan. Comm
-ARB • Board of Supervisors

PETITION TO OPPOSE REZONING APPLICATION FOR WETSEL PROPERTY

	PRINTED NAME	ADDRESS	SIGNATURE
109	Eric Warren	241 Pebble Beach Ct.	Eric A. Warren
110	Karen Warren	241 Pebble Beach Ct.	Karen Warren
111	Robert Polhamus	235 Pebble Beach Ct	Robert A. Polhamus
112	Jody Polhamus	235 Pebble Beach Ct.	
113	Jim Foley	231 PEBBLE BEACH CT	
114	CHRIS CONRAD	229 PEBBLE BEACH CT	
115	Elliot Smith	238 Pebble Beach Ct.	
116	Anne Smith	238 Pebble Beach Ct	
117	BRIE JONES	2012 BETHPAGE CT	
118	Brandon Smoot	2034 Bethpage CT	
119	Margaret Smoot	2034 Bethpage Ct	
120	Vincent CAPAFFO	2032 Bethpage Ct.	
121	Brandon Liggins	2056 Bethpage Ct	
122	Emarie Drath	2018 Bethpage Ct	
123	Robyn Russell	1621 Sangamon CT	
124	CAROL SIMON	1621 SANGAMON CT	
125	Susan Gaines	2014 Bethpage Ct	
126	Robert Sheeny	2058 Bethpage Ct	
127	Barry Barber	230 PEBBLE Beach ct.	
128	Erin Bulinski	234 Pebble Beach Ct	
129	John Curry	242 Pebble Beach Ct	
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Cameron Langille

From: Megan Nedostup
Sent: Monday, June 03, 2019 5:08 PM
To: Tori Kanellopoulos; Cameron Langille
Subject: FW: Deny the Rezoning requests for 999 and the Wetsel property!

fyi

Megan Nedostup, AICP
(pronounced nuh-DAHST-up)
Principal Planner
Community Development Department
Planning Services
ph: 434.296.5832 ext. 3004

-----Original Message-----
From: Alex Siedlecki <alexsied@embarqmail.com>
Sent: Monday, June 03, 2019 4:37 PM
To: Board of Supervisors members <bos@albemarle.org>; Planning Commission <PlanningCommission@albemarle.org>
Subject: Deny the Rezoning requests for 999 and the Wetsel property!

To whom it may concern,

We are very against the rezoning requests for 999 and Wetsel property!

These are our reasons:

1. Morning and evening traffic is already very heavy. Another 1000 or more cars will be Increasingly dangerous and will bring the intersection with John Warner Parkway to a Standstill.
2. Neither the county nor VDOT has any plans to Improve this dangerous intersection.

3. Local schools have no plans to address this increase in population.

4. No further development should be permitted in this area until improved road and Other County infrastructure is in place.

5. There is no need for more mixed-use space built. The Fashion Mall and Albemarle square already have too many empty store fronts.

6. We have lovely residential communities. Plans for 3 story buildings will shatter our neighborhood feel.

7. Zoning changes for apartments and commercial buildings are not the answer. Stay with the origin zoning; 4 units per acre.

Thank you for your time and consideration.

Alex and M.J. Siedlecki

965 King William Drive
Dunlora
434-975-2466
Sent from my iPad

Cameron Langille

From: Anne Hindman <arhindman@gmail.com>
Sent: Monday, July 29, 2019 9:43 PM
To: Cameron Langille
Subject: Opposition to Park Place Development

Good day, Mr. Langille,
I appreciate your taking time to read this expression of my concern regarding the potential dense development by the Kotarides Company of the Wetsel property on Rio Road.

It is my strong belief that the development as currently designed will wreak havoc on numerous aspects of life for those of us who live off of Rio Road, close by.

There will be heavy, heavy traffic causing frustrated drivers and more morning accidents at the intersection of Pen Park and Rio Roads, where morning drop-offs at two private schools bring speeding cars driven by harried parents, seemingly always late for dropoffs. Public school bus pickups and drop-offs regularly contribute to backups here, as well.

Walking, biking and jogging on Pen Park Road will likely be more perilous since drivers frustrated by the slowdowns on Rio Road will turn onto PPR ready to hit the gas - a regular occurrence even now. This initial block of Pen Park north of Rio is quite dangerous: drivers think they can go 45 mph, since 35 is the listed limit. The speed limit should never have been permitted to be 35 there, and the dangers must be addressed.

The backups at the intersection of Rio and John Warner Parkway will stretch in all directions at high traffic times, as well as other times of day, since this is a treacherous intersection now. Deer are plentiful in the area, even in daylight.

The corridor of Rio Road extending to Melbourne Road is one which has seen the addition of dense residential properties very recently. Careful examination of existing issues caused by these developments should occur prior to redistricting for more development. To add the Park Place Development without careful study and analysis of safety and lifestyle concerns related to over-development would cause a tipping point for those of us living in the area.

Measured growth in this population-dense area should be the approach that is taken for current and future residents. Otherwise, our area will become a blight for the city and the county, with John Warner Parkway hopelessly incapable of handling the traffic it was thought to be able to handle - but which it already cannot accommodate.

Please give due consideration to the fact that residents of Dunlora Forest are strongly opposed to this excessively-sized project, as are my husband and I.
Sincerely,
Anne Hindman

Cameron Langille

From: Megan Nedostup
Sent: Thursday, July 18, 2019 1:43 PM
To: Cameron Langille
Subject: FW: Wetzel Property

Megan Nedostup, AICP
(pronounced nuh-DAHST-up)
Principal Planner
Community Development Department
Planning Services
ph: 434.296.5832 ext. 3004

-----Original Message-----
From: Betty Spann <be.spann@cspann.com>
Sent: Thursday, July 18, 2019 11:56 AM
To: Planning Commission <PlanningCommission@albemarle.org>
Subject: Wetzel Property

Good Morning: I will attempt to be brief. Know your job is not an easy one, and we do appreciate what you do. However, I am writing to request your prayerful, thoughtful decision on granting a change of zoning to the Wetzel Property at the corner of Rio Road and John Warner Parkway.

The many reasons this is a bad idea have been stated --- traffic headaches, installation and maintenance of traffic lights, safety, burden on all drivers, unbelievable additional traffic not only from this change but also from the development of the 4 story apartments further southeast on Rio Road, soon to be opened, and the development near Covenant Church. All of this is a potential nightmare -- particularly for Dunlora.

But there is another reason -- or two -- I am writing. Has anyone given consideration to the Dunlora residents? Besides the headaches and inconveniences and devaluation of our properties and potential criminal activities, there is the aspect of seriously changing our lives. Many of our residents are retired -- aging in place. Many chose not to drive at night, believing it is safer not to take chances. The threat of all that traffic and the inability to enjoy easy access by car is going to seriously change lives. We will be afraid to take our chance out in the mayhem of traffic at any time.. We could become prisoners of our neighborhood. That is not a happy thought..

While the Developer may be a good guy and erect a pleasant project, it is still a traffic and parking problem -- to say nothing of the commercial entities they plan on offering. It is tough to build a life in a lovely, quiet community and see it "go to pot:." And I cannot help but believe that this is just another example of --------- not community growth -- but greed. Which is the root of all evil. Lovely homes on a quarter acre is to be expected. To suddenly be faced with this many new citizens and cars is a sad situation.

Thank you for reading -- and considering what I said.

Sincerely.
Mrs. Robert B. Spann (Betty)

Cameron Langille

From: Dale Fruchtnicht <dfruchtnicht@icloud.com>
Sent: Sunday, July 28, 2019 5:02 PM
To: Cameron Langille
Subject: Kotarides Developers Application (ZMA 2019-08 Parkway Place)

Dear Mr. Langille,

This letter concerns the Kotarides Developers' application to change the current R4 zoning of the property at the corner of Rio Road East and the John W. Warner Parkway (known as the Wetzel Property) in order to increase the number of housing units allowed. The developer is planning to build 328 rental units on the property in two- and three-story buildings.

This proposal will result in a significant increase in traffic at an intersection (Rio Road East and the John W. Warner Parkway) that already carries more traffic than it can accommodate. The developer's offer to build a turn lane at the intersection will not have a significant positive effect on traffic, especially when considered in the context of all of the development planned for Rio Road East between U.S. 29 and the 250 Bypass during the next few years. For this reason, a new traffic study covering this entire area should be completed and evaluated before the development is allowed to move forward.

Another concern about traffic and safety is that, according to the current plan, school buses will be required to stop on Rio Road East very near the intersection with the John W. Warner Parkway in order pick up and drop off the children who live in the development. Not only will stopped school buses during rush hours bring traffic in the intersection to a halt, but children will be endangered by heavy traffic they will encounter while crossing Rio Road East each day.

Further, the current placement of the buildings on the Wetzel Property, which is very close to Rio Road East, will, combined with the existing Dunlora Forest development, prevent any effort to add lanes to the road in the future. Not only will this and other development plans in the area significantly increase the traffic on the road, but widening the road will be made prohibitively expensive. Deferring the planned development while a new traffic study is conducted will enable the community to avoid this bind.

The increase in traffic plus the construction of 328 rental units will also increase the population density of the neighborhood significantly. Coupled with the increased traffic, this is likely to have a negative effect on property values in the area. Lower property values will mean decreased tax revenues. Reduced property tax revenues coupled with likely expenditures for infrastructure improvements required for this development will increase pressure for higher tax rates.

Please bear these points in mind as you consider this application from Kotarides Developers. We understand that development is necessary and, if effectively planned, can have a positive impact on the neighborhood. Taking the time to conduct a new traffic study and insuring that the number and density of units is appropriate for the area will help insure that the Wetzel Property development does so.

We appreciate the opportunity to express our concerns.

Sincerely,

Jane and Dale Fruchtnicht
1608 Sawgrass Court
Charlottesville, Virginia 22901

Cameron Langille

From: David Myers <david.r.myers10@gmail.com>
Sent: Tuesday, July 30, 2019 2:00 PM
To: Cameron Langille; Ned Gallaway; Bruce Dotson
Cc: Board of Supervisors members; Planning Commission
Subject: Opposition to Wetsel Rezoning Application
Attachments: Opposition to Rezoning Application of Wetsel Property.docx

Cameron, Bruce, Ned:

My name is David Myers, a resident of Dunlora Forest. Attached is a letter outlining why my wife and I (Malinda) oppose the application to rezone the Wetsel property.

I can be reached via e-mail (david.r.myers10@gmail.com) or phone (434-529-6665) for any questions or clarifications.

Thank you for your time,
David Myers

David R. Myers
2010 Bethpage Ct. (within Dunlora Forest)
July 30, 2019

Cameron Langille
Bruce Dotson
Ned Gallaway

CC:
Board of Supervisors
Planning Commission

Cameron, Bruce, Ned:

The goal of this communique is to convey the reasoning of our strong opposition to the application for rezoning of the Wetsel property. The issues fall into 2 broad areas; traffic and character of the neighborhood.

Traffic

Summary:

The current traffic experience by existing residents in this specific corridor, and the greater Rio, John Warner corridor is frustrating and exhausting. John Warner and Rio are the two main roads that allow north/south access to downtown Charlottesville outside of Route 29. Navigating the AM / PM peak periods is already over resident's reasonable patience. I personally have waited 4+ cycles at the 250 / John Warner intersection, with traffic backing up all the way to Melbourne Rd. Typical travel times can go from 12 minutes to 25 in some cases depending on destination. Another broad concern is increased population growth in the surrounding areas, not just this sub-corridor which also needs to be taken into consideration.

Beyond our personal (and neighbors) experience of current traffic conditions, I've laid out specific concerns below regarding the rezoning application submitted for the Wetsel Property.

Key Concerns:

- The traffic study completed to make recommendations for the rezoning proposal did not even consider Dunlora Forest Drive, a neighborhood of 200+ residents. That's surprising given the fact that the "Zoning Map Amendment Application Narrative" (submitted June 17, 2019) states

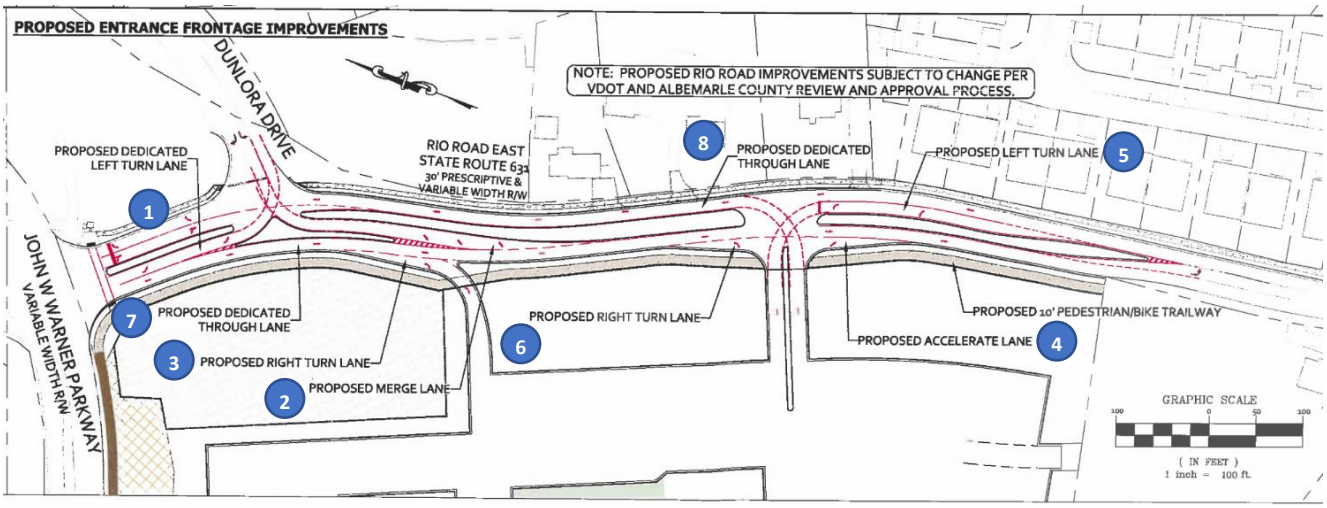
  "Most notably, the lane delay turning left out of Dunlora Forest, without road improvement, is expected to increase to an extremely high level without this Project. With the Project's proposed road improvements, the wait time will decrease over today's levels and will be a dramatic improvement over the level that would be experience without the Project."

  It seems short sighted and illogical to base most of the rezoning narrative related to traffic on improving a road/intersection that wasn't analyzed as a part of the traffic study.

- While I understand the county determined an annual rate of traffic at 2%, that number could be argued as low given the other existing development in the area, namely: Lochyn hill (143 total units remaining), Belvedere (280 units remaining + soccer park + under construction commercial

space), Dunlora Park, Stonewater (Stanley Martin neighborhood @ Dunlora Drive & Rio), the complex adjacent to Charlottesville Catholic School, etc. There has been extensive development in this corridor over the past several years with more coming. Little has been done to alleviate current conditions let alone the continue growth.

- Unfortunately, the proposal does not solve the traffic increase and recommends changes that are significant safety concerns. I have included a notated drawing (from the June 17 version of the plans) and a summary below:



  - *Safety Concerns: Called out on the drawing under numbers: 2,3,4,5*
    - Callout 2: This proposed merge lane from Dunlora drive on Rio Rd. attempts to solve a problem that doesn't exist (namely significant backup from Dunlora onto Rio) and at the same time creates a safety nightmare. Cars already go too fast on this stretch and introducing a median based merge lane will only complicate matters without improving traffic flow.
    - Callout 3: The proposed right turn lane into the development coincides with the through lane and Dunlora Drive merge lane. For a small distance, there will be three lanes side by side, with the outside two potentially changing lanes simultaneously. Further, given the curvature of the entrance lane, it could be assumed that the cars will be exiting Rio with a higher velocity than a typical turn, dangerous not only for Rio and bikers on the path, but the new neighborhood itself.
    - Callout 4: The proposed accelerate lane will add another merge area to an already congested area. Coupled with Callouts 2 & 3, you have 3 merge areas in a very short distance on a narrow road with no shoulder.
    - Callout 5: With the existing volume + the anticipated increase in volume (900 projected car trips), drivers will inevitably make turns they should not after waiting too long to turn due to volume, thus increasing potential for a wreck or collision with a biker on the new proposed path.
    - Overall: This ~0.25 mile stretch from the intersection of John Warner and Rio to Pen Park becomes slightly wider, but only to accommodate turn lanes for the new development and dangerous merges that don't alleviate flow concerns in an efficient manner. Further, they make the corridor unsafe for motorists, bikers, and pedestrians alike.

- *Existing capabilities that do no alleviate congestion: Called out on the drawing under numbers: 1,6,7,8*
    - The two through lanes (Callouts 7&8) drawn already exist, thus no improvement to the current situation.
    - Callout 1: A partial left turn lane already exists. Extending this doesn't solve a problem as I have never seen this lane overflow into the through lane, impeding traffic on Rio due to cars turning onto Dunlora Drive.
    - Callout 6: Only improves accessibility for the new proposed development. It doesn't consider alleviating existing traffic concerns.
- The Places29 Community Master Plan states it is important to "provide infrastructure at or before the time it is needed to serve new development". 300-400 additional car trips (estimate of existing zoning load) violates this but increasing this up to 900 cars for a road that already has congestion issues would not keep with one of the underlying tenets of this Plan.

Character of Neighborhood

Summary:

The character of this area of Albemarle county is beautiful. Rolling hills, trees, parks, trails, wildlife, etc. abound. It is, generally speaking, residential with few commercial locations or high-density style housing. One could argue that Belvedere, Arden, and Treesdale are cases where high density does exist, which is true. However, these cases are generally smaller in size, and in the case of Arden and Belvedere, set back significantly from the roadway, preserving the look/feel of the area. This isn't a place in the county where we feel we need further high-density (several high rises going up downtown at current), given the aesthetics and pedestrian walkability of the area.

Key Concerns:

- Property values could be negatively impacted for residents who already live in the area due to the flood of units on the market and transient / rental nature of apartment complexes. This is true for both the Westsel rezoning proposal and the yet to be named multi-unit building in construction off Rio next to Charlottesville Catholic School. Folks who want to live in a residential neighborhood close to Charlottesville are quickly running out of options, and like will have far fewer potential buyers given the proposed changing dynamics of the area.
- It is my understanding that the Places29 Community Master Plan is a guideline for the county. Thus it should be used as a working framework, subject to rethinking, change, etc. Additionally, some of the assumptions made for this are 10+ years old. It doesn't make sense, nor is it the goal, to use this as the be all end all for development in the area.
- I've also continued to educate myself on the planning of the Rio / 29 intersection to be more urban; mixed retail / residential, higher density, walkability, at or near road frontage as a few of the pillars. To me, if the focus is on urban core at that intersection, it implies we should shift focus to this area for that purposed and other areas outside this core would continue to be developed in a lower density way (i.e. neighborhoods and / or suburban). At the highest level, it doesn't make sense to me to have little urban core pockets sprinkled in sporadically throughout the corridor, only where it's convenient for developers to make money.
- I also understand that during preparation for the John Warner Parkway, that our sub-corridor was noted as "having high scenic" value and "picturesque terrain". It is noted in the Places29 Community Master Plan that future development must respect and work with the terrain and that the community "values the expansive views of…and other vistas" and that these should be

preserved. Putting up 9 3 story buildings would completely eliminate the vista views and natural beauty that exist today.

- The Westel property current zoning is R4 (4 units/acre, standard level). The Places29 Community Master Plan shows the long-term vision to be between 6 and 34 units per acre. This is a VERY wide range and could be anything from townhomes built in good taste to high-density apartments that don't make sense for the beauty and character of the area. Everything in that immediate area (Dunlora, Stonewater, Dunlora Forest) falls into the county's R4 by right goal of "Detached single-family dwellings", and townhouses / duplexes. Rezoning this piece of property is not required to still meet the goals of the Places29 Community Master Plan given current capability to build ~160-170 units.

In summation, we vehemently protest the rezoning of the Wetsel Property under the current application (submitted June 17). While we understand that development is part of the growing city of Charlottesville and surrounding areas, we as Dunlora Forest residents, simply ask that future developers are held to standards of (1) efficient & safe movement of residents (i.e. traffic, bikes, pedestrians) and (2) Consider the character and natural beauty of the existing landscape and community value of this ever more scarce commodity. Please consider this when making your final decisions regarding the application and path forward of the Wetsel Property.

Respectfully,

David R. Myers

Malinda L. Myers

Dunlora Forest Residents

Cameron Langille

From: Megan Nedostup
Sent: Monday, June 03, 2019 10:00 AM
To: Tori Kanellopoulos; Cameron Langille
Subject: FW: Please do not rezone the Warner Parkway intersection

Continuing the sharing.

From: David Benish
Sent: Monday, June 03, 2019 9:59 AM
To: Megan Nedostup <mnedostup@albemarle.org>
Subject: FW: Please do not rezone the Warner Parkway intersection

I like to share things, too.

From: Doug Walker
Sent: Monday, June 03, 2019 9:38 AM
To: David Benish <DBENISH@albemarle.org>; Mark Graham <mgraham@albemarle.org>; Amelia McCulley <AMCCULLE@albemarle.org>
Subject: FW: Please do not rezone the Warner Parkway intersection

Sharing for your awareness.

Douglas C. Walker
Deputy County Executive
Albemarle County, Virginia
401 McIntire Road
Charlottesville, VA 22901
434.296-5841, Ext. 3400

From: Rick Randolph
Sent: Thursday, May 30, 2019 9:33 AM
To: Dewey Cornell <dcornell56@gmail.com>; Board of Supervisors members <bos@albemarle.org>
Subject: Re: Please do not rezone the Warner Parkway intersection

Thanks, Dewey, for letting the Board know of your traffic concerns about this proposed additional development in an already highly congested corridor.
Best regards,
Rick

Sent from my iPad

On May 30, 2019, at 8:23 AM, Dewey Cornell <dcornell56@gmail.com> wrote:

> Dear Diantha and Ned,

I am writing against the proposed rezoning at both 999 East Rio Road and the Wetsel property on Rio Road across from Dunlora, where I live. Traffic on the under-sized John Warner Parkway is already heavy, and nearly every day I see back-ups of a half-mile or more in both directions. We have heavy traffic from residents, commuters, and the nearby schools (CATEC, CHS, Charlottesville Catholic School, Waldorf) and churches (e.g., Covenant, City Church, Church of Our Saviour, Northside Baptist).

As you know, the section of Rio between US 29 and the JW Parkway already experiences one of the highest motor vehicle accident rates in the area. This traffic will only increase with the upcoming move of the Senior Center to Belvedere, which will create new congestion and accidents at the intersection of Belvedere Blvd and Rio. This looming problem is adjacent to one of the proposed developments and only a few hundred yards from the JW Parkway intersection. You will be hearing more about this when the Center opens.

The intersection of Rio and the JW Parkway is already complex and often jammed with vehicles turning in or out of Dunlora, as well as vehicles turning in and out of CATEC. The addition of more vehicles from high density apartments located adjacent to this intersection will worsen this problem and make it more difficult to solve. At some point our planners will recognize that the Parkway-Rio intersection requires revision. Please keep the original zoning. Please think about proactively addressing this growing problem and do not allow a zoning change that will make it more difficult.

Dewey Cornell
Dunlora resident

From: Megan Nedostup
Sent: Sunday, June 23, 2019 6:33 PM
To: Cameron Langille; Tori Kanellopoulos
Subject: Fw: Rezoning attempt for 999 Rio Road East and Wetsel property

---

From: Ed Guida <1efgefg1@gmail.com>
Sent: Friday, June 21, 2019 4:01 PM
To: Board of Supervisors members
Cc: Planning Commission
Subject: Rezoning attempt for 999 Rio Road East and Wetsel property

Albemarle County Board of Supervisors,

My wife and I wish to convey our strong objection to the rezoning attempts for:

- 999 Rio Road East [Planning Application Number ZMA201900001] and
- by Kotarides Developers, Parkway View located on the Wetsel Property.

There are many reasons for our objections, although the main one, by far, is the traffic safety concern at the Rio Road East/John Warner Parkway intersection and the right turn exit onto Rio from the Dunlora Drive spur. **Currently**, making a left hand turn out of Dunlora onto Rio Road East has serious safety issues, especially with traffic from the left coming very quickly up over the hill. We are finding that the behavior of transit drivers during rush hour is becoming more reckless and aggressive. We can give several specific examples. Given not only the increased number of cars associated with these two projects but also the many other projects within a 2-mile radius, **the prospects of our safety** will be even worse.

The other intersection of concern is Belvedere and Rio. We are looking forward to the completion of the new senior center. The Center's main clients will be seniors; our reflexes are tending to slow down. This is already a difficult intersection to navigate. We do not need the additional increase of traffic that would result from the proposed 999 Rio Road East and other nearby developments that are already in progress.

There are other considerations, as well, that should preclude rezoning at this time:

- Consideration should be given to future school enrollment as well as logistics for school transportation (proposed School Bus Stop on Rio Rd).
- The area is already saturated with many empty stores close to residential developments.

- Mass transit to this heavily traveled corridor has not been addressed and needs substantial improvements not yet offered.
- The proposal for three story buildings is out of character of our environment which is mostly single family, duplex, triplex dwellings or a few two-story townhomes.

The roadway planning appears to be nil with **NO** action plan and schedule. This is well beyond the responsibility of the various developers. Until we are presented with evidence otherwise, we hold the Board of Supervisors responsible for not leading appropriate planning. We will work diligently and vote with other concerned citizens to ensure our local government stops development until all the infrastructure issues are corrected and in place.

The request is made to **DENY** the Re-zoning requests for 999 Rio Road as well as Parkway View and maintain the R-4 zoning as currently on record.

June Taft and Ed Guida, 2238 Shepherds Ridge Road

Cameron Langille

From: Dale Fruchtnicht <dfruchtnicht@icloud.com>
Sent: Sunday, July 28, 2019 5:02 PM
To: Cameron Langille
Subject: Kotarides Developers Application (ZMA 2019-08 Parkway Place)

Dear Mr. Langille,

This letter concerns the Kotarides Developers' application to change the current R4 zoning of the property at the corner of Rio Road East and the John W. Warner Parkway (known as the Wetzel Property) in order to increase the number of housing units allowed. The developer is planning to build 328 rental units on the property in two- and three-story buildings.

This proposal will result in a significant increase in traffic at an intersection (Rio Road East and the John W. Warner Parkway) that already carries more traffic than it can accommodate. The developer's offer to build a turn lane at the intersection will not have a significant positive effect on traffic, especially when considered in the context of all of the development planned for Rio Road East between U.S. 29 and the 250 Bypass during the next few years. For this reason, a new traffic study covering this entire area should be completed and evaluated before the development is allowed to move forward.

Another concern about traffic and safety is that, according to the current plan, school buses will be required to stop on Rio Road East very near the intersection with the John W. Warner Parkway in order pick up and drop off the children who live in the development. Not only will stopped school buses during rush hours bring traffic in the intersection to a halt, but children will be endangered by heavy traffic they will encounter while crossing Rio Road East each day.

Further, the current placement of the buildings on the Wetzel Property, which is very close to Rio Road East, will, combined with the existing Dunlora Forest development, prevent any effort to add lanes to the road in the future. Not only will this and other development plans in the area significantly increase the traffic on the road, but widening the road will be made prohibitively expensive. Deferring the planned development while a new traffic study is conducted will enable the community to avoid this bind.

The increase in traffic plus the construction of 328 rental units will also increase the population density of the neighborhood significantly. Coupled with the increased traffic, this is likely to have a negative effect on property values in the area. Lower property values will mean decreased tax revenues. Reduced property tax revenues coupled with likely expenditures for infrastructure improvements required for this development will increase pressure for higher tax rates.

Please bear these points in mind as you consider this application from Kotarides Developers. We understand that development is necessary and, if effectively planned, can have a positive impact on the neighborhood. Taking the time to conduct a new traffic study and insuring that the number and density of units is appropriate for the area will help insure that the Wetzel Property development does so.

We appreciate the opportunity to express our concerns.

Sincerely,

Jane and Dale Fruchtnicht
1608 Sawgrass Court
Charlottesville, Virginia 22901

Cameron Langille

From: Jack Nunez <jujio121@aol.com>
Sent: Sunday, March 1, 2020 1:06 PM
To: Planning Commission
Cc: Cameron Langille
Subject: Parkway Place apartments

CAUTION: This message originated outside the County of Albemarle email system. DO NOT CLICK on links or open attachments unless you are sure the content is safe.

Planning members,

I wanted to reach out and express my support for the Parkway Place apartments project. It will provide a living solution for many people in the general Charlottesville area. Our county is growing and we need to have more affordable places to live.

Thanks -
Jack

Cameron Langille

From: Cameron Langille
Sent: Wednesday, July 10, 2019 6:32 PM
To: Hullfish, Kathie L *HS
Cc: Francis MacCall
Subject: RE: Inquiry about Wetzel property, Rio Road

You're very welcome, Kathie. Let me know if you have any questions ahead of the community meeting next week.

-----Original Message-----
From: Hullfish, Kathie L *HS <KLH2S@hscmail.mcc.virginia.edu>
Sent: Wednesday, July 10, 2019 5:52 PM
To: Cameron Langille <blangille@albemarle.org>
Cc: Francis MacCall <FMACCALL@albemarle.org>
Subject: Re: Inquiry about Wetzel property, Rio Road

Dear Cameron,

Thank you so much for this detailed process description. It is very helpful. I am planning to attend the July 18th community meeting.

If I think of other questions before the meeting I will be in touch.

Sincerely,
Kathie

Kathie L. Hullfish, MD

On Jul 10, 2019, at 4:20 PM, Cameron Langille <blangille@albemarle.org<mailto:blangille@albemarle.org>> wrote:

Hi Kathie,

The Zoning Map Amendment (ZMA) application for the proposed rezoning of the Wetsel property on Rio Road was submitted to the County for review on June 17th. The application and materials were only distributed to County staff for review last week. A date for a public hearing with the Planning Commission has not yet been set. The earliest possible date that it could go to the Commission is September 3, 2019.

I've written a summary of the process below. Please let me know if you have any questions.

1. Key dates - the application was received on June 17 and it passed the County's completeness check where we verify that the applicant included all the necessary items with their initial submittal. The rezoning was officially distributed to the applicable County staff members for the initial review.
   * This group includes staff from the Department of Community Development, the Department of Fire & Rescue, and the Department of Parks & Recreation (among others).
   * The application has also been sent to staff with the County's partner agencies such as VDOT and the Albemarle County Service Authority (ACSA). These agencies always review ZMA applications as part of the standard process. They

will review the application for compliance with their standards, and issue any comments regarding deficiencies in the proposal. Those comments are then sent to the applicant in an official review letter.

* By Friday, August 2, 2019, a set of written comments will be sent to the applicant. These comments will include items that need to be revised on the application in order for it to meet the goals of the County Comprehensive Plan and address issues related to public health, safety, and welfare.
* The applicant can then choose to revise the application and re-submit it for another round of reviews with staff. Or, they can file a request to move the application forward to a public hearing with the Planning Commission.

i. At this point, it is difficult for me to speculate on which route the applicant may choose. But if they choose to go straight to a public hearing with the Planning Commission after receiving the comments (and make no revisions to the application) the earliest possible date for the public hearing would be September 3, 2019 pending what else is scheduled on that meeting agenda.

1. Community Meeting – A community meeting will be held on Thursday, July 18th at 6 PM with the Places29 Rio Community Advisory Committee (CAC). Please be aware that this meeting will be held in Lane Auditorium at the County office building on McIntire Road. This is a public information meeting required by the County prior to any ZMA application being sent to the Planning Commission for a public hearing. VDOT staff will be in attendance, as will the developer and staff from the Department of Community Development. The purpose and meeting format is as follows:
   * The developer will introduce themselves and give a presentation on the specific of their proposal.
   * County staff will introduce themselves and give a brief presentation on the ZMA review process.
   * Members of the CAC and the public may ask questions to the developer and staff after the presentations have concluded.

1. Specific questions about laws and regulations that VDOT and ACSA administer related to land development projects should be sent directly to staff members with those agencies. Here is the contact information for staff in the partner agencies that will be reviewing this application:
   * VDOT – Adam Moore, adam.moore@vdot.virginia.gov<mailto:adam.moore@vdot.virginia.gov>
   * ACSA – Richard Nelson, rnelson@serviceauthority.org<mailto:rnelson@serviceauthority.org>

1. I can answer questions about the County's Comprehensive Plan and Places29 Master Plan objectives and recommendations. Those plans include the criteria that staff will use to evaluate the ZMA's consistency with the community's long-range land use, transportation, and parks/recreation goals as adopted by the Board of Supervisors.

Thanks,
Cameron

From: Francis MacCall
Sent: Wednesday, July 03, 2019 7:42 PM
To: Cameron Langille <blangille@albemarle.org<mailto:blangille@albemarle.org>>
Subject: Fwd: Inquiry about Wetzel property, Rio Road

Francis

_____

From: Hullfish, Kathie L *HS <KLH2S@hscmail.mcc.virginia.edu<mailto:KLH2S@hscmail.mcc.virginia.edu>>
Sent: Wednesday, July 3, 2019 1:21:30 PM
To: Francis MacCall
Subject: Inquiry about Wetzel property, Rio Road

Hello,

Has a date been set for the above developer to present their rezoning application? This is the 27 acre plot in Rio Rd and the John Warner Parkway.

Thank you in advance for the kindness of your reply.

Kathie L. Hullfish
817 King William Dr
Charlottesville VA 22901

Cameron Langille

From: Megan Nedostup
Sent: Wednesday, July 17, 2019 9:21 AM
To: Cameron Langille
Subject: FW: Rezoning of the Wetzel Property aka Parkway Place

Megan Nedostup, AICP
(pronounced **nuh-DAHST-up**)
Principal Planner
Community Development Department
Planning Services
ph: 434.296.5832 ext. 3004

From: Kathryn St. Peter <kathrynleigh08@gmail.com>
Sent: Wednesday, July 17, 2019 9:02 AM
To: Planning Commission <PlanningCommission@albemarle.org>
Subject: Rezoning of the Wetzel Property aka Parkway Place

Good day Planning Commissioners,

I am writing to express my concern for the rezoning of the property. I am a Dunlora Forest resident. I oppose to the rezoning of the property for the following reasons:

- One of the reasons I selected to buy property in Charlottesville was the balance of nature in comparison to population growth; the visual appeal of the area.
- I have lived in Northern VA and am a Richmond native - the charm, quaintness, uniqueness of the area, views of the Blue Ridge Mountains, lack of traffic and population in comparison, made it most appealing to me.
- The rezoning would have greater negative impact on an already congested area. We simply do not have the civil infrastructure to support the increased traffic (Rio nor John Warner Parkway).
- Our current medical and educational institutions are already overwhelmed by the population they support; add to that those of 328 rental units.
- Potential decrease in surrounding property values.
- Safety concerns for pedestrian traffic.

Please DO NOT REZONE the property.

Thank you in advance for your time and consideration.

Best,
Kathryn St. Peter
Dunlora Forest property owner

Cameron Langille

From: Kathryn St. Peter <kathrynleigh08@gmail.com>
Sent: Monday, July 29, 2019 9:12 AM
To: Cameron Langille
Subject: Fwd: Rezoning of the Wetzel Property aka Parkway Place

Good day Planner Langille,

I am writing to express my concern for the rezoning of the property. I am a Dunlora Forest resident. I oppose to the rezoning of the property for the following reasons:

- One of the reasons I selected to buy property in Charlottesville was the balance of nature in comparison to population growth; the visual appeal of the area.
- I have lived in Northern VA and am a Richmond native - the charm, quaintness, uniqueness of the area, views of the Blue Ridge Mountains, lack of traffic and population in comparison, made it most appealing to me.
- The rezoning would have greater negative impact on an already congested area. We simply do not have the civil infrastructure to support the increased traffic (Rio nor John Warner Parkway).
- Our current medical and educational institutions are already overwhelmed by the population they support; add to that those of 328 rental units.
- Potential decrease in surrounding property values.
- Safety concerns for pedestrian traffic.

Please DO NOT REZONE the property.

Thank you in advance for your time and consideration.

Best,
Kathryn St. Peter
Dunlora Forest property owner

Cameron Langille

From: Linda Noble <noblelinda50@sbcglobal.net>
Sent: Sunday, July 28, 2019 1:37 PM
To: Cameron Langille
Subject: Parkway Place Zoning Amendment Application

I am writing to express my concern about the proposed projects on Rio Road. There is so much development in this area that isn't occupied yet and then it's being proposed to add hundreds more to an area with 2 lane roads. Getting out of the neighborhood is already a challenge and will get so much worse. I wish the county would consider the residents and not just look at tax dollars.
I live in Dunlora Forest and I am opposed to the rezoning.

Linda Noble

Sent from my iPad

Cameron Langille

From: llhdrummond@aol.com
Sent: Sunday, December 8, 2019 5:05 PM
To: Board of Supervisors members; Planning Commission; Ned Gallaway; Cameron Langille; Bruce Dotson
Subject: Wetsel Property

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I'm a resident of Dunlora Forest and am following up on the developer's application to rezone the Wetsel Property to accommodate 328 apartment units from the current R4 zoning which would have allowed a maximum of appr 160 units. I continue to oppose this rezoning on the basis of the increased amount of traffic on Rio Road (double the level at existing zoning and adding to existing traffic woes) and the condensed, rental nature of the proposed development.

In reading the application, County comments and resubmitted applications, I have the following comments:

- On the plus side, the buildings will be no more than 3 stories and the developer seems committed to providing the Trailhead access as part of the development. The look and feel of the apartment buildings will reportedly be somewhat broken up by use of various materials (not 100% brick), although I'd like to see exactly what the drawings look like. Also it is unclear from the latest application if there are to be 3 buildings facing Rio Rd or 2 (one real long one and one short one).

- Buildings will be staggered in placement along the JW Parkway; however, the buildings along East Rio will be in a straight line and not set back beyond appr. 30 feet from the road and only small trees will be planted in front of these buildings. Why can't there be additional setback for the Rio Road facing buildings and bigger trees since the Rio Road buildings actually face other inhabited buildings (Dunlora Forest), whereas the JWP facing buildings don't face anything.
- There continues to be considerable discussion about the impact of traffic. The traffic studies acknowledge that the developer has not satisfactorily addressed the concerns of Dunlora Forest especially for left turns out of DF drive. In addition, there are also concerns about the structure of the developer's offered "improvements" to Rio Road at the confluence of Dunlora Drive and JW Parkway. It seems like the prudent thing to do would to do a comprehensive traffic study for the entire Rio corridor between Rt 29 and Melbourne before potentially short-sighted decisions are made.
- While the original application indicated that the developer would complete its offered road "improvements" prior to the apartments being occupied, the most recent applications from the developer offer some funds in lieu of making road improvements, which could lead us to being dependent on VDOT for any action on roads and will not benefit residents. I think accepting a promise of money (and of course, it's a pittance) would be very short-sighted and irresponsible on the part of our elected leaders.
- There seems to be a continued desire by the county for a mix of housing types in this corridor -- I maintain that the mix of housing types is already satisfied by the other apartment complexes in the nearby vicinity (the soon to be completed one on Rio Road

and Pen Park Road and Belvedere)-- leaving this property to be developed under R4 as townhouse, single family or duplexes would be a mix of housing types.

In summary, our original concerns have not been satisfied- namely increasing the density will put additional cars on Rio Road, a road which has congestion and safety issues right now. Why double the traffic damage of any R4 development? Also, I don't believe the existing R4 zoning regulation should be usurped in favor of a vision statement (The Places29 Community Master Plan) which is out of date and should be revised with full community input.

Thanks for considering the above. Lisa and Lanny Drummond

Delete
More

The Parkway Place zoning map amendment should be rejected; it does not conform to Albemarle County Comprehensive plan intent for Development Areas in terms of proposed density and location. If the planning staff decides on a favorable recommendation for the Parkway Place application, alternative arguments against a favorable recommendation, as stated in the following paragraphs, should be included in the staff report

The R4 zoning is the appropriate designation and **not** Urban Density Residential and Urban Mixed Use designations.. The applicant argues the R4 is inconsistent with e Master plan. But the Master plan is acknowledged to require updating and thus should not be used as the basis for the for making a zoning decision and particularly to increase allowable density

The Parkway Place location does not support the intent of the Comprehensive Plan has an objective to promote density in Development Areas . Comprehensive Plan Objective 5 states that density is to be promoted within Development Areas to create compact urban places. The intent is "to create places where parks, playgrounds, shopping, transit, and employment *are **all** within a walking and bicycling distance of residents*" (emphasis added). The Parkway Place location does not meet this intent. In essence it is a bedroom community where residents will have to travel by car for most daily services (shopping, transit, employment). Thus an increase density is not warranted

Parkway Place does not meet Comprehensive Plan Objective 6 to be compatible with surrounding neighborhood.. This objective is for "infill" developments. The closest communities across from Parkway Place were developed under R4 zoning. Staff has argued that Parkway Place is a "greenfield" development. The Comprehensive Plan has no definition for either term. In Objective 5 a criteria for a greenfield site is that it is "not closely surrounded by existing developments." Again the nearest communities across the street are single family, villa and townhouse built under R4 zoning. Further, "context is the determining factor" for identifying a greenfield site. So both surrounding and inability to satisfy Objective 5 intent (see previous paragraph) all argue that Parkway Place does not meet the Comprehensive Plan objectives.

The appropriate place to promote multifamily units is along major commuting route around shopping areas that are within easy walking or bicycle distance. The Rio Small Area plan, passed in 2018, represents the citizen's views on where multifamily units should be located. There are already a large number of on-going, approved or planed multifamily unit developments along Rt 29 . These include Stonefield (160 apartment), Seminole square (500 units), Hydraulic Small area plan (identifies site for up to 1000 apartments), Brookhill (300 apartments), Norhpoint(200 apartments), Berkmar (260 apartments). The Parkway Place developer has not shown there is a need for a multifamily development at the proposed location.

Cameron Langille

From: Megan Nedostup
Sent: Sunday, June 23, 2019 6:31 PM
To: Cameron Langille
Subject: Fw: Rezoning Wetsel and 999 Rio Road Properties

From: Marty <martytopel@embarqmail.com>
Sent: Saturday, June 22, 2019 11:51 AM
To: Planning Commission
Subject: Rezoning Wetsel and 999 Rio Road Properties

Planning Commissioners,

As residents of the Dunlora community, we have seen major changes to the area. Besides more single-family homes, there are now crowded developments with attached homes and four-story apartment complexes. The traffic on Rio Road and the John Warner Parkway has become extremely congested and dangerous. We know of multiple near-collisions and in fact, we have a Dunlora friend who was
t-boned with her car totaled. Also, we have seen a number of bicycle/motor bike accidents. With the present plan for a wildflower meadow at the junction of Rio Road and the Parkway, we don't even want to imagine the deer/car accidents due to the attraction of the meadow for the deer. The roads were not constructed to even handle the existing traffic and presently VDOT and the county don't have any plans to make improvements. Plus, we have the prospect of the (Senior) Center along with the Martha Jefferson Outpatient Care Center on Belvedere that will add even more traffic coming out onto Rio Road. It will be challenging enough to have the
999 Rio Road property and the Wetsel property developed with the present zoning.

All this, and that's not even taking into account how the character of our area is deteriorating. Reading the damning reviews of the Kotarides properties in which residents state that their development is "clearly built poorly" and cite many examples of poor maintenance such as "cockroaches and it being filthy", we dread the thought of how Kotarides will not maintain their proposed apartments and bring down our community even further.

The present developments have contributed enough to the urban core plan and we deserve to be able to maintain some of the beautiful neighborhood character that we have previously had. It's at a tipping point now.
Deny the rezoning requests for 999 Rio Road and the Wetsel properties!

Tom and Marty Topel
832 King William Drive

Sent from Mail for Windows 10

Cameron Langille

From: Megan Nedostup
Sent: Tuesday, June 11, 2019 12:13 PM
To: Cameron Langille
Subject: FW: Wetsel property Rezoning

Please note: I will be out of the office starting Wednesday June 12th until Monday June 24th .

Megan Nedostup, AICP
(pronounced nuh-DAHST-up)
Principal Planner
Community Development Department
Planning Services
ph: 434.296.5832 ext. 3004

-----Original Message-----
From: Rita Waine <rita.waine@comcast.net>
Sent: Tuesday, June 11, 2019 12:06 PM
To: Planning Commission <PlanningCommission@albemarle.org>
Subject: Wetsel property Rezoning

Resend due to inaccurate Wetsel:
>
> To All,
>
> I am adamantly opposed to the rezoning of the Wetsel Property across
> from Dunlora.
>
> The roads here are 1 lane in each direction and are already over used
> and inadequate For the present traffic. There is no plan to expand
> the roads by VDot for additional Use.
>
> The Schools are also full to capacity.
>
> We do not need this type of expansion in this area which is already over saturated!
>
> Please consider not rezoning.
>
> Thank you for you time.
>
> Rita Waine
> RiverRun
>
>
>
> Sent from my iPad

Cameron Langille

From: Cameron Langille
Sent: Wednesday, September 04, 2019 6:11 PM
To: Roberta Penkava
Subject: RE: Parkway Place

Good evening Ms. Penkava,

Thank you for your email regarding the Parkway Place application. All comments and feedback I receive from members of the public about this proposal will be forwarded to the Board and Planning Commission should the applicant proceed to a public hearing in the future.

Staff members with the County and VDOT are aware of the current traffic congestion problems along both Rio Road and John Warner Parkway. This is a major consideration that is being taken into account and evaluated during reviews of the Parkway Place application. Comments have already been provided to the applicant regarding necessary revisions to the Traffic Impact Analysis (TIA) and transportation/road improvements that were proposed with the initial submittal of the application. Specifically, we have requested that the scope of the TIA be expanded past the Wetsel property boundaries in order to evaluate traffic impacts that would be generated at the intersection of Rio Road and Dunlora Forest Drive.

At this point, the application is still under review and no decisions have been made as to whether the project will be recommended for approval or denial. The applicant has informed us that they will be re-submitting for a second round of review and comments from Albemarle County staff, VDOT, and the Albemarle County Service Authority.

One of your neighbors in Dunlora Forest, Marty Meth, has volunteered to be the point person for your neighborhood. I correspond with him regularly and provide updates on the status of the application and specifics of the proposal as they change during the course of the review and revision cycle. I encourage you to communicate with Marty, and moving forward he will relay comments, concerns, and/or questions to me for response. Marty can be reached at mmeth@ieee.org.

I hope this information eases some of your concerns about this proposal as it currently stands. Have a great evening.

-Cameron

From: Roberta Penkava <penkavar@yahoo.com>
Sent: Wednesday, September 04, 2019 5:33 PM
To: Cameron Langille <blangille@albemarle.org>
Subject: Parkway Place

Dear Sir:

As a resident of Dunlora Forest, located across Rio Rd from the Wetsel property and the proposed Parkway Place I urge you not to change the zoning on this property and allow the overwhelming Parkway Place to proceed.

In the first place, Rio road is already very congested, especially during rush hours, and even with the developers proposed changes to Rio road I don't see how people could even get out of the one exit from Parkway Place to make a left turn. Traffic would already be backed up to that point and it is just wishful thinking that traffic would sit and let people out. What would probably happen is that cars

would drive down to our entrance and U turn around our median to then go east on Rio. Wouldn't we love that!

Secondly, the development is overwhelmingly large and not in keeping with the neighborhood. This IS supposed to be a neighborhood lifestyle is it not, not an urban extension of Charlottesville. Why do we insist on destroying the beautiful landscape that has brought people here for decades by covering it with ugly high rise, high density chintzy construction!

Sincerely,
Roberta Penkava
1627 Sawgrass Ct.
Charlottesville, VA 22901

Cameron Langille

From: Thomas Noble <tnoble@nd.edu>
Sent: Monday, July 29, 2019 11:24 AM
To: Cameron Langille
Subject: Kotarides

Dear Mr. Langille,

I write as a resident of Dunlora Forest to question the wisdom of adding 328 apartment across the street from us. The Rio East corridor is a mess. The traffic has absolutely no alternatives. The huge development next to Pen Park is going to add numerous cars per day. I just might live long enough to see the apartment building facing CCS inhabited. I gather that there is to be a small development at the corner of Belvedere Drive. Dunlora Ridge has been added. Dunlora Park is going up now. Does anyone take thought for the impact of all this development on the people who already live here? Our quality of life and property values will be substantially diminished by the Kotarides project.

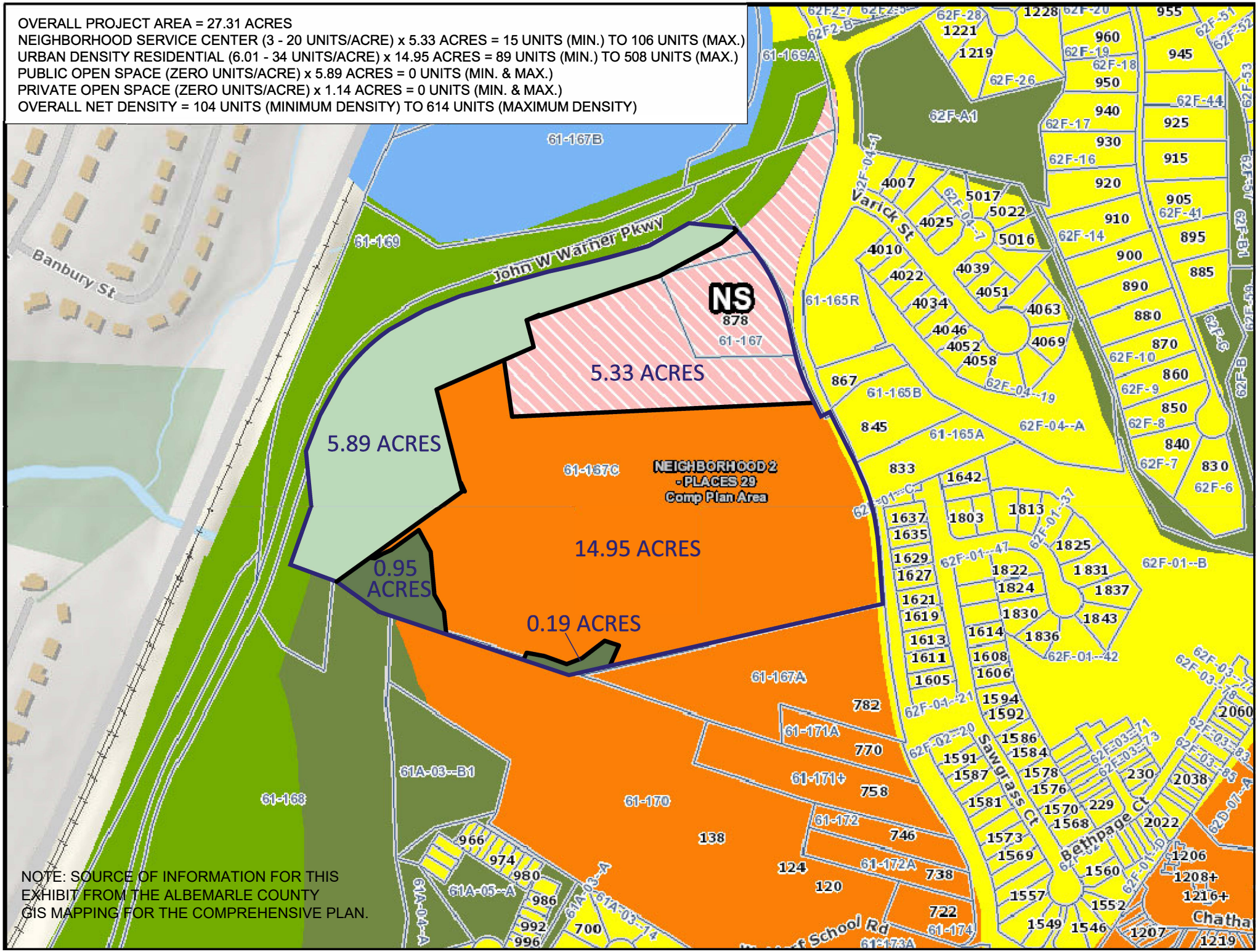
Sincerely,

Tom Noble

Thomas F. X. Noble
Andrew V. Tackes Professor Emeritus
University of Notre Dame
1622 Sawgrass Ct.
Charlottesville,VA 22901
434-202-1104

B PARKWAY PLACE ALLOWABLE DENSITY ANALYSIS (ZMA-2019-00008)

OVERALL PROJECT AREA = 27.31 ACRES
NEIGHBORHOOD SERVICE CENTER (3 - 20 UNITS/ACRE) x 5.33 ACRES = 15 UNITS (MIN.) TO 106 UNITS (MAX.)
URBAN DENSITY RESIDENTIAL (6.01 - 34 UNITS/ACRE) x 14.95 ACRES = 89 UNITS (MIN.) TO 508 UNITS (MAX.)
PUBLIC OPEN SPACE (ZERO UNITS/ACRE) x 5.89 ACRES = 0 UNITS (MIN. & MAX.)
PRIVATE OPEN SPACE (ZERO UNITS/ACRE) x 1.14 ACRES = 0 UNITS (MIN. & MAX.)
OVERALL NET DENSITY = 104 UNITS (MINIMUM DENSITY) TO 614 UNITS (MAXIMUM DENSITY)



NOTE: SOURCE OF INFORMATION FOR THIS EXHIBIT FROM THE ALBEMARLE COUNTY GIS MAPPING FOR THE COMPREHENSIVE PLAN.

Attachment 8 – ZMA201900008 Parkway Place

Staff Analysis of Application's Consistency with Neighborhood Model Principles

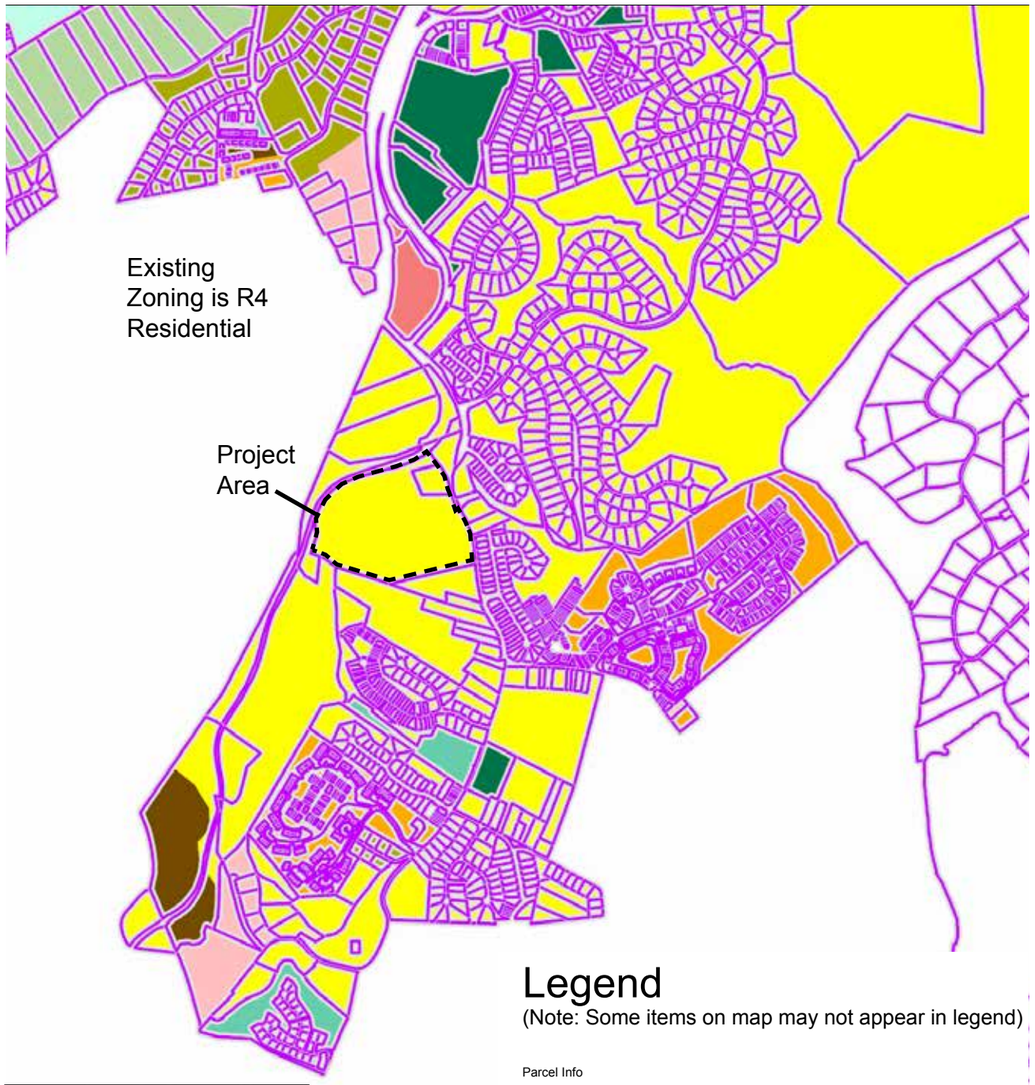
Pedestrian Orientation	The application proposes a new 10' wide multi-use path along the entire property frontage of Rio Road E. The trailhead park will provide an additional trail connection leading to the trails inside of the John Warner Parkway greenway. Sidewalks and other pedestrian walkways will be provided inside of the development to connect buildings to outdoor recreation areas. This principle is met.
Mixture of Uses	The application only provides two uses: residential and open space (including public and private recreation areas). No commercial, retail, office, or institutional uses are proposed. This principle is not fully met.
Neighborhood Centers	Strategy 2f in Chapter 8 of the Comprehensive Plan identifies neighborhood centers as having four components: 1) a centralized park or outdoor amenity which is surrounded by 2) a ring of commercial or mixed uses with 3) surrounded by medium to high density residential uses and a final 4) outer ring of low density residential. Parkway Place provides a centralized park/outdoor amenity and medium to high density residential uses. However, a commercial/mixed use area is missing from this proposal. This principle is not fully met.
Mixture of Housing Types and Affordability	The Application Plan allows for any residential uses listed under Section 18-19.3 of the Zoning Ordinance. This includes single-family detached, attached dwellings such as duplexes or townhomes, and multifamily dwellings. However, the applicant has made it clear through the project narrative and public meetings that they only intend to develop multifamily housing within Parkway Place. While the Application Plan does not explicitly preclude development of more than one housing types, it is unlikely that any units other than multifamily will be provided. The applicant is providing 15 percent affordable housing, per the Housing Policy in the Comprehensive Plan. This affordability component is met but the mixture of housing types is not. However, considering the mix of residential dwelling types in adjacent neighborhoods, the proposal is generally consistent the Master Plan recommendations in the context of the overall Rio Road E./John Warner Parkway area.

Interconnected Streets and Transportation Networks	No new streets are recommended inside the subject parcels according to Figure 4.8 – Future Transportation Network in the Places29 Master Plan. As explained under Strategy #2j of Chapter 8 of the Comprehensive Plan, "at times it may not be possible to make a connection in the short term. In these cases, right-of-way should be reserved for dedication in a manner consistent with planned transportation improvements, and non-roadway connections made, such as walking and bicycle paths." The Application Plan proposes a 10' wide multi-use path for bicycles and pedestrians across the entire property frontage of Rio Road E. Furthermore, a public access easement will be granted within the internal travel ways of Parkway Place so that members of the public may access the trailhead park. An inter-parcel easement will be granted allowing access into TMP 06100-00-00-167A0 which could enable construction of a road or other travel way should that property be redeveloped. This principle is met.
Multi-modal Transportation Opportunities	The Application Plan designates a new transit stop location, complete with a shelter and benches, at the right-in only entrance into Parkway Place. This will provide a much-needed transit stop for buses heading southbound that service CAT's Route 11. The nearest stop located on the same side of Rio Road is near the intersection of Belvedere Boulevard ¼ mile to the north. The new transit stop is situated in an ideal location for riders that live in any of the existing adjacent neighborhoods, as well as potential residents of Parkway Place. This principle is met.
Parks, Recreational Amenities, and Open Space	The proposal demonstrates consistency with the recommendations for public parks, recreational amenities, and open space as called for by the Places29 Master Plan. Although the John Warner Parkway greenway currently exists in a dedicated easement on site, Strategy 2l in Chapter 8 of the Comprehensive Plan states that "as more residents move to the Development Areas, public parks will be needed as centers for neighborhoods and the community." The proposed 1.1 acre park that will be dedicated to public use exceeds the minimum size standards called for by the Places29 Master Plan *Table LU1: Land Use and Centers in the Uptown*. It is centrally located at the northern corner of the Wetsel properties, immediately adjacent to the intersection of Rio Road/John Warner Parkway and existing trails in the greenway. The applicant has proffered construction and installation of recreational amenities within the 1.1 acre public park. This will include parking, benches, trails, and other amenities. The park will be accessible to all County residents by foot, bicycle, or vehicle.

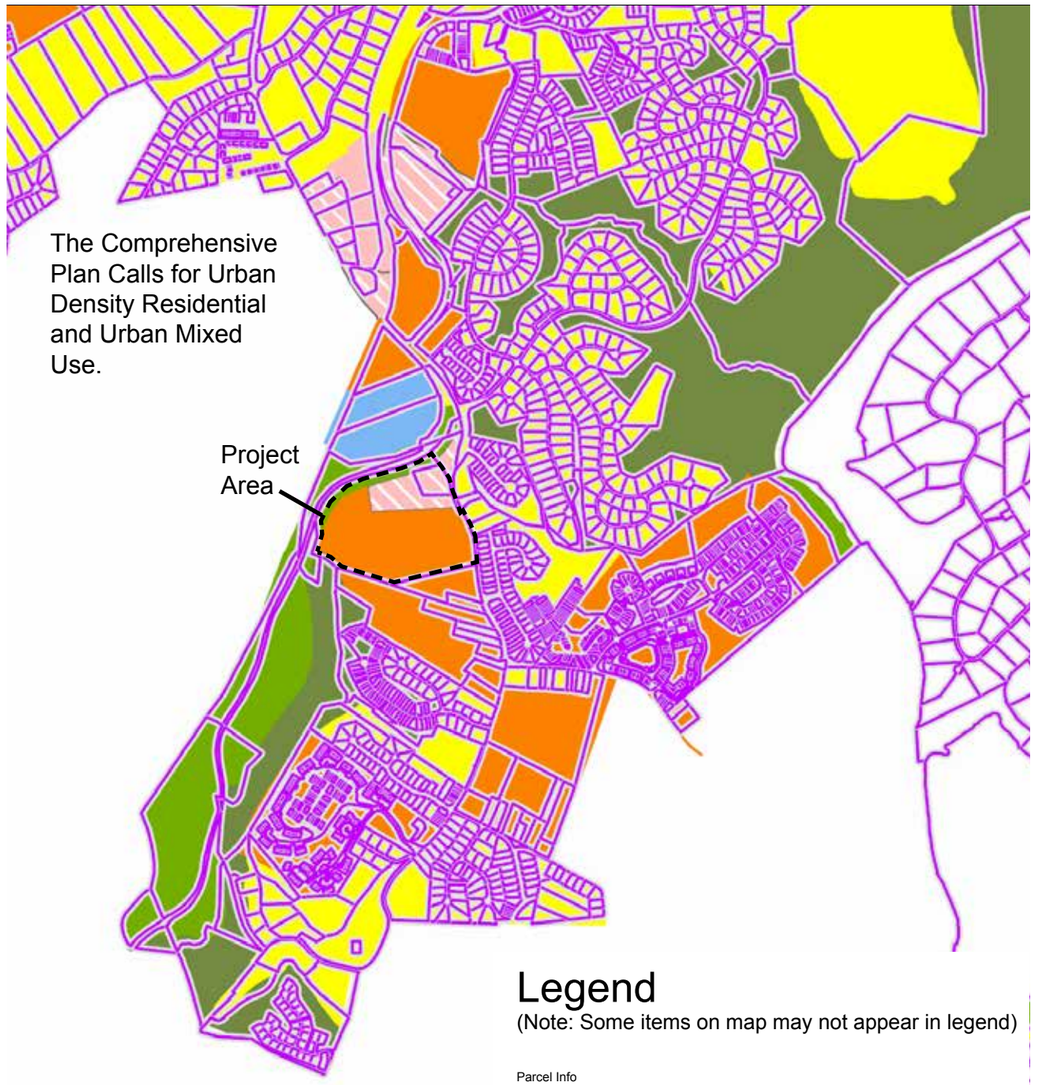
	Final design will be determined during site plan review stage, but construction of the park will be completed prior to the issuance of the first certificate of occupancy in Parkway Place. Therefore, the new 1.1 acre public park is consistent with Strategy 2l. Additional open space and active recreation areas will be provided inside of the development for the benefit of residents. Planning and Zoning Division staff have verified that the minimum space and recreation facilities required by Section18-4.16 of the Zoning Ordinance can be provided. Landscaping buffers are provided along the perimeter of the development which will ensure that views of the new buildings are at least partially obscured from view by residents using the greenway. Finally, the proposal strikes a balance between the creation of urban parks and recreation areas and conserving sensitive environmental features in a natural state. Encroachments into the 100-year floodplain, WPO stream buffer, and Preserved Steep Slopes have been almost entirely avoided, except for a small area where disturbance is necessary to extend sanitary sewer and provide storm sewer drainage in the development. This principle is met.
Buildings and Space of Human Scale	The applicant has reduced their proposed building heights from four (4) stories to three (3) stories. This is consistent with the Places29 Master Plan form recommendation calling for residential buildings to be a maximum of three (3) stories in height in Neighborhood Service Centers. On Sheet 1A of the Application Plan (Attachment 3), the applicant has provided an architectural detail note stating that that new buildings adjacent to Rio Road and visible from John Warner Parkway “will include a variety of architectural materials and colors, porches and projections, and offsetting or staggering portions of the buildings, in addition to the use of projections and bays, and possibly two-story hyphens, to promote diversity of architectural character, to reduce uniformity among the buildings, to establish human scale, and to break up the mass of the buildings and the roof lines.” That note will ensure that appropriate scale and massing will be provided for structures adjacent to pedestrian walkways. Stories on the new structures will be easily distinguished by pedestrians through windows, porches and other façade details. This is consistent with Strategy 2m of Chapter 8 in the Comprehensive Plan. For reference purposes, the applicant has provided illustrative renderings of what the future building facades could look like (Attachment 9). This principle is met.

Relegated Parking	The Application Plan demonstrates that parking areas will be relegated behind buildings facing John Warner Parkway and Rio Road. Landscaping notes and buffers drawn on the Application Plan will provide additional screening of vehicular travel ways and parking areas. This is particularly true for near buildings that face John Warner Parkway because a landscaping buffer that varies in width between 30 feet and 50 feet will be provided in front of the buildings, per Architectural Review Board recommendations**.** The applicant has verified with the City of Charlottesville Parks & Recreation Department that they will allow new landscaping within that buffer where it crosses into the John Warner Parkway greenway easement (Attachment 10). This principle is met.
Redevelopment	The requested rezoning will permit redevelopment of the property that is consistent with the County's growth management policy. This principle is met.
Respecting Terrain and Careful Grading and Re-grading of Terrain	The property contains areas within both the Managed and Preserved Steep Slopes Overlay Zoning District. Pursuant to Section 18-30.7.4 of the Zoning Ordinance, Managed Steep Slopes can be disturbed if the design standards of Section 18-30.7.5 are adhered to. This includes future buildings and parking areas. As shown on the Application Plan, areas of Preserved Steep Slopes will be left as open space within the development. The only grading that will occur in areas where Preserved Steep Slopes exist will be to extend a public sewer line to the development. The County Engineer and ACSA staff have reviewed this disturbance and have no objections. This principle is met.
Clear Boundaries with the Rural Area	The subject property is located within the Places29 Development Area. No improvements or changes in use near any boundaries with the Rural Area are proposed. This principle is not applicable to the request.

Existing Zoning



Comprehensive Plan



Legend

(Note: Some items on map may not appear in legend)

Parcel Info
- Parcels

Zoning Info

Zoning Classifications
- Rural Areas
- Village Residential
- R1 Residential
- R2 Residential
- R4 Residential
- R6 Residential
- R10 Residential
- R15 Residential
- Planned Unit Developmen
- Planned Residential Devel
- Neighborhood Model Distri
- Monticello Historic District
- C1 Commercial
- Commercial Office
- Highway Commercial
- Planned Development Sh
- Planned Development Mix
- Downtown Crozet District
- Light Industry
- Heavy Industry
- Planned Development Ind
- Town of Scottsville



GIS-Web
Geographic Data Services
www.albemarle.org
(434) 296-5832

June 4, 2019

Legend

(Note: Some items on map may not appear in legend)

Parcel Info
- Parcels

Comp Plan Land Use Info

Pantops Master Plan Land
- Neighborhood Density Re
- Urban Density Residential
- Urban Mixed Use
- Institutional
- Employment District
- Employment Mixed Use
- Commercial Mixed Use
- Parks
- Greenspace
- River Corridor
- Rural Area

Places29 Master Plan Lan
- Airport District
- Urban Mixed Use (in Cent
- Urban Mixed Use (in area
- Commercial Mixed Use
- Urban Density Residential
- Neighborhood Density Re
- Office / R & D / Flex / Light
- Light Industrial
- Heavy Industrial
- Institutional
- Public Open Space
- Privately Owned Open Sp

COLLINS ENGINEERING
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Kotarides Builders · Developers Property Management
LPDA Land Planning, Architecture, Land Planning

REVISIONS

DATE	DESCRIPTION
06/17/19	INITIAL SUBMITTAL
09/03/19	RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS
11/18/19	RESUBMITTAL TO ALBEMARLE COUNTY - ADDRESSING STAFF COMMENTS

PARKWAY PLACE DEVELOPMENT
EXHIBIT A
ZONING MAPS
RIVANNA MAGISTERIAL DISTRICT

June 17, 2019

SCALE
NTS



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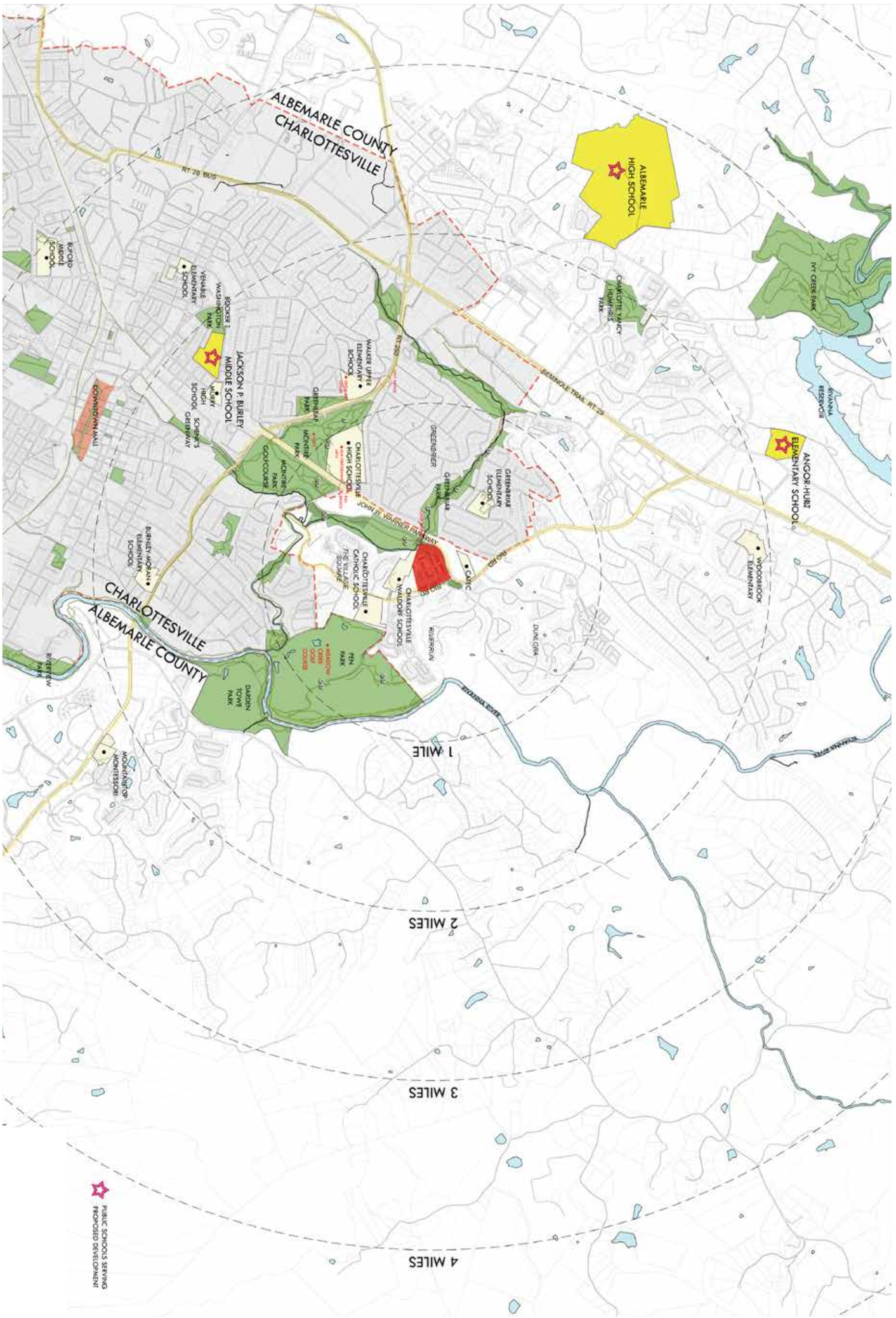
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PARKWAY PLACE DEVELOPMENT
EXHIBIT A
VICINITY -WALKING RADIUS
RIVANNA MAGISTERIAL DISTRICT

June 17, 2019

SCALE
1"=1000'



SCALE 1"=3000'

June 17, 2019

PARKWAY PLACE DEVELOPMENT

EXHIBIT A

VICINITY -DRIVING RADIUS

RIVANNA MAGISTERIAL DISTRICT

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LPDA LANDSCAPE ARCHITECTURE LAND PLANNING

Property Line
Meadow Planting
Public Art
Dunlora Dr.
John Warner Parkway
Landscape Buffer
Public Park & Trailhead
Picnic Shelter & Trail Map
Existing trees to remain
Rivanna Trail
Park Easement
Bldg 5 3 Story
Landscape Buffer
Bldg 4 3 Story
Meadow Planting
Bldg 6 3 Story
Bldg 1 3 Story
Bldg 7 3 Story
Clubhouse
Pool
Conservation Area
Bldg 2 3 Story
Tot Lot
Picnic & Grill Area
Community Park w/ Gazebo
Bldg 3 3 Story
Rio Rd East
Park Easement
Garage
Bldg 8 3 Story
Bldg 9 3 Story
Bldg 11 3 Story
Meadow Creek
Open Space
Garage
Stormwater
Sawgrass Ct.
Bldg 10 3 Story
Future Greenway Connection Area
Future Connection
Property Line

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11/18/19	

PARKWAY PLACE DEVELOPMENT
EXHIBIT A
PRD - ILLUSTRATIVE PLAN
RIVANNA MAGISTERIAL DISTRICT

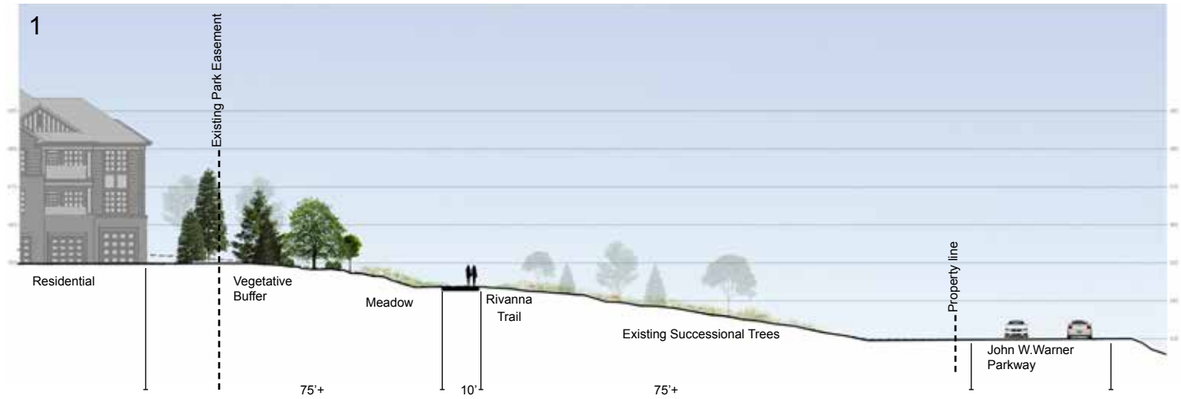
June 17, 2019

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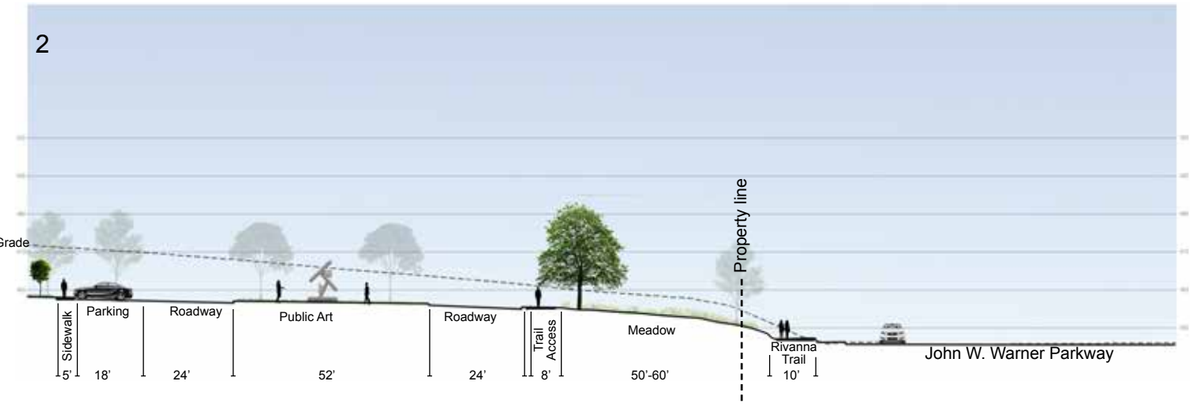
SECTION LOCATIONS

Scale
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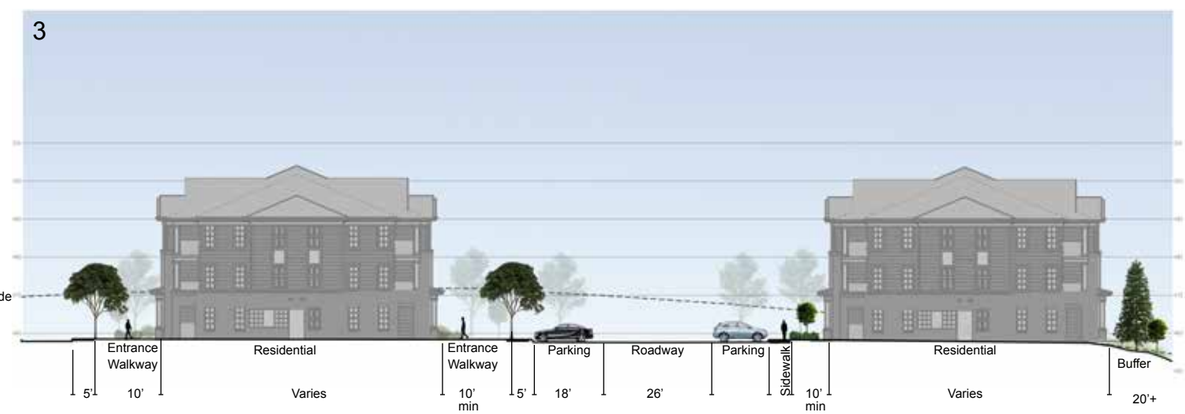
SECTION 1- MEADOW AND BUFFER ALONG JOHN W. WARNER PARKWAY

Scale
1"=40'



SECTION 2- TRAILHEAD AND PUBLIC PARK

Scale
1"=40'



SECTION 3- TYPICAL PARKING CROSS SECTION

18'

Scale
1"=40'

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Kotarides
Builders · Developers
Property Management
LPDA
LAND PLANNING ARCHITECTURE
LAND PLANNING

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PARKWAY PLACE DEVELOPMENT
EXHIBIT A
SECTIONS
RIVANNA MAGISTERIAL DISTRICT

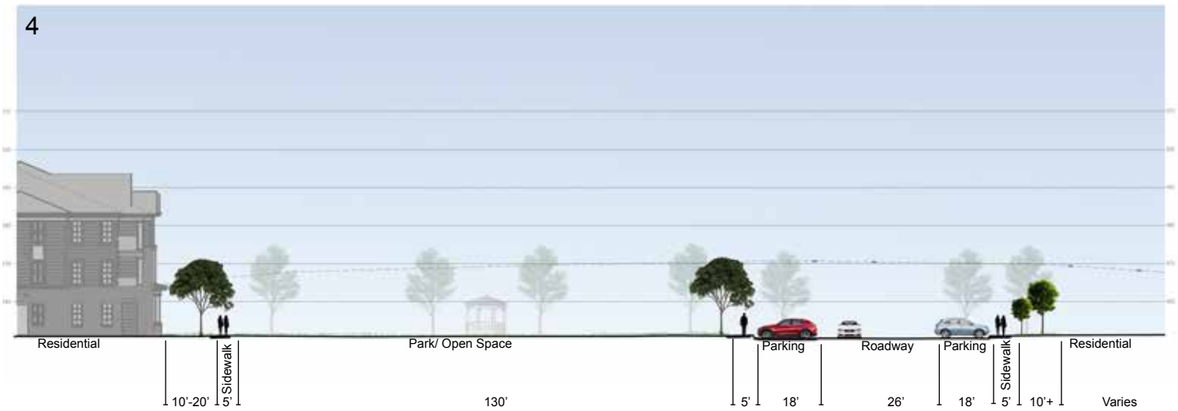
June 17, 2019

SCALE
1"=40'



SECTION LOCATIONS

Scale
1"=300'



SECTION 4- PARK SPACE

Scale
1"=40'



SECTION 5- ENTRANCE ROAD

Scale
1"=40'



SECTION 6 - RIO RD SCREENING

Scale
1"=40'

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LANDSCAPE ARCHITECTURE
LAND PLANNING

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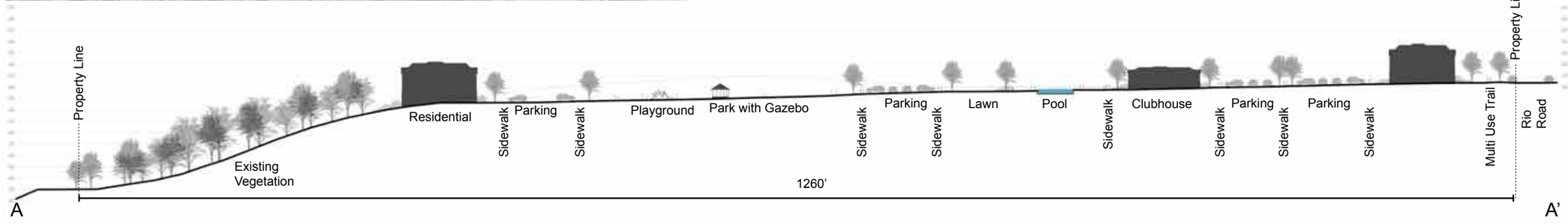
PARKWAY PLACE DEVELOPMENT
EXHIBIT A
SECTIONS
RIVANNA MAGISTERIAL DISTRICT

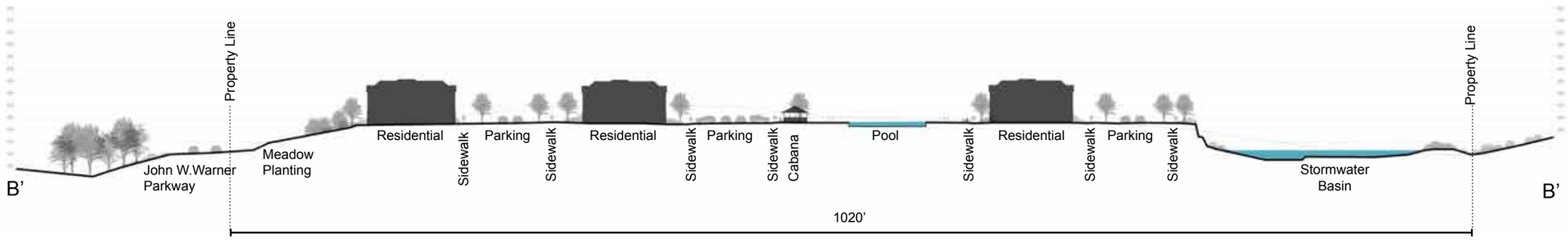
June 17, 2019

SCALE
1"=40'









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LPDA Landscape Architecture Land Planning

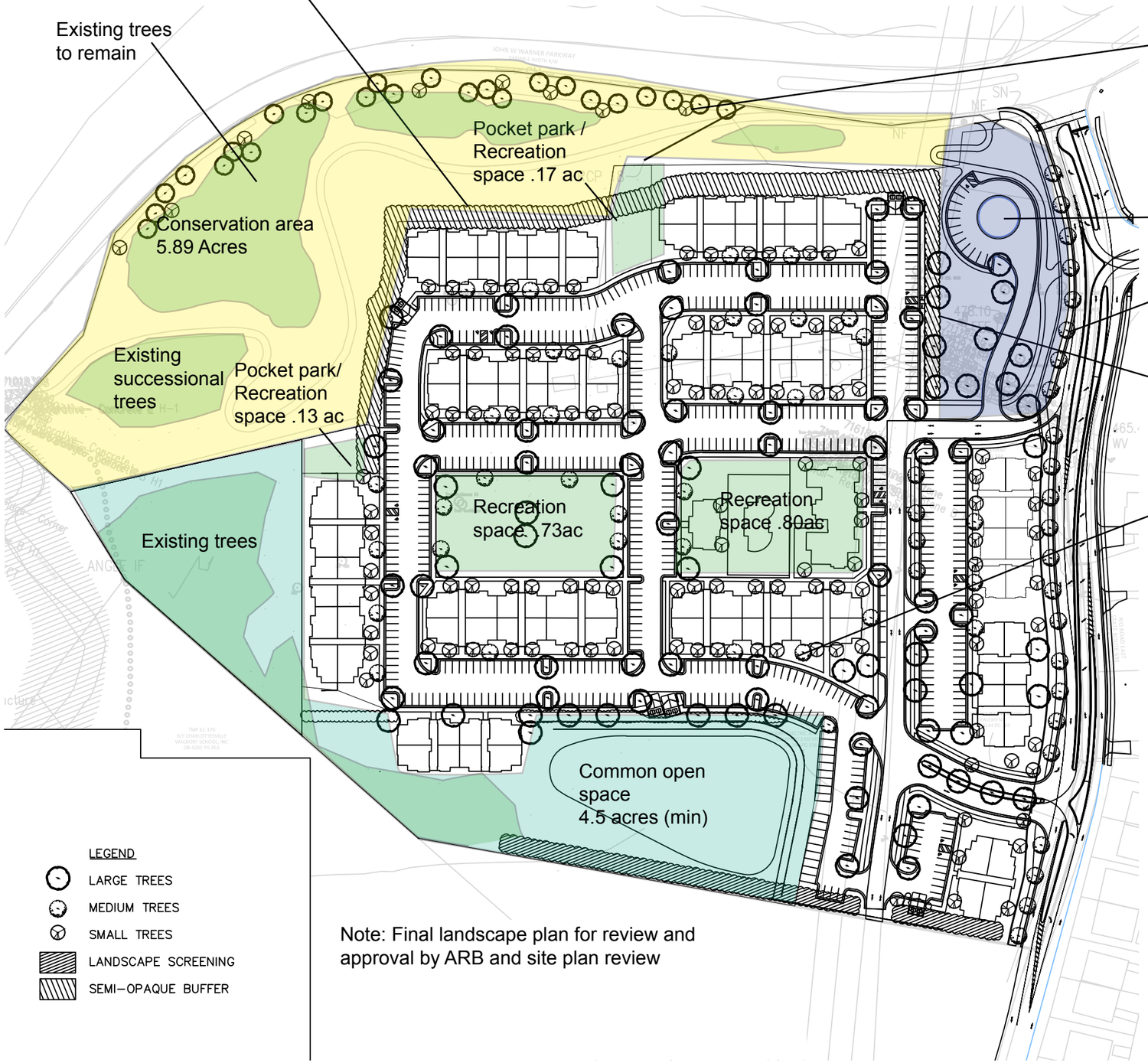
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PARKWAY PLACE DEVELOPMENT
EXHIBIT A
TRANSVERSE SECTIONS & M
RIVANNA MAGISTERIAL DISTRICT

June 17, 2019

SCALE
1"=100'



Note: Final landscape plan for review and approval by ARB and site plan review

Preliminary Tree Canopy Calculation	
Gross Site Acreage:	27.31ac
Land Dedicated to Public Use:	(1. 1 ac)
Total Development Area:	26.21 ac
Common Open Space Area	4.5 ac (min)
Greenway (included in 5.07 ac)	.12 ac
Open Space Dedicated to Public Use	1.1 ac
Active Recreation Area	1.5 ac (min)
Conservation Area	5.89 ac
Total Open Space Provided (49.37%)	12.99 ac
Gross Site Acreage:	27.31ac
Deductions per 32.7.9.8(c)	12.71 ac
Developed Acres	14.6 ac
Canopy Requirement: (15%)	2.19 ac

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LPDA Land Planning, Architecture, Landscape Architecture

REVISIONS

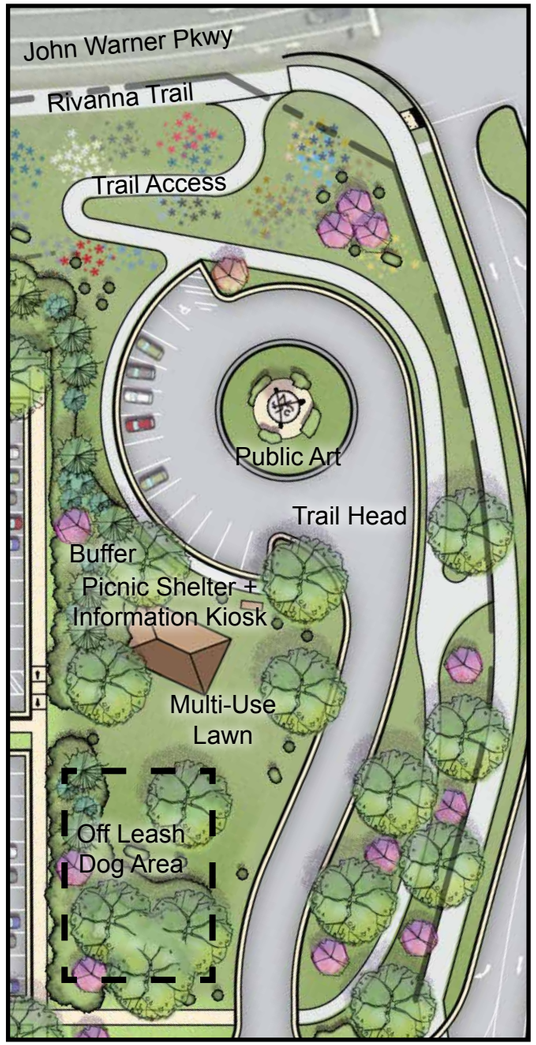
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PARKWAY PLACE DEVELOPMENT
EXHIBIT A
LANDSCAPING
RIVANNA MAGISTERIAL DISTRICT

June 17, 2019

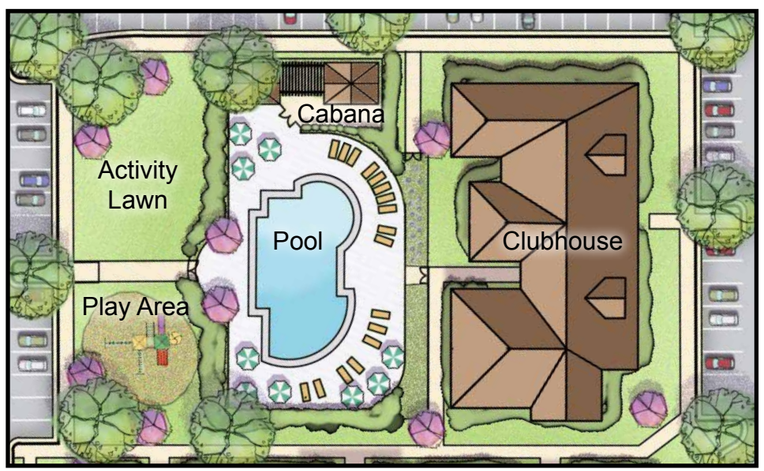
SCALE
NTS







A. Central Park/Neighborhood Park



B. Central Clubhouse and Pool Complex

C. Public Park

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REVISIONS

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PARKWAY PLACE DEVELOPMENT
EXHIBIT A
PUBLIC SPACES
RIVANNA MAGISTERIAL DISTRICT

June 17, 2019

SCALE
1"=60'

CHARLOTTESVILLE
parks & recreation

P.O. Box 911 Charlottesville, VA 22902
"A World Class City"

November 12, 2019

Mr. Ryan Hambleton
Kotarides Developers
1128 Independence Blvd. #200
Virginia Beach, VA 23455

Mr. Hambleton:

The City of Charlottesville Parks and Recreation department understands that a rezoning application (ZMA 2019-00008) has been submitted for the rezoning of the property located at the intersection of Rio Road and John Warner Parkway (PIN 06100-00-00-167C0).

The Applicant is committing to the installation of enhanced landscape buffers, which may include grading within the 5.9 acre trail easement located at John Warner Parkway and Rio Road. The buffer will consist of natural undisturbed vegetation and the planting of a mix of deciduous and evergreen trees and shrubs locally native to Virginia. The plantings will be planted to a 30' depth within a 50' buffer as shown on the ZMA 2019-00008 Application Plan. Installation and maintenance will be the responsibility of the developer. The City has no objections to creation of the landscaping buffer or grading within the trail easement and shall grant to the developer the necessary easements for all such grading, planting, and continued maintenance of plantings within the trail easement prior to site plan approval. The grading must avoid impact to the existing trail, and repairs to existing erosion within the easement shall be allowed as part of the development.

Sincerely,

Todd Brown

Todd Brown

Interim Director, Charlottesville Department of Parks and Recreation

Pete O. Kotarides

Subject: FW: Rio Road By-right Analysis
Attachments: image001.png; ATT00001.htm; image002.gif; ATT00002.htm; image003.gif; ATT00003.htm; image004.gif; ATT00004.htm; Build AM - No Improvements.syn; ATT00005.htm; Build PM - No Improvements.syn; ATT00006.htm; Synchro Reports (By-right).pdf; ATT00007.htm; Rio Road Multi-Family - By-Right Analysis Tables.pdf; ATT00008.htm

From: Mike Bailey <mbailey@rameykemp.com>
Date: January 21, 2020 at 4:24:32 PM EST
To: "Adam.Moore@vdot.virginia.gov" <Adam.Moore@vdot.virginia.gov>, "kmcdermott@albemarle.org" <kmcdermott@albemarle.org>
Cc: Ryan Hambleton <ryanh@kotarides.com>, Cameron Langille <blangille@albemarle.org>
Subject: Rio Road By-right Analysis

Kevin / Adam,

Attached, please find the by-right analysis we discussed at today's meeting. Please note the following:

- Trip generation is for 162 apartments (low-rise)
- Tables are numbered to match the tables in the TIA
- We used the "Build – No Improvements" Synchro files and only changed the volumes (same cycle lengths, splits, etc.)
- The reported queues are SimTraffic max queues

Please let me know if you have any questions or concerns.

Thanks,
Mike

Michael Bailey, P.E., PTOE
Transportation Engineer

www.rameykemp.com

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Table 5
Level-of-Service Summary for Rio Road at John Warner Parkway / CATEC Driveway

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2018) Traffic Conditions	EBL	200	F	114.2	47	D (50.2 sec)	F	114.4	276	D (52.3 sec)
	EBT/R	300	D	40.3	314		D	52.6	782	
	WBL	-	F	84.0	466		F	83.6	654	
	WBT	-	B	13.0	310		B	12.5	330	
	WBR	500	A	7.1	19		A	7.3	29	
	NBL/T	75	F	84.3	124		E	78.6	124	
	NBR	-	E	67.3	190		E	64.3	180	
	SBL/T	-	F	113.6	23		F	103.6	30	
	SBR	125	F	98.5	6		F	101.5	11	
No-Build (2023) Traffic Conditions	EBL	200	F	114.4	100	D (53.7 sec)	F	115.0	299	E (59.9 sec)
	EBT/R	300	D	47.2	471		E	76.8	1,289	
	WBL	-	F	83.4	581		F	83.9	803	
	WBT	-	B	15.7	481		B	14.4	455	
	WBR	500	A	7.2	24		A	7.4	32	
	NBL/T	75	F	89.4	124		E	79.3	124	
	NBR	-	E	74.4	213		E	61.5	191	
	SBL/T	-	F	113.6	22		F	104.0	35	
	SBR	125	F	98.5	6		F	100.4	13	
Build (2023) Traffic Conditions ***By-Right***	EBL	200	F	114.4	169	E (55.8 sec)	F	115.0	299	E (62.6 sec)
	EBT/R	300	D	48.0	435		F	84.5	1,331	
	WBL	-	F	83.3	545		F	84.6	818	
	WBT	-	B	15.7	446		B	14.4	538	
	WBR	500	A	7.2	23		A	7.4	30	
	NBL/T	75	F	98.4	124		E	80.0	124	
	NBR	-	E	79.0	220		E	60.2	200	
	SBL/T	-	F	113.6	24		F	104.0	36	
	SBR	125	F	98.5	4		F	100.4	8	
Build (2023) Traffic Conditions ***With Median Acceleration Lane***	EBL	200	F	114.4	233	E (57.1 sec)	F	115.0	254	E (64.4 sec)
	EBT/R	300	D	48.5	424		F	89.7	1,341	
	WBL	-	F	83.3	595		F	85.2	816	
	WBT	-	B	15.7	488		B	14.5	536	
	WBR	500	A	7.2	26		A	7.4	33	
	NBL/T	-	F	104.8	179		F	80.5	164	
	NBR	-	F	81.8	178		E	59.5	183	
	SBL/T	-	F	113.6	13		F	104.2	22	
	SBR	125	F	98.5	2		F	99.5	5	

Table 6
Level-of-Service Summary for Rio Road at Dunlora Drive

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]
Existing (2018) Conditions	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 50 -	E B - A -	45.1 14.6 - 9.3 -	107 106 - 65 -	N/A	D B - A -	34.1 13.5 - 9.4 -	58 66 - 92 -	N/A
No-Build (2023) Conditions	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 50 -	F C - A -	120.1 16.9 - 9.8 -	287 210 - 80 -	N/A	F C - A -	58.8 15.0 - 10.0 -	78 84 - 98 -	N/A
Build (2023) Conditions ***By-Right***	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 50 -	F C - A -	147.4 17.8 - 10.0 -	460 270 - 81 -	N/A	F C - B -	67.8 15.4 - 10.1 -	81 87 - 96 -	N/A
Build (2023) Conditions ***With Median Acceleration Lane***	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 100 -	D D - B -	25.5 25.5 - 10.1 -	150 139 - 84 -	N/A	C C - B -	20.7 20.7 - 10.2 -	75 101 - 130 -	N/A

1. Level of service for minor approach
2. Level of service for major street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Table 7
Level-of-Service Summary for Rio Road at Dunlora Forest Drive

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]
Existing (2018) Traffic Conditions	WBL[1]	-	D	26.1	37	N/A	D	27.3	32	N/A
	WBR[1]	25	B	13.2	44		B	13.6	33	
	NBT	-	-	-	-		-	-	-	
	NBR	200	-	-	-		-	-	-	
	SBL[2]	225	A	8.9	31		A	9.2	47	
	SBT	-	-	-	-		-	-	-	
No-Build (2023) Traffic Conditions	WBL[1]	-	D	34.2	44	N/A	E	36.8	27	N/A
	WBR[1]	25	B	14.6	44		C	15.1	22	
	NBT	-	-	-	-		-	-	-	
	NBR	200	-	-	-		-	-	-	
	SBL[2]	225	A	9.3	33		A	9.7	36	
	SBT	-	-	-	-		-	-	-	
Build (2023) Traffic Conditions ***By-Right***	WBL[1]	-	E	35.6	42	N/A	E	38.6	34	N/A
	WBR[1]	25	B	14.7	50		C	15.4	32	
	NBT	-	-	-	-		-	-	-	
	NBR	200	-	-	-		-	-	-	
	SBL[2]	225	A	9.4	35		A	9.8	49	
	SBT	-	-	-	-		-	-	-	
Build (2023) Conditions	WBL[1]	-	E	36.4	46	N/A	E	39.6	37	N/A
	WBR[1]	25	B	14.8	39		C	15.6	29	
	NBT	-	-	-	-		-	-	-	
	NBR	200	-	-	-		-	-	-	
	SBL[2]	225	A	9.4	37		A	9.8	53	
	SBT	-	-	-	-		-	-	-	

1. Level of service for minor approach
2. Level of service for major street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

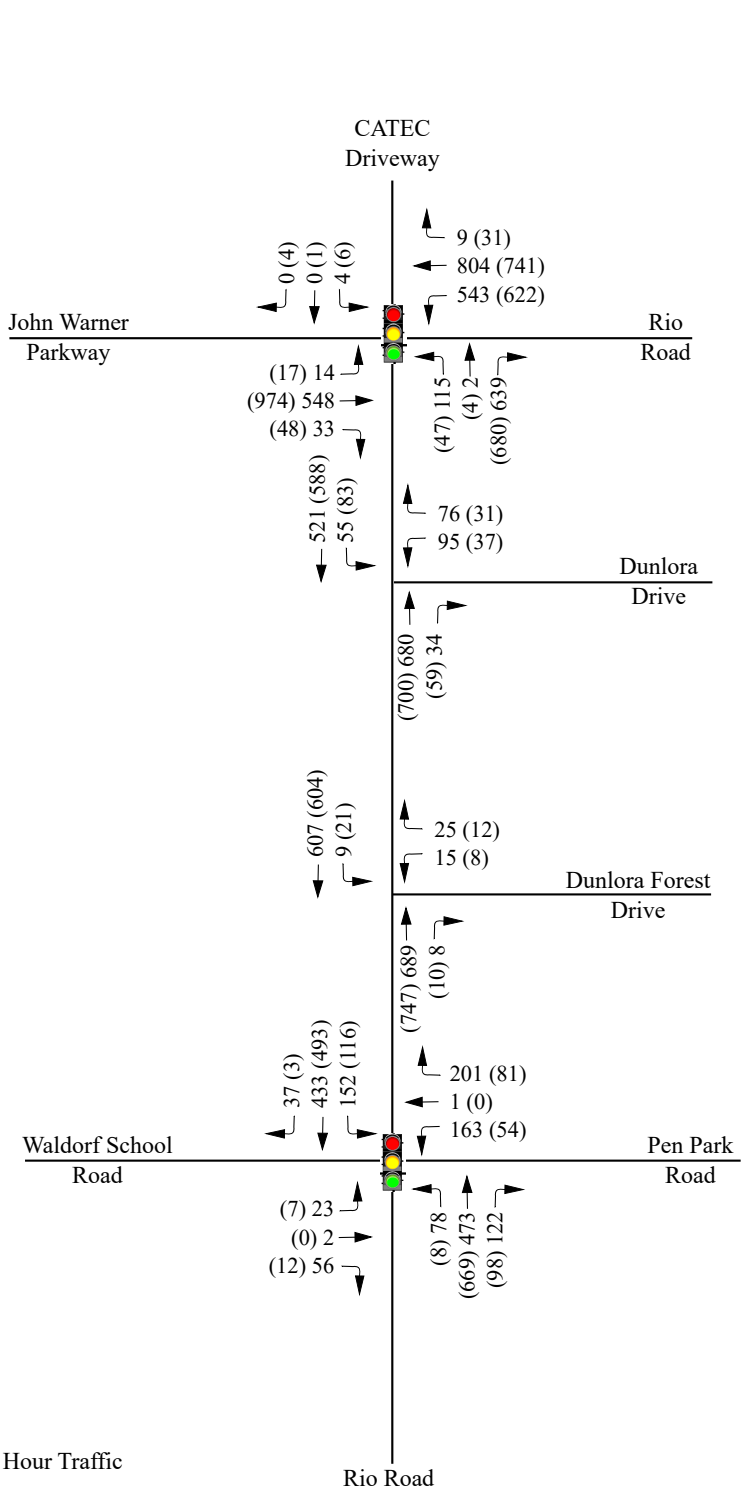
Table 8
Level-of-Service Summary for Rio Road at Pen Park Road / Waldorf School Road

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2018) Traffic Conditions	EBL/T/R	-	C	24.1	103	C (20.4 sec)	C	23.7	40	B (12.8 sec)
	WBL/T	350	D	35.2	188		C	24.4	80	
	WBR	-	C	31.0	124		C	29.3	67	
	NBL	75	B	12.3	130		A	8.1	56	
	NBT	-	B	19.2	261		B	13.5	252	
	NBR	125	B	14.3	152		A	8.8	149	
	SBL	225	B	13.6	142		A	9.4	108	
	SBT	-	B	16.4	305		A	8.7	217	
	SBR	100	B	12.0	156		A	6.4	23	
No-Build (2023) Traffic Conditions	EBL/T/R	-	C	30.5	135	C (24.9 sec)	C	26.6	44	B (13.9 sec)
	WBL/T	350	E	56.0	240		C	27.5	80	
	WBR	-	D	49.5	180		C	32.7	81	
	NBL	75	B	12.2	160		A	8.0	82	
	NBT	-	B	20.0	383		B	15.2	322	
	NBR	125	B	13.5	198		A	8.5	162	
	SBL	225	B	14.7	199		B	10.9	108	
	SBT	-	B	16.3	350		A	8.9	235	
	SBR	100	B	11.2	144		A	6.1	10	
Build (2023) Traffic Conditions ***By-Right***	EBL/T/R	-	C	31.0	119	C (25.3 sec)	C	27.1	50	B (14.2 sec)
	WBL/T	350	E	57.3	250		C	28.1	92	
	WBR	-	D	51.2	188		C	33.4	91	
	NBL	75	B	12.4	169		A	7.9	69	
	NBT	-	C	20.2	378		B	15.7	411	
	NBR	125	B	13.5	210		A	8.4	209	
	SBL	225	B	14.8	217		B	11.2	126	
	SBT	-	B	16.6	390		A	8.9	246	
	SBR	100	B	11.1	155		A	6.0	13	
Build (2023) Conditions	EBL/T/R	-	C	31.3	124	C (25.6 sec)	C	27.4	52	B (14.4 sec)
	WBL/T	350	E	58.4	215		C	28.2	80	
	WBR	-	D	52.3	172		C	33.7	83	
	NBL	75	B	12.5	166		A	7.9	71	
	NBT	-	C	20.3	382		B	16.0	440	
	NBR	125	B	13.4	195		A	8.4	209	
	SBL	225	B	14.9	220		B	11.4	126	
	SBT	-	B	16.9	362		A	9.0	224	
	SBR	100	B	11.1	142		A	6.0	20	

Table 9
Level-of-Service Summary for Rio Road at Full-movement Driveway

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Build (2023) Conditions ***By-Right***	EBL[1]	-	E	40.8	159	N/A[3]	E	41.2	57	N/A[3]
	EBR[1]	-	B	13.2	65		B	13.2	28	
	NBL[2]	100	A	9.0	60		A	9.1	41	
	NBT	-	-	-	-		-	-	-	
	SBT/R	-	-	-	-		-	-	-	
Build (2023) Conditions ***With Median Acceleration Lane***	EBL[1]	-	C	23.3	75	N/A[3]	C	24.4	62	N/A[3]
	EBR[1]	-	B	13.4	57		B	13.4	27	
	NBL[2]	100	A	9.0	40		A	9.2	63	
	NBT	-	-	-	-		-	-	-	
	SBT/R	-	-	-	-		-	-	-	

1. Level of service for minor approach
2. Level of service for major street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.



LEGEND

X (Y) AM (PM) Peak Hour Traffic

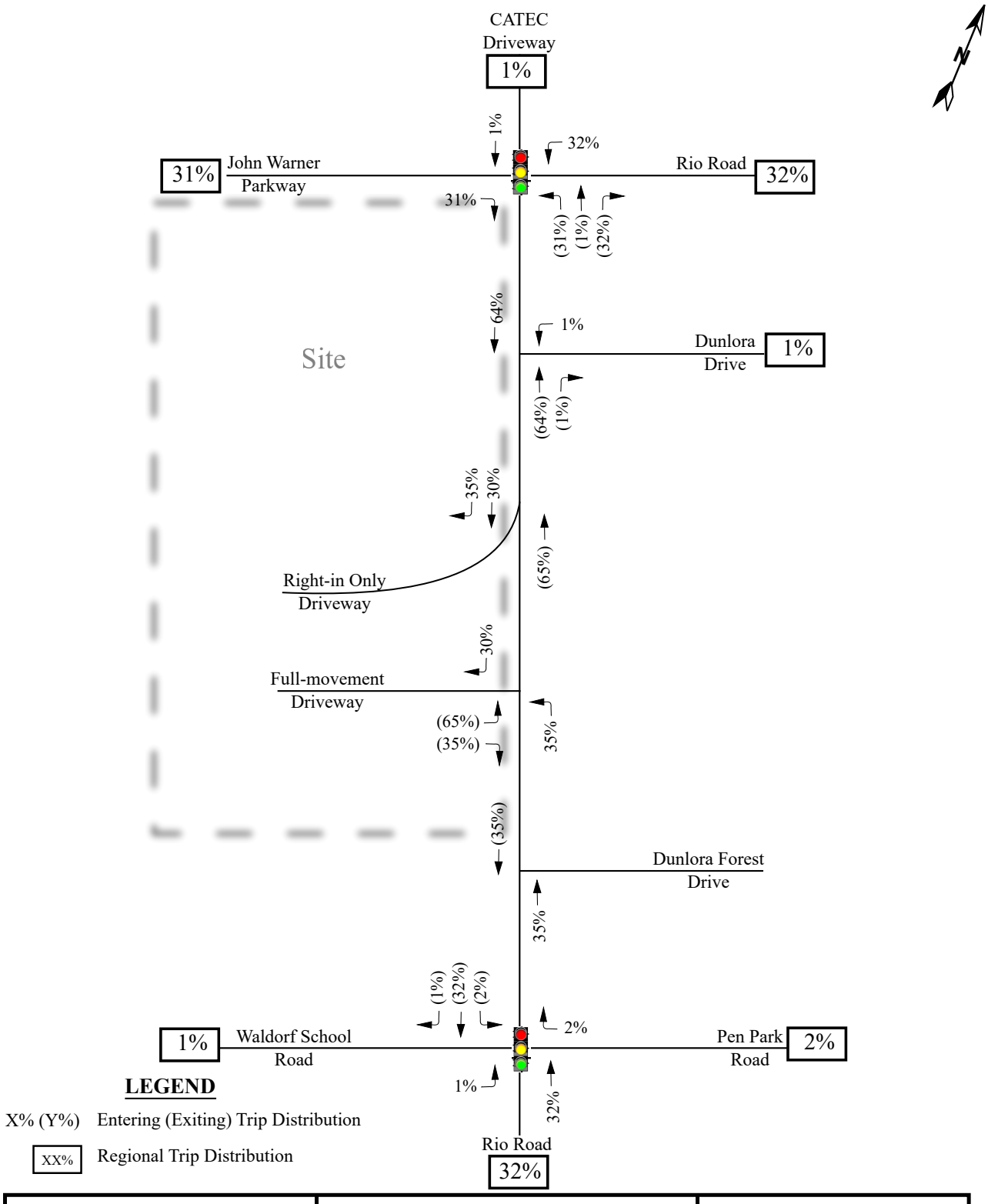
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

No-Build (2023)
Peak Hour Traffic Volumes
(By-Right)

Scale: Not to Scale

Figure 1

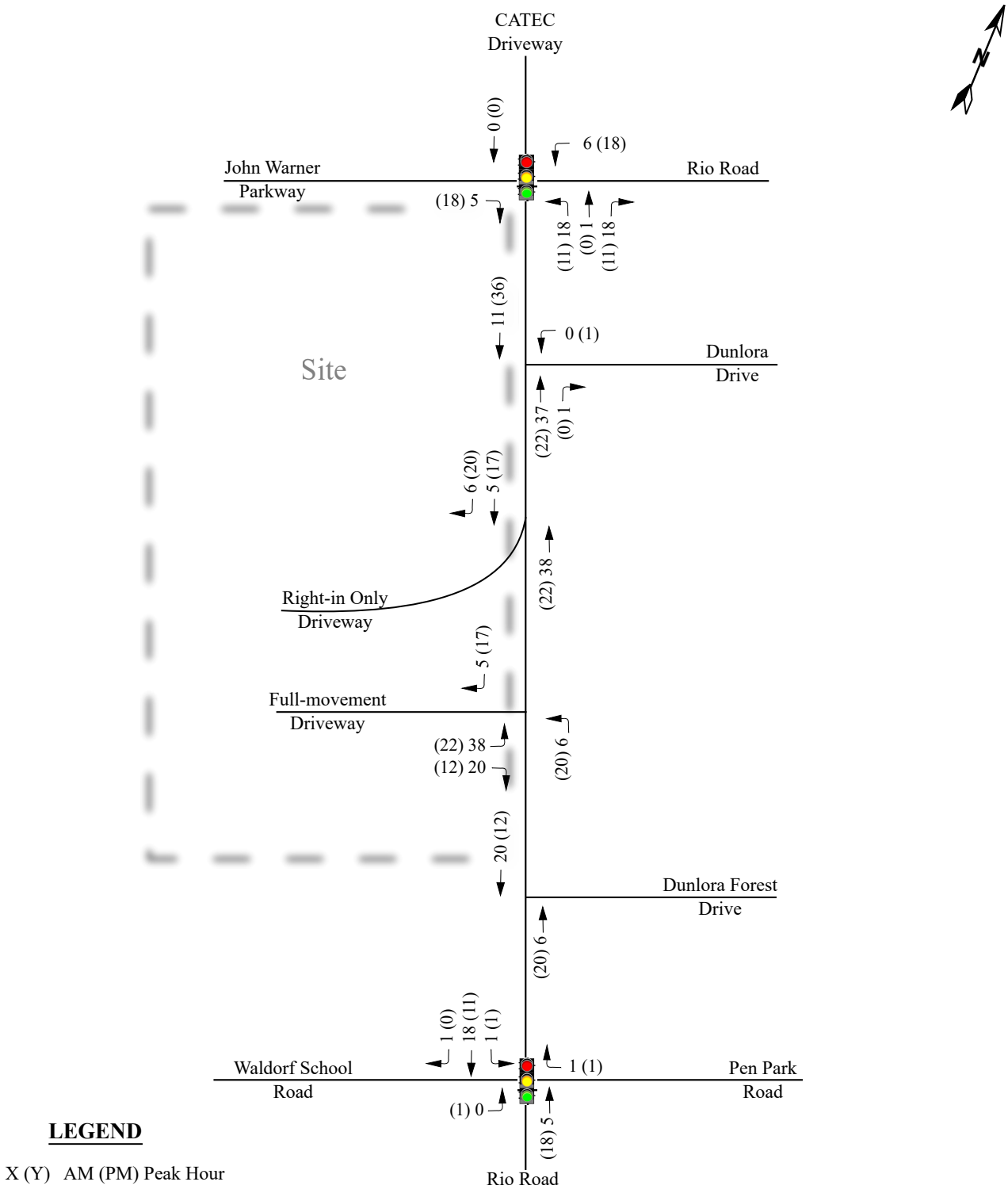


RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Site Trip Distribution
(By-Right)

Scale: Not to Scale | Figure 2

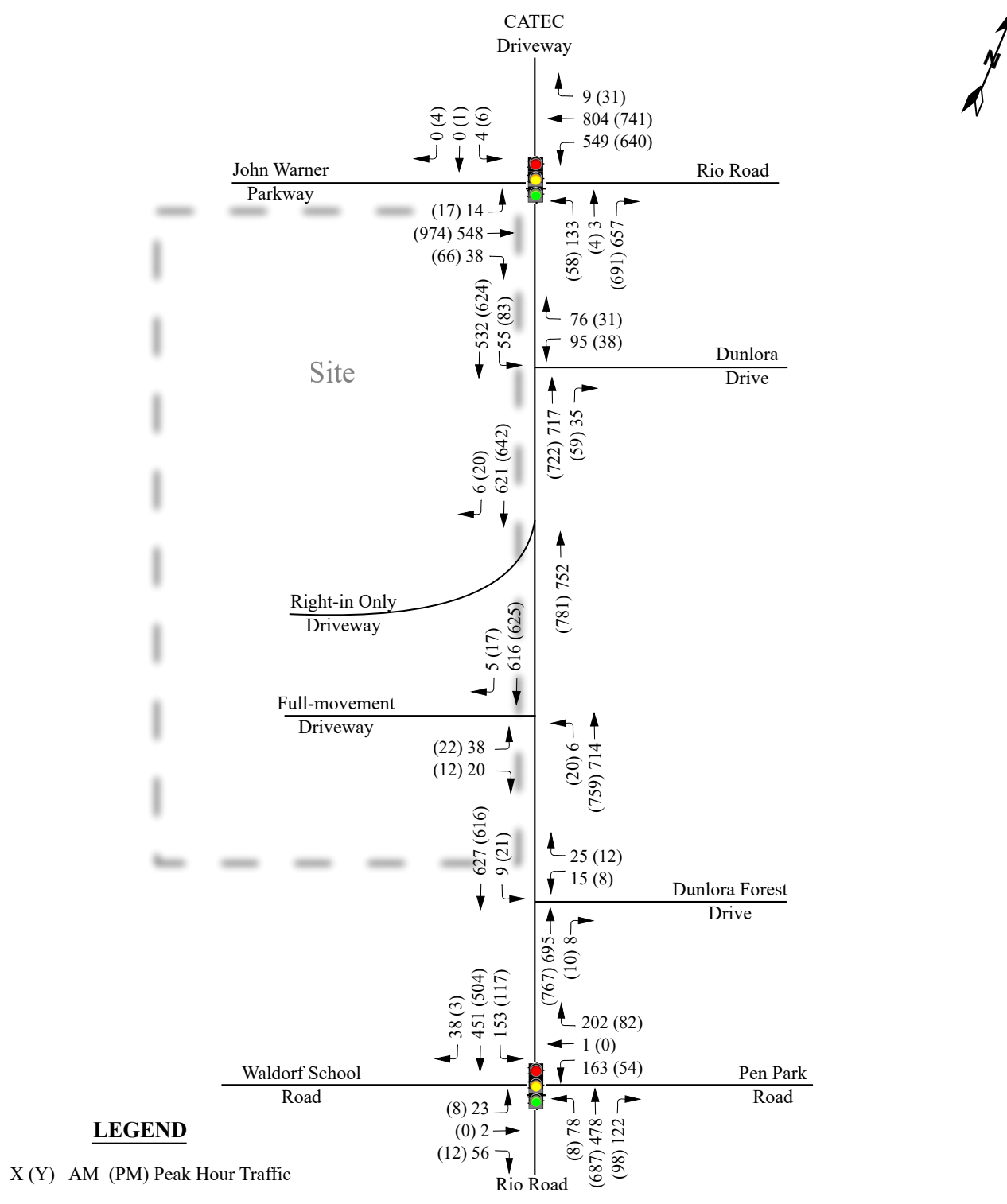


RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Site Trip Assignment
(By-Right)

Scale: Not to Scale | Figure 3



RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Build (2023) Peak Hour Traffic Volumes
(By-Right)

Scale: Not to Scale | Figure 4

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November 14, 2019

Mr. Kevin McDermott
Albemarle County
401 McIntire Road
Charlottesville, Virginia 22902
Phone: (434) 296-5832

Reference: Rio Road Multi-Family – Revised Traffic Impact Analysis (TIA)

Dear Mr. McDermott,

Ramey Kemp & Associates, Inc. (RKA) has performed a Traffic Impact Analysis (TIA) for the proposed 328-unit multi-family development located on the southwest corner of the Rio Road at John Warner Parkway / CATEC Driveway intersection. The access plan includes one full-movement driveway and one right-in only driveway on Rio Road and a stub-out for a future connection on the south side of the property. If approved, the proposed development is expected to be built in 2023. Figure 1 shows the site location and study intersections, and Figure 2 shows the preliminary site plan.

The purpose of this letter report is to provide the following:

- Trip generation calculations
- Evaluation of turn lane warrants for the site driveways
- Capacity and queueing analysis of the study intersections

Existing Roadway Conditions

Route 631 (Rio Road) is a four-lane divided Minor Arterial with a 2017 Virginia Department of Transportation (VDOT) average daily traffic (ADT) volume of approximately 28,000 vehicles per day (vpd) and a posted speed limit of 35 miles per hour (mph) north of the John Warner Parkway intersection. Rio Road becomes a two-lane Major Collector with an ADT volume of approximately 11,700 vpd and a posted speed limit of 35 mph south of the John Warner Parkway intersection. Note that the ADT along the property frontage was calculated assuming the AM and PM peak hour volumes represent 20% of the daily traffic.

Route 2500 (John Warner Parkway) is a two-lane Minor Arterial with a posted speed limit of 35 mph in the vicinity of the site and does not have a VDOT published ADT volume. Based on discussion with the County, the ADT is approximately 17,500 vpd.

Route 768 (Pen Park Road) is a two-lane local road with a 2017 VDOT ADT volume of approximately 4,300 vpd, and a posted speed limit of 35 mph in the vicinity of the site.

Route 1177 (Dunlora Drive) is a two-lane local road with a 2017 VDOT ADT volume of approximately 2,300 vpd, and a posted speed limit of 35 mph in the vicinity of the site.

Figure 3 shows existing lane configuration.

Existing Traffic Volumes
The AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were conducted by Burns Service, Inc. during the week of August 27, 2018 at the following intersections:

- Rio Road at John Warner Parkway / CATEC Driveway
- Rio Road at Dunlora Drive
- Rio Road at Pen Park Road / Waldorf School Road

The AM peak hour (7:30 to 8:30 AM) and PM peak hour (4:45 – 5:45 PM) turning movements counts for Rio Road at Dunlora Forest Drive were conducted by RKA during the week of August 19, 2019.

Note that some volumes have been increased as necessary to balance between the Rio Road at John Warner Parkway / CATEC Driveway intersection and the Rio Road at Dunlora Drive intersection. The traffic count data are enclosed, and the existing volumes are shown in Figure 4.

Background Traffic Growth
Based on discussion with the County and VDOT, the 2018 peak hour traffic volumes were grown by an annual rate of 2.0% for five years to estimate the 2023 peak hour traffic volumes.

Approved Development Traffic
Based on discussion with the County and VDOT, three approved developments near the site are included in this TIA. Belvedere Residential is partially built-out, with 190 single family homes and 90 townhomes remaining to be built and is located at the end of Belvedere Boulevard. The trip generation potential of Belvedere Residential during a typical weekday, AM peak hour and PM peak hour was estimated using the methodologies published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual – 10th Edition*.

Table 1
ITE Trip Generation – Belvedere Residential – Weekday – 10th Edition

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
Single Family Detached Housing (210)	190 homes	938	938	35	106	118	70
Multifamily Housing (Low-Rise) (220)	90 units	330	330	10	33	34	20
Total Trips		**1,268**	**1,268**	**45**	**139**	**152**	**90**

Figures 5 and 6 show the trip distribution and assignment for Belvedere Residential.

Dunlora Park Residential consists of 28 single family homes and 14 townhomes and is located on Varick Street. The ITE trip generation potential of Dunlora Park Residential is shown in Table 2.

Table 2
ITE Trip Generation – Dunlora Park Residential – Weekday – 10th Edition

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
Single Family Detached Housing (210)	28 homes	161	161	6	19	19	11
Multifamily Housing (Low-Rise) (220)	14 units	51	51	1	6	6	4
Total Trips		**212**	**212**	**7**	**25**	**25**	**15**

Figures 7 and 8 show the trip distribution and assignment for Dunlora Park Residential.

Lochlyn Hill Residential is partially built-out, with 129 single family homes and 14 townhomes remaining to be built and is located on the south side of Pen Park Lane. The ITE trip generation potential of Lochlyn Hill Residential is shown in Table 3.

Table 3
ITE Trip Generation – Lochlyn Hill Residential – Weekday – 10th Edition

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
Single Family Detached Housing (210)	129 homes	657	657	24	72	82	48
Multifamily Housing (Low-Rise) (220)	14 units	51	51	1	6	6	4
Total Trips		**708**	**708**	**25**	**78**	**88**	**52**

Figures 9 and 10 show the trip distribution and assignment for Lochlyn Hill Residential. The total approved development trips are shown in Figure 11. The total approved development trips were combined with the background growth to estimate the 2023 no-build traffic volumes, which are shown in Figure 12.

There are several other small developments currently under construction near the site (such as The Center at Belvidere). Based on discussion with the County, it was determined that the trip generation potential of these sites is captured in the 2% annual growth rate.

Trip Generation

The trip generation potential of the proposed neighborhood during a typical weekday, AM peak hour, and PM peak hour was estimated using the methodologies published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual – 10th Edition*. Table 4 summarizes the trip generation calculations.

Table 4
ITE Trip Generation – Typical Weekday – 10th Edition

Land Use (ITE Land Use Code)	Size	Average Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
Multifamily Housing (Mid-Rise) (221)	328 units	893	893	31	87	85	54

It should be noted that Rio Road is an existing transit corridor, and some of the future residents living along Rio Road will likely use the transit service. This will reduce the number of vehicles on Rio Road. To be conservative, this reduction was not applied to the trip generation potential of the site or the surrounding approved developments.

Site Traffic Distribution

The following site traffic distribution was applied based on coordination with the County and VDOT:

- 32% to / from the north on Rio Road
- 32% to / from the south on Rio Road
- 31% to / from the south on John Warner Parkway
- 2% to / from the east on Pen Park Road
- 1% to / from the south on Waldorf School Road
- 1% to / from the north on CATEC Driveway
- 1% to / from the north on Dunlora Drive

Figures 13 and 14 show the site trip distribution and site trip assignment, respectively. Figure 15 shows the projected 2023 build-out peak hour traffic volumes.

VDOT Turn Lane Warrant Analysis
The projected build-out AM and PM peak hour traffic volumes at the proposed site driveways were compared to the turn lane warrants in the Virginia Department of Transportation (VDOT) *Access Management Design Standards for Entrances and Intersections*:

Rio Road at Right-in Only Driveway:

- A southbound right-turn taper on Rio Road is warranted in the PM peak hour

Rio Road at Full-Movement Driveway:

- A northbound left-turn lane on Rio Road is warranted
- A southbound right-turn taper on Rio Road is warranted in the PM peak hour

Intersection Spacing Standards
VDOT requires at least 250 feet of separation between partial access driveways and full-movement driveways / intersections on Major Collector roadways. The proposed right-in only driveway is approximately 180 feet south of Dunlora Drive and 500 feet north of the proposed full-movement driveway. The proposed right-in only driveway does not meet VDOT's minimum intersection spacing standards, so an Access Management Exception (AME) request will be submitted.

VDOT requires at least 335 feet of separation between full-movement driveways and intersections on Major Collector roadways. The proposed full-movement driveway is approximately 560 feet north of Dunlora Forest Drive. The proposed full-movement driveway exceeds VDOT's minimum intersection spacing standards.

Traffic Capacity Analysis
Traffic capacity analysis for the study intersections was performed using Synchro 10, which is a comprehensive software package that allows the user to model signalized and unsignalized intersections to determine levels-of-service based on the thresholds specified in the Highway Capacity Manual (HCM) – 6th Edition. All queues reported are the maximum SimTraffic queues based on the average of 10 microsimulation runs.

Note that Rio Road is considered an east / west roadway but is north / south in the vicinity of the site. Additionally, John Warner Parkway, Dunlora Drive, Pen Park Road, and Waldorf School Road are all east / west roadways in the vicinity of the site.

Table 5 summarizes the capacity analysis results for the signalized intersection of Rio Road at John Warner Parkway / CATEC Driveway, and the Synchro and SimTraffic outputs are enclosed for reference.

Table 5
Level-of-Service Summary for Rio Road at John Warner Parkway / CATEC Driveway

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2018) Traffic Conditions	EBL	200	F	114.2	47	D (50.2 sec)	F	114.4	276	D (52.3 sec)
	EBT/R	300	D	40.3	314		D	52.6	782	
	WBL	-	F	84.0	466		F	83.6	654	
	WBT	-	B	13.0	310		B	12.5	330	
	WBR	500	A	7.1	19		A	7.3	29	
	NBL/T	75	F	84.3	124		E	78.6	124	
	NBR	-	E	67.3	190		E	64.3	180	
	SBL/T	-	F	113.6	23		F	103.6	30	
	SBR	125	F	98.5	6		F	101.5	11	
No-Build (2023) Traffic Conditions	EBL	200	F	114.4	100	D (53.7 sec)	F	115.0	299	E (59.9 sec)
	EBT/R	300	D	47.2	471		E	76.8	1,289	
	WBL	-	F	83.4	581		F	83.9	803	
	WBT	-	B	15.7	481		B	14.4	455	
	WBR	500	A	7.2	24		A	7.4	32	
	NBL/T	75	F	89.4	124		E	79.3	124	
	NBR	-	E	74.4	213		E	61.5	191	
	SBL/T	-	F	113.6	22		F	104.0	35	
	SBR	125	F	98.5	6		F	100.4	13	
Build (2023) Traffic Conditions ***Without Improvements***	EBL	200	F	114.4	102	E (57.1 sec)	F	115.0	299	E (64.4 sec)
	EBT/R	300	D	48.5	391		F	89.7	1,352	
	WBL	-	F	83.3	568		F	85.2	801	
	WBT	-	B	15.7	461		B	14.5	581	
	WBR	500	A	7.2	19		A	7.4	32	
	NBL/T	75	F	104.8	124		F	80.5	124	
	NBR	-	F	81.8	215		E	59.5	192	
	SBL/T	-	F	113.6	22		F	104.2	28	
	SBR	125	F	98.5	7		F	99.5	10	
Build (2023) Traffic Conditions ***With Median Acceleration Lane***	EBL	200	F	114.4	233	E (57.1 sec)	F	115.0	254	E (64.4 sec)
	EBT/R	300	D	48.5	424		F	89.7	1,341	
	WBL	-	F	83.3	595		F	85.2	816	
	WBT	-	B	15.7	488		B	14.5	536	
	WBR	500	A	7.2	26		A	7.4	33	
	NBL/T	-	F	104.8	179		F	80.5	164	
	NBR	-	F	81.8	178		E	59.5	183	
	SBL/T	-	F	113.6	13		F	104.2	22	
	SBR	125	F	98.5	2		F	99.5	5	

Capacity analysis indicates that the intersection currently operates at LOS D during the AM and PM peak hours. Under no-build conditions, the intersection is expected to operate at LOS D during the AM peak hour and at LOS E during the PM peak hour.

Under build conditions (without improvements), the intersection is expected to operate at LOS E during the AM and PM peak hours.

Under build conditions (with median acceleration lane), the intersection is expected to operate at LOS E during the AM and PM peak hours with the following improvement:

- Restripe the existing northbound shared left-through lane on Rio Road to extend the existing storage to Dunlora Drive

Table 6 summarizes the capacity analysis results for the unsignalized intersection of Rio Road at Dunlora Drive, and the Synchro and SimTraffic outputs are enclosed for reference. Note that HCM 6 reports were used for the existing, no-build, and build without improvements scenarios. HCM 2000 reports were used for the build with median acceleration lane scenario because HCM 6 does not accurately report two-stage left-turn movements.

Table 6
Level-of-Service Summary for Rio Road at Dunlora Drive

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]
Existing (2018) Conditions	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 50 -	E B - A -	45.1 14.6 - 9.3 -	107 106 - 65 -	N/A	D B - A -	34.1 13.5 - 9.4 -	58 66 - 92 -	N/A
No-Build (2023) Conditions	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 50 -	F C - A -	120.1 16.9 - 9.8 -	287 210 - 80 -	N/A	F C - A -	58.8 15.0 - 10.0 -	78 84 - 98 -	N/A
Build (2023) Conditions ***Without Improvements***	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 50 -	F C - B -	164.3 18.3 - 10.1 -	401 255 - 84 -	N/A	F C - B -	73.4 15.6 - 10.2 -	123 135 - 93 -	N/A
Build (2023) Conditions ***With Median Acceleration Lane***	WBL[1] WBR[1] NBT/R SBL[2] SBT	- 200 - 100 -	D D - B -	25.5 25.5 - 10.1 -	150 139 - 84 -	N/A	C C - B -	20.7 20.7 - 10.2 -	75 101 - 130 -	N/A

1. Level of service for minor approach
2. Level of service for major street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that the minor street left-turn movement currently operates with moderate delays (between 25 and 50 seconds) during both the AM and PM peak hours. Under no-build conditions, the minor street left-turn movement is expected to operate with long delays (greater than 50 seconds) during both peak hours.

Under build conditions (without improvements), capacity analysis indicates that the minor street left-turn movement is expected to operate with long delays (greater than 50 seconds) during the AM and PM peak

Under build conditions (with median acceleration lane), capacity analysis indicates that the minor street left-turn movement is expected to operate with moderate delays (between 25 and 50 seconds) during the AM peak hour and short delays (less than 25 seconds) during PM peak hour with the following improvements:

- Construct one southbound through lane on Rio Road
- Restripe the existing southbound through lane on Rio Road as a dedicated left-turn lane with 100 feet of storage

Collision data was obtained from the Virginia Crash GIS published by VDOT based on data from the Virginia Department of Motor Vehicles (DMV). Data was reported from January 1, 2013 to December 31, 2017 within 150 feet of the study intersection. There have only been five reported collisions over the last 5 years and just one angle crash, so the intersection does not meet the warrant of five or more correctable collisions over a twelve-month period. Additionally, the collision data does not indicate an unusual crash pattern that would be mitigated with the installation of a traffic signal.

Table 7 summarizes the capacity analysis results for the unsignalized intersection of Rio Road at Dunlora Forest Drive, and the Synchro and SimTraffic outputs are enclosed for reference.

Table 7
Level-of-Service Summary for Rio Road at Dunlora Forest Drive

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)[3]
Existing (2018) Traffic Conditions	WBL[1]	-	D	26.1	37	N/A	D	27.3	32	N/A
	WBR[1]	25	B	13.2	44		B	13.6	33	
	NBT	-	-	-	-		-	-	-	
	NBR	200	-	-	-		-	-	-	
	SBL[2]	225	A	8.9	31		A	9.2	47	
	SBT	-	-	-	-		-	-	-	
No-Build (2023) Traffic Conditions	WBL[1]	-	D	34.2	44	N/A	E	36.8	27	N/A
	WBR[1]	25	B	14.6	44		C	15.1	22	
	NBT	-	-	-	-		-	-	-	
	NBR	200	-	-	-		-	-	-	
	SBL[2]	225	A	9.3	33		A	9.7	36	
	SBT	-	-	-	-		-	-	-	
Build (2023) Conditions	WBL[1]	-	E	36.4	46	N/A	E	39.6	37	N/A
	WBR[1]	25	B	14.8	39		C	15.6	29	
	NBT	-	-	-	-		-	-	-	
	NBR	200	-	-	-		-	-	-	
	SBL[2]	225	A	9.4	37		A	9.8	53	
	SBT	-	-	-	-		-	-	-	

1. Level of service for minor approach
2. Level of service for major street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that the minor street left-turn movement currently operates with moderate delays (between 25 and 50 seconds) during both the AM and PM peak hours. Under no-build conditions, the minor

street left-turn movement is expected to continue to operate with moderate delays (between 25 and 50 seconds) during both the AM and PM peak hours.

Under build conditions, capacity analysis indicates that the minor street left-turn movement is expected to continue to operate with moderate delays (between 25 and 50 seconds) during both the AM and PM peak hours.

No improvements are warranted or recommended at this intersection at build out of the neighborhood.

Table 8 summarizes the capacity analysis results for the signalized intersection of Rio Road at Pen Park Road / Waldorf School Road, and the Synchro and SimTraffic outputs are enclosed for reference.

Table 8
Level-of-Service Summary for Rio Road at Pen Park Road / Waldorf School Road

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2018) Traffic Conditions	EBL/T/R	-	C	24.1	103	C (20.4 sec)	C	23.7	40	B (12.8 sec)
	WBL/T	350	D	35.2	188		C	24.4	80	
	WBR	-	C	31.0	124		C	29.3	67	
	NBL	75	B	12.3	130		A	8.1	56	
	NBT	-	B	19.2	261		B	13.5	252	
	NBR	125	B	14.3	152		A	8.8	149	
	SBL	225	B	13.6	142		A	9.4	108	
	SBT	-	B	16.4	305		A	8.7	217	
	SBR	100	B	12.0	156		A	6.4	23	
No-Build (2023) Traffic Conditions	EBL/T/R	-	C	30.5	135	C (24.9 sec)	C	26.6	44	B (13.9 sec)
	WBL/T	350	E	56.0	240		C	27.5	80	
	WBR	-	D	49.5	180		C	32.7	81	
	NBL	75	B	12.2	160		A	8.0	82	
	NBT	-	B	20.0	383		B	15.2	322	
	NBR	125	B	13.5	198		A	8.5	162	
	SBL	225	B	14.7	199		B	10.9	108	
	SBT	-	B	16.3	350		A	8.9	235	
	SBR	100	B	11.2	144		A	6.1	10	
Build (2023) Conditions	EBL/T/R	-	C	31.3	124	C (25.6 sec)	C	27.4	52	B (14.4 sec)
	WBL/T	350	E	58.4	215		C	28.2	80	
	WBR	-	D	52.3	172		C	33.7	83	
	NBL	75	B	12.5	166		A	7.9	71	
	NBT	-	C	20.3	382		B	16.0	440	
	NBR	125	B	13.4	195		A	8.4	209	
	SBL	225	B	14.9	220		B	11.4	126	
	SBT	-	B	16.9	362		A	9.0	224	
	SBR	100	B	11.1	142		A	6.0	20	

Capacity analysis indicates that the intersection currently operates at LOS C during the AM peak hour and LOS B during the PM peak hour. Under no-build conditions, the intersection is expected to continue to operate at LOS C during the AM peak hour and LOS B during the PM peak hour.

Under build conditions, capacity analysis indicates that the intersection is expected to continue to operate at LOS C during the AM peak hour and LOS B during the PM peak hour with all movements at LOS E or better.

No improvements are warranted or recommended at this intersection at build out of the neighborhood.

It should be noted that the County has submitted a SMART Scale project application to convert the existing signalized Rio Road at Pen Park Road intersection into a roundabout. If the application is successful, and the roundabout is constructed, the roundabout will likely improve the overall LOS for the intersection and will not have an impact on other intersections in this analysis.

Table 9 summarizes the capacity analysis results for the unsignalized intersection of Rio Road and Full-movement Driveway, and the Synchro and SimTraffic outputs are enclosed for reference. Note that HCM 6 reports were used for the median acceleration lane scenario. HCM 2000 reports were used for the build with median acceleration lane scenario because HCM 6 does not accurately report two-stage left-turn movements.

Table 9
Level-of-Service Summary for Rio Road at Full-movement Driveway

CONDITION	LANE GROUP	Storage Length (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Build (2023) Conditions ***Without Improvements***	EBL[1]	-	F	50.8	149	N/A[3]	E	49.9	83	N/A[3]
	EBR[1]	-	B	13.4	70		B	13.3	36	
	NBL[2]	100	A	9.0	61		A	9.2	74	
	NBT	-	-	-	-		-	-	-	
	SBT/R	-	-	-	-		-	-	-	
Build (2023) Conditions ***With Median Acceleration Lane***	EBL[1]	-	C	23.3	75	N/A[3]	C	24.4	62	N/A[3]
	EBR[1]	-	B	13.4	57		B	13.4	27	
	NBL[2]	100	A	9.0	40		A	9.2	63	
	NBT	-	-	-	-		-	-	-	
	SBT/R	-	-	-	-		-	-	-	

1. Level of service for minor approach
2. Level of service for major street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Under build conditions (without improvements), capacity analysis indicates that the minor street left-turn movement is expected to operate with long delays (greater than 50 seconds) during the AM peak hour and moderate delays (between 25 and 50 seconds) during PM peak hours.

Under build conditions (with median acceleration lane), capacity analysis indicates that the minor street left-turn movement is expected to operate with short delays (less than 25 seconds) during the AM and PM peak hours with the following improvements:

- Construct a northbound left-turn lane on Rio Road with 100 feet of storage and 100 feet of taper
- Construct a 100 foot southbound right-turn taper on Rio Road
- Construct the site driveway with one ingress lane and two egress lanes

Recommendations
Based on the trip generation potential of the site, the following improvements are recommended:

Rio Road at John Warner Parkway / CATEC Driveway:

- Restripe the existing northbound shared left-through lane on Rio Road to extend the existing storage to Dunlora Drive

Rio Road at Dunlora Drive:

- Construct one southbound through lane on Rio Road
- Restripe the existing southbound through lane on Rio Road as a dedicated left-turn lane with 100 feet of storage
- Construct a southbound acceleration lane on Rio Road

Rio Road at Right-in Only Driveway:

- Construct a 100 foot southbound right-turn taper on Rio Road
- Construct the site driveway with one ingress lane

Rio Road at Full-movement Driveway:

- Construct a northbound left-turn lane on Rio Road with 100 feet of storage and 100 foot taper
- Construct a 100 foot southbound right-turn taper on Rio Road
- Construct a northbound acceleration lane on Rio Road
- Construct the site driveway with one ingress lane and two egress lanes

Figure 16 shows the recommended lane configuration.

We appreciate your attention to this matter. Please contact me at (804) 217-8560 if you have any questions about this report.

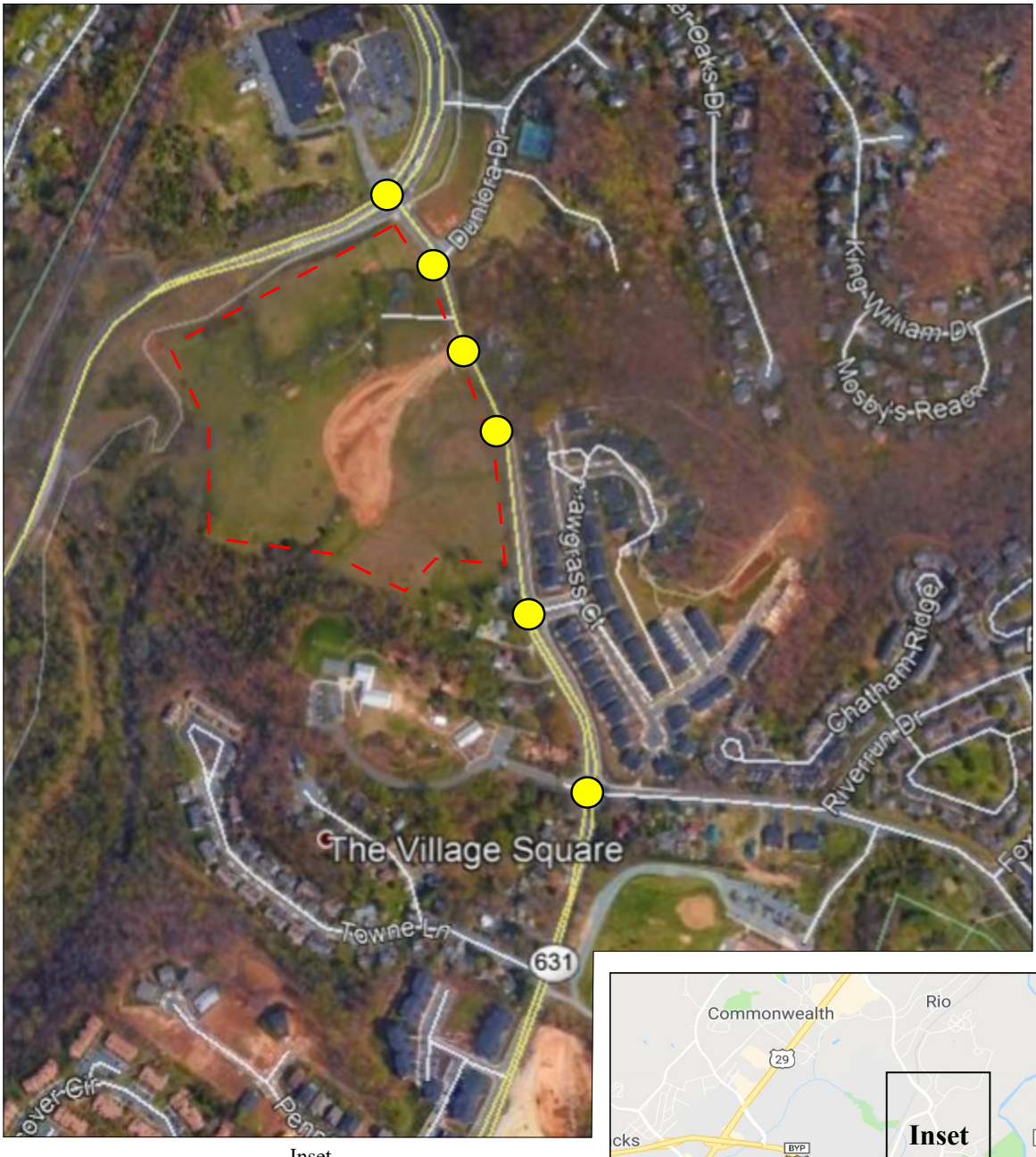
Sincerely yours,
Ramey Kemp & Associates, Inc.



Michael Bailey, P.E., PTOE
Project Manager

Enclosures: Figures, VDOT turn lane warrant diagrams, Traffic count data, Synchro output

Copy to: Mr. Adam Moore, P.E., VDOT
Mr. Ryan Hambleton, Kotarides
Mr. Scott Collins, P.E., Collins Engineering
Mr. Bill Mechnick, LPDA



Inset



Overview

LEGEND

N

Study Intersection

Site Boundary

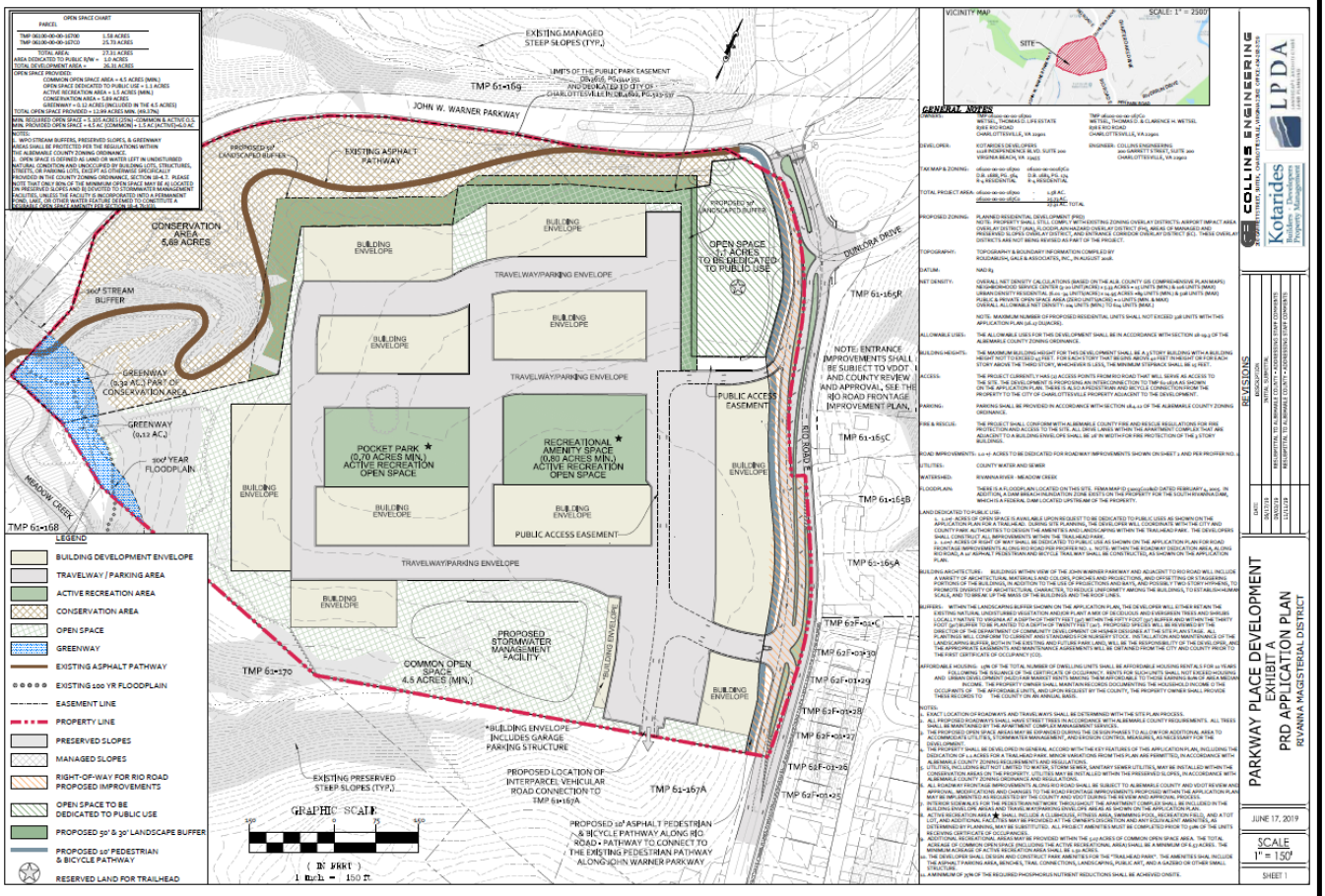
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Site Location and Study Intersections

Scale: Not to Scale

Figure 1



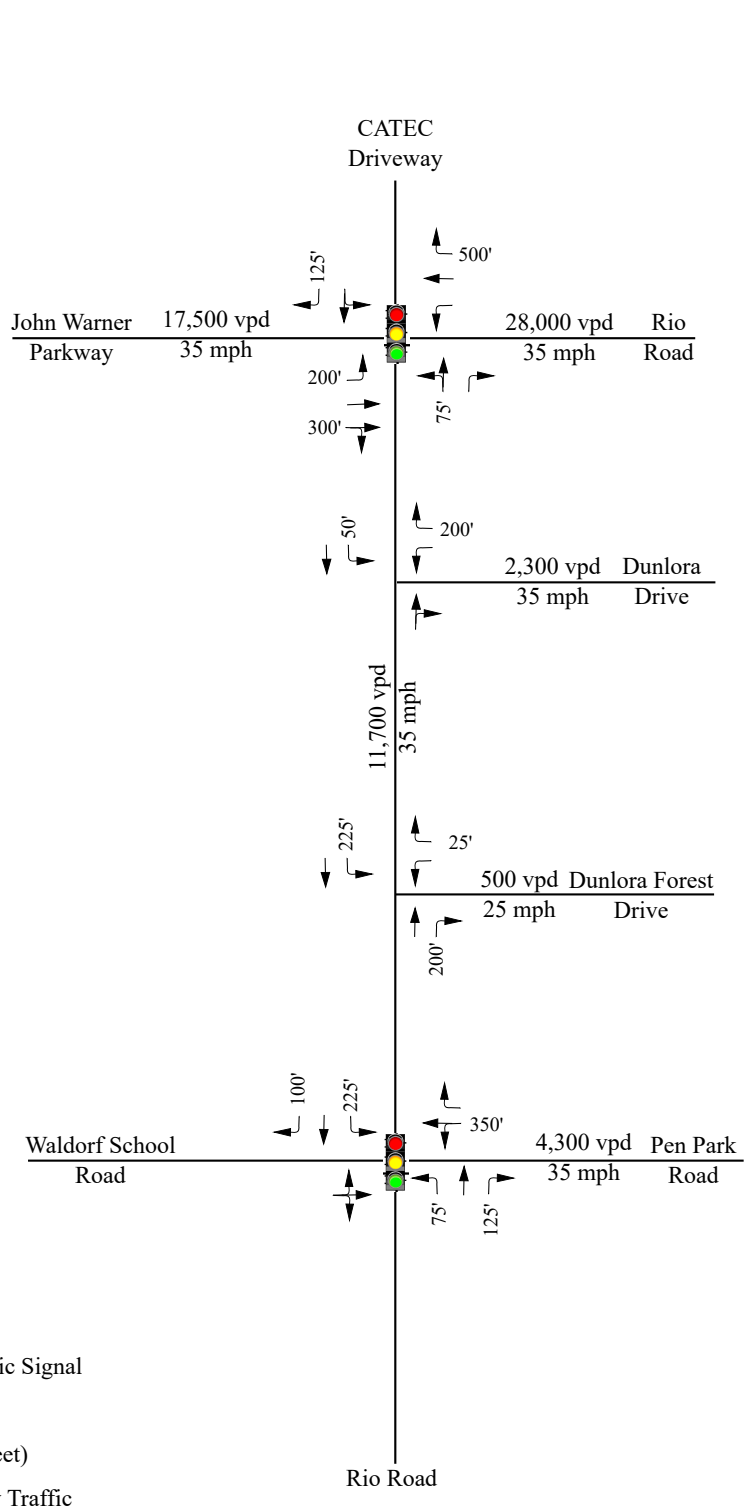
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Rio Road Multi-Family
Albemarle County, Virginia

Preliminary Site Plan

Scale: Not to Scale

Figure 2



LEGEND

- Existing Traffic Signal
- Existing Lane
- X' — Storage (In Feet)
- X vpd — Average Daily Traffic

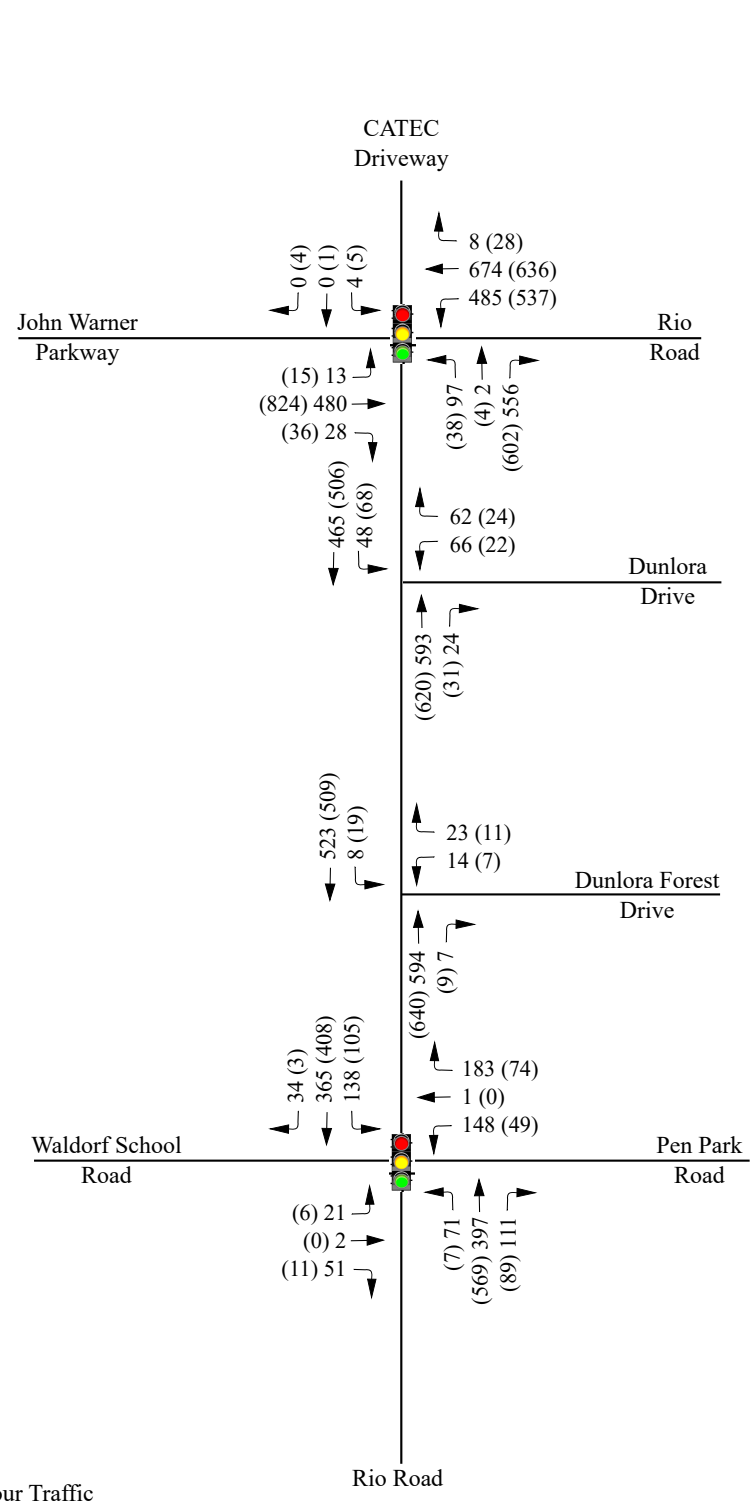
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Rio Road Multi-Family
Albemarle County, Virginia

Existing (2018)
Lane Configurations

Scale: Not to Scale

Figure 3



LEGEND

X (Y) AM (PM) Peak Hour Traffic

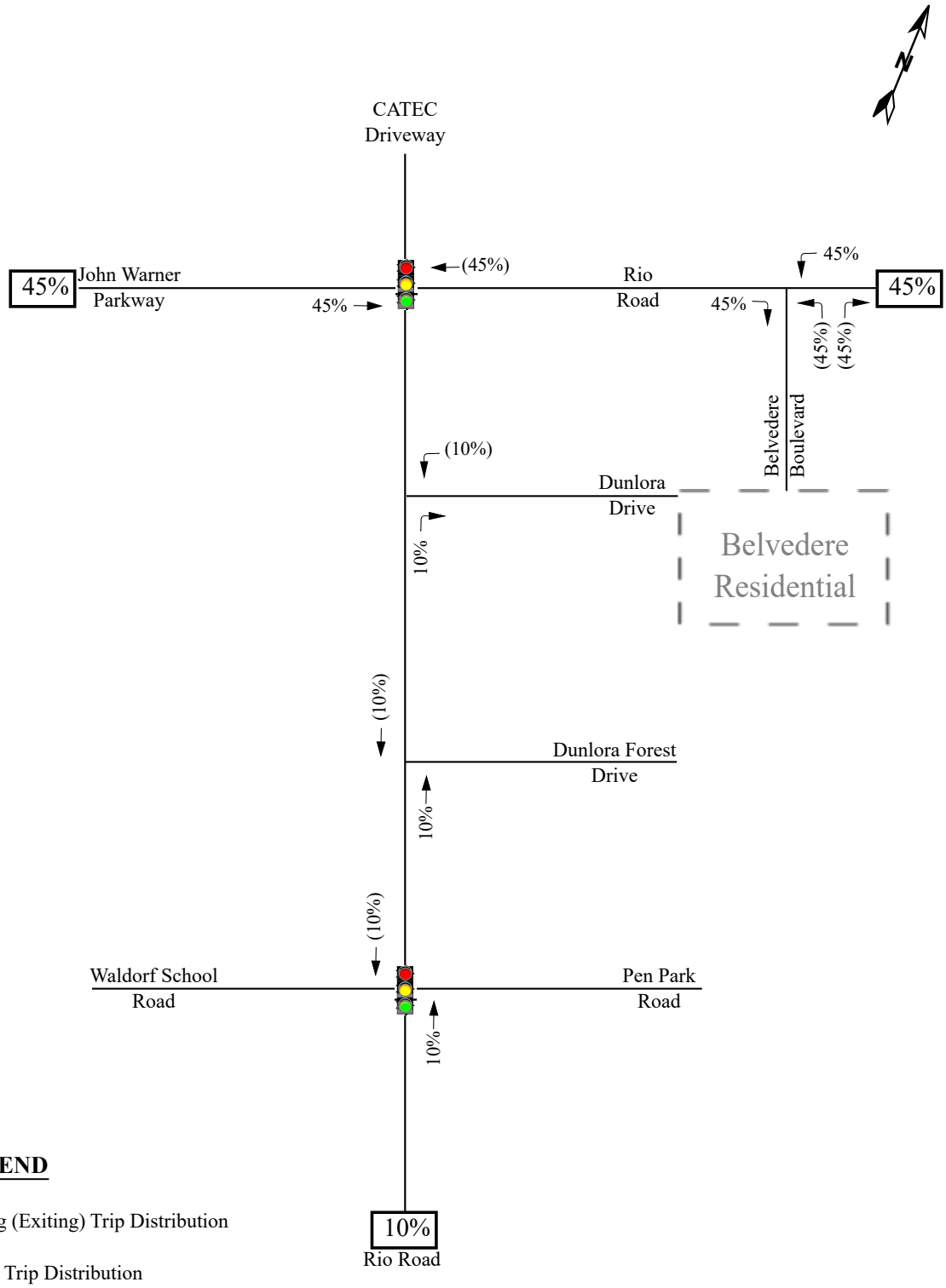
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Rio Road Multi-Family
Albemarle County, Virginia

Existing (2018)
Peak Hour Traffic Volumes

Scale: Not to Scale

Figure 4



LEGEND

X% (Y%) Entering (Exiting) Trip Distribution

XX% Regional Trip Distribution

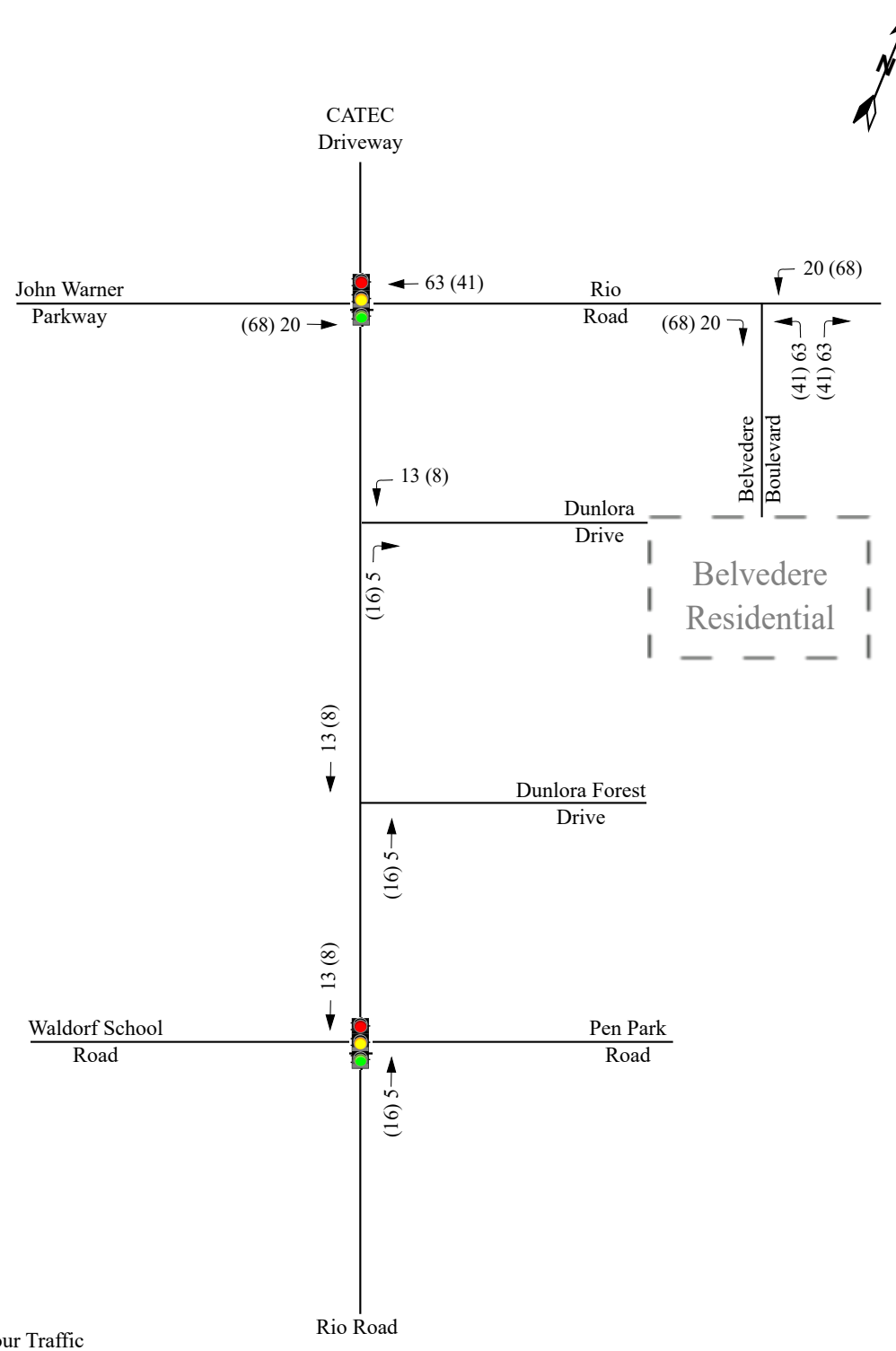
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Rio Road Multi-Family
Albemarle County, Virginia

Belvedere Residential Distribution

Scale: Not to Scale

Figure 5



LEGEND

X (Y) AM (PM) Peak Hour Traffic

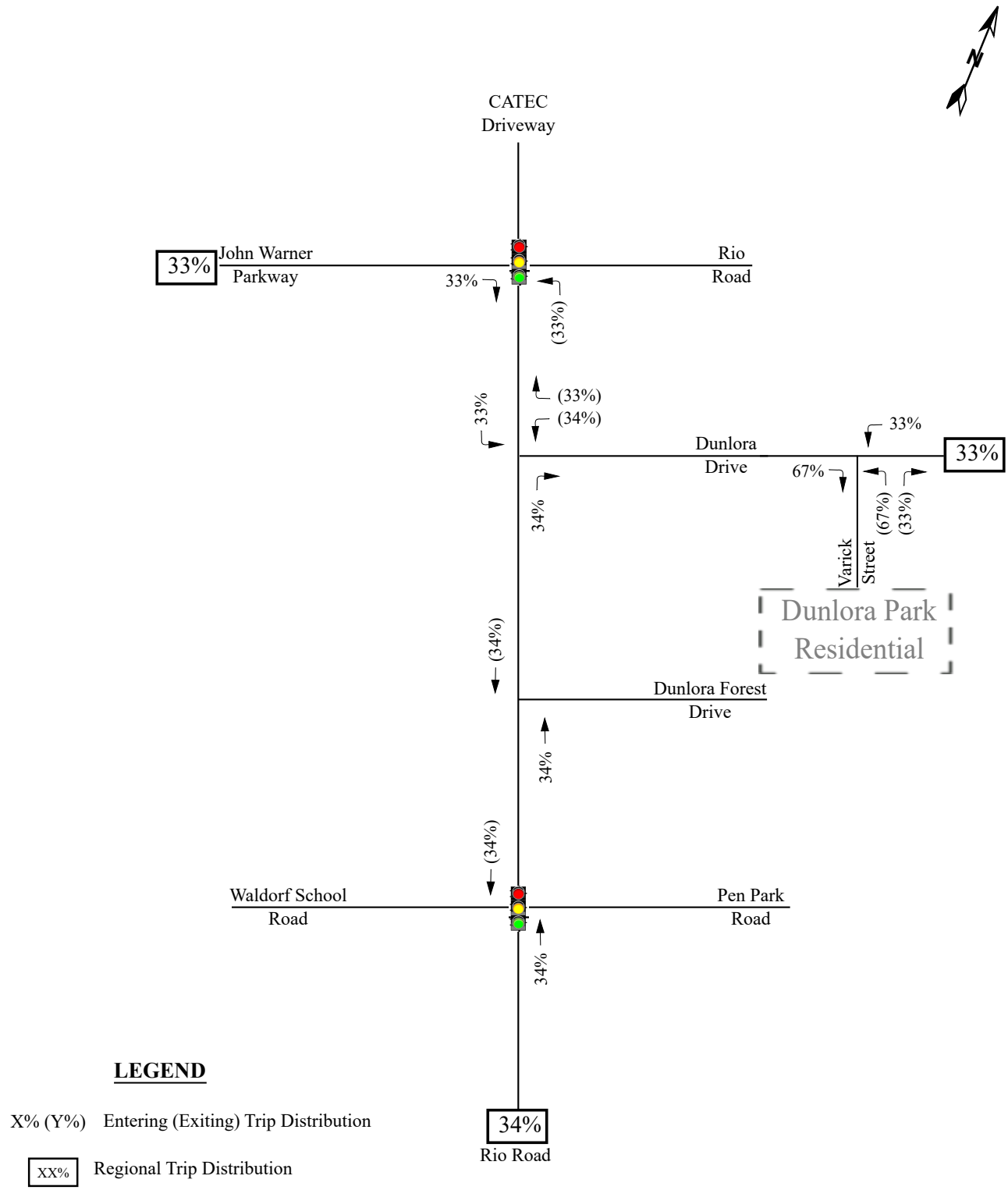
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TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Belvedere Residential
Assignment

Scale: Not to Scale

Figure 6



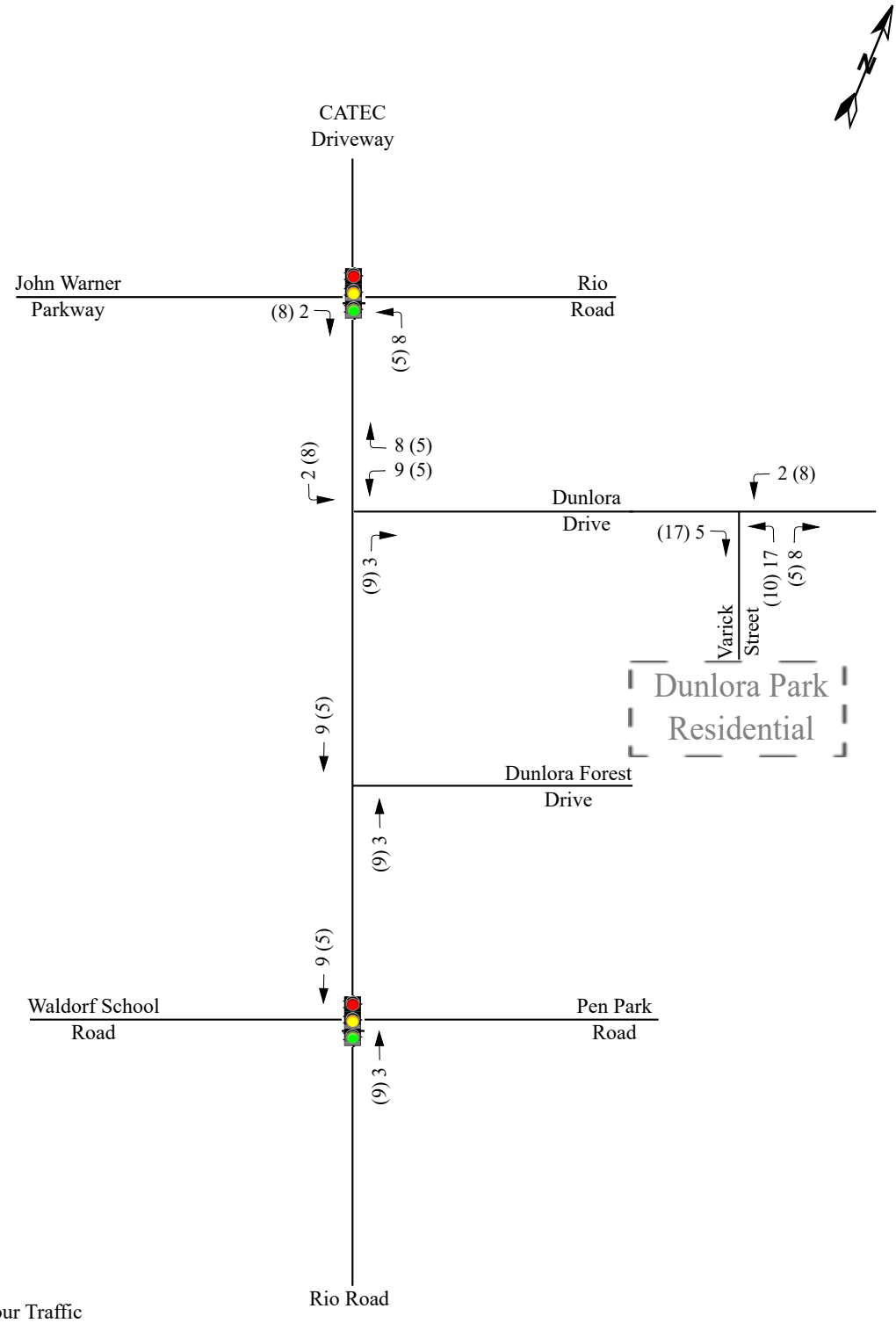
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TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Dunlora Park Residential Distribution

Scale: Not to Scale

Figure 7



LEGEND

X (Y) AM (PM) Peak Hour Traffic

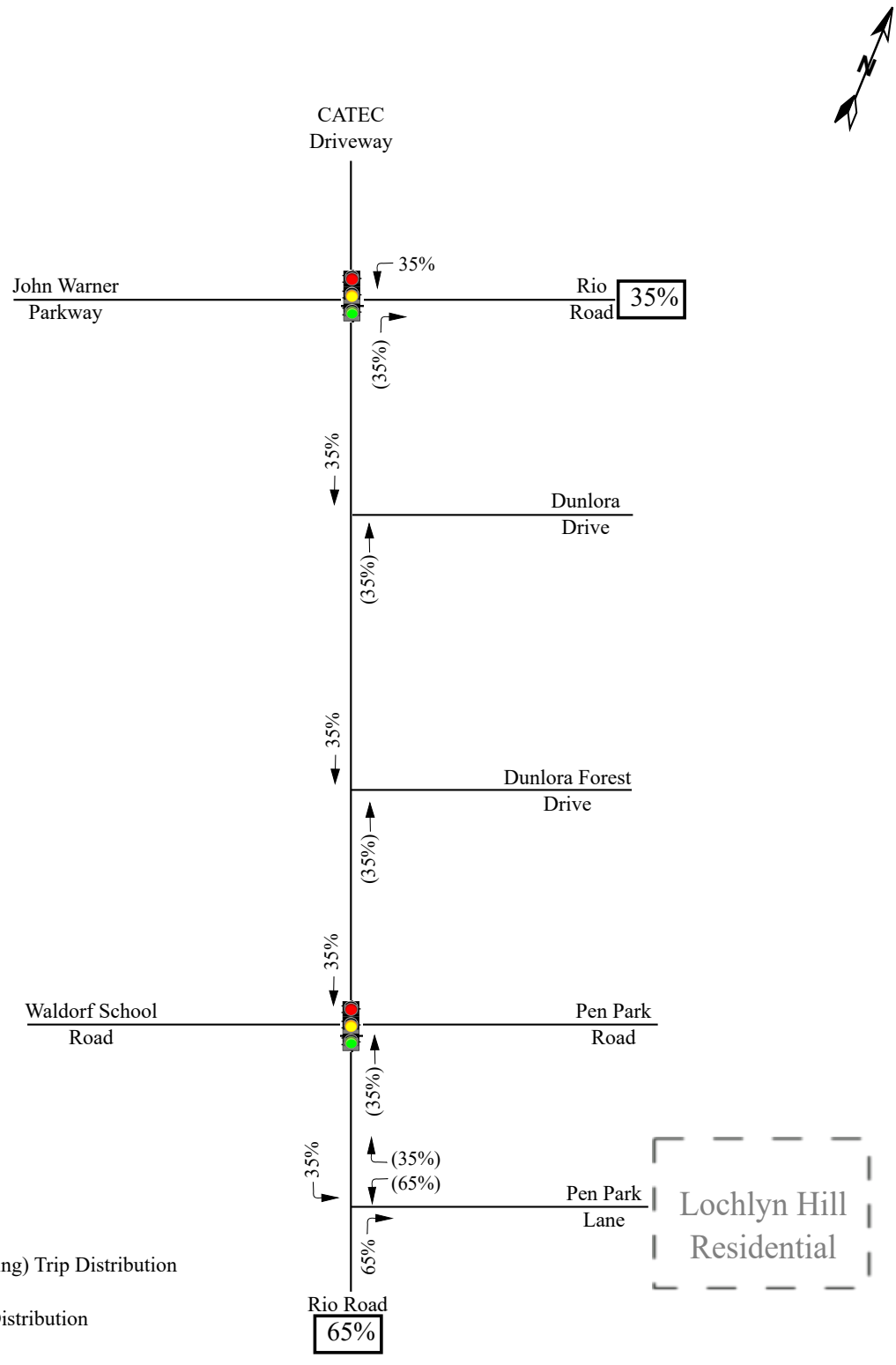
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Dunlora Park Residential
Assignment

Scale: Not to Scale

Figure 8



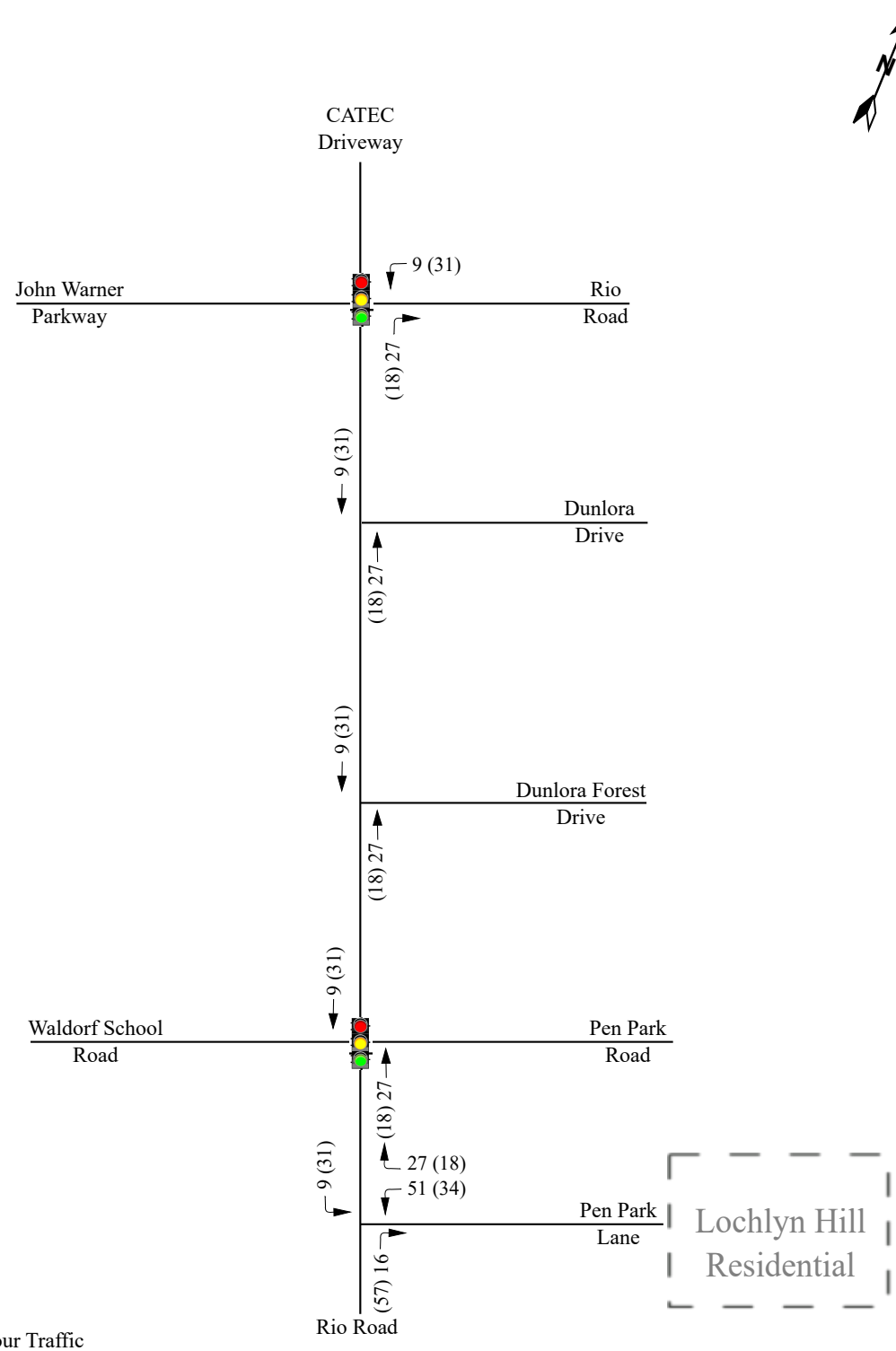
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Lochlyn Hill Residential Distribution

Scale: Not to Scale

Figure 9



LEGEND

X (Y) AM (PM) Peak Hour Traffic

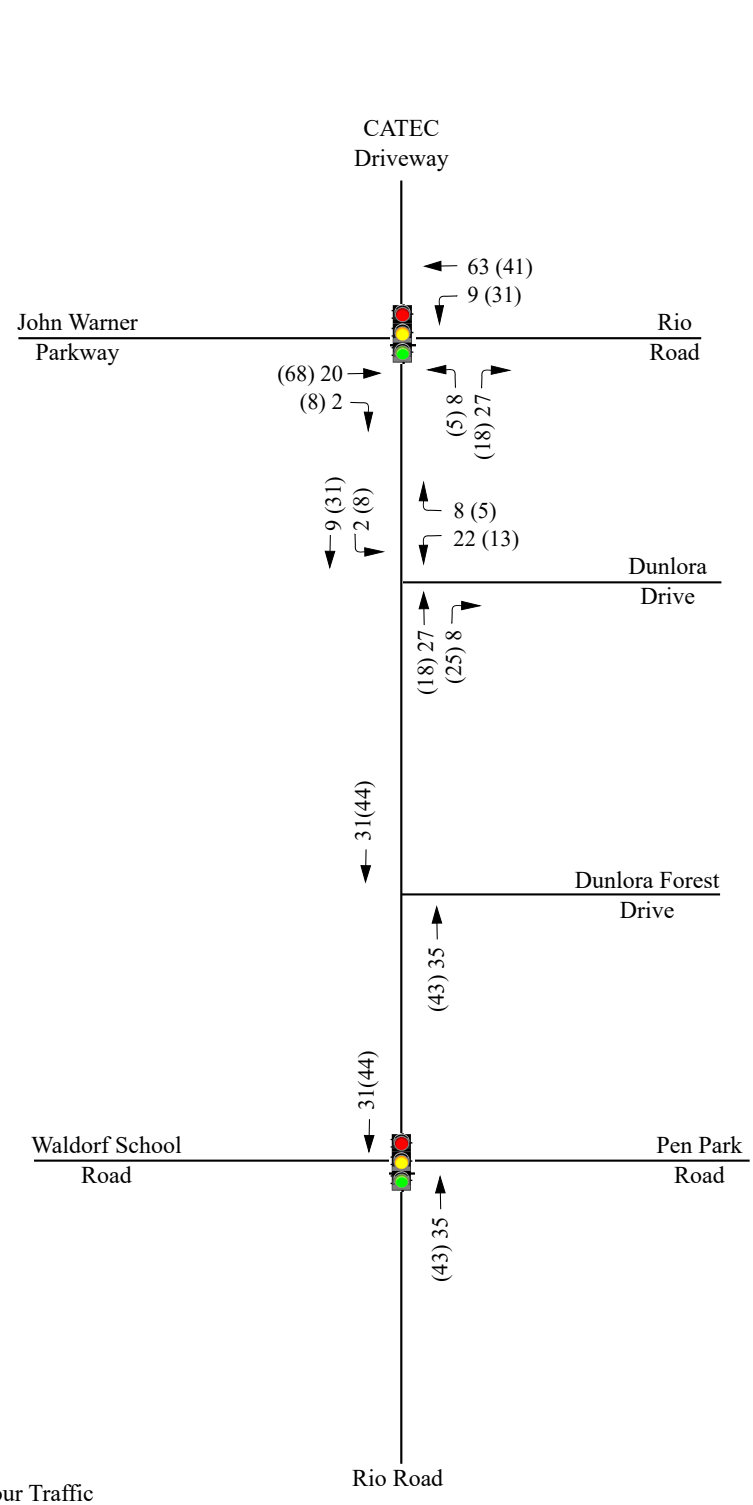
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TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Lochlyn Hill Residential
Assignment

Scale: Not to Scale

Figure 10



LEGEND

X (Y) AM (PM) Peak Hour Traffic

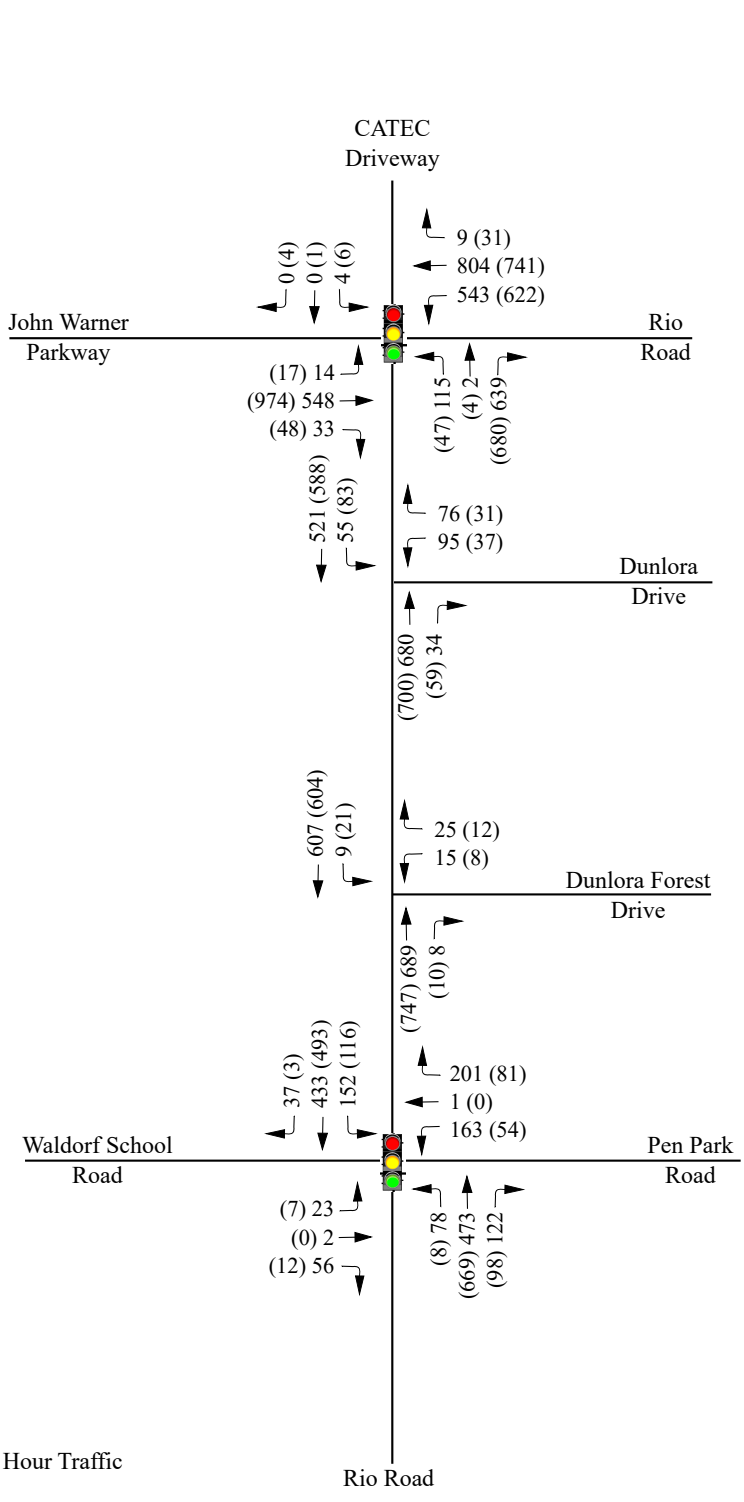
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Total Approved Development Volumes

Scale: Not to Scale

Figure 11



LEGEND

X (Y) AM (PM) Peak Hour Traffic

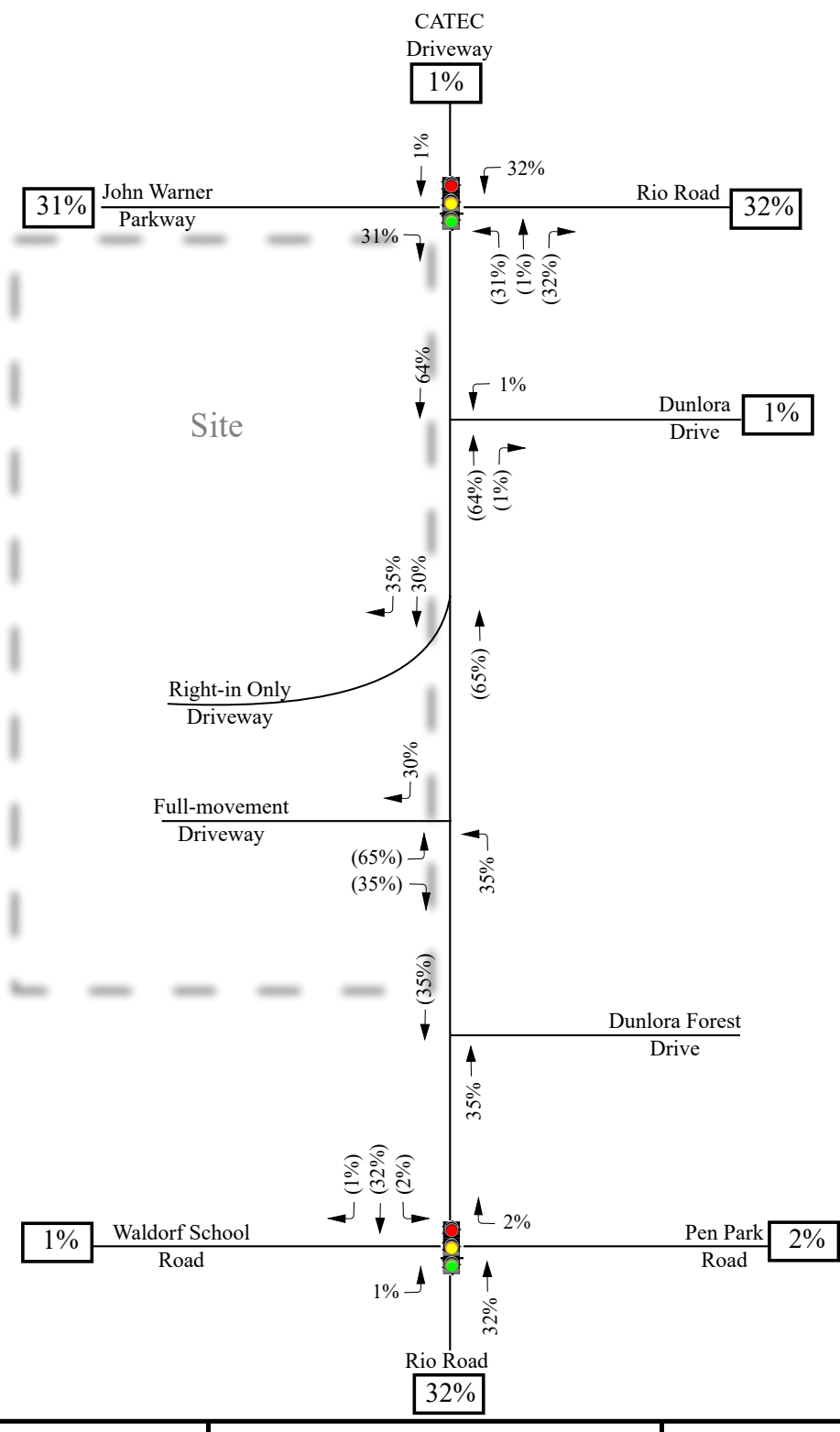
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TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

No-Build (2023)
Peak Hour Traffic Volumes

Scale: Not to Scale

Figure 12



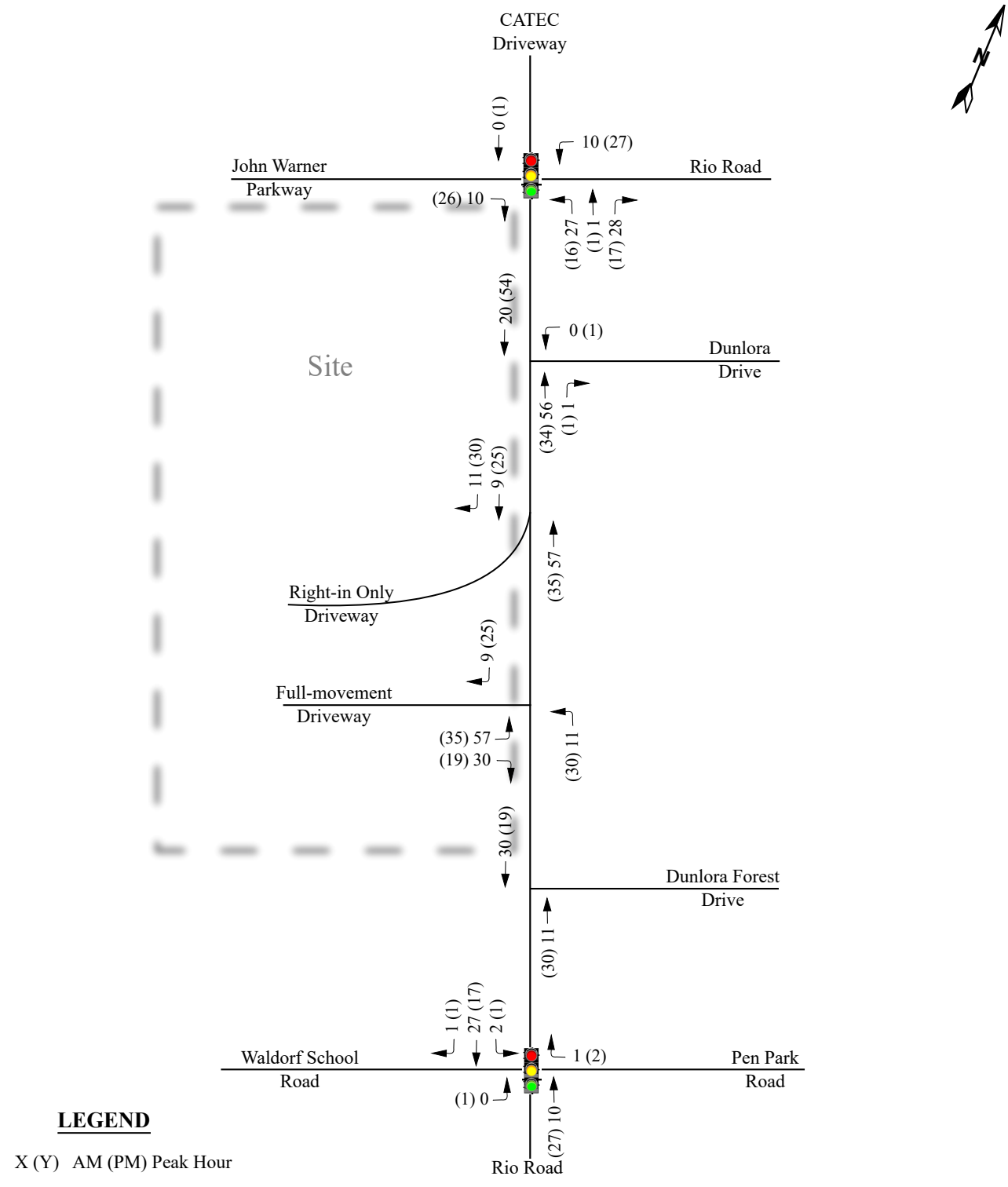
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Site Trip Distribution

Scale: Not to Scale

Figure 13

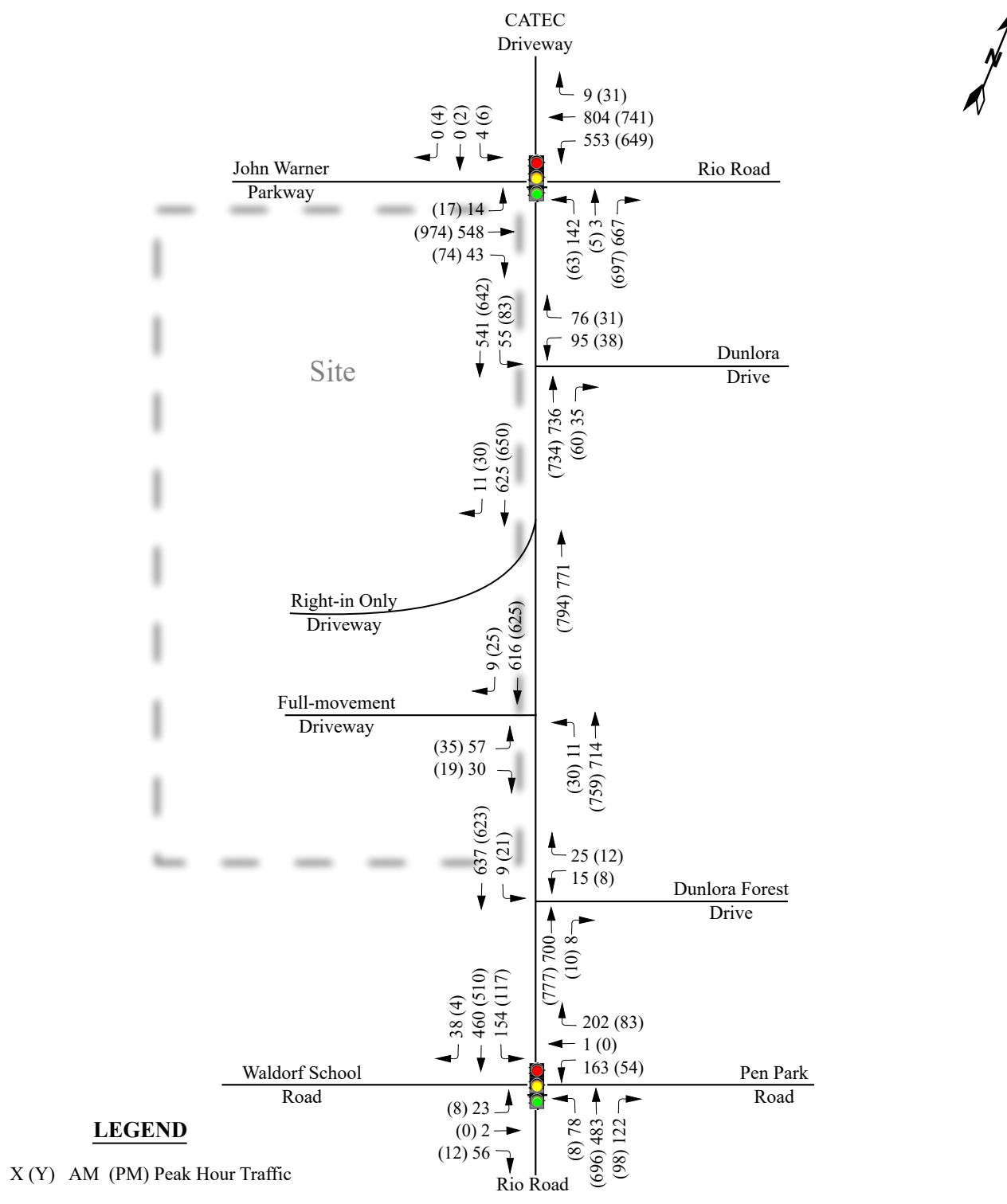


RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Site Trip Assignment

Scale: Not to Scale | Figure 14



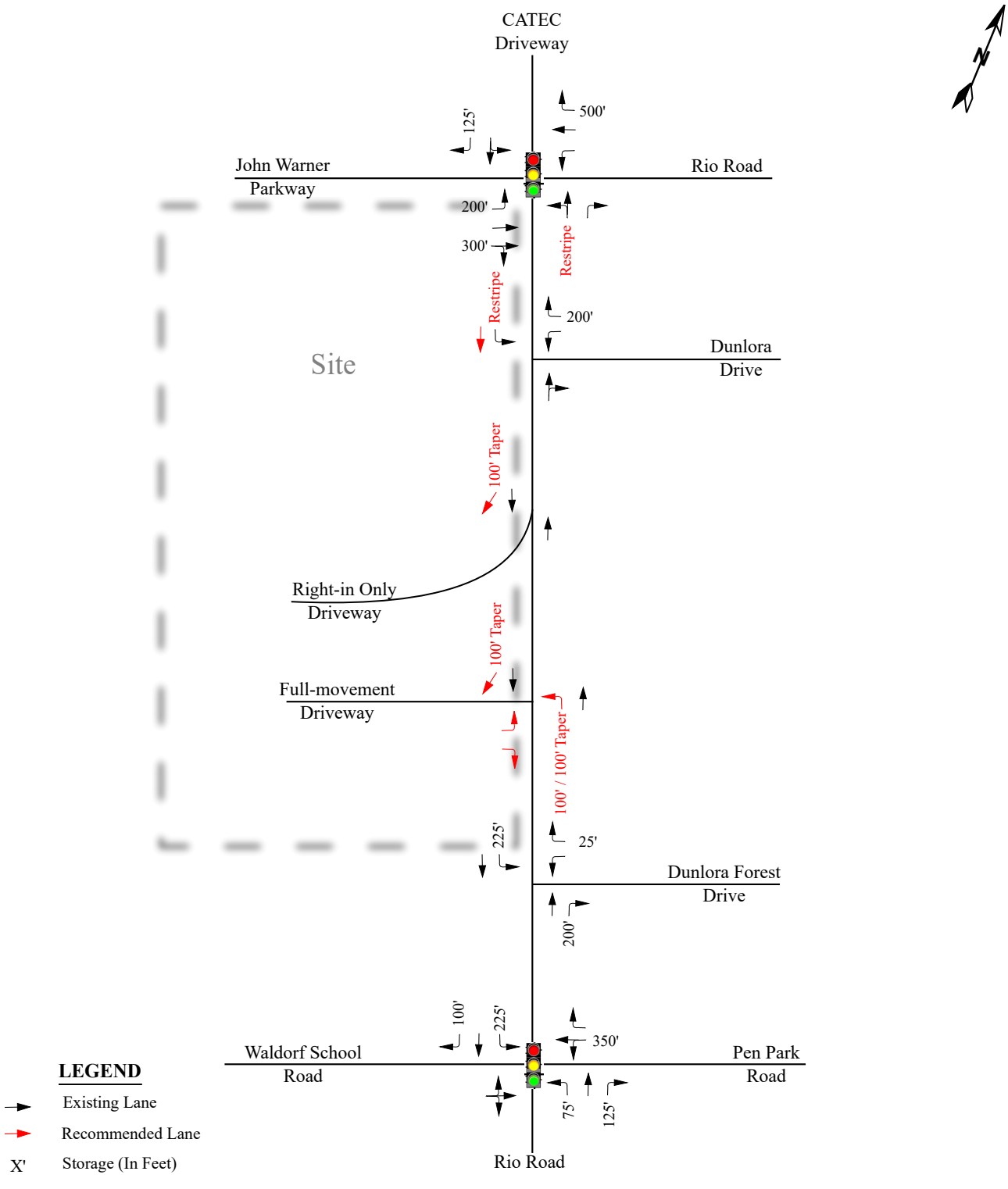
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Build (2023) Peak Hour Traffic Volumes

Scale: Not to Scale

Figure 15



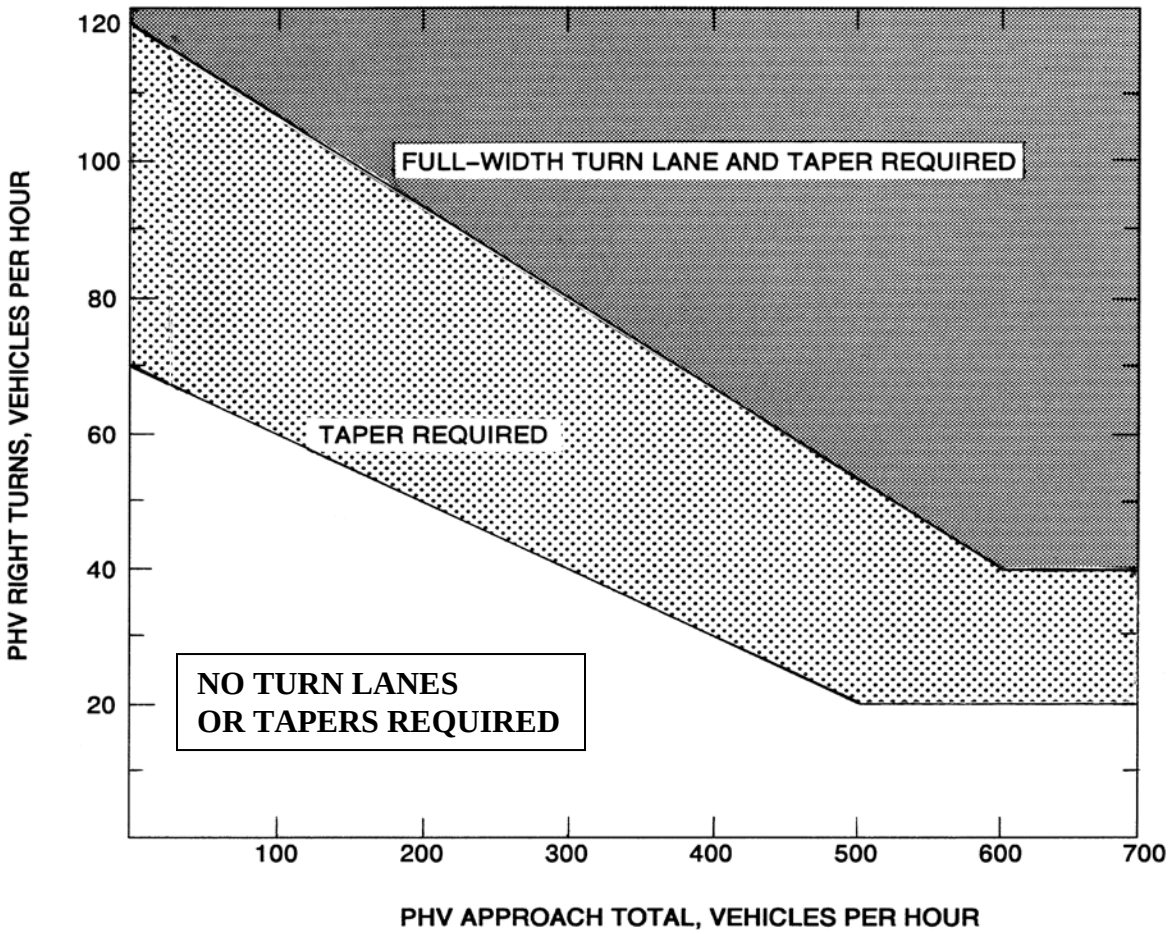
RAMEY KEMP & ASSOCIATES
TRANSPORTATION ENGINEERS

Rio Road Multi-Family
Albemarle County, Virginia

Recommended Lane Configuration

Scale: Not to Scale

Figure 16



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.
Adjusted right turns = PHV Right Turns - 20
If PHV is not known use formula: PHV = ADT x K x D

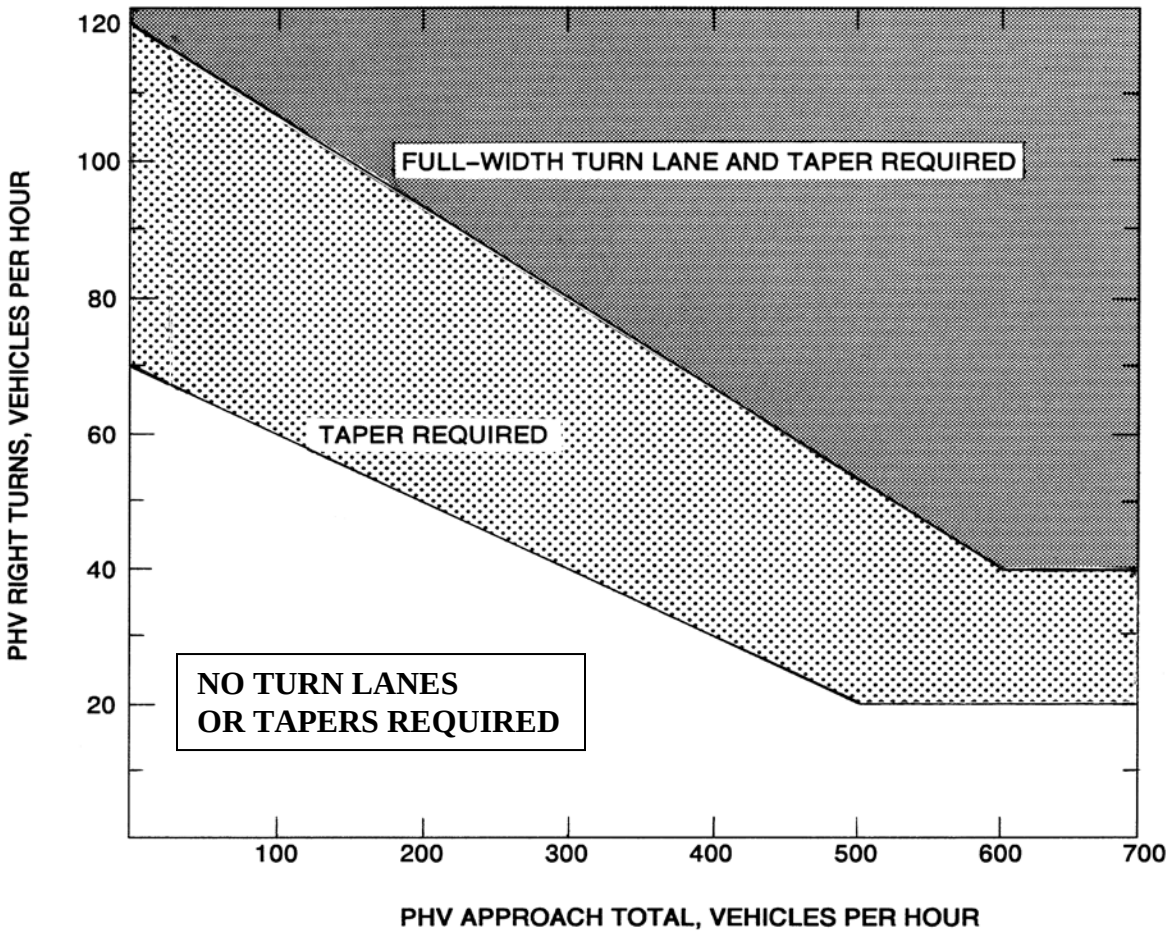
K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.*

FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

* Rev. 1/15



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.
Adjusted right turns = PHV Right Turns - 20
If PHV is not known use formula: PHV = ADT x K x D

K = the percent of AADT occurring in the peak hour
D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.*

FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

* Rev. 1/15

WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAY

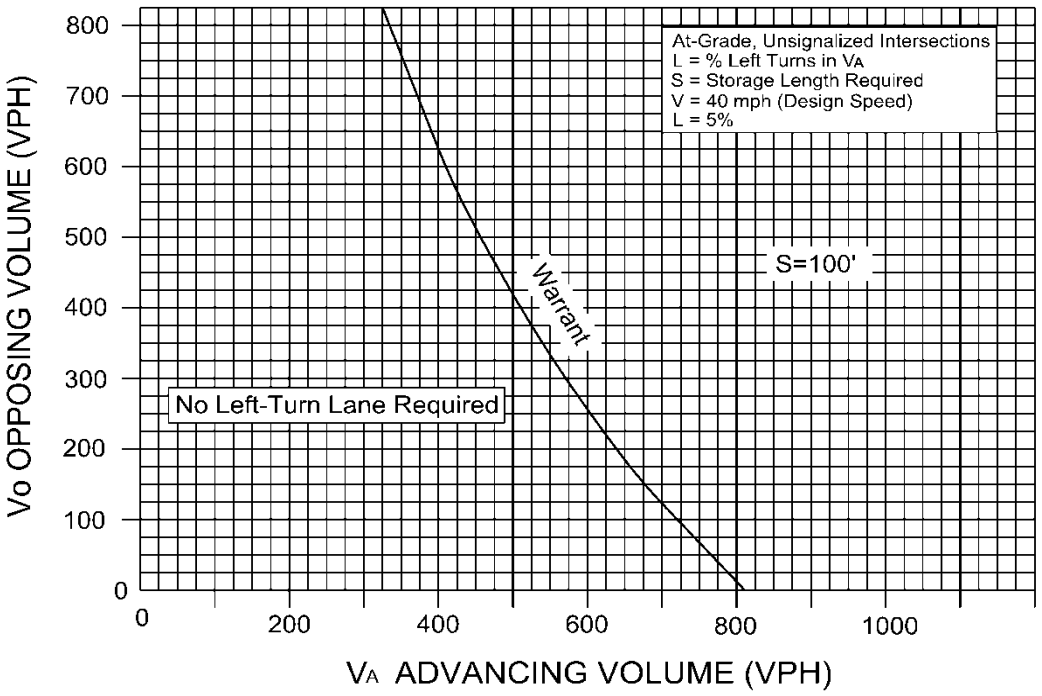


FIGURE 3-5

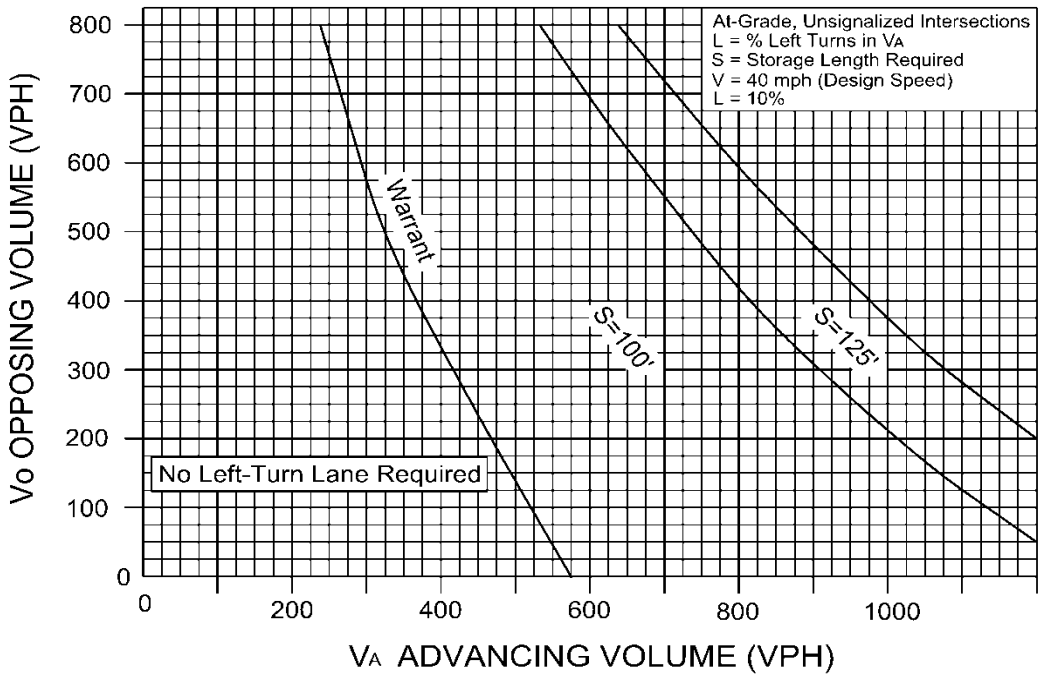


FIGURE 3-6

Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079

We Count because YOU Count

File Name : Charlottesville(Rio and John W. Warner) AM Peak
Site Code :
Start Date : 8/29/2018
Page No : 1

Groups Printed- Cars + - Trucks

	CATEC Access Southbound				John W. Warner Parkway Westbound				Rio Road Northbound				Rio Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
07:00	0	1	1	2	0	111	50	161	52	1	12	65	2	82	0	84	312
07:15	0	0	0	0	1	113	69	183	80	0	25	105	2	114	0	116	404
07:30	0	0	0	0	2	168	112	282	137	0	32	169	7	118	0	125	576
07:45	0	0	0	0	1	181	164	346	142	0	19	161	9	126	6	141	648
Total	0	1	1	2	4	573	395	972	411	1	88	500	20	440	6	466	1940
08:00	0	0	3	3	1	153	112	266	140	1	24	165	10	101	5	116	550
08:15	0	0	1	1	4	172	97	273	129	1	22	152	2	135	2	139	565
08:30	2	0	2	4	7	168	71	246	109	0	24	133	2	110	6	118	501
08:45	1	1	2	4	3	126	66	195	97	2	18	117	1	155	4	160	476
Total	3	1	8	12	15	619	346	980	475	4	88	567	15	501	17	533	2092
Grand Total	3	2	9	14	19	1192	741	1952	886	5	176	1067	35	941	23	999	4032
Apprch %	21.4	14.3	64.3		1	61.1	38		83	0.5	16.5		3.5	94.2	2.3		
Total %	0.1	0	0.2	0.3	0.5	29.6	18.4	48.4	22	0.1	4.4	26.5	0.9	23.3	0.6	24.8	
Cars +	3	2	9	14	19	1192	738	1949	886	5	176	1067	35	941	23	999	4029
% Cars +	100	100	100	100	100	100	99.6	99.8	100	100	100	100	100	100	100	100	99.9
Trucks	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
% Trucks	0	0	0	0	0	0	0.4	0.2	0	0	0	0	0	0	0	0	0.1

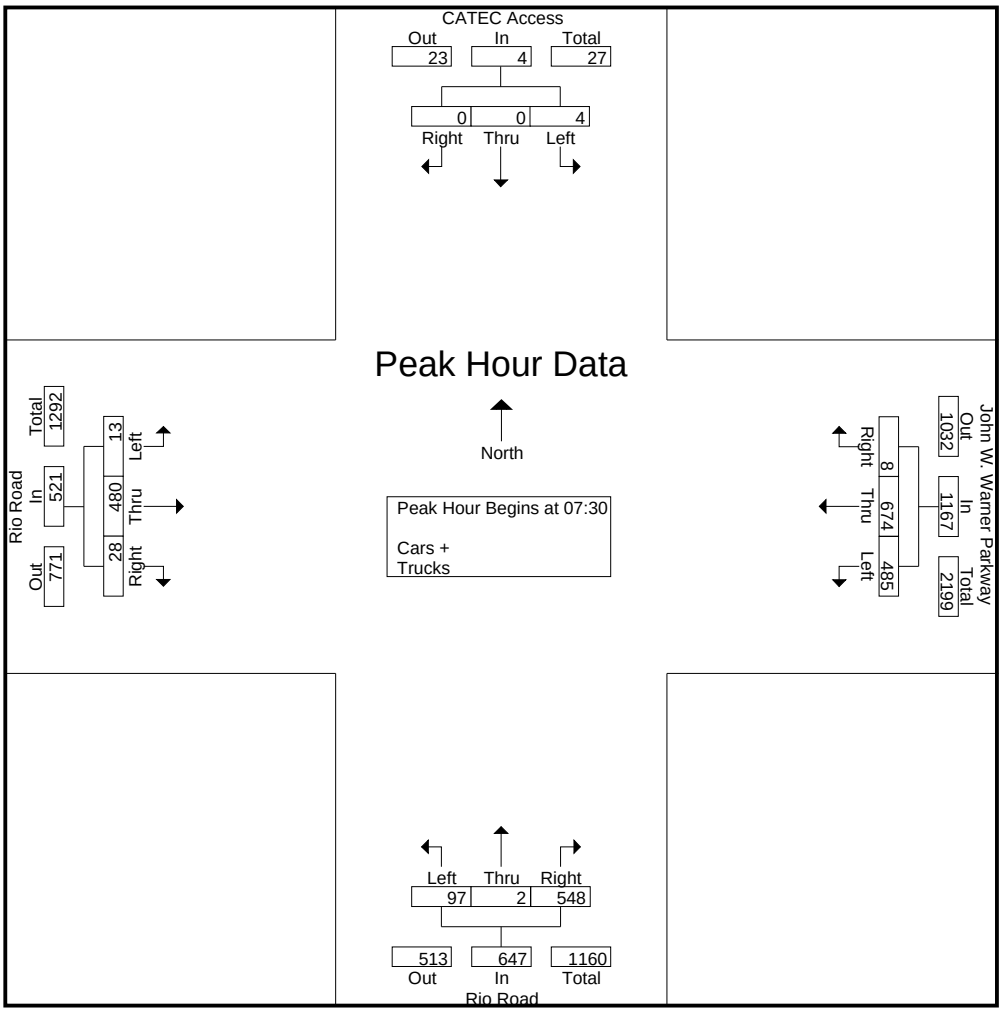
Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079

We Count because YOU Count

File Name : Charlottesville(Rio and John W. Warner) AM Peak
Site Code :
Start Date : 8/29/2018
Page No : 2

	CATEC Access Southbound				John W. Warner Parkway Westbound				Rio Road Northbound				Rio Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	**0**	**0**	**0**	**0**	**2**	**168**	**112**	**282**	**137**	**0**	32	169	7	118	0	125	576
07:45	0	0	0	0	1	181	164	**346**	**142**	0	19	161	9	126	**6**	**141**	**648**
08:00	0	0	**3**	**3**	1	153	112	266	140	**1**	24	165	**10**	101	5	116	550
08:15	0	0	1	1	**4**	172	97	273	129	1	22	152	2	**135**	2	139	565
Total Volume	0	0	4	4	8	674	485	1167	548	2	97	647	28	480	13	521	2339
% App. Total	0	0	100		0.7	57.8	41.6		84.7	0.3	15		5.4	92.1	2.5		
PHF	.000	.000	.333	.333	.500	.931	.739	.843	.965	.500	.758	.957	.700	.889	.542	.924	.902



Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079
We Count because YOU Count

File Name : Charlottesville(Rio and John W. Warner) PM Peak
Site Code :
Start Date : 8/29/2018
Page No : 1

Groups Printed- Cars + - Trucks

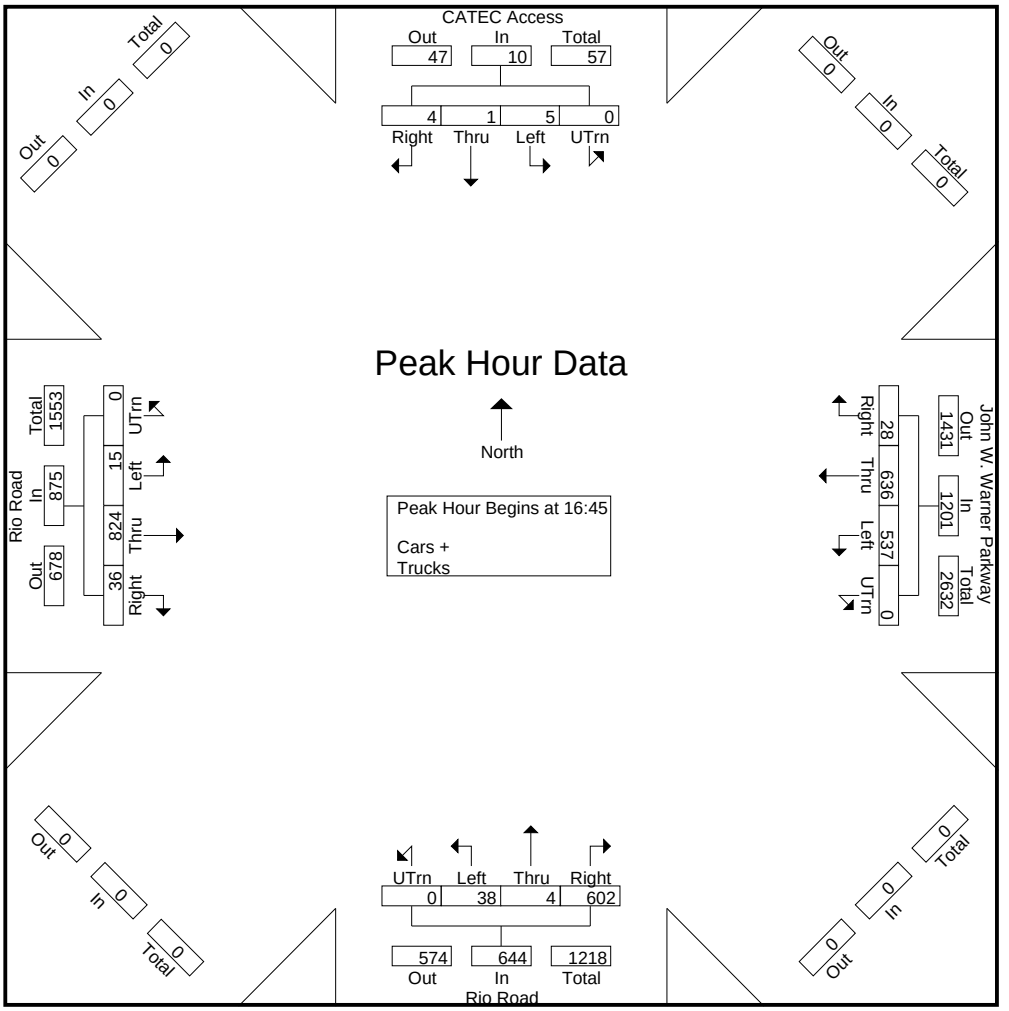
	CATEC Access Southbound					John W. Warner Parkway Westbound					Rio Road Northbound					Rio Road Eastbound					
Start Time	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Int. Total
16:00	3	1	2	0	6	3	145	119	0	267	111	0	7	0	118	8	186	2	1	197	588
16:15	4	0	2	0	6	3	137	124	0	264	132	0	7	0	139	7	199	1	1	208	617
16:30	2	0	1	0	3	5	145	143	0	293	130	1	9	0	140	7	183	3	0	193	629
16:45	1	1	1	0	3	2	159	125	0	286	151	0	9	0	160	6	205	3	0	214	663
Total	10	2	6	0	18	13	586	511	0	1110	524	1	32	0	557	28	773	9	2	812	2497
17:00	2	0	0	0	2	7	175	139	0	321	155	3	10	0	168	13	188	6	0	207	698
17:15	1	0	1	0	2	7	154	159	0	320	165	0	5	0	170	5	218	2	0	225	717
17:30	0	0	3	0	3	12	148	114	0	274	131	1	14	0	146	12	213	4	0	229	652
17:45	1	0	1	0	2	5	147	108	0	260	123	0	8	0	131	9	149	2	2	162	555
Total	4	0	5	0	9	31	624	520	0	1175	574	4	37	0	615	39	768	14	2	823	2622
Grand Total	14	2	11	0	27	44	1210	1031	0	2285	1098	5	69	0	1172	67	1541	23	4	1635	5119
Apprch %	51.9	7.4	40.7	0		1.9	53	45.1	0		93.7	0.4	5.9	0		4.1	94.3	1.4	0.2		
Total %	0.3	0	0.2	0	0.5	0.9	23.6	20.1	0	44.6	21.4	0.1	1.3	0	22.9	1.3	30.1	0.4	0.1	31.9	
Cars +	14	2	11	0	27	44	1210	1031	0	2285	1098	5	69	0	1172	67	1540	23	4	1634	5118
% Cars +	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100	99.9	100	100	99.9	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0

Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079
We Count because YOU Count

File Name : Charlottesville(Rio and John W. Warner) PM Peak
Site Code :
Start Date : 8/29/2018
Page No : 2

	CATEC Access Southbound					John W. Warner Parkway Westbound					Rio Road Northbound					Rio Road Eastbound					
Start Time	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	1	**1**	1	0	**3**	2	159	125	0	286	151	0	9	0	160	6	205	3	0	214	663
17:00	**2**	0	0	0	2	7	**175**	139	0	**321**	155	**3**	10	0	168	**13**	188	**6**	0	207	698
17:15	1	0	1	0	2	7	154	**159**	0	320	**165**	0	5	0	**170**	5	**218**	2	0	225	**717**
17:30	0	0	**3**	0	3	**12**	148	114	0	274	131	1	**14**	0	146	12	213	4	0	**229**	652
Total Volume	4	1	5	0	10	28	636	537	0	1201	602	4	38	0	644	36	824	15	0	875	2730
% App. Total																					
PHF	.500	.250	.417	.000	.833	.583	.909	.844	.000	.935	.912	.333	.679	.000	.947	.692	.945	.625	.000	.955	.952



Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079
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File Name : Charlottesville(Rio and Dunlora) AM Peak
Site Code :
Start Date : 8/29/2018
Page No : 1

Groups Printed- Cars + - Trucks

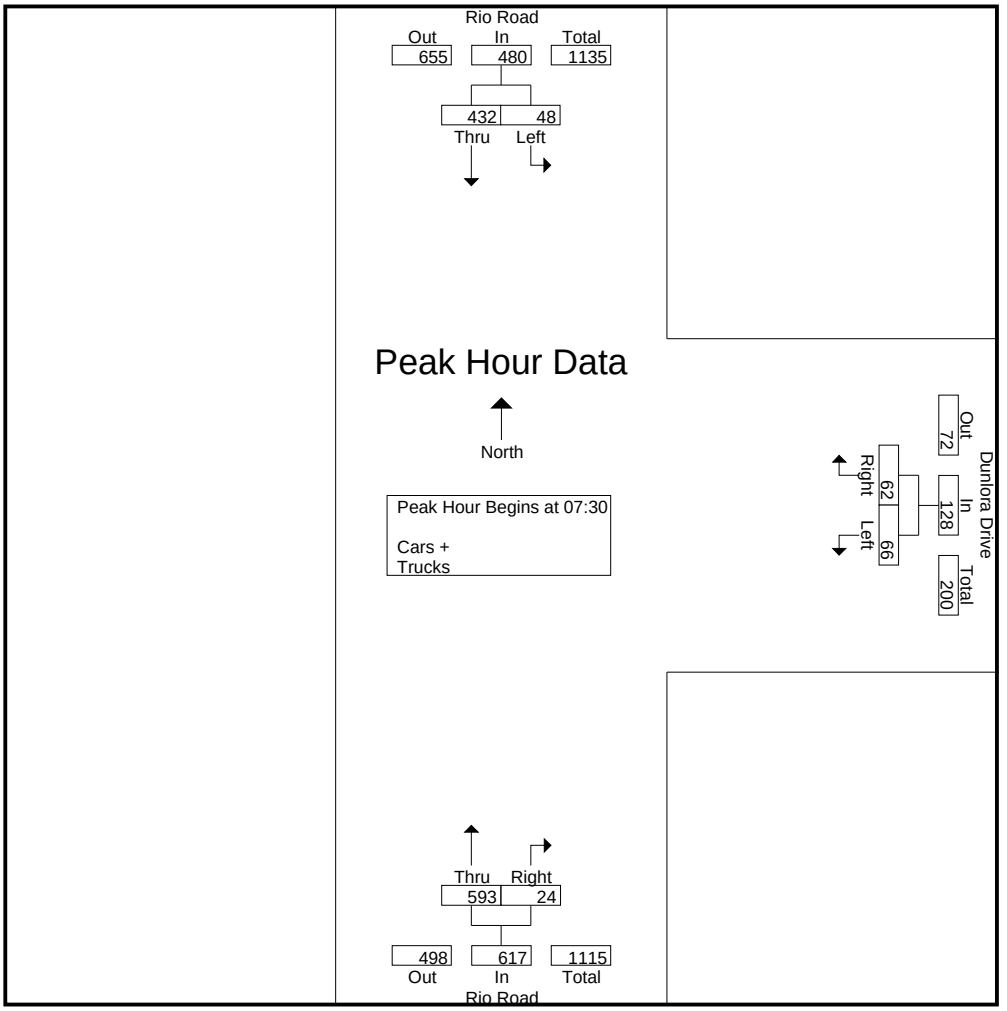
	Rio Road Southbound			Dunlora Drive Westbound			Rio Road Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
07:00	48	5	53	7	5	12	4	60	64	129
07:15	61	6	67	14	7	21	1	88	89	177
07:30	117	5	122	22	10	32	1	149	150	304
07:45	127	15	142	9	29	38	10	159	169	349
Total	353	31	384	52	51	103	16	456	472	959
08:00	109	10	119	15	11	26	11	149	160	305
08:15	79	18	97	16	16	32	2	136	138	267
08:30	63	5	68	14	13	27	3	122	125	220
08:45	64	8	72	12	13	25	5	104	109	206
Total	315	41	356	57	53	110	21	511	532	998
Grand Total	668	72	740	109	104	213	37	967	1004	1957
Apprch %	90.3	9.7		51.2	48.8		3.7	96.3		
Total %	34.1	3.7	37.8	5.6	5.3	10.9	1.9	49.4	51.3	
Cars +	657	67	724	109	103	212	36	957	993	1929
% Cars +	98.4	93.1	97.8	100	99	99.5	97.3	99	98.9	98.6
Trucks	11	5	16	0	1	1	1	10	11	28
% Trucks	1.6	6.9	2.2	0	1	0.5	2.7	1	1.1	1.4

Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079
We Count because YOU Count

File Name : Charlottesville(Rio and Dunlora) AM Peak
Site Code :
Start Date : 8/29/2018
Page No : 2

	Rio Road Southbound			Dunlora Drive Westbound			Rio Road Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	117	5	122	**22**	10	32	1	149	150	304
07:45	**127**	15	**142**	9	**29**	**38**	10	**159**	**169**	**349**
08:00	109	10	119	15	11	26	**11**	149	160	305
08:15	79	**18**	97	16	16	32	2	136	138	267
Total Volume	432	48	480	62	66	128	24	593	617	1225
% App. Total	90	10		48.4	51.6		3.9	96.1		
PHF	.850	.667	.845	.705	.569	.842	.545	.932	.913	.878



Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079

We Count because YOU Count

File Name : Charlottesville(Rio and Dunlora) PM Peak
Site Code :
Start Date : 8/29/2018
Page No : 1

Groups Printed- Cars + - Trucks

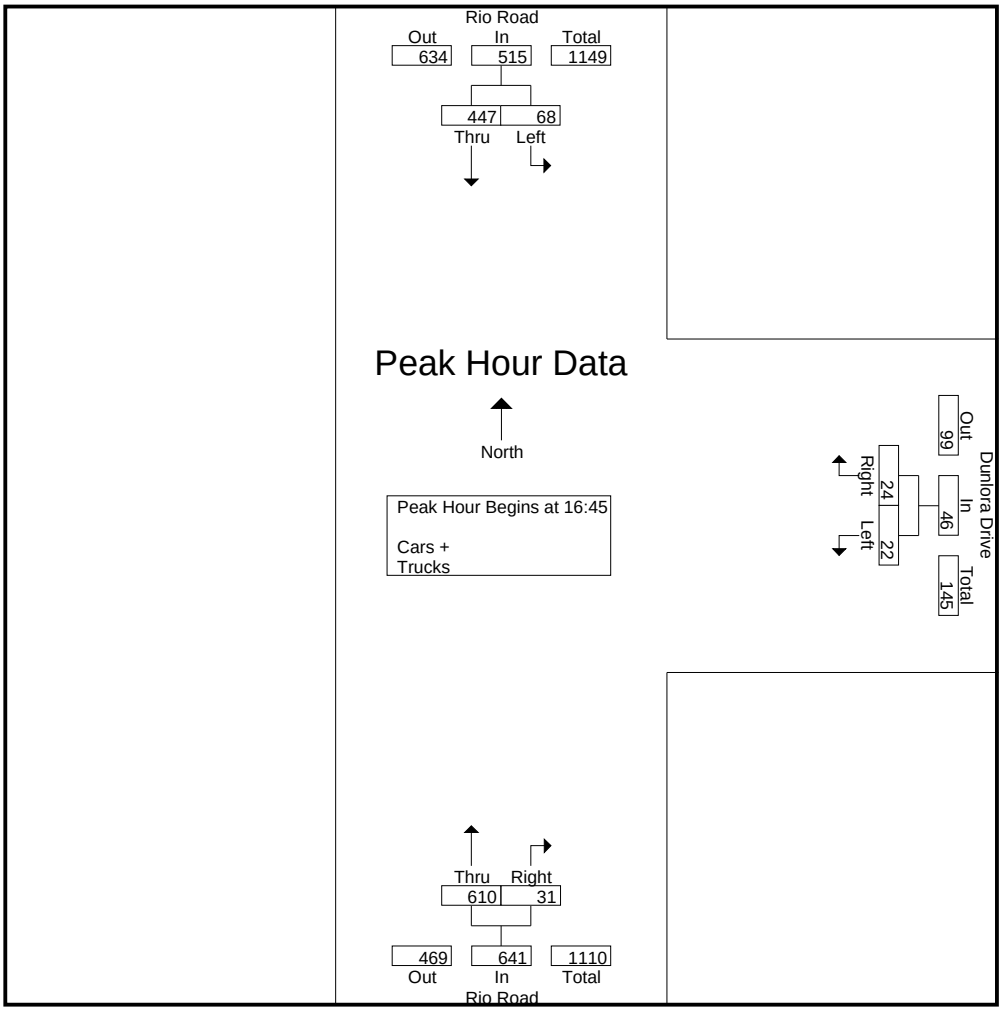
	Rio Road Southbound			Dunlora Drive Westbound			Rio Road Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
16:00	90	31	121	4	2	6	8	117	125	252
16:15	96	13	109	4	7	11	8	135	143	263
16:30	99	18	117	5	5	10	5	129	134	261
16:45	100	18	118	7	6	13	6	148	154	285
Total	385	80	465	20	20	40	27	529	556	1061
17:00	119	20	139	5	2	7	7	170	177	323
17:15	116	17	133	4	3	7	10	160	170	310
17:30	112	13	125	8	11	19	8	132	140	284
17:45	90	13	103	6	5	11	6	116	122	236
Total	437	63	500	23	21	44	31	578	609	1153
Grand Total	822	143	965	43	41	84	58	1107	1165	2214
Apprch %	85.2	14.8		51.2	48.8		5	95		
Total %	37.1	6.5	43.6	1.9	1.9	3.8	2.6	50	52.6	
Cars +	815	138	953	43	41	84	58	1103	1161	2198
% Cars +	99.1	96.5	98.8	100	100	100	100	99.6	99.7	99.3
Trucks	7	5	12	0	0	0	0	4	4	16
% Trucks	0.9	3.5	1.2	0	0	0	0	0.4	0.3	0.7

Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079
We Count because YOU Count

File Name : Charlottesville(Rio and Dunlora) PM Peak
Site Code :
Start Date : 8/29/2018
Page No : 2

	Rio Road Southbound			Dunlora Drive Westbound			Rio Road Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:45										
16:45	100	18	118	7	6	13	6	148	154	285
17:00	**119**	**20**	**139**	5	2	7	7	**170**	**177**	**323**
17:15	116	17	133	4	3	7	**10**	160	170	310
17:30	112	13	125	**8**	**11**	**19**	8	132	140	284
Total Volume	447	68	515	24	22	46	31	610	641	1202
% App. Total	86.8	13.2		52.2	47.8		4.8	95.2		
PHF	.939	.850	.926	.750	.500	.605	.775	.897	.905	.930



Ramey Kemp & Associates

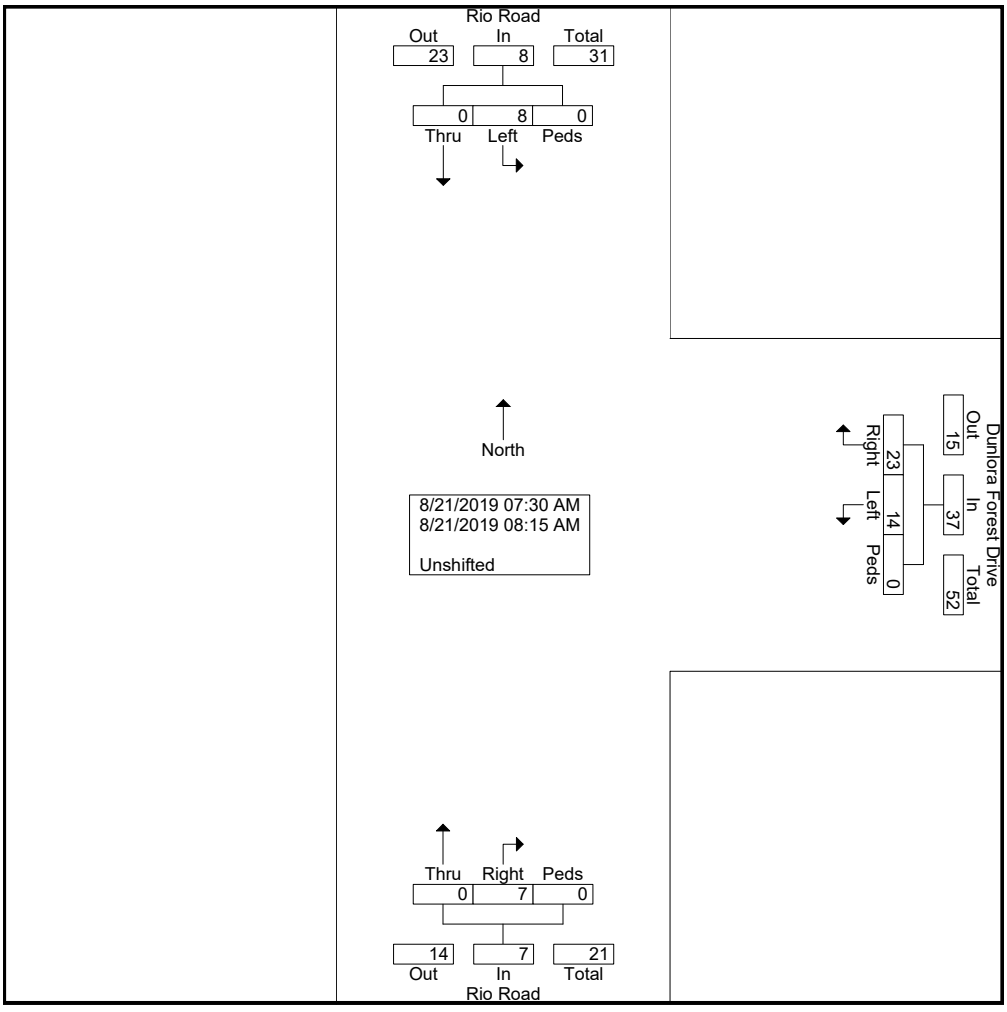
4343 Cox Road
Glen Allen, VA 23060

File Name : Dunlora Forest Drive AM
Site Code : 00000001
Start Date : 8/21/2019
Page No : 1

Counted By: Rupinski
Weather: Clear
Equipment ID: 4792

Groups Printed- Unshifted

	Rio Road From North				Dunlora Forest Drive From East				Rio Road From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:30 AM	0	3	0	3	11	4	0	15	2	0	0	2	20
07:45 AM	0	2	0	2	4	5	0	9	0	0	0	0	11
Total	0	5	0	5	15	9	0	24	2	0	0	2	31
08:00 AM	0	3	0	3	2	3	0	5	3	0	0	3	11
08:15 AM	0	0	0	0	6	2	0	8	2	0	0	2	10
Grand Total	0	8	0	8	23	14	0	37	7	0	0	7	52
Apprch %	0	100	0		62.2	37.8	0		100	0	0		
Total %	0	15.4	0	15.4	44.2	26.9	0	71.2	13.5	0	0	13.5	



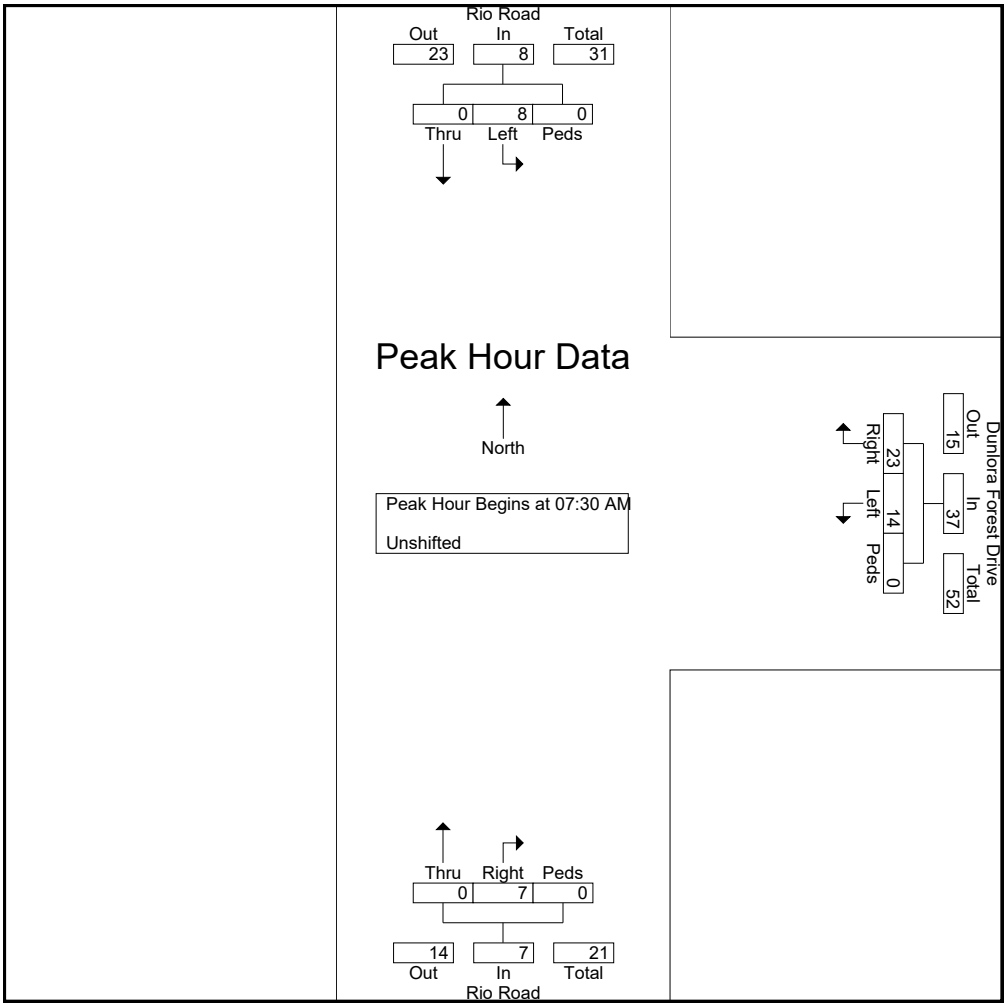
Ramey Kemp & Associates

4343 Cox Road
Glen Allen, VA 23060

Counted By: Rupinski
Weather: Clear
Equipment ID: 4792

File Name : Dunlora Forest Drive AM
Site Code : 00000001
Start Date : 8/21/2019
Page No : 2

	Rio Road From North				Dunlora Forest Drive From East				Rio Road From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	**3**	**0**	**3**	**11**	4	0	**15**	2	0	0	2	**20**
07:45 AM	0	2	0	2	4	**5**	0	9	0	0	0	0	11
08:00 AM	0	3	0	3	2	3	0	5	**3**	0	0	**3**	11
08:15 AM	0	0	0	0	6	2	0	8	2	0	0	2	10
Total Volume	0	8	0	8	23	14	0	37	7	0	0	7	52
% App. Total	0	100	0		62.2	37.8	0		100	0	0		
PHF	.000	.667	.000	.667	.523	.700	.000	.617	.583	.000	.000	.583	.650



Ramey Kemp & Associates

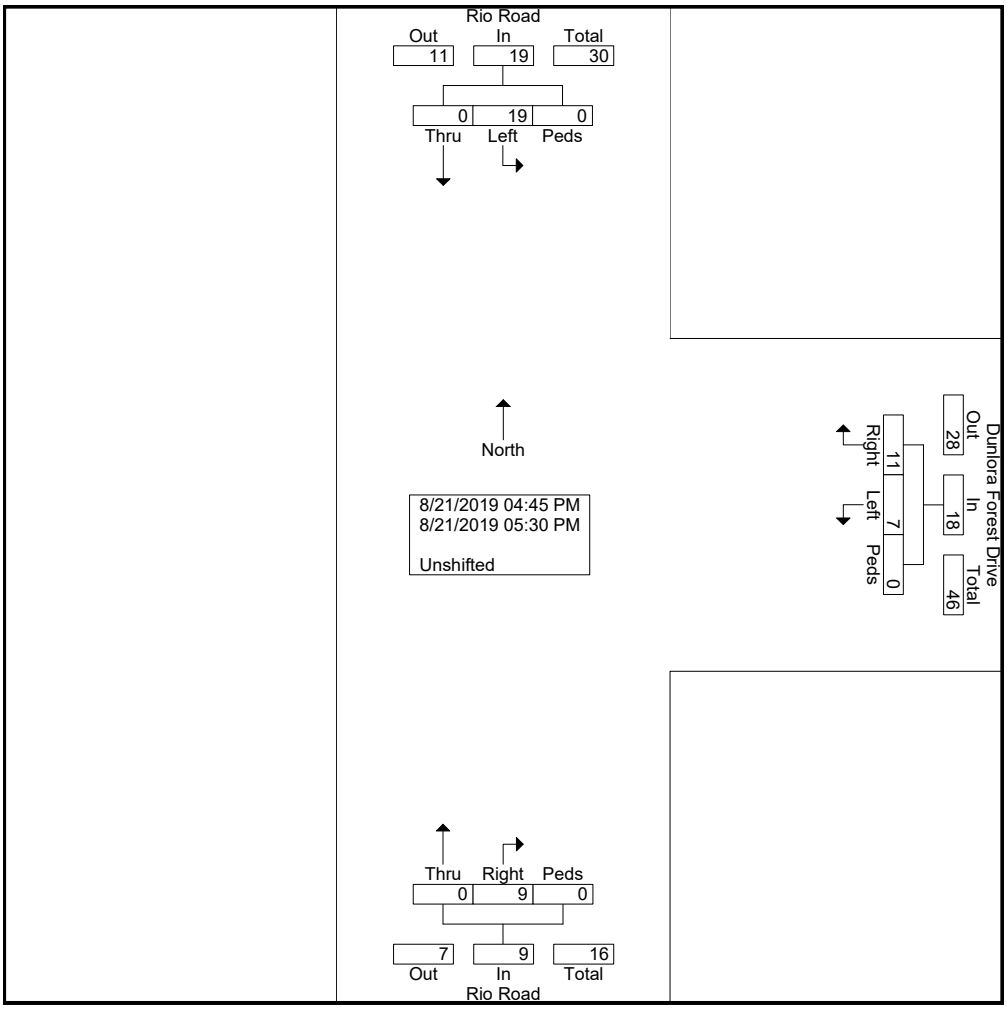
4343 Cox Road
Glen Allen, VA 23060

File Name : Dunlora Forest Drive PM
Site Code : 00000007
Start Date : 8/21/2019
Page No : 1

Counted By: Lee
Weather: Clear
Equipment ID: 4792

Groups Printed- Unshifted

	Rio Road From North				Dunlora Forest Drive From East				Rio Road From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:45 PM	0	3	0	3	2	2	0	4	1	0	0	1	8
Total	0	3	0	3	2	2	0	4	1	0	0	1	8
05:00 PM	0	5	0	5	1	3	0	4	1	0	0	1	10
05:15 PM	0	6	0	6	3	1	0	4	5	0	0	5	15
05:30 PM	0	5	0	5	5	1	0	6	2	0	0	2	13
Grand Total	0	19	0	19	11	7	0	18	9	0	0	9	46
Apprch %	0	100	0		61.1	38.9	0		100	0	0		
Total %	0	41.3	0	41.3	23.9	15.2	0	39.1	19.6	0	0	19.6	



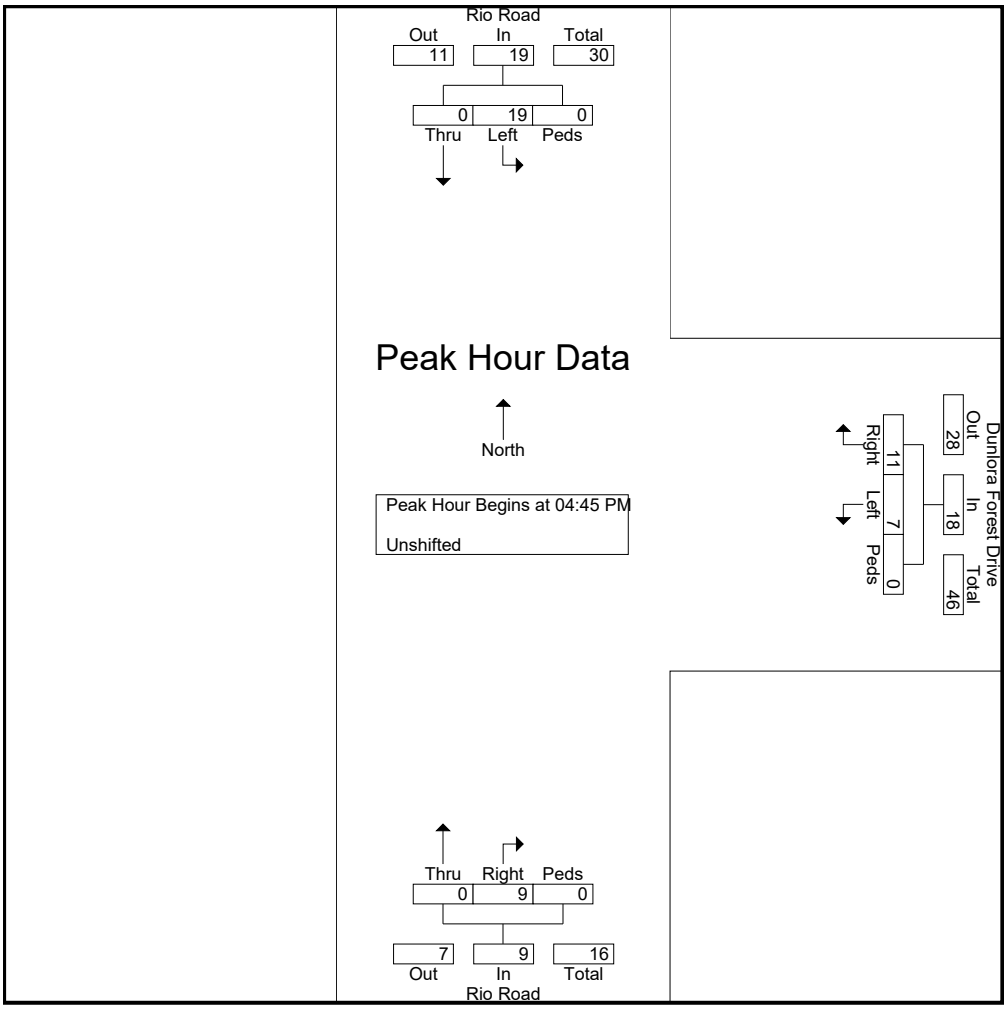
Ramey Kemp & Associates

4343 Cox Road
Glen Allen, VA 23060

Counted By: Lee
Weather: Clear
Equipment ID: 4792

File Name : Dunlora Forest Drive PM
Site Code : 00000007
Start Date : 8/21/2019
Page No : 2

	Rio Road From North				Dunlora Forest Drive From East				Rio Road From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	0	3	0	3	2	2	0	4	1	0	0	1	8
05:00 PM	0	5	0	5	1	**3**	0	4	1	0	0	1	10
05:15 PM	0	**6**		**6**	3	1	0	4	**5**	0	0	**5**	**15**
05:30 PM	0	5	0	5	**5**	1	0	**6**	2	0	0	2	13
Total Volume	0	19	0	19	11	7	0	18	9	0	0	9	46
% App. Total	0	100	0		61.1	38.9	0		100	0	0		
PHF	.000	.792	.000	.792	.550	.583	.000	.750	.450	.000	.000	.450	.767



Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079

We Count because YOU Count

File Name : Charlottesville(Rio and Pen Park) AM Peak
Site Code :
Start Date : 8/29/2018
Page No : 1

Groups Printed- Cars + - Trucks

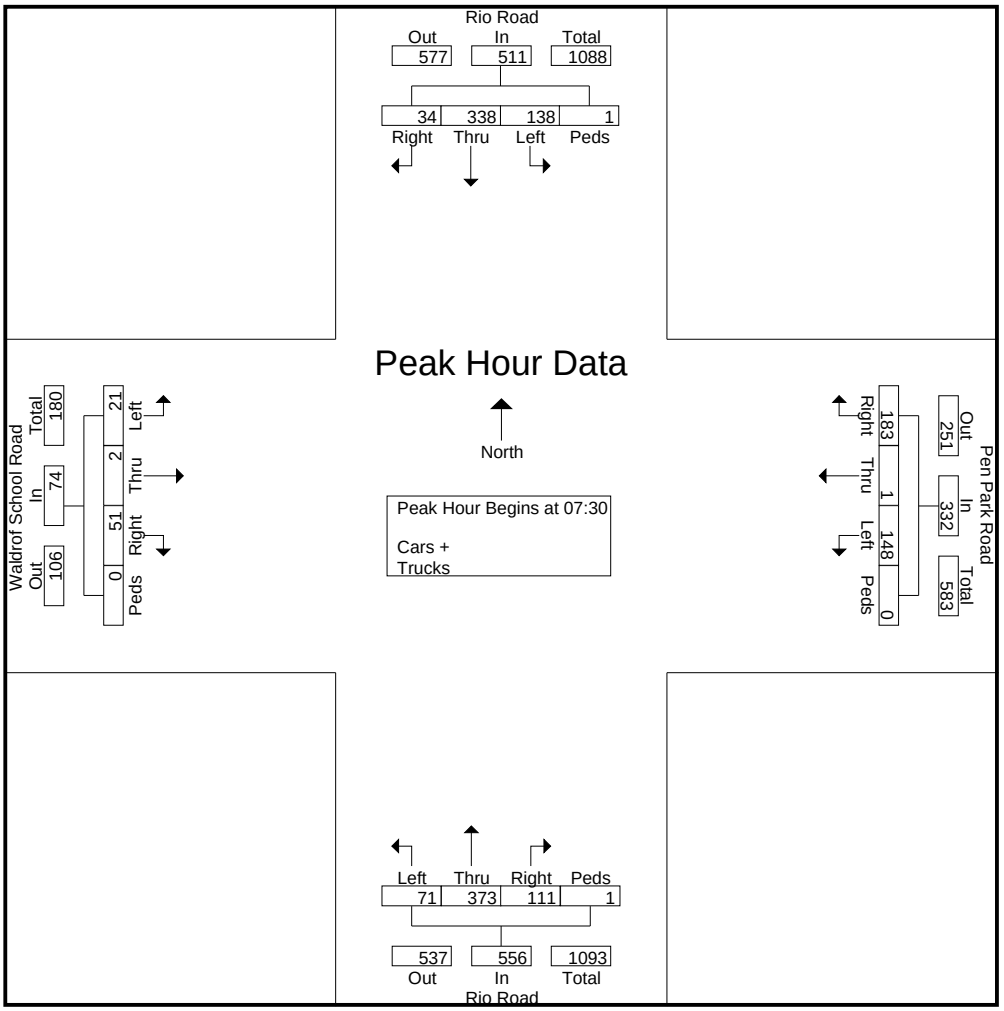
	Rio Road Southbound					Pen Park Road Westbound					Rio Road Northbound					Waldrof School Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00	2	41	8	0	51	15	0	16	0	31	6	46	1	0	53	1	0	0	0	1	136
07:15	2	51	18	0	71	22	0	12	0	34	20	62	4	0	86	0	0	0	0	0	191
07:30	5	67	39	0	111	46	0	31	0	77	36	88	8	0	132	2	1	0	0	3	323
07:45	13	95	71	0	179	65	1	54	0	120	48	87	26	0	161	8	1	5	0	14	474
Total	22	254	136	0	412	148	1	113	0	262	110	283	39	0	432	11	2	5	0	18	1124
08:00	11	81	18	1	111	54	0	45	0	99	18	90	28	1	137	27	0	9	0	36	383
08:15	5	95	10	0	110	18	0	18	0	36	9	108	9	0	126	14	0	7	0	21	293
08:30	3	64	5	0	72	20	0	12	0	32	5	92	3	0	100	9	0	5	0	14	218
08:45	1	74	5	0	80	9	0	16	0	25	9	98	1	0	108	3	1	3	0	7	220
Total	20	314	38	1	373	101	0	91	0	192	41	388	41	1	471	53	1	24	0	78	1114
Grand Total	42	568	174	1	785	249	1	204	0	454	151	671	80	1	903	64	3	29	0	96	2238
Apprch %	5.4	72.4	22.2	0.1		54.8	0.2	44.9	0		16.7	74.3	8.9	0.1		66.7	3.1	30.2	0		
Total %	1.9	25.4	7.8	0	35.1	11.1	0	9.1	0	20.3	6.7	30	3.6	0	40.3	2.9	0.1	1.3	0	4.3	
Cars +	42	568	174	1	785	249	1	204	0	454	151	671	80	1	903	64	3	29	0	96	2238
% Cars +	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	100	100	100	0	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079
We Count because YOU Count

File Name : Charlottesville(Rio and Pen Park) AM Peak
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	Rio Road Southbound					Pen Park Road Westbound					Rio Road Northbound					Waldrof School Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	5	67	39	0	111	46	0	31	0	77	36	88	8	0	132	2	**1**	0	0	3	323
07:45	**13**	**95**	**71**	0	**179**	**65**	**1**	**54**	0	**120**	**48**	87	26	0	**161**	8	1	5	0	14	**474**
08:00	11	81	18	**1**	111	54	0	45	0	99	18	90	**28**	**1**	137	**27**	0	**9**	0	**36**	383
08:15	5	95	10	0	110	18	0	18	0	36	9	**108**	9	0	126	14	0	7	0	21	293
Total Volume	34	338	138	1	511	183	1	148	0	332	111	373	71	1	556	51	2	21	0	74	1473
% App. Total																					
PHF	.654	.889	.486	.250	.714	.704	.250	.685	.000	.692	.578	.863	.634	.250	.863	.472	.500	.583	.000	.514	.777



Burns Service Inc.

1202 Langdon Terrace Drive
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We Count because YOU Count

File Name : Charlottesville(Rio and Pen Park) PM Peak
Site Code :
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Groups Printed- Cars + - Trucks

	Rio Road Southbound					Pen Park Road Westbound					Rio Road Northbound					Waldorf School Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
16:00	0	78	14	0	92	11	0	12	0	23	12	109	1	0	122	1	0	2	0	3	240
16:15	2	86	18	0	106	19	0	9	0	28	20	128	2	0	150	4	0	1	0	5	289
16:30	4	83	28	0	115	21	0	9	0	30	18	105	0	0	123	3	0	2	0	5	273
16:45	0	99	23	0	122	23	0	15	0	38	16	129	0	0	145	0	0	1	0	1	306
Total	6	346	83	0	435	74	0	45	0	119	66	471	3	0	540	8	0	6	0	14	1108
17:00	1	100	29	0	130	18	0	14	0	32	22	161	4	0	187	2	0	1	1	4	353
17:15	2	93	29	1	125	19	0	15	0	34	24	148	3	0	175	8	0	3	0	11	345
17:30	0	89	24	0	113	14	0	5	0	19	27	126	0	0	153	1	0	1	0	2	287
17:45	0	87	18	0	105	14	0	13	0	27	20	112	0	0	132	0	0	0	1	1	265
Total	3	369	100	1	473	65	0	47	0	112	93	547	7	0	647	11	0	5	2	18	1250
Grand Total	9	715	183	1	908	139	0	92	0	231	159	1018	10	0	1187	19	0	11	2	32	2358
Apprch %	1	78.7	20.2	0.1		60.2	0	39.8	0		13.4	85.8	0.8	0		59.4	0	34.4	6.2		
Total %	0.4	30.3	7.8	0	38.5	5.9	0	3.9	0	9.8	6.7	43.2	0.4	0	50.3	0.8	0	0.5	0.1	1.4	
Cars +	9	715	183	1	908	139	0	92	0	231	159	1018	10	0	1187	19	0	11	2	32	2358
% Cars +	100	100	100	100	100	100	0	100	0	100	100	100	100	0	100	100	0	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

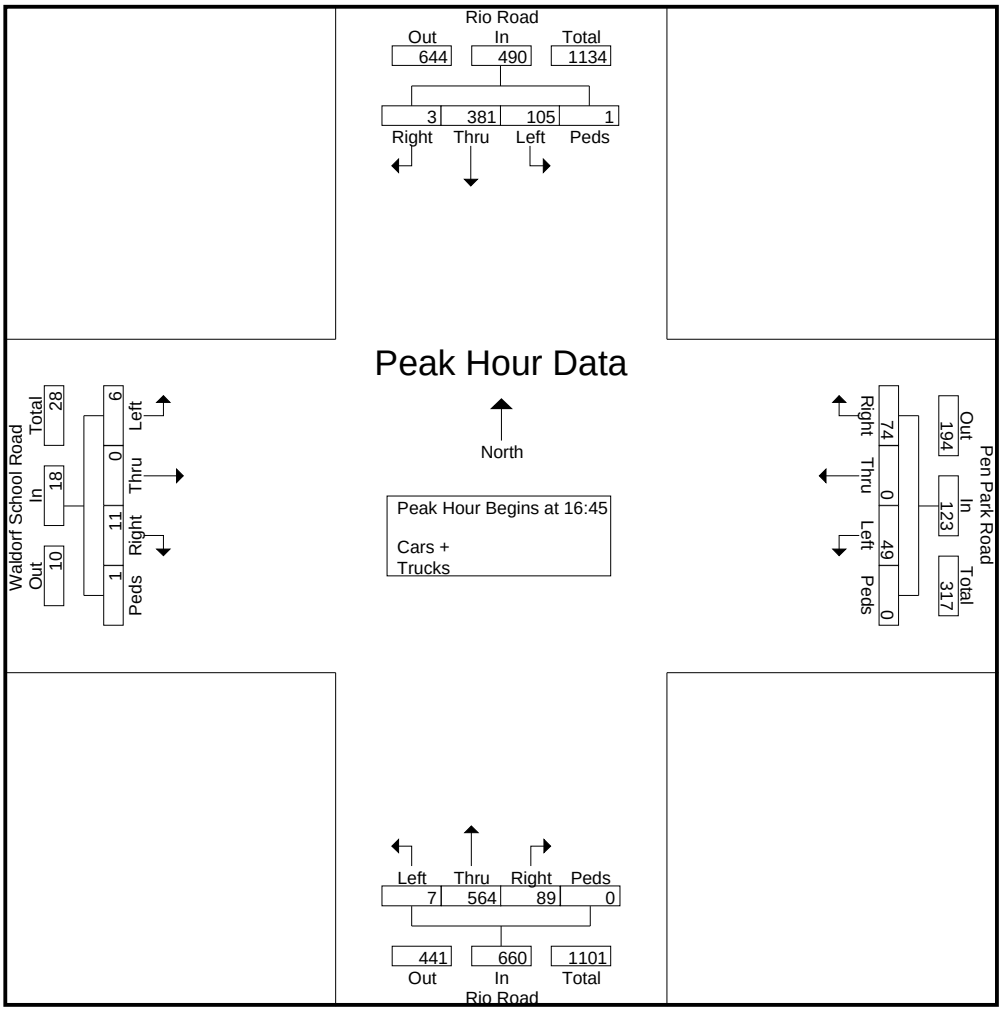
Burns Service Inc.

1202 Langdon Terrace Drive
Indian Trail, NC, 28079

We Count because YOU Count

File Name : Charlottesville(Rio and Pen Park) PM Peak
Site Code :
Start Date : 8/29/2018
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	Rio Road Southbound					Pen Park Road Westbound					Rio Road Northbound					Waldorf School Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	0	99	23	0	122	**23**	0	**15**	0	**38**	16	129	0	0	145	0	0	1	0	1	306
17:00	1	**100**	**29**	0	**130**	18	0	14	0	32	22	**161**	**4**	0	**187**	2	0	1	**1**	4	**353**
17:15	**2**	93	29	**1**	125	19	0	15	0	34	24	148	3	0	175	**8**	0	**3**	0	**11**	345
17:30	0	89	24	0	113	14	0	5	0	19	**27**	126	0	0	153	1	0	1	0	2	287
Total Volume	3	381	105	1	490	74	0	49	0	123	89	564	7	0	660	11	0	6	1	18	1291
% App. Total																					
PHF	.375	.953	.905	.250	.942	.804	.000	.817	.000	.809	.824	.876	.438	.000	.882	.344	.000	.500	.250	.409	.914



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	480	28	485	674	8	97	2	556	4	1	1
Future Volume (veh/h)	13	480	28	485	674	8	97	2	556	4	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	533	31	539	749	9	108	2	618	4	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	1423	83	567	1350	1155	196	4	682	10	3	11
Arrive On Green	0.01	0.42	0.42	0.32	0.72	0.72	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3413	198	1781	1870	1585	1750	32	1585	1439	360	1585
Grp Volume(v), veh/h	14	277	287	539	749	9	110	0	618	5	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1835	1781	1870	1585	1783	0	1585	1798	0	1585
Q Serve(g_s), s	1.5	20.8	20.9	57.1	35.9	0.3	11.3	0.0	21.6	0.5	0.0	0.1
Cycle Q Clear(g_c), s	1.5	20.8	20.9	57.1	35.9	0.3	11.3	0.0	21.6	0.5	0.0	0.1
Prop In Lane	1.00		0.11	1.00		1.00	0.98		1.00	0.80		1.00
Lane Grp Cap(c), veh/h	24	741	765	567	1350	1155	200	0	682	13	0	11
V/C Ratio(X)	0.57	0.37	0.38	0.95	0.55	0.01	0.55	0.00	0.91	0.39	0.00	0.09
Avail Cap(c_a), veh/h	78	741	765	723	1350	1155	200	0	682	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.6	38.9	38.9	64.3	12.5	7.1	81.1	0.0	51.4	95.4	0.0	95.2
Incr Delay (d2), s/veh	19.6	1.4	1.4	19.7	0.5	0.0	3.2	0.0	15.9	18.2	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	14.6	15.0	37.8	21.3	0.2	9.2	0.0	39.9	0.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.2	40.3	40.3	84.0	13.0	7.1	84.3	0.0	67.3	113.6	0.0	98.5
LnGrp LOS	F	D	D	F	B	A	F	A	E	F	A	F
Approach Vol, veh/h		578			1297			728			6	
Approach Delay, s/veh		42.1			42.5			69.9			111.1	
Approach LOS		D			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	68.1	85.9		30.0	9.2	144.8		9.0				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	59.1	22.9		23.6	3.5	37.9		2.5				
Green Ext Time (p_c), s	2.3	6.7		0.0	0.0	13.8		0.0				

Intersection Summary

HCM 6th Ctrl Delay	50.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	62	593	24	48	465
Future Vol, veh/h	66	62	593	24	48	465
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	200	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	70	674	27	55	528

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1326	688	0	0	701	0
Stage 1	688	-	-	-	-	-
Stage 2	638	-	-	-	-	-
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	172	446	-	-	896	-
Stage 1	499	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	162	446	-	-	896	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	494	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.3	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	162	446	896	-
HCM Lane V/C Ratio	-	-	0.463	0.158	0.061	-
HCM Control Delay (s)	-	-	45.1	14.6	9.3	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	2.2	0.6	0.2	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	23	594	7	8	523
Future Vol, veh/h	14	23	594	7	8	523
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	25	-	200	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	16	26	660	8	9	581

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1259	660	0	0	668	0
Stage 1	660	-	-	-	-	-
Stage 2	599	-	-	-	-	-
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	188	463	-	-	922	-
Stage 1	514	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	186	463	-	-	922	-
Mov Cap-2 Maneuver	186	-	-	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	544	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	186	463	922	-
HCM Lane V/C Ratio	-	-	0.084	0.055	0.01	-
HCM Control Delay (s)	-	-	26.1	13.2	8.9	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	2	51	148	1	183	71	397	111	138	365	34
Future Volume (veh/h)	21	2	51	148	1	183	71	397	111	138	365	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	3	65	190	1	235	91	509	142	177	468	44
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	37	80	267	1	327	397	687	582	378	741	628
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.06	0.37	0.37	0.09	0.40	0.40
Sat Flow, veh/h	0	179	387	751	4	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	95	0	0	191	0	235	91	509	142	177	468	44
Grp Sat Flow(s),veh/h/ln	566	0	0	755	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	8.8	2.0	15.1	4.0	3.8	12.9	1.1
Cycle Q Clear(g_c), s	13.2	0.0	0.0	13.2	0.0	8.8	2.0	15.1	4.0	3.8	12.9	1.1
Prop In Lane	0.28		0.68	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	0	0	268	0	327	397	687	582	378	741	628
V/C Ratio(X)	0.50	0.00	0.00	0.71	0.00	0.72	0.23	0.74	0.24	0.47	0.63	0.07
Avail Cap(c_a), veh/h	189	0	0	268	0	327	639	1249	1058	568	1249	1058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	0.0	0.0	26.6	0.0	23.6	12.0	17.6	14.1	12.7	15.5	12.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	8.6	0.0	7.4	0.3	1.6	0.2	0.9	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.0	0.0	6.2	0.0	6.7	1.3	10.0	2.3	2.5	8.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	0.0	35.2	0.0	31.0	12.3	19.2	14.3	13.6	16.4	12.0
LnGrp LOS	C	A	A	D	A	C	B	B	B	B	B	B
Approach Vol, veh/h		95			426			742			689	
Approach Delay, s/veh		24.1			32.9			17.4			15.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	30.8		20.0	11.3	32.6		20.0				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	5.8	17.1		15.2	4.0	14.9		15.2				
Green Ext Time (p_c), s	0.3	6.3		0.0	0.1	5.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay		20.4	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	47	314	288	466	310	19	124	190	23	6
Average Queue (ft)	13	171	137	220	123	1	81	117	3	0
95th Queue (ft)	41	266	250	377	259	11	137	193	13	3
Link Distance (ft)		1309		956	956			162	309	
Upstream Blk Time (%)								3		
Queuing Penalty (veh)								19		
Storage Bay Dist (ft)	200		300			500	75			125
Storage Blk Time (%)		6	0				20	13		
Queuing Penalty (veh)		17	0				113	14		

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	107	106	199	65	21
Average Queue (ft)	38	38	28	22	1
95th Queue (ft)	84	80	118	56	17
Link Distance (ft)	506		236		162
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			1		
Storage Bay Dist (ft)		200		50	
Storage Blk Time (%)	0			2	
Queuing Penalty (veh)	0			9	

Intersection: 3: Rio Road & Dunlora Forest Drive

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	37	44	31
Average Queue (ft)	10	13	4
95th Queue (ft)	33	34	21
Link Distance (ft)	166		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	225
Storage Blk Time (%)	6	3	
Queuing Penalty (veh)	1	0	

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	103	188	124	130	261	152	142	305	156
Average Queue (ft)	36	74	43	34	109	34	52	116	18
95th Queue (ft)	80	145	89	86	203	84	102	236	78
Link Distance (ft)	740		1306		976			523	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)				0	15			7	
Queuing Penalty (veh)				2	29			12	

Network Summary

Network wide Queuing Penalty: 218

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	824	36	537	636	28	38	4	602	5	1	4
Future Volume (veh/h)	15	824	36	537	636	28	38	4	602	5	1	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	886	39	577	684	30	41	4	647	5	1	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	1360	60	604	1341	1153	182	18	715	16	3	17
Arrive On Green	0.01	0.39	0.39	0.34	0.72	0.72	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3467	153	1781	1870	1585	1630	159	1585	1496	299	1585
Grp Volume(v), veh/h	16	454	471	577	684	30	45	0	647	6	0	4
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1870	1585	1789	0	1585	1796	0	1585
Q Serve(g_s), s	1.7	40.3	40.3	61.1	31.5	1.0	4.4	0.0	21.6	0.6	0.0	0.5
Cycle Q Clear(g_c), s	1.7	40.3	40.3	61.1	31.5	1.0	4.4	0.0	21.6	0.6	0.0	0.5
Prop In Lane	1.00		0.08	1.00		1.00	0.91		1.00	0.83		1.00
Lane Grp Cap(c), veh/h	27	697	723	604	1341	1153	200	0	715	19	0	17
V/C Ratio(X)	0.60	0.65	0.65	0.96	0.51	0.03	0.22	0.00	0.91	0.31	0.00	0.23
Avail Cap(c_a), veh/h	78	697	723	723	1341	1153	200	0	715	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.5	47.9	47.9	62.4	12.2	7.3	78.1	0.0	49.1	94.8	0.0	94.7
Incr Delay (d2), s/veh	19.9	4.7	4.5	21.2	0.3	0.0	0.6	0.0	15.1	8.8	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	26.0	26.8	40.3	19.1	0.7	3.8	0.0	41.3	0.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.4	52.6	52.4	83.6	12.5	7.3	78.6	0.0	64.3	103.6	0.0	101.5
LnGrp LOS	F	D	D	F	B	A	E	A	E	F	A	F
Approach Vol, veh/h		941			1291			692			10	
Approach Delay, s/veh		53.6			44.2			65.2			102.8	
Approach LOS		D			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	72.1	81.2		30.0	9.5	143.8		9.7				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	63.1	42.3		23.6	3.7	33.5		2.6				
Green Ext Time (p_c), s	2.3	7.3		0.0	0.0	11.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay	52.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	24	620	31	68	506
Future Vol, veh/h	22	24	620	31	68	506
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	200	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	26	667	33	73	544

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1374	684	0	0	700	0
Stage 1	684	-	-	-	-	-
Stage 2	690	-	-	-	-	-
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	160	449	-	-	897	-
Stage 1	501	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	147	449	-	-	897	-
Mov Cap-2 Maneuver	147	-	-	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	458	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.4	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	147	449	897	-
HCM Lane V/C Ratio	-	-	0.161	0.057	0.082	-
HCM Control Delay (s)	-	-	34.1	13.5	9.4	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.2	0.3	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	11	640	9	19	509
Future Vol, veh/h	7	11	640	9	19	509
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	25	-	200	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	8	12	711	10	21	566

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1319	711	0	0	721	0
Stage 1	711	-	-	-	-	-
Stage 2	608	-	-	-	-	-
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	173	433	-	-	881	-
Stage 1	487	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	169	433	-	-	881	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	169	433	881	-
HCM Lane V/C Ratio	-	-	0.046	0.028	0.024	-
HCM Control Delay (s)	-	-	27.3	13.6	9.2	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	11	49	1	74	7	569	89	105	408	3
Future Volume (veh/h)	6	1	11	49	1	74	7	569	89	105	408	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	1	12	54	1	81	8	625	98	115	448	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	24	76	252	4	130	496	852	722	397	973	825
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.01	0.46	0.46	0.07	0.52	0.52
Sat Flow, veh/h	323	295	928	1491	43	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	20	0	0	55	0	81	8	625	98	115	448	3
Grp Sat Flow(s),veh/h/ln	1546	0	0	1533	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.0	2.7	0.1	15.1	2.0	1.8	8.4	0.1
Cycle Q Clear(g_c), s	1.7	0.0	0.0	1.6	0.0	2.7	0.1	15.1	2.0	1.8	8.4	0.1
Prop In Lane	0.35		0.60	0.98		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	0	0	255	0	130	496	852	722	397	973	825
V/C Ratio(X)	0.09	0.00	0.00	0.22	0.00	0.62	0.02	0.73	0.14	0.29	0.46	0.00
Avail Cap(c_a), veh/h	448	0	0	475	0	378	886	1445	1224	673	1445	1224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	0.0	24.0	0.0	24.5	8.1	12.3	8.7	9.0	8.4	6.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	4.8	0.0	1.2	0.1	0.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.0	1.2	0.0	2.0	0.1	8.9	1.0	1.0	4.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	0.0	0.0	24.4	0.0	29.3	8.1	13.5	8.8	9.4	8.7	6.4
LnGrp LOS	C	A	A	C	A	C	A	B	A	A	A	A
Approach Vol, veh/h		20			136			731			566	
Approach Delay, s/veh		23.7			27.3			12.8			8.8	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	32.5		11.3	7.9	36.1		11.3				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	3.8	17.1		3.7	2.1	10.4		4.7				
Green Ext Time (p_c), s	0.2	8.1		0.0	0.0	5.5		0.3				

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	276	782	400	654	330	29	124	180	30	11
Average Queue (ft)	27	350	278	317	84	3	56	143	4	1
95th Queue (ft)	129	633	437	546	226	17	123	209	18	6
Link Distance (ft)		1309		956	956			162	309	
Upstream Blk Time (%)								8		
Queuing Penalty (veh)								53		
Storage Bay Dist (ft)	200		300			500	75			125
Storage Blk Time (%)		30	8				10	31		
Queuing Penalty (veh)		139	36				63	13		

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	B12	SB	SB
Directions Served	L	R	TR	T	L	T
Maximum Queue (ft)	58	66	302	47	92	138
Average Queue (ft)	15	19	76	2	32	10
95th Queue (ft)	42	51	222	24	75	71
Link Distance (ft)	506		236	573		162
Upstream Blk Time (%)			1			0
Queuing Penalty (veh)			10			1
Storage Bay Dist (ft)		200			50	
Storage Blk Time (%)					4	
Queuing Penalty (veh)					22	

Intersection: 3: Rio Road & Dunlora Forest Drive

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	32	33	47
Average Queue (ft)	5	9	9
95th Queue (ft)	22	30	33
Link Distance (ft)	350		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	225
Storage Blk Time (%)	3	2	
Queuing Penalty (veh)	0	0	

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	40	80	67	56	252	149	108	217	23
Average Queue (ft)	9	27	23	4	121	27	40	68	1
95th Queue (ft)	29	62	49	31	210	86	84	167	9
Link Distance (ft)	736		1306		976			546	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)					13			2	
Queuing Penalty (veh)					13			3	

Network Summary

Network wide Queuing Penalty: 352

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	548	33	543	804	9	115	2	639	4	1	1
Future Volume (veh/h)	14	548	33	543	804	9	115	2	639	4	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	609	37	603	893	10	128	2	710	4	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	1299	79	629	1347	1153	196	3	737	10	3	11
Arrive On Green	0.01	0.38	0.38	0.35	0.72	0.72	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3403	207	1781	1870	1585	1755	27	1585	1439	360	1585
Grp Volume(v), veh/h	16	318	328	603	893	10	130	0	710	5	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1833	1781	1870	1585	1783	0	1585	1798	0	1585
Q Serve(g_s), s	1.7	26.0	26.0	63.9	49.3	0.3	13.5	0.0	21.6	0.5	0.0	0.1
Cycle Q Clear(g_c), s	1.7	26.0	26.0	63.9	49.3	0.3	13.5	0.0	21.6	0.5	0.0	0.1
Prop In Lane	1.00		0.11	1.00		1.00	0.98		1.00	0.80		1.00
Lane Grp Cap(c), veh/h	27	678	700	629	1347	1153	200	0	737	13	0	11
V/C Ratio(X)	0.60	0.47	0.47	0.96	0.66	0.01	0.65	0.00	0.96	0.39	0.00	0.09
Avail Cap(c_a), veh/h	78	678	700	723	1347	1153	200	0	737	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.5	44.9	44.9	61.0	14.4	7.2	82.1	0.0	50.0	95.4	0.0	95.2
Incr Delay (d2), s/veh	19.9	2.3	2.3	22.3	1.2	0.0	7.3	0.0	24.4	18.2	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	17.7	18.3	42.1	28.3	0.2	10.9	0.0	48.3	0.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.4	47.2	47.2	83.4	15.7	7.2	89.4	0.0	74.4	113.6	0.0	98.5
LnGrp LOS	F	D	D	F	B	A	F	A	E	F	A	F
Approach Vol, veh/h		662			1506			840			6	
Approach Delay, s/veh		48.8			42.7			76.7			111.1	
Approach LOS		D			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	74.9	79.2		30.0	9.5	144.5		9.0				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	65.9	28.0		23.6	3.7	51.3		2.5				
Green Ext Time (p_c), s	2.3	7.5		0.0	0.0	19.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	53.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	76	680	34	55	521
Future Vol, veh/h	95	76	680	34	55	521
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	200	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	86	773	39	63	592

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1511	793	0	0	812	0
Stage 1	793	-	-	-	-	-
Stage 2	718	-	-	-	-	-
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	132	389	-	-	814	-
Stage 1	446	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	122	389	-	-	814	-
Mov Cap-2 Maneuver	122	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	74.2	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	122	389	814	-
HCM Lane V/C Ratio	-	-	0.885	0.222	0.077	-
HCM Control Delay (s)	-	-	120.1	16.9	9.8	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	5.5	0.8	0.2	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	25	689	8	9	607
Future Vol, veh/h	15	25	689	8	9	607
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	25	-	200	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	17	28	766	9	10	674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1460	766	0	0	775	0
Stage 1	766	-	-	-	-	-
Stage 2	694	-	-	-	-	-
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	142	403	-	-	841	-
Stage 1	459	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	140	403	-	-	841	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	140	403	841	-
HCM Lane V/C Ratio	-	-	0.119	0.069	0.012	-
HCM Control Delay (s)	-	-	34.2	14.6	9.3	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	2	56	163	1	201	78	473	122	152	433	37
Future Volume (veh/h)	23	2	56	163	1	201	78	473	122	152	433	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	3	72	209	1	258	100	606	156	195	555	47
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	33	75	243	1	299	384	774	656	360	831	705
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.06	0.41	0.41	0.09	0.44	0.44
Sat Flow, veh/h	0	177	399	745	4	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	104	0	0	210	0	258	100	606	156	195	555	47
Grp Sat Flow(s),veh/h/ln	576	0	0	749	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	11.0	2.2	19.7	4.5	4.3	16.4	1.2
Cycle Q Clear(g_c), s	13.2	0.0	0.0	13.2	0.0	11.0	2.2	19.7	4.5	4.3	16.4	1.2
Prop In Lane	0.28		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	0	0	244	0	299	384	774	656	360	831	705
V/C Ratio(X)	0.60	0.00	0.00	0.86	0.00	0.86	0.26	0.78	0.24	0.54	0.67	0.07
Avail Cap(c_a), veh/h	174	0	0	244	0	299	598	1141	967	519	1141	967
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	0.0	30.6	0.0	27.5	11.9	17.8	13.4	13.4	15.4	11.1
Incr Delay (d2), s/veh	5.4	0.0	0.0	25.5	0.0	22.0	0.4	2.2	0.2	1.3	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	0.0	0.0	8.9	0.0	9.6	1.4	12.5	2.6	2.8	10.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	0.0	56.0	0.0	49.5	12.2	20.0	13.5	14.7	16.3	11.2
LnGrp LOS	C	A	A	E	A	D	B	B	B	B	B	B
Approach Vol, veh/h		104			468			862			797	
Approach Delay, s/veh		30.5			52.5			17.9			15.6	
Approach LOS		C			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	36.3		20.0	11.6	38.4		20.0				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	6.3	21.7		15.2	4.2	18.4		15.2				
Green Ext Time (p_c), s	0.4	7.3		0.0	0.2	6.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	100	471	371	581	481	24	124	213	22	6
Average Queue (ft)	19	224	191	288	169	2	100	153	3	0
95th Queue (ft)	79	366	319	504	366	13	147	220	15	4
Link Distance (ft)		1309		956	956			162	309	
Upstream Blk Time (%)								13		
Queuing Penalty (veh)								99		
Storage Bay Dist (ft)	200		300			500	75			125
Storage Blk Time (%)		17	2		0		38	20		
Queuing Penalty (veh)		55	5		0		244	24		

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	B12	B10	SB	SB
Directions Served	L	R	TR	T	T	L	T
Maximum Queue (ft)	287	210	285	271	10	80	94
Average Queue (ft)	119	87	111	34	0	29	5
95th Queue (ft)	339	224	293	207	11	65	46
Link Distance (ft)	506		236	573	268		162
Upstream Blk Time (%)	5		6	0			0
Queuing Penalty (veh)	0		44	3			0
Storage Bay Dist (ft)		200				50	
Storage Blk Time (%)	4	10				4	
Queuing Penalty (veh)	3	10				21	

Intersection: 3: Rio Road & Dunlora Forest Drive

Movement	WB	WB	SB	SB
Directions Served	L	R	L	T
Maximum Queue (ft)	44	44	33	7
Average Queue (ft)	12	15	5	0
95th Queue (ft)	36	36	24	8
Link Distance (ft)	138			268
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	225	
Storage Blk Time (%)	10	5		
Queuing Penalty (veh)	3	1		

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	135	240	180	160	383	198	199	350	144
Average Queue (ft)	46	99	60	41	145	48	67	128	20
95th Queue (ft)	100	211	130	103	300	141	145	265	91
Link Distance (ft)	744		1307		976			546	
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)		1		1	20		0	9	
Queuing Penalty (veh)		2		5	42		0	18	

Network Summary

Network wide Queuing Penalty: 579

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	974	48	622	741	31	47	4	680	6	1	4
Future Volume (veh/h)	17	974	48	622	741	31	47	4	680	6	1	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1047	52	669	797	33	51	4	731	6	1	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	29	1183	59	689	1337	1151	186	15	791	18	3	18
Arrive On Green	0.02	0.34	0.34	0.39	0.71	0.71	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3445	171	1781	1870	1585	1657	130	1585	1537	256	1585
Grp Volume(v), veh/h	18	540	559	669	797	33	55	0	731	7	0	4
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1870	1585	1787	0	1585	1793	0	1585
Q Serve(g_s), s	1.9	55.3	55.3	71.2	40.9	1.1	5.4	0.0	21.6	0.7	0.0	0.5
Cycle Q Clear(g_c), s	1.9	55.3	55.3	71.2	40.9	1.1	5.4	0.0	21.6	0.7	0.0	0.5
Prop In Lane	1.00		0.09	1.00		1.00	0.93		1.00	0.86		1.00
Lane Grp Cap(c), veh/h	29	610	632	689	1337	1151	200	0	791	21	0	18
V/C Ratio(X)	0.63	0.88	0.88	0.97	0.60	0.03	0.27	0.00	0.92	0.34	0.00	0.22
Avail Cap(c_a), veh/h	78	610	632	723	1337	1151	200	0	791	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.4	59.8	59.8	58.1	13.7	7.4	78.5	0.0	45.0	94.7	0.0	94.5
Incr Delay (d2), s/veh	20.6	17.0	16.6	25.8	0.7	0.0	0.7	0.0	16.5	9.3	0.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	27.8	28.7	36.8	17.2	0.4	2.6	0.0	36.1	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.0	76.8	76.4	83.9	14.4	7.4	79.3	0.0	61.5	104.0	0.0	100.4
LnGrp LOS	F	E	E	F	B	A	E	A	E	F	A	F
Approach Vol, veh/h		1117			1499			786			11	
Approach Delay, s/veh		77.2			45.2			62.7			102.7	
Approach LOS		E			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	81.4	71.8		30.0	9.7	143.5		9.8				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	73.2	57.3		23.6	3.9	42.9		2.7				
Green Ext Time (p_c), s	1.5	0.0		0.0	0.0	15.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay	59.9
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	31	700	59	83	588
Future Vol, veh/h	37	31	700	59	83	588
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	200	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	33	753	63	89	632

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1595	785	0	0	816	0
Stage 1	785	-	-	-	-	-
Stage 2	810	-	-	-	-	-
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	118	393	-	-	812	-
Stage 1	449	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	105	393	-	-	812	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	390	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38.8	0	1.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	105	393	812	-
HCM Lane V/C Ratio	-	-	0.379	0.085	0.11	-
HCM Control Delay (s)	-	-	58.8	15	10	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0.3	0.4	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	12	747	10	21	604
Future Vol, veh/h	8	12	747	10	21	604
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	25	-	200	250	-
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	9	13	830	11	23	671

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1547	830	0	0	841	0
Stage 1	830	-	-	-	-	-
Stage 2	717	-	-	-	-	-
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	126	370	-	-	794	-
Stage 1	428	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	122	370	-	-	794	-
Mov Cap-2 Maneuver	122	-	-	-	-	-
Stage 1	428	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.8	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	122	370	794	-
HCM Lane V/C Ratio	-	-	0.073	0.036	0.029	-
HCM Control Delay (s)	-	-	36.8	15.1	9.7	-
HCM Lane LOS	-	-	E	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	12	54	1	81	8	669	98	116	493	3
Future Volume (veh/h)	7	1	12	54	1	81	8	669	98	116	493	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	1	13	59	1	89	9	735	108	127	542	3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	28	79	242	3	137	463	934	792	357	1046	886
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.01	0.50	0.50	0.07	0.56	0.56
Sat Flow, veh/h	311	322	914	1477	37	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	22	0	0	60	0	89	9	735	108	127	542	3
Grp Sat Flow(s),veh/h/ln	1546	0	0	1513	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.6	0.0	3.4	0.2	20.2	2.3	2.1	11.2	0.1
Cycle Q Clear(g_c), s	2.3	0.0	0.0	2.1	0.0	3.4	0.2	20.2	2.3	2.1	11.2	0.1
Prop In Lane	0.36		0.59	0.98		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	0	0	245	0	137	463	934	792	357	1046	886
V/C Ratio(X)	0.10	0.00	0.00	0.24	0.00	0.65	0.02	0.79	0.14	0.36	0.52	0.00
Avail Cap(c_a), veh/h	398	0	0	421	0	335	805	1280	1085	592	1280	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	27.0	0.0	27.6	8.0	12.9	8.4	10.3	8.5	6.1
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.5	0.0	5.1	0.0	2.3	0.1	0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.0	1.4	0.1	7.4	0.7	0.6	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	0.0	27.5	0.0	32.7	8.0	15.2	8.5	10.9	8.9	6.1
LnGrp LOS	C	A	A	C	A	C	A	B	A	B	A	A
Approach Vol, veh/h		22			149			852			672	
Approach Delay, s/veh		26.6			30.6			14.3			9.3	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	38.5		12.2	8.0	42.2		12.2				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	4.1	22.2		4.3	2.2	13.2		5.4				
Green Ext Time (p_c), s	0.2	9.0		0.0	0.0	6.9		0.3				

Intersection Summary

HCM 6th Ctrl Delay			13.9									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	299	1289	400	803	455	32	124	191	35	13
Average Queue (ft)	40	830	368	405	121	3	70	159	6	1
95th Queue (ft)	174	1488	472	699	358	18	135	212	23	8
Link Distance (ft)		1309		956	956			162	309	
Upstream Blk Time (%)		10		0	0			18		
Queuing Penalty (veh)		0		0	0			135		
Storage Bay Dist (ft)	200		300			500	75			125
Storage Blk Time (%)		49	34		0		20	35		
Queuing Penalty (veh)		272	172		0		136	18		

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	B12	B10	SB	SB
Directions Served	L	R	TR	T	T	L	T
Maximum Queue (ft)	78	84	314	347	3	98	183
Average Queue (ft)	25	27	172	37	0	47	37
95th Queue (ft)	59	66	354	199	3	94	147
Link Distance (ft)	506		236	563	277		162
Upstream Blk Time (%)			9	0			1
Queuing Penalty (veh)			73	1			8
Storage Bay Dist (ft)		200				50	
Storage Blk Time (%)						14	
Queuing Penalty (veh)						84	

Intersection: 3: Rio Road & Dunlora Forest Drive

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	27	22	2	36
Average Queue (ft)	5	6	0	8
95th Queue (ft)	21	20	2	31
Link Distance (ft)	117			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	200	250
Storage Blk Time (%)	4	1		
Queuing Penalty (veh)	1	0		

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	44	80	81	82	322	162	108	235	10
Average Queue (ft)	10	29	26	7	146	30	46	86	0
95th Queue (ft)	32	64	58	43	264	93	90	191	5
Link Distance (ft)	738		1306		976			549	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)					18	0		4	
Queuing Penalty (veh)					19	0		4	

Network Summary

Network wide Queuing Penalty: 924

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	548	43	553	804	9	142	3	667	4	1	1
Future Volume (veh/h)	14	548	43	553	804	9	142	3	667	4	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	609	48	614	893	10	158	3	741	4	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	1254	99	640	1347	1153	196	4	746	10	3	11
Arrive On Green	0.01	0.38	0.38	0.36	0.72	0.72	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3337	263	1781	1870	1585	1750	33	1585	1439	360	1585
Grp Volume(v), veh/h	16	324	333	614	893	10	161	0	741	5	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1823	1781	1870	1585	1783	0	1585	1798	0	1585
Q Serve(g_s), s	1.7	26.8	26.9	65.1	49.3	0.3	17.0	0.0	21.6	0.5	0.0	0.1
Cycle Q Clear(g_c), s	1.7	26.8	26.9	65.1	49.3	0.3	17.0	0.0	21.6	0.5	0.0	0.1
Prop In Lane	1.00		0.14	1.00		1.00	0.98		1.00	0.80		1.00
Lane Grp Cap(c), veh/h	27	668	685	640	1347	1153	200	0	746	13	0	11
V/C Ratio(X)	0.60	0.48	0.49	0.96	0.66	0.01	0.81	0.00	0.99	0.39	0.00	0.09
Avail Cap(c_a), veh/h	78	668	685	723	1347	1153	200	0	746	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.5	46.0	46.0	60.5	14.4	7.2	83.7	0.0	50.7	95.4	0.0	95.2
Incr Delay (d2), s/veh	19.9	2.5	2.5	22.8	1.2	0.0	21.1	0.0	31.0	18.2	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	18.3	18.7	42.8	28.3	0.2	14.0	0.0	52.5	0.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.4	48.5	48.5	83.3	15.7	7.2	104.8	0.0	81.8	113.6	0.0	98.5
LnGrp LOS	F	D	D	F	B	A	F	A	F	F	A	F
Approach Vol, veh/h		673			1517			902			6	
Approach Delay, s/veh		50.0			43.0			85.9			111.1	
Approach LOS		D			D			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	76.0	78.0		30.0	9.5	144.5		9.0				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	67.1	28.9		23.6	3.7	51.3		2.5				
Green Ext Time (p_c), s	2.2	7.5		0.0	0.0	19.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	57.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	11.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	76	736	35	55	541
Future Vol, veh/h	95	76	736	35	55	541
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	200	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	86	836	40	63	615

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1597	856	0	0	876	0
Stage 1	856	-	-	-	-	-
Stage 2	741	-	-	-	-	-
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	117	357	-	-	771	-
Stage 1	416	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 107	357	-	-	771	-
Mov Cap-2 Maneuver	~ 107	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	432	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	99.4	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	107	357	771	-
HCM Lane V/C Ratio	-	-	1.009	0.242	0.081	-
HCM Control Delay (s)	-	-	164.3	18.3	10.1	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	6.4	0.9	0.3	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	25	700	8	9	637
Future Vol, veh/h	15	25	700	8	9	637
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	25	-	200	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	17	28	778	9	10	708

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1506	778	0	0	787	0
Stage 1	778	-	-	-	-	-
Stage 2	728	-	-	-	-	-
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	133	396	-	-	832	-
Stage 1	453	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	131	396	-	-	832	-
Mov Cap-2 Maneuver	131	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	472	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	131	396	832	-
HCM Lane V/C Ratio	-	-	0.127	0.07	0.012	-
HCM Control Delay (s)	-	-	36.4	14.8	9.4	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	2	56	163	1	202	78	483	122	154	460	38
Future Volume (veh/h)	23	2	56	163	1	202	78	483	122	154	460	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	3	72	209	1	259	100	619	156	197	590	49
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	33	74	240	1	295	366	784	665	358	843	714
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.06	0.42	0.42	0.09	0.45	0.45
Sat Flow, veh/h	0	177	399	745	4	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	104	0	0	210	0	259	100	619	156	197	590	49
Grp Sat Flow(s),veh/h/ln	576	0	0	749	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	11.3	2.2	20.3	4.5	4.3	17.9	1.2
Cycle Q Clear(g_c), s	13.2	0.0	0.0	13.2	0.0	11.3	2.2	20.3	4.5	4.3	17.9	1.2
Prop In Lane	0.28		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	0	0	241	0	295	366	784	665	358	843	714
V/C Ratio(X)	0.60	0.00	0.00	0.87	0.00	0.88	0.27	0.79	0.23	0.55	0.70	0.07
Avail Cap(c_a), veh/h	172	0	0	241	0	295	577	1128	956	513	1128	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	0.0	31.0	0.0	28.0	12.1	17.8	13.2	13.6	15.6	11.0
Incr Delay (d2), s/veh	5.8	0.0	0.0	27.4	0.0	24.3	0.4	2.5	0.2	1.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.1	0.0	0.0	9.1	0.0	10.0	1.4	12.9	2.6	2.8	11.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	0.0	0.0	58.4	0.0	52.3	12.5	20.3	13.4	14.9	16.9	11.1
LnGrp LOS	C	A	A	E	A	D	B	C	B	B	B	B
Approach Vol, veh/h		104			469			875			836	
Approach Delay, s/veh		31.3			55.0			18.2			16.1	
Approach LOS		C			E			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	37.0		20.0	11.6	39.2		20.0				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	6.3	22.3		15.2	4.2	19.9		15.2				
Green Ext Time (p_c), s	0.4	7.3		0.0	0.2	7.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	30	11	714	616	9
Future Vol, veh/h	57	30	11	714	616	9
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	0	100	-	-	1
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	100	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	30	12	776	670	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1470	670	680	0	-	0
Stage 1	670	-	-	-	-	-
Stage 2	800	-	-	-	-	-
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	140	457	912	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	442	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	138	457	912	-	-	-
Mov Cap-2 Maneuver	138	-	-	-	-	-
Stage 1	502	-	-	-	-	-
Stage 2	442	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.6	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	912	-	138	457	-	-
HCM Lane V/C Ratio	0.013	-	0.449	0.066	-	-
HCM Control Delay (s)	9	-	50.8	13.4	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0	-	2	0.2	-	-

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	102	551	391	568	461	19	124	215	22	7
Average Queue (ft)	16	260	223	293	169	1	106	164	3	0
95th Queue (ft)	64	429	358	500	374	10	144	231	14	3
Link Distance (ft)		1309		956	956			164	309	
Upstream Blk Time (%)								21		
Queuing Penalty (veh)								169		
Storage Bay Dist (ft)	200		300			500	75			125
Storage Blk Time (%)		23	3		0		47	16		
Queuing Penalty (veh)		76	9		0		316	24		

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	401	255	228	84	150
Average Queue (ft)	183	124	135	32	11
95th Queue (ft)	493	298	284	70	76
Link Distance (ft)	519		213		164
Upstream Blk Time (%)	16		11		0
Queuing Penalty (veh)	0		85		1
Storage Bay Dist (ft)		200		50	
Storage Blk Time (%)	6	25		7	
Queuing Penalty (veh)	4	25		36	

Intersection: 3: Rio Road & Dunlora Forest Drive

Movement	WB	WB	NB	SB
Directions Served	L	R	T	L
Maximum Queue (ft)	47	38	44	35
Average Queue (ft)	12	16	2	5
95th Queue (ft)	36	38	44	25
Link Distance (ft)	148		548	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25		225
Storage Blk Time (%)	10	6	0	
Queuing Penalty (veh)	3	1	0	

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	131	231	146	147	373	178	221	344	141
Average Queue (ft)	44	93	63	43	146	44	61	121	12
95th Queue (ft)	103	181	115	114	281	134	140	254	63
Link Distance (ft)	747		1307		976			548	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)				1	21			7	
Queuing Penalty (veh)				5	44			15	

Intersection: 5: Right-in Driveway & Rio Road

Movement	NB	B16
Directions Served	T	T
Maximum Queue (ft)	167	220
Average Queue (ft)	59	49
95th Queue (ft)	178	201
Link Distance (ft)	90	184
Upstream Blk Time (%)	11	5
Queuing Penalty (veh)	85	35
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Full-movement Driveway

Movement	EB	EB	NB	NB	B10	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	149	70	61	122	75	2
Average Queue (ft)	48	22	5	20	10	0
95th Queue (ft)	127	54	34	126	94	2
Link Distance (ft)	369	369		191	260	
Upstream Blk Time (%)	0			2	0	
Queuing Penalty (veh)	0			14	3	
Storage Bay Dist (ft)			100			1
Storage Blk Time (%)				3		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 950

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	974	74	649	741	31	63	5	697	6	2	4
Future Volume (veh/h)	17	974	74	649	741	31	63	5	697	6	2	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1047	80	698	797	33	68	5	749	6	2	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	29	1102	84	713	1336	1151	186	14	812	17	6	19
Arrive On Green	0.02	0.33	0.33	0.40	0.71	0.71	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3346	256	1781	1870	1585	1665	122	1585	1352	451	1585
Grp Volume(v), veh/h	18	556	571	698	797	33	73	0	749	8	0	4
Grp Sat Flow(s),veh/h/ln	1781	1777	1824	1781	1870	1585	1787	0	1585	1803	0	1585
Q Serve(g_s), s	1.9	58.9	59.0	74.6	41.0	1.1	7.3	0.0	21.6	0.8	0.0	0.5
Cycle Q Clear(g_c), s	1.9	58.9	59.0	74.6	41.0	1.1	7.3	0.0	21.6	0.8	0.0	0.5
Prop In Lane	1.00		0.14	1.00		1.00	0.93		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	29	585	601	713	1336	1151	200	0	812	22	0	19
V/C Ratio(X)	0.63	0.95	0.95	0.98	0.60	0.03	0.36	0.00	0.92	0.36	0.00	0.21
Avail Cap(c_a), veh/h	78	585	601	723	1336	1151	200	0	812	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.4	63.1	63.2	57.1	13.7	7.4	79.4	0.0	43.6	94.6	0.0	94.4
Incr Delay (d2), s/veh	20.6	26.6	26.3	28.1	0.7	0.0	1.1	0.0	16.0	9.6	0.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	40.0	40.9	49.1	24.0	0.7	6.2	0.0	46.6	0.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.0	89.7	89.4	85.2	14.5	7.4	80.5	0.0	59.5	104.2	0.0	99.5
LnGrp LOS	F	F	F	F	B	A	F	A	E	F	A	F
Approach Vol, veh/h		1145			1528			822			12	
Approach Delay, s/veh		90.0			46.6			61.4			102.6	
Approach LOS		F			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	83.9	69.1		30.0	9.7	143.3		10.0				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	76.6	61.0		23.6	3.9	43.0		2.8				
Green Ext Time (p_c), s	0.6	0.0		0.0	0.0	15.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay	64.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	31	734	60	83	642
Future Vol, veh/h	38	31	734	60	83	642
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	200	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	33	789	65	89	690

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1690	822	0	0	854	0
Stage 1	822	-	-	-	-	-
Stage 2	868	-	-	-	-	-
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	103	374	-	-	785	-
Stage 1	432	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	91	374	-	-	785	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	432	-	-	-	-	-
Stage 2	365	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	47.4	0	1.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	91	374	785	-
HCM Lane V/C Ratio	-	-	0.449	0.089	0.114	-
HCM Control Delay (s)	-	-	73.4	15.6	10.2	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	1.9	0.3	0.4	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	12	777	10	21	623
Future Vol, veh/h	8	12	777	10	21	623
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	25	-	200	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	9	13	863	11	23	692

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1601	863	0	0	874	0
Stage 1	863	-	-	-	-	-
Stage 2	738	-	-	-	-	-
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	117	354	-	-	772	-
Stage 1	413	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	113	354	-	-	772	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	413	-	-	-	-	-
Stage 2	459	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.2	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	113	354	772	-
HCM Lane V/C Ratio	-	-	0.079	0.038	0.03	-
HCM Control Delay (s)	-	-	39.6	15.6	9.8	-
HCM Lane LOS	-	-	E	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	12	54	1	83	8	696	98	117	510	4
Future Volume (veh/h)	8	1	12	54	1	83	8	696	98	117	510	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	1	13	59	1	91	9	765	108	129	560	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	29	76	240	3	138	458	954	808	345	1063	901
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.01	0.51	0.51	0.07	0.57	0.57
Sat Flow, veh/h	336	336	873	1477	36	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	23	0	0	60	0	91	9	765	108	129	560	4
Grp Sat Flow(s),veh/h/ln	1544	0	0	1513	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.6	0.0	3.6	0.2	21.8	2.3	2.1	11.9	0.1
Cycle Q Clear(g_c), s	2.3	0.0	0.0	2.2	0.0	3.6	0.2	21.8	2.3	2.1	11.9	0.1
Prop In Lane	0.39		0.57	0.98		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	0	0	243	0	138	458	954	808	345	1063	901
V/C Ratio(X)	0.11	0.00	0.00	0.25	0.00	0.66	0.02	0.80	0.13	0.37	0.53	0.00
Avail Cap(c_a), veh/h	386	0	0	409	0	326	789	1243	1053	572	1243	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	0.0	27.7	0.0	28.4	7.9	13.1	8.3	10.8	8.5	6.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.5	0.0	5.3	0.0	2.9	0.1	0.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	0.0	1.5	0.0	2.7	0.1	12.7	1.2	1.2	6.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	0.0	0.0	28.2	0.0	33.7	7.9	16.0	8.4	11.4	9.0	6.0
LnGrp LOS	C	A	A	C	A	C	A	B	A	B	A	A
Approach Vol, veh/h		23			151			882			693	
Approach Delay, s/veh		27.4			31.5			15.0			9.4	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	40.1		12.4	8.0	43.8		12.4				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	4.1	23.8		4.3	2.2	13.9		5.6				
Green Ext Time (p_c), s	0.2	9.0		0.0	0.0	7.2		0.3				

Intersection Summary

HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	1.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	19	30	759	625	25
Future Vol, veh/h	35	19	30	759	625	25
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	0	100	-	-	1
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	21	33	825	679	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1570	679	706	0	-	0
Stage 1	679	-	-	-	-	-
Stage 2	891	-	-	-	-	-
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	122	452	892	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	452	892	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	401	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37	0.3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	892	-	117	452	-	-
HCM Lane V/C Ratio	0.037	-	0.325	0.046	-	-
HCM Control Delay (s)	9.2	-	49.9	13.3	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	0.1	-	-

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	299	1352	400	801	581	32	124	192	28	10
Average Queue (ft)	42	1005	383	422	140	4	82	166	5	1
95th Queue (ft)	180	1623	453	723	407	20	141	211	20	7
Link Distance (ft)		1309		956	956			173	309	
Upstream Blk Time (%)		21		1	0			17		
Queuing Penalty (veh)		0		0	0			133		
Storage Bay Dist (ft)	200		300			500	75			125
Storage Blk Time (%)		53	42		0		28	35		
Queuing Penalty (veh)		309	213		0		197	24		

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	123	135	210	93	172
Average Queue (ft)	34	42	146	44	28
95th Queue (ft)	89	108	266	91	128
Link Distance (ft)	523		198		173
Upstream Blk Time (%)			8		1
Queuing Penalty (veh)			65		6
Storage Bay Dist (ft)		200		50	
Storage Blk Time (%)	0	0		14	
Queuing Penalty (veh)	0	0		91	

Intersection: 3: Rio Road & Dunlora Forest Drive

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	32	30	6	46
Average Queue (ft)	7	9	0	12
95th Queue (ft)	27	30	4	39
Link Distance (ft)	114			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	200	225
Storage Blk Time (%)	4	3		
Queuing Penalty (veh)	1	0		

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	50	84	91	43	400	225	171	257	14
Average Queue (ft)	14	32	32	6	173	46	50	86	1
95th Queue (ft)	39	66	65	31	328	154	112	197	9
Link Distance (ft)	745		1307		976			545	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)					19			4	
Queuing Penalty (veh)					21			4	

Intersection: 5: Right-in Driveway & Rio Road

Movement	NB	B16	SB
Directions Served	T	T	R
Maximum Queue (ft)	174	230	7
Average Queue (ft)	62	30	0
95th Queue (ft)	176	143	7
Link Distance (ft)	93	174	
Upstream Blk Time (%)	8	2	
Queuing Penalty (veh)	68	20	
Storage Bay Dist (ft)			1
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Full-movement Driveway

Movement	EB	EB	NB	NB	B10	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	83	36	74	100	34	4
Average Queue (ft)	30	12	14	11	5	0
95th Queue (ft)	85	34	49	92	58	4
Link Distance (ft)	370	370		198	273	
Upstream Blk Time (%)			0	1	0	
Queuing Penalty (veh)			0	6	1	
Storage Bay Dist (ft)			100			1
Storage Blk Time (%)			0	1		
Queuing Penalty (veh)			0	0		

Network Summary

Network wide Queuing Penalty: 1159

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	548	43	553	804	9	142	3	667	4	1	1
Future Volume (veh/h)	14	548	43	553	804	9	142	3	667	4	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	609	48	614	893	10	158	3	741	4	1	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	1254	99	640	1347	1153	196	4	746	10	3	11
Arrive On Green	0.01	0.38	0.38	0.36	0.72	0.72	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3337	263	1781	1870	1585	1750	33	1585	1439	360	1585
Grp Volume(v), veh/h	16	324	333	614	893	10	161	0	741	5	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	1823	1781	1870	1585	1783	0	1585	1798	0	1585
Q Serve(g_s), s	1.7	26.8	26.9	65.1	49.3	0.3	17.0	0.0	21.6	0.5	0.0	0.1
Cycle Q Clear(g_c), s	1.7	26.8	26.9	65.1	49.3	0.3	17.0	0.0	21.6	0.5	0.0	0.1
Prop In Lane	1.00		0.14	1.00		1.00	0.98		1.00	0.80		1.00
Lane Grp Cap(c), veh/h	27	668	685	640	1347	1153	200	0	746	13	0	11
V/C Ratio(X)	0.60	0.48	0.49	0.96	0.66	0.01	0.81	0.00	0.99	0.39	0.00	0.09
Avail Cap(c_a), veh/h	78	668	685	723	1347	1153	200	0	746	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.5	46.0	46.0	60.5	14.4	7.2	83.7	0.0	50.7	95.4	0.0	95.2
Incr Delay (d2), s/veh	19.9	2.5	2.5	22.8	1.2	0.0	21.1	0.0	31.0	18.2	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	12.5	12.8	33.4	20.8	0.1	9.0	0.0	41.9	0.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.4	48.5	48.5	83.3	15.7	7.2	104.8	0.0	81.8	113.6	0.0	98.5
LnGrp LOS	F	D	D	F	B	A	F	A	F	F	A	F
Approach Vol, veh/h		673			1517			902			6	
Approach Delay, s/veh		50.0			43.0			85.9			111.1	
Approach LOS		D			D			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	76.0	78.0		30.0	9.5	144.5		9.0				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	67.1	28.9		23.6	3.7	51.3		2.5				
Green Ext Time (p_c), s	2.2	7.5		0.0	0.0	19.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	57.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	95	76	736	35	55	541
Future Volume (Veh/h)	95	76	736	35	55	541
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	108	86	836	40	63	615
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			Raised			None
Median storage veh)			1			
Upstream signal (ft)						259
pX, platoon unblocked						
vC, conflicting volume	1597	856			876	
vC1, stage 1 conf vol	856					
vC2, stage 2 conf vol	741					
vCu, unblocked vol	1597	856			876	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	56	76			92	
cM capacity (veh/h)	243	357			771	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	194	876	63	615
Volume Left	108	0	63	0
Volume Right	86	40	0	0
cSH	436	1700	771	1700
Volume to Capacity	0.44	0.52	0.08	0.36
Queue Length 95th (ft)	56	0	7	0
Control Delay (s)	25.5	0.0	10.1	0.0
Lane LOS	D		B	
Approach Delay (s)	25.5	0.0	0.9	
Approach LOS	D			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	25	700	8	9	637
Future Vol, veh/h	15	25	700	8	9	637
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	25	-	200	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	17	28	778	9	10	708

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1506	778	0	0	787	0
Stage 1	778	-	-	-	-	-
Stage 2	728	-	-	-	-	-
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	133	396	-	-	832	-
Stage 1	453	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	131	396	-	-	832	-
Mov Cap-2 Maneuver	131	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	472	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	131	396	832	-
HCM Lane V/C Ratio	-	-	0.127	0.07	0.012	-
HCM Control Delay (s)	-	-	36.4	14.8	9.4	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	2	56	163	1	202	78	483	122	154	460	38
Future Volume (veh/h)	23	2	56	163	1	202	78	483	122	154	460	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	3	72	209	1	259	100	619	156	197	590	49
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	33	74	240	1	295	366	784	665	358	843	714
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.06	0.42	0.42	0.09	0.45	0.45
Sat Flow, veh/h	0	177	399	745	4	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	104	0	0	210	0	259	100	619	156	197	590	49
Grp Sat Flow(s),veh/h/ln	576	0	0	749	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	11.3	2.2	20.3	4.5	4.3	17.9	1.2
Cycle Q Clear(g_c), s	13.2	0.0	0.0	13.2	0.0	11.3	2.2	20.3	4.5	4.3	17.9	1.2
Prop In Lane	0.28		0.69	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	0	0	241	0	295	366	784	665	358	843	714
V/C Ratio(X)	0.60	0.00	0.00	0.87	0.00	0.88	0.27	0.79	0.23	0.55	0.70	0.07
Avail Cap(c_a), veh/h	172	0	0	241	0	295	577	1128	956	513	1128	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	0.0	31.0	0.0	28.0	12.1	17.8	13.2	13.6	15.6	11.0
Incr Delay (d2), s/veh	5.8	0.0	0.0	27.4	0.0	24.3	0.4	2.5	0.2	1.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	5.3	0.0	6.0	0.8	8.2	1.5	1.6	6.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	0.0	0.0	58.4	0.0	52.3	12.5	20.3	13.4	14.9	16.9	11.1
LnGrp LOS	C	A	A	E	A	D	B	C	B	B	B	B
Approach Vol, veh/h		104			469			875			836	
Approach Delay, s/veh		31.3			55.0			18.2			16.1	
Approach LOS		C			E			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	37.0		20.0	11.6	39.2		20.0				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	6.3	22.3		15.2	4.2	19.9		15.2				
Green Ext Time (p_c), s	0.4	7.3		0.0	0.2	7.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	30	11	714	616	9
Future Volume (Veh/h)	57	30	11	714	616	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	1.00	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	30	12	776	670	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				1211	908	
pX, platoon unblocked	0.75					
vC, conflicting volume	1470	670	680			
vC1, stage 1 conf vol	670					
vC2, stage 2 conf vol	800					
vCu, unblocked vol	1460	670	680			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	93	99			
cM capacity (veh/h)	258	457	912			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	62	30	12	776	670	10
Volume Left	62	0	12	0	0	0
Volume Right	0	30	0	0	0	10
cSH	258	457	912	1700	1700	1700
Volume to Capacity	0.24	0.07	0.01	0.46	0.39	0.01
Queue Length 95th (ft)	23	5	1	0	0	0
Control Delay (s)	23.3	13.4	9.0	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	20.1		0.1		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	233	424	390	595	488	26	179	178	13	2
Average Queue (ft)	24	245	215	288	172	1	128	123	1	0
95th Queue (ft)	116	370	345	504	372	11	196	206	8	1
Link Distance (ft)		1303		950	950		164	164	308	
Upstream Blk Time (%)				0	0		11	4		
Queuing Penalty (veh)				0	0		45	15		
Storage Bay Dist (ft)	200		300			500				125
Storage Blk Time (%)		21	2		0					
Queuing Penalty (veh)		71	5		0					

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	150	139	228	84	12
Average Queue (ft)	52	50	90	30	0
95th Queue (ft)	111	107	238	68	13
Link Distance (ft)	508		215		164
Upstream Blk Time (%)			4		
Queuing Penalty (veh)			31		
Storage Bay Dist (ft)		200		100	
Storage Blk Time (%)	0			0	
Queuing Penalty (veh)	0			2	

Intersection: 3: Rio Road & Dunlora Forest Drive

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	46	39	37
Average Queue (ft)	12	13	5
95th Queue (ft)	36	32	24
Link Distance (ft)	124		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	225
Storage Blk Time (%)	10	5	
Queuing Penalty (veh)	3	1	

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	124	215	172	166	382	195	220	362	142
Average Queue (ft)	47	94	57	40	151	42	66	134	15
95th Queue (ft)	106	187	121	107	287	126	153	280	75
Link Distance (ft)	746		1307		976			558	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)		0	0	1	21			9	
Queuing Penalty (veh)		1	0	4	45			18	

Intersection: 5: Right-in Driveway & Rio Road

Movement	NB	B16	B16
Directions Served	T	T	
Maximum Queue (ft)	161	89	94
Average Queue (ft)	29	11	8
95th Queue (ft)	128	73	82
Link Distance (ft)	115	160	160
Upstream Blk Time (%)	3	1	1
Queuing Penalty (veh)	23	5	5
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Full-movement Driveway

Movement	EB	EB	NB	NB	B10	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	75	57	40	56	37	4
Average Queue (ft)	32	20	7	5	3	0
95th Queue (ft)	60	49	28	61	43	3
Link Distance (ft)	362	362		189	256	
Upstream Blk Time (%)				1		
Queuing Penalty (veh)				4		
Storage Bay Dist (ft)			100			1
Storage Blk Time (%)				1		
Queuing Penalty (veh)				0		

Network Summary

Network wide Queuing Penalty: 276

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	974	74	649	741	31	63	5	697	6	2	4
Future Volume (veh/h)	17	974	74	649	741	31	63	5	697	6	2	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1047	80	698	797	33	68	5	749	6	2	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	29	1102	84	713	1336	1151	186	14	812	17	6	19
Arrive On Green	0.02	0.33	0.33	0.40	0.71	0.71	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1781	3346	256	1781	1870	1585	1665	122	1585	1352	451	1585
Grp Volume(v), veh/h	18	556	571	698	797	33	73	0	749	8	0	4
Grp Sat Flow(s),veh/h/ln	1781	1777	1824	1781	1870	1585	1787	0	1585	1803	0	1585
Q Serve(g_s), s	1.9	58.9	59.0	74.6	41.0	1.1	7.3	0.0	21.6	0.8	0.0	0.5
Cycle Q Clear(g_c), s	1.9	58.9	59.0	74.6	41.0	1.1	7.3	0.0	21.6	0.8	0.0	0.5
Prop In Lane	1.00		0.14	1.00		1.00	0.93		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	29	585	601	713	1336	1151	200	0	812	22	0	19
V/C Ratio(X)	0.63	0.95	0.95	0.98	0.60	0.03	0.36	0.00	0.92	0.36	0.00	0.21
Avail Cap(c_a), veh/h	78	585	601	723	1336	1151	200	0	812	97	0	85
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.4	63.1	63.2	57.1	13.7	7.4	79.4	0.0	43.6	94.6	0.0	94.4
Incr Delay (d2), s/veh	20.6	26.6	26.3	28.1	0.7	0.0	1.1	0.0	16.0	9.6	0.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	30.9	31.7	38.9	17.2	0.4	3.4	0.0	36.6	0.5	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.0	89.7	89.4	85.2	14.5	7.4	80.5	0.0	59.5	104.2	0.0	99.5
LnGrp LOS	F	F	F	F	B	A	F	A	E	F	A	F
Approach Vol, veh/h		1145			1528			822			12	
Approach Delay, s/veh		90.0			46.6			61.4			102.6	
Approach LOS		F			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	83.9	69.1		30.0	9.7	143.3		10.0				
Change Period (Y+Rc), s	* 6.7	* 5.5		* 8.4	6.6	* 5.5		7.6				
Max Green Setting (Gmax), s	* 78	* 55		* 22	8.4	* 1.2E2		10.4				
Max Q Clear Time (g_c+I1), s	76.6	61.0		23.6	3.9	43.0		2.8				
Green Ext Time (p_c), s	0.6	0.0		0.0	0.0	15.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay	64.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	38	31	734	60	83	642
Future Volume (Veh/h)	38	31	734	60	83	642
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	41	33	789	65	89	690
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			Raised			None
Median storage veh)			1			
Upstream signal (ft)						262
pX, platoon unblocked						
vC, conflicting volume	1690	822			854	
vC1, stage 1 conf vol	822					
vC2, stage 2 conf vol	868					
vCu, unblocked vol	1690	822			854	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	91			89	
cM capacity (veh/h)	222	374			785	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	74	854	89	690
Volume Left	41	0	89	0
Volume Right	33	65	0	0
cSH	400	1700	785	1700
Volume to Capacity	0.19	0.50	0.11	0.41
Queue Length 95th (ft)	17	0	10	0
Control Delay (s)	20.7	0.0	10.2	0.0
Lane LOS	C		B	
Approach Delay (s)	20.7	0.0	1.2	
Approach LOS	C			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	12	777	10	21	623
Future Vol, veh/h	8	12	777	10	21	623
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	25	-	200	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	9	13	863	11	23	692

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1601	863	0	0	874	0
Stage 1	863	-	-	-	-	-
Stage 2	738	-	-	-	-	-
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	117	354	-	-	772	-
Stage 1	413	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	113	354	-	-	772	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	413	-	-	-	-	-
Stage 2	459	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.2	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	113	354	772	-
HCM Lane V/C Ratio	-	-	0.079	0.038	0.03	-
HCM Control Delay (s)	-	-	39.6	15.6	9.8	-
HCM Lane LOS	-	-	E	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	12	54	1	83	8	696	98	117	510	4
Future Volume (veh/h)	8	1	12	54	1	83	8	696	98	117	510	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	1	13	59	1	91	9	765	108	129	560	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	29	76	240	3	138	458	954	808	345	1063	901
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.01	0.51	0.51	0.07	0.57	0.57
Sat Flow, veh/h	336	336	873	1477	36	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	23	0	0	60	0	91	9	765	108	129	560	4
Grp Sat Flow(s),veh/h/ln	1544	0	0	1513	0	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.6	0.0	3.6	0.2	21.8	2.3	2.1	11.9	0.1
Cycle Q Clear(g_c), s	2.3	0.0	0.0	2.2	0.0	3.6	0.2	21.8	2.3	2.1	11.9	0.1
Prop In Lane	0.39		0.57	0.98		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	0	0	243	0	138	458	954	808	345	1063	901
V/C Ratio(X)	0.11	0.00	0.00	0.25	0.00	0.66	0.02	0.80	0.13	0.37	0.53	0.00
Avail Cap(c_a), veh/h	386	0	0	409	0	326	789	1243	1053	572	1243	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	0.0	27.7	0.0	28.4	7.9	13.1	8.3	10.8	8.5	6.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.5	0.0	5.3	0.0	2.9	0.1	0.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.9	0.0	1.5	0.1	8.1	0.7	0.7	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	0.0	0.0	28.2	0.0	33.7	7.9	16.0	8.4	11.4	9.0	6.0
LnGrp LOS	C	A	A	C	A	C	A	B	A	B	A	A
Approach Vol, veh/h		23			151			882			693	
Approach Delay, s/veh		27.4			31.5			15.0			9.4	
Approach LOS		C			C			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	40.1		12.4	8.0	43.8		12.4				
Change Period (Y+Rc), s	7.3	7.3		* 6.8	7.3	7.3		* 6.8				
Max Green Setting (Gmax), s	12.7	42.7		* 13	12.7	42.7		* 13				
Max Q Clear Time (g_c+I1), s	4.1	23.8		4.3	2.2	13.9		5.6				
Green Ext Time (p_c), s	0.2	9.0		0.0	0.0	7.2		0.3				

Intersection Summary

HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	19	30	759	625	25
Future Volume (Veh/h)	35	19	30	759	625	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	21	33	825	679	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				1217	901	
pX, platoon unblocked	0.67					
vC, conflicting volume	1570	679	706			
vC1, stage 1 conf vol	679					
vC2, stage 2 conf vol	891					
vCu, unblocked vol	1605	679	706			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	95	96			
cM capacity (veh/h)	223	452	892			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	38	21	33	825	679	27
Volume Left	38	0	33	0	0	0
Volume Right	0	21	0	0	0	27
cSH	223	452	892	1700	1700	1700
Volume to Capacity	0.17	0.05	0.04	0.49	0.40	0.02
Queue Length 95th (ft)	15	4	3	0	0	0
Control Delay (s)	24.4	13.4	9.2	0.0	0.0	0.0
Lane LOS	C	B	A			
Approach Delay (s)	20.5		0.4		0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: Rio Road & John Warner Parkway & CATEC Driveway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LT	R	LT	R
Maximum Queue (ft)	254	1341	400	816	536	33	164	183	22	5
Average Queue (ft)	34	928	375	439	132	5	78	164	3	0
95th Queue (ft)	153	1599	469	732	365	22	144	214	15	3
Link Distance (ft)		1303		950	950		174	174	308	
Upstream Blk Time (%)		19		0	0		1	16		
Queuing Penalty (veh)		0		0	0		3	63		
Storage Bay Dist (ft)	200		300			500				125
Storage Blk Time (%)		51	38		0					
Queuing Penalty (veh)		297	194		0					

Intersection: 2: Rio Road & Dunlora Drive

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	TR	L	T
Maximum Queue (ft)	75	101	210	130	154
Average Queue (ft)	26	34	137	48	8
95th Queue (ft)	58	79	263	104	69
Link Distance (ft)	512		198		174
Upstream Blk Time (%)			7		0
Queuing Penalty (veh)			54		1
Storage Bay Dist (ft)		200		100	
Storage Blk Time (%)				3	
Queuing Penalty (veh)				19	

Intersection: 3: Rio Road & Dunlora Forest Road

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	37	29	6	53
Average Queue (ft)	9	9	0	11
95th Queue (ft)	32	29	4	38
Link Distance (ft)	128			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	200	225
Storage Blk Time (%)	8	3		
Queuing Penalty (veh)	1	0		

Intersection: 4: Rio Road & Waldorf School Road/Pen Park Road

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	52	80	83	71	440	209	126	224	20
Average Queue (ft)	17	32	34	6	178	40	51	86	1
95th Queue (ft)	45	67	64	38	355	128	100	187	8
Link Distance (ft)	748		1307		976			542	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		350		75		125	225		100
Storage Blk Time (%)					20			4	
Queuing Penalty (veh)					21			4	

Intersection: 5: Right-in Driveway & Rio Road

Movement	NB	B16	B16
Directions Served	T	T	
Maximum Queue (ft)	201	142	134
Average Queue (ft)	57	18	12
95th Queue (ft)	184	91	92
Link Distance (ft)	121	147	147
Upstream Blk Time (%)	5	1	1
Queuing Penalty (veh)	41	3	3
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Full-movement Driveway

Movement	EB	EB	NB	NB	B10	SB	SB
Directions Served	L	R	L	T	T	T	R
Maximum Queue (ft)	62	27	63	47	3	2	11
Average Queue (ft)	21	9	16	3	0	0	0
95th Queue (ft)	49	25	49	35	3	2	7
Link Distance (ft)	364	364		198	266	147	
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				0			
Storage Bay Dist (ft)			100				1
Storage Blk Time (%)			0	0			0
Queuing Penalty (veh)			1	0			0

Network Summary

Network wide Queuing Penalty: 705

Cameron Langille

From: Rosalyn Schmitt <rschmitt@k12albemarle.org>
Sent: Wednesday, February 26, 2020 3:07 PM
To: Cameron Langille
Cc: Renee DeVall
Subject: RE: Zoning Map Amendment Projected School Impacts

Yes, your calculation is accurate. As you follow the email chain, you can see that they will likely make the case that communities like the one they are proposing do not produce that same number of students. The yield rates are a county-wide average and do not take into account age of building, number of bedrooms or value of the property.

Rosalyn Schmitt
Chief Operating Officer, Albemarle County Public Schools
401 McIntire Road Charlottesville, VA 22902
(434) 296-5877 | rschmitt@k12albemarle.org
www.k12albemarle.org

From: Cameron Langille <blangille@albemarle.org>
Sent: Wednesday, February 26, 2020 2:45 PM
To: Rosalyn Schmitt <rschmitt@k12albemarle.org>
Cc: Renee DeVall <rdevall@k12albemarle.org>
Subject: Zoning Map Amendment Projected School Impacts

Hi Rosalyn & Renee,

I am working on a rezoning that is looking to do a minimum of 102 units and up to 328 multifamily units. This development would sent students to Agnor-Hurt, Burley, and Albemarle High.

I have used ACPS official estimate generator for students at each level that ACPS sent to the applicant (see attached) and that is as follow:

Official Calculator

Dwelling Type	Elementary	Middle	High	Total
Single-family detached	0.15 students/unit	0.08	0.12	0.35
Single-family attached (162 units)	0.13 (21)	0.05 (8)	0.08 (13)	0.26 (42)
Townhomes	0.15	0.06	0.08	0.29
Multifamily (328 units)	0.12 (40)	0.03 (10)	0.05 (16)	0.21 (68)

Can you verify that this calculation is accurate based on the number of units proposed?

Cameron Langille | Senior Planner
Community Development Department
Planning Division
blangille@albemarle.org

(434) 296-5832 ext. 3432

Schweller, Lori

Subject: FW: Parkway Place - Email from County Schools regarding Student Numbers (for inclusion in the package) [IWOV-IWOVRIC.FID1976140]

From: Renee DeVall <rdevall@k12albemarle.org>
Sent: Monday, November 11, 2019 9:23 AM
To: Rosalyn Schmitt <rschmitt@k12albemarle.org>; Ryan Hambleton <ryanh@kotarides.com>
Subject: RE: [EXTERNAL]RE: Student Yield by Building Type

School Year 19/20

	Pre-K	Elem	Middle	High
Reserve at Belvedere	1	7	2	4
Arden Place	0	4	3	5

Thank you,

Renee DeVall
Routing and Planning Manager
Albemarle County Pupil Transportation
434-973-5716 ext 12210 Cell 434-882-0013



This email may include protected student information that is intended for the listed recipients only and must be kept confidential in accordance with FERPA. Recipients should not forward this email to others unless those additional recipients have a legitimate educational interest in the information.

From: Rosalyn Schmitt
Sent: Friday, November 8, 2019 9:04 AM
To: 'Ryan Hambleton' <ryanh@kotarides.com>; Renee DeVall <rdevall@k12albemarle.org>
Subject: RE: [EXTERNAL]RE: Student Yield by Building Type

Good Morning,

We can have something to you by early next week. Renee will reach out to you directly.

Thanks,

Rosalyn Schmitt

Chief Operating Officer
Albemarle County Public Schools
401 McIntire Road
Charlottesville, VA 22902
www.k12albemarle.org

O: 434-296-5877

From: Ryan Hambleton [mailto:ryanh@kotarides.com]
Sent: Thursday, November 7, 2019 5:45 PM
To: Rosalyn Schmitt <rschmitt@k12albemarle.org>; Renee DeVall <rdevall@k12albemarle.org>
Subject: [EXTERNAL]RE: Student Yield by Building Type

Ms. Schmitt / Ms DeVall,

I wanted to make sure that you received my email below. Is it possible to get the corresponding enrollment or transportation data that the two apartment complexes below are generating? Something like the information highlighted below, provided rom last year.

Thank you,

Ryan'

Ryan Hambleton PE, LEED AP
Kotarides Developers
919-824-2219

From: Ryan Hambleton
Sent: Tuesday, November 5, 2019 8:07 AM
To: rschmitt@k12albemarle.org; Renee DeVall <rdevall@k12albemarle.org>
Subject: FW: Student Yield by Building Type

Ms. Schmitt - I am working on a rezoning in Ablemarle County for apartments near Belvedere and Dunlora. I had talked to one of you about the actual students that are being generated by nearby apartment communities. Could you give the number of students currently enrolled that are coming from some comparable communities in the area? This is what I have from last year and I was hoping for something up to date.

Thank you for any help you can provide!

Comparable communities – Student population 2018...

	Pre-K	Elem	Middle	High
Reserve at Belvedere	0	4	1	6
Arden Place	0	1	3	4

Ryan Hambleton PE, LEED AP
Kotarides Developers
919-824-2219

From: Rosalyn Schmitt <rschmitt@k12albemarle.org>
Sent: Tuesday, September 25, 2018 12:27 PM

O: 434-296-5877

From: Ryan Hambleton [mailto:ryanh@kotarides.com]
Sent: Thursday, November 7, 2019 5:45 PM
To: Rosalyn Schmitt <rschmitt@k12albemarle.org>; Renee DeVall <rdevall@k12albemarle.org>
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Ryan Hambleton PE, LEED AP
Kotarides Developers
919-824-2219

From: Rosalyn Schmitt <rschmitt@k12albemarle.org>
Sent: Tuesday, September 25, 2018 12:27 PM

To: Laura Addis
Subject: Student Yield by Building Type

Laura,

Here is the information you have requested:

Number of Albemarle County Public School Students Generated by Housing Type:

Type of Dwelling Unit	Elementary	Middle	High	Total
Single Family (Detached)	0.15	0.08	0.12	0.35
Single Family (Attached)	0.13	0.05	0.08	0.26
Town Home	0.15	0.06	0.08	0.29
Multi-Family	0.12	0.03	0.05	0.21
Mobile Home	0.26	0.10	0.11	0.46

As I mentioned on the phone, these yields are an average county-wide. They do not take into account age of building, number of bedrooms or value of the property.

Also, I have attached more information about the High School Center model we briefly discussed.

Please let me know if you have any further questions.

Rosalyn Schmitt

Chief Operating Officer
Albemarle County Public Schools
401 McIntire Road
Charlottesville, VA 22902
www.k12albemarle.org
O: 434-296-5877

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Cameron Langille

From: Schweller, Lori <lschweller@williamsmullen.com>
Sent: Wednesday, February 5, 2020 2:30 PM
To: Cameron Langille
Subject: Proffers-Parkway Place [IWOV-IWOVRIC.FID1976140]

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Good Afternoon, Cameron,

Kotarides is electing for its proffers to be considered under the 2019 state law. Please let me know if you need additional information or have questions.

Thanks,
Lori

J. Lori H. Schweller | Attorney | Williams Mullen
321 East Main St. Suite 400 | Charlottesville, VA 22902-3200
T 434.951.5728 | C 804.248.8700 | F 434.817.0977 | lschweller@williamsmullen.com | www.williamsmullen.com

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